Project Memo

H370343

November 30, 2023

To: Kendrick Doll, Senior Project Evaluator, Environmental Assessment Branch, MECP

From: Darcy Snyder, Hatch

cc: Jon Arkell, Northland Power
Robert Miller, Northland Power
Bryan Hibbs, Northland Power
Caleb Coughlin, Hatch

Northland Power
North Burgess Solar Project

Draft Modification Document for Renewable Energy Approval (No. 5149-8YPMVG)

Northland Power Solar North Burgess L.P. ("Northland") owns and operates a 10-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximate 75-acre parcel of land located on Narrows Lock Road near the intersection with Scotch Line, within the Township of Tay Valley in Lanark County; herein referred to as "North Burgess Solar Project" or the "Project". The Ministry of the Environment (MOE now MECP) issued a Renewable Energy Approval (REA) for the Project (No. 5149 8YPMVG) on November 7, 2012.

1. Proposed changes

Northland is seeking to expand the existing project footprint to allow for vegetation management to address safety, fire and shading issues caused by vegetation growth along the southern and central sections of perimeter fence of the facility.

The original EIS intended to mitigate impacts to the wetland by imposing setbacks of 30m between the wetland and/or high-water mark and the Project Location Boundary. In 2013, the high-water mark and wetland boundary mapping demonstrated that the original delineation of the wetland was not accurate, which resulted in some setbacks being greater than 30m. It is proposed that the new Project Location Boundary be realigned such that the project is setback 30m from the wetland and/or high-water mark, as originally intended in the EIS. In areas where REA-approved setbacks are already less than 30 m, it is proposed that hand clearing and trimming be permitted within the setback area, such that there are no new adverse impacts to the natural environment. The proposed Project Location Boundary surrounding the wetland is indicated in Appendix B.

In addition to the proposed amendment surrounding the wetland described above, it is proposed that the southern boundary of the Project Location Boundary be shifted 2m to the south, in alignment with a newly subdivided property boundary. Additionally, the additional 2m

of clearing will control vegetation growth over the last year such that health and safety risks associated with falling trees and grass fires are mitigated and shading of the facility is reduced. Both the local municipality and the MNRF have been consulted and confirmed alignment with the proposed change (Appendix C). Northland has worked with the TVT to protect public and worker health and safety by clearing dead and dying trees fallen on the fence line within both Northland-donated and Northland-owned land.

The proposed Project Location Boundary and Vegetation Management Area (Appendix B) will allow for proper operation of the Solar PV facility and protection of public and worker health and safety, while avoiding new adverse impacts. Changes to the physical components of the Project are not proposed. All lands proposed to be included in the expanded Project Location Boundary are owned by Northland and have been since issuance of the original REA.

The Project approval history is availably publicly on Northland's website (link), which includes the previously withdrawn amendment application and associated notification. Beyond the correspondence provided in Appendix C, no other correspondence has been received since the 2013 posting.

For the aforementioned reasons, a Technical Amendment is required to revise the Project Location Boundary.

1.1 Assessment of Impacts to Natural Heritage Features

The potential for the expanded Project Location Boundary to pose impacts to natural heritage features was considered at both the central wetland and the southern 2m extension. It was determined that the expanded Project Location was assessed in the Environmental Impact Study (Appendix D), and that the mitigation measures described in the Environmental Impact Study will be implemented during the vegetation management associated with the expanded Project Location Boundary. Specifically, these mitigation measures include including clearly flagging work areas, falling trees into previously cleared areas only, hand trimming, and complying with all SAR and bird breeding windows. Qualified biologists will verify the presence of any SAR or breeding birds if vegetation management occurs outside of those windows.

Incremental impacts to the central wetland are not expected because either a) the Project Location is setback 30m from the wetland or b) the Project Location within 30m of the wetland was previously assessed and approved. Further, any clearing that will occur within the pre-approved Project Location Boundary within 30m of the wetland will occur by hand exclusively.

Incremental impacts to the southern 2m extension are not expected because this area was originally assessed in the buffer area of the Natural Heritage Environmental Impact Study, and more recently assessed by a biologist to confirm that species at risk were not present.

1.2 Assessment of Impacts to Cultural Heritage Features

The expanded Project Location was compared to the lands assessed in the Protected Properties and Heritages Report submitted with the REA application and attached in Appendix E and Appendix F, which indicates that these lands were originally assessed and deemed to not have potential for cultural heritage or archaeological resources.

1.3 Summary of Changes

Table 1.1 provides a description of each proposed change, the rationale for the change, an assessment of potential for altered environmental effects and any additional mitigation or monitoring required.

Table 1-1: Table of Proposed Changes, Rationale for Change, Altered Effects and Additional Mitigation Measures and Monitoring

Change	Change Details	Rationale for Change	Altered Effect	Additional Mitigation Proposed	Additional Environmental Effects Monitoring
Extended Project Location Boundary	Project Location Boundary revised to align with the NHA and EIS. 30m setback from wetland maintained, alignment with newly subdivided property boundary achieved.	Extended Project Location Boundary required for vegetation management to maintain worker and public safety, and to optimize performance of the asset.	None. Mitigation measures proposed in the EIS will be maintained, including clearly flagging work areas, falling trees into previously cleared areas only, hand trimming, and complying with all SAR and bird breeding windows.	Any vegetation management within the wetland area will be done by hand exclusively such that new adverse impacts are not introduced.	When working within 30 m of any wetland during construction, or during high precipitation events during construction, monitoring of sediment and erosion controls will occur daily.

Overall, the proposed Project changes have no new adverse impacts to the natural or cultural heritage features. Based on this, the proposed changes are determined to be a Technical Amendment.

2. Summary Revisions to REA Supporting Documents

The supporting documents that have been amended include:

- Natural Heritage Records Review;
- Natural Heritage Site Investigation Report;
- Natural Heritage Evaluation of Significance;
- Natural Heritage Environmental Impact Study;

- Construction Plan Report; and
- Design and Operations Report.

The text of the Natural Heritage Environmental Impact Study has been revised to allow hand/mechanical vegetation management within 30m of the wetland. There are no changes to the text of the remaining reports, however the Project Location Boundary previously provided within the aforementioned reports are replaced with the new Project Location provided in Appendix B of this letter.

As the changes to the Natural Heritage reports are being completed to bring the Project Location Boundary in line with other Project documentation, and the layout changes are within the original Project footprint, there are no revisions required to any other reports.

3. Conclusion

As noted previously, given that the proposed changes outlined in this letter do not result in any new adverse impacts not addressed in the original REA application, it is our assessment that these proposed changes constitute a Technical Change.

If you have any questions, please do not hesitate to contact me at (437) 971-0636.

Yours truly,

Darcy Snyder, Hatch
Environmental Engineer
darcy.snyder@hatch.com
(437) 971-0636

Attachment(s)/Enclosure

Appendix A – REA Amendment Application Form
Appendix B – Proposed Project Location
Appendix C – Correspondence with MNRF
Appendix D – Environmental Impact Study
Appendix E – Protected Properties and Heritage Resources
Appendix F – Archaeological Assessment

Appendix A
REA Amendment Application Form

Renewable Energy Approval Application

General Information and Instructions

General Information

Information requested in this form is collected under the authority of the *Environmental Protection Act*, R.S.O. 1990, c. E.19 (EPA) and will be used for the purposes of making decisions in respect of applications for the issue of, or amendment to, a Renewable Energy Approval. The information may also be used in connection with the Ministry's compliance and enforcement activities under the EPA.

For all questions related to preparing or submitting this form or about the Ministry's collection of information related to applying for a Renewable Energy Approval contact: Client Services and Permissions Branch, 135 St. Clair Ave W, 1st Floor, Toronto ON M4V 1P5. Telephone outside Toronto 1-800-461-6290 or in Toronto 416-314-8001. E-mail: enviropermissions@ontario.ca.

Instructions

1. **Applicants are responsible for ensuring that they complete the most recent application form.** Application forms and information about the required supporting documentation and technical requirements are available on the Ministry of the Environment, Conservation and Parks website at www.ontario.ca/environment-and-energy/renewable-energy-approvals.

2. **Complete Submission**

   In order to be eligible for the issue of a renewable energy approval, a person who proposes to engage in or change a renewable energy project, or alter the terms and conditions of a renewable energy approval shall, before submitting an application to the Director,

   1) prepare the application in a form or format approved by the Director;
   2) obtain or prepare, as the case may be, any documents that,
      a) are required under Part IV of O. Regulation 359/09 (the Regulation) to be submitted as part of the application; or,
      b) are to be submitted as part of the application for the purposes of obtaining an exemption from a provision of Part V of the Regulation; and,
      c) comply with all other requirements of Part IV of the Regulation;
   3) If there is more than one person applying for the issue of a renewable energy approval in respect of a renewable energy project, those persons shall jointly submit one application for the issue of a renewable energy approval;

   New Renewable Energy Approval

   Where a renewable energy approval has not yet been issued, a person who proposes to engage in a renewable energy project shall also

   1) submit, as part of the application, the documents set out in Column 1 of Table 1 of the Regulation, wherever the renewable energy project is described opposite the document in Column 3 of Table 1 of the Regulation; and,
   2) ensure the documents meet the requirements set out opposite the document in Column 2 of Table 1 of the Regulation.

   Amendment to Renewable Energy Approval

   Where a renewable energy approval has been issued, a person making an application in respect of a **proposed change to a renewable energy project or alteration** to the terms and conditions of the renewable energy approval shall, also

   1) obtain or prepare, as the case may be, one or more reports that set out a description of and rationale for the proposed change or alteration, including any proposed change or alteration in respect of the following:
      a) the nameplate capacity of the renewable energy generation facility.
      b) the energy sources to be used to generate electricity at the renewable energy generation facility.
      c) the project location.
      d) the renewable energy generation facility, including any associated or ancillary equipment, systems or technologies.
      e) the activities that will be engaged in as part of the project.
      f) the negative environmental effects that may result from engaging in the project.
      g) the measures to mitigate the negative environmental effects that may result from engaging in the project.

Supporting documents

Any document submitted as part of an application for the issue of a new, or amendment of an existing, renewable energy approval that is a diagram, map or plan shall be drawn to scale and shall include a scale bar and a north arrow.

Payment of the application fee (in Canadian funds) by certified cheque or money order made payable to the Minister of Finance, or credit card payment (for payments up to $10,000) is required with the complete submission of your application.

Incomplete applications will be returned to the applicant.

The Ministry may require additional information during the technical review of any application.

3. **How to submit**

   See section 5 Payment Information for instructions.

   Do not mail a paper copy of the application submission to our branch.

4. Information collected by the Ministry of the Environment, Conservation and Parks is subject to the *Freedom of Information and Protection of Privacy Act* (FIPPA). If you are of the view that any part of your application is confidential on the grounds that such information constitutes a trade secret or scientific, technical, commercial, financial or labour relations information, please make this known now. Otherwise, the Ministry may make the information available to the public without further notice to you.

   It is an offence under the EPA to provide false or misleading information in this application and/or accompanying documents.

Renewable Energy Approval Application

For Office Use Only			
Reference Number	Payment Received	Date (yyyy/mm/dd)	Initials
	$		

Application Summary

Applicant Name (Legal name of individual or organization as evidenced by legal documents)

Northland Power Solar North Burgess L.P.

Project Name (Project identifier to be used as a reference in correspondence)

North Burgess Solar Project

Project Description Summary (This summary should reflect the description in the documents upon which consultation has been completed and if it does not, the difference should be highlighted)

The proposed facility is a 10 MW Class 3 solar photovoltaic generating facility, located on Narrow Lock Road near the intersection of Scotch Line, in the township of Tay Valley, in Lanark County, Ontario. This amendment is being made in order to identify additional changes to the Project, including:

- Revisions to the Project location as shown in the Natural Heritage Assessment and Environmental Impact Study reports

Supplemental Application Information (Provide any other information that might be relevant to your application)

The proposed changes do not result in any additional negative effects not addressed in the original REA application and the proposed changes would constitute a Technical Change.

Note: This form has been save-enabled; you can save a copy of this form that includes any information you have entered.

Additional instructions and information on how to complete the application form can be found in the accompanying "Guide for Completing the Renewable Energy Approval Application".

Section 1 – Applicant Information

1.1 – Applicant Information (Owner of works/facility)

Applicant Name (Legal name of individual or organization as evidenced by legal documents)	Business Identification Number
Northland Power Solar North Burgess L.P.	191194588

☑ Same as Applicant Name

Applicant Type

☐ Corporation ☐ Federal Government ☐ Individual ☐ Municipal Government
☑ Partnership ☐ Provincial Government ☐ Sole Proprietor
☐ Other (describe) ►

North American Industry Classification System (NAICS) Code

221119

Business Activity Description (A description of the business endeavour, this may include products sold, services provided or machinery/equipment used, etc.)

Northland Power specializes in the development and operation of renewable energy facilities, including solar power projects.

1.2 – Applicant Physical Address

Civic Address

Unit Number	Street Number	Street Name (Include type and direction)
12 Floor	30	St. Clair Avenue West

City/Town	Province	Postal Code
Toronto	ON – Ontario	M4V 3A1

Survey Address (Not required if the Civic Address is provided)

Lot/Part	Municipality/Unorganized Township	Concession/Reference Plan

County/District	Province/State	Country	Postal Code

Telephone Number	Mobile Number	Fax Number
ext.		

Email Address

1.3 – Applicant Mailing Address ☑ Same as Applicant Physical Address

Civic Address

Unit Number	Street Number	Street Name (Include type and direction)	PO Box

City/Town/Municipality/Unorganized Township	Province/State

Country	Postal Code

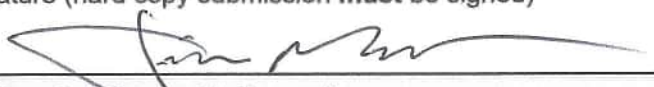
Delivery Designator	Delivery Identifier	Postal Station

1.4 – Statement of Applicant

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*;
- I understand that by submitting this form, I am guaranteeing the completeness and accuracy of all the information provided on this form and included in the draft reports. Failure to submit the correct information will result in an incomplete application being returned;
- The Project Technical Information Contact identified below is authorized to act on my behalf for the purpose of obtaining approval under section 47.3 of the EPA for the Project identified herein.

☑ By checking this each of the undersigned acknowledge that in providing their name on the applicable line below in electronic form will constitute a signature for the purposes of the *Electronic Commerce Act, 2000*, S.O. 2000, c. 17.

Name of Signing Authority (Please print) (Last name, first name)		Title
Mulvale, Jim		Sr. Director, Environment
Telephone Number	**Mobile Number**	**Fax Number**
416-662-1437 ext.	416-662-1437	
Email Address		
Jim.mulvale@northlandpower.com		
Signature (hard copy submission must be signed)		**Date (yyyy/mm/dd)**
		2023/05/29

Section 2 – Project Information

2.1 – Application Type

- ☐ New Renewable Energy Approval
- ☑ Amendment to existing Renewable Energy Approval

Application Initiated by

- ☑ Applicant
- ☐ Client Services and Permissions Branch/Environmental Permissions Branch
- ☐ Provincial Officer Order (attach copy)
- ☐ Other (describe) ▶

Relevant pre-submission rules subject to/elected (please select one of the following)

Notice of Proposal to Engage **and** if applicable, Notice of First Public Meeting, distributed on or before December 31, 2010.	☐ 2010 Rules ☐ Elect into one or more 2011 Rules ☑ Elect into Current Rules	If "Elect into one or more 2011 Rules", please specify which rules:
Notice of Proposal to Engage **and** Notice of First Public Meeting (or if public meeting not required, drafts of the documents identified in paragraphs 1 and 2 of subsection 18(2) of the Regulation) distributed after December 31, 2010 and on or before July 1, 2012.	☐ 2011 Rules ☑ Elect into Current Rules	
Notice of Proposal to Engage **or** Notice of First Public Meeting distributed after July 1, 2012.	☑ Current Rules	

Current Environmental Compliance Approvals (please attach a separate list if more space is required)

Environmental Compliance Approval Number	Date of Issue (yyyy/mm/dd)
Environmental Compliance Approval Number	Date of Issue (yyyy/mm/dd)
Environmental Compliance Approval Number	Date of Issue (yyyy/mm/dd)
Environmental Compliance Approval Number	Date of Issue (yyyy/mm/dd)

Current Permit(s) to Take Water (please attach a separate list if more space is required)

Permit Number	Date of Issue (yyyy/mm/dd)
Permit Number	Date of Issue (yyyy/mm/dd)
Permit Number	Date of Issue (yyyy/mm/dd)

Permit Number	Date of Issue (yyyy/mm/dd)

Project Schedule

Estimated date for start of construction/installation (yyyy/mm/dd)	Estimated date for start of operation (yyyy/mm/dd)

2.2 – Statement of Project Technical Information Contact

☐ The Project Technical Information Contact is the same as the Applicant (Identified in Section 1)

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted in support of this application (electronically and in hard copy) is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- I understand that by submitting this form, I am guaranteeing the completeness and accuracy of this form and the draft documents. Failure to submit the correct information will result in the application being returned as incomplete.
- That the information contained in the electronically submitted application form is the same as the information submitted in the hard copy submission.
- I have used the most recent application form (as obtained from the "Renewable Energy Approvals" section of the Ministry of the Environment, Conservation and Parks website at www.ontario.ca/environment-and-energy/renewable-energy-approvals or from the Client Services and Permissions Branch at 1-800-461-6290).

☑ By checking this each of the undersigned acknowledge that in providing their name on the applicable line below in electronic form will constitute a signature for the purposes of the *Electronic Commerce Act, 2000*, S.O. 2000, c. 17.

Name of Project Technical Information Contact (Please print) (Last name, first name)

Darcy Snyder

Company

Hatch

Telephone Number	Mobile Number	Fax Number
437-971-0636 ext.		

Email Address

darcy.snyder@hatch.com

Signature (hard copy submission **must** be signed)	Date (yyyy/mm/dd)
Snyder, Darcy Digitally signed by Snyder, Darcy DN: cn=Snyder, Darcy, email=darcy.snyder@hatch.com Date: 2023.06.02 16:37:44 -04'00'	

Address

☐ The Project Technical Information Contact Address is the same as the Applicant (Identified in Section 1)

Unit Number	Street Number	Street Name (Include type and direction)	PO Box
	2699	Speakman Drive	

City/Town/Municipality/Unorganized Township	Province/State
Mississauga	ON
Country	**Postal Code**
Canada	L5K 1B1

Delivery Designator	Delivery Identifier	Postal Station

2.3 – Other Approvals for Facility (Please attach a separate list if more space is required)

☐ A separate list is attached

List all other environmental approvals/permits applied for related to this project or received in relation to this project

Approval Number	Approval Date (yyyy/mm/dd)
Approval Number	Approval Date (yyyy/mm/dd)
Approval Number	Approval Date (yyyy/mm/dd)
Approval Number	Approval Date (yyyy/mm/dd)

Permit Number	Date of Issue (yyyy/mm/dd)

Project Schedule

Estimated date for start of construction/installation (yyyy/mm/dd)	Estimated date for start of operation (yyyy/mm/dd)

2.2 – Statement of Project Technical Information Contact

☐ The Project Technical Information Contact is the same as the Applicant (Identified in Section 1)

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted in support of this application (electronically and in hard copy) is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- I understand that by submitting this form, I am guaranteeing the completeness and accuracy of this form and the draft documents. Failure to submit the correct information will result in the application being returned as incomplete.
- That the information contained in the electronically submitted application form is the same as the information submitted in the hard copy submission.
- I have used the most recent application form (as obtained from the "Renewable Energy Approvals" section of the Ministry of the Environment, Conservation and Parks website at www.ontario.ca/environment-and-energy/renewable-energy-approvals or from the Client Services and Permissions Branch at 1-800-461-6290).

