

**White Pines Wind Project  
Heritage Assessment Report**

File No. 160960594



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## Sign-off Sheet

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Prepared by  \_\_\_\_\_  
(signature)

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**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

**Table of Contents**

**EXECUTIVE SUMMARY .....E.1**

**1.0 INTRODUCTION .....1.1**

**2.0 STUDY METHODOLOGY.....2.1**

2.1 PROCESS ..... 2.1

2.2 CONSULTATION ..... 2.2

2.3 VISUALIZATION ..... 2.2

2.4 O.REG. 359/09 REQUIREMENTS, HERITAGE ASSESSMENT ..... 2.4

    2.4.1 Determining Cultural Heritage Value or Interest (CHVI) ..... 2.5

    2.4.2 Impact Assessment..... 2.5

**3.0 PROJECT CONTEXT.....3.1**

3.1 PROJECT DESCRIPTION..... 3.1

    3.1.1 Wind Turbine Generators..... 3.1

    3.1.2 Crane Pads..... 3.2

    3.1.3 Electrical Collector Lines and Fibre Optic Cable..... 3.2

    3.1.4 Substations..... 3.2

    3.1.5 Access Roads..... 3.3

    3.1.6 Storage Area ..... 3.3

3.2 TEMPORARY COMPONENTS ..... 3.3

    3.2.1 Construction Areas..... 3.4

    3.2.2 Crane Laydown Areas..... 3.4

    3.2.3 Staging Areas..... 3.4

    3.2.4 Delivery Truck Turnaround Areas ..... 3.4

    3.2.5 Access Road Entrances..... 3.5

3.3 PROJECT LOCATION ..... 3.5

3.4 PHYSICAL SETTING ..... 3.5

**4.0 HISTORICAL CONTEXT.....4.1**

4.1 PRE-CONTACT CONTEXT ..... 4.1

4.2 EURO-CANADIAN SETTLEMENT ..... 4.2

    4.2.1 Early Settlement Patterns..... 4.3

    4.2.2 Agriculture ..... 4.5

    4.2.3 Interaction with the Physical Setting..... 4.7

**5.0 PROTECTED PROPERTIES .....5.1**

5.1 POLICY FRAMEWORK ..... 5.1

5.2 EXISTING PROTECTED PROPERTIES..... 5.2

**6.0 CULTURAL HERITAGE RESOURCES.....6.1**

6.1 POLICY FRAMEWORK ..... 6.1

6.2 INVENTORY OF CULTURAL HERITAGE RESOURCES ..... 6.1



**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

<b>7.0</b>	<b>IMPACT ASSESSMENT .....</b>	<b>7.1</b>
7.1	POTENTIAL IMPACTS.....	7.1
7.1.1	Destruction or Alteration.....	7.1
7.1.2	Visual Impacts or Shadows .....	7.1
7.1.3	Isolation, Change in Land Use, Land Disturbances.....	7.3
7.1.4	Reversibility .....	7.3
7.2	IDENTIFICATION OF IMPACTS ON HERITAGE VALUES.....	7.4
<b>8.0</b>	<b>RECOMMENDATIONS.....</b>	<b>8.1</b>
<b>9.0</b>	<b>SOURCES .....</b>	<b>9.1</b>
9.1	LITERATURE CITED .....	9.1
9.2	LITERATURE CONSULTED .....	9.3
9.3	PERSONAL COMMUNICATIONS .....	9.5

**LIST OF TABLES**

Table 1:	Table from Section 19, O.Reg. 359/09.....	5.1
Table 2:	Summary of Evaluation of CVHI.....	6.4
Table 3:	Summary of Impact Assessment.....	7.5

**LIST OF FIGURES**

Figure 1:	Study Area.....	1.3
Figure 2:	Project Components .....	1.5
Figure 3:	Study Area as Shown on 1863 Tremaine Map .....	4.11
Figure 4:	Study Area as Shown on Belden's 1878 Atlas, Athol Township .....	4.13
Figure 5:	Study Area as Shown on Belden's 1878 Atlas, South Marysburgh Township .....	4.15
Figure 6:	Identified Cultural Heritage Resources .....	6.3

**LIST OF PLATES:**

Plate 1:	Mariner's Museum overlooking South Bay .....	4.4
Plate 2:	Bend in Long Point Road near Union G.M. Church .....	4.4
Plate 3:	Royal Road Streetscape – narrowly setback farm complexes and tree plantings. Royal Street Cheese Factory at left. ....	4.5
Plate 4:	Royal Street Cheese Factory.....	4.6
Plate 5:	Tree-lined portion of Brewers Road near Dulmage-Farrington Driveshed ....	4.7
Plate 6:	South Bay Cemetery.....	4.8
Plate 7:	Residence, orchard and outbuildings along Long Point Road (County Road 13) overlooking the water.....	4.8
Plate 8:	Scott's Mill near Milford (Mount Tabor United Church in the background above Mill Pond).....	4.9

**LIST OF VISUAL AIDS**

Visual Aid 1:	Wind Turbine Scale Schematic.....	7.2
Visual Aid 2:	Wind Turbine Scale Schematic, with trees.....	7.3



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

## LIST OF APPENDICES

- Appendix A: Cultural Heritage Record Forms
- Appendix B: Photographs
- Appendix C: Relevant Correspondence
- Appendix D: Designation By-Laws
- Appendix E: Project Personnel
- Appendix F: Aerial Images of Cultural Landscapes
- Appendix G: Visual Simulations

## Executive Summary

Sections of the Ontario Regulation 359/09, Renewable Energy Approvals Under Part V.0.1 Of The Environmental Protection Act pertain to Cultural Heritage Resources, specifically built heritage resources and cultural heritage landscapes. In order to meet the conditions of the regulation, Stantec Consulting Ltd was retained by wpd Canada Corporation to conduct a Heritage Assessment of the location of a proposed wind project in the Townships of Athol and South Marysburgh, Prince Edward County, Ontario

The assessment included a review of historic period maps, aerial imagery and census data as well as records and inventories held by the Municipality of Prince Edward County, the County of Prince Edward Public Library and Archives, the Ontario Ministry of Tourism, Culture and Sport, and the Ontario Heritage Trust.

Visual surveys of the Study Area were completed to determine the existence of any potential built heritage resources within and adjacent to the Study Area. During the site visits the Study Area was also assessed for any groupings of resources that might constitute a cultural heritage landscape.

A total of 103 potential cultural heritage resources were identified through desktop research, a windshield survey, and consultation with the public. These were evaluated against the criteria outlined under Ontario Regulation 9/06 Criteria for Determining Cultural Heritage Value or Interest and of those 103 potential cultural heritage resources recorded, 74 were determined to meet the criteria and designated cultural heritage resources (CHRs). In addition to the cultural heritage resources identified, 12 properties were determined to be protected under the Ontario Heritage Act.

For each resource and landscape of heritage value, a heritage impact assessment (HIA) was undertaken in order to identify potential Project-related negative impacts. Impacts evaluated include: destruction; alteration; shadows; isolation; direct or indirect obstruction of significant views; and changes in land use.

The potential for indirect impacts was identified for 20 cultural heritage resources. Potential Project-related direct impacts have been identified for 21 cultural heritage resources. The indirect impacts relate to the potential for vibration impacts while the direct impacts relate to views.

In order to mitigate any visual impacts, Turbine locations T07, T09, and T11 would have to be avoided. Turbine locations T07, T09, and T11 have been decided based on consideration of availability of land, and natural environment, noise, and property line setbacks, as defined in Ontario Regulation 359/09. Moving the turbines is not possible, due to these constraints, and avoidance/removal of the turbines will impact the economic viability of the project. Moving Project turbines to other locations in the County is also not possible, due to potential interference with Department of National Defence (DND) radar systems, as identified through consultations with DND.

## WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

As the turbines are temporary in nature, a record of pre-construction conditions is necessary to provide a baseline for decommissioning activities. This should be established based on current land use at the Project Location which is documented in extensive detail in the Natural Heritage Assessment and Environmental Impact Study Report (NHA/EIS) completed as a component of the Renewable Energy Approvals process. Review of the NHA/EIS prior to decommissioning activities will ensure that decommission efforts will return the land as close to pre-construction conditions as is reasonable. The record of current conditions, including this Report and the NHA/EIS, should be deposited permanently at the local library to facilitate access to pre-construction conditions at the end of the Project lifespan.

Although it is not expected, the potential for indirect impacts related to construction vibrations was identified for 20 cultural heritage resources located within 60 m of project components. In order to minimize the risk of damage it is recommended that construction activities be avoided within 60 m of identified cultural heritage resources.

Where construction within 60 m cannot be avoided, it is recommended that maximum acceptable vibration levels, or peak particle velocity (PPV) levels, should be determined by a qualified engineer prior to any construction activities. Construction within the 60 m bufferzone should be monitored to ensure that acceptable PPV levels are not exceeded. All construction activities should cease if levels are exceeded until an acceptable solution can be identified. Equal care should be applied during decommissioning activities to safeguard heritage resource, particularly with regards to vibration levels adjacent to the resources.

In the case of the Royal Road/Maypul Layn Road Streetscape, it is recommended that any new transmission infrastructure be installed below-grade in order to preserve the character of the tree-lined streetscape linking the Maypul Layn dairy farms to the Royal Street Cheese Factory and nearby farmsteads. Landscaping features, such as fencing or vegetation, should not be removed for the installation of transmission infrastructure. Any such disturbances that cannot be avoided should be repaired immediately following Project construction activities. Where possible, repair to landscaping features should restore the features to pre-construction conditions.

It is further recommended that removal of, or damage to, trees along roads in the Study Area be avoided to the greatest extent practicable.

As a general recommendation, any extant cabins, log houses or built features encountered in wooded portions of the Study Area during the construction of Project infrastructure should not be removed without first undertaking a Heritage Impact Assessment of the resource.

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Introduction

June 2012, Revised October 15, 2013

## 1.0 Introduction

Stantec Consulting Ltd. (Stantec) was retained by wpd Canada Corporation (wpd) to prepare a Renewable Energy Approval (REA) Application, as required under Ontario Regulation 359/09 – Renewable Energy Approvals under Part V.0.1 of the Environmental Protection Act (O.Reg. 359/09). According to subsection 6.(3) of O.Reg. 359/09, the Project is classified as a Class 4 Wind Facility and will follow the requirements identified in O.Reg.359/09 for such a facility.





The Project consists of a 29 wind turbines with a 59.45 MW nameplate capacity. The Project will be located entirely within the Townships of South Marysburgh and Athol in Prince Edward County in Ontario. The Study Area is generally bounded by: Brummell Road and Bond Road to the north; Lighthall Road to the west; Gravelly Bay Road to the east and Lake Ontario to the south (**Figure 1 and Figure 2**).

This Revised White Pines Wind Project Heritage Assessment Report (the Report) is one component of the REA Application for the Project, and has been prepared in accordance with O.Reg. 359/09.





**Legend**

-  Project Study Area
-  Road
-  Waterbody (MNR)
-  Woodland (MNR)



**Notes**

1. Coordinate System: NAD 1983 UTM Zone 18N  
Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2011.
2. Imagery Source: © First Base Solutions, 2012  
Imagery Date: 2008



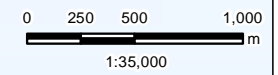
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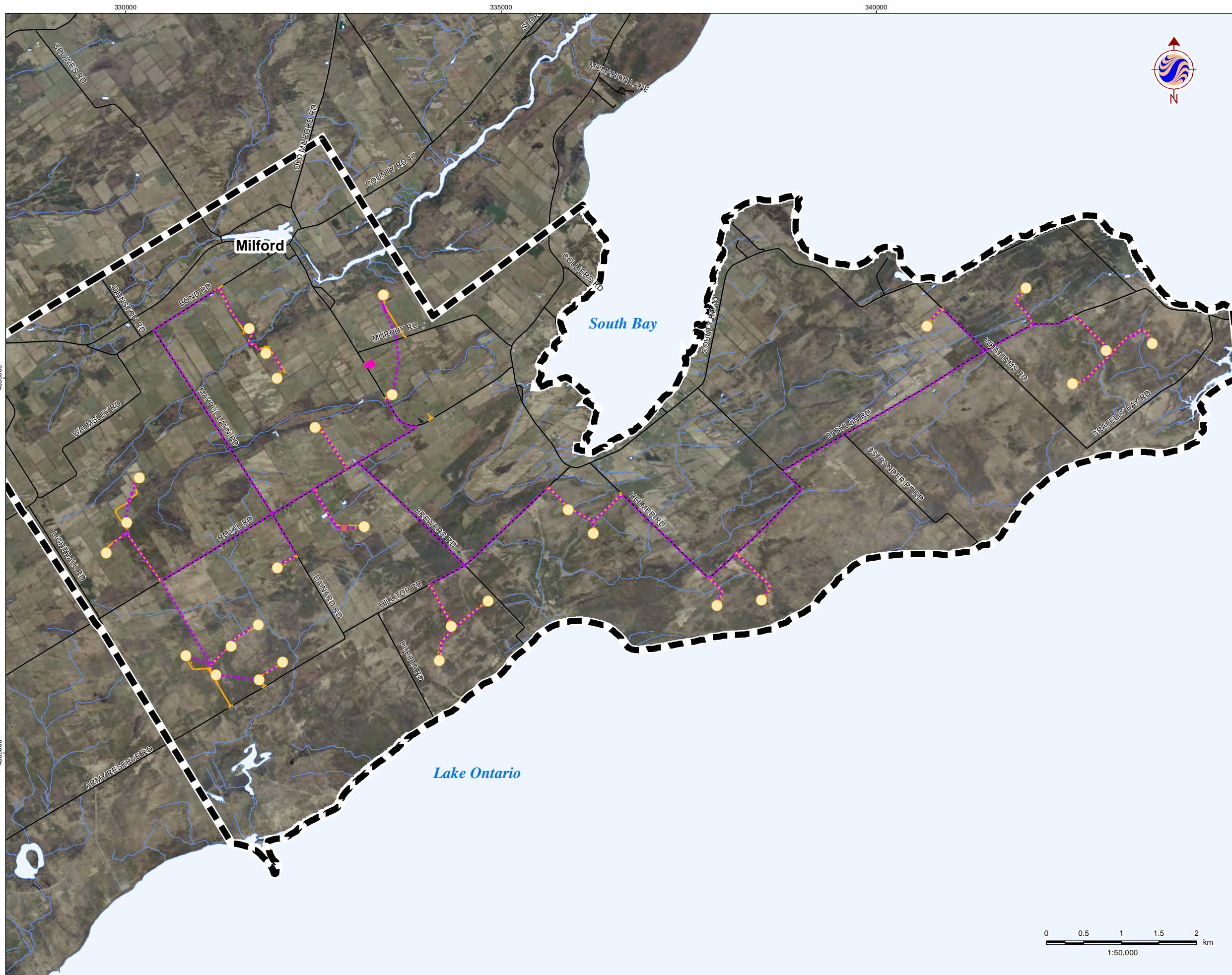
Client/Project  
WPD CANADA CORP  
WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT

