*APPENDIX J*

# ARCHAEOLOGY ASSESSMENT

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# FAIRMONT WIND FARM PROJECT, REVISED TURBINE LOCATIONS: ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT

## HERITAGE RESEARCH PERMIT A2011NS45

**JUNE 2011**

REPORT SUBMITTED TO:

**Wind Prospect Inc.**
1791 Barrington St, Suite 1030
Halifax Nova Scotia B3J 1L1

# FAIRMONT WIND FARM PROJECT, REVISED TURBINE LOCATIONS: ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT

Heritage Research Permit A2011NS45
Category C

Davis MacIntyre & Associates Limited

Principal Investigator: Laura A. de Boer
**Report Compiled by:** Laura A. de Boer, April D. MacIntyre & Stephen A. Davis

*Cover: View of a plateau near the proposed site of Turbine 1. Looking northwest.*

# Table of Contents

# List of Figures



# List of Plates

# Executive Summary

Davis MacIntyre & Associates Limited conducted an archaeological resource impact assessment of the proposed Fairmont Wind Farm Project in Antigonish County in October 2010. The assessment included consultation of historic maps, manuscripts, and previous archaeological assessments as well as the Maritime Archaeological Resource Inventory in order to determine the potential for archaeological resources in the study area. A field reconnaissance was also conducted, consisting of a walkover survey of all areas to be impacted by the project's construction.

Archaeological research and reconnaissance in 2010 yielded no evidence of archaeological resources within the impact area, though historical resources are known within the study area. However, in May 2011, two of the previously surveyed turbine sites were moved, necessitating a follow-up assessment of these areas in order to ensure that no heritage resources would be impacted by their construction. A second visit to the study area to review the new turbine sites and a short proposed access road revealed that no archaeological sites would be impacted within this new layout. No further recommendations for archaeological mitigation have been made at this time.

## 1.0 INTRODUCTION

In May 2011, Davis MacIntyre & Associates Limited was contracted by Wind Prospect Inc. to conduct a follow-up archaeological resource impact assessment of the proposed Fairmont Wind Farm Project in Antigonish County, as two of the previously surveyed proposed turbine sites had been moved and an access road had been added. The purpose of the assessment was to determine the potential for archaeological resources within the development zone and to provide recommendations for further mitigation if deemed necessary.

A previous archaeological assessment of the study area was conducted by Davis MacIntyre & Associates Limited in October 2010. That assessment included consultation of the Maritime Archaeological Resource Inventory in the Heritage Division of the Nova Scotia Museum as well as historic maps, manuscripts and published resources. A field reconnaissance of the impact area was also conducted and heritage resources were encountered, although outside any anticipated impact areas at the time.

The follow-up assessment was conducted under Category C Heritage Research Permit A2011NS45 issued by the Nova Scotia Heritage Division. This report conforms to the standards required by the Heritage Division under the Special Places program.

## 2.0 STUDY AREA

Wind Prospect Inc. is proposing to construct a small wind farm consisting of two turbines near Fairmont, north of the town of Antigonish (Figure 2.0-1). The construction of the wind farm will involve erecting two wind turbines and installing access roads and the necessary electrical facilities. A concrete foundation approximately 16 meters in diameter would be required for each wind turbine. The construction of the reinforced concrete foundations will include excavation to a depth of several meters, the placement of concrete forms and steel reinforcement, and the pouring of concrete within the forms. The upper surface of each base will lie approximately 1 meter below ground level. The

central support pedestal would extend 0.20 meters above existing ground level to receive the bolted bottom tower section. Suitable excavated material would be compacted in layers on top of the concrete foundation to terminate flush with the existing ground level.

Internal site roads required for the development are typically up to 12 meters wide and will be used to move workers and equipment about the site during the mobilization, construction, operation and decommissioning phases. The roads will be rolled back to 6 meters during the operation life of the wind farm. The construction of new roads will involve the removal of soil to a depth of between 0.25 - 0.50 meters (depending on the ground conditions encountered during the geotechnical investigations). The internal site roads would be maintained in good condition during construction and throughout the lifetime of the Project.

The electricity produced from the turbines will be transformed up to 25.5 kV by a pad-mounted transformer located adjacent to each turbine base, conducted to the switchgear enclosure via underground collection cables, and then routed to the connection the point with the existing distribution system. The electrical collection cable will consist of an armored polyethylene-insulated jacket with copper or aluminum conductors. It will be buried in gravel bedding, next to the internal site roads, at a depth of approximately 1.2 meters. A separate fiber optic cable for communications will be laid in the same trench separate from the electrical connection cable in order to minimize signal interference. The electrical, communications and earthing (grounding) cables will leave the turbine foundations below grade via cable ducts cast into the turbine foundations. Where the cables are to cross the site roads and crane bases, they may be located in cable ducts surrounded by 0.15 meters of concrete to ensure the integrity of the cables is maintained independent of the site crossings above.