☑ By checking this each of the undersigned acknowledge that in providing their name on the applicable line below in electronic form will constitute a signature for the purposes of the *Electronic Commerce Act, 2000*, S.O. 2000, c. 17.

Name of Project Technical Information Contact (Please print) (Last name, first name)

Darcy Snyder

Company

Hatch

Telephone Number	Mobile Number	Fax Number
437-971-0636 ext.		

Email Address

darcy.snyder@hatch.com

Signature (hard copy submission **must** be signed)	Date (yyyy/mm/dd)

Address

☐ The Project Technical Information Contact Address is the same as the Applicant (Identified in Section 1)

Unit Number	Street Number	Street Name (Include type and direction)	PO Box
	2699	Speakman Drive	

City/Town/Municipality/Unorganized Township	Province/State
Mississauga	ON
Country	**Postal Code**
Canada	L5K 1B1

Delivery Designator	Delivery Identifier	Postal Station

2.3 – Other Approvals for Facility (Please attach a separate list if more space is required)

☐ A separate list is attached

List all other environmental approvals/permits applied for related to this project or received in relation to this project

Approval Number	Approval Date (yyyy/mm/dd)
Approval Number	Approval Date (yyyy/mm/dd)
Approval Number	Approval Date (yyyy/mm/dd)
Approval Number	Approval Date (yyyy/mm/dd)

Ontario Power Authority Reference (i.e. FIT) Number (if applicable)

FIT-F0HJPWL

2.4 – Type of Renewable Energy Generation Facility (Select all that apply)

Wind	☐ Class 2	☐ Class 3	☐ Class 4	☐ Class 5
Other	☐ Biofuel	☐ Biogas	☐ Other (if other please describe):	
Anaerobic Digestion	☐ Class 1	☐ Class 2	☐ Class 3	
Solar Photovoltaic	☑ Class 3			
Thermal Treatment	☐ Class 1	☐ Class 2	☐ Class 3	

2.5 – Generation of Electricity

Total Maximum Name Plate Capacity	Total Expected Generation Capacity
10 MW (1 MW = 1000 kW / 1 kW = 0.001 MW)	10 MW (1 MW = 1000 kW / 1 kW = 0.001 MW)

Days and Hours of Operation

365 d/yr, sunlight hours

Section 3 – Site Information

3.1 – Project Location (The site/location where project will be located)

☐ The Project Location is the same as the Applicant's Address (Identified in Section 1)

Civic Address

Unit Number	Street Number	Street Name (Include type and direction)		
	Lot 13	Concession 9		
City/Town		Province		Postal Code
Tay Valley Township, Lanark County		ON – Ontario		K7H 3C5

Survey Address (Not required if the Civic Address is provided)

Lot/Part	Concession/Reference Plan	Municipality/Unorganized Township	
County/District	Province/State	Country	Postal Code

Non Address Information (where the project spans many locations or a large rural area, specify how the project area relates to the address provided)

The Project is located on approximately 78 ha of land on a property associated with the above address. UTM is below the facility's main transformer location.

Geo Reference (Southwest corner of property)

Map Datum	Zone	Accuracy Estimate
NAD83	18	+/- 10 m
Geo Referencing Method	UTM Easting	UTM Northing
GIS Mapping	396658.5	4963853.2

3.2 – Municipal or Local Authority Information (List all municipal or board authorities where the project is located. Attach a separate list if more space is necessary.)

Local Municipality (include each Single Tier or Lower Tier in which the project location is situated) / Unorganized Township

Name of Municipality/Unorganized Township

Township of Tay Valley

Address

Unit Number	Street Number	Street Name (Include type and direction)		PO Box
	217	Harper Road		
City/Town		Province		Postal Code
Perth		ON – Ontario		K7H 3C6
Telephone Number		Mobile Number	Fax Number	
613-267-5353	ext. 123		613-264-8516	

Email Address
clerk@tayvalleytwp.ca

Clerk

Last Name	First Name	Middle Initial
Mabo	Amanda	

Telephone Number	Email Address
613-267-5353	clerk@tayvalleytwp.ca

Is the project location situated in one or more Upper Tier Municipality? (i.e., county, regional or district municipality)

☑ Yes ☐ No

Is the project location situated in a Local Roads area?

☐ Yes ☑ No

Is the project location in a Local Service Board area?

☐ Yes ☑ No

3.3 – Site Information (Information about the site/location where project will be located)

Site Name	MECP District Office
North Burgess Solar Project	Kingston District Office

Is any portion of the Project location on federally owned land or a reserve?	☐ Yes ☑ No
Is any portion of the Project location on Crown Land?	☐ Yes ☑ No
Is the Project location that is the subject of this application owned by the Applicant? If "no", please attach the owner's name, address and a signed letter granting consent for the installation and operation of the facilities.	☑ Yes ☐ No
Is the Applicant the operating authority of the facility that is the subject of this application? If "no", please attach the operating authority name, address and phone number.	☑ Yes ☐ No
Is the Project location in the area of the Niagara Escarpment Plan?	☐ Yes ☑ No
Is the Project location in the area subject to the Oak Ridges Moraine Conservation Plan?	☐ Yes ☑ No
Is the Project location in the Protected Countryside as shown in Schedule 1 to the Greenbelt Belt Plan?	☐ Yes ☑ No
Is the Project location in the Lake Simcoe Watershed as defined in the *Lake Simcoe Protection Act, 2008*?	☐ Yes ☑ No
Is the Project location in the Central Pickering Development Planning Area as shown in Schedule 1 to the Central Pickering Development Plan?	☐ Yes ☑ No
Has an Archaeological Report (s. 22) been prepared as part of the complete submission?	☑ Yes ☐ No
Has a Heritage Report (s.23) been prepared as part of the complete submission?	☑ Yes ☐ No
Has an Environmental Impact Study Report (s.38, s. 41 or s. 43) been prepared as part of the complete submission?	☑ Yes ☐ No
Has a Water Assessment Report or supplementary reporting on any additional mitigation (s.39, s. 40, s.44 s. 45) been prepared as part of the complete submission?	☑ Yes ☐ No
Does the Project require any authorizations under the *Endangered Species Act, 2007*?	☐ Yes ☑ No

Section 4 – Supporting Documents

4.1 – Supporting Documentation and Technical Requirements

This is a list of all supporting information to this application and is subject to the FIPPA and EBR.

Mandatory	Attachment	Attached	Reference	Confidential*
Yes	Proof of Legal Name of Applicant.	☑ Yes ☐ No	Always Mandatory	☐
Yes	A map that identifies the project location.	☑ Yes ☐ No	Always Mandatory	☐
	Name, Address and Phone Number of the Operating Authority.	☐ Yes ☑ No	Mandatory if applicant not operating authority.	☐
	Name, Address and consent of land/site owner for the installation/construction and operation of the facility.	☐ Yes ☑ No	Mandatory if applicant not landowner	☐
Yes	Project Description Report.	☑ Yes ☐ No	Mandatory	☐

Mandatory	Attachment	Attached	Reference	Confidential*
Yes	Design and Operations Report.	☑ Yes ☐ No	Mandatory for all but Class 2 Wind Facility.	☐
Yes	Decommissioning Plan Report.	☑ Yes ☐ No	Mandatory for all but Class 2 Wind Facility.	☐
Yes	Construction Plan Report.	☑ Yes ☐ No	Mandatory for all but Class 2 Wind Facility.	☐
Yes	Consultation Report.	☑ Yes ☐ No	Mandatory for all but Class 2 Wind Facility.	☐
	Development Permit under the *Niagara Escarpment Planning and Development Act*.	☐ Yes ☑ No	Mandatory where permit required by NEC.	☐
Yes	A copy of this application has been sent to the Ministry local district office(s).	☑ Yes ☐ No	Always Mandatory	☐
	Report(s) that sets out a description of and rationale for the proposed change or alteration.	☑ Yes ☐ No	Mandatory for Amendment to REA applications.	☐
	Document(s) required under Part IV the Regulation to be submitted as part of the application (list below).	☐ Yes ☑ No		☐
	Document(s) required for the purposes of obtaining an exemption from a provision of Part V of the Regulation (list below).	☐ Yes ☑ No		☐

Other Information Submitted in Support of the Application for the issue of a new, or amendment to an existing, Renewable Energy Approval, including any document that is required under Part IV of the Regulation and/or for the purposes of obtaining an exemption from a provision of Part V of the Regulation.

Title	Reference	Confidential*
REA Amendment Letter		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

Are you attaching an additional list of documents? ☐ Yes ☑ No

If there is not enough space to list all of the attached documents included in this application package, please include an additional listing of these attachments.

***Note:** The collection of personal information in this application is necessary to administer the Ministry's approvals program, which is authorized pursuant to the *Environmental Protection Act*. The personal information collected in this application will be used to administer the program, including for the purposes of the Ministry's compliance and enforcement activities under the aforementioned acts, and for the purposes of making information in respect of the Renewable Energy Approval available to the public with the exception of payment information. Questions about the collection of the information can be directed to a Client Service Representative, Client Services and Permissions Branch, 135 St. Clair Avenue West, 1st Floor, Toronto ON M4V 1P5; Telephone outside Toronto 1-800-461-6290 or in Toronto 416-314-8001 or Fax 416-314-8452.

Section 5 – Payment Information

Total Payment	Reference Number	Payment Record	Date (yyyy/mm/dd)
$300.00		$	

Payment Options

The information collected in this section of the form is considered confidential and will only be used to process the application fee. All fees should be paid in Canadian funds.

☐ **Pay online** (under $10,000)

- Ensure the application form is complete before paying your application fee online.
- Send us a link to download your files by emailing ECA.submission@ontario.ca.

☐ **Credit card payment by mail** (address below) **or facsimile** at 416-314-8452 (under $10,000)

Type of Credit Card	Credit Card Number	Expiry Date (mm/yy)
☐ VISA ☐ MasterCard		

Name on Credit Card (please print)

Credit Card Holder's Company Name

Card Holder's Signature	Date (yyyy/mm/dd)

- Email the application package to ECA.submission@ontario.ca. Wait for the ministry to provide the reference number, then complete the Payment Information above (include the reference number), and mail or fax it to the Client Services and permissions Branch.
- To protect credit card information, do not submit this page containing payment information via email. **Applications containing credit card information that are submitted via email will not be processed and will be destroyed.**

☐ **Certified cheque** (payable to the Minister of Finance)

☐ **Money order** (payable to the Minister of Finance)

If payment by **certified cheque or money order**, email the application package to ECA.submission@ontario.ca.
Wait for the ministry to provide the reference number, then complete the Payment Information above (include the reference number), staple the cheque / money order to the payment page, and mail it to the Client Services and Permissions Branch.

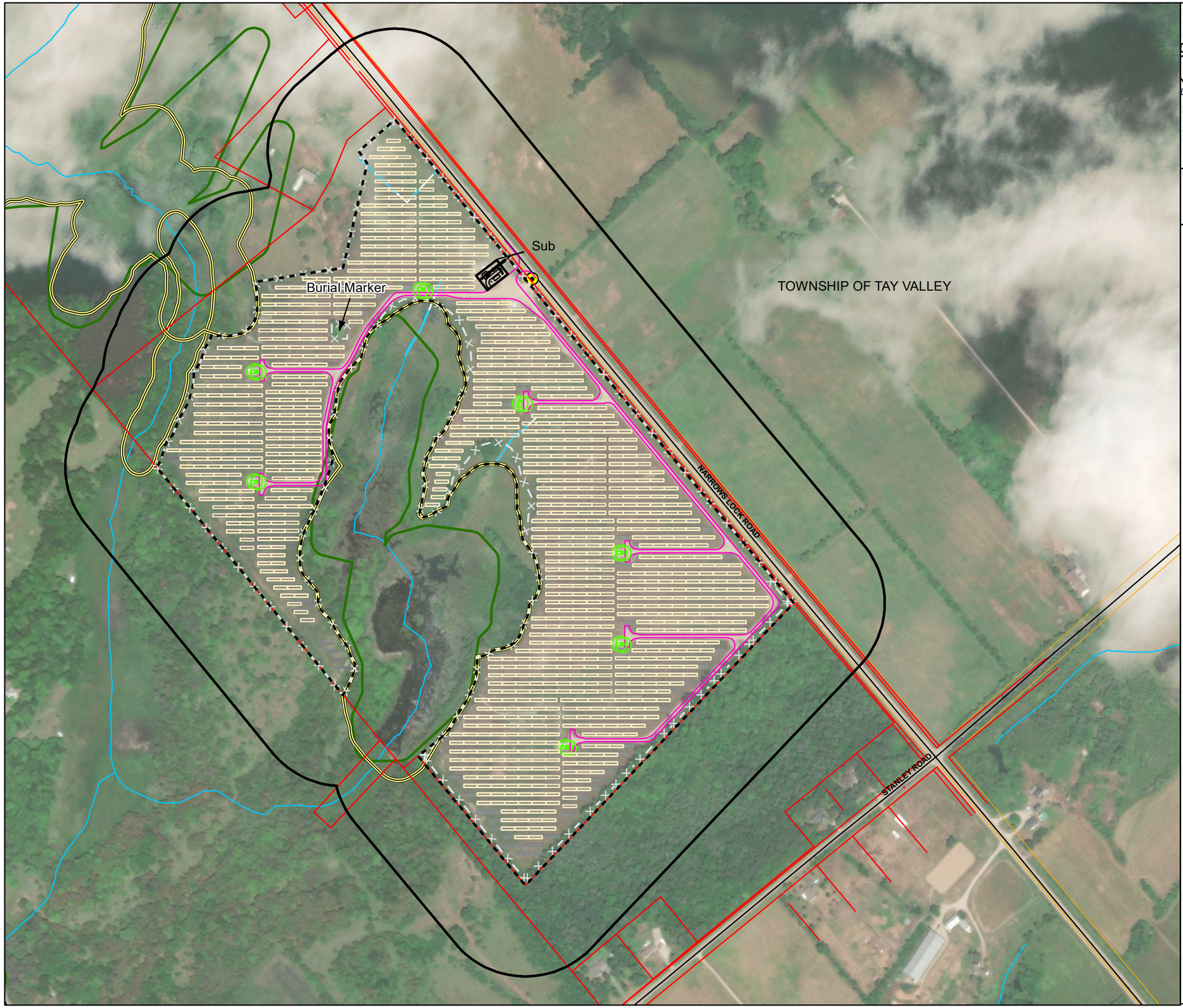
Mailing Address

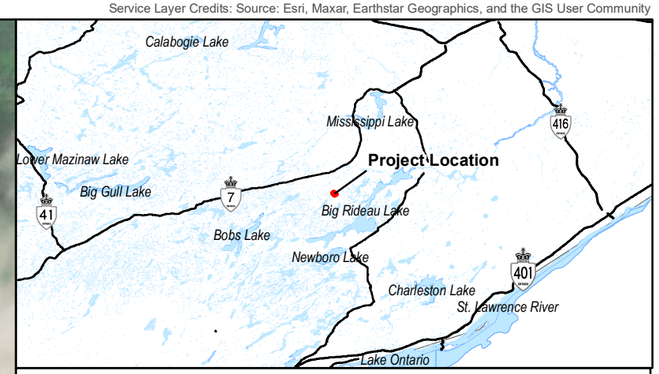
Client Services and Permissions Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Ave W, 1st Floor
Toronto ON M4V 1P5

If paying by certified cheque or money order, please attach it here.

Appendix B
Proposed Project Location

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community





LEGEND

- Road
- Grassed Waterway
- Watercourse
- Parcel
- Proposed Project Footprint
- 120 m from Project Location
- 30m from Average Annual High Water Mark
- 20m from Wetland

Project Infrastructure

- Connection Point with Existing Distribution Line
- Solar Panel
- Inverter
- Substation
- Access Road
- Property Line
- Fence

Notes:
1. OBM and NRVIS data downloaded from LIO, with permission.
2. Spatial referencing UTM NAD 83.

0 50 100 200 Meters

1:5,000

NORTH

Northland Power Inc.

North Burgess Solar Project
2023 Project Location

HATCH

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

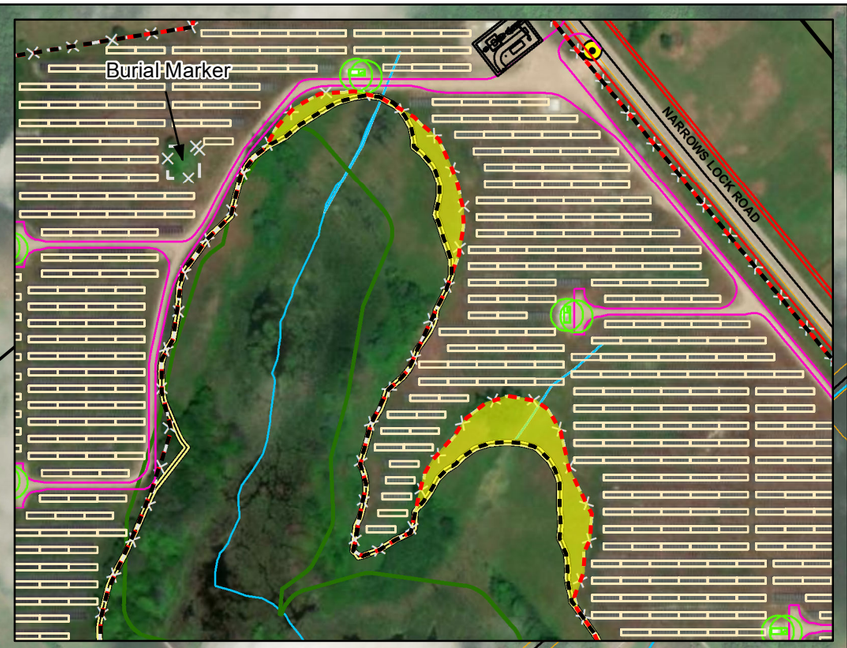
TOWNSHIP OF
TAY VALLEY

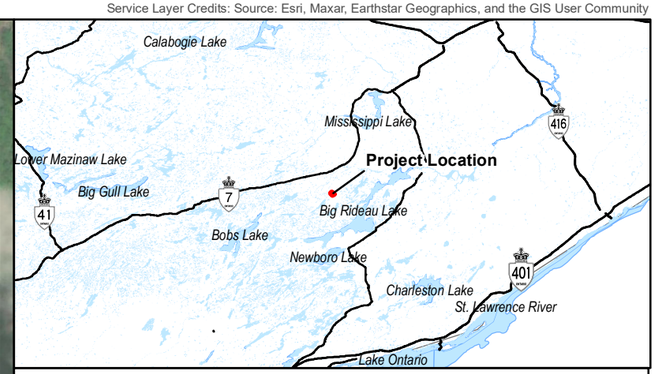
Sub

Burial Marker

NARROWS LOCK ROAD

STANLEYVILLE ROAD





LEGEND

- Road
- Grassed Waterway
- Watercourse
- Parcel
- Proposed Project Footprint
- Previous Project Footprint
- Project Location Difference
- 120 m from Project Location
- 30m from Average Annual High Water Mark
- 20m from Wetland

Project Infrastructure

- Connection Point with Existing Distribution Line
- Solar Panel
- Inverter
- Substation
- Access Road
- Property Line
- Fence

Notes:
1. OBM and NRVIS data downloaded from LIO, with permission.
2. Spatial referencing UTM NAD 83.

0 75 150 300 Meters

NORTH

1:6,500

Northland Power Inc.