Figure No.  
1.0

Title  
**Study Area**

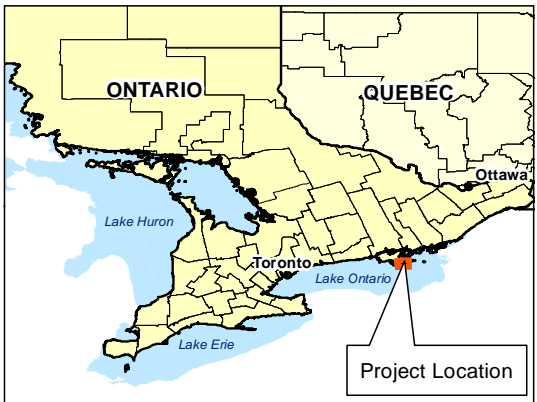






**Legend**

- Study Area
  - Wind Turbine (Blade Sweep)
  - Access Road
  - Collector Line
  - Interconnection Line
  - Crane Laydown Area
  - Turbine Laydown Area
  - Construction Area
  - Storage Area
  - Substation
- Existing Features**
- Road
  - Railway
  - Watercourse (as per MNR base mapping)
  - Waterbody (as per MNR base mapping)



**Notes**

1. Coordinate System: UTM NAD 83 - Zone 18 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2011; © Natural Resources Canada, 2011; © WPD Canada, 2011; © Prince Edward County, 2011.
3. Imagery Source: © First Base Solutions, 2012  
Imagery Date: 2008



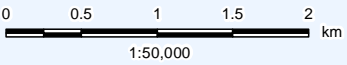
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Figure No.  
**2.0**

Title  
**Project Components**





# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Study Methodology  
June 2012, Revised October 15, 2013

## 2.0 Study Methodology

### 2.1 PROCESS

The Heritage Assessment study was undertaken in several phases. The first phase was desktop background research based on the Study Area for the overall Project. Listings of provincially and locally designated built heritage sites, districts and easements and buildings of architectural or historical interest for the municipality were reviewed in order to compile a catalogue of existing identified heritage resources. The staff contact for the Prince Edward County Heritage Advisory Committee (PEHAC) was contacted to determine designated properties and properties of cultural heritage interest as part of the 2010 background research (Leary, 2010 pers. comm.). The PEHAC staff contact was contacted again in April, 2012 to identify new properties of interest and recent designations (Schaefer, 2012 pers. comm.).

Visual surveys were conducted on June 8 and 9, 2010, August 31, 2010 and April 4, 2012. The Study Area was surveyed for extant buildings, outbuildings and/or other built heritage remains. During the site visit cultural heritage resources which might satisfy criteria outlined under Ontario Regulation 9/06 (O.Reg. 9/06) were photographed and their locations recorded. Where municipal addresses were not available locations were recorded using a handheld Global Positioning System (GPS).

In general, buildings and structures of more than forty years of age were evaluated during the survey for their potential to satisfy O.Reg. 9/06 criteria. The use of the forty year threshold is generally accepted by both the federal and provincial authorities as a preliminary screening measure for heritage interest or values. This practice does not imply that all buildings and structures more than forty years of age are inherently of cultural heritage value, nor does it exclude exceptional examples constructed within the past forty years of being of cultural heritage value.

The Study Area was assessed for groupings of resources and environs that might potentially constitute cultural heritage landscapes as defined by the Ministry of Culture's InfoSheet #2 Cultural Heritage Landscapes in Heritage Resources in the Land Use Planning Process: Cultural Heritage and Archaeology Policies of the Ontario Provincial Policy Statement, 2005 (MTCS, 2006b).

Evaluation of potential cultural heritage resources was performed using criteria set out under O.Reg.9/06 of the Ontario Heritage Act (OHA). Resources meeting one or more of the criteria under O.Reg.9/06 are considered by this study to be of cultural heritage value.

Identification of potential impacts on cultural heritage resources and landscapes considered the proposed site plan for the layout of turbines and other Project infrastructure (**Figure 2**). Layout of Project components was undertaken separately from this study with the understanding that negative impacts on cultural heritage resources identified by this study might require mitigative measures, up to and including the relocation of Project infrastructure.

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Study Methodology  
June 2012, Revised October 15, 2013

## 2.2 CONSULTATION

A meeting took place in October, 2012 between PEHAC, members of the local heritage community, and Stantec to discuss concerns regarding the June, 2012 Heritage Assessment Report and Protected Properties Report undertaken for the White Pines Wind Project. As a result of this meeting, an accompanied site visit was planned for February 12 and 13, 2013. Due to inclement weather, the site visit was postponed to February 20 and 21, 2013. During the site visit, significant views, cultural heritage landscapes, and previously unidentified heritage attributes of individual cultural heritage resources were identified and documented. A series of visual simulations were rendered in order to better analyze potential Project-related impacts related to views of cultural heritage value or interest (see **Section 2.3 and 8.1.2**).

As a result of this additional consultation, a more comprehensive understanding of local architectural styles and historical themes as they pertain to the study area was reached and are reflected in this Report. The site visit resulted in the addition of properties to the inventory of potential cultural heritage resources and an improved understanding and recording of views associated with previously assessed properties. Consultation was limited to matters pertaining to the identification of potential cultural heritage resources and historical background information and at the time of writing is considered complete based on the current proposed Project layout.

In addition to consultation with the local heritage community, wpd has also undertaken extensive consultation with 32 participating landowners where Project components are proposed. Many of these landholders are actively involved in agricultural activities and represent the most recent generation to operate family farms which have been in the same family for more than 100 years. Wind generation was identified by select landowners as a means to protect their agricultural heritage, while ensuring the financial viability of farming operations active since the 19th century.

It is important to acknowledge that consultation regarding various aspects of the Project is an ongoing process and it will continue past the completion of the current Report. Therefore, while consultation will continue, the Report will be revised only at a time when the Project layout has been modified and thereby determined to be necessary by MTCS requirements.

## 2.3 VISUALIZATION

As part of the planned February, 2013 accompanied site visit with PEHAC and members of the local heritage community, a total of 52 vantage points were identified which were considered to be iconic, unique, representative, and which revealed environments, contexts and relationships (Appendix C). Of those, views from 32 vantage points were recorded, based on discussions in the field. A total of 12 vantage points were chosen for the preparation of visual simulations (see Appendix G for simulations). The vantage points were chosen based on a number of factors, including:

- Information received from PEHAC and the heritage community regarding significant views, including views described in designation by-laws where applicable;

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Study Methodology

June 2012, Revised October 15, 2013

- Consideration of publically accessible views (although not limited to publically accessible views);
- Views captured which could be applied to other resources and vantage points for comparative purposes based on their topography, existing visual barriers (.e.g., open fields versus tree-cover, buildings, etc.), and distances from proposed turbines; and
- Professional opinion based on similar visual modeling exercises.

The resulting visualizations were prepared not as cultural heritage resources in and of themselves, but rather as tools with which the visual impacts of the Project on identified heritage attributes of heritage resources could be evaluated. For example, where a viewscape was identified to be a heritage attribute contributing to the CHVI of a property, as in the designation by-law of the Rose/Frost Farm Complex (PP-10), the visualizations were used to evaluate the impacts of the Project in **Section 7.0**. A description of the methodology used for visual modeling is provided below and consistent with industry standards:

A 3D cad survey was used to generate an existing conditions surface model as well as a proposed conditions surface model. These surface models were generated using the lowest contour interval possible using standard grading processes. All fixed structures on the survey were massed in as well, using as much detail as the survey has available (building footprints are extruded up to create solid shape for example). Supporting information was re-projected and overlaid on the surface as appropriate (aerial photos, site plan renderings, GIS shape files, additional CAD layers, etc.).

Once locations for the photos were determined, the data collection process was initiated. Before the first photo was taken, the equipment was calibrated with at least three different fixed points on the survey (per standard surveying practices) to ensure all recorded data was registered to existing survey accurately. Once this was done, the survey take two survey points (x, y, and z coordinates) for each camera location; first at the center of the camera location and the second positioned in the center cross hairs of the positioned camera. If more than one photo was taken (in the case of taking images in a panoramic series) then a survey reading was taken for each image. This provided the exact location of camera as well as the direction the camera is pointing.

The camera used in all photo simulation was a full sized CCD (Charge-Coupled Device which is a type of image sensor used for high quality image data) digital camera with a fixed 50mm lens. A 50mm lens most closely reproduces the way a human eye sees the world and provides the most "fair" visual representation of the site. The fixed 50mm lens was used to insure that the focal length does not change from image to image. Finally, a full sized CCD camera (or any traditional 35mm film camera) was necessary to avoid focal length multipliers. Because of the way that digital SLR cameras record information, a 50mm lens will look different from one model camera to the next. A full sized CCD camera recorded the entire frame of view the same way a film camera does and (most importantly) how the visualization software recreates the image.

At each photograph location, whether a single photograph or a series of photographs as part of a panorama, the camera was placed on a tripod and made level. Once all of the data was collected (photos and survey information) it was combined in Autodesk 3DS Max.



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Study Methodology

June 2012, Revised October 15, 2013

The survey information was delivered in a CAD format with the same projection as the 3D survey and 3D surfaces. The re-projection insures that all of the camera locations were accurate to the model. A 3D 50mm camera was snapped at each camera location in Autodesk 3DS Max. Each camera target was snapped to the X and Y coordinates of the target location, but the Z elevation was set to match that of the camera itself (as the camera was made level for each photo). At this point, if necessary, the photograph was imported to verify that the camera was accurate to the existing conditions surface.

At this point the cameras were locked in place and frozen to prevent accidental movement. All proposed conditions were then modeled. The time of day and atmospheric conditions were entered into the environment settings to insure accurate lighting and shadow conditions. Once the proposed conditions were built, images files were rendered out and overlaid over the photographs in Photoshop. Because all of the camera locations in the model were created using recorded survey information, it was crucial that they were not "tweaked" in post-production. Basing all of the camera locations (and directions) on registered survey data is what provided the mathematical accuracy.

## 2.4 O.REG. 359/09 REQUIREMENTS, HERITAGE ASSESSMENT

This Report has been conducted in accordance with O.Reg. 359/09, s.23 (1), (2) and (3). O. Reg.359/09 s.23 (1) states that:

23. (1) If, as a result of the consideration mentioned in subsection 20 (1), a person concludes that engaging in the renewable energy project may have an impact on a heritage resource described in paragraph 2 of subsection 20 (1), the person shall,

(a) conduct a heritage assessment consisting of,

(i) an evaluation of whether there are any heritage resources at the project location, applying the criteria set out in O.Reg. 9/06 (Criteria for Determining Cultural Heritage Value or Interest) made under the Ontario Heritage Act

**Section 4** of this Report satisfies the requirements of O.Reg.359/09, s.23(1)(a)(i).

The Regulation further states that:

(ii) if any heritage resources are identified as a result of the evaluation under subclause (i), an evaluation of any impact of the renewable energy project on the heritage resources and proposed measures to avoid, eliminate or mitigate the impact, which may include a heritage conservation plan.

In order to satisfy O.Reg.359/09, s.23(1)(a)(ii), an assessment of potential Project-related negative impacts was carried out for each cultural heritage resource within the Study Area. This assessment, conducted as per InfoSheet #5 in Heritage Resources in the Land Use Planning Process, Cultural Heritage and Archaeology Policies of the Ontario Provincial Policy Statement, 2005 (MTCS, 2006a), is presented in **Section 8**.



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Study Methodology  
June 2012, Revised October 15, 2013

## 2.4.1 Determining Cultural Heritage Value or Interest (CHVI)

As per O.Reg. 359/09, evaluation of potential cultural heritage resources in the Study Area was performed using criteria set out under O.Reg 9/06 of the OHA. A property or resource meeting one or more of the following criteria is considered significant under the OHA.

1. *The property has design value or physical value because it,*
  - i. *is a rare, unique, representative or early example of a style, type, expression, material or construction method,*
  - ii. *displays a high degree of craftsmanship or artistic merit, or*
  - iii. *demonstrates a high degree of technical or scientific achievement.*
2. *The property has historical value or associative value because it,*
  - i. *has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community,*
  - ii. *yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or*
  - iii. *demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.*
3. *The property has contextual value because it,*
  - i. *is important in defining, maintaining or supporting the character of an area,*
  - ii. *is physically, functionally, visually or historically linked to its surroundings, or*
  - iii. *is a landmark. O. Reg. 9/06, s. 1 (2).*

Evaluations of recorded resources are presented in Appendix A. Where CHVI was identified, attributes that contribute to CHVI were described and a Cultural Heritage Resource (CHR) number was assigned and mapped in **Figure 6**. Each cultural heritage resource was assessed for potential direct or indirect impacts which may result from the Project.

## 2.4.2 Impact Assessment

Assessment of potential direct or indirect impacts of the Project on identified cultural heritage resources in the Study Area considered MTCS guidelines concerning Heritage Impact Assessments and Conservation Plans (MTCS, 2006a).

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Study Methodology  
June 2012, Revised October 15, 2013

MTCS outlines seven potential negative impacts on heritage resources:

- **Destruction** of any, or part of any, significant heritage attributes or features;
- **Alteration** that is not sympathetic, or is incompatible, with the historic fabric and appearance;
- **Shadows** created that alter the appearance of a heritage attribute or change the viability 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 within, from, or of built and natural features;
- **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; and
- **Land disturbances** such as a change in grade that alters soils and drainage patterns that adversely affect an archaeological resource.

Land disturbances are being assessed in separate Stage 1 and 2 Archaeological Assessments and have not been included in the current evaluation.

Identification of potential impacts considered the proposed site plan in relation to identified cultural heritage resources (**Figure 2**).