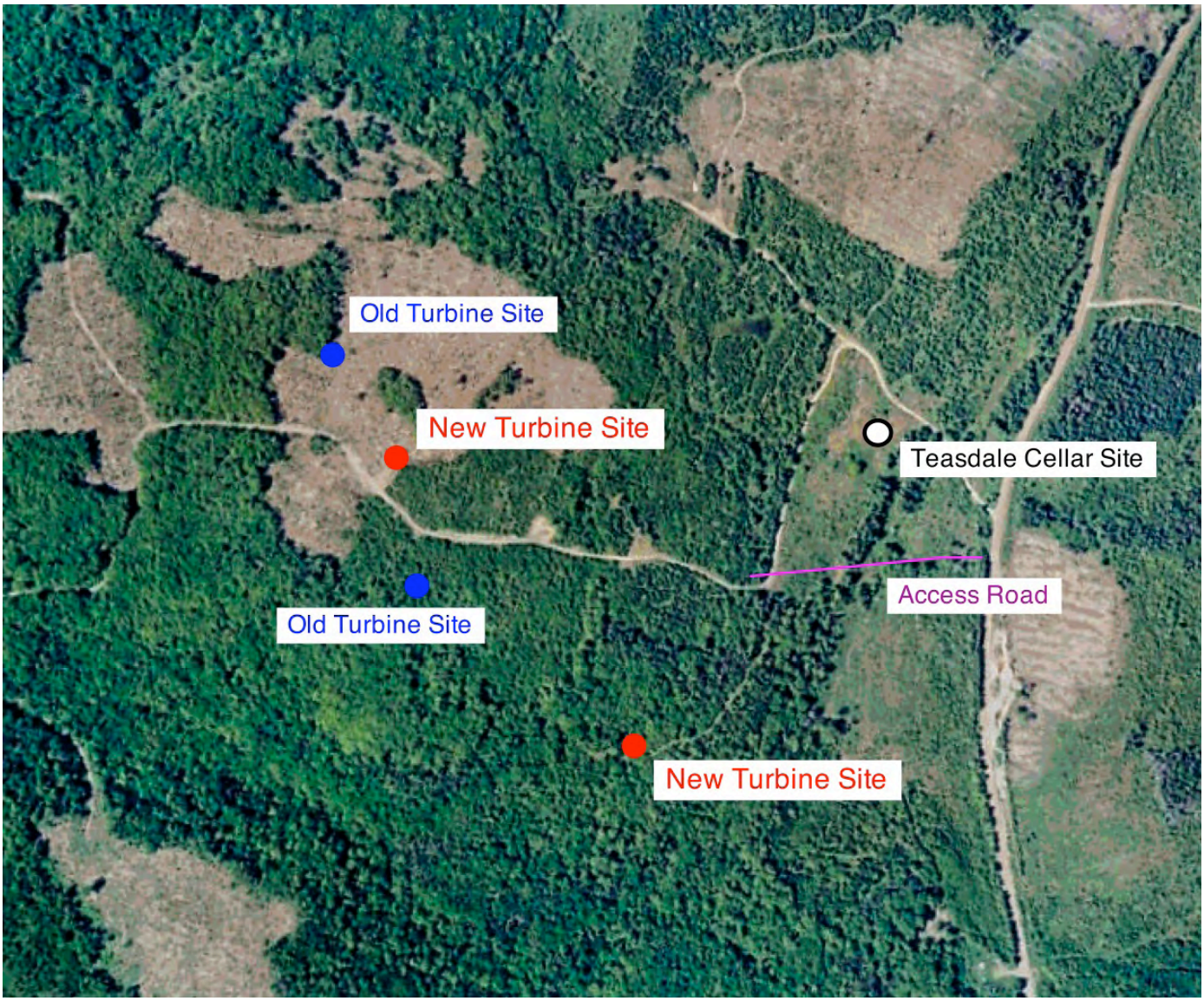


***Figure 2.0-1: Map of the revised project study area showing the old and new turbine locations, as well as th previously identified archaeological site. Base map courtesy Wind Prospect Inc.***

The study area is located in the Antigonish Uplands region, Lakevale sub-Unit (Natural Theme Region #583b) (Figure 2.0-2). The Antigonish Uplands region is divided into several tertiary watersheds that drain mainly into St. George's Bay. The surface water in this region is comprised primarily of tributaries that flow into first order streams by way of a modified trellis pattern. The soils in the Lakevale sub-Unit are imperfectly-drained, either because of fine-textured underlying clays or flat-lying bedrock. The geology of the region includes resistant Horton, Canso, and Riversdale strata along with eroded Windsor deposits. Sugar Maple, Yellow Birch, and American Beech are most common in the part of the region covered by the development area. Freshwater fish are abundant in lakes and streams, although no significant habitats exist within the development area. Species include White Suckers, perch, shiners, Brown Bullhead, Brook Trout, American Eel and Gaspereau. Information on small mammals in this sub-Unit is somewhat scarce. The natural environment has influenced cultural activities in the region, including limestone quarrying, fish hatcheries, forestry, commercial fishing, and small-scale farming in valleys.[1]

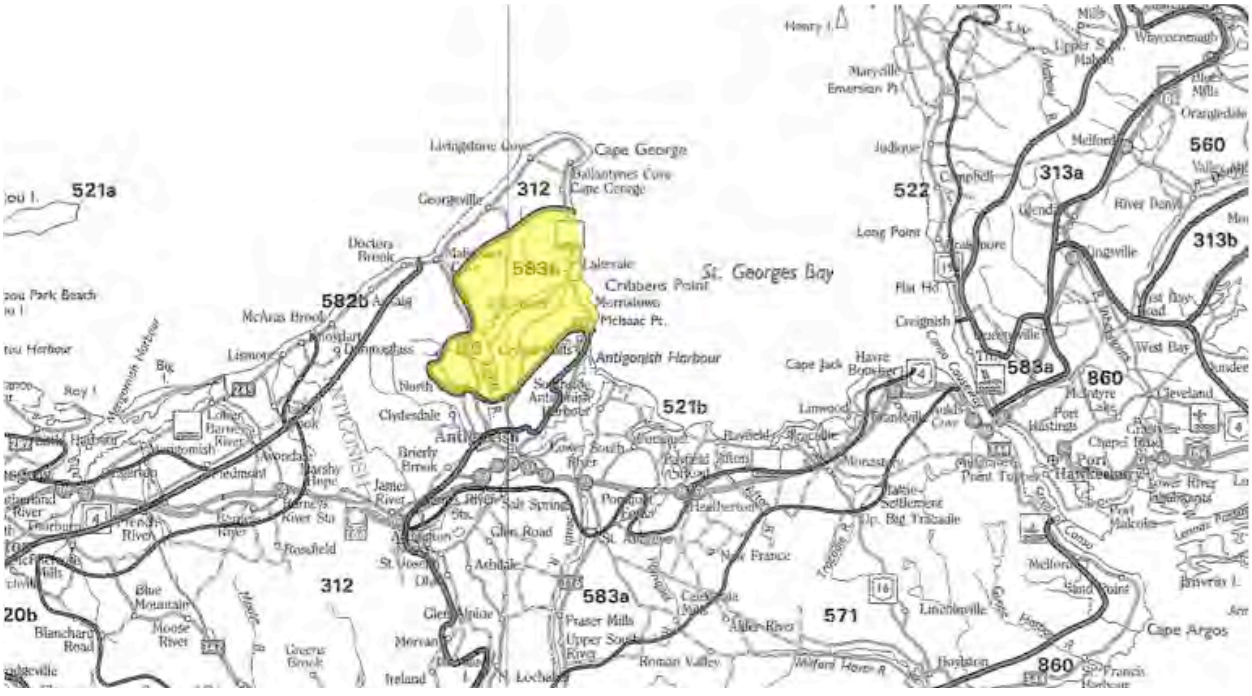


**Figure 2.0-2: Natural Theme Regions of Nova Scotia, showing region #583b (highlighted) – Antigonish Uplands, Lakevale sub-unit.**

[1] Davis and Browne 1996:142.

## 3.0 METHODOLOGY

A previous archaeological assessment was conducted by Davis MacIntyre & Associates Limited in October 2010, which included a historic background study and field reconnaissance. The results of this assessment were documented in detail in a report submitted to Wind Prospect Inc. and the Nova Scotia Heritage Division in November 2010 under Heritage Research Permit A2010NS104.

In June 2011, the revised turbine sites were visited by Stephen Davis and Laura de Boer in order to ensure that no archaeological resources would be impacted by the construction of the new turbine site.