North Burgess Solar Project
Proposed Project Footprint Comparison

HATCH

Appendix C
Correspondence with MNRF

Ministry of Natural Resources and Forestry
Land Use Planning and Strategic Issues Section
Southern Region
300 Water Street
4th Floor, South Tower
Peterborough, Ontario K9J 8M5

Ministère des Richesses naturelles et des Forêts

August 31, 2023

Darcy Snyder
Hatch Environmental
Mississauga, ON

RE: Modifications to North Burgess Solar Project

Dear Darcy,

The Ministry of Natural Resources and Forestry (MNRF) has received the document dated August 8, 2023 that describes modifications to the North Burgess Solar Project. MNRF has reviewed the following modifications made subsequent to MNRF's letter confirming the Natural Heritage Assessment in respect of the project:

- A shift in the boundaries of the project location
- Clearing within 30m of the existing wetland will be conducted by hand

Upon review of these modifications, MNRF is satisfied that the Natural Heritage Assessment requirements of Ontario Regulation 359/09 have been met. Please add this letter as an addendum to the confirmation letter issued August 19, 2011 along with subsequent confirmation letters, for the North Burgess Solar Project.

If you wish to discuss, please contact me at melinda.thompson@ontario.ca.

Sincerely,

Melinda Thompson

Melinda Thompson
Regional Planning Ecologist, Land Use Planning and Strategic Issues Section, Southern Region

Cc Kendrick Doll, MECP

Appendix D
Environmental Impact Study

Project Report

November 30, 2023

Northland Power Inc.
North Burgess Solar Project

Natural Heritage Environmental Impact Study

Table of Contents

List of Tables

List of Figures

Blank back

Report Revisions

Section	Report Date: November 11, 2011	Report Date: September 13, 2012 – Revised Content	Report Date: November 30, 2023 – Revised Content
1	Northland Power Solar North Burgess L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic project titled North Burgess Solar Project (hereinafter referred to as the "Project").	Northland Power Solar North Burgess L.P. (hereinafter referred to as "Northland") is proposing to develop an up to 10-megawatt (MW) solar photovoltaic project titled North Burgess Solar Project (hereinafter referred to as the "Project").	N/A
4.1.1.1.1	At a maximum of approximately 14 ha (pending final Project design), the amount of vegetation removed will represent approximately 22% of the 64 ha woodland.	At a maximum of approximately 9.6 ha (pending final Project design), the amount of vegetation removed will represent approximately 15% of the 64 ha woodland.	N/A
4.1.1.1.1	The woodland restoration program will consist of targeted tree planting on a number of properties in eastern Ontario to facilitate the restoration of an equal area of woodland as was removed from the Project location (currently anticipated to a maximum of approximately 14 ha, pending final design) with the following target criteria:	The woodland restoration program will consist of targeted tree planting on a number of properties in eastern Ontario to facilitate the restoration of an equal area of woodland as was removed from the Project location (currently anticipated to a maximum of approximately 9.6 ha, pending final design) with the following target criteria:	N/A
4.1.2.3	N/A	Annual mowing of vegetation within 30 m of the watercourse and wetland will be required to maintain areas that currently exist in a grassland state in such a manner. Mowing will be timed for the late fall to ensure that any breeding wildlife species are no longer present within the subject areas. As a result, mowing will not have an impact on	Annual vegetation management within 30 m of the watercourse and wetland will be required to maintain areas that currently exist in a grassland state in such a manner. Vegetation management will be limited to hand/mechanical methods in these areas, and will be timed to ensure that any breeding wildlife

Section	Report Date: November 11, 2011	Report Date: September 13, 2012 – Revised Content	Report Date: November 30, 2023 – Revised Content
		the animal movement corridor, or habitat for species of conservation concern that are found within the wetland and watercourse.	species are not present within the subject areas. As a result, vegetation management will not have an impact on the animal movement corridor, or habitat for species of conservation concern that are found within the wetland and watercourse.
Appendix A	N/A	Appendix A has been replaced.	Appendix A has been replaced.

Blank back

1. Introduction

Northland Power Solar North Burgess L.P. (hereinafter referred to as "Northland") is proposing to develop an up to 10-megawatt (MW) solar photovoltaic project titled North Burgess Solar Project (hereinafter referred to as the "Project"). The Project location is approximately 78 hectares (ha) in size and is located on Narrows Lock Road near the intersection with Scotch Line, within the Township of Tay Valley, within Lanark County (Figure 1.1).

As stated in Sections 37 and 38 of Ontario Regulation (O. Reg.) 359/09 *Renewable Energy Approvals Under Part V.0.1 of the Act*, (herein referred to as the "REA Regulation"), an Environmental Impact Study (EIS) is required for all significant natural heritage features determined to be within a specified setback in order to obtain a Renewable Energy Approval (REA). The EIS identifies the potential negative environmental effects, documents the proposed mitigation measures, and describes the environmental effects monitoring plan for the significant natural heritage features.

1.1 Renewable Energy Approval Legislative Requirements

Per Section 4 of the REA Regulation, ground-mounted solar facilities with a name plate capacity greater than 10 kilowatts (kW) are classified as Class 3 solar facilities and require a REA.

The REA process requires the preparation of several reports with respect to natural heritage features on and adjacent to the Project location, including the Records Review Report, Site Investigation Report, Evaluation of Significance, and if necessary, the EIS. The legislative requirements for these reports are summarized in the following sections.

1.1.1 Records Review Report

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

1. in a natural feature
2. within 50 m of an area of natural and scientific interest (earth science)
3. within 120 m of a natural feature that is not an area of natural or scientific interest (earth science)." (O. Reg. 359/09, s. 25, Table).

Natural Features are defined in Section 1 (1) of the REA Regulation to be all or part of

a) an area of natural and scientific interest (ANSI) (earth science)
b) an ANSI (life science)
c) a coastal wetland
d) a northern wetland
e) a southern wetland
f) a valleyland
g) a wildlife habitat, or
h) a woodland.

Subsection 3 of Section 25 of the REA Regulation requires the proponent to prepare a report "setting out a summary of the records searched and the results of the analysis" (O. Reg. 359/09). The Natural Heritage Records Review Report (Hatch Ltd., 2010a) was prepared to meet these requirements.

1.1.2 Site Investigation Report

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

- whether the results of the analysis summarized in the (Natural Heritage Records Review) report prepared under Subsection 25 (3) are correct or require correction, and identifying any required corrections
- whether any additional natural features exist, other than those that were identified in the (Natural Heritage Records Review) report prepared under Subsection 25 (3)
- the boundaries, located within 120 m of the project location, of any natural feature that was identified in the records review or the site investigation
- the distance from the project location to the boundaries determined under clause (c).

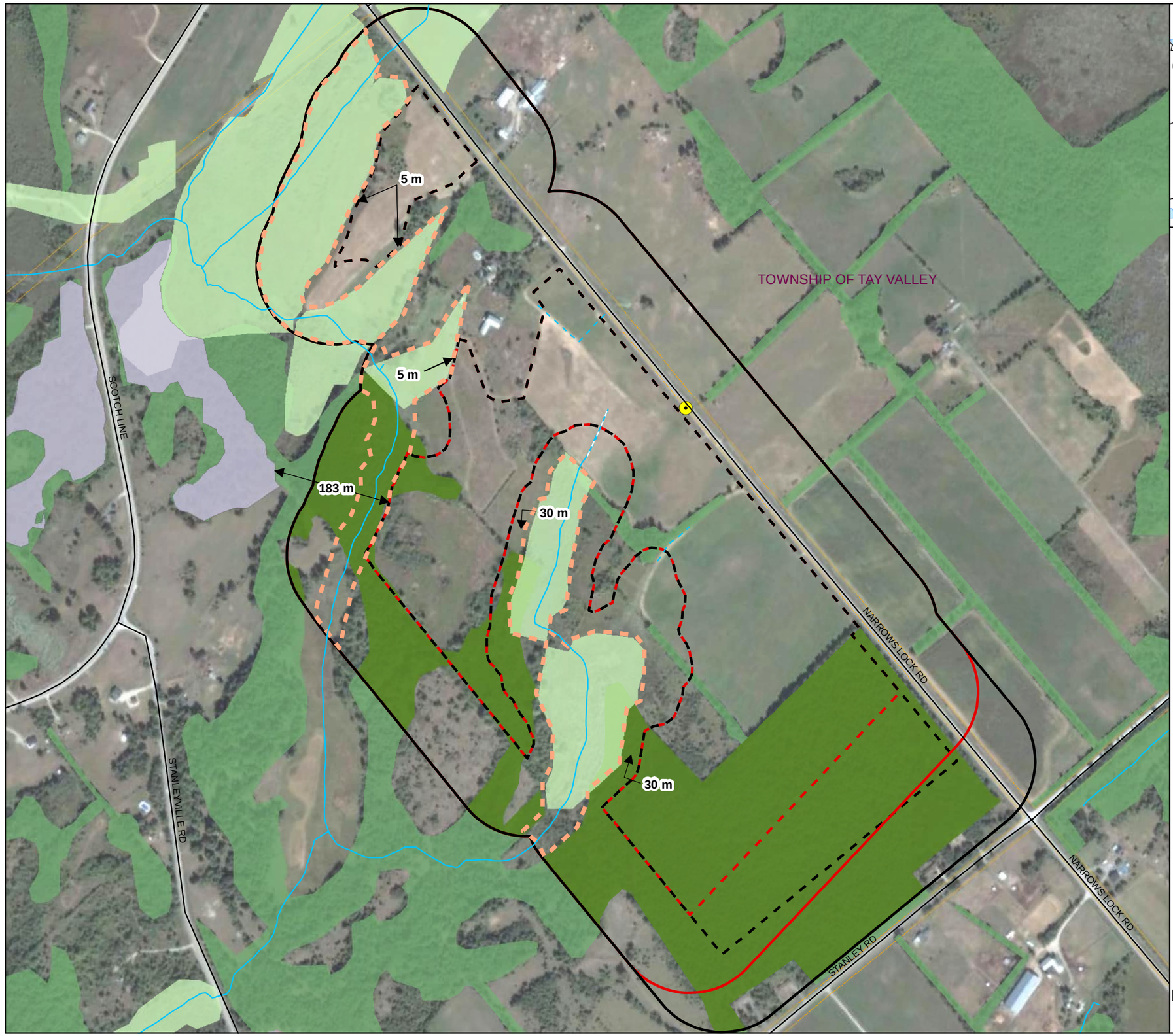
The Natural Heritage Site Investigation Report (Hatch Ltd., 2010b) was prepared to meet these requirements.

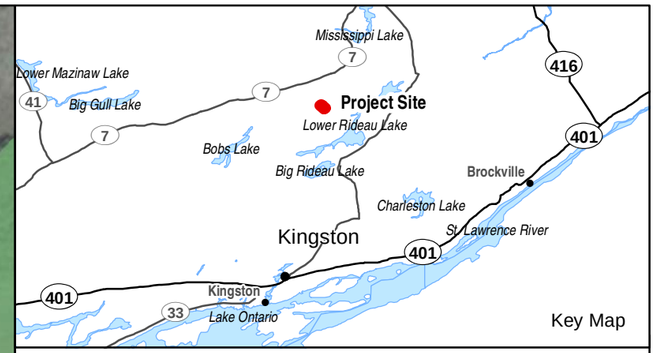
1.1.3 Evaluation of Significance Report

Section 27(1) of the REA Regulation requires proponents of Class 3 solar projects to undertake an evaluation of significance for natural heritage features identified during the records review and site investigation that sets out

- a determination of whether the natural feature is
  - provincially significant
  - significant
  - not significant
  - not provincially significant
- a summary of the evaluation criteria or procedures used to make the determinations
- the name and qualifications of any person who applied the evaluation criteria or procedures.

The Evaluation of Significance Report (Hatch Ltd., 2010c) for the natural features identified on and within 120 m of the Project location was prepared to meet these requirements.





Legend

- Road
- Grassed Waterway
- Watercourse
- Parcel
- Woodland
- Old Growth Forest (as identified by MNR)

Significant Natural Features

- Provincially Significant Weland (assumed) / Amphibian Breeding Habitat
- Forest Providing a High Diverstiy of Habitat / Animal Movement Corridor / Significant Woodland
- Animal Movement Corridor / Western Chorus Frog Habitat / Eastern Ribbonsnake Habitat / Snapping Turtle Habitat / Northern Map Turtle Habitat

Project Components

- Connection Point With Existing Distribution Line
- Original Project Location
- 120 m from Original Project Location
- Proposed Revised Project Location
- 120 m from Revised Project Location

0 50 100 200 Meters

NORTH

1:6,000

Notes:
1. OBM and NRVIS data downloaded from LIO, with permission.
2. Old Growth Forest data based on information by Information Management & Planning Kemptville District.
3. Spatial referencing UTM NAD 83.
4. Satellite imagery from Google Earth Pro.

Figure 1.1
Northland Power Inc.
North Burgess Solar Project
Project Location and Significant Natural Heritage Features

HATCH

1.1.4 Environmental Impact Study Report

Section 38(1) of the REA Regulation prohibits the construction, installation or expansion of any component of a solar project within the following locations:

- provincially significant northern wetland or within 120 m of a provincially significant northern wetland
- within 120 m of a provincially significant southern wetland
- within 120 m of a provincially significant coastal wetland
- a provincially significant area of natural and scientific interest (ANSI) (earth science) or within 50 m of a provincially significant ANSI (earth science)
- a provincially significant ANSI (life science) or within 120 m of a provincially significant ANSI (life science)
- a significant valleyland or within 120 m of a significant valleyland
- a significant woodland or within 120 m of a significant woodland
- a significant wildlife habitat or within 120 m of a significant wildlife habitat
- within 120 m of a provincial park
- within 120 m of a conservation reserve.

However, Section 38(2) allows proponents to construct within the locations noted above, subject to the completion of an EIS to assess negative effects and evaluate appropriate mitigation and monitoring measures.

Section 38(2) of the REA Regulation indicate that the EIS report must

- identify and assess any negative environmental effects of the projects on natural features, provincial parks or conservation reserves referred to in Section 38(1)
- identify mitigation measures in respect of any negative environmental effects
- describe how the environmental effects monitoring plan in the Design and Operations Report (Hatch Ltd., 2010e) addresses any negative environmental effects
- describe how the Construction Plan Report (Hatch Ltd., 2010d) addresses any negative environmental effects.

This EIS has been prepared to address these requirements for the construction of Project components within 120 m of significant natural heritage features noted in Section 1.1 and described in Section 1.2.

1.2 Background Information on Natural Heritage Features

The Natural Heritage Records Review (Hatch Ltd., 2010a) and Natural Heritage Site Investigations Report (Hatch Ltd., 2010b) confirmed that the Project will be constructed within 120 m of several

natural features. Of these natural features, several were identified as significant natural heritage features during the evaluation of significance (Hatch Ltd., 2010c).

The natural heritage features that were classified as significant are significant wildlife habitat that included

- all lands on and within 120 m of the Project location as significant habitat for Milksnake, a species of conservation concern, and as highly diverse areas
- wetlands/watercourse within 120 m of the Project location as a significant animal movement corridor and significant habitat for Western Chorus Frog, Eastern Ribbonsnake, Northern Map Turtle, and Snapping Turtle (species of conservation concern)
- wetland complexes within 120 m of the Project location as significant amphibian breeding habitat
- woodland on and within 120 m of the Project location as forest providing a high diversity of habitat
- all woodlands on the western and southern portion of the Project location, in conjunction with woodlands west of the Project location, as a significant animal movement corridor and significant woodland
- wetland areas are assumed to be provincially significant wetlands.

These significant natural heritage features and their location in relation to the Project location are shown in Figure 1.1.

1.3 Environmental Impact Study Format

Section 1 of this EIS has identified the legislative requirements for an EIS under the REA Regulation and identified the reasons why an EIS is required for the Project. Section 2 provides the methodology of the EIS. Section 3 summarizes the activities associated with project construction, operation and decommissioning, as described in the Project Description Report (Hatch Ltd., 2010h). Section 4 identifies and assesses negative environmental effects and the proposed mitigation measures to prevent/minimize the potential effects. Section 5 describes the environmental effects monitoring plan from the Design and Operations Report (Hatch Ltd., 2010e) and Section 6 describes how the Construction Plan Report (Hatch, 2010d) addresses the potential negative environmental effects. Section 7 summarizes the results of the EIS. References are included in Section 8.

2. Methodology

The following steps outline the methodology that was used to prepare this EIS:

1. Documentation of Project components and activities during all project phases, including construction, operations and decommissioning, including identification of temporal and spatial boundaries.
2. Background data collection on the natural features within 120 m of the Project location through the Records Review and Site Investigation processes.

3. Identification of the effects that is likely to occur on the environmental components as result of implementing the Project.
4. Development of mitigation measures to eliminate, alleviate or avoid the identified negative effects.
5. Design of an environmental effects monitoring program to confirm the predicted effects and the effectiveness of mitigation measures.

3. Project Components and Activities

The following sections briefly describe the construction, operation and decommissioning phases of the Project. The information is taken from the Project Description Report (Hatch Ltd., 2010h). More detailed information can be found in the Construction Plan Report (Hatch Ltd., 2010d), Design and Operations Report (Hatch Ltd., 2010e) and Decommissioning Plan Report (Hatch Ltd., 2010f). The Site Layout from the Construction Plan Report (Hatch Ltd., 2010d) is provided in Appendix A to show the detailed components of the facility including solar panel, inverter, transformer and access road locations.

3.1 Construction

Construction is anticipated to occur over an approximately 6-month period, likely commencing in April 2012 with commissioning scheduled for late January 2013. The activities associated with construction are summarized in Table 3.1.

Table 3.1 General Description of Construction Activities (From Hatch Ltd., 2010h)

Activity	Description
Access Road Construction	Activities associated with construction of internal access roads will include • removal of topsoil and subsoil • placement of granular base (at least 30 cm) • installation of ditches and culverts • installation of sediment and erosion control features as necessary • replacement of topsoil on the temporary access roads if the roads are to be removed.
Site Preparation	Activities associated with the site preparation will include • consultation with construction contractor to determine the locations of topsoil and subsoil stockpiles where topsoil is stripped. Note that the piles will not be within 30 m of waterbodies and drainage routes • accumulation of uncut or shredded crops on the soil surface where topsoil is not stripped • installation of sediment and erosion control features as necessary.
Installation of Support Structures	Activities associated with the installation of support structures will include • creation of drilled holes for the purposes of stabilizing the support structures of the photovoltaic arrays • construction of foundations and/or support structures beneath transformers, inverters and photovoltaic panels

Activity	Description
	• installation of photovoltaic panels on fixed racking structures • inspection of foundation construction and of support structures prior to the installation of photovoltaic modules, and wiring.
Underground Cable Installation	Activities associated with underground cable installation will include • installation of direct current (DC) wiring along the structural supports of the photovoltaic arrays. A network of underground DC cabling will be required at the termination point of the photovoltaic arrays to centrally located inverters which will then convert the electricity to alternating current (AC) • utilization of a simple trenching device to install the cables; whereby a slot will be opened, the cable will be laid, and the soil replaced.
Distribution Line Erection	Activities associated with distribution line erection will include • construction of an underground distribution line which transports the electricity from the inverters to the transformer • erection of a overhead distribution connection from the transformer to transport the generated power from the Project to the 44-kV connection point • utilization of new or existing wooden poles.
Site Security	Activities associated with site security will include • installation of gate and fence on Project location • installation of additional security measures (e.g., security cameras, motion sensor flood lighting) if deemed necessary.

3.2 Operation

The expected commercial operation date (COD) is January 16, 2013. The facility will operate 365 d/yr when sufficient solar radiation exists to generate electricity. The facility will be remotely monitored with no regular on-site employees. Maintenance is anticipated to occur quarterly. Maintenance activities will involve checking the structures and interconnections and cleaning the photovoltaic panels, as necessary. All maintenance materials such as hydraulic fluids, will be brought on site as required and no on-site storage will be made available. Rain and snowfall are anticipated to be sufficient for the cleaning of the panels. Should extra water be required it will be brought on site. The system does not produce waste of any type. All debris as a result of maintenance or cleaning will be removed from the site immediately by the contracted party. The Project will also be inspected whenever the power output is lower than anticipated as this would be indicative of a mechanical problem. The Project is expected to have a lifespan of 35 to 40 years.