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Project Context  
June 2012, Revised October 15, 2013

## 3.0 Project Context

### 3.1 PROJECT DESCRIPTION

wpd is a renewable energy development company based in Mississauga, Ontario and is dedicated to providing renewable energy for Ontario. Further information can be found on the company website at <http://www.canada.wpd.de>. wpd is proposing to develop, construct and operate the White Pines Wind Project (the Project) in Prince Edward County, Ontario, in response to the Government of Ontario's initiative to promote the development of renewable electricity in the province. The Project was awarded an Ontario Feed-In-Tariff (FIT) contract with the Ontario Power Authority (OPA) in May, 2010 (FIT Contract No. F-000675-WIN-130-601).

The wind turbine Study Area is generally bounded by: Brummell Road and Bond Road to the north; Lighthall Road to the west; Gravelly Bay Road to the east and Lake Ontario to the south (**Figure 1 and Figure 2**).

The basic components of the Project include:

- 29 REpower MM92-2.05 MW wind turbine generators with a total maximum installed nameplate capacity of 59.45 MW (FIT Contract maximum of 60 MW);
- step-up transformers located adjacent to each turbine;
- an electrical power line system;
- two transformer substations (substation);
- turbine access roads; and
- a fenced storage area.

Temporary components during construction include: work and storage areas at the turbine locations and along access roads and laydown areas.

The collector system will transport the electricity generated from each turbine to a substation located near Turbine 7 (T07) off Royal Road east of Dainard Road. An interconnection line will connect the substation near T07 to a substation to be built near the Picton Transformer Station (TS) on County Road 5. The interconnection line is being assessed in a separate Heritage Assessment Report.

Details regarding Project components are provided below and can be found in the Project Description Report for the Project.

#### 3.1.1 Wind Turbine Generators

The Project consists of 29 Repower 2.05 MW wind turbines. The Project has a total maximum installed nameplate capacity of 59.45 MW (FIT Contract maximum of 60 MW). The wind turbines consist of a 100



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Project Context  
June 2012, Revised October 15, 2013

m steel tube tower, three blades (45.2 m in length), the nacelle, hub, and step-up transformer. The turbine tower base is approximately 4-5 m in diameter and would be anchored to the concrete foundation using large diameter anchor bolts. Proposed locations of the turbines are shown on **Figure 2**.

## 3.1.2 Crane Pads

Crane pads will be constructed at the same time as the access roads and will be within the construction area at each turbine site. The crane pad area will be approximately 30 m x 45 m. Generally, the process for crane pad construction will be the same as that for access roads; surface material will be stripped and stockpiled (topsoil separate from subsoil) and a gravel or stone base applied. The excavated soil will be re-used on site as feasible. Once the turbine erection is complete, the gravel area around each turbine and the crane pads will be kept, while the remaining construction area will be rehabilitated to pre-existing conditions. Perimeter surface hydrology will be maintained during crane pad construction.

## 3.1.3 Electrical Collector Lines and Fibre Optic Cable

From each step-up transformer, 34.5 kV underground and/or overhead collector lines carry the electricity generated by the turbines to a substation located on private property, along the access road to turbine T07. Where feasible, underground collector lines and fibre optic cables have been incorporated into access roads. Where collector lines will be underground, a trench is ploughed and reel trucks dispense the cable at a depth of approximately 1.0 m. The cables will be bedded in sand and the trench will be backfilled with the excavated material. Where directional drilling will be required to install the cable, it will be enclosed in plastic conduits. No blasting is anticipated for the installation of underground collector lines. If bedrock is encountered close to the surface it will be removed by mechanical digger to the necessary depth.

For overhead collector line sections installed in the municipal road allowance that require new poles, equipment used may include a tandem truck pole carrier equipped with an integral crane, a truck or track mounted pole auger, and a backhoe or track mounted excavator. After delivery of the poles, post insulators will be installed and poles will be set into holes augured to a depth of approximately two to three metres. The poles will be plumbed, backfilled, and stabilized with guy wires as appropriate. The power lines will then be strung using reel trailers and tensioning machines. Some sections of the municipal road allowance contain existing distribution lines. In these areas, the existing poles will be upgraded using methods described above.

A separate Heritage Assessment Report has been prepared for the Project interconnector line.

## 3.1.4 Substations

The substation yards will be approximately 70 m by 70 m. Construction of the substations will include excavation of the area to allow construction of concrete foundations and installation of gravel. An electrical grounding grid, to which the transformer and all other electrical equipment and structures are grounded, will be installed throughout the yards and covered by gravel fill. The main transformer and other substation structures will be installed on the foundations and electrically connected to the incoming and outgoing power lines. A chain link fence will enclose the yards and will be equipped with a locked

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Project Context

June 2012, Revised October 15, 2013

vehicle gate to allow for maintenance access. An oil containment structure will be constructed for the transformer, acting as a double containment system for the oil to be used in the transformer.

## 3.1.5 Access Roads

Approximately 16.7 km of new access roads will be constructed to support construction and transportation vehicles. The gravel access roads will be used periodically during operation for ongoing turbine maintenance. The access roads will be approximately 5 m wide (5.5 m at a turning radius) with a 10 m wide staging area (15 m total), and include 30 m wide access road entrances off municipal roads (with a 15 m wide staging area). Staging areas will be temporary and will be restored to pre-existing conditions at the end of the construction phase.

All access roads have been planned in consultation with the landowner to parallel property boundaries to reduce potential impacts to drainage systems, farm operations and agricultural lands wherever possible. The excavation for the roadbed is expected to be above the water table at all times of the year. No blasting is anticipated for the access roads. If bedrock is encountered close to the surface it will be removed by mechanical digger to the necessary depth required for the roadbed.

The access roads and associated underground electrical collector lines and fibre optic cables will require permanent culvert installations for both watercourse crossings and for equalization of surface water flow. All crossings will require permit approval from Quinte Conservation.

## 3.1.6 Storage Area

A storage area will be constructed near T06 to contain a variety of materials required throughout the construction and operation of the Project. A gravel or stone base will be applied to the storage area and a chain link fence will enclose the storage area, equipped with a locked vehicle gate to allow for maintenance access.

## 3.2 TEMPORARY COMPONENTS

Lands to be temporarily used during the construction are staging areas at each turbine location (including construction areas and crane laydown areas), temporary areas for access road and collector line construction, including staging areas, some delivery truck turnaround areas, access road entrances, and staging areas for collector lines. Any temporary structures used during construction will not be serviced, and will be placed within the delineated construction work areas.

Following construction activities, all temporary work locations will be restored to pre-existing conditions. Restoration work will start following installation of the wind turbines and removal of all construction materials and equipment from each turbine site. This includes removal of the granular and geotextile material from applicable areas. Restoration activities will follow the Site Restoration Plan outlined in the Decommissioning Plan Report.

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Project Context  
June 2012, Revised October 15, 2013

## 3.2.1 Construction Areas

A construction area will be used around the turbine base, within which will be a turbine staging area and the permanent crane pad. The turbine staging area will be used for temporary storage of turbine components, parking, and foundation soil (excavated soil from foundation area) pile. Turbine components will be delivered directly to the staging areas for temporary storage until assembled. Staging areas will not be excavated or gravelled, and will be restored to pre-existing conditions at the end of the construction phase. Staging areas will be actively used throughout the construction phase, to varying degrees during all construction activities at the siting areas.

## 3.2.2 Crane Laydown Areas

A heavy-lift crawler crane will be used to assemble the turbines. Crane laydown areas are temporary platforms for the helper cranes that parallel access roads, and will be put in place at the same time as the access roads. Crane paths for movement of the crane between turbine sites will be located along access roads and municipal roads where possible, and the crane will be in some places broken down and transported to other turbine siting areas for re-assembly. Crane laydown areas will be approximately 6 m x 120 m.

Generally, the process for crane laydown area construction will be the same as that for access roads: surface material will be stripped and stockpiled (topsoil separate from subsoil) and a gravel or stone base is applied. The gravel base may be deeper than that of the access roads at an approximate depth of 0.5 m of Granular B type gravel (final amount to be determined following completion of detailed geotechnical studies, and in consultation with the turbine supplier). The excavated soil will be re-used on site as feasible. Metal plates will be laid on the ground prior to crane assembly, and will be disassembled after assembly of the crane.

Once the turbine erection is complete, the crane laydown areas will be rehabilitated to pre-existing conditions. Perimeter surface hydrology will be maintained during construction, and all proposed crane laydown areas have been located on private lands where landowners have agreements with wpd.

## 3.2.3 Staging Areas

A 10 m staging area will be required for construction of the 5 m wide access road (15 m total). The timing of the temporary use of land for the access road staging areas will begin with the construction of the access roads and these areas will be rehabilitated at the end of the construction phase. The duration of time that the land will be actively used is expected to be 5-6 months.

## 3.2.4 Delivery Truck Turnaround Areas

All sites require turnaround areas for delivery trucks. These turnaround areas will be the same width as access roads, with turning radii, and will be constructed in the same manner, including the requirement for staging areas. The timing of the temporary use of land for the delivery truck turnaround areas will

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Project Context  
June 2012, Revised October 15, 2013

begin with the construction of the access roads and these areas will be restored to pre-existing conditions, as possible, at the end of the construction phase.

## 3.2.5 Access Road Entrances

Access road entrances will require a wider turning radius for construction/delivery vehicles. Entrances will be approximately 30 m wide during the construction phase, and can be reduced to an appropriate width at the end of the construction phase to account for routine maintenance vehicles once commissioned.

## 3.3 PROJECT LOCATION

In accordance with O. Reg. 359/09, the "Project Location" includes all land and buildings/structures associated with the Project and any air space in which the Project will occupy. This includes structures such as turbines, access roads and power lines as well as any temporary work areas (the 'constructible area' for the Project) which are required to be utilized during the construction of the Project. The proposed Project Location and Project Components are shown in **Figure 2**.

O. Reg. 359/09 considers the REA process in terms of the Project Location. The siting of wind projects to determine the Project Location is an iterative process. Many factors are considered during the siting process including, but not limited to, environmental considerations, technological requirements, and land access and availability. In order to evaluate a broader range of factors influencing the siting process, a larger Study Area is defined. Information gathered regarding the larger Study Area feeds into the siting exercise to determine an appropriate Project Location given these various factors. While the identification of CHR is typically limited to the Project Location as defined in O. Reg. 35/09, information collected during the initial phase of research as provided in **Section 4.0** was taken into account while determining the Project Location as it is currently presented. Furthermore, continued consultation contributes to ongoing modifications to the Project Layout, and subsequently, the Project Location.

## 3.4 PHYSICAL SETTING

The Project Study Area is generally bounded by: Brummell Road and Bond Road to the north; Lighthall Road to the west; Gravelly Bay Road to the east and Lake Ontario to the south (**Figures 1 and 2**). It is composed of approximately 7800 ha (19,274 acres) of primarily agricultural and undeveloped land in the historic Townships of South Marysburgh and Athol in Prince Edward County, Ontario.

The Study Area is located within the Prince Edward Peninsula Physiographic Region, a low plateau of flat limestone that projects into the eastern part of Lake Ontario (Chapman and Putnam, 1984). The peninsula was separated from the mainland in the 1880s, following construction of the Murray Canal (Cruikshank and Stokes, 1984). The surficial geology of the Study Area is typical of Prince Edward County and consists predominantly of Farmington loam. Farmington loam is characterized by a shallow layer of well to excessively drained soil of about 30 cm above limestone bedrock. The majority of the Farmington loam occurs as broad, level tablelands. Although agriculture predominates land use in the area, Farmington loam is less suited for cultivation than pasturing and large tracts of land have



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Project Context

June 2012, Revised October 15, 2013

traditionally been used for grazing land (Richards and Morwick, 1948). Some pockets of Ameliasburg loam, Athol sandy loam, Gerow clay loam, South Bay clay loam, Brighton sandy loam and marsh persist across the Study Area (Richards and Morwick, 1948).

Much of the area has been cleared for agriculture (mainly pasture) but some small stands of trees remain intact (**Figure 2**). Major topographic features include: Lake Ontario to the south and east of the Study Area; South Bay, a small harbor of Lake Ontario in the northeast corner of the Study Area, and Black River which intersects the Study Area south of Bond Road (**Figure 1**). A large Provincially Significant wetland is located at the south-east part of the Study Area. Numerous smaller watercourses are found throughout the Study Area (**Figures 1 and 2**). The Village of Milford is located in the northeast corner of the Study Area.

The unsuitability of much of the County's land for cultivation as a result of shallow soils, its location in relation to Lake Ontario and its early survey and settlement patterns (**Section 4.2**) have shaped the general cultural landscape of the Study Area throughout its history. Visible remnants of the evolution of Prince Edward County and prevalent themes are located throughout the County and the Study Area, particularly those related to agriculture.

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Historical Context

June 2012, Revised October 15, 2013

## 4.0 Historical Context

### 4.1 PRE-CONTACT CONTEXT

The following summary of the prehistoric occupation of the Pre-Contact cultural context is based on syntheses in Archaeologix (2008), Ellis and Ferris (1990), Jacques Whitford (2008), Pilon (1999) and Wright (1995).

Identifiable human occupation of Ontario begins just after the end of the Wisconsin Glacial period. The first human settlement can be traced back 11,000 years, when this area was settled by Native groups that had been living to the south of the emerging Great Lakes. This initial occupation is referred to as the "Palaeo-Indian" archaeological culture.

Early Palaeo-Indian (EPI) (11,000-10,400 before present BP) settlement patterns suggest that small groups, or "bands", followed a pattern of seasonal mobility extending over large territories. Many (although by no means all) of the EPI sites were located on former beach ridges associated with Lake Algonquin, the post-glacial lake occupying the Lake Huron/Georgian Bay basin, and research/evidence indicates that the vegetative cover of these areas would have consisted of open spruce parkland, given the cool climatic conditions. EPI site location often appears to be located in areas which would have intersected with migratory caribou herds.

The Late Palaeo-Indian (LPI) period (10,400-10,000 BP) is poorly understood compared to the EPI, the result of less research focus than the EPI. Like the EPI, LPI peoples covered large territories as they moved around to exploit different resources. Environmental conditions in Eastern Ontario were sufficient to allow for a Late Palaeo-Indian occupation, although the evidence of such is still very limited.

The transition from the Palaeo-Indian period to the Archaic archaeological culture of Ontario prehistory is evidenced in the archaeological record by the development of new tool technologies, the result of utilising an increasing number of resources as compared to peoples from earlier archaeological cultures, and developing a broader based series of tools to more intensively exploit those resources. Late Archaic sites are far more numerous than either Early or Middle Archaic sites. It appears that the increase in numbers of sites at least partly represents an increase in population. However, around 4,500 BP water levels in the Great Lakes began to rise, taking their modern form. It is likely that the relative paucity of earlier Archaic sites is due to their being inundated under the rising lake levels.