### 3.1 Historic Background Study Summary

The ancestors of the Mi'kmaq are known to have inhabited Nova Scotia as least as early as 11,000 years BP. First Nations sites are known to have existed along the nearby shores of Antigonish, Tracadie and Merigomish Harbours but no evidence of such presence was noted in the development area during the 2010 field reconnaissance. The Mi'kmaq inhabited the territory known as *Mi'kma'ki* or *Megumaage*, which included all of Nova Scotia including Cape Breton, Prince Edward Island, New Brunswick (north of the Saint John River), the Gaspé region of Quebec, part of Maine and southwestern Newfoundland (Figure 3.2-1). With the arrival of Europeans in what is now Nova Scotia came the first documentation of the Mi'kmaq inhabiting Antigonish County. The district was known to the Mi'kmaq as *Nalegitkoonech* meaning "place were branches are torn off." The name reportedly originates from the presence of damaged branches resulting from bears retrieving beech nuts. Antigonish town is itself the location of the "Indian Gardens" reported by the French in the eighteenth century. Father Pierre Maillard, a French Roman Catholic priest, referred to *Naltigonech* as being part of his mission to Christianize the Mi'kmaq in 1745.[2]

[2] Walsh, 1989:16-20.

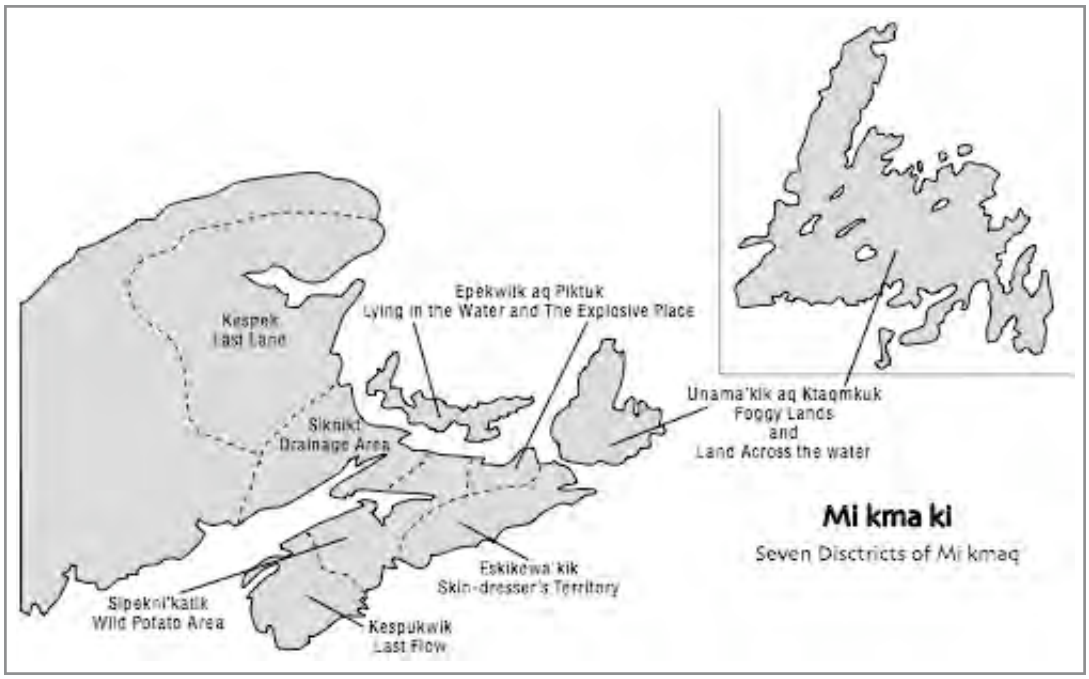


***Figure 3.2 -1: Map of the Mi'kmaq territories.***[3]

The area was settled by Loyalist refugees and disbanded soldiers in 1784. The densest settlement was originally around Town Point (originally known as Dorchester), to the northeast of present-day Antigonish where the Mi'kmaq were originally settled. The Mi'kmaq were slowly pushed out of their settlement on the western shore of the harbour and moved further south and eventually on to the east side of the harbour near Pomquet where the Pa'qntkek First Nation is presently located.

The settlement was eventually moved to the present site of Antigonish and in the late 18th and early 19th century, the area was subjected to large influxes of Scottish immigrants, most by way of Pictou. Cloverville, a village located immediately south of the study area, was initially settled by Irish immigrants who migrated from Guysborough County in the mid 19th century. Fairmont itself was known as the Upper Hallowell Grant prior to 1892 when its name was changed to "Fairmount" as was sparsely occupied by farms (Figure 3.2-2). Around this time there appear to have been few structures

[3] Confederacy of Mainland Mi'kmaq, 2007:11.

located on the leased lands indicated for use on the wind farm project, as an 1893 geological survey map has indicated (Figure 3.2-3). In the 1960s Fergusson noted that "many of the farms are now vacant [and] the school has been closed and the school district became part of the 'Fringe Area' in 1958. The population in 1956 was 73."[4] The study area includes elements of several original land grants: John Stealing Connor, Maron MacDonald, Michael Sipple, and Samuel Hood (Figure 3.2-4).

Historic occupation has been recorded in the Maritime Archaeological Resource Inventory near Town Point and in the Harbour Centre area, approximately five kilometers from the proposed wind farm site.


***Figure 3.2 -2: Detail from Church's 1879 map of Antigonish County. Note that the map is not as accurate as later mapping, and therefore the study area is indicated more approximately.***

[4] Fergusson 1967:203.

