Appendix G – Archaeology Report and Approval

NOVA SCOTIA

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January 2, 2015

Stephen G. Garcin
Boreas Heritage Consulting Inc.
1465 Brenton St. Box 24
Halifax, NS B3J 3T4

Dear Mr. Garcin:

RE: Heritage Research Permit Report
A2014NS068 – Liverpool Wind Farm

We have received and reviewed your report on work conducted under the terms of Heritage Research Permit A2014NS068 for archaeological screening and reconnaissance of the proposed Liverpool Wind Farm in Queens County.

The report details the archaeological screening and reconnaissance of the proposed Liverpool Wind Farm project area, northeast of the Town of Liverpool, Queens County, by Boreas Heritage Consulting Inc. in June 2014. The assessment included background, historical and environmental research as well as visual assessment of the proposed project area. No shovel testing took place.

Based on the background study and the field reconnaissance the study area was determined to have low archaeological potential. No evidence of archaeological resources, areas of elevated archaeological potential or areas of significant historical cultural modification were encountered or identified. The majority of the study area had level but undulating, rocky, swampy and hummocky terrain significantly removed from any water source in the area.

Based on the above, the reporter recommends that the study area as identified in the report be cleared of any requirement for future archaeological investigation. In the event that archaeological resources or human remains are encountered during development activities within the study area, all activity should stop and immediate contact be made with the Coordinator of Special Places.

CCH staff agree with the recommendations and finds the report acceptable as submitted. Please do not hesitate to contact me should you have any questions or concerns.

Sincerely,

Sean Weseloh McKeane
Coordinator, Special Places

LIVERPOOL WIND FARM
ARCHAEOLOGICAL SCREENING AND RECONNAISSANCE
QUEENS COUNTY

ARCHAEOLOGICAL SCREENING & RECONNAISSANCE REPORT

Submitted to:

Eon WindElectric
and the
Special Places Program

Submitted by:

Boreas Heritage Consulting Inc.
and
Strum Consulting

October 2014

HERITAGE RESEARCH PERMIT: A2014NS068

Strum CONSULTING

BOREAS Heritage Consulting Inc.

PROJECT PERSONNEL

PRINCIPAL INVESTIGATOR:	Stephen G. Garcin, M.A.
PROJECT MANAGEMENT:	Melanie Smith, MES Sara J. Beanlands, M.A. Stephen G. Garcin, M.A.
BACKGROUND STUDY:	Sara J. Beanlands, M.A.
FIELD STUDY:	Stephen G. Garcin, M.A. Sara J. Beanlands, M.A.
REPORT PREPARATION:	Stephen G. Garcin, M.A. Sara J. Beanlands, M.A.
GIS/DRAFTING:	Stephen G. Garcin, M.A.

EXECUTIVE SUMMARY

Eon WindElectric is proposing to develop a three turbine wind farm, located in the Region of Queens Municipality, approximately six kilometres northeast of Liverpool. In order to evaluate the potential for impacting archaeological resources during the proposed development, Eon WindElectric retained Strum Consulting in June 2014 to conduct archaeological screening and reconnaissance of the proposed study area. Boreas Heritage Consulting Inc. (BHCI) assisted Strum in obtaining and completing the assessment in accordance with the Heritage Research Permit.

The archaeological assessment was conducted according to the terms of Heritage Research Permit A2014NS068, issued to BHCI Senior Archaeologist Stephen Garcin by the Special Places Program (SPP).

The archaeological screening and reconnaissance of the study area consisted of a background study and visual assessment of the property. It did not involve sub-surface testing. No evidence of archaeological resources or areas of elevated archaeological potential were encountered and no indication of significant historic cultural modification was identified within the study area. Based on the results of the background study and reconnaissance, BHCI determined the study area to exhibit low potential for encountering Precontact and/or early historic Native archaeological resources, as well as historic Euro-Canadian archaeological resources.

It is therefore recommended that the study area, as identified in this report, be cleared of any requirement for further archaeological investigation.

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1.0 INTRODUCTION

Eon WindElectric is proposing to develop a three turbine wind farm, located in the Region of Queens Municipality, approximately six kilometres northeast of Liverpool. In order to evaluate the potential for impacting archaeological resources during the proposed development, Eon WindElectric retained Strum Consulting in June 2014 to conduct archaeological screening and reconnaissance of the proposed study area. Boreas Heritage Consulting Inc. (BHCI) assisted Strum in obtaining and completing the assessment in accordance with the Heritage Research Permit.

The archaeological assessment was directed by BHCI Principal and Senior Archaeologist Stephen Garcin and conducted according to the terms of Heritage Research Permit A2014NS068, issued to Garcin by the Special Places Program (SPP). Background research and technical support were provided by Sara Beanlands. The field component of the archaeological assessment was carried out on October 1, 2014.