The Early Woodland period (2,900-2,200 BP) is distinguished from the Late Archaic period primarily by the addition of ceramic technology. While the introduction of pottery provides a useful demarcation point for archaeologists, it may have made less difference in the lives of the Early Woodland peoples. The first pots were very crudely constructed, thick walled, and friable. These vessels were not easily portable, and individual pots must not have enjoyed a long use life. There have also been numerous Early Woodland sites located at which no pottery was found, suggesting that these poorly constructed, undecorated vessels had yet to assume a central position in the day-to-day lives of Early Woodland peoples. Other than the



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Historical Context

June 2012, Revised October 15, 2013

introduction of this rather limited ceramic technology, the life-ways of Early Woodland peoples show a great deal of continuity with the preceding Late Archaic period.

In terms of settlement and subsistence patterns, the Middle Woodland (2,400 B.C.-1,400 BP) provides a major point of departure from the Archaic and Early Woodland periods. While Middle Woodland peoples still relied on hunting and gathering to meet their subsistence requirements, fish were becoming an even more important part of the diet. It is also at the beginning of the Middle Woodland period that rich, densely occupied sites appear along the margins of major rivers and lakes. This shift towards a greater degree of sedentism continues the trend witnessed from at least Middle Archaic times, and provides a prelude to the developments that follow during the Late Woodland period. Burial mounds, such as the Serpent Mounds at Rice Lake, near Peterborough, are seen during this period, although their use markedly declines around 1550 BP.

The Late Woodland period in Southern Ontario is associated with societies referred to as the Ontario Iroquois Tradition. During the end of the Late Woodland most, if not all, of the Iroquoian communities along the north shore of Lake Ontario had moved by about 1600 either northward, joining with other groups in Simcoe County to form the Petun and Huron, or westward to join other ancestral groups of the Neutral, situated at the west end of Lake Ontario and the Niagara Peninsula.

In the absence of protracted Iroquoian occupation of the north shore of Lake Ontario, the area was occupied by the Mississauga, a band of the Ojibwa nation by the time of initial contact between Aboriginals and Europeans. It was the Mississauga who established links to French fur traders in Southern Ontario in the 1600s. By the late 1600s the New York state based Five Nations Iroquois, in particular the Seneca, were using the central north shore of Lake Ontario for hunting, fishing, and participation in the European fur trade.

Within Prince Edward County, the Carrying Place, located northwest of the Study Area, was used by pre-contact populations and fur traders as a portage between Lake Ontario and the River Trent, linking Lake Ontario to Lake Huron. It was at the Carrying Place, in 1787, that the Gunshot Treaty was signed, in which all of the land from Lake Ontario to Lake Simcoe between the Bay of Quinte and Etobicoke River were transferred from the Mississauga to the British Government.

## 4.2 EURO-CANADIAN SETTLEMENT

As a result of its location, Prince Edward County was one of the earliest areas settled as part of the land granting program following the American War of Independence. Marysburgh was the first township in the peninsula surveyed in 1784 (Cruikshank and Stokes, 1984). The survey was undertaken under great time pressure and not only did the complex topography and shape of the coastline result in technical difficulties laying in a survey grid (Chapman and Putnam, 1984), but the accessible location of the County had given rise to the arrival of squatters (Lunn, 1967). The resulting lots and concessions are perhaps the most irregular in the province. Evidence of survey patterns in the Study area is visible in a number of winding and crooked rural roads (Plate 2).



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Historical Context

June 2012, Revised October 15, 2013

Survey of Prince Edward County was initiated by Surveyor General Samuel Holland in 1783, as part of the land granting program for settling United Empire Loyalists after the American War of Independence. The first township in the peninsula surveyed was Marysburgh in 1784 followed by Sophiasburgh in 1785 (Cruikshank and Stokes, 1984). Settlement started in 1784 in Marysburgh. More settlers arrived in the adjoining townships, Sophiasburgh and Ameliasburgh, in the 1780s and early 1790s. Athol Township was first settled in 1788 as a part of the original 'Fifth Town' of Upper Canada along with parts of Hallowell and South and North Marysburgh townships. It was given separate township status in 1848 owing to the displeasure of the townspeople over the inaccessibility of proper local government due to the large size of the jurisdiction (Belden, 1878).

## 4.2.1 Early Settlement Patterns

The first settlers generally drew lots in their preferred areas resulting in families locating close together. A combination of geography, time constraints, squatters and limitations of the tools being used meant that the survey of Prince Edward County was incomplete and inaccurate in the autumn of 1784 when settlers drew their lots (Lunn, 1967). The irregular nature of the survey lots in the County is still evident in the configuration of roads and property boundaries.

By 1842, Prince Edward County was settled, with less than 1,500 acres left unoccupied. Since a large portion of Prince Edward County was relatively poor agriculturally, the early settlers engaged in pursuits other than or in addition to farming in order to supplement farm income (Cruikshank and Stokes, 1984). The shoreline provided easy access to water transportation which favoured fishing and shipbuilding.

By the 1863 Tremaine map of Prince Edward County, settlement was widespread (**Figure 3**). Churches, schoolhouses and settlements were located throughout the Study Area. Belden's 1878 atlas shows subdivided lots and structures along concession roads throughout the area (**Figures 4 and 5**). Where possible, these maps have been reviewed for property specific information and cross-referenced with Census data and Historical Architectural Survey of Prince Edward (HASPE) files for resource evaluation.

Early farmsteads within the Study Area are generally narrowly setback from road allowances with tightly grouped outbuildings. Groups of early farmsteads can be found at major crossroads, including at the intersection of present-day Royal Road and Dainard Road. Settlements developed at other crossroads throughout the County as small commercial and social centres, including the Hamlet of Milford, Port Milford and Balfour.

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Historical Context

June 2012, Revised October 15, 2013



Plate 1: Mariner's Museum overlooking South Bay



Plate 2: Bend in Long Point Road near Union G.M. Church

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Historical Context

June 2012, Revised October 15, 2013



Plate 3: Royal Road Streetscape – narrowly setback farm complexes and tree plantings. Royal Street Cheese Factory at left.

## 4.2.2 Agriculture

Agriculture was the driving force for the settlement and development of Prince Edward County; however, as previously discussed, the surficial geology and topography of the Study Area are not particularly conducive to cultivation. Pasturing became the primary agricultural activity in the County as Canada blue grass grows well on the area's Farmington loam soils (Richards and Morwick, 1948). The need for large pasturelands led to the abandonment of a number of farmsteads in the Long Point area by the early 20th century (Richards and Morwick, 1948). Many of these vacant structures were demolished when the Royal Canadian Air Force established the former air to ground firing range in Long Point.

Dairy farming became an industrial activity in Prince Edward County in 1867 when cheese factories were established at Cherry Valley and Bloomfield (Akerman, 1971). Prior to this, cheese-making was primarily done on a smaller scale by individual farms, but the cheese factories established in 1867 were organized as joint stock factories (Akerman, 1971). These early cheese factories operated from May to September as farmers would retain spring and fall milk for butter. Milk, which was generally transported to the factories during the hot summer months, was not always cared for properly and early cheese factories struggled with losses due to the low quality of the product that often resulted (Akerman, 1971).



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Historical Context

June 2012, Revised October 15, 2013

The success of early cheese factories, the numbers of which multiplied in the 1870s and 80s, was dependent on the cooperation of local farmers and the tenacity of early supporters despite the financial instability of the venture. By May, 1890 dairy had become such an important industry in the County that a local Cheese Board was organized and in 1935 a Cheese Producers' Association was established (Akerman, 1971).

Although the majority of cheese factories in Prince Edward County have now disappeared, vestiges of the dairy industry which was once the staple of the County are still visible on the landscape, including: several remaining cheese factory buildings (Plate 4); dairy farms in close proximity to former or extant cheese factories; rolling pastures; and tree-lined streets with canopies shading roads between farms, factories and markets (Plate 5).



Plate 4: Royal Street Cheese Factory

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Historical Context

June 2012, Revised October 15, 2013



Plate 5: Tree-lined portion of Brewers Road near Dulmage-Farrington Driveshed

## 4.2.3 Interaction with the Physical Setting

Lake Ontario has had a great impact on the evolution of the cultural landscape of Prince Edward County. The shoreline provided settlers with easy access to water transportation and - particularly along South Bay - there is visible evidence of this relationship with the surrounding water. The Cooper House and Port Milford General Store, in Port Milford, were built to capitalize on the shoreline and the string of historic buildings stretching along County Road 13, south of the bay emphasizes this relationship. The False Ducks Lighthouse, now partially residing at the Mariner's Museum, was once located southeast of the museum beyond Long Point to warn boats of the dangerous False Ducks (Plate 1).

In addition to use-related relationships with the surrounding water, a number of spatial relationships are also evident throughout the Study Area related to views of the water. In particular, a number of County churches, private residences, and the South Bay Cemetery all overlook the water (Plates 6 to 8). Recreational land use also became more popular during the late 20th century.

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Historical Context

June 2012, Revised October 15, 2013



Plate 6: South Bay Cemetery



Plate 7: Residence, orchard and outbuildings along Long Point Road (County Road 13) overlooking the water



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Historical Context

June 2012, Revised October 15, 2013



Plate 8: Scott's Mill near Milford (Mount Tabor United Church in the background above Mill Pond)

Several historical themes were identified through the course of research. Significant themes identified in consultation with PEHAC include: churches and schoolhouses; century farms and barns; the dairy industry; shipping and ship building; early settlement along Royal Road; clusters of early farmsteads at major crossroads; and the "Loyalist" style of architecture. The "Loyalist" influence in southwestern Ontario comes from the influx of Americans after the War of Independence in 1776. They brought with them an "Adams" interpretation of Georgian styling mixed with neo-Classical elements and European influence.