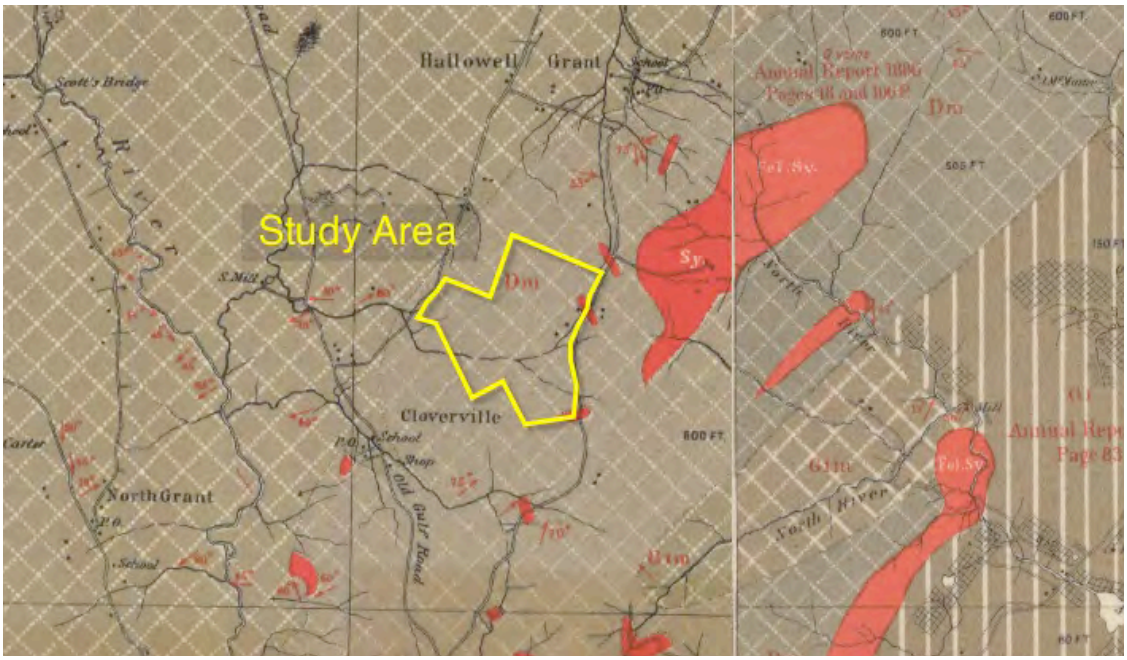


***Figure 3.2 -3: Detail of an 1893 geological survey map of Fairmont and its surroundings, showing the study area in yellow.[5]***

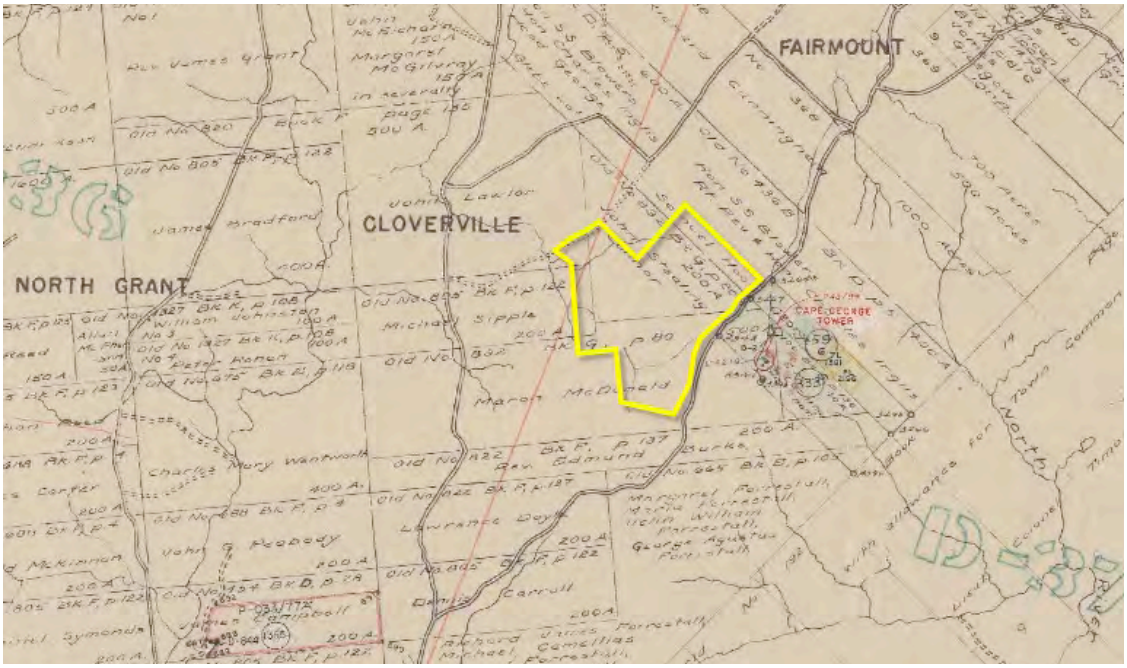


***Figure 3.2 -4: A land grant map of Fairmont and its surroundings, showing the study area in yellow.[6]***

[5] Faribault and Fletcher, 1893.

[6] Department of Lands and Forests c.1949.

### 3.2 Field Reconnaissance

A field reconnaissance of the original turbine sites was conducted by Stephen Davis and Laura de Boer on October 27, 2010. No evidence of historical or Precontact cultural activity were found at either turbine site. Bedrock in the area was found to be extremely shallow and somewhat soft, exhibiting heavy scarring from glaciers and other natural effects.

The 2011 field reconnaissance was conducted on June 2, 2011 by Stephen Davis and Laura de Boer. The two new turbine sites were investigated, as was the proposed access road leading east from Fairmont Road.

The proposed site of Turbine 1 (20 T 578560 5059274) is located in an already cleared area southeast of the formerly proposed site. As was the case in October 2010, it was observed that the soil was relatively infertile and that the till was very shallow (Plate 1). The recent installation of a telephone pole, possibly for power transmission from the turbine, was observed on the slope leading to the site of Turbine 1. Disturbed soil around the base of the pole was examined for artifactual material, but none was observed (Plate 2).

The second proposed turbine site (20 T 578793 5058994) is located farther southeast, along an old road or logging trail that has become overgrown due to disuse. In this area, young hardwoods predominate in undulating, rocky soil that slopes gently south (Plate 3). Aside from the logging road, no cultural activity was observed in the vicinity of the proposed site of Turbine 2.

The access road running east from an existing access road for the turbines to Fairmont Road was the final impact area to be examined during this reconnaissance. The proposed road traverses areas of old field (Plate 4) associated with the archaeological site (a nineteenth century farm) identified to the north of the impact area during the October 2010 reconnaissance. A low, wet area also lies within this path. No archaeological re-

sources, either associated with the farm site or with other activities, were observed or predicted within the proposed road corridor.

During the 2010 reconnaissance, a local landowner directed the archaeologists to a narrow stone-lined cellar feature in a cleared field near the main Fairmont Road (NAD83 20 T 0578995 5059275). Two coarse bricks, likely from the nineteenth or very early twentieth century, were noted on the ground nearby. The cellar is lined with large stones of the same type as the local bedrock, and is unusually long and narrow, being about 4 metres wide east-west by 7 metres long north-south. The site is overgrown, but the rough outline of a house, 6 metres longer to the north than the cellar and appearing to have also had an "ell" addition to the east, is barely visible. A rough stone staircase, 4 metres long and 1.5 metres wide, extends upwards from the southeast corner of the cellar, forming an external exit. Part of this staircase has been repaired with coarse concrete mixed on-site, consistent with a date of pre- to ante-WWII. Garbage from the past fifty years or so has been dumped into the cellar, including pop cans, glass bottles, rubber shoes and boots, and spray paint cans. The cellar is approximately 1.5 metres deep. Although no sign of burning remains, the landowner reported that the house had burned down circa 1939. The landowner noted that a barn foundation and a well were also present in association with the house, but neither could be located in the overgrowth on the site.

Following the October reconnaissance DM&A submitted a Maritime Archaeological Resource Inventory (MARI) form for this site, named the Teasdale Cellar Site. It has since been incorporated into the MARI database under Borden Number BkCl-07.