This report describes the archaeological assessment of the Liverpool Wind Farm study area, presents the results of this investigation and offers cultural resource management recommendations.

2.0 STUDY AREA

The archaeological study area for the proposed Liverpool Wind Farm is located in the Region of Queens Municipality, approximately six kilometres northeast of the community of Liverpool (***Plate 1; Figure 1***). Comprising a total area of approximately 23 hectares, the study area includes three wind turbine footprints, each measuring approximately 100 metres by 100 metres, as well as a proposed 6.9 kilometre access road (***Figure 2***). The study area can be accessed off of Highway 103 at exit 18.

PLATE 1: Typical forest growth within study area; facing east.

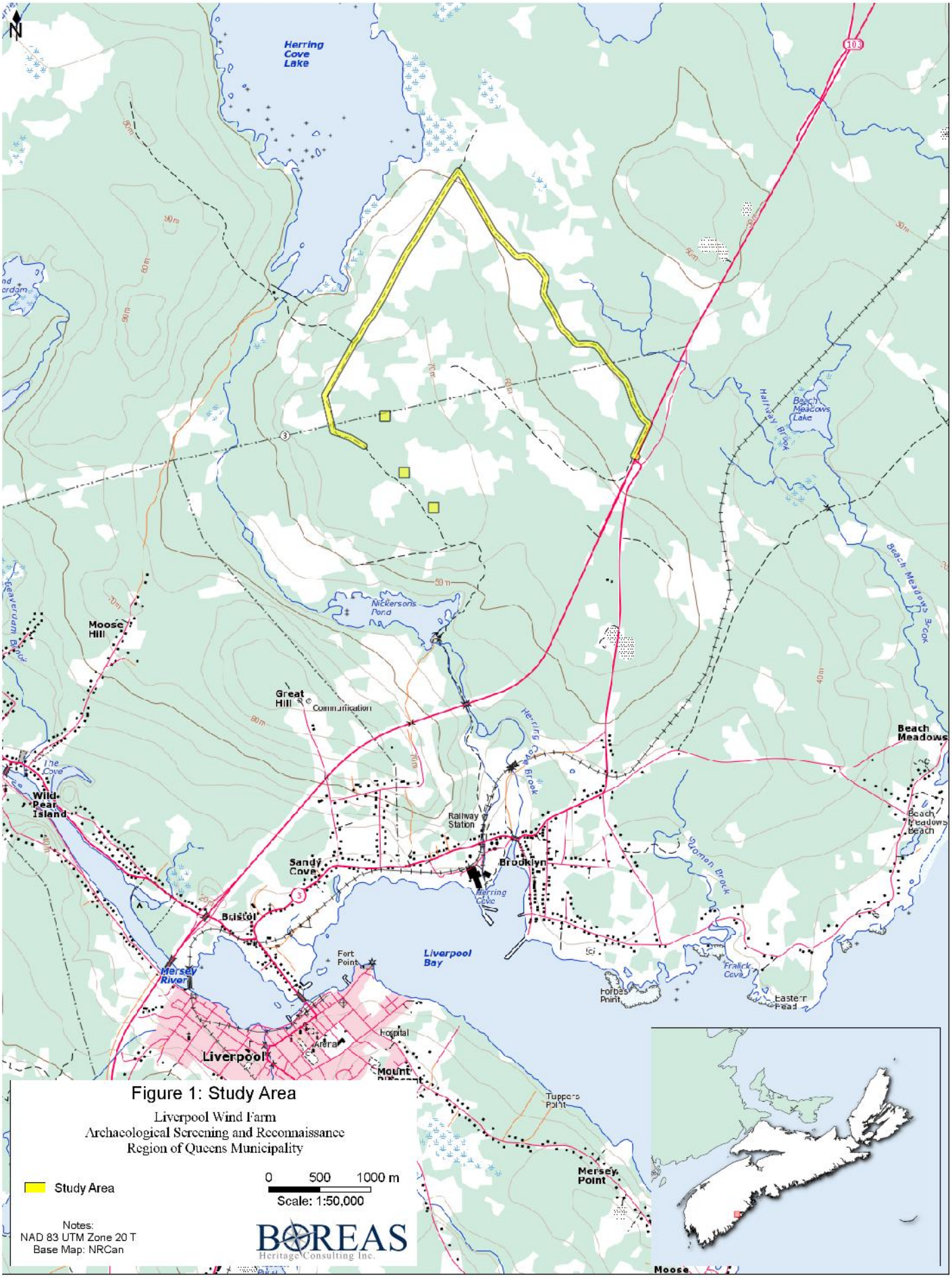

Figure 1: Study Area

Liverpool Wind Farm
Archaeological Screening and Reconnaissance
Region of Queens Municipality