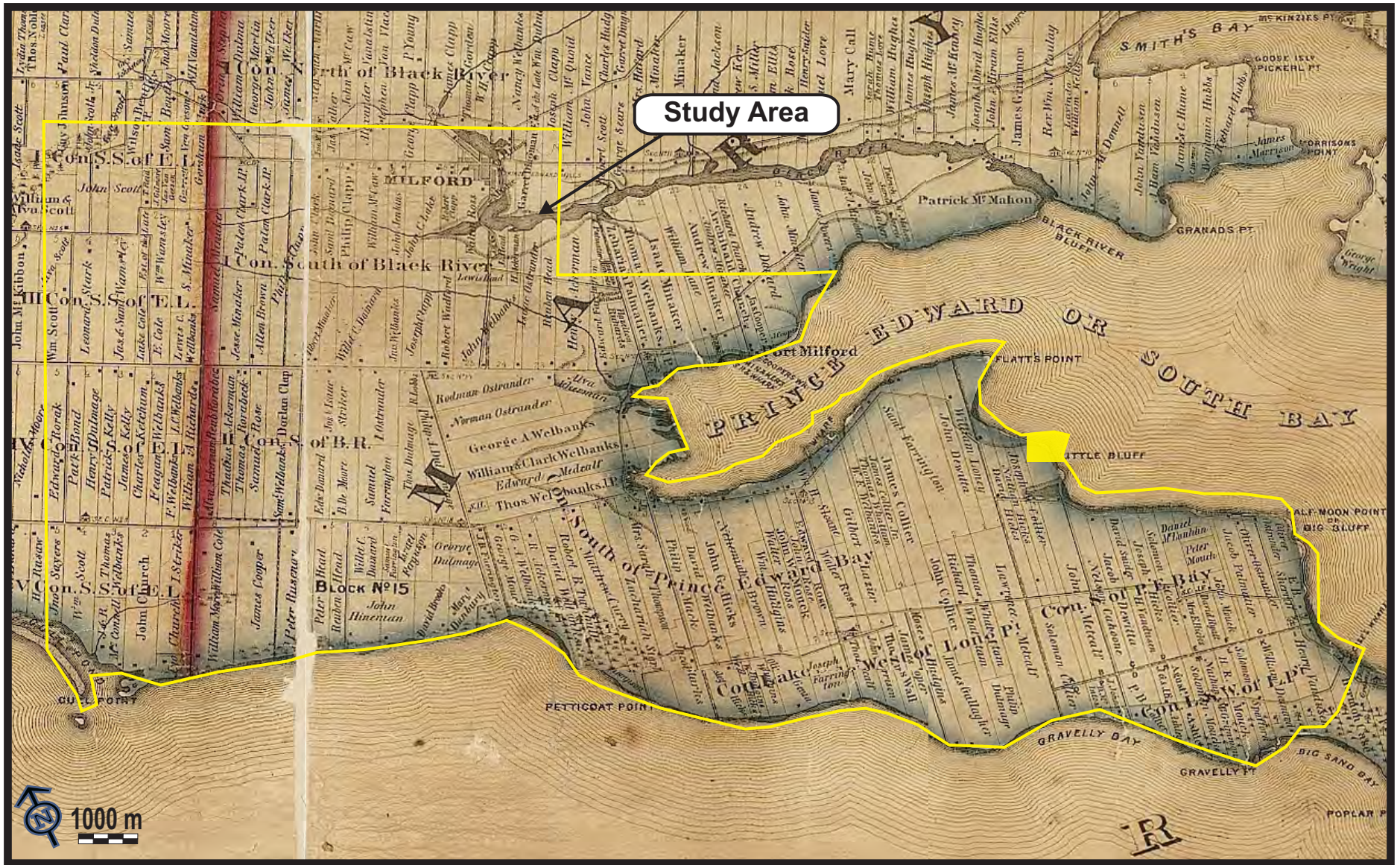


Figure 3: Study Area as shown on 1863 Tremaine Map



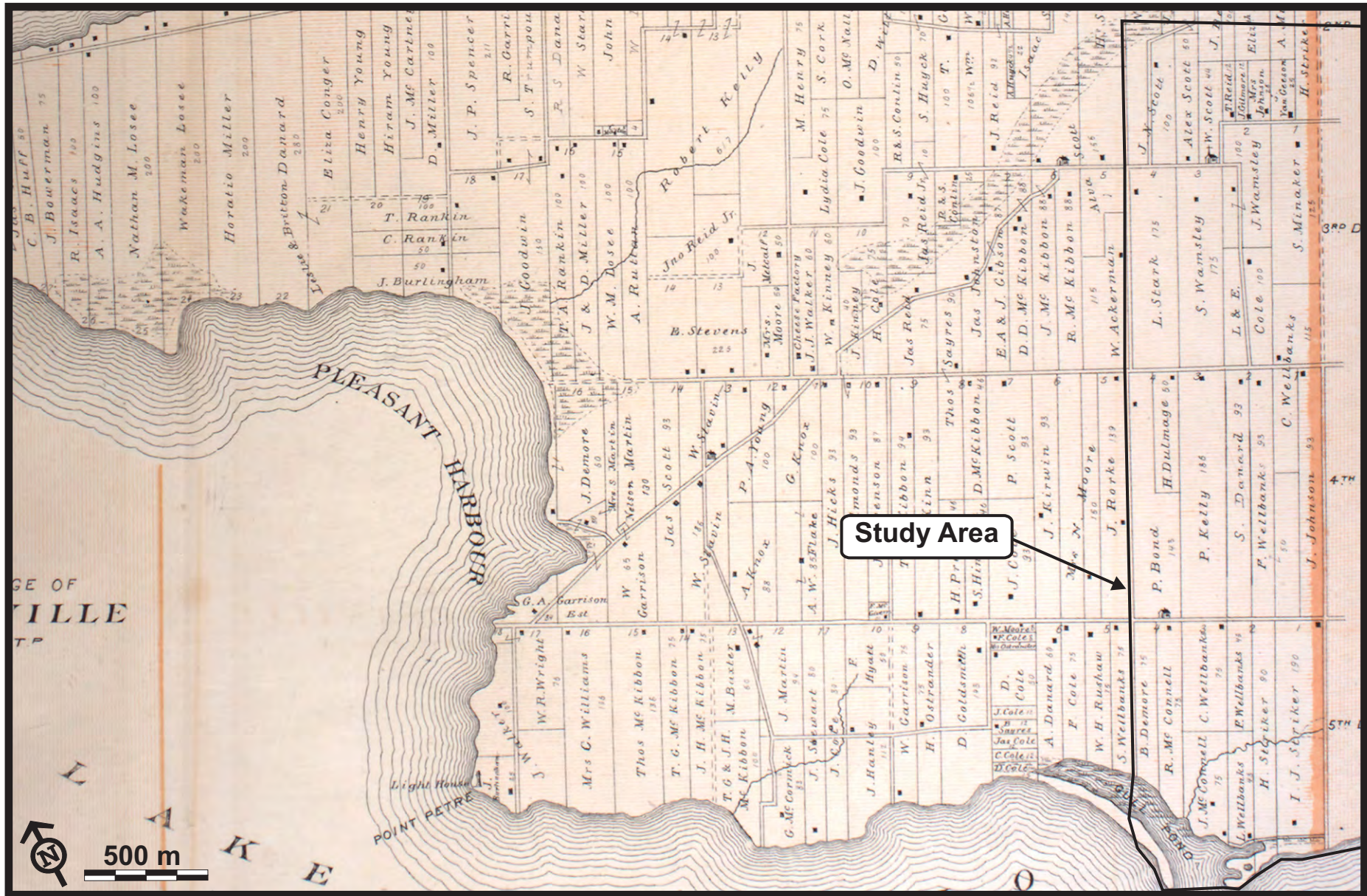


Figure 4: Study Area as shown on Belden’s 1878 Map of Athol Township



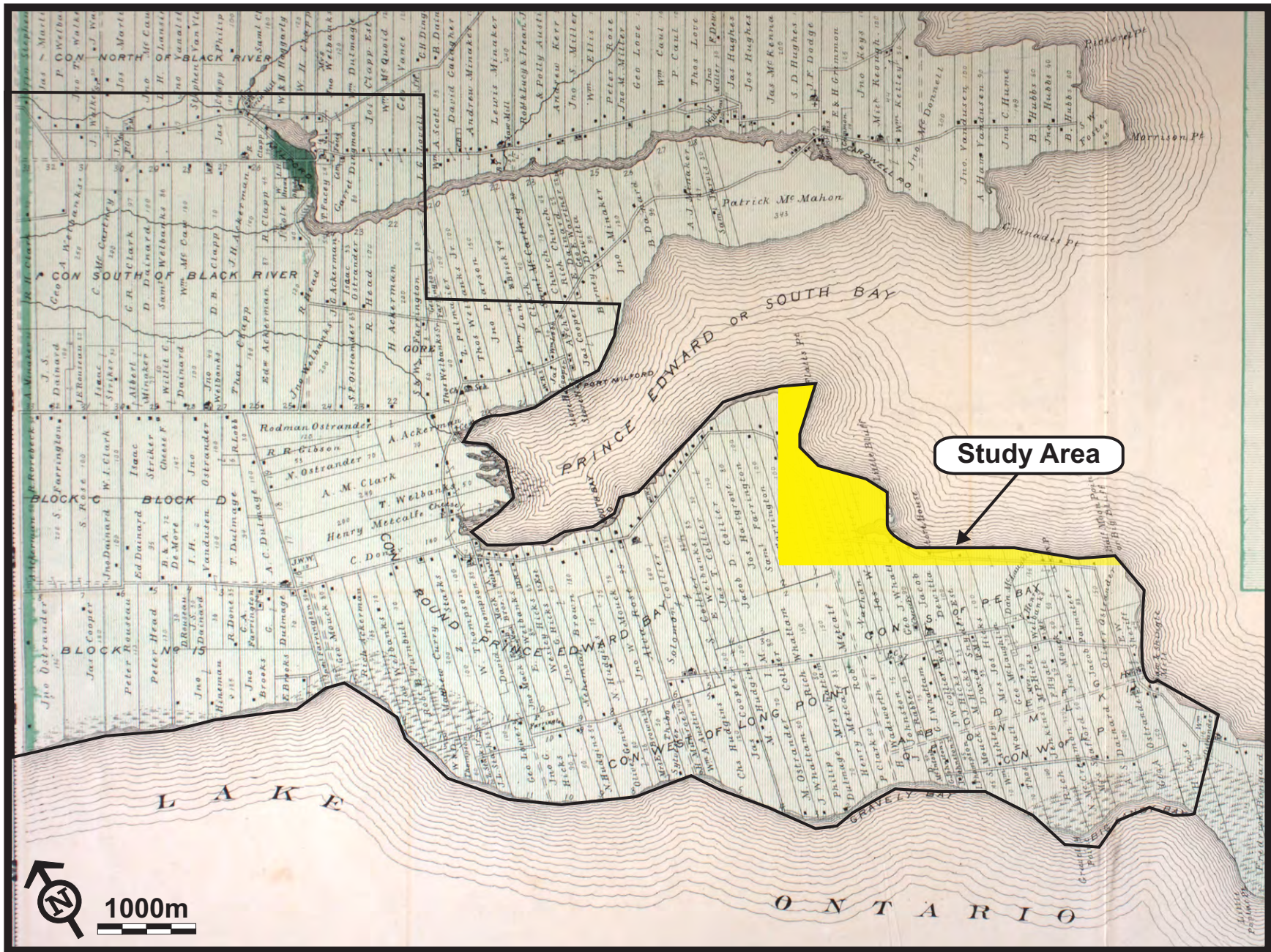


Figure 5: Study Area as shown on Belden's 1878 Map of South Marysburgh Township



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Protected Properties  
June 2012, Revised October 15, 2013

## 5.0 Protected Properties

### 5.1 POLICY FRAMEWORK

There is a requirement under O.Reg.359/09 to identify protected properties located within or adjacent to the Project Location. With respect to protected properties, the Regulation states:

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 the section.

Item	Column 1	Column 2	Column 3
	Description of property.	Person or body whose authorization is required.	Type of authorization required to be submitted.
1	A property that is the subject of an agreement, covenant or easement entered into under clause 10 (1) (b) of the <i>Ontario Heritage Act</i> .	Ontario Heritage Trust.	Authorization to undertake any activities related to the renewable energy project that require the approval of the Ontario Heritage Trust pursuant to the easement or covenant.
2	A property in respect of which a notice of intention to designate the property to be of cultural heritage value or interest has been given in accordance with section 29 of the <i>Ontario Heritage Act</i> .	Municipality that gave the notice.	If, as part of the renewable energy project, the alteration of the property or the demolition or removal of a building or structure on the property is proposed, consent to alter the property or demolish or remove the building or structure.
3	A property designated by a municipal by-law made under section 29 of the <i>Ontario Heritage Act</i> as a property of cultural heritage value or interest.	Municipality that made the by-law.	If, as part of the renewable energy project, the alteration of the property or the demolition or removal of a building or structure on the property is proposed, consent to alter the property or demolish or remove the building or structure.
4	A property designated by order of the Minister of Culture made under section 34.5 of the <i>Ontario Heritage Act</i>	Minister of Culture.	If, as part of the renewable energy project, the alteration of the property or the demolition or removal of a building or structure on the property is proposed, consent to alter the property or demolish or remove the building or structure.
5	A property in respect of which a notice of intention to designate the property as property of cultural heritage value or interest of provincial significance has been given in accordance with section 34.6 of the <i>Ontario Heritage Act</i> .	Minister of Culture.	If, as part of the renewable energy project, the alteration of the property or the demolition or removal of a building or structure on the property is proposed, consent to alter the property or demolish or remove the building or structure.

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Protected Properties  
June 2012, Revised October 15, 2013

**Table 1: Table from Section 19, O.Reg. 359/09**

Item	Column 1	Column 2	Column 3
	Description of property.	Person or body whose authorization is required.	Type of authorization required to be submitted.
6	A property that is the subject of an easement or a covenant entered into under section 37 of the <i>Ontario Heritage Act</i> .	Municipality that entered into the easement or covenant.	Authorization to undertake any activities related to the renewable energy project that require the approval of the municipality that entered into the easement or covenant.
7	A property that is part of an area designated by a municipal by-law made under section 41 of the <i>Ontario Heritage Act</i> as a heritage conservation district.	Municipality that made the by-law.	If, as part of the renewable energy project, the alteration of the property or the erection, demolition or removal of a building or structure on the property is proposed, a permit to alter the property or to erect, demolish or remove a building or structure or to erect, demolish or remove a building or structure on the property.
8	A property designated as a historic site under Regulation 880 of the Revised Regulations of Ontario, 1990 (Historic Sites) made under the <i>Ontario Heritage Act</i> .	Minister of Culture.	If, as part of the renewable energy project, the excavation or alteration of the property of historical significance is proposed, a permit to excavate or alter the property.

The Regulation further states that:

*(2) If the project location is on a property described in Column 1 of the Table to this section, a person mentioned in subsection (1) shall submit, as part of the application for the issue of a renewable energy approval, a copy of the written authorization,*

*(a) of the person or body set out opposite the description in Column 2 of the Table; and*

*(b) of the type set out opposite the description in Column 3 of the Table.*

This assessment included consultation with the County of Prince Edward and review of Ontario Heritage Trust (OHT) and MTCS documents to determine whether or not protected properties, as listed in Section 19 (Table 1) of the Regulation, are located within or adjacent to the Project Location.

## 5.2 EXISTING PROTECTED PROPERTIES

A Protected Properties Report was completed and submitted to the MTCS in May, 2012. Written comments were provided by the MTCS on June 13, 2012. The Protected Properties Report identified a total of nine protected properties, including:

- the Dulmage-Farrington-Marshall Driveshed (PP-1), designated under Part IV of the OHA in October, 1990, according to By-Law No. 1967;

## WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Protected Properties

June 2012, Revised October 15, 2013

- the Moses Hudgins House (PP-2), designated under Part IV of the OHA in February 2011, according to Municipal By-Law No. 2793-2011;
- the Isaac Stryker House (PP-3), designated under Part IV of the OHA in in November, 2008, according By-Law No. 2321-2008;
- the Mariner's Museum (PP-4), designated under Part IV of the OHA in May 2011, according to By-Law No. 2870-2011;
- the Henry House (PP-5), designated under Part IV of the OHA in October, 1985, according to By-Law No. 1628;
- the Matheson House (PP-6), designated under Part IV of the OHA in 1985, according to By-Law No. 1628 and amended under By-Law No. 2402-2009 in 2009;
- the Milford Town Hall (PP-7), designated under Part IV of the OHA in 2006, according to By-Law No. 1758-2006;
- the Mount Tabor United Church (PP-8), designated under Part IV of the OHA in January 1986, according to Municipal By-law #1677; and
- the Royal Street Cheese Factory (PP-9), designated under Part IV of the OHA in February 2011, according to Municipal By-Law No. 2794-2011.

In addition to these nine protected properties, a further three protected properties were designated, following completion of the May 2012 Protected Properties Report and the June 2012 White Pines Wind Project Heritage Assessment Report. Although both properties were discussed in previous reports, at the time they were identified as CHR as opposed to protected properties. Additional protected properties included in this Report are:

- the Rose/Frost Farm Complex (PP-10), designated under Part IV of the OHA on October 11, 2012 (see By-Law No. 3141-2012, Appendix D); and
- the Stryker Log House (PP-11), designated under Part IV of the OHA on October 11, 2012 (see By-Law No. 3140-2012, Appendix D).

A third protected property, the Miller Property Nature Reserve, protected by an OHT conservation easement under c. 10(1)(b) of the Ontario Heritage Act as of February 12, 2012, was also identified following completion of the May 2012 Protected Properties Report (see letter, Appendix C). As the Miller Nature Reserve is protected under a natural heritage easement, potential impacts to that property are being addressed through on-going consultation and the natural heritage assessment process. No cultural heritage issues that require addressing in this Report are associated with that protected property.

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Cultural Heritage Resources  
June 2012, Revised October 15, 2013

## 6.0 Cultural Heritage Resources

### 6.1 POLICY FRAMEWORK

**Built Heritage Resources (BHRs)** are defined as "one or more significant buildings, structures, monuments, installations or remains associated with architectural, cultural, social, political, economic or military history and identified as being important to a community. These resources may be identified through designation or heritage conservation easement under the OHA, or listed by local, provincial or federal jurisdictions" (MTCS, 2006c).

**Cultural Heritage Landscapes (CHL)** for the purposes of this study are: "a defined geographical area of heritage significance which has been modified by human activities and is valued by a community. A landscape involves a grouping(s) of individual heritage features such as structures, spaces, archaeological sites and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts" (MTCS, 2006b).