During the June 2011 reconnaissance, the barn foundation or possibly that of the barn referenced by the landowner the previous autumn and one other outbuilding was noted directly north of the cellar site at NAD83 20 T 579059 5059334. Seasonal vegetation was somewhat thinner, allowing archaeologists to clearly see the stone foundations. (Plates 5 and 6) Both the barn and the originally identified cellar site remain outside of the currently defined impact area. The new proposed assess road is located to the south of the cellar, while the turbines are located to the south and west.

## 4.0 RESULTS AND DISCUSSION

Although a nineteenth to early twentieth century farm site has been identified and recorded within the study area, this site is not threatened by the current wind farm development. Neither the proposed access road nor the two relocated turbine sites lie within close proximity to the identified archaeological resources. Photographs and a GPS coordinate for the barn north of the Teasdale Cellar Site has been submitted for inclusion in the MARI database, to be incorporated into the data for BkCl-07.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

Archaeological research and reconnaissance has yielded no evidence of archaeological resources within the impact area, though historical resources are known within the study area. As a result, so long as construction plans remain unchanged, no further archaeological mitigation is recommended at this time.

Avoidance is the preferred method of mitigation in all instances where archaeological resources are present. This investigation has indicated that nothing of archaeological significance will be impacted during construction activities. However, should any archaeological resources be encountered during ground disturbance activities, it is recommended that all activity cease and the Coordinator of Special Places, Laura Bennett (902-424-6475) be contacted immediately to determine a suitable method of mitigation.

## 6.0 REFERENCES CITED

Church, Ambrose F. 1879. *Topographical Township Map of Antigonish County*. Halifax: A. F. Church & Co.

Confederacy of Mainland Mi'kmaq. 2007. *Kekina'muek: Learning about the Mi'kmaq of Nova Scotia*. Truro: Eastern Woodland Publishing.

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Department of Lands and Forests. c.1949. Crown Land Index Sheet No. 98: Pictou and Antigonish Counties.

Faribault, E R; and Fletcher, H. 1893. Province of Nova Scotia, Antigonish and Pictou Counties. Geological Survey of Canada, Multicoloured Geological Map 388. Faribault-Fletcher Geological Map Series 34.

Fergusson, C. Bruce, ed. 1967. *Place Names and Places of Nova Scotia*. Halifax: Public Archives of Nova Scotia.

# PLATES

*Plate 1: The slope leading to turbine location one, looking north.*

*Plate 2: The disturbed soil around the base of a power pole.*

*Plate 3: Forest around the proposed site of Turbine 2. Looking north.*

*Plate 4: Old field within the access road corridor. Looking west.*

*Plate 5: One foundation wall from the barn, clearly visible above the shorter vegetation during the 2011 site reconnaissance. Looking west.*

*Plate 6: A broad view of the foundations noted north of the Teasdale Cellar Site. Likely that of a barn and possibly an additional outbuilding.*

# APPENDIX A: HERITAGE RESEARCH PERMIT

NOVA SCOTIA
Tourism, Culture and Heritage

Heritage Division

Special Places Protection Act, R.S.N.S. 1989

# Heritage Research Permit (Archaeology)

(Original becomes Permit when approved by the Executive Director of the Heritage Division)

**Office Use Only**
Permit Number A2011NS45

A2011NS45

| *Greyed out fields will be made publically available. Please choose your project name accordingly* | |
|---|---|
| Surname de Boer | First Name Laura |
| Project Name Fairmont Wind Farm (Revised Turbine Locations) | |
| Name of Organization Davis, MacIntyre & Associates | |
| Representing (if applicable) | |
| Permit Start Date 24 May 2011 | Permit End Date 30 June 2011 |

**General Location**: Antigonish County

**Specific Location**: *(cite Borden numbers and UTM designations where appropriate and as described separately in accordance with the attached Project Description. Please refer to the appropriate Archaeological Heritage Research Permit Guidelines for the appropriate Project Description format)*

Fairmont, in the vicinity of the Teasdale Cellar Site (BkCl-07), 20 T 0578995 5059275

**Permit Category**:
Please choose one:

☐ Category A - Archaeological Reconnaissance
☐ Category B - Archaeological Research
☒ Category C - Archaeological Resource Impact Assessment

☐ I certify that I am familiar with the provisions of the *Special Places Protection Act* of Nova Scotia and that I have read, understand and will abide by the terms and conditions listed in the Heritage Research Permit Guidelines for the above noted category.

☐ I currently hold a treasure trove license or pending application for a licence related to this Heritage Research Permit.

| | |
|---|---|
| Signature of applicant Stephen Davis for Laura de Boer | Date 10 May 2011 |
| Approved by Executive Director Bill Mensh | Date May 15/11 |

# FAIRMONT WIND FARM PROJECT: ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT

**HERITAGE RESEARCH PERMIT A2010NS104**

**NOVEMBER 2010**

REPORT SUBMITTED TO:

**Wind Prospect Ltd.**

1791 Barrington St, Suite 1030

Halifax Nova Scotia B3J 1L1

# FAIRMONT WIND FARM PROJECT:
# ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT

Heritage Research Permit A2010NS104
Category C

Davis MacIntyre & Associates Limited

Principal Investigator: Laura A. de Boer
**Report Compiled by:** Laura A. de Boer & Stephen A. Davis

*Cover*: *A view of the western end of the study area from an elevated ridge. Looking south.*

# Table of Contents

# List of Figures



# List of Plates

# Executive Summary

Davis MacIntyre & Associates Limited conducted an archaeological resource impact assessment of the proposed Fairmont Wind Farm Project in Antigonish County. The assessment included consultation of historic maps, manuscripts, and previous archaeological assessments as well as the Maritime Archaeological Resource Inventory in order to determine the potential for archaeological resources in the study area. A field reconnaissance was also conducted, consisting of a walkover survey of all areas to be impacted by the project's construction.

The assessment indicated that First Nations activity was present on nearby coasts, but was not confirmed archaeologically in the highlands surrounding the study area. European settlement took place as early as 1784, but populations have not significantly increased since the mid-nineteenth century. During the field survey, a nineteenth to early twentieth century farm site was identified and recorded within the study area. However, this site is not threatened by the current wind farm development. So long as current construction plans do not change, the site is likely to be preserved. No other archaeological resources were located during the field survey. As a result, no further archaeological mitigation is recommended at this time.

## 1.0 INTRODUCTION

In October 2010, Davis MacIntyre & Associates Limited was contracted by Wind Prospect Ltd. to conduct an archaeological resource impact assessment of the proposed Fairmont Wind Farm Project in Antigonish County. The purpose of the assessment was to determine the potential for archaeological resources within the development zone and to provide recommendations for further mitigation if deemed necessary. This assessment included consultation of the Maritime Archaeological Resource Inventory in the Heritage Division of the Nova Scotia Museum as well as historic maps, manuscripts and published resources. A field reconnaissance of the impact area was also conducted.