3.3 Decommissioning

Decommissioning would occur when the decision has been made that it is no longer economically feasible to continue operation or refurbish generating equipment. It is anticipated that decommissioning would not occur for at least 35 years unless a power purchase agreement cannot be secured after the 20-yr duration of the Feed-In-Tariff (FIT) contract that has been obtained.

All decommissioning and site restoration activities would adhere to the requirements of appropriate regulatory authorities and would be conducted in accordance with all applicable federal, provincial

and municipal permits and other requirements. The decommissioning and restoration process comprises the following activities:

- removal of the scrap metal and cabling. Where possible, these materials will be recycled, with non-recyclable materials taken to an approved disposal site
- removal of support structures and foundations. These materials will be recycled where possible
- site cleanup and regrading to original contours, and any damage to tile drainage system to be repaired/replaced
- planting of leguminous crops to provide a rapid return of nutrients and soil structure.

Once the Project, other materials, and road network are removed from the site, lands on the Project location will be restored to a condition suitable for agricultural use.

4. Potential Negative Environmental Effects and Proposed Mitigation Measures

This section describes the anticipated negative environmental effects on the identified significant natural features that could occur as a result of construction, operation and decommissioning phases of the Project (as described in Section 3).

Mitigation measures are proposed to minimize, eliminate or alleviate any negative effects. Potential negative effects are discussed by environmental component, where affects on the land could negatively affect the significant natural feature. Relevant environmental components of the significant wildlife habitats that may be impacted by the proposed Project include

- vegetation communities/wildlife habitat
- wildlife communities.

4.1 Vegetation Communities/Wildlife Habitat

Vegetation communities/wildlife habitat can be impacted by a number of activities, including the following:

- Direct encroachment on the feature – The removal of vegetation from the significant natural feature would have an impact on the vegetation community as a whole and the wildlife habitat that is provided therein.
- Fugitive dust generation – Fugitive dust generation has the potential to impact vegetation communities within the significant natural features as heavy dust loads on the photosynthetic surfaces of plants can retard growth and ultimately result in loss of the individual.
- Changes in surface water runoff altering the moisture regime of the feature – Alterations in surface water runoff may impact the moisture regime of the receiving significant natural feature. If the moisture regime of the receiving natural feature was altered significantly, the composition of this community may change as a result.

The potential negative effects and proposed mitigation measures associated with these activities are discussed by Project phase in the following sections.

4.1.1 Construction Phase

4.1.1.1 Direct Encroachment on the Natural Heritage Features

Direct encroachment will be required on the following significant natural heritage features:

- Woodland
- Forest Providing a High Diversity of Habitats
- Highly Diverse Areas
- Milksnake Habitat
- Woodlands supporting amphibian breeding habitat.

Potential impacts to these features and mitigation measures to minimize impacts are discussed further below by feature.

There will be no direct encroachment on the wetlands assumed to be provincially significant.

4.1.1.1.1 Woodland/Forest Providing a High Diversity of Habitats/Animal Movement Corridor

Vegetation removal will be required within portions of the significant woodland and associated forest providing a high diversity of habitats located on the Project location. In order to minimize the amount of vegetation removal required, work areas will be clearly flagged and workers will be made aware not to work beyond the extent of the cleared areas. All trees will be felled into the already cleared areas. Further, workers will be advised not to trespass beyond the bounds of the areas that had been previously flagged for vegetation removal.

At a maximum of approximately 9.6 ha (pending final Project design), the amount of vegetation removed will represent approximately 15% of the 64 ha woodland. As a result, the woodland will still maintain sufficient size, and maple/beech forests, and riparian protection, and there will be no clearing within areas of old growth forest, such that the woodland will remain a significant woodland. In addition, there will be no areas of woodland isolated as a result of Project construction.

Further, there will be no clearing within 30 m of the high water mark of the wetland and water body communities present within the woodland, such that the woodland will maintain water protection functions. In addition, woodland clearing will be completed from a relatively homogeneous portion of the community. As a result, the remaining woodland will maintain the functions of the forest providing a high diversity of habitats. Further, a shelter belt, such as a line of conifers, will be planted along the northern edge of the newly exposed woodland to protect trees previously sheltered from the elements.

Clearing within the woodland will remove the identified areas of non-significant forest interior habitat. Vegetation removed from the woodland and hedgerows will be placed around the perimeter of the Project location in order to provide increased habitat for wildlife species, such as snakes.

Construction of the Project will result in direct encroachment onto portions of the animal movement corridor found within the southern woodland. In order to maintain wildlife passage through the animal movement corridor, a treed buffer is planned within the southern woodland, such that there will be a minimum 50-m corridor present along the western and southern edges of the Project location, and a minimum 25-m wide corridor along the eastern edge (see Figure 1.1). The width of the corridor selected along the western and southern edge is consistent with narrow portions of corridor width in other portions of the corridor, while the 25 m corridor along the eastern portions of the Project location will permit connectivity to the narrow hedgerow community located east of Narrows Lock Road. Corridors of this width will permit safe wildlife passage within the corridor around the Project location, while also ensuring wildlife are not directed onto road shoulders/road surfaces prior to the existing crossing location.

The fenceline will be installed at the edge of the cleared area at 1 m from the dripline of the woodland. Periodic maintenance may be required along the fenceline to prevent woodland encroachment. This will consist of occasional (no more than once per year) tree removal to be conducted in the late fall to minimize impacts on wildlife populations.

As a result, there will be no impact on the significance of the woodland.

In order to compensate for the loss of woodland communities, Northland will enter into an agreement to provide funding to undertake a woodland restoration program. The woodland restoration program will consist of targeted tree planting on a number of properties in eastern Ontario to facilitate the restoration of an equal area of woodland as was removed from the Project location (currently anticipated to a maximum of approximately 9.6 ha, pending final design) with the following target criteria:

- a mix of native woodland tree species, preferably beech and maple, appropriately selected for the properties on which they will be planted
- an approximate planting density of approximately 2000 to 2400 trees per ha
- up to 3 ha of interior habitat provided by the plantings (defined as woodland area $>$100 m from the woodland edge)
- plantings to enhance connectivity in the landscape and core habitat areas to enhance the function of existing woodlands to provide benefits to wildlife.

In association with the planting program, survival monitoring will be undertaken in years 1, 2 and 5 following the planting. The target survival rate at the end of year 5 is 60%. If this target is not met, Northland will fund re-fill plantings to ensure that the target survival is met.

The proposed woodland compensation will, in the long-term, result in the restoration of a similar amount of woodland with equal or better ecological functions (i.e., provision of interior habitat, connectivity and linkage and general wildlife habitat) than that which will be lost due to the Project.

4.1.1.1.2 Highly Diverse Areas

As was noted within the Site Investigation Report, the Project location and surrounding area were identified as highly diverse areas as a result of the presence of a agricultural lands, wetlands, and woodland communities.

There will be no removal of wetland communities as a result of the Project, while the loss of hayfields does not represent a significant loss from the planning area given the presence of more than 72,000 ha of pastureland and abandoned agricultural fields.

As is noted within Section 4.1.1.1.1, clearing within the woodland communities, was already determined to not be impactful on the forest providing a high diversity of habitats.

As a result, there will be no significant impact to the highly diverse areas present within this region.

4.1.1.1.3 Woodlands Supporting Amphibian Breeding Habitat

There will be no construction within the wetland communities providing amphibian breeding habitat. As is discussed above, some clearing will occur within the woodland communities supporting the amphibian breeding habitat, however no removal will occur within 30 m of the amphibian breeding habitat, and the amphibian breeding habitat will remain connected to the woodland communities and larger wetland areas located off the Project location. Overall, tree removal planned from the woodland supporting amphibian breeding habitat is not anticipated to significantly impact the form or function of the amphibian breeding areas. Further, as construction activities will primarily occur during the day, while amphibian breeding occurs at night, there should be minimal disturbance of amphibian breeding communities.

4.1.1.1.4 Milksnake Habitat

Construction of the Project will result in direct encroachment onto the significant wildlife habitat for Milksnake that is present on the Project location. This will result in a temporary loss during construction of general use habitat for Milksnake. Wherever possible, construction will commence outside of the spring emergence period for Milksnake (i.e., April through May) when the species can be slow-moving. Given this avoidance time frame, it will not be possible to avoid construction during the period of movement to hibernacula, however ongoing construction on-site would be expected to deter large-scale movement of Milksnake across the Project location. Regardless, no specific habitat features for Milksnake, such as hibernation sites, were identified during the site investigations and the risk to Milksnake is considered to be low. Given that Milksnake are a habitat generalist and all lands in this area would represent suitable general use habitat, sufficient alternate habitat locations are available. Mitigation measures to avoid incidental take of Milksnake are identified within Section 4.2.1.

4.1.1.2 Project Construction Near Assumed Provincially Significant Wetland

There are portions of the assumed Provincially Significant Wetland within 120 m of the Project location.

A minimum 5-m setback from the wetland community in agricultural areas, and a minimum 30-m setback in treed areas, will be in place to ensure impacts are minimized. It is not possible to move the Project location farther from the boundaries of this complex given existing constraints on space

on the Project location. Prior to construction, the boundary of the feature will be delineated, and the 5-m or 30-m setback marked off with staking/flagging spaced at distances of 20 m, and at any location where the work area boundary changes direction; this will ensure that the setback is preserved. Drainage and sediment and erosion controls are proposed within the Waterbodies Environmental Impact Study (Hatch 2011d) to ensure that there is no significant alteration in either the amount of surface water runoff, or potential sediment transport into the wetland from the Project location. At the completion of construction, the Project location will be vegetated with a mixture of grasses or other low-growing vegetation (mix to be determined), such that following establishment, there will be no variation in the amount of surface water runoff protection provided by the Project location when compared to the existing agricultural land. Though there may be some minor alteration in local microclimate at the edge of the feature as a result of Project construction, and ultimately operation, it is not expected that this will impact the form of the wetland community, and no special features or rare vegetation was reported from this area. Connectivity between the wetland community, and other communities of the wetland complex will remain intact.

The use of the mitigation measures identified above, will ensure that there is no impact to the assumed PSW, and associated significant wildlife habitats.

4.1.1.3 Fugitive Dust Generation

Dust may be mobilized due to vehicular traffic and heavy machinery use, drilling (if necessary for solar panel installation) and soil moving activities (e.g., excavation, trenching).

However, it is not anticipated that dust generation will result in adverse effects on vegetation communities and associated wildlife habitat, since the potential impacts can be substantially mitigated through the use of standard construction site best management practices and mitigation measures. In this regard, the document entitled "Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities" (Cheminfo Services Inc., 2005) will be used as a guideline for contractors. Mitigation measures to be used, as required, to control dust generation on the Project location include

- use of approved dust suppression (i.e., water or non-chloride based materials) on exposed areas including access roads, stockpiles and works/laydown areas as necessary
- hard surfacing (addition of coarse Granular A material, free of fine soil particles) of access roads or other high-traffic working 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., tarped, mulched, graded, revegetated or watered to create a hard surface crust) to reduce/prevent erosion and escape of fugitive dust.

Visual monitoring of dust generation will occur during the construction period and if dust is observed to be of concern, additional mitigation will be implemented. Given the mitigation and monitoring proposed, it is anticipated that dust generation will be relatively low in magnitude and limited in

duration and geographical area, such that no negative effects on vegetation communities will occur as a result of dust.

4.1.1.4 Surface Water Runoff

Activities that could occur during the construction phase that would have the potential to affect surface water runoff patterns and rates include

- land grading and ditching associated with access roads
- soil compaction due to heavy equipment or stockpiling
- vegetation removal.

The potential negative effects and proposed mitigation measures associated with these activities are discussed in the Waterbodies Environmental Impact Study (Hatch Ltd., 2010g). The study concluded that through the use of effective mitigation measures, there will be no significant change in surface water runoff as a result of Project construction. Measures will be employed to ensure that surface water runoff patterns and rates remain similar to existing conditions. Therefore, no alterations in the moisture regime in the significant natural features are anticipated to occur.

4.1.2 Operations Phase

With the Project operating unmanned and regular maintenance only expected to occur periodically throughout the year, potential impacts on the significant natural feature are expected to be limited to changes in surface water runoff and presence of the Project within the significant wildlife habitat for Milksnake.

4.1.2.1 Surface Water Runoff

Long-term site alterations associated with the operational phase of the Project that could potentially affect surface water runoff include

- long-term changes in land grading and ditches
- presence of impervious or less pervious surfaces
- changes in vegetation structure and density.

The potential negative effects and mitigation measures associated with these activities are discussed in the Waterbodies Environmental Impact Study (Hatch Ltd., 2010g). The study concluded that through the use of effective mitigation measures, there will be no significant change in surface water runoff as a result of Project operations. Measures will be employed to ensure that surface water runoff patterns and rates remain similar to existing conditions. Therefore, no alterations in the moisture regime in the significant features are anticipated to occur.

4.1.2.2 Presence of Project within Significant Wildlife Habitat for Milksnake

The presence of Project components on significant wildlife habitat for Milksnake is not expected to impact the amount of available habitat. Milksnake are a habitat generalist and are commonly found around manmade structures, and as such it can be anticipated that the presence of the structures will not result in an impact on the amount of habitat available in the local area.

4.1.2.3 *Vegetation Management within 30 m of Significant Wildlife Habitat in the Watercourse/Wetland*

Annual vegetation management within 30 m of the watercourse and wetland will be required to maintain areas that currently exist in a grassland state in such a manner. Vegetation management will be limited to hand/mechanical methods in these areas, and will be timed to ensure that any breeding wildlife species are not present within the subject areas. As a result, vegetation management will not have an impact on the animal movement corridor, or habitat for species of conservation concern that are found within the wetland and watercourse.

Any work on the fence present on the Project location boundary will be conducted from the Project location side of the fence (i.e., not within 30 m of the wetland communities). Therefore any fence maintenance required will not impact these habitats.

4.1.3 Decommissioning Phase

Certain decommissioning activities will be similar to those activities that occurred during the construction phase of the Project, and as such mitigation measures from the construction phase will be similar to those employed in the decommissioning phase.

4.1.3.1 *Fugitive Dust Generation*

The potential for dust generation during decommissioning will be the same as that previously discussed for construction (see Section 4.1.1.2). The mitigation measures previously identified with respect to construction will also be effective at mitigating potential impacts during decommissioning.

4.1.3.2 *Surface Water Runoff*

Short-term activities and long-term site alterations associated with the decommissioning of the Project that could potentially affect surface water runoff include

- long-term changes in land grading
- changes in vegetation structure and density.

The potential negative effects and mitigation measures associated with these activities are discussed in the Waterbodies Environmental Impact Study (Hatch Ltd., 2010g). The study concluded that decommissioning will restore the Project location to pre-existing conditions and there will therefore be no long-term effect on surface water runoff and therefore, no effect on the significant natural feature.

4.1.3.3 *Restoration of Significant Wildlife Habitat for Milksnake*

During decommissioning, the Project location will be restored to pre-existing conditions, returning the Project area to use by Milksnake similar to that which is already present on site.

4.2 Wildlife Communities

Some project activities (e.g., tree clearing and solar panel installation) will occur within the significant wildlife habitat, causing direct impacts to the wildlife present within this feature.

4.2.1 Construction Phase

Major activities, such as tree clearing, land grading, excavation, construction of access roads and trenching will be scheduled to occur outside of the breeding bird period (generally May through July) to the greatest extent possible so that impacts to wildlife species breeding on the Project location, such as nesting birds, will be minimized. If major activities are required during the breeding wildlife period, the areas potentially impacted will be searched by a trained biologist within 48 hours of the proposed activity in order to determine if birds are currently nesting in these areas. If nests are found, work will be suspended within 100 m of the nest location until such time as the nest is successful or abandoned. Use of these mitigation measures is anticipated to prevent potential effects to nesting wildlife.

In order to minimize the potential for incidental take of wildlife, speeds on access roads of the Project location will be restricted. Further, daily visual monitoring of the project area will be completed to search for amphibians and reptiles to ensure that potential impacts to these species are minimized. In addition, the construction workforce will be made aware of the potential for wildlife occurring on the Project location and that measures should be taken to avoid wildlife wherever possible. If wildlife are observed on the Project location, they will be either directed off of the Project location by the worker (without the use of vehicles) or collected by a designated employee, who has been provided with protocols for the safe handling and transport of wildlife, and transported to the nearest available location off site and released.

Some incidental take may still occur during construction; however, levels should be negligible. Known occurrences of incidental take will be documented in the monthly environmental report. If a species of conservation concern is noted, work within the area will be ceased immediately, and the Ministry of Natural Resources (MNR)/Environment Canada (EC) will be contacted to make them aware of the occurrence. Work in the area will remain ceased until a survey is conducted by a trained biologist to ensure that there are no species of conservation concern present in the area.

The presence of the construction workforce and construction activities associated with the Project will also result in auditory and visual disturbance of local wildlife populations. Wildlife populations within the significant natural features adjacent to the Project location may retreat from these areas as a result of the disturbance, and some restriction of movement within the animal movement corridor may occur during work in proximity to that area. It is not possible to mitigate these effects, however work will occur across a single year and therefore impacts will be restricted to that year. As a result, this impact will not result in noticeable effects to wildlife populations.

It is expected that wildlife populations that typically occurred on the Project location will abandon these sites throughout the duration of construction. In respect of Milksnake, Milksnake may temporarily retreat from these areas during construction as a result of the disturbance; however, as they are habitat generalists, this is not expected to impact the local population.

4.2.2 Operations Phase

As regular maintenance is anticipated to occur infrequently throughout the year, this would be consistent with existing disturbances on the Project location from agricultural operations.

Mowing of vegetation beneath and around the solar panels, if required, may also result in incidental take. Mowing will be scheduled to occur outside of the breeding bird period. If these activities are required during the breeding period, the site will be searched for breeding birds prior to undertaking mowing activities. If nesting locations are identified, mowing will not be conducted within 25 m of the proposed location, until such time as the nest is successful or abandoned. Known occurrences of incidental take will be reported and the species impacted will be determined. If the species is determined to be a species of conservation concern, work within the area will be ceased immediately, and the MNR/EC will be contacted to make them aware of the occurrence. Work in the area will remain ceased until a survey is conducted by a trained biologist to ensure that there are no further species of conservation concern present in the area. Milksnake are habitat generalists and may be impacted by incidental take.

As a result of the low level of disturbance associated with the Project (infrequent nature of site investigation, minimal noise produced by the Project equipment) ,operations are not expected to impact wildlife communities within the significant wildlife habitat features within 120 m of the Project location.

4.2.3 Decommissioning Phase

During the decommissioning phase, disturbances present in the area will be similar to those that may occur during the construction phase as described in Section 4.2.1. In order to minimize potential impacts to wildlife communities of the significant natural features, decommissioning will be scheduled to occur outside of breeding wildlife period. Though there may be some avoidance of the significant natural features near the Project location during decommissioning, these effects are temporary, and following decommissioning the site will be restored to existing conditions.

5. Environmental Effects Monitoring Plan – Design and Operations Report

As discussed in the Design and Operations Report (Hatch Ltd., 2010e) environmental effects monitoring is proposed in respect of any negative environmental effects that may result from engaging in the Project. As per the REA Regulation, the monitoring plan identifies

- performance objectives in respect of the negative environmental effects
- mitigation measures to assist in achieving the performance objectives
- 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.

For the purposes of this EIS report, the effects monitoring measures with respect to negative effects on the significant natural feature have been reproduced here, in Table 5.1.