There are three widely accepted types of cultural heritage landscapes (better known internationally as cultural landscapes). This typology was adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Committee in the 1992 revisions to their Operational Guidelines which defines cultural landscapes as the "combined works of nature and of man" (UNESCO, 2008). The Operation Guidelines identify the three types as:

- **Designed Landscapes:** those which have been intentionally designed and created by man. (e.g., historic gardens and parks);
- **Evolved Landscapes:** this type includes both relict and continuing landscapes resulting from social, economic, administrative, and/or religious imperative and has developed into its present form as a result of its natural environmental context; and
- **Associative Landscapes:** those with powerful religious, artistic or cultural associations of the natural element rather than material or built cultural evidence.

All BHRs and CHLs identified during the course of this assessment have been assigned a Cultural Heritage Resource (CHR) number (e.g., CHR-1).

### 6.2 INVENTORY OF CULTURAL HERITAGE RESOURCES

A total of 103 individual resources and groupings of resources have been recorded and evaluated (**Figure 6**). Based on the evaluations, a total of 74 cultural heritage resources (CHRs), including both individual BHRs and groupings of resources comprising CHLs, have been identified which meet the criteria under O.Reg. 9/06 for determining Cultural Heritage Value or Interest (CHVI). Evaluations are included in Appendix A and a summary of the evaluations is presented in **Table 2**. Appendix A includes the identification of heritage attributes which define the CHVI of a property. These range from architectural features to viewsapes and were identified through multiple site visits over the course of the study.



## WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Cultural Heritage Resources  
June 2012, Revised October 15, 2013

Based on a review of cultural landscape features and individual resources throughout the Study Area, including a site visit accompanied by PEHAC and members of the heritage community, several distinct cultural heritage landscapes have been identified, including:

- Walmsley Road (CHR-53);
- Long Point Road (CHR-40);
- Royal Road (CHR-54);
- The Village of Milford (CHR-55);
- Bond Road (CHR-56); and
- Port Milford (CHR-57).

Aerial images outlining the cultural landscapes are included in Appendix F.

Cultural heritage resources were not found on every property where Project infrastructure will be located and not every cultural heritage resource identified is located on property that will contain Project infrastructure.



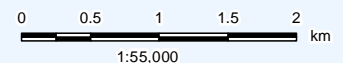
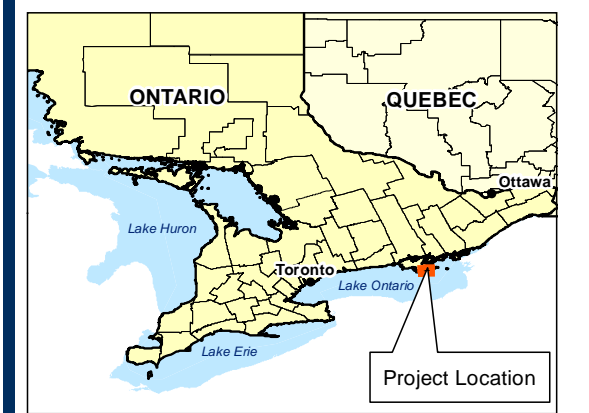


### Legend

- Study Area
- Cultural Heritage Resource
- Protected Property
- Cultural Landscape
- Wind Turbine (Blade Sweep)
- Access Road
- Collector Line
- Interconnection Line
- Crane Laydown Area
- Turbine Laydown Area
- Construction Area
- Storage Area
- Substation

#### Existing Features

- Road
- Railway
- Watercourse (as per MNR base mapping)
- Waterbody (as per MNR base mapping)



- ### Notes
1. Coordinate System: UTM NAD 83 - Zone 18 (N).
  2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2011; © Natural Resources Canada, 2011; © WPD Canada, 2011; © Prince Edward County, 2011.
  3. Imagery Source: © First Base Solutions, 2012  
Imagery Date: 2008



October, 2013  
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WHITE PINES WIND PROJECT

Figure No.  
6.0

Title  
**Identified Cultural Heritage Resource**



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Cultural Heritage Resources  
June 2012, Revised October 15, 2013

<b>CHR Number</b>	<b>Municipal Address</b>	<b>Identification of CHVI</b>	<b>Photograph # (Appendix B)</b>
CHR-1	442 Bond Road	Meets criteria	1, 2
N/A	471 Bond Road	Does not meet criteria	3
CHR-3	506 Bond Road	Meets criteria	4, 5
CHR-4	540 Bond Road	Meets criteria	6, 7
CHR-5	104 Brewers Road	Meets criteria	10-12, 15
PP-1	104 Brewers Road (Dulmage-Farrington-Marshall Drive-shed)	Designated under Part IV of the OHA in October, 1990, according to By-Law No. 1967	8, 9 and 12-14
N/A	369 Brewers Road	Does not meet criteria	15
N/A	167 Brewers Road	Does not meet criteria	16
N/A	177 Brewers Road	Does not meet criteria	17
N/A	377 Brewers Road	Does not meet criteria	18
CHR-2	12 Walmsley Road	Meets criteria	19
CHR-59	71 Walmsley Road	Meets criteria	20
CHR-6	94 Walmsley Road	Meets criteria	21, 22, 132 -134
CHR-7	130 Walmsley Road	Meets criteria	23, 135
CHR-8	191 Walmsley Road	Meets criteria	24
N/A	315 Walmsley Road	Does not meet criteria	25
CHR-65	379 Walmsley Road	Meets criteria	26
N/A	390 Walmsley Road	Does not meet criteria	27
CHR-9	409 Walmsley Road	Meets criteria	28
CHR-10	477 Walmsley Road	Meets criteria	136, 137
CHR-61	2847 County Road 10	Meets criteria	142
CHR-11	3705 County Road 10	Meets criteria	29, 30
CHR-12	3750 County Road 10	Meets criteria	31 to 33

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Cultural Heritage Resources  
June 2012, Revised October 15, 2013

<b>CHR Number</b>	<b>Municipal Address</b>	<b>Identification of CHVI</b>	<b>Photograph # (Appendix B)</b>
CHR-74	3835 County Road 10	Meets criteria	34
CHR-13	3046 County Road 10	Meets criteria	35
CHR-14	3054 County Road 10	Meets criteria	36
CHR-15	3058 County Road 10	Meets criteria	37
CHR-16	3104 County Road 10	Meets criteria	38
N/A	3942 County Road 10	Does not meet criteria	39
CHR-17	193 Murphy Road	Meets criteria	40, 41
CHR-60	413 Murphy Road	Meets criteria	148
N/A	422 Murphy Road	Does not meet criteria	42
N/A	620 Royal Road	Does not meet criteria	43
CHR-18	757 Royal Road	Meets criteria	44
N/A	832 Royal Road	Does not meet criteria	45, 46
N/A	843 Royal Road	Does not meet criteria	47
CHR-19	896 Royal Road	Meets criteria	48, 49
N/A	889 Royal Road	Does not meet criteria	50, 51
CHR-20	919 Royal Road	Meets criteria	52
PP-10	940 Royal Road (Rose/Frost Farm Complex)	Designated under Part IV of the OHA, according to Schedule "A" to By-Law No. 3141-2012	53
N/A	1034 Royal Road	Does not meet criteria	54
CHR-21	1038 Royal Road	Meets criteria	55, 56
CHR-22	1071 Royal Road	Meets criteria	57
PP-3	1078 Royal Road (Isaac Striker House)	Designated under Part IV of the OHA in November, 2008, according By-Law No. 2321-2008	58-61
CHR-62	1106 Royal Road	Meets criteria	138

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Cultural Heritage Resources  
June 2012, Revised October 15, 2013

<b>CHR Number</b>	<b>Municipal Address</b>	<b>Identification of CHVI</b>	<b>Photograph # (Appendix B)</b>
CHR-63	1112 Royal Road	Meets criteria	139, 140
CHR-64	1177 Royal Road	Meets criteria	141
CHR-23	1210 Royal Road	Meets criteria	62
CHR-24	1247 Royal Road	Meets criteria	63
CHR-25	1327 Royal Road	Meets criteria	64, 65
CHR-26	1375 Royal Road	Meets criteria	66
CHR-54	Royal Road Streetscape	Meets criteria	See Appendix E, Figure 3
CHR-27	587 Babylon Road	Meets criteria	67
CHR-28	761 Babylon Road	Meets criteria	68
CHR-29	817 Babylon Road	Meets criteria	69
CHR-30	Babylon Road at Whattham Road	Meets criteria	70
N/A	1253 Babylon Road	Does not meet criteria	72
N/A	1257 Babylon Road	Does not meet criteria	73
CHR-31	1676 County Road 13	Meets criteria	74
CHR-32	1972 County Road 13	Meets criteria	75
CHR-33	2029 County Road 13	Meets criteria	76
PP-4	2065 County Road 13 (Mariners Museum)	Designated under Part IV of the OHA in May 2011, according to By-Law No. 2870-2011	77, 78
CHR-34	2109 County Road 13 (South Bay Cemetery)	Meets criteria	79-81
CHR-35	2446 County Road 13	Meets criteria	82, 83
CHR-36	2733 County Road 13	Meets criteria	84
CHR-37	2839 County Road 13	Meets criteria	85
N/A	2256 County Road 13	Does not meet criteria	86

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Cultural Heritage Resources  
June 2012, Revised October 15, 2013

<b>CHR Number</b>	<b>Municipal Address</b>	<b>Identification of CHVI</b>	<b>Photograph # (Appendix B)</b>
CHR-39	2814 Long Point Road	Meets criteria	87
CHR-40	Long Point Streetscape	Meets criteria	See Appendix E, Figure 1
CHR-71	3127 Long Point Road	Meets criteria	88
CHR-72	3135 Long Point Road	Meets criteria	89
CHR-73	3196 Long Point Road	Meets criteria	90
CHR-38	3253 Long Point Road	Meets criteria	91
CHR-44	3265 Long Point Road	Meets criteria	92
CHR-49	3271 Long Point Road	Meets criteria	93
CHR-41	3413 Long Point Road	Meets criteria	94, 95
N/A	3701 Long Point Road	Does not meet criteria	96
CHR-42	3753 Long Point Road	Meets criteria	97, 98
N/A	4477 Long Point Road	Does not meet criteria	99
CHR-43	4572 Long Point Road	Meets criteria	100, 101
N/A	4611 Long Point Road	Does not meet criteria	102
N/A	Army Reserve Road	Does not meet criteria	103
N/A	Army Reserve Road	Does not meet criteria	104
CHR-45	42 Army Reserve Road	Meets criteria	105
CHR-46	89 Colliers Road	Meets criteria	106
CHR-47	96 Colliers Road	Meets criteria	107
N/A	12 Dainard Road	Does not meet criteria	108
CHR-48	283 Dainard Road	Meets criteria	109, 110
N/A	330 Dainard Road	Does not meet criteria	111
N/A	306 Whatthams Road	Does not meet criteria	112

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Cultural Heritage Resources  
June 2012, Revised October 15, 2013

**Table 2: Summary of Evaluation of CVHI**

CHR Number	Municipal Address	Identification of CHVI	Photograph # (Appendix B)
N/A	321 Whatthams Road	Does not meet criteria	113
N/A	115 Gravelly Bay Road	Does not meet criteria	114
N/A	139 Gravelly Bay Road	Does not meet criteria	115
N/A	167 Gravelly Bay Road	Does not meet criteria	116
PP-5	41 Lighthall Road (Henry House)	Designated under Part IV of the OHA in October, 1985, according to By-Law No. 1628	117, 118
N/A	148 Lighthall Road	Does not meet criteria	119
CHR-50	45 Maypul Layn Road	Meets criteria	120, 121
CHR-51	114 Maypul Layn Road	Meets criteria	122 to 124
CHR-52	Scott's Mill	Meets criteria	125, 126
CHR-53	Walmsley Road Streetscape	Meets criteria	See Appendix E, Figure 2
CHR-55	Hamlet of Milford	Meets criteria	See Appendix E, Figure 4
CHR-56	Bond Road Streetscape	Meets criteria	131 and see Appendix E, Figure 5
CHR-66	310 Bond Road	Meets criteria	149
CHR-57	Port Milford	Meets criteria	See Appendix E, Figure 6
CHR-67	Bay House	Meets criteria	See Plate 1, Appendix A
CHR-68	510 County Road 24	Meets criteria	143, 144
CHR-69	4699 Long Point Road	Meets criteria	145
CHR-70	Metcalfe Cheese Factory	Meets criteria	149, 150
PP-6	1902 County Road 13 (Mathewson House)	Designated under Part IV of the OHA in 1985, according to By-Law No. 1628 and amended under By-Law No. 2402-2009 in 2009.	151
PP-7	3076-3080 County Road 10 (Milford Town Hall)	Designated under Part IV of the OHA in 2006, according to By-Law No. 1758-2006	127

**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Cultural Heritage Resources  
June 2012, Revised October 15, 2013

**Table 2: Summary of Evaluation of CVHI**

<b>CHR Number</b>	<b>Municipal Address</b>	<b>Identification of CHVI</b>	<b>Photograph # (Appendix B)</b>
PP-8	2179 County Road 17 (Mount Tabor United Church)	Designated under Part IV of the OHA in January 1986, according to Municipal By-law #1677	128
PP-9	1112 Royal Road (Royal Street Cheese Factory)	Designated under Part IV of the OHA in February 2011, according to Municipal By-Law No. 2794-2011	129
PP-2	191 Ostrander Point Road (Moses Hudgins House)	Designated under Part IV of the OHA in February 2011, according to Municipal By-Law No. 2793-2011	130
PP-11	4513 County Road 13 (Stryker Log House)	Designated under Part IV of the OHA in October 2012, according to Schedule "B" to By-Law No. 3140-2012	146, 147
PP-12	482 Hilltop Road (Miller Nature Reserve)	Does not meet criteria. Protected by a Heritage Conservation Easement Agreement dated January 2, 2012 between the Hasting Prince Edward Land Trust and the Ontario Heritage Trust.	See Appendix A, PP-12

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Impact Assessment  
June 2012, Revised October 15, 2013

## 7.0 Impact Assessment

### 7.1 POTENTIAL IMPACTS

Identification of potential impacts considered the proposed site plan in relation to identified cultural heritage resources (**Figure 2**).

#### 7.1.1 Destruction or Alteration

The first type of potential Project-related negative impact to be considered during this assessment was the potential for the destruction, removal, or alteration of any, or part of any, identified heritage attribute of a cultural heritage resource. This could include: alteration of a in a manner that is unsympathetic or incompatible with the historic fabric or appearance; introduction of new elements to a cultural heritage resource which diminish its heritage value; or indirect damage to a structure resulting from construction vibration.