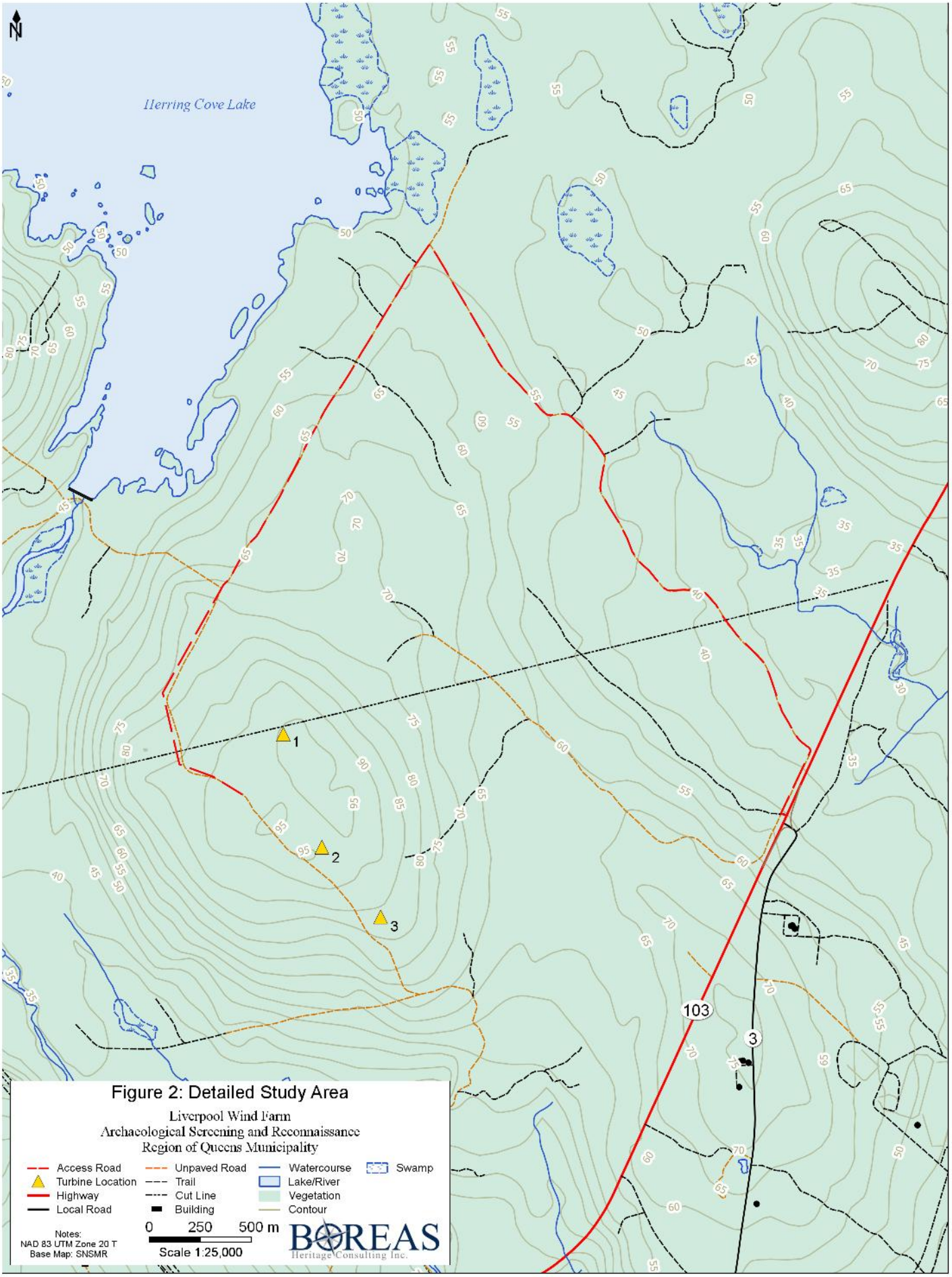

Figure 2: Detailed Study Area

Liverpool Wind Farm
Archaeological Screening and Reconnaissance
Region of Queens Municipality

Access Road
Turbine Location
Highway
Local Road
Unpaved Road
Trail
Cut Line
Building
Watercourse
Lake/River
Vegetation
Contour
Swamp

0 250 500 m
Scale 1:25,000

Notes:
NAD 83 UTM Zone 20 T
Base Map: SNSMR

BOREAS Heritage Consulting Inc.

3.0 METHODOLOGY

The objectives of the assessment are to evaluate archaeological potential within the study area, to delineate areas considered to exhibit high potential for encountering archaeological resources, and to provide the most comprehensive information possible so that appropriate resource management strategies can be devised in light of the proposed development and before project implementation. To achieve these ends, BHCI designed a research strategy consisting of the following components:

3.1 Background Study

The objectives of the background study are to identify known archaeological and historic sites, delineate areas of archaeological potential, and provide a context for resources identified during the course of the assessment. The background study includes a review of previous archaeological research undertaken in the area, an examination of extant records and archival sources relating to historic settlement and development activities within the study area, and a review of relevant geomorphological research and environmental features that may have influenced human settlement and resource processing patterns.