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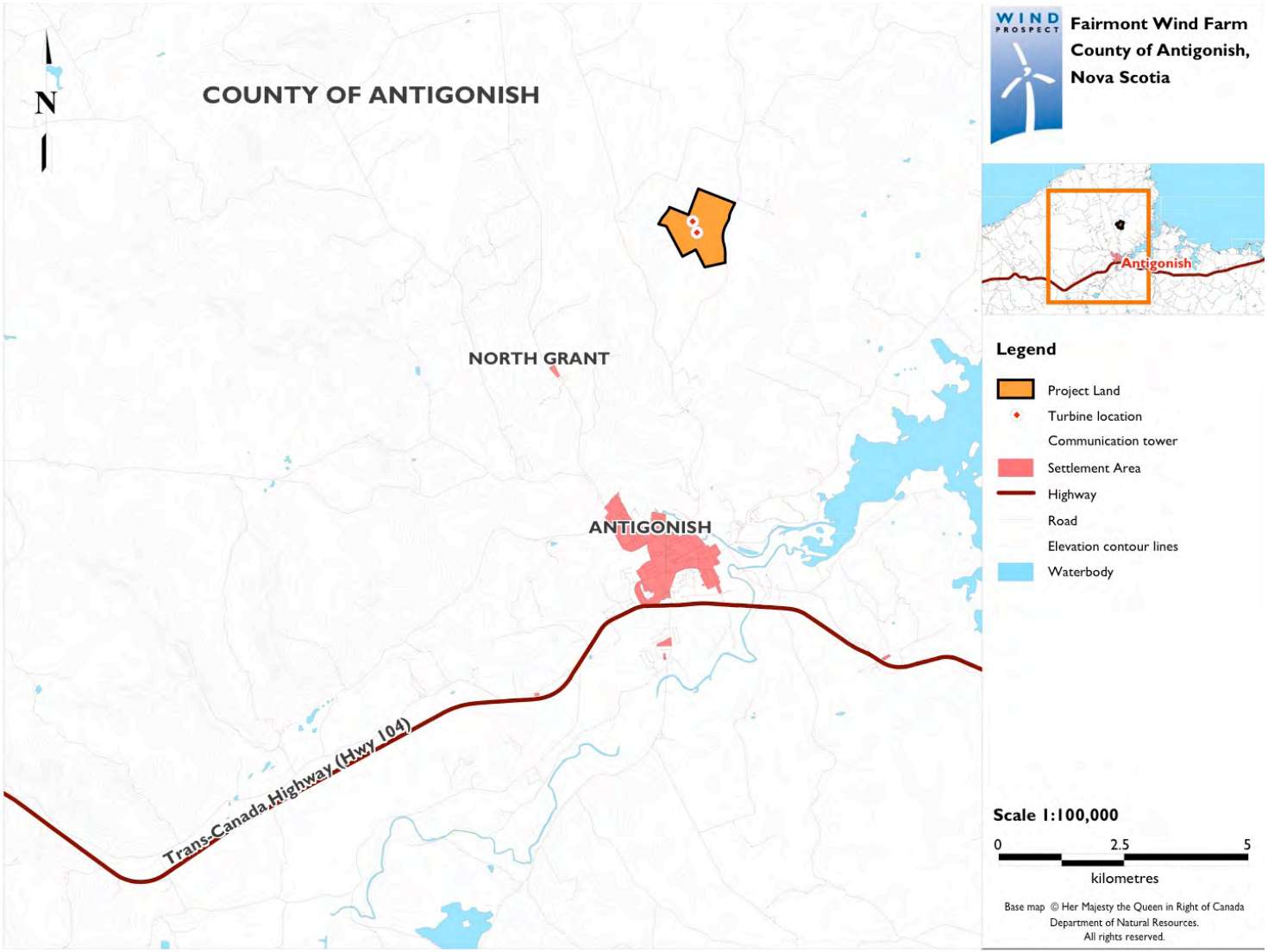


*Figure 2.0-1: Map of the project study area showing leased land for the project and the two turbine locations. Courtesy Wind Prospect Ltd.*

Internal site roads required for the development are typically up to 12 meters wide and will be used to move workers and equipment about the site during the mobilization, construction, operation and decommissioning phases. The roads will be rolled back to 6 meters during the operation life of the wind farm. The construction of new roads will involve the removal of soil to a depth of between 0.25 - 0.50 meters (depending on the ground conditions encountered during the geotechnical investigations). The internal site roads would be maintained in good condition during construction and throughout the lifetime of the Project.

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The study area is located in the Antigonish Uplands region, Lakevale sub-Unit (Natural Theme Region #583b) (Figure 2.0-2). The Antigonish Uplands region is divided into several tertiary watersheds that drain mainly into St. George's Bay. The surface water in this region is comprised primarily of tributaries that flow into first order streams by way of a modified trellis pattern. The soils in the Lakevale sub-Unit are imperfectly-drained, either because of fine-textured underlying clays or flat-lying bedrock. The geology of the region includes resistant Horton, Canso, and Riversdale strata along with eroded Windsor deposits. Faults are not uncommon, representing a transition between coastal lowland and upland, and some volcanic rock is present. A transition in predominant vegetation is also present, falling within Loucks' Sugar Maple-Hemlock, Pine Zone, where conifers fade into more shade-tolerant species to the south. Sugar Maple,

Yellow Birch, and American Beech are most common in that part of the region covered by the development area. Freshwater fish are abundant in lakes and streams, although no significant habitats exist within the development area. Species include White Suckers, perch, shiners, Brown Bullhead, Brook Trout, American Eel and Gaspereau. Information on small mammals in this sub-Unit is somewhat scarce. The natural environment has influenced cultural activities in the region, including limestone quarrying, fish hatcheries, forestry, commercial fishing, and small-scale farming in valleys.[1]