In addition to direct impacts related to destruction, this assessment also evaluated the potential for indirect impacts resulting from the vibrations of construction and the transportation of Project components and personnel. Although the effect of traffic and construction vibrations on historic period structures is not fully understood, negative effects have been demonstrated on buildings with a setback of less than 40 m from the curbside (Crispino and D'Apuzzo, 2001; Ellis, 1987; Rainer, 1982; Wiss, 1981). The initial screening for potential impacts related to construction vibration, for this assessment, included resources located within or adjacent to Project locations, in particular those resources identified within 60 m of construction and/or laydown areas (e.g., access roads, underground collector lines).

#### 7.1.2 Visual Impacts or Shadows

This assessment considered potential Project-related negative impacts related to obstruction of views or shadows. This includes: shadows that alter the appearance of a heritage attribute or change the visibility of a natural feature identified as a heritage attribute that contributes to the CHVI of a cultural heritage resource; or, obstruction of significant views from or of a cultural heritage resource. Project components, particularly the wind turbines, are likely to be visible from a number of vantage points within the Study Area. The goal of this assessment is to identify instances in which the addition of wind turbines will detract from heritage attributes or features from which the CHVI of specific cultural heritage resources are derived. This might include instances where the location or relative scale of a wind turbine is such that it directly obstructs views of a heritage resource or prevents the interpretation of visible remains of settlement patterns. Assessment of potential visual impacts considered the setback of built features and tree cover; narrowly setback features can be effective in shielding views of wind turbines, whereas trees or buildings set farther away from the viewer are not.

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Impact Assessment

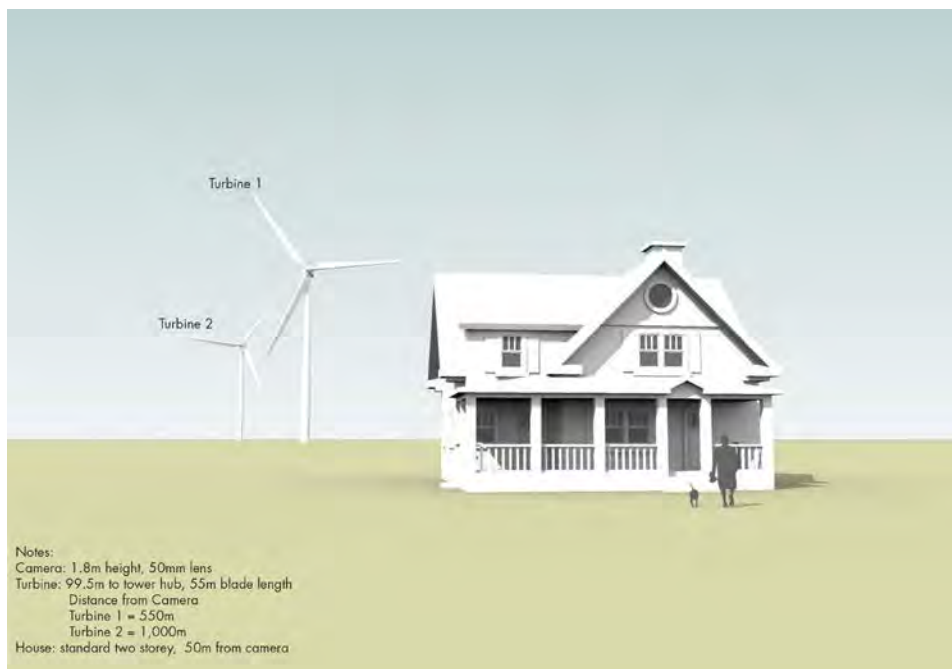
June 2012, Revised October 15, 2013

Documentation of built resources and landscapes in the field was undertaken from public property and included: principle elevations of built resources; perspective views of the surrounding landscape; and views from cultural heritage resources where significant vistas related to the CHVI of a resource could potentially be obstructed by the Project.

The hub height of the proposed wind turbines will be 100 m with a blade length of 45.2 m. In order to evaluate the potential visual impact of turbines, general topographical conditions and land-use recorded during the site visit, aerial imagery, and comparative examples from similar projects were reviewed, particularly those projects within and around the Study Area.

The assessment of potential visual impacts considered the distance of visible Project components in relation to cultural heritage resources. A visual rendering was used to inform the evaluation with respect to assessing the scale of new turbines relative to existing built features. Visual Aid 1 presents the scale of a turbine with a similar hub height at a distance of 550 m and 1000 m from a typical two storey residential building. Visual Aid 2 presents that same model with trees at various locations and distances in order to evaluate the effectiveness of existing tree-cover as a potential mitigative measure.

In addition to the visual aids available, Stantec also participated in a site visit with PEHAC and members of the local heritage community in February, 2013 (as described in **Section 2.3**). During the course of the site visit a number of vantage points were identified as iconic, unique, representative, and which revealed environments, contexts and relationships. Where these views were determined to represent a heritage attribute of a cultural heritage resource, the impacts were assessed.



Visual Aid 1: Wind Turbine Scale Schematic



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Impact Assessment

June 2012, Revised October 15, 2013



Visual Aid 2: Wind Turbine Scale Schematic, with trees

## 7.1.3 Isolation, Change in Land Use, Land Disturbances

Land disturbances related to the Project are being addressed in separate Stage 1 and 2 Archaeological Assessments.

Potential negative Project-related impacts were considered with respect to isolation and change in land use, including: reduced accessibility to a landmark, monument, or public site; change in contextual relationships or isolation of a cultural heritage attribute, feature or resources from its surrounding environment; obstruction through the re-routing of traffic or alteration of roadways or gateways near a cultural heritage resource that might limit access to that resource or property; or change in land use or neglect of a heritage resource which may result in deterioration of heritage attributes.

## 7.1.4 Reversibility

One consideration of interventions on resources and landscapes of cultural heritage value is the reversibility of any new features. English Heritage (officially known as the Historic Buildings and Monuments Commission for England), a governmental statutory adviser on the historic environment in the United Kingdom, has prepared guidance on the assessment of impacts of renewable energy projects on the Historic Environment which addresses reversibility. English Heritage states that, as a best practice, “consideration should always be given to the reversibility of wind energy projects” (English Heritage, 2005).



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Impact Assessment

June 2012, Revised October 15, 2013

A Decommissioning Plan Report has been prepared for the Project, in accordance with O.Reg. 359/09, which sets out specific content requirements for the Decommission Plan Report in Table 1, Item 3 of the Ministry of Environment's (MOE's) draft guidance document "Technical Guide to Renewable Energy Approvals" (MOE, March 2012). The Decommission Plan Report provides the following information with respect to plans for site rehabilitation or restoration following the lifespan of the Project.

The operator of the Project will develop a Rehabilitation Plan that is designed to restore habitat in areas affected by Project-related equipment. This plan will be developed in consultation with the appropriate agencies prior to decommissioning.

## 7.2 IDENTIFICATION OF IMPACTS ON HERITAGE VALUES

Potential Project-related negative impacts outlined in **Section 8.1** were considered for the 74 cultural heritage resources identified in Section 7 and 12 protected properties. **Table 3** summarizes the assessment of potential negative impacts.

**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Impact Assessment  
June 2012, Revised October 15, 2013

**Table 3: Summary of Impact Assessment**

CHR #	Address/ Name	Potential Negative Impact						Comments	Recommended Mitigation
		Destruction	Alteration	Shadows	Isolation	Obstruction of Views	Change in Land Use		
CHR-1	442 Bond Road	N	N	N	N	N	N	Turbines 01, 02, and 03 will be visible from certain vantage points along the Bond Road streetscape; however, given the topography of Bond Road (farmsteads are located along a rise to the south of the road) and the intermittent canopy and tree-cover along both sides of the road, views from Bond Road will not be obstructed such that they lessen the understanding of the historic relationships of the Bond Road farmsteads with each other and eastward with Milford.	No further mitigation recommended.
CHR-3	506 Bond Road								
CHR-4	540 Bond Road								
CHR-56	Bond Road Streetscape								
CHR-66	310 Bond Road	I	N	N	N	N	N	Potential for indirect impacts related to construction vibrations.	<p>In order to lessen the potential for indirect impacts from construction vibrations, the following is recommended:</p> <ul style="list-style-type: none"> <li>• Avoid construction within a 60 m bufferzone of structures on the property;</li> <li>• In the event that construction within a 60 m bufferzone cannot be avoided, it is recommended that maximum acceptable vibration, or peak particle velocity (PPV), levels be determined by a qualified engineer prior to Project construction and that construction activities be monitored to ensure that maximum PPV levels are not exceeded.</li> </ul>

**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Impact Assessment  
June 2012, Revised October 15, 2013

**Table 3: Summary of Impact Assessment**

CHR #	Address/ Name	Potential Negative Impact						Comments	Recommended Mitigation
		Destruction	Alteration	Shadows	Isolation	Obstruction of Views	Change in Land Use		
CHR-5	104 Brewers Road	N	N	N	N	R	N	<p>Visual modelling indicates that several turbines will be visible to the west when looking out from the vineyard and outbuildings (see Vantage Point 10). Visual impacts with respect to these turbines are generally minimal in terms of their intrusion into views of the surrounding landscape, with the exception of T07. The proximity of T07 to the vineyards visited by the public is such that it creates a visual intrusion. Turbine 07 will also impact views from the designated drive shed when looking out towards surrounding agricultural fields. The drive shed is identified in the designation documents as a focal point of the property and, as such, views to and from the drive shed are integrally linked to the cultural heritage values of the structure and the overall property.</p> <p>Note: The impacts associated with views are considered reversible as the removal of the turbine, and associated</p>	<p>In order to mitigate any visual impacts, Turbine locations T07 would have to be avoided. Turbine locations have been decided based on consideration of availability of land, and natural environment, noise, and property line setbacks, as defined in Ontario Regulation 359/09. Moving the turbines is not possible, due to these constraints, and avoidance/removal of the turbines will impact the economic viability of the project. Moving Project turbines to other locations in the County is also not possible, due to potential interference with Department of National Defence (DND) radar systems, as identified through consultations with DND.</p> <p>As the turbines are temporary in nature, a record of pre-construction conditions is necessary to provide a baseline for decommissioning activities. This should be established based on current land use at the Project Location which is documented in extensive detail in the Natural Heritage Assessment and Environmental Impact Study Report (NHA/EIS) completed as a component of the Renewable Energy Approvals process. Review of the NHA/EIS prior to decommissioning activities will ensure that decommission efforts will return the land as close to pre-construction conditions as is</p>
PP-1	Dulmage-Farrington-Marshall Drive-shed								



**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Impact Assessment  
June 2012, Revised October 15, 2013

**Table 3: Summary of Impact Assessment**

CHR #	Address/ Name	Potential Negative Impact						Comments	Recommended Mitigation
		Destruction	Alteration	Shadows	Isolation	Obstruction of Views	Change in Land Use		
								infrastructure, would result in the return to current conditions.	reasonable. The record of current conditions, including this Report and the NHA/EIS, should be deposited permanently at the local library to facilitate access to pre-construction conditions at the end of the Project lifespan.
CHR-2	12 Walmsley Road	N	N	N	N	N	N	Visual models were prepared for two separate locations along Walmsley Road (see Vantage Points 6 and 7). Although a number of turbines will be visible from several vantage points along the road, trees and existing infrastructure shield many of the views. In open areas, turbines would be more visible; however, their presence does not, in the opinion of this study, detract from an understanding of the cultural heritage values of the landscape as views between farmsteads, along the road corridor and across vast agricultural fields are not interrupted.	No further mitigation recommended.
CHR-59	71 Walmsley Road								
CHR-6	94 Walmsley Road								
CHR-7	130 Walmsley Road								
CHR-8	191 Walmsley Road								
CHR-65	379 Walmsley Road								
CHR-9	409 Walmsley Road								
CHR-10	477 Walmsley Road								

**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Impact Assessment  
June 2012, Revised October 15, 2013

**Table 3: Summary of Impact Assessment**

CHR #	Address/ Name	Potential Negative Impact						Comments	Recommended Mitigation
		Destruction	Alteration	Shadows	Isolation	Obstruction of Views	Change in Land Use		
CHR-53	Walmsley Road Cultural Landscape								
CHR-61	2847 County Road 10	N	N	N	N	N	N	Visual modelling was undertaken for several vantage points in Milford, including: from the fairgrounds associated with Mount Tabor Church; from the yard behind St. Philips Church; and from County Road 10, in front of the Town Hall building (see Vantage Points 1 through 4). Observations during the site visit and subsequent visual models indicate that Turbines 01 through 06 will be visible from several vantage points within Milford, in particular from Mount Tabor and St. Philips. For the most part, narrow building setbacks and low elevation will protect views related to significant cultural heritage values, such as those along main thoroughfares, between buildings, and towards the Mill Pond and Mount Tabor. Views from public gathering places at both Mount Tabor and St. Philips were modelled to determine if nearby turbines will obstruct views (see Vantage Points 2 and 4). It is the opinion of this study that views	No further mitigation recommended.
CHR-12	3750 County Road 10								
CHR-74	3835 County Road 10								
CHR-13	3046 County Road 10								
CHR-14	3054 County Road 10								
CHR-15	3058 County Road 10								
CHR-16	3104 County Road 10								
CHR-52	Scott's Mill								
PP-7	Milford Town Hall								
PP-8	Mount Tabor United								

**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Impact Assessment  
June 2012, Revised October 15, 2013

**Table 3: Summary of Impact Assessment**

CHR #	Address/ Name	Potential Negative Impact						Comments	Recommended Mitigation
		Destruction	Alteration	Shadows	Isolation	Obstruction of Views	Change in Land Use		
	Church							from these two outdoor gathering places will not be obstructed in a way that detracts from an understanding of the place, its cultural heritage values or its greater context. Views of Mount Tabor from Old Milford Road, facing southwest, may include turbines depending on distance from the church; however, none of the turbines obstructs the silhouette of the steeple that defines Mount Tabor as a landmark.	
CHR-55	Hamlet of Milford								
CHR-18	757 Royal Road	I	I	N	N	R	N	Views related to the cultural heritage values of the Royal Road streetscape and individual CHRs along Royal Road may be impacted by the Project (see Vantage Point 9). Turbine T11 has the potential to impact views between the structures and properties along the linear village of Royal Road and detract from an understanding of the visual and land use relationships of these adjoining properties. These views are not only related to the cultural heritage value of the overall cultural landscape, but more specifically, this view is one of the heritage attributes of 940 Royal Street, which is outlined in the designation by-law. Similarly, Turbine 07 has the potential to impact views from public areas associated	In order to avoid any visual impacts on the Royal Road Streetscape and individual CHRs located within the cultural landscape, turbines T07 and T11 would have to be avoided. Turbines T07 and T11 have been decided based on consideration of availability of land, and natural environment, noise, and property line setbacks, as defined in Ontario Regulation 359/09. Moving the turbines is not possible, due to these constraints, and avoidance/removal of the turbines will impact the economic viability of the project. Moving Project turbines to other locations in the County is also not possible, due to potential interference with Department of National Defence (DND) radar systems, as identified through consultations with DND.
CHR-19	896 Royal Road								
CHR-20	919 Royal Road								
PP-10	Rose/Frost Farm Complex								
CHR-21	1038 Royal Road								
CHR-22	1071 Royal Road								
PP-3	1078 Royal								