Research is focussed on the identification of areas considered to exhibit high potential for encountering archaeological resources and includes a review of relevant documentation and inventory files, such as available land records, historic maps, and local and/or regional histories. A review of previous archaeological research in the greater area is conducted in order to determine the range and nature of archaeological remains that might be anticipated within the study area. Topographic maps and aerial photographs are consulted in order to identify geomorphological and hydrological attributes that correlate with high archaeological potential (e.g. waterfalls, rapids and marine terraces representing former coastal locations). The historical and cultural information is integrated with the environmental and physiographic data to identify areas of archaeological potential within the study area and to provide a framework for the initial interpretation of any resources encountered during the field component of the assessment.

3.2 Archaeological Reconnaissance

The objectives of the archaeological field reconnaissance are to conduct a visual inspection of the study area, to delineate areas exhibiting high archaeological potential, as identified during the background study and/or encountered during the course of the field survey, and to document any archaeological resources identified during the background study and/or the field survey.

In order to achieve comprehensive coverage of the property, the archaeological reconnaissance involves pedestrian transects throughout the study area in an effort to evaluate archaeological

potential and identify any surface features or other signs of human occupation. Particular attention is paid to geomorphological features deemed to have potentially influenced human settlement and resource processing patterns, and topographic and/or vegetative anomalies that might indicate the presence of buried archaeological resources. All areas of exposure, including tree falls, are visually examined for artifacts and cultural features (***Plate 2***). During the course of the survey, strategies will be identified for the appropriate methodology and scope of more detailed assessment for areas considered to exhibit high archaeological potential.

The process and results of the field reconnaissance are documented in field notes and with photographs. A hand-held Global Positioning System (GPS) unit is used to record UTM coordinates within the study area. All coordinates are UTM projection with NAD 83 as datum. Any archaeological resources encountered during the course of the archaeological reconnaissance will be evaluated and documented for registration within the Maritime Archaeological Resource Inventory (MARI), a provincial archaeological site database maintained by the Nova Scotia Museum.

PLATE 2: Visual inspection of tree throw within study area; facing west.

4.0 RESULTS

4.1 Background Study

The following discussion details the environmental and cultural setting of the study area, which serves to identify locations that may be predicted to have high archaeological potential and provides a framework for the initial interpretation of any resources encountered during the field component of the assessment.

4.1.1 Environmental Setting

A number of environmental, topographic and hydrographic factors, such as water sources, physiographic attributes, soil types and vegetation, have influenced settlement patterns and contribute to the archaeological potential of the area.

Water Sources
Proximity to water is a significant factor in determining Precontact and historic Native, as well as early Euro-Canadian, archaeological potential. The Liverpool Wind Farm study area contains no significant water sources, and although a number of small streams and wetlands were observed in the general area, these are considered to have had minimal influence on the suitability of the area for settlement. The most significant watercourses in the vicinity of the study area are Halfway Brook, located approximately 400 metres to the northeast, Herring Cove Lake, located approximately 500 metres to the northwest, Herring Cove Brook, located approximately one kilometer to the west and Nickersons Pond, located approximately 1 kilometre to the south.

Topography
The study area is located within the greater terrestrial region known as the Atlantic Interior – Mersey Meadows (Lake Rossignol) Unit (Davis & Browne 1996:53). Although the general area is blanketed with quartzite till, it contains only a few scattered drumlins of the same material. The topography within the study are can be generally described as gently undulating to undulating. Elevations within the study area range from 35 metres above sea level at the eastern end to 95 metres above sea level in the vicinity of Turbines 1 and 2.

Soils and Vegetation
Soils within the study area are comprised of *Halifax Sandy Loam* and *Danesville Sandy Loam*. The *Halifax* soils are described as a light brown sandy loam over yellowish brown sandy loam derived from the parent material of olive coloured sandy loam till in which quartzite is the dominant rock. These well-drained soils are typically found in undulating to knobby topography where the soils are typically shallow and stony and tend to support vegetation consisting of spruce, pine, red oak, red maple, wire birch and hemlock (Cann & Hilchey 1959:26). The other soil type in the study

area, *Danesville Sandy Loam*, are described as dark grayish brown sandy loam over dark yellowish brown sandy loam derived from the parent material of an olive coloured sandy loam. Commonly stony and shallow, *Danesville* soils are typically found in topography ranging from undulating to long slopes and support vegetation consisting of red maple, spruce, poplar and hemlock (Cann & Hilchey 1959:29-31).