The monitoring proposed in Table 5.1 will confirm that mitigation measures are functioning as designed to meet performance objectives. If monitoring shows that performance objectives are not being met, the contingency measures documented in Table 5.1 will be used to ensure that remedial action is undertaken as necessary to meet the performance objectives.

Blank back

Table 5.1 Summary of Environmental Effects Monitoring Requirements with Respect to Significant Natural Features

Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methodology	Monitoring Locations	Frequency	Rationale	Reporting Requirements	
Construction Phase								
Potential impacts to nesting birds	Clearing/land grading to be conducted outside of breeding bird period. If not possible, areas to be cleared to be searched for nests prior to clearing.	Preventing impacts to nesting birds.	Confirmation of timing of clearing. If searches are required, area searches by a trained biologist will be conducted.	Throughout areas to be cleared.	Confirmation of clearing progress to occur weekly during clearing in order to ensure completed prior to breeding bird period. If clearing required during breeding bird period, searches will be conducted within 48 hours of clearing activities.	The use of this monitoring will confirm that clearing is either conducted outside of the breeding bird period, or that nesting birds will be identified prior to clearing being undertaken.	Reported in monthly environmental monitoring report during construction.	If nesting birds are identified, work will be suspended within 100 m of the nest until the nesting attempt is successful or abandoned.
Wildlife becoming trapped within the fence	Visual inspection following completion of fence and removal of wildlife.	Ensure all trapped wildlife species are removed from the Project location.	Visual search of the Project location for trapped wildlife species. Any wildlife observed will be either directed off of the Project location or collected by a designated employee and transported to the nearest available location off site and released.	Entire Project location within the fence.	Once following completion of fence.	Visual search will ensure all trapped wildlife species are detected and removed.	Reported in monthly environmental monitoring report following completion of search.	If any wildlife are recorded trapped within the fence following this activity, previously described protocols will be followed to remove wildlife species from the Project location.
Incidental take of wildlife	Daily visual monitoring of work areas and construction equipment prior to start of work. Wildlife observed will be removed from areas of impact through established protocols. Speeds to be limited on Project location and construction workforce to be made aware of potential for wildlife on the Project location.	Avoid occurrences of incidental take.	Daily visual monitoring will be conducted by workers on foot of the areas to be worked on the given day. Any wildlife observed will be either directed off of the Project location or collected by a designated employee and transported to the nearest available location off-site and released.	Throughout construction site.	Ongoing during construction on a continued basis.	Incidental take will be reported by construction workforce to the on-site personnel responsible for environmental protection if incidents occur.	Reported in monthly environmental monitoring report during construction, unless the species is a species of conservation concern in which case reporting will be immediate to the MNR/EC.	If incidental take of species of conservation concern are recorded, work will be ceased until such time as a trained biologist can state that the species is no longer present in the area.

Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methodology	Monitoring Locations	Frequency	Rationale	Reporting Requirements	
Dust generation and off-site transport	Standard construction site best management practices to prevent fugitive dust.	Minimize fugitive dust from the construction site.	Visual monitoring of visible dust plumes during construction.	Throughout construction site.	Periodically during all construction activities.	Visual dust monitoring would identify if dust plumes are an issue and where their source may be.	Reported in monthly environmental monitoring report during construction.	Dust control measures implemented as necessary to prevent/minimize dust generation.
Operations Phase								
Incidental take of wildlife	Speeds to be limited on Project location and maintenance workforce to be made aware of potential for wildlife on the Project location.	Avoid occurrences of incidental take.	Occasions of incidental take to be reported as they are identified.	Throughout Project location.	Ongoing during maintenance activities.	Incidental take will be reported by maintenance staff to the on-site personnel responsible for environmental protection if incidents occur.	No requirement; unless the incident involves a species of conservation concern in which case reporting will be immediate to the MNR/EC.	If incidental take of species of conservation concern are recorded, work will be ceased until such time as a trained biologist can state that the species is no longer present in the area.
Decommissioning Phase								
Incidental take of wildlife	Daily visual monitoring of work areas and decommissioning equipment prior to start of work. Speeds to be limited on Project location and construction workforce to be made aware of potential for wildlife on the Project location.	Avoid occurrences of incidental take.	Daily visual monitoring will be conducted by workers on foot of the areas to be worked on the given day. Any wildlife observed will be either directed off of the Project location or collected by a designated employee and transported to the nearest available location off-site and released.	Throughout decommissioning site.	Ongoing during decommissioning on a continued basis.	Incidental take will be reported by decommissioning workforce to the on-site personnel responsible for environmental protection if incidents occur	Reported in monthly environmental monitoring report during decommissioning, unless the species is a species of conservation concern in which case reporting will be immediate to the MNR/EC	If incidental take of species of conservation concern are recorded, work will be ceased until such time as a trained biologist can state that the species is no longer present in the area
Dust generation and off-site transport	Standard site best management practices to prevent fugitive dust.	Minimize fugitive dust from the Project location.	Visual monitoring of visible dust plumes during decommissioning.	Throughout Project location.	Periodically during all decommissioning activities.	Visual dust monitoring would identify if dust plumes are an issue and where their source may be.	Reported in monthly environmental monitoring report during decommissioning.	Dust control measures implemented as necessary to prevent/minimize dust generation.

6. Construction Plan Report

The REA Regulation requires proponents of Class 3 solar projects to prepare a Construction Plan Report (CPR). Hatch completed the CPR for this Project (Hatch Ltd., 2010d). The CPR 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 proposed mitigation measures for the identified negative environmental effects. The CPR addresses all potential effects of construction on natural features within 300 m of the Project location in a general manner. The mitigation proposed in the CPR with respect to preventing/minimizing negative effects on natural features is the same as that discussed in this EIS. Additional mitigation is proposed to address negative effects during construction not related to natural features. Therefore, the CPR and this EIS should be read in conjunction with each other, although all negative effects and mitigation requirements with respect to significant natural features are contained within this EIS and duplicated in the CPR.

7. Summary and Conclusions

As discussed in the Natural Heritage Records Review (Hatch Ltd., 2010a), the Natural Heritage Site Investigation (Hatch Ltd., 2010b) and the Evaluation of Significance (Hatch Ltd., 2010c), there are significant wildlife habitat features and a significant woodland found on and within 120 m of the Project location, and an assumed provincially significant wetland found within 120 m of the Project location..

The EIS has been prepared to identify potential negative environmental effects that all phases of the Project may have on the significant natural features. 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. Monitoring measures have been proposed to confirm that mitigation measures are having the intended effect and that performance objectives are being met.

8. References

Cheminfo Services Inc. 2005. Best Practices for the Reduction of Air Emissions From Construction and Demolition Activities. Prepared for Environment Canada. March 2005. 49 pp.

DeJong-Hughes, J., Moncreif, J.F., Vorhees, W.B. and J.B. Swan. 2001. Soil Compaction Causes, Effects and Control. Regents of the University of Minnesota. Available on-line at http://www.extension.umn.edu/distribution/cropsystems/DC3115.html. Accessed November 28, 2007.

Hatch Ltd. 2010a. North Burgess Solar Project – Natural Heritage Records Review Report. Prepared for Northland Power Inc. August 2010.

Hatch Ltd. 2010b. North Burgess Solar Project – Natural Heritage Site Investigations Report. Prepared for Northland Power Inc. August 2010.

Hatch Ltd. 2010c. North Burgess Solar Project – Evaluation of Significance Report. Prepared for Northland Power Inc. August 2010.

Hatch Ltd. 2010d. North Burgess Solar Project – Construction Plan Report. Prepared for Northland Power Inc. August 2010.

Hatch Ltd. 2010e. North Burgess Solar Project – Design and Operations Report. Prepared for Northland Power Inc. August 2010.

Hatch Ltd. 2010f. North Burgess Solar Project – Decommissioning Plan Report. Prepared for Northland Power Inc. August 2010.

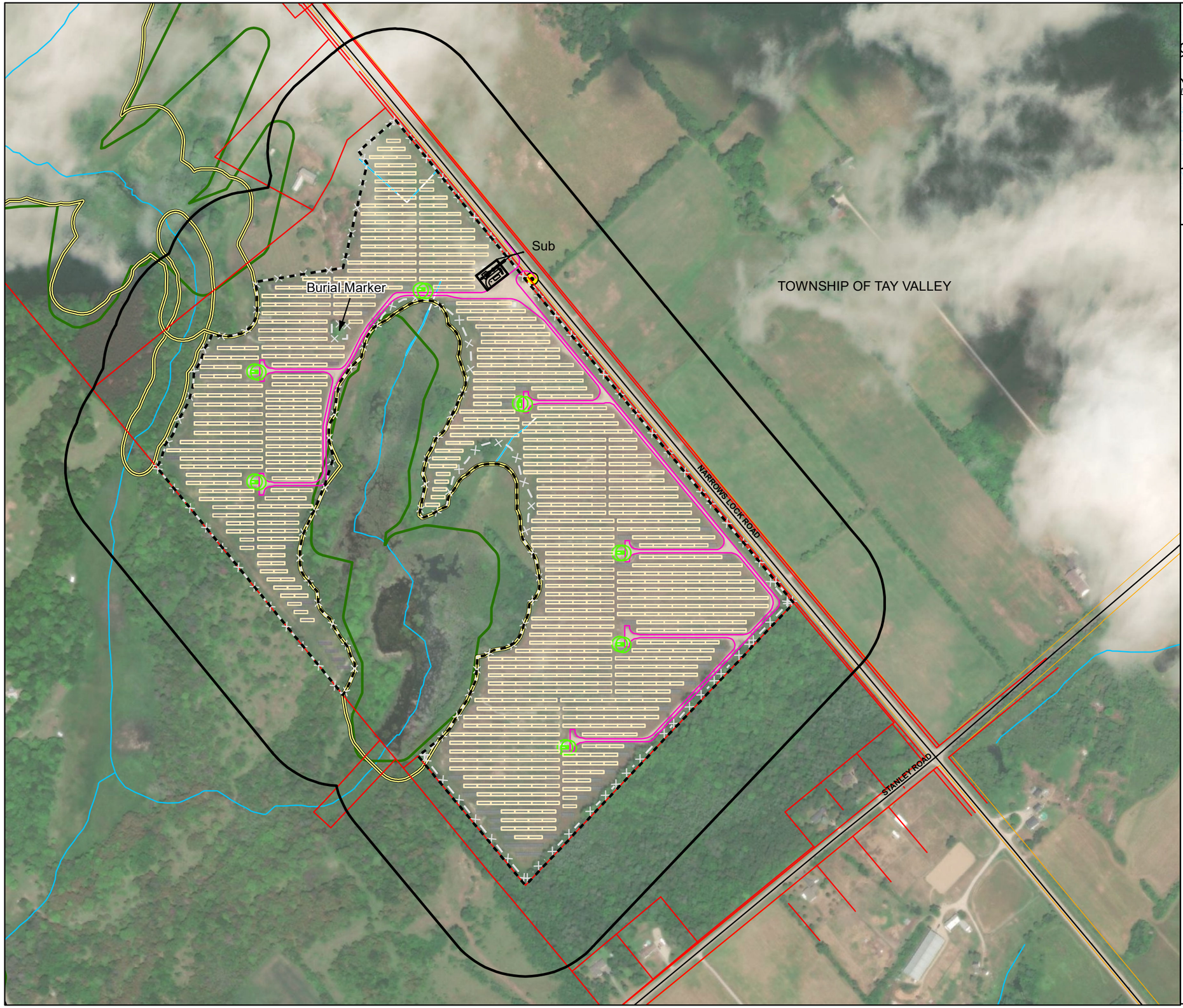
Hatch Ltd. 2010g. North Burgess Solar Project – Waterbodies Environmental Impact Study. Prepared for Northland Power Inc. August 2010.

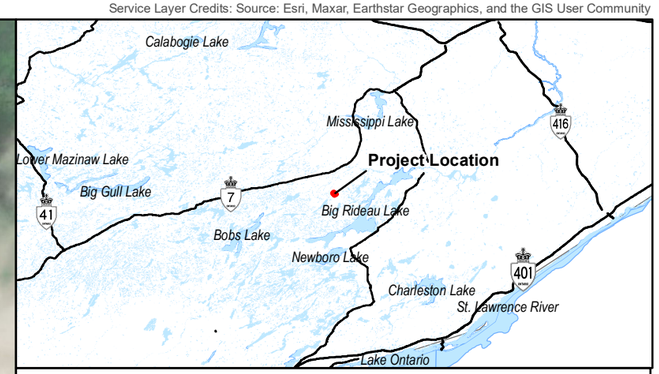
Hatch Ltd. 2010h. North Burgess Solar Project – Project Description Report. Prepared for Northland Power Inc. May 2010.

Appendix A

Site Layout

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community





LEGEND

- Road
- Grassed Waterway
- Watercourse
- Parcel
- Proposed Project Footprint
- 120 m from Project Location
- 30m from Average Annual High Water Mark
- 20m from Wetland

Project Infrastructure

- Connection Point with Existing Distribution Line
- Solar Panel
- Inverter
- Substation
- Access Road
- Property Line
- Fence

Notes:
1. OBM and NRVIS data downloaded from LIO, with permission.
2. Spatial referencing UTM NAD 83.

0 50 100 200 Meters

1:5,000

NORTH

Northland Power Inc.

North Burgess Solar Project
2023 Project Location

HATCH

Appendix E
Protected Properties and Heritage Resources

Project Report

November 11, 2011

Northland Power Solar North Burgess L.P.
North Burgess Solar Project

Protected Properties and Heritage Resources

Table of Contents

1. Introduction

1.1 Project Description

Northland Power Solar North Burgess L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic project titled North Burgess Solar Project (hereinafter referred to as the "Project"). The Project site will be located on approximately 85 hectares (ha) of land, located in Tay Valley Township, within Lanark County.

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 below has been prepared to address Section 19 of the REA Regulation.

3. Heritage Assessment

As discussed in Section 1.2, Table 1.2 below 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: North Burgess
Address: longitude & latitude: 44.825956 & -76.312777
Township and County: Township of Tay Valley, within Lanark County

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 *Ontario Heritage Act*.	See MCL Check Sheet Step 2, Item 4. The property is not designated under clause 10(1)(b) of the *Ontario Heritage Act*.
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 *Ontario Heritage Act*.	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 *Ontario Heritage Act*. 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 *Ontario Heritage Act* 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 *Ontario Heritage Act*. 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 *Ontario Heritage Act* 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 *Ontario Heritage Act*. 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 *Ontario Heritage Act*.	The MCL Ontario Heritage Properties Database includes properties designated under Part IV of the *Ontario Heritage Act*. 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	The MCL Ontario Heritage Properties Database includes properties designated under Part IV

	entered into under section 37 of the *Ontario Heritage Act*.	of the *Ontario Heritage Act*. The Project is not proposed to be located on or adjacent to such a property.
7	A property that is part of an area designated by a municipal by-law made under section 41 of the *Ontario Heritage Act* as a heritage conservation district.	The MCL Ontario Heritage Properties Database includes properties designated under Part V of the *Ontario Heritage Act*. 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 *Ontario Heritage Act*.	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: North Burgess
Address: longitude & latitude: 44.825956 & -76.312777
Township and County: Township of Tay Valley, within Lanark County

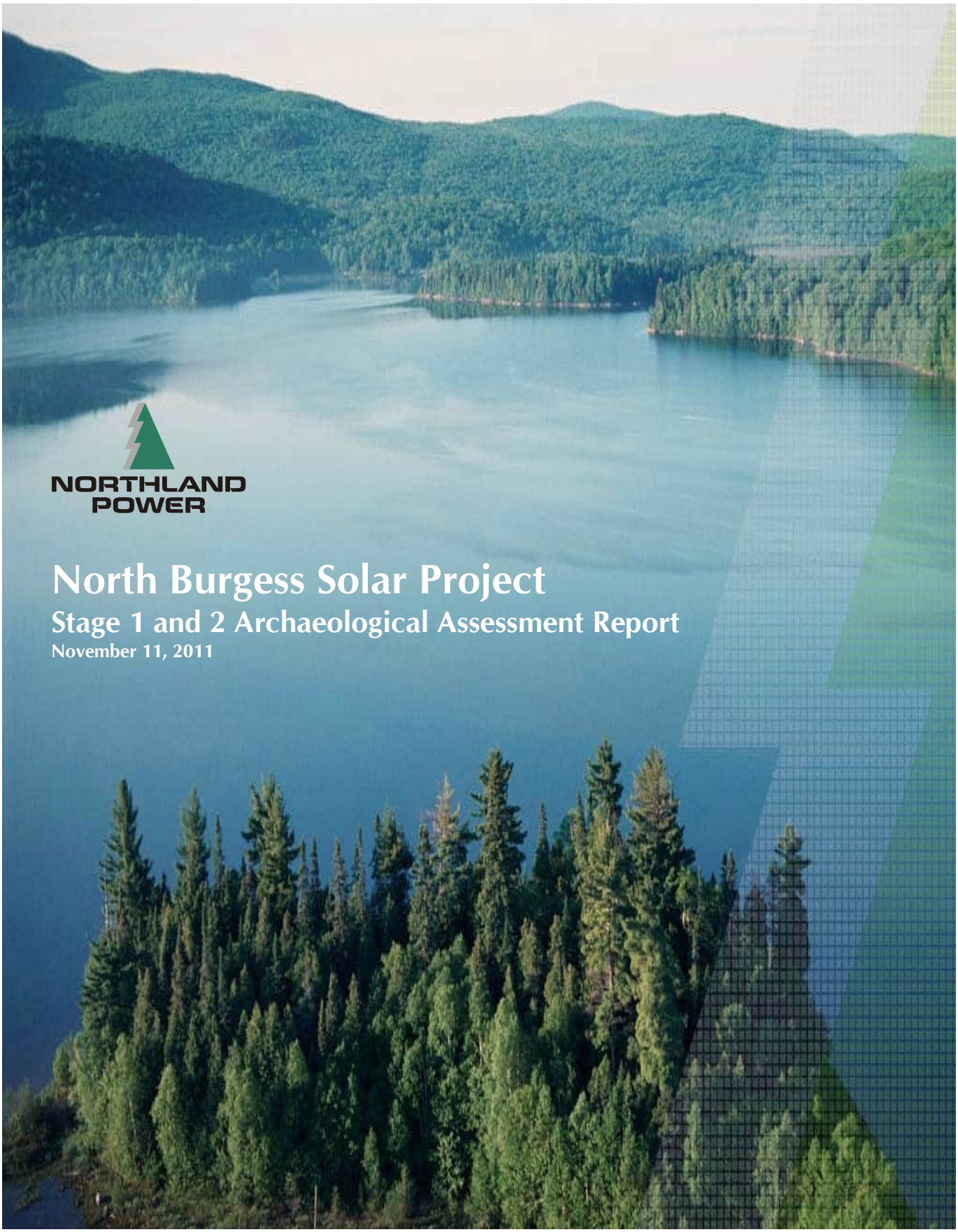
Step 1 – Screening Potential Resources			
		Built heritage resources	**Comments**
Yes	**No**	Does the property contain any built structures, such as:	The following resources were assessed using Google Earth 5.1.3535.3218 on May 26, 2010.
	√	Residential structures (e.g. house, apartment building, trap line shelter)	Several residences located within 300m of Project Property.
	√	Agriculture (e.g. barns, outbuildings, silos, windmills)	Barns located within 300m East, Northeast and Southeast of Project Property.
	√	Industrial (e.g. factories, complexes)	
	√	Engineering works (e.g. bridges, roads, water/sewer systems)	Project Property is bordered by Ferrier Rd. (N), Narrows Lock Rd. (E), and Stanley Rd. (S), and Scotch Ln. runs through 300m border.
	√	**Cultural heritage landscapes**	
Yes	**No**	Does the property contain landscapes such as:	
√		Burial sites and/or cemeteries	An unregistered burial site for past landowner was found on the Project Property, outside of the Project location. This location is being registered and will be protected from present and future development.
	√	Parks	
	√	Quarries or mining operations	
	√	Canals	Project Property includes wetland areas and watercourses; these features are not on the Project location.
	√	Other human-made alterations to the natural landscape	

Step 2 – Screening Potential Significance			
Yes	**No**	**A property's heritage significance may be identified through the following:**	**Reference** According to the MCL Ontario Heritage Properties Database there are no heritage properties located within or in the vicinity of the Project Property. (Website search: 26May10)
	√	1. Is it designated or adjacent to a property designated under the Ontario Heritage Act?	See general comment above.
	√	2. Is it listed on the municipal heritage register or provincial register (e.g. Ontario Heritage Bridge List)?	See general comment 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. (or within the Township of Tay Valley) 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 Township of Tay Valley, or in the vicinity of the Project property. (Research competed 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 26May10) In addition, no sites within the vicinity of the Project, or within the Township of Tay Valley 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.)	
√		8. Was the municipality contacted regarding potential cultural heritage value?	
	√	Were any concerns expressed?	
		9. What are the dates of construction?	N/A
	√	Are the buildings and/or structures over 40 years old?	
	√	Is it within a Canadian Heritage River watershed?	
		10. Is a renowned architect or builder associated with the property?	