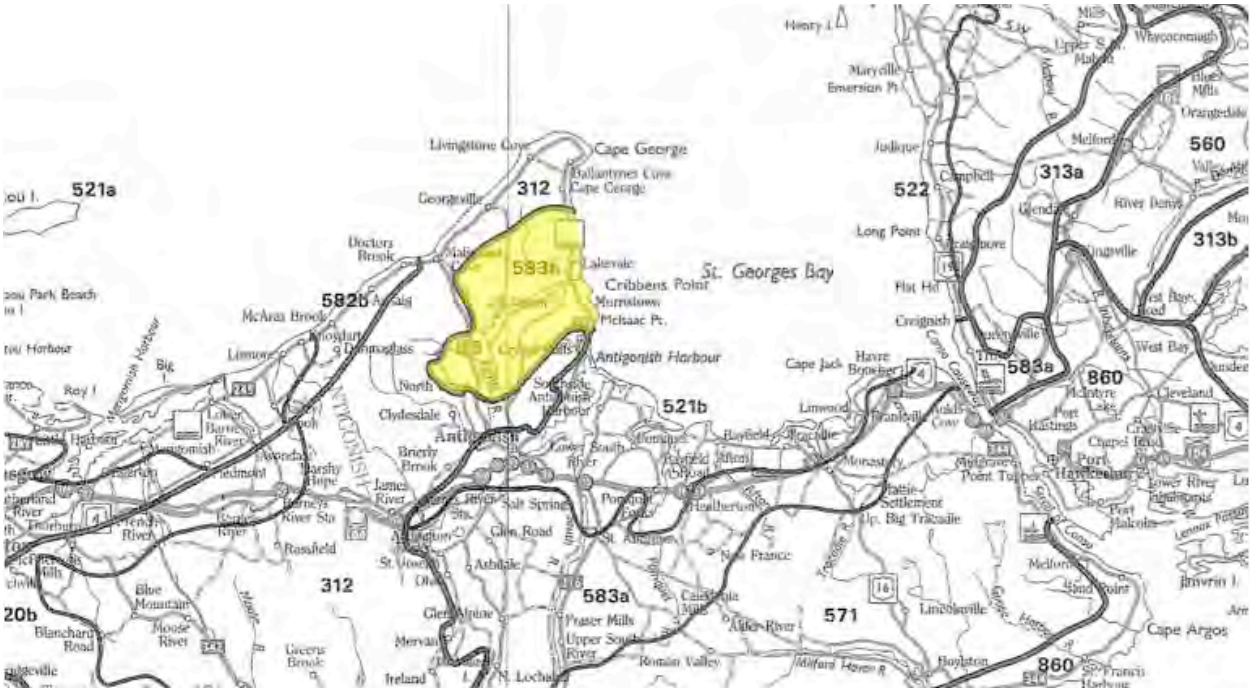


**Figure 2.0-2: Natural Theme Regions of Nova Scotia, showing region #583b (highlighted) – Antigonish Uplands, Lakevale sub-unit.**

## 3.0 METHODOLOGY

A historic background study was conducted by Davis MacIntyre & Associates Limited in October 2010, followed in the same month by a field reconnaissance. Historical maps and manuscripts and published literature were consulted at the Nova Scotia Archives and Records Management in Halifax. The Maritime Archaeological Resource Inventory, held at the Nova Scotia Museum's Heritage Division, was searched to understand

[1] Davis and Browne 1996:142.

prior archaeological research and known archaeological resources neighboring the study area. The field reconnaissance was conducted on October 27, 2010 by Stephen Davis and Laura de Boer.

### 3.1 Maritime Archaeological Resource Inventory

The Maritime Archaeological Resource Inventory, a Provincial database of known archaeological sites held at the Nova Scotia Heritage Division, was consulted in October 2010 to understand prior archaeological research and known archaeological resources neighboring the study area.

Tracadie Harbour's shores encompass a total of thirteen known First Nations sites, identified from 1973 thru the early 1990s. The sites, usually consisting of lithic scatters, represent a broad range of dates beginning in the Archaic period, and multiple uses including fishing sites and encampments. Similarly, the shores of Pomquet Harbour host six known sites of general First Nations activity. An isolated find of a stone gouge also originated from Pomquet Harbour, and is attributed to the Late Archaic period.

Four more First Nations sites have been recorded in Antigonish Harbour. The nearest to the study area appears to be located at Crystal Cliffs, where a unilaterally barbed bone point was found by a child in 1986. A Mi'kmaq Traditional Ecological Knowledge study has noted that no significant village site has been encountered in the area, possibly due to the growth of the town of Antigonish, an area once known as Indian Gardens.[2]

Historic period sites relating to European settlement have also been identified. An Acadian or Black Loyalist house site, and a possible cemetery, have been found in East Tracadie. A large house cellar and associated farm buildings, and another house site, have been identified in Rear Monastery and attributed to Black Loyalist settlement. Six more Black Loyalist cellar sites were identified on the eastern site of Tracadie Harbour.

[2] Mi'kmaq Environmental Services 2004:19.

A nineteenth century house foundation and cellar, attributed to an A. Kennedy, was identified near Town Point in 2009. A second house foundation, filled with stone, was also located not far from the coast near Town Point. Finally, a series of depressions related to historic settlement has been identified in the Harbour Centre area, approximately five kilometers from the proposed wind farm site.

## 3.2 Historical Background

### 3.2.1 The Precontact Period

The history of human occupation in Nova Scotia has been traced back approximately 11,000 years ago, to the Palaeo-Indian period or *Sa'qewe'k L'nu'k* (11,000 – 9,000 years BP). The only significant archaeological evidence of Palaeo-Indian settlement in the province exists at Debert/Belmont in Colchester County.

The *Saqiwe'k Lnu'k* period was followed by the *Mu Awsami Kejikawe'k L'nu'k* (Archaic period) (9,000 – 2,500 years BP), which included several traditions of subsistence strategy. The Maritime Archaic people exploited mainly marine resources while the Shield Archaic concentrated on interior resources such as caribou and salmon. The Laurentian Archaic is generally considered to be a more diverse hunting and gathering population.

The Archaic period was succeeded by the Woodland/Ceramic period or *Kejikawek L'nu'k* (2,500 – 500 years BP). Much of the Archaic way of subsistence remained although it was during this period that the first exploitation of marine molluscs is seen in the archaeological record. It was also during this time that ceramic technology was first introduced.

The Woodland period ended with the arrival of Europeans and the beginning of recorded history. The initial phase of contact between First Nations people and Europeans, known as the Protohistoric period, was met with various alliances particularly between the Mi'kmaq and French.

The Mi'kmaq inhabited the territory known as *Mi'kma'ki* or *Megumaage*, which included all of Nova Scotia including Cape Breton, Prince Edward Island, New Brunswick (north of the Saint John River), the Gaspé region of Quebec, part of Maine and southwestern Newfoundland (Figure 3.2-1). With the arrival of Europeans in what is now Nova Scotia came the first documentation of the Mi'kmaq inhabiting Antigonish County. The district was known to the Mi'kmaq as *Nalegitkoonech* meaning "place were branches are torn off." The name reportedly originates from the presence of damaged branches resulting from bears retrieving beech nuts. Antigonish town is itself the location of the "Indian Gardens" reported by the French in the eighteenth century. Father Pierre Maillard, a French Roman Catholic priest, referred to *Naltigonech* as being part of his mission to Christianize the Mi'kmaq in 1745.[3]