4.1.2 Native Land Use

The land within the study area was once part of the greater Mi'kmaq territory known as *Kespukwik*, meaning 'Land Ends'. The surrounding area is relatively dense with lakes and watercourses that would have been important transportation corridors, providing a resource base for the Mi'kmaq, their ancestors and predecessors for millennia prior to the arrival of European settlers. The Mi'kmaq seasonally moved throughout the greater region between areas where shelter ad resources, including food and medicinal plants, were available and annually migrated between hunting and fishing grounds (Chute 1999).

A review of the Maritime Archaeological Resource Inventory, a provincial archaeological site database maintained by the Nova Scotia Museum, determined that there are no registered archaeological sites located within, or in the general vicinity of the study area. The closest registered sites, BaDe-06 and BaDe-07, situated approximately 4.5 kilometres south of the study area, are the locations of a Precontact shell midden and an isolated Precontact find of a grooved sinker respectively. Situated approximately five kilometres to the north on the Medway River, archaeological site BaDd-02 is a multi-component site consisting of Late Archaic and Ceramic Period artifacts, which has been completely destroyed by road construction. BaDd-01, located approximately 6.5 kilometres to the southeast is a Ceramic Period site on Coffin Island at the mouth of Liverpool Harbour.

Of particular note in the general area is the Native settlement along the Mersey River. Starting approximately 5 kilometres south on the Mersey River at Liverpool, which the Mi'kmaq called *Ogomkeega*, and stretching over 20 kilometres northwest to Lake Rossignol, there are over 150 registered archaeological sites ranging from the Palaeo-Indian to historic period in what is one of the densest concentration of known Precontact sites in the province.

4.1.3 Property History

The study area is situated approximately 6 kilometres north of the communities of Liverpool and Brooklyn. In 1604, Samuel de Champlain named the area Port Rossignol (More 1972:5). Subsequently, under French occupation, it became known as Port Senior and Port Savior, and finally, Liverpool. The early permanent settlers of Liverpool, established in 1759, came mainly from Massachusetts and by 1761 the area was home to approximately 90 families. In 1762, the

County of Queens was formally proclaimed, and included the townships of Liverpool, Barrington and Yarmouth, with Liverpool being the county seat (Sheppard 2001:vii). The first sawmill in the Brooklyn area, formerly known as Herring Cove, was established in 1873 (Sheppard 2001:xiii). Known for fishing, shipping and shipbuilding, the establishment of the Mersey Pulp and Paper Company in Brooklyn in 1929 provided employment for many in the region (PANS 1967:362-364).

A cursory examination of historic mapping revealed that the study area does not appear to have been granted and has remained Crown Land (Grant Index Sheet 33). An examination of the 1888 A.F. Church map of Queens County (***Figure 3***) reveals settlement concentrated to the south in the Liverpool area as well as to the northeast in the area of Mill Village. Although historic mapping indicates the presence of a nineteenth-century sawmill located on Herring Cove Brook, west of the study area, there is no evidence of any historic structures or settlement within the study area. Additional historic mapping also depicted no historic features within the study area, thereby diminishing the potential for encountering significant historic/Euro-Canadian archaeological resources.

4.1.4 Archaeological Potential

Based on the various components of the background study, including environmental setting, Native land use and property history, the study area is ascribed low potential for encountering Precontact and/or early historic Native archaeological resources, as well as historic Euro-Canadian archaeological resources.