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.	Though there are no known archaeological resources, there may be a reduction in soil quality/loss of soils as a result of accidental spills, erosion, soil compaction during construction. Also, surface water quality of two tributaries of Grants Creek could be impaired due to contamination from accidental spills or increased turbidity due to erosion during construction. Excavations may result in a decrease in the local availability of groundwater due to dewatering. In addition, groundwater may also be impaired by contamination due to accidental spills, or changes in ground water recharge.

Appendix F
Archaeological Assessment



NORTHLAND POWER

North Burgess Solar Project

Stage 1 and 2 Archaeological Assessment Report

November 11, 2011

Archaeological Research Associates Ltd.

97 Gatewood Road, Kitchener, ON N2M 4E3
Tel: (519) 835-4427
Fax: (519) 954-4797
248 Ruby St., Midland, ON L4R 2L4
Tel: (705) 526-9518
Fax: (705) 526-4541

Stage 1 and 2 Archaeological Assessment
North Burgess Solar Project
(FIT – F0HJPWL)
Township of Tay Valley
Lanark County, Ontario

Prepared for
Hatch Ltd.
4342 Queen Street, Suite 500, Niagara Falls, ON, L2E 7J7
Tel: (905) 374-0701 ext. 5313 Fax: (905) 374-1157
&
The Ontario Ministry of Tourism and Culture

By
C.E. Gohm, B.A. and T. Stilling, M.A.
Archaeological Research Associates Ltd.
97 Gatewood Road, Kitchener, ON N2M 4E3
Tel: (519) 835-4427 Fax: (519) 954-4797

Reviewed by
P.J. Racher, M.A., CAHP
Ontario Ministry of Tourism and Culture Licence #P-007
Project #P007-244
PIF #P007-244-2010

September 2010

TABLE OF CONTENTS

List of Figures

List of Plates

Personnel:

Project Director: P.J. Racher, M.A., CAHP, MTC Licence #P-007
Project Manager: P.J. Racher
Field Directors: H.T. Brown, MTC Licence #R-217, A.J. Wong, MTC Licence #R-326
Assistant Field Director: A. Ray
Field Work: K. Brightwell, H.T. Brown, V. Cafik, L. Cavers, K. Craig-Paul, P. Demarte, S. Knight, J. Landry, H.J. Maurice, M. Nichols, J. Parker, C. Ramsoomair, A. Ray, A.J. Wong
Photographers: H.T. Brown, A.J. Wong
Background Research: T. Stilling, A.J. Wong
Report Preparation: C.E. Gohm, T. Stilling
Graphics: C.E. Gohm, P. Hoskins

Acknowledgements:

Special thanks for his generous and timely research assistance are extended to Mr. Robert Von Bitter, Archaeological Data Coordinator, Archaeology Unit, Heritage Branch, Ontario Ministry of Tourism and Culture, Toronto.

Executive Summary:

Under a contract awarded in May of 2010, **Archaeological Research Associates Ltd. (ARA)** carried out a Stage 1 and 2 archaeological assessment of lands with the potential to be impacted by the proposed **North Burgess Solar Project** on part Lot 13, Concession 9, in the Township of Tay Valley, Lanark County, Ontario. This work was completed under contract to **Hatch Ltd.** in advance of a Renewable Energy Approval (REA) application.

The assessment was conducted between mid-August of 2010 and mid-January of 2011. Research indicated a high potential for the presence of both Pre-Contact and Historic-era archaeological sites in the study area. In advance of field work, legal *Permission to Enter* (PTE) was granted by the property owner. In mid-August of 2010, prior to commencement of field work, the son of the former property owners advised Hatch Ltd. that his parents were interred in an unregistered burial location on the subject property. During the study, 3 findspots (1 Pre-Contact and 2 Historic-era) and the probable location of the burial were identified. Findspot 1 consisted of a possible Palaeo-Indian point, Findspot 2 was a unique man-made arrangement of stones, and Findspot 3 was a Historic-era well. Of these, Findspot 1 and Findspot 2 warranted additional study. The Registrar of Cemeteries has been notified about the burial and is working directly with the client to ensure that it is surveyed, protected by a buffer, and registered as a cemetery.

In consultation with both the Ministry of Tourism and Culture and the Proponent, Findspot 1 and Findspot 2 were further investigated in mid-January in order to determine whether they possessed significant cultural heritage value or interest (CHVI). During the investigation, it was found that neither Findspot 1 nor Findspot 2 exhibited any evidence of CHVI. Accordingly, **ARA** suggests that neither of these findspots warrant further investigation. It is recommended that the project, with the exception of the soon-to-be registered cemetery, be released from further heritage concerns.

1.0 Introduction

Under a contract awarded in May of 2010, **Archaeological Research Associates Ltd. (ARA)** carried out a Stage 1 and 2 archaeological assessment of lands with the potential to be impacted by the proposed **North Burgess Solar Project** in the Township of Tay Valley, Lanark County, Ontario. This assessment was conducted between mid-August and mid-September of 2010, and in mid-January of 2011 under licence #P-007, PIF #P007-244-2010. The work was completed under contract to **Hatch Ltd.** as a component of the screening process outlined in **Ontario Regulation 359/09**, which governs **Renewable Energy Approvals** under the provincial **Environmental Protection Act** (EPA). The archaeological assessment was carried out in order to:

- Identify any known archaeological sites that might be found near or within the study area;
- Empirically determine the presence of any unknown archaeological resources which may be extant within the study area; and
- If identified, suggest appropriate strategies for the protection and management of these sites.

The assessment was carried out in accordance with the provisions of the *Ontario Heritage Act* (R.S.O. 1990), and the *Draft Standards and Guidelines for Consultant Archaeologists* (Ministry of Culture 2009). All records pertaining to this assessment are currently housed in a storage facility located at Archaeological Research Associates Ltd.'s office at 97 Gatewood Road in Kitchener, Ontario.

The Ministry of Tourism and Culture is asked to review the results and recommendations presented in this report.

2.0 Location

The study area is an 80 ha parcel of land, bounded by Narrows Lock Road to the east, Stanley Road to the south and Scotch Line to the northwest in the North Burgess Ward of the Township of Tay Valley, Lanark County, Ontario (see Figures 1-3). Irregular in shape, it is historically described as being located on part Lot 13, Concession 9, in the Township of North Burgess, Lanark County, Ontario.

The nearest water sources are four small unnamed streams which pass through the study area before eventually draining into Grant's Creek and Pike Lake (see Appendix). Grant's Creek lies 250 m west of the study area, while Pike Lake is situated approximately 1.4 km to the southwest. Two beaver dams, located along the western boundary of the property, have caused a large portion of the study area to flood (see Figure 3).

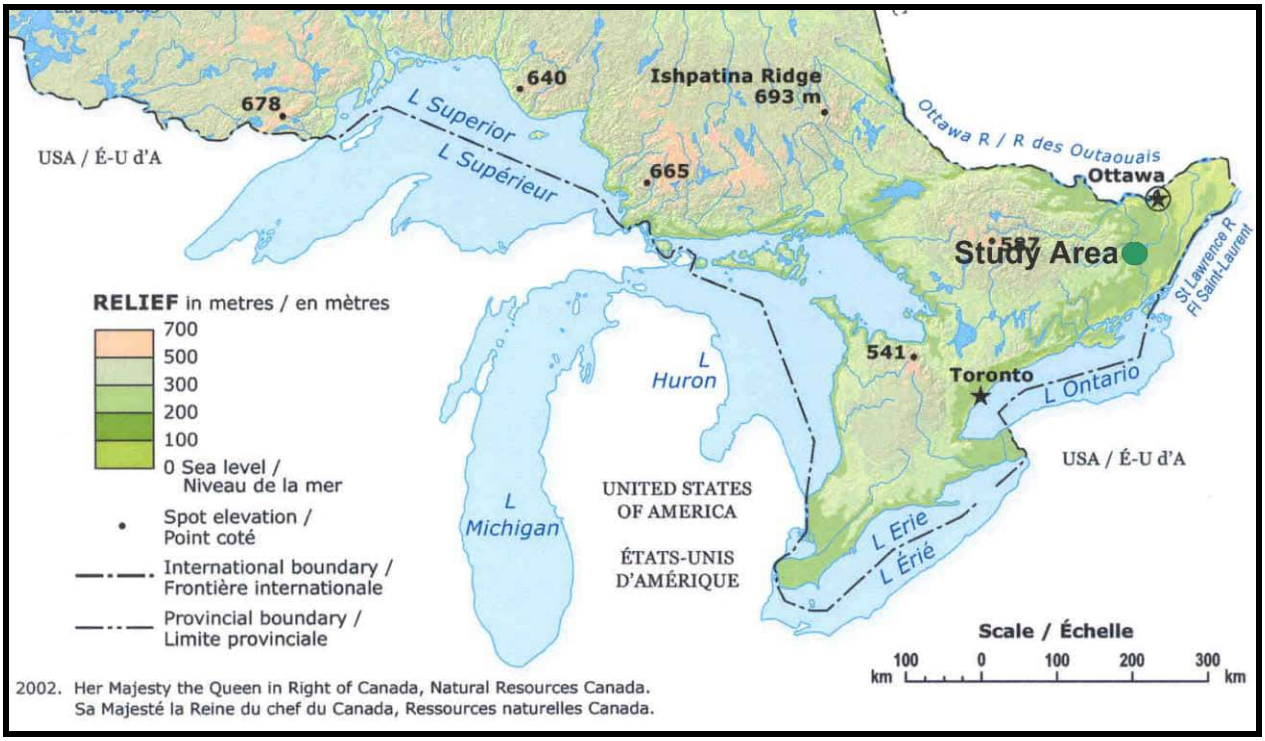


Figure 1: Location of Study Area in the Province of Ontario

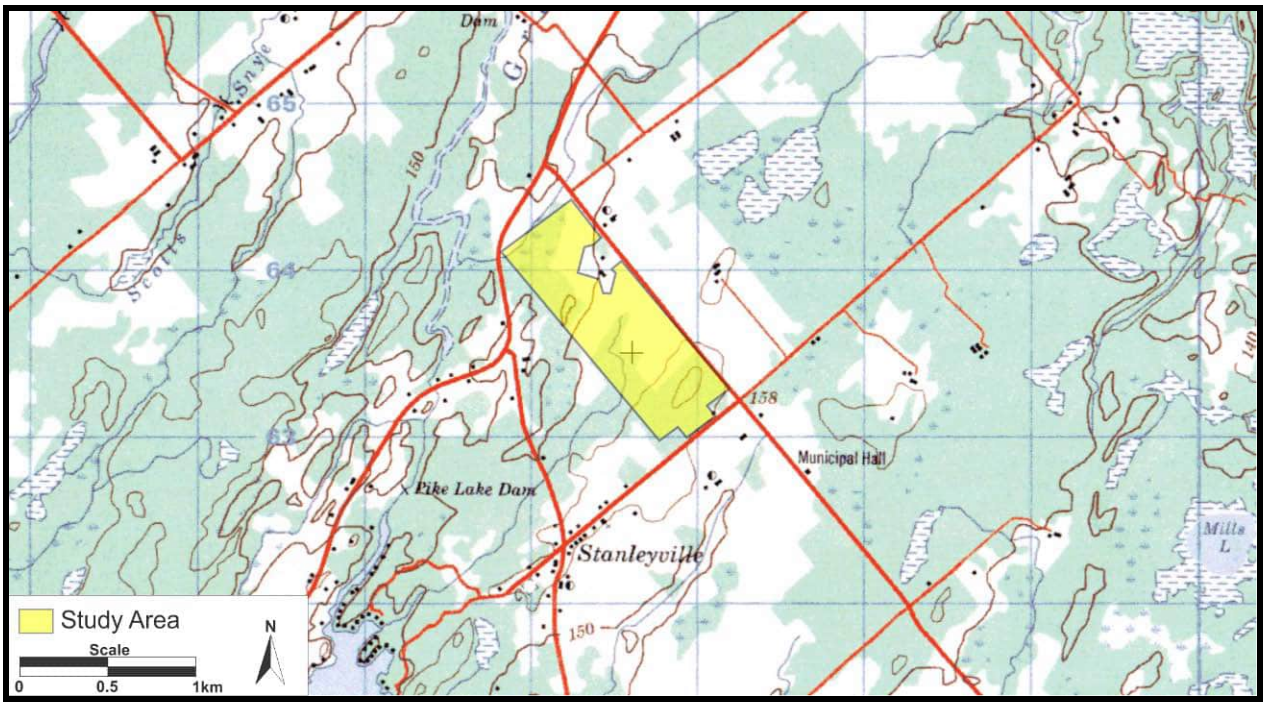


Figure 2: Location of Study Area in the Township of Tay Valley

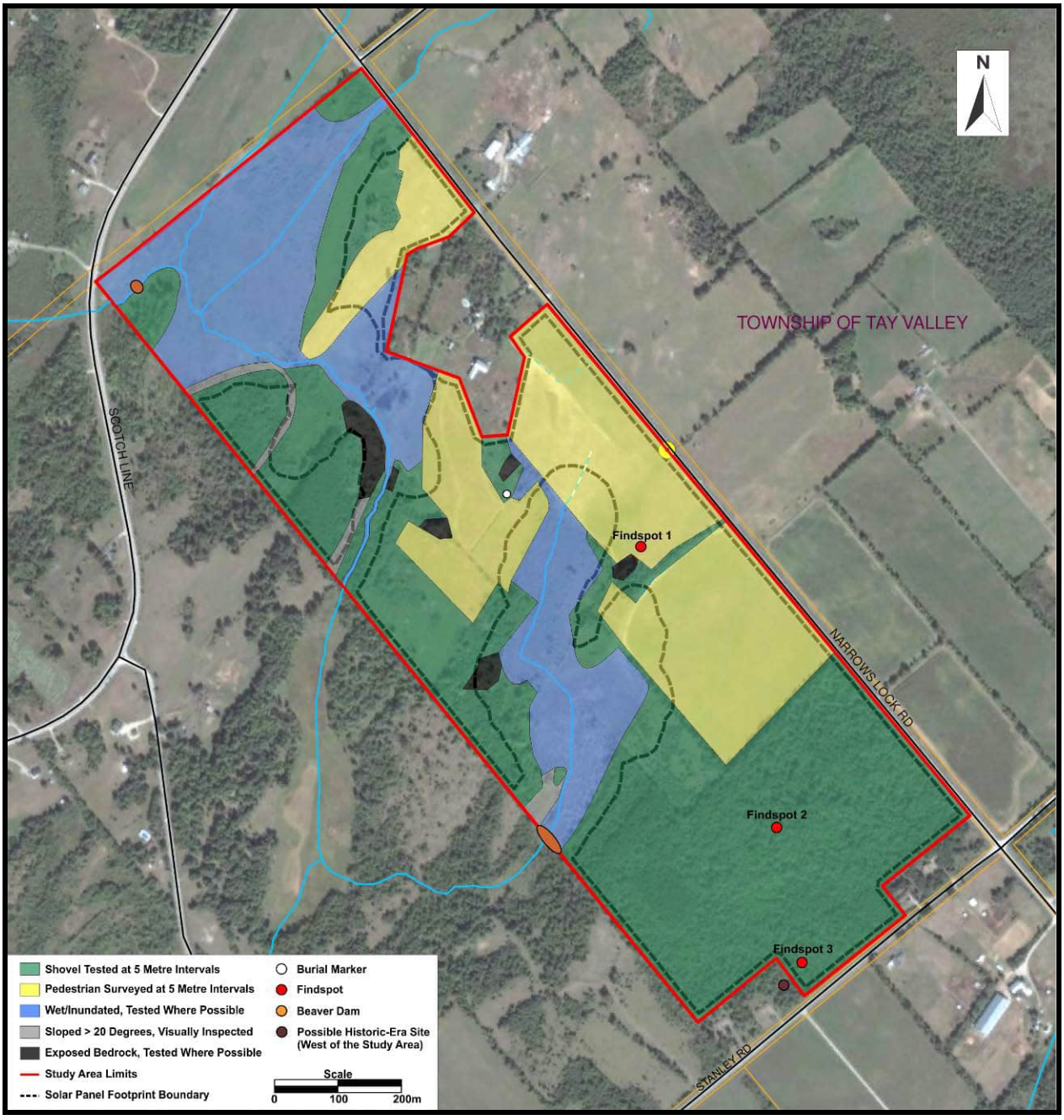


Figure 3: Study Area in Detail

3.0 Geography

It has long been understood that environment plays a key role in determining site location, particularly in small societies with non-complex, subsistence-oriented economies. The local environment of the study area lies within the Great Lakes-St. Lawrence Forest. The Great Lakes-St. Lawrence Forest is a transitional zone between the southern deciduous forest and coniferous boreal forest. Vegetation here consists of a mixture of coniferous trees, such as eastern white pine, red pine, eastern hemlock and white cedar, and deciduous trees, such as yellow birch, sugar and red maple basswood and red oak (Ontario Ministry of Natural Resources 2009).

In the upper Great Lakes region it is believed that the First Nations used some 500 plant species as food, food flavourings, drinks, medicines, building materials, fibres, dyes, and basketry (Mason 1981:59). As such, it is clear that vegetation played an important role in the site selection processes employed by Pre-Contact Aboriginal groups. Furthermore, this vegetation served as home and food for a wide range of game animals such as white tailed deer, turkey, passenger pigeon, cottontail rabbit, elk, muskrat, and beaver (Ibid:60).

Physiographically, the study area is located within the Algonquin Highlands. This region is underlain by granite and other hard Precambrian rocks. Soils are generally shallow and swamps and bogs are commonly found in the region (Chapman and Putnam 1984:211). Soil types on the property include Christy Sandy Loam, Montague Sandy Loam and North Gower Clay Loam (Hoffman et al. 1967:South Map).

4.0 Archaeological Potential

The archaeological potential of the study area was assessed using its soils, hydrology and landforms as considerations. Young et al. note that, "*either the number of streams and/or stream order is <u>always</u> a significant factor in the positive prediction of site presence"* (1995:23). They further note that certain types of landforms, such as moraines, seem to have been favoured by different groups throughout prehistory (Ibid:33). According to several researchers, such as Janusas (1988:1), "*The location of early settlements tended to be dominated by the proximity to reliable and potable water resources."* Site potential modeling studies (Peters 1986; Pihl 1986) have found that most prehistoric archaeological sites are located within 300 m of remnant or extant water sources.