**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Impact Assessment  
June 2012, Revised October 15, 2013

**Table 3: Summary of Impact Assessment**

CHR #	Address/ Name	Potential Negative Impact						Comments	Recommended Mitigation
		Destruction	Alteration	Shadows	Isolation	Obstruction of Views	Change in Land Use		
	Road								
CHR-62	1106 Royal Road							<p>with the Royal Street Cheese Factory, a protected property (see Vantage Point 8). Turbines 12 to 17 are also visible in the distance but were not determined to obstruct the views in a way that detracts from an understanding of the place, its cultural heritage values or its greater context.</p> <p>Potential for indirect impacts related to construction vibrations.</p> <p>Note: The impacts associated with views are considered reversible as the removal of the turbine, and associated infrastructure, would result in the return to current conditions.</p>	<p>As the turbines are temporary in nature, a record of pre-construction conditions is necessary to provide a baseline for decommissioning activities. This should be established based on current land use at the Project Location which is documented in extensive detail in the Natural Heritage Assessment and Environmental Impact Study Report (NHA/EIS) completed as a component of the Renewable Energy Approvals process. Review of the NHA/EIS prior to decommissioning activities will ensure that decommission efforts will return the land as close to pre-construction conditions as is reasonable. The record of current conditions, including this Report and the NHA/EIS, should be deposited permanently at the local library to facilitate access to pre-construction conditions at the end of the Project lifespan.</p> <p>In order to lessen the potential for indirect impacts from construction vibrations, the following is recommended:</p> <ul style="list-style-type: none"> <li>• Avoid construction within a 60 m bufferzone of structures on the property;</li> <li>• In the event that construction within a 60 m bufferzone cannot be avoided, it is recommended that maximum acceptable vibration, or peak particle velocity (PPV), levels</li> </ul>
CHR-63	1112 Royal Road								
PP-9	Royal Street Cheese Factory								
CHR-64	1177 Royal Road								
CHR-23	1210 Royal Road								
CHR-24	1247 Royal Road								
CHR-25	1327 Royal Road								
CHR-26	1375 Royal Road								
CHR-50	45 Maypul Layn Road								
CHR-51	114 Maypul Layn Road								
CHR-54	Royal Road								



**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Impact Assessment  
June 2012, Revised October 15, 2013

**Table 3: Summary of Impact Assessment**

CHR #	Address/ Name	Potential Negative Impact						Comments	Recommended Mitigation
		Destruction	Alteration	Shadows	Isolation	Obstruction of Views	Change in Land Use		
	Streetscape								be determined by a qualified engineer prior to Project construction and that construction activities be monitored to ensure that maximum PPV levels are not exceeded.
CHR-11	3705 County Road 10	I	N	N	N	N	N	Potential for indirect impacts related to construction vibrations.	In order to lessen the potential for indirect impacts from construction vibrations, the following is recommended: <ul style="list-style-type: none"> <li>• Avoid construction within a 60 m bufferzone of structures on the property;</li> <li>• In the event that construction within a 60 m bufferzone cannot be avoided, it is recommended that maximum acceptable vibration, or peak particle velocity (PPV), levels be determined by a qualified engineer prior to Project construction and that construction activities be monitored to ensure that maximum PPV levels are not exceeded.</li> </ul>
CHR-17	193 Murphy Road	N	N	N	N	N	N	Although nearby turbines will be visible from certain vantage points looking to and from these Murphy Road CHRs, views of the turbines will not obstruct significant visual relationships associated with the cultural heritage values of these resources, in particular, views towards South Bay.	No further mitigation recommended.
CHR-60	413 Murphy Road								
CHR-27	587 Babylon Road	N	N	N	N	N	N	Vulnerable resources are widely setback from the road right of way where Project activities are planned and no visual impacts	No further mitigation recommended.
CHR-28	761 Babylon								

**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Impact Assessment  
June 2012, Revised October 15, 2013

<b>Table 3: Summary of Impact Assessment</b>									
CHR #	Address/ Name	Potential Negative Impact						Comments	Recommended Mitigation
		Destruction	Alteration	Shadows	Isolation	Obstruction of Views	Change in Land Use		
	Road							to cultural heritage values of identified CHRs are anticipated.	
CHR-29	817 Babylon Road								
CHR-30	Carman Church								
CHR-31	1676 County Road 13								
CHR-32	1972 County Road 13								
CHR-33	2029 County Road 13								
CHR-35	2446 County Road 13	N	N	N	N	N	N	Vulnerable resources are widely setback from the road right of way where Project activities are planned and no visual impacts to cultural heritage values of identified CHRs are anticipated.	No further mitigation recommended.
CHR-36	2733 County Road 13								
CHR-37	2839 County Road 13								
CHR-39	2814 Long Point Road								
CHR-40	Long Point Road Streetscape								
CHR-71	3127 Long								

**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Impact Assessment  
June 2012, Revised October 15, 2013

<b>Table 3: Summary of Impact Assessment</b>									
CHR #	Address/ Name	Potential Negative Impact						Comments	Recommended Mitigation
		Destruction	Alteration	Shadows	Isolation	Obstruction of Views	Change in Land Use		
	Point Road								
CHR-72	3135 Long Point Road								
CHR-73	3196 Long Point Road								
CHR-38	3253 Long Point Road								
CHR-44	3265 Long Point Road								
CHR-49	3271 Long Point Road								
CHR-41	3413 Long Point Road								
CHR-42	3753 Long Point Road								
CHR-43	4572 Long Point Road								
CHR-69	4699 Long Point Road								
CHR-70	Metcalf Cheese Factory								
CHR-45	42 Army								

**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Impact Assessment  
June 2012, Revised October 15, 2013

<b>Table 3: Summary of Impact Assessment</b>									
CHR #	Address/ Name	Potential Negative Impact						Comments	Recommended Mitigation
		Destruction	Alteration	Shadows	Isolation	Obstruction of Views	Change in Land Use		
	Reserve Road								
CHR-48	283 Dainard Road								
CHR-68	510 County Road 24								
CHR-46	89 Colliers Road	N	N	N	N	N	N	Significant contextual and visual relationships of, from, and within the Port Milford cultural landscape are associated with travel/views between individual buildings in the former Port Milford as well as views outward to South Bay and Lake Ontario. These views will not be obstructed.	No further mitigation recommended.
CHR-47	96 Colliers Road								
CHR-57	Port Milford								
CHR-67	Bay House								
CHR-34	South Bay Cemetery	N	N	N	N	N	N	Significant visual relationships associated with the cultural heritage values of South Bay Cemetery are towards South Bay to the east and the valley to the south. They will not be obstructed by the Project.	No further mitigation recommended.
PP-4	Mariners Museum	N	N	N	N	N	N	Although turbines 04, 06, 21 and 22 may be visible from certain vantage points looking outward from the Mariners Museum, this will not obstruct significant visual relationships associated with the cultural heritage values of Museum, including views towards South Bay, South Bay Church and Schoolhouse, and views within the Museum property from areas where the community	No further mitigation recommended.



**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Impact Assessment  
June 2012, Revised October 15, 2013

<b>Table 3: Summary of Impact Assessment</b>									
CHR #	Address/ Name	Potential Negative Impact						Comments	Recommended Mitigation
		Destruction	Alteration	Shadows	Isolation	Obstruction of Views	Change in Land Use		
								gathers for events (see Vantage Point 12).	
PP-5	Henry House	N	N	N	N	R	N	<p>When viewed from County Road 24, the silhouette of Henry House, a protected property, in its surrounding agricultural setting may be impacted by Turbine T09 (see Vantage Point 7). This view is related to its cultural heritage value and its contextual relationships with surrounding transportation routes as well as the farmhouse at 510 County Road 24 which was constructed around the same time in the same style and material.</p> <p>Note: The impacts associated with viewscapes are considered reversible as the removal of the turbine, and associated infrastructure, would result in the return to current conditions.</p>	<p>It order to mitigate any visual impacts, Turbine T09 would have to be avoided. The location of Turbine T09 has been decided based on consideration of availability of land, and natural environment, noise, and property line setbacks, as defined in Ontario Regulation 359/09. Moving the turbine is not possible, due to these constraints, and avoidance/removal of the turbines will impact the economic viability of the project. Moving Project turbines to other locations in the County is also not possible, due to potential interference with Department of National Defence (DND) radar systems, as identified through consultations with DND.</p> <p>As the turbines are temporary in nature, a record of pre-construction conditions is necessary to provide a baseline for decommissioning activities. This should be established based on current land use at the Project Location which is documented in extensive detail in the Natural Heritage Assessment and Environmental Impact Study Report (NHA/EIS) completed as a component of the Renewable Energy Approvals process. Review of the NHA/EIS prior to</p>

**WHITE PINES WIND PROJECT  
HERITAGE ASSESSMENT REPORT**

Impact Assessment  
June 2012, Revised October 15, 2013

**Table 3: Summary of Impact Assessment**

CHR #	Address/ Name	Potential Negative Impact						Comments	Recommended Mitigation
		Destruction	Alteration	Shadows	Isolation	Obstruction of Views	Change in Land Use		
									decommissioning activities will ensure that decommission efforts will return the land as close to pre-construction conditions as is reasonable. The record of current conditions, including this Report and the NHA/EIS, should be deposited permanently at the local library to facilitate access to pre-construction conditions at the end of the Project lifespan.
PP-6	Mathewson House	N	N	N	N	N	N	No negative Project-related impacts are anticipated.	No further mitigation recommended.
PP-2	Moses Hudgins House	N	N	N	N	N	N	No negative Project-related impacts are anticipated.	No further mitigation recommended.
PP-11	Stryker Log House	N	N	N	N	N	N	Although turbines will be visible from certain vantage points on the Stryker Log House property, views of these turbines will not obstruct those views related to the cultural heritage value of the log house as outlined in its by-law which identifies uninterrupted views of the lake and adjacent properties as a cultural heritage value.	No further mitigation recommended.

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Recommendations  
June 2012, Revised October 15, 2013

## 8.0 Recommendations

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The Heritage Assessment involved archival research, consultation with relevant groups and authorities and a visual survey of the Study Area. During the course of the assessment 103 potential cultural heritage resources were recorded. Of those, a total of 74 CHRs have been identified which meet the criteria for determining cultural heritage value or interest (CHVI) under O.Reg. 9/06. 12 protected properties, as identified in the table in Section 19, O.Reg.359/09 are located adjacent to the Project Location.

The potential for indirect impacts related to construction vibrations were identified for 20 cultural heritage resources located within 60 m of project components, including:

- 310 Bond Road;
- 3705 County Road 10;
- 757, 896, 919, 1038, 1071, 1106, 1112, 1177, 1210, 1247, 1327, 1375 Royal Road;
- The Royal Road Streetscape;
- Rose/Frost Farm Complex;
- 1078 Royal Road;
- The Royal Street Cheese Factory; and
- 45 and 114 Maypul Layn Road.

Although it is not expected that construction activities will result in any indirect damage as a result of vibrations, in order to minimize the risk of damage it is recommended that construction activities be avoided within 60 m of identified cultural heritage resources. Where construction within 60 m cannot be avoided, it is recommended that maximum acceptable vibration levels, or peak particle velocity (PPV) levels, should be determined by a qualified engineer prior to any construction activities (pre-construction survey). Construction within the 60 m bufferzone should be monitored to ensure that acceptable PPV levels are not exceeded. All construction activities should cease if levels are exceeded until an acceptable solution can be identified. Equal care should be applied during decommissioning activities to safeguard heritage resource, particularly with regards to vibration levels adjacent to the resources.

It is recommended that removal of or damage to trees along roads in the Study Area be avoided to the greatest extent practicable.

Other potential Project-related impacts related to views were also identified with respect to 21 cultural heritage resources, including:

- 104 Brewers Road;
- The Royal Road/Maypul Layn Road Streetscape and associated resources; and

# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Recommendations

June 2012, Revised October 15, 2013

- Henry House.

In order to mitigate any visual impacts, Turbine locations T07, T09, and T11 would have to be avoided. Turbine locations T07, T09, and T11 have been decided based on consideration of availability of land, and natural environment, noise, and property line setbacks, as defined in Ontario Regulation 359/09. Moving the turbines is not possible, due to these constraints, and avoidance/removal of the turbines will impact the economic viability of the project. Moving Project turbines to other locations in the County is also not possible, due to potential interference with Department of National Defence (DND) radar systems, as identified through consultations with DND.

As the turbines are temporary in nature, a record of pre-construction conditions is necessary to provide a baseline for decommissioning activities. This should be established based on current land use at the Project Location which is documented in extensive detail in the Natural Heritage Assessment and Environmental Impact Study Report (NHA/EIS) completed as a component of the Renewable Energy Approvals process. Review of the NHA/EIS prior to decommissioning activities will ensure that decommission efforts will return the land as close to pre-construction conditions as is reasonable. The record of current conditions, including this Report and the NHA/EIS, should be deposited permanently at the local library to facilitate access to pre-construction conditions at the end of the Project lifespan.

In the case of the Royal Road/Maypul Layn Road Streetscape, it is recommended that any new transmission infrastructure be installed below-grade in order to preserve the character of the tree-lined streetscape linking the Maypul Layn dairy farms to the Royal Street Cheese Factory and nearby farmsteads. Landscaping features, such as fencing or vegetation, should not be removed for the installation of transmission infrastructure. Any such disturbances that cannot be avoided should be repaired immediately following Project construction activities. Where possible, repair to landscaping features should restore the features to pre-construction conditions.

As a general recommendation, any extant cabins, log houses or built features encountered in wooded portions of the Study Area during the construction of Project infrastructure should not be removed without first undertaking a Heritage Impact Assessment of the resource.



# WHITE PINES WIND PROJECT HERITAGE ASSESSMENT REPORT

Sources

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## 9.0 Sources

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