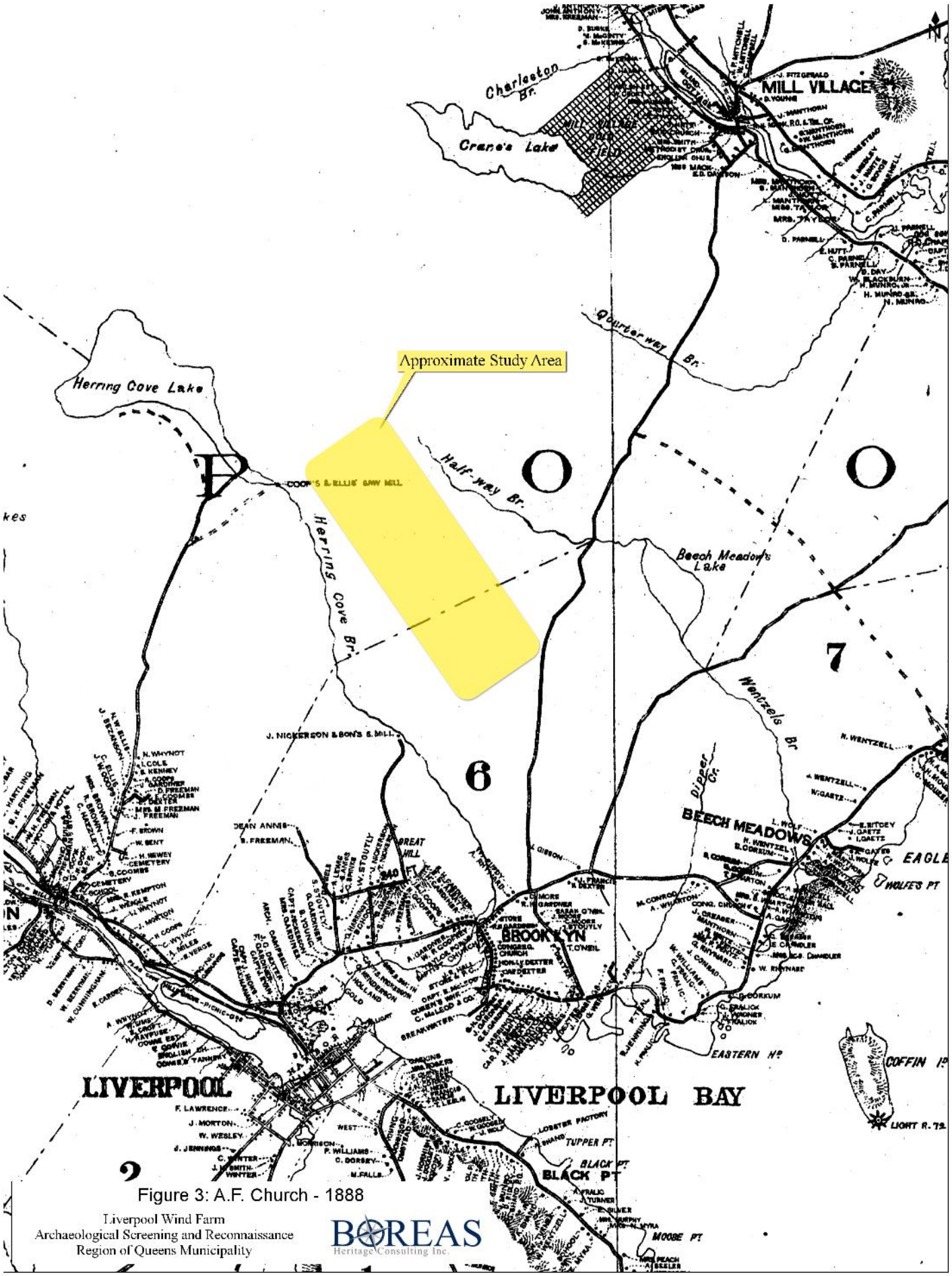

Figure 3: A.F. Church - 1888

4.2 Archaeological Reconnaissance

Fieldwork, consisting of a visual inspection of the study area, was conducted on October 1, 2014 under overcast, warm conditions. The primary purpose of the visual assessment was to evaluate the archaeological potential of the study area and to investigate any topographical or cultural features identified during the background study.

Access Road

The proposed 6.9 kilometre access road alignment, which will connect the turbine sites to Highway 103, follows an existing wide, unpaved road for its entire length (***Figure 4; Plate 3***). The road, situated within mainly level to undulating terrain, crosses a number of low, wet swampy areas as well as numerous areas of rocky terrain, which would have been unsuitable for occupation and/or work areas associated with resource exploitation by Precontact peoples. The road crosses no major watercourse and is situated approximately 500 metres southeast of Herring Cove Lake. Evidence of forestry harvesting and quarrying activities in the surrounding area was observed along the length of the access road (***Plate 4***). However, no evidence of archaeological resources or areas of elevated archaeological potential were encountered and no indication of significant historic cultural modification was identified. Furthermore, given the size and nature of the existing road, it is unlikely that the surrounding terrain will be significantly impacted during any upgrade or use of the road.

PLATE 3: Existing access road; facing west.