While many of these studies do not go into detail as to the basis for this pattern, Young et al. (1995) suggest that the presence of streams is a significant attractor for a host of plant, game, and fish species which in turn encourage human settlement in an area. Conversely, it must be understood that non-habitational sites (e.g. burials, lithic quarries, kill sites, etc.) may be located anywhere. Potential modeling appears to break down when it comes to these idiosyncratic sites, many of which have more significance than their habitational counterparts as a result of their relative rarity.

With the development of integrated 'complex' economies in the Historic (or Euro-Canadian) era, settlement tended to become less dependent upon local resource production and more tied to wider economic networks. As such, proximity to transportation routes became the most significant predictor of site location. In the early Historic era (pre-1850), when transport by water was the norm, sites tended to be situated along major rivers and creeks - the 'highways' of their day. With the opening of the interior of the Province to settlement after about 1850, sites tended to be located along historically-surveyed roads.

Bearing these factors in mind, it is clear that the study area, in its pristine state, would have a high potential for containing Pre-Contact sites. This is largely due to the presence of four small unnamed streams, potable and possibly navigable, which drain into Grants Creek and Pike Lake. The property's potential for Historic-era sites is similarly high given that Narrows Lock Road, Stanley Road and Scotch Line are historically-surveyed thoroughfares.

5.0 Previous Archaeological Research

An archival search was conducted using the Ontario Ministry of Tourism and Culture's Archaeological Sites Database in order to determine the presence of any registered heritage resources which might be located on or within a 2 km radius of the study area. It was found that there are no registered sites within these limits. The overall lack of sites in the area is most likely the result of a paucity of research in the area, as opposed to representing any meaningful settlement pattern.

6.0 Historic Land Use Summary

6.1 Pre-Contact

The first settlers in the region were the Paleo-Indian people who arrived after the retreat of the Wisconsinan glaciers, approximately 9,000 B.C. (Warrick 2004:83). For the next 1,500 years or so, the Palaeo-Indians lived as hunter-gatherers in the boreal-like landscapes of southern Ontario. Because of the low biotic productivity of this environment, it is believed that human groups ranged over very wide territories in order to live sustainably (Ellis and Deller 1990:52). Traditionally, Palaeo-Indians have been conceptualized as 'big game hunters' who lived on caribou and other Pleistocene megafauna. However, given the poor preservation of these sites (which are mostly understood only from stone tool and debris from their manufacture), much about the lifeways of these people remains unknown (Ibid.:38). In general, the impacts that humans left on their environment at these times were small (less than 200 sq m) and ephemeral (Ibid.:51).

Beginning around 8,000 B.C., the biotic productivity of the environment began to increase as the climate warmed and the watershed was colonized by deciduous forest. As a result, more opportunities arose for the exploitation of both animal and plant food sources. The resulting broad-based economy was the basis for the archaeological cultures that are referred to as 'Archaic'. During this period (roughly 8,000 B.C. – 800 B.C.), there was an explosion in the number and variety of raw materials, tool forms, site types, and the number of sites themselves. Because Archaic sites are more recent than Paleo-Indian ones, preservation tends to be better. Artifacts composed of bone, shell, and even wood are not unheard of.

During the Late Archaic period, heavy wood-working tools appear, suggesting that people were building shelters or other objects, such as transportation aids (Ellis et al. 1990:66-67). It is clear from the toolkits that have been unearthed that Archaic peoples had an encyclopaedic understanding of the environment that they inhabited. The number and density of the sites that have been found suggest that the environment was exploited in a successful and sustainable way over a considerable period of time. The success of Archaic lifeways is attested to by clear evidence of steady population increases over time. Eventually, these increases set the stage for the final period of Pre-Contact occupation – the Woodland Period (Ibid.).

The Terminal Archaic/Early Woodland transition for the region was characterized by the presence of the Broad Point Culture Phase. It is so named because the lithic assemblage consists of broad corner-removed stemmed broadpoints, which has been attested at several sites in the vicinity. It has been suggested that the Broad Point Culture Phase gave way to the Meadowood Complex of the Early Woodland Period (800 B.C. – 0 A.D.). However, there are no known sites belonging to the Meadowood Complex in the area (Watson 1982:33).

The Middle Woodland period (roughly 0 A.D. - 500 A.D.) saw the emergence of the Point Peninsula Complex, stretching from south-central Ontario to Quebec (Spence et al. 1990:157). The Wyght site near Rideau Lake is the only example of a Point Peninsula site near the study area. It is suggested that the people of this complex lived in large macroband sites on lakeshores and rivers during the spring, summer, and fall; probably with an emphasis on fishing. During the winter, they would disperse into microbands and live on stored food and occasional hunting (Ibid:164).

During the Middle to Late Woodland transition (ca. A.D. 400) the first rudimentary evidence of maize (corn) horticulture appears in Ontario. In Eastern Ontario, the Wyght site shows a cultural continuity from the Point Peninsula Complex to the later archaeological cultures (Ibid:187). During the Late Woodland Period (roughly A.D. 1000 to A.D. 1650) maize horticulture allowed for population increases which in turn lead to larger settlement sizes, higher population densities, and increased social complexity among the peoples involved. Beginning around A.D. 1000, early Iroquoians were living in small villages comprised of a number of longhouses, producing pottery with decorated incised rims, and using pipes to smoke tobacco. Essentially, the lifeways that were observed by the first Europeans to venture into the area were in place by this time. By

1450, it is possible to differentiate between the archaeologically-represented groups that would become the Huron, Neutral, and St. Lawrence Iroquois of the early Contact period (Ibid.:446).

By the Late Woodland Period, there is no evidence of settlement in the Rideau Lakes area. No villages have been found. It is possible that the area was used as a hunting ground by people living in the St. Lawrence Valley. However, it has also been suggested that the Iroquoians overhunted the Rideau Lakes area, forcing Algonquian hunter-gatherers to hunt elsewhere (Watson 1982:49).

6.2 The Early Contact Period

Jacques Cartier was the first European to travel the St. Lawrence River in 1534. Here he encountered 300 St. Lawrence Iroquoians at the tip of the Gaspe Peninsula. Cartier travelled further up the St. Lawrence River the following year. He encountered two permanent settlements at the present locations of Quebec City and Montreal. Cartier's accounts of the people are the only accounts of the St. Lawrence Iroquois at the time of contact (Jamieson 1990:385). When Samuel de Champlain came to the St. Lawrence in 1603 the St. Lawrence Iroquois had disappeared and the land was occupied by Algonquian-speaking peoples. The disappearance of the St. Lawrence Iroquois has been attributed to the introduction of European disease and warfare with other Aboriginal groups, and it has been suggested that they there were attacked and dispersed by the New York Iroquois (Ibid.:403). The St. Lawrence Iroquois refugees proceeded to join with the Huron and Algonquians. A large population influx on Huron sites in the Trent Valley is indicated by a large number of St. Lawrence Iroquoian ceramics recovered solely from areas of village expansion (Ibid.).

The first European explorer to venture into what would become southern Ontario was Etienne Brulé, who was sent by Samuel de Champlain to visit the area and to learn the language and customs of the First Nations there. Champlain himself made two trips to Ontario, first in 1613 and later from 1615 to 1616 (Vaugeois et al. 2004:182). The Iroquoian peoples encountered by Champlain included the Huron (or Wendat as they called themselves), the Petun, and "la nation neutre" (the Neutrals). While the former groups were concentrated in the northern part of Simcoe County and the Grey-Bruce region respectively, the Neutrals occupied the territory immediately west of Lake Ontario and across the Niagara Peninsula.

The first half of the 17th Century saw a marked increase in trading contacts between the First Nations and European colonists. It also led to increasing factionalism and tension between the First Nations as different groups vied for control of the lucrative fur trade. In what would become Ontario, the Wendat (Huron), the Petun (Tobacco), and the Anishnabeg allied themselves with the French. In what would become New York State, the League of the Haudenosaunee, often referred to as the Six Nations (which included the Mohawk, Cayuga, Onondaga, Oneida, Seneca, and Tuscarora Nations) allied themselves with the English.

Interposed between the belligerents, the Neutral Nation declined to align itself with either group. Tensions boiled over in 1649. The resulting conflict led to demise of the Neutral Nation as a distinct cultural entity and the dispersal of the Wendat and Petun Nations (Lennox and Fitzgerald 1990:456, Ramsden 1990:384). The remnants of the latter settled in Quebec (the modern-day community of Wendake), near Lake St. Claire (where they were known as the Wyandot), and in the area of Michilimackinac. Many were probably adopted into the nations of the Haudenosaunee (Ramsden 1990:384). By 1651, most of southern Ontario was little more than the underpopulated hunting grounds of the Six Nations Iroquois (Lajeunesse 1960:xxxii).

The land tenure vacuum that was created by the dispersal of the Wendat and Neutral Nations allowed Anishinabeg peoples to migrate to the north shores of Lake Erie and Lake Ontario by about AD 1700. Europeans called these people the "Mississaugas", mistaking the name of a single clan (the *Ma-se-sau-gee*) for that of the entire group (Smith 2002:107). At this time, Haudenosaunee settlements appear to have contracted back into New York state, possibly due to fur trade-related tensions between the League and their Anishnabeg neighbours (Warrick 2005:1).

6.3 The Historic Era

Throughout the 1700's and early 1800's, Anishnabeg peoples hunted, fished, gardened and camped across southern Ontario, but the footprint left by these people on the landscape they inhabited was exceedingly light. Archaeological sites dating to this time period are both rare and difficult to detect (Ibid.).

The Mississaugas had been stalwart allies of the French up to and including the 7 Years War. After 1760, they forged a new alliance with the English. This relationship endured the English defeat at the end of the American War of Independence (1775-1783) and set the tone for the refugee movement of the United Empire Loyalists and the Six Nations into Canada (Smith 2002:109).

The Constitutional Act (sometimes called the Canada Act) of 1791 created the Provinces of Upper Canada and Lower Canada (Craig 1993:17). John Graves Simcoe, the first Lieutenant Governor of the Province, initiated several schemes to populate and protect the newly-created province as the ongoing threat of war with the United States required the borders to be populated quickly. A settlement strategy that relied on the creation of shoreline communities and effective transportation links between the settlements was employed. In 1792, the first legislature of Upper Canada changed the names of the Districts to Eastern, Midland, Home and Western respectively (Walker 1939:90).

6.3.1 Lanark County

The first survey of Lanark County was started by William Fortune in 1774 and completed by John Stegemann in 1797. The survey was for Montague Township in Leeds County, which would eventually become part of Lanark County (McGill 1968:1). The Townships of Elmsley and Burgess were surveyed in the early 1800's. Loyalists gradually settled in these new townships, but the influx of settlers into Burgess was meagre due to the rocky terrain, which proved unfavourable for agriculture (McGill 1968:3).

A military settlement was founded in Lanark County in 1815-1816. British veterans were given land grants in the County and were joined by Scottish and Irish settlers. Further population growth was seen when the construction of the Rideau Canal began in 1827 (Chapman and Putnam 1984:198; Lanark County 2005).

Northern Lanark County was home to a busy lumber industry, while the southern portion of the county was dominated by wheat farming. Near the end of the 19th century these wheat farms gave way to dairy farms. Cheese was the pride of the county and the "Mammoth Cheese", a 22,000 pound specimen, was brought from Perth to the 1893 Chicago World's Fair to advertise the Canadian cheese industry. It brought unique attention to Lanark County, especially after the giant cheese broke through the floor of the building in which it was exhibited. The Canadian cheese industry benefited greatly from this accident, as it was the most reported event during the World's Fair (Ruddick 1943; Lanark County 2005).

6.3.2 Township of North Burgess

North Burgess was originally part of the larger Burgess Township, surveyed in the early 1800's. Burgess was separated in 1842 into two townships. South Burgess was given to Leeds County and North Burgess to Lanark County. Reverend Thomas Burgess gave his name to the township. Burgess attended Oxford University and became the Bishop of Salisbury (Brown 1984:10). As in much of Lanark County, initial settlement was slow due to land being unsuitable for agriculture (McGill 1968:3).

6.3.3 Stanleyville

Stanleyville was named after Michael Stanley, who lived on Lot 15, Concession 8. In 1840 Irish settlers made their homes here (McGill 1968:228). By 1863, the village consisted of a town hall, schoolhouse, and a few houses.

6.3.4 Lot 13, Concession 9

Lot 13 was granted by the Crown to Clossen Eyers in 1816. The land was deeded to William Abercrombie in 1867. Belden and Co.'s *Lanark Supplement* (1880) shows that the property was

still owned by William Abercrombie 13 years later, which is consistent with land registry records (see Figure 4). The map also shows that a structure was built on the property, but this clearly falls outside of the study area.

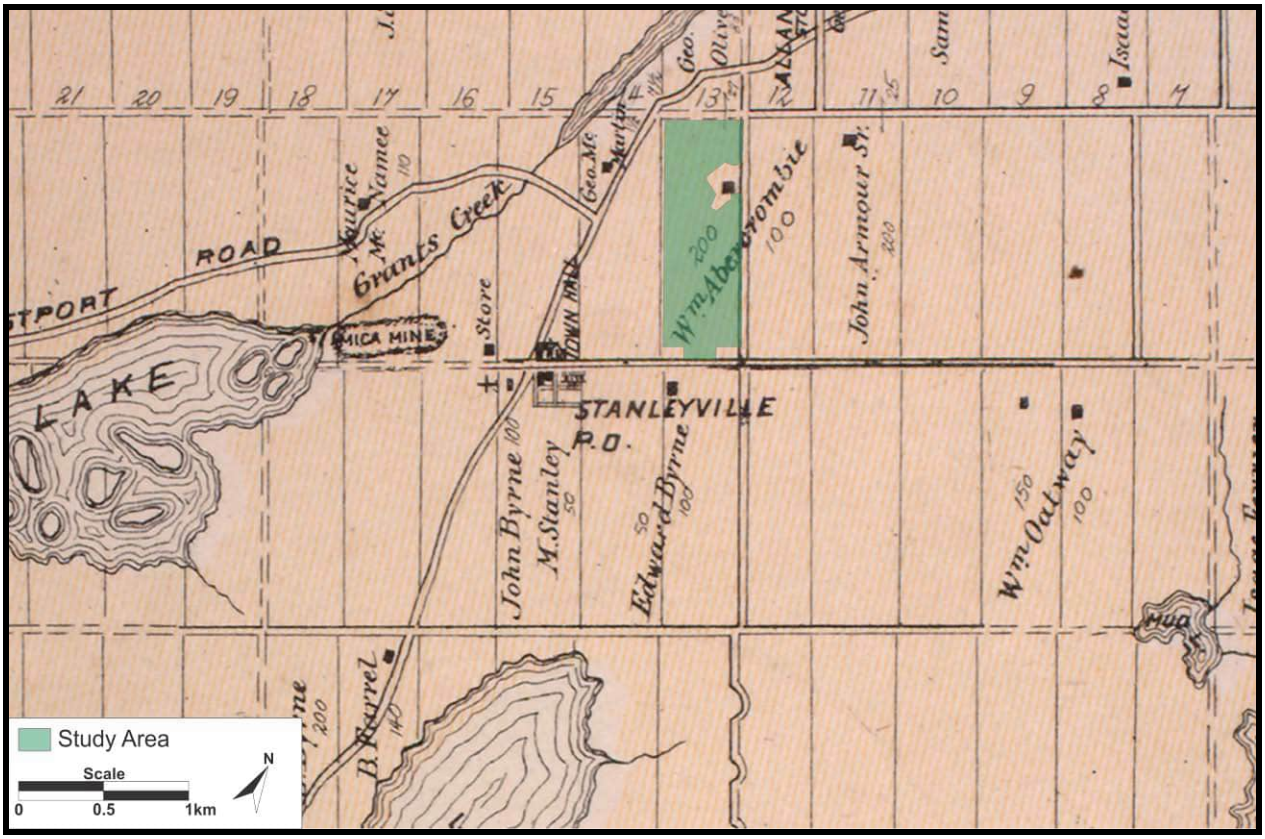


Figure 4: Detail from Belden & Co.'s *Lanark Supplement* Showing the Study Area (1880)

In 1895, the property was sold to Adam McLean for $8700.00 by the Abercrombie family. The McLean family divided and sold their land to Patrick White Jr. and James V. Coburn in 1902 and 1906, respectively. In 1908, the White land was sold to the McCaffrey family who in 1914, sold it to John Irwin. In 1945 part of the Coburn land was sold to the Irwin family. The second part of the Coburn land was later deeded to Ulrich Wirths in 1963. By 1979, the property had been divided into four parts. Part 1 was deeded to The Corporation of the County of Lanark, while the other three parts belonged to the Wirths family. In 1997, Ulrich Wirths estate was transferred to his son Michael Carl Wirths. The unregistered burial location in the study area is believed to belong to Ulrich and Charlotte Wirths.

7.0 Field Methods

Given that the study area was comprised of both ploughed lands and areas not under cultivation, it was necessary to utilize both the pedestrian survey method and the test pitting method.

In areas that were under cultivation (see Plate 1), the study area was assessed using the pedestrian survey method. In this strategy, crewmembers traversed the study area along parallel transects established at intervals of either 5 or 10 m, depending upon the archaeological potential of the property. In this case, the subject property was felt to have a high archaeological potential and, as such, was surveyed at 5 m intervals (see Plate 2). If cultural materials were encountered in the course of the survey, the transect interval would be closed to 1 m and a close inspection of the ground would be conducted for 20 m in all directions. All identified diagnostic artifacts and a representative sample of non-diagnostic artifacts are collected for analysis. All remaining artifacts are left *in situ* until a proper Stage 3 Controlled Surface Collection (CSC) can be performed.

In areas not under cultivation, Ministry of Tourism and Culture guidelines (Ontario Ministry of Culture 2009) required that the study area be assessed using the test pitting method (sometimes referred to as shovel-testing). In this strategy, small regular 'test' pits, 30 cm in diameter, were hand-excavated into subsoil at a prescribed interval of 5 m (see Plates 3-4). All soil materials from each pit were screened through 6 mm mesh and examined for the presence of archaeological materials (see Plate 5). If cultural materials were encountered in the course of the survey, each positive test would be documented. Clustered test pits at a transect interval of 1 m were excavated in areas of high artifact concentrations to further delimit the site. All artifacts recovered from test pits are collected for analysis. All test pits were backfilled upon completion.

Artifacts that may indicate the presence of significant cultural deposits include bone, charcoal, lithics (stone tools and refuse generated by their production and use), ceramics, glass, and metal. Archaeological features such as pits, foundations, and other non-portable remains may also be detected during a Stage 2 survey. Any cultural materials encountered are flagged, mapped, photographed and collected for further analysis. Artifact locations are recorded on topographic maps, in field notes and at +/- 5 m accuracy on a Garmin eTrex Legend, WAAS-enabled GPS (using the **WGS-84** coordinate system). Any artifacts recovered are sent to the ARA office at 97 Gatewood Road in Kitchener, Ontario for processing, cataloguing, analysis and curation. All project photographs, mapping materials, and field notes are stored at the same facility.