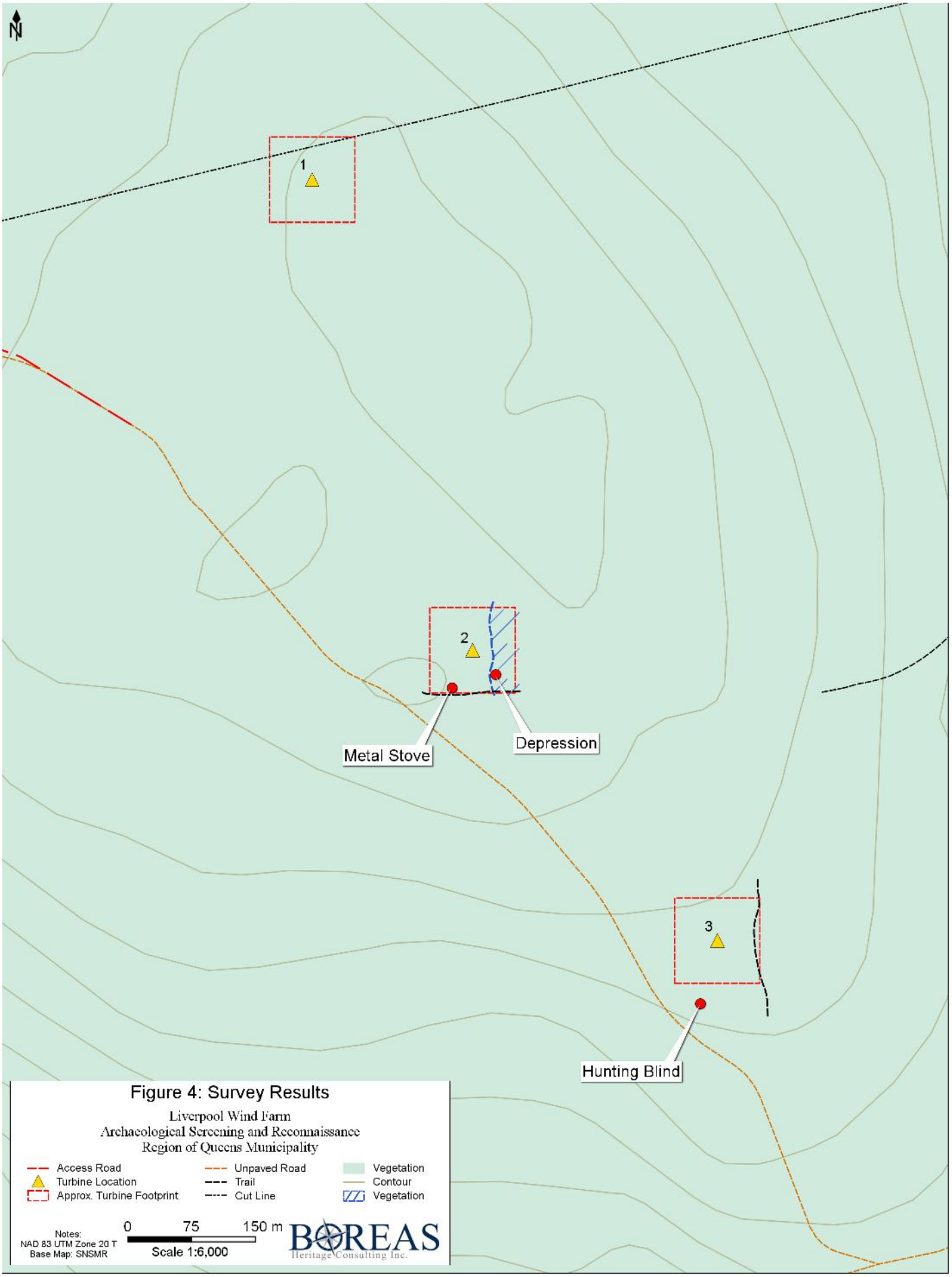

Figure 4: Survey Results

Liverpool Wind Farm
Archaeological Screening and Reconnaissance
Region of Queens Municipality

Access Road
Turbine Location
Approx. Turbine Footprint
Unpaved Road
Trail
Cut Line
Vegetation
Contour
Vegetation

Notes:
NAD 83 UTM Zone 20 T
Base Map: SNSMR

0 75 150 m
Scale 1:6,000

BOREAS Heritage Consulting Inc.

PLATE 4: Evidence of tree-harvesting activity; facing southwest.

Turbine Site 1

Turbine Site 1, situated approximately 2.5 kilometres northwest of Highway 103, is characterized by mainly level to undulating, hummocky terrain, which has been subjected to previous tree-harvesting activity (***Figure 4***). The open forest is comprised of a mix of pine, spruce, fir and maple (***Plate 5***). An old, overgrown cut line running roughly northeast-southwest is situated in the northern portion of the area (***Plate 6***). Overall, the area is lacking in any significant, or minor, water source and was determined to be unsuitable for occupation and/or work areas associated with resource exploitation by Precontact peoples. No evidence of archaeological resources or areas of elevated archaeological potential were encountered and no indication of significant historic cultural modification was identified.

Turbine Site 2

Turbine Site 2, situated approximately 600 metres southeast of Turbine Site 1, is characterized by mainly level to undulating, hummocky terrain, which has been subjected to previous tree-harvesting activity (***Figure 4***). The open forest is comprised of a mix of pine, spruce, fir and maple, with the eastern portion of the turbine site situated in mainly low-lying, wet terrain. A number of areas indicating modern land use and disturbance were also observed during the course of the assessment, including a water-filled depression, metal stove, tire ruts and a trail running

east-west along the southern edge of the turbine site (***Plates 7-9***). The roughly circular, water-filled depression, measures approximately 10 metres in diameter is most likely man-made, recent in nature and not considered to be archeologically significant. Visual inspection of the surrounding area revealed no additional features or associated artifacts. Overall, the area is lacking in any significant, or minor, water source and was determined to be unsuitable for occupation and/or work areas associated with resource exploitation by Precontact peoples. No evidence of archaeological resources or areas of elevated archaeological potential were encountered and no indication of significant historic cultural modification was identified.

Turbine Site 3

Turbine Site 3, situated approximately 450 metres southeast of Turbine Site 2, is characterized by mainly level to undulating, hummocky terrain, which has been subjected to previous tree-harvesting activity (***Figure 4***). The open forest, comprised of mainly pine, spruce, fir and maple, contains more mature trees and thicker underbrush than the other turbine locations. A number of areas indicating modern land use and disturbance were also observed during the course of the assessment, including tire ruts and a trail running north-south along the eastern edge of the study area, mounding of earth related to road construction and the remains of an abandoned hunting blind (***Plates 10-12***). Overall, the area is lacking in any significant, or minor, water source and was determined to be unsuitable for occupation and/or work areas associated with resource exploitation by Precontact peoples. No evidence of archaeological resources or areas of elevated archaeological potential were encountered and no indication of significant historic cultural modification was identified.

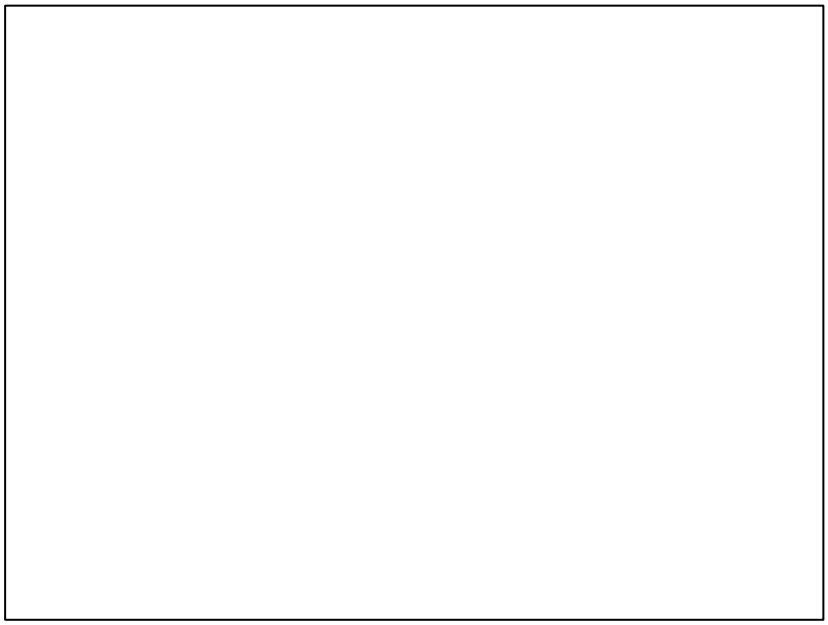

PLATE 5: Typical forest and terrain found throughout study area; facing west.

PLATE 6: Existing cut line at north end of Turbine 1 study area; facing northeast.

PLATE 7: Water-filled depression within Turbine 2 study area; facing north.

PLATE 8: Metal stove within Turbine 2 study area; facing northeast.

PLATE 9: Existing trail within Turbine 2 study area; facing west.

PLATE 10: Existing trail and tire ruts within Turbine 3 study area; facing north.

PLATE 11: Mounding of earth in the vicinity of the Turbine 3 study area; facing south.

PLATE 12: Remains of hunting blind in the vicinity of the Turbine 3 study area; facing northwest.

4.2.1 Archaeological Potential

Visual inspection revealed that the majority of the study area consisted of mainly level but hummocky terrain, significantly removed from any significant water source in the area. As a result, it was determined that the Liverpool Wind Farm study area would have been unsuitable for occupation and/or work areas associated with resource exploitation by Precontact peoples. No evidence of archaeological resources or areas of elevated archaeological potential were encountered and no indication of significant historic cultural modification was identified within the study area. Based on the nature of the terrain, the distance to a significant water source, and the lack of evidence indicating significant cultural modification, the Liverpool Wind Farm study area is considered to exhibit low potential for encountering significant archaeological resources.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The 2014 archaeological screening and reconnaissance of the Liverpool Wind Farm study area consisted of a background study and visual assessment of the property. It did not involve sub-surface testing. Based on the nature of the terrain, the distance to a significant water source, and the lack of evidence indicating significant cultural modification, the study area is considered to exhibit low potential for encountering significant archaeological resources.

Based on the results, the following management recommendations are provided:

1. It is recommended that the study area, as identified in this report, be cleared of any requirement for future archaeological investigation.

2. In the event that archaeological resources or human remains are encountered during development activities within the study area, immediate contact should be made with Sean Weseloh McKeane, Coordinator of Special Places, Communities Culture and Heritage, at 902-424-6475.

6.0 REFERENCES

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