Plate 1: View of Soil Conditions at the Time of Survey

Plate 2: View of Crewmembers Conducting Pedestrian Survey at 5 m Intervals

Plate 3: View of Crewmembers Shovel Testing at 5 m Intervals

Plate 4: Typical Test Pit, Excavated to Subsoil

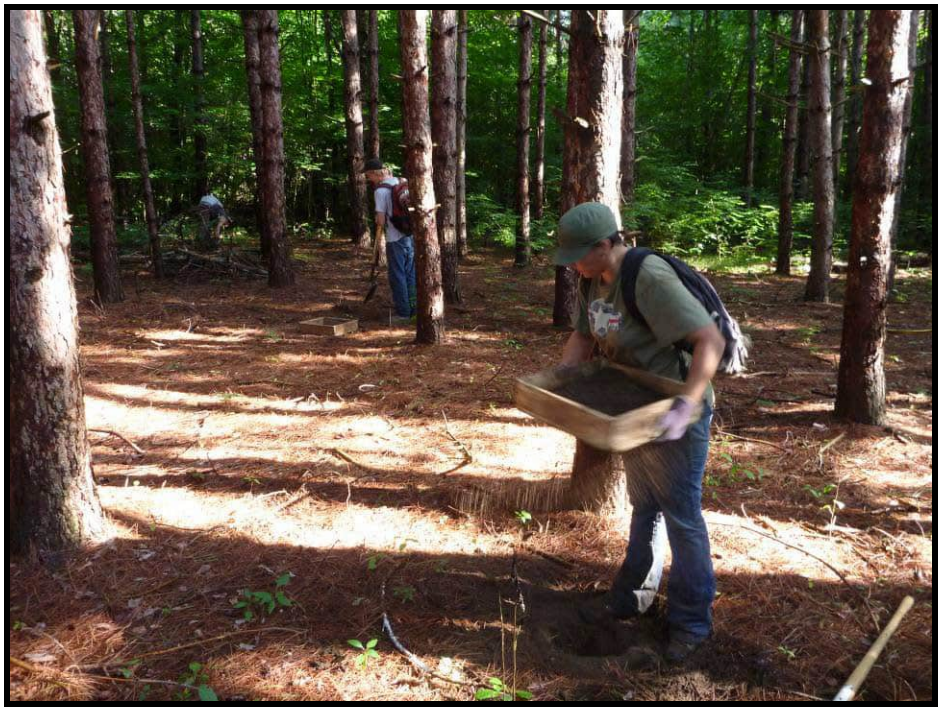


Plate 5: View of Crewmember Screening through 6 mm Mesh

8.0 Results and Recommendations

The Stage 2 archaeological assessment of the proposed North Burgess Solar Project was carried out between August 12th and 26th and on September 21st of 2010, and between January 10th and 12th of 2011. Legal *Permission to Enter* (PTE) and recover artifacts on project lands was granted by the landowner. Key personnel involved during the assessment were P.J. Racher, Project Director; H.T. Brown and A.J. Wong, Field Directors; A. Ray, Assistant Field Director; and 11 additional crewmembers. Field conditions were excellent in August and September with a mixture of sunny and cloudy skies, with dry soil for screening. Field conditions for January were much more challenging; with winter weather resulting in the need for heating sources to thaw the soil (see Sections 8.2 and 8.3).

In the course of the assessment all cultivated lands were pedestrian surveyed at 5 m intervals (see Figure 3). In the field it was noted that large portions of land in proximity to the unnamed streams were either wet or completely inundated. This flooding was found to be the result of two beaver dams, located on along the western boundary of the study area (see Plates 6-7). Areas with exposed bedrock and lands sloped greater than 20° were also identified on the property (see Plate 8). Wet or marshy lands and areas with exposed bedrock were tested where possible. Lands sloped greater than 20° were visually inspected. All other uncultivated lands were test pitted at 5 m intervals.

Plate 6: View of Inundated Area Adjacent to the Southern Beaver Dam

Plate 7: View of Wet/Marshy Area

Plate 8: View of Exposed Bedrock

During the Stage 2 archaeological assessment, an unregistered burial and 3 findspots yielding archaeological materials were located. The following is a description of each:

8.1 Unregistered Burial Location

In mid-August of 2010, prior to commencement of field work, the son of the former property owners advised Hatch Ltd. that his parents were interred in an unregistered burial location on the subject property. The GPS co-ordinates provided (N 44° 49’11.94” W 076° 18’35.96”) placed the burial 5 m into a field which is currently under cultivation. During the assessment no evidence of a burial was identified at that location. However, a large worked granite stone measuring 90 cm in height, 72 cm width and 55 cm in depth was identified in a small clearing 36 m southeast of this location at GPS co-ordinates N 44° 49’11.7” W 076° 18’34.3” (see Plate 9). This worked stone had a flat western face with no visible inscription, and a rose bush was planted at its base (see Plate 10). This information and additional photographs have been sent to the former property owner for confirmation that this is the burial marker. The Registrar of Cemeteries has been notified and is working directly with the client to ensure that the burial is surveyed, protected by required buffering, and registered as a cemetery.

Plate 9: Location of the Possible Burial Marker in the Small Clearing

Plate 10: Southern View of the Marker, Showing the Worked Surface and Rose Bush

8.2 Findspot 1

Description: A possible late Palaeo-Indian projectile point (see Plate 11).
Location: In a ploughed field, 125 m southwest of Narrows Lock Road.
GPS Co-ordinates: N 44° 49’09.0” W 076° 18’24.5”
Materials Identified: Siliceous sandstone.
Diagnostics: Possible Hi-Lo Projectile Point. No other artifacts were found in the area, despite 3 repeat visits to the location and intensive visual survey.
Cultural Affiliation: Possible Late Palaeo-Indian, dating between 10,500 and 9,500 B.P.

Plate 11: Possible Hi-Lo Projectile Point from Findspot 1, Anterior and Posterior Views

After consultation among ARA, the Ministry of Tourism and Culture and the Proponent, it was agreed that an additional investigation of Findspot 1 should be carried out in order to determine if the point was an isolated find or part of a larger, significant deposit. It was agreed that the excavation could consist of the excavation of a single 1m test unit at the location where the projectile point had been recovered. Given that it was mid-January, freezing weather and snowy conditions required innovative excavation techniques (see Plate 12). Loose snow was shovelled from the surface, and a Tiger torch was used to melt the remaining snow (see Plate 13). The soil in the test unit was then melted using aluminum roasting pans filled with burning charcoal briquettes. This proved remarkably effective (see Plate 14) and allowed the unit to be hand-excavated to a depth of 48 cm, 5 cm of which extended into the subsoil (sees Plate 15-16). Some of the soil was screened through 3mm mesh in the field. However, cold conditions required the remainder to be taken to ARA’s office for screening (still through 3mm mesh) (see Plates 17-18).

Plate 12: View of Findspot 1, Showing Test Unit

Plate 13: View of Findspot 1, Showing Initial Heating

Plate 14: View of Findspot 1, Showing Aluminum Pan Heating

Plate 15: View of Findspot 1, Showing Crewmember Excavating the Test Unit

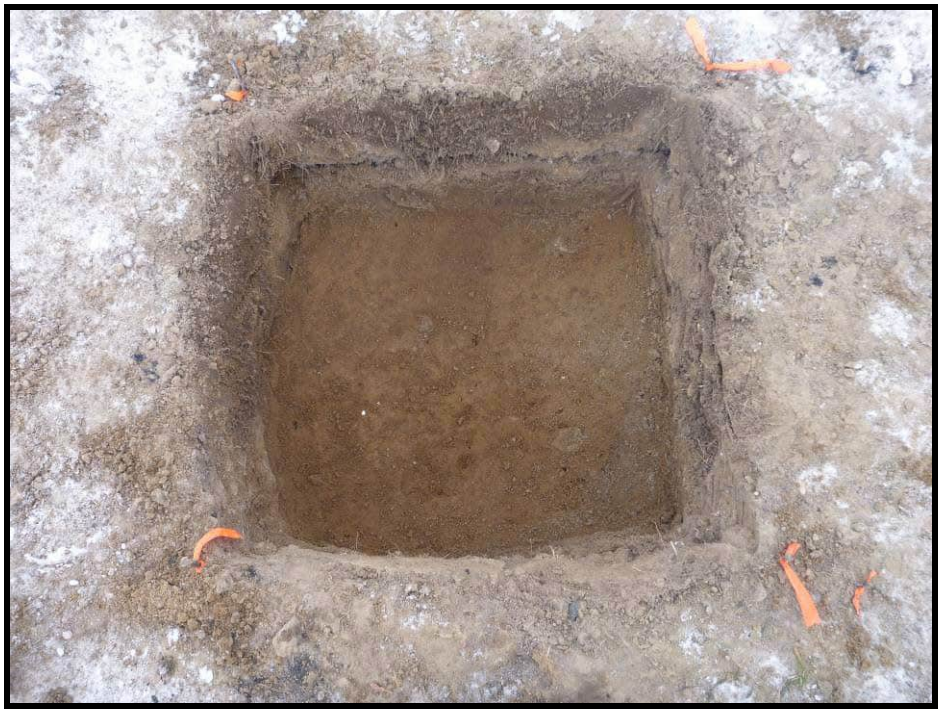


Plate 16: View of Findspot 1, Showing Completed Test Unit

Plate 17: View of Crewmember Screening through 3 mm Mesh in the Field

Plate 18: View of Crewmember Screening through 3 mm Mesh at ARA's Head Office

The excavation of the test unit at Findspot 1 did not result in the discovery of any further artifacts from the location.

Recommendation: Not recommended for further assessment.

8.3 Findspot 2

Description: An irregular man-made arrangement of stones (rectangular in part but oval at one end), of an undetermined function (see Plate 19). The feature measured 3.3 x 1.5 m externally, and had an interior dimension of 2.5 x 0.6 m. The arrangement was filled with smaller stones, on top of which lay an unmarked piece of sheet metal. Intensified test pits around the arrangement were all negative.
Location: In the southern woodlot, 235 m southwest of Narrows Lock Road.
GPS Co-ordinates: N 44° 48'55.0" W 076° 18'14.3"
Materials Identified: Stone.
Diagnostics: None.
Cultural Affiliation: Historic or modern. Function undetermined.

Plate 19: View of Irregular Arrangement of Stones, Findspot 2

After consultation among ARA, the Ministry of Tourism and Culture and the Proponent, it was agreed that an additional investigation of Findspot 2 should be carried out in order to determine if the feature possessed significant CHVI. This investigation was carried out using the same techniques described for Findspot (see Plate 20). A blow torch was used to melt the snow on and around the feature. The ground at its eastern end was thawed using aluminum roasting pans filled with burning charcoal briquettes (see Plates 21-22). The unit was then hand-excavated 5 cm into subsoil, which was reached at a depth between 47 and 49 cm (see Plates 23-24). The soil was screened, in the field, using 6 mm mesh (see Plate 25).

The excavation of the eastern end of the feature at Findspot 2 did not result in the discovery of any artifacts of significant CHVI. The sole discovery consisted of a bent wire nail (post 1890). The function of this man-made arrangement of stones must remain enigmatic; it could have served as anything from a hunting blind to a children's 'play' fort.

Recommendation: Not recommended for further assessment.

Plate 20: View of Findspot 2

Plate 21: View of Findspot 2, Showing Initial Heating

Plate 22: View of Findspot 2, Showing Aluminum Pan Heating

Plate 23: View of Findspot 2, Showing Crewmember Excavating the Test Unit

Plate 24: View of Findspot 2, Showing Completed Test Unit

Plate 25: View of Crewmember Screening through 6 mm Mesh in the Field

8.4 Findspot 3

Description: A Historic-era stone-lined well, measuring 2.4 m in diameter with an interior diameter of 1.8 m (see Plate 26). Intensified test pits around the well were all negative. This well lies 45 m northeast of what appears to be a Historic-era site with a second stone-lined well. The Historic-era site is situated on the adjacent private property, separated from the study area by a fieldstone fence. No artifacts were recovered from intensified test pits east of this fence line within the study area.
Location: In the southern woodlot, 55 m north of Stanley Road.
GPS Co-ordinates: N 44° 48’48.0” W 076° 18’12.4”.
Materials Identified: Stone.
Diagnostics: None.
Cultural Affiliation: Euro-Canadian, 19th Century.

Plate 26: View of Stone Lined Well

Recommendation: Not recommended for further assessment.

8.5 Summary

The Stage 2 archaeological assessment of the study area identified three findspots yielding archaeological materials, along with the probable location of an unregistered burial. The latter is being dealt with according to the provisions of the Ontario Cemeteries Act. It will be registered as a cemetery, buffered, and protected from impacts in accordance with the terms of the Act.

Of the archaeological sites, only Findspot 1 and 2 were initially found to have potential CHVI (cultural heritage value or interest). After consultation with the Ministry of Tourism and Culture and the Proponent, **ARA** carried out additional investigations at these findspots. At each location, no materials indicating CHVI for the findspot were recovered. Findspot 3, a capped stone well, appears to be associated with a historic site that lies outside of the project lands. It yielded no artifacts and appears to be of limited CHVI.

Based on the results of this Stage 1 and 2 archaeological assessment, **Archaeological Research Associates Ltd.** feels that no further archaeological study of the subject lands would be productive. It is recommended that the project, excluding the cemetery and its buffer, be released from further heritage concerns. A **Letter of Concurrence** with these recommendations is requested.

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.

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.

9.0 References Cited

Belden, H. & Co.
1880 **Lanark Supplement in Illustrated Atlas of the Dominion of Canada**. Toronto: H. Belden & Co.

Brown, Howard Morton
1984 **Lanark Legacy: Nineteenth Century Glimpses of an Ontario County.** Perth: The Corporation of the County of Lanark.

Carter, Trevor
ND **The Artifacts of Historical Archaeology.** General Ceramics, Compiled by Trevor Carter. Courtesy of Dr. John Triggs, Historic Archaeologist, Wilfrid Laurier University.

Chapman, L.J. and D.F. Putnam
1984 **The Physiography of Southern Ontario, 3rd Edition**. Toronto: Ontario Geological Survey, Special Volume 2.

Craig, G.M.
1963 **Upper Canada: The Formative Years, 1784-1841**. Toronto: McClelland and Stewart Limited.

Ellis, C.J and D.B. Deller.
1990 *Paleo-Indians* in **The Archaeology of Southern Ontario to A.D. 1650.** Edited by Chris J. Ellis and Neal Ferris, Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc., pp. 37-74.

Ellis, C.J., I.T. Kenyon, and M.W. Spence.
1990 *The Archaic* in **The Archaeology of Southern Ontario to A.D. 1650.** Edited by Chris J. Ellis and Neal Ferris, Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc., pp. 65-124.

Hoffman, D.W., M.H. Miller and R.E. Wicklund
1967 **The Soils of Lanark County, Ontario.** Report No. 40. Ontario Soil Survey, Research Branch, Canada Department of Agriculture, Guelph, Ontario.

Jamieson, Bruce
1990 ***The St. Lawrence Iroquois*** in **The Archaeology of Southern Ontario to A.D. 1650. E**dited by Chris J. Ellis and Neal Ferris, Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc., pp. 385-404.

Janusas, S.E.
1988 **The Cultural Implication of Drainage in the Municipality of Waterloo.** Kitchener: Regional Municipality of Waterloo.

Lajeunesse, Ernest J.
1960 **The Windsor Border Region: Canada's Southernmost Frontier, A Collection of Documents.** Toronto: University of Toronto Press.

Lanark County
2005 **Local Government, County History.** Located online at: http://www.county.lanark.on.ca/Page13.aspx

Lennox, P.A. and W.R. Fitzgerald.
1990 *The Culture History and Archaeology of the Neutral Iroquoians* in **The Archaeology of Southern Ontario to A.D. 1650.** Edited by Chris J. Ellis and Neal Ferris, Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc., pp. 405-456.

Mason, R.J.
1981 **Great Lakes Archaeology.** New York: Academic Press.

McGill, Jean S.
1968 **A Pioneer History of the County of Lanark.** Toronto: T. H. Best Printing Company Limited.

Ontario Heritage Act
1990 **R.S.O., CHAPTER 18; R.R.O., Reg. 875**

Ontario Ministry of Natural Resources
2009 **About Ontario's Forests.** Located online at: www.mnr.gov.on.ca/en/Business/Forests/2ColumnSubPage/STEL02_163390.html

Ontario Ministry of Tourism and Culture
2009 **Standards and Guidelines for Consultant Archaeologists**. Toronto: Ministry of Culture.

Peters, J.
1986 **Transmission Line Planning and Archaeological Research: A Model of Archaeological Potential for Southwestern Ontario**. *Archaeological Consulting in Ontario: Papers of the London Conference 1985*. W.A. Fox, ed. Occasional Papers of the London Chapter, OAS, Inc., No. 2:19-40.

Pihl, R.
1986 **Site Potential Modeling in Archaeological Consulting**. *Archaeological Consulting in Ontario: Papers of the London Conference 1985***.** W.A. Fox, ed. Occasional Papers of the London Chapter, OAS, Inc., No. 2:33-37.

Ramsden, Peter
1990 *The Hurons: Archaeology and Culture History* in **The Archaeology of Southern Ontario to A.D. 1650.** Edited by Chris J. Ellis and Neal Ferris, Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc., pp. 361-384.

Ruddick, J. A.
1943 **Celebration at Perth, Ontario, 23rd October, 1943, To Commemorate the Manufacture and Shipment of the Mammoth Cheese.** Canada Department of Agriculture: Ottawa. Transcribed by Charles Dobie, Lanark County Genealogical Society. Located online at: http://globalgenealogy.com/LCGS/articles/A-CHEESE.HTM.

Smith, Donald B.
2002 ***Their Century and a Half on The Credit: The Mississaugas in Mississauga***. In **Mississauga: The First 10,000 Years** Edited by Frank A. Dieterman. Mississauga: The Mississauga Heritage Foundation., pp. 107-122.

Spence M.W., R.H. Pihl and C. Murphy.
1990 *Cultural Complexes of the Early and Middle Woodland Periods* in **The Archaeology of Southern Ontario to A.D. 1650.** Edited by Chris J. Ellis and Neal Ferris, Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc., pp. 125-170.

Stelle, Lenville J.
2001 **An Archaeological Guide to Historic Artifacts of the Upper Sangamon Basin, Central Illinois, U.S.A.** Parkland College: Center for Social Research.

Vaugeois, D., R. Litalien, & K. Roth
2004 **Champlain; The Birth of French America**. Montreal: McGill-Queen's University Press.

Walker, John A.
1939 *Municipal Government in the County of Kent* in **Kentiana: The Story of the Settlement and Development of the County of Kent.** Chatham: The Kent Historical Society, pp. 90-94.

Warrick, G.
2000 *The Precontact Iroquoian Occupation of Southern Ontario* in **Journal of World Prehistory**, Volume 14, Number 4, pp. 415-456.
2004 *Early Aboriginal Occupation of the Grand River Watershed* in **Towards a Grand Sense of Place**, edited by G. Nelson, B. Veale and B. Dempster, Waterloo: University of Waterloo. pp. 83-98.
2005 *Lessons from the Past* in **Grand Actions**, Volume 10, No. 3. Cambridge: The Grand River Conservation Authority, pp.2-4.

Watson, Gordon
1982 ***Prehistoric Peoples of the Rideau Waterway*** in **Archaeological Historical Symposium**: October 2-3, 1982, Rideau Ferry, Ontario, presented by the Central Region and the Ministry of Citizenship and Culture", F.C.L. Wyght, ed., Lombardy, Ontario, 1982, pp. 24-55.

Young, Penny M., Malcolm R. Horne, Colin D. Varley, P.J. Racher and Andrew J. Clish
1995 **A Biophysical Model for Prehistoric Archaeological Sites in Southern Ontario**. The Research and Development Branch, Ministry of Transportation, Ontario.

10.0 Artifact Registry

Record	Findspot	Date	Freq.	Material Code	Material	Group Code	Group	Class Code	Class Name	Object	Object Name	Datable Attribute Code	Datable Attribute Name	L x W x H (cm)	Comments	Fire Evidence
1	Findspot 1	12-Aug-2010	1	59	Quartzite	23	Native	230	Tools	363	Projectile Point?	4	Unidentifiable	5.2 x 2.6 x 0.6	Possible Hi-Lo Point	n
23	Findspot 2	12-Jan-2011	1	18	Ferrous	12	Architectural	121	Nails	316	Nails	412	Wire	-	Bent wire nail	n

Appendix: Map of the North Burgess Solar Project Provided by Hatch Ltd.