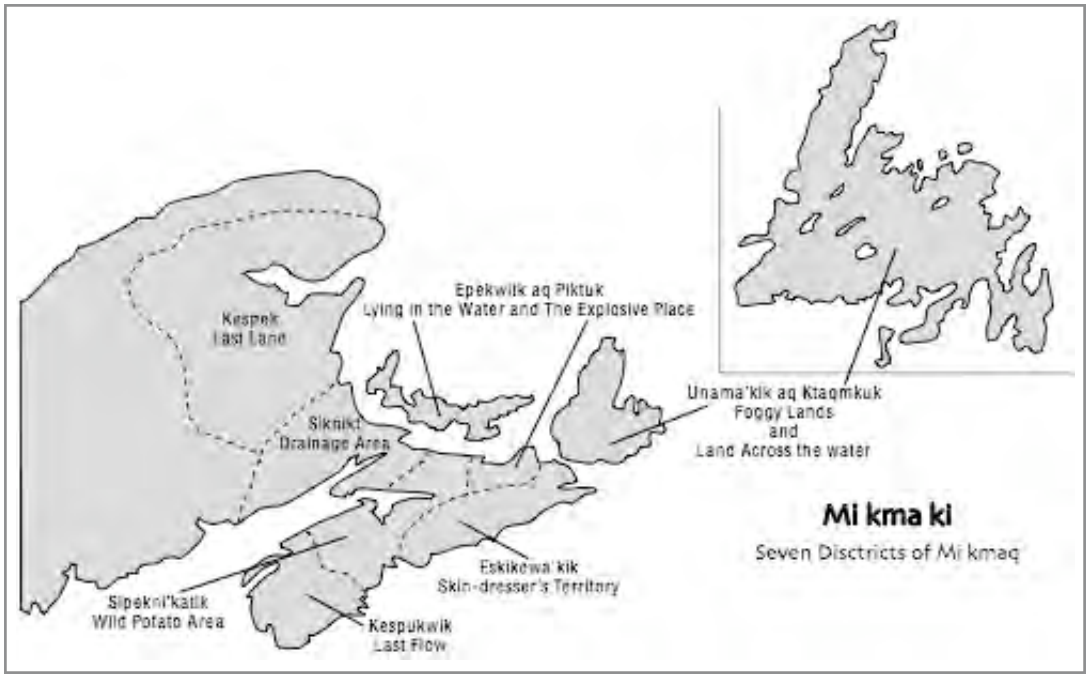


***Figure 3.2 -1: Map of the Mi'kmaq territories.***[4]

Early Euoprean influence through trade and particularly through religious missionaries appears to have influenced the subsistence patterns of Mi'kmaq tribes in this area, encouraging the more sedentary and agrarian lifestyle deemed suitable by European standards. In about 1720 Father Gaulin, a Catholic missionary, reported to his superiors

[3] Walsh, 1989:16-20.

[4] Confederacy of Mainland Mi'kmaq, 2007:11.

that the "Micmacs of Acadia are desirous of being collected in one village; then they could send for grain and catch fish sufficiently to make a living, and that is what induced them to select the river d'Arthigoniesche near which to set up a village…. The little corn the Indians have been growing there for some time, and peas, and beans and cabbages grow there very well".[5]

### 3.2.2 European Settlement

In 1784, Colonel Timothy Hierlihy and his disbanded regiment of soldiers received a grant of 21,600 acres in the Antigonish area, plotted by the deputy surveyor of the Governor of Halifax. This survey and grant came only one year after the same Governor of Halifax had granted a licence to Anthony Bernard, chief of the Antigonish Indians, "for them to occupy undisturbed the several villages and tracts they have improved or settled upon on the River (that is, the harbour) of the same name, to wit: on the peninsula on the western side of the river where the Mass house is placed; also the island near the western side of the River, together with the village near the head of the tide on both sides of the river with liberty of hunting and fishing as customary". The Governor's order had effectively been ignored during the survey, and the whole of the reservation was taken up.[6] The Mi'kmaq were slowly pushed out of their settlements on the west side of the harbour. The presence of a few remaining Mi'kmaq on the Antigonish shores was noted into the 19th century, as birch bark wigwams were present at Antigonish Landing in the 1920s, and tarpaper wigwams were noted at South River Station in the 1940s.[7] By the mid-nineteenth century, many had established themselves on new lands on the east side of the harbour near Pomquet where the Pa'qntkek First Nation is presently located.

Prior to this, Hierlihy, a captain in the British army who with his men would receive grants on the shores Antigonish, had been stationed at New York during the war between America and Britain. Shortly after the outbreak of war, the regiment was sent to Halifax and later to Prince Edward Island where it remained until war was at an end.

[5] MacGillivray, 1935:95-96.

[6] MacGillivray, 1935:95-96.

[7] Nash, quoted in Mi'kmaq Environmental Services 2004:19.

At one point during their station at PEI, four or five soldiers deserted and Hierlihy was sent to capture them. He landed at Pictou and followed an Indian guide to Merigomish where he then sailed along the shore to Guysborough and found the deserters. During this expedition, Hierlihy had entered Antigonish Harbour and was so impressed with the place that he decided once the war was over he would take up land there.

In 1783, the regiment was called to Halifax and disbanded. Hierlihy and 88 others were given the grant on both sides of the harbour, including the former Indian Gardens, as mentioned above. The grant became known as the Soldier's Grant and was the first formal settlement in Antigonish County by Europeans. Each soldier was given 100 acres in addition to one quarter-acre town lot. The settlement was named Dorchester in honour of Sir Guy Carleton, who was then Lord Dorchester and Governor of Canada. In 1784, 76 men, 12 women, 8 children above ten years of age, 6 children under ten years of age, and 18 servants were listed on the town's muster roll.[8]

Shortly after the settlement of Dorchester by Loyalist refugees, a large influx of Scottish immigrants began arriving in Pictou County and quickly made their way to Antigonish County, which was then the county of Sydney. The earliest Scotch immigrants settled at Arisaig on the north coast, taking up the front lands easily accessible by boat before 1800. Their descendants, and subsequent waves of immigrants, made their way to inland regions of the county once road networks began to be established.

It is worth noting that the study area lies within Antigonish County, but its earlier designation was Sydney County. In 1863 the name was changed, "[in] consideration the present name of this County being the same with the Shire town of the County of Cape Breton and perceiving that inconvenience and mistakes have frequently occurred through the Post Office".[9]

[8] Rankin, 1929:4-6; Walsh, 1989:25-26.
[9] Grand Jury 1863.

The Antigonish region, and its Highland population, was commented upon by several prominent local writers in the nineteenth century. Judge Chipman wrote that "[t]he class of people living here are chiefly Highlanders a good [bit?] ignorant and warm in their tempers, representing supposed or real wrongs and injuries – when they get to Law they do not easily give back."[10] Writer and politician Joseph Howe also commented by stating, "A curious feature in the character of the highland population, spread over the eastern parts of the Province, is the extravagant desire they cherish to purchase large quantities of land."[11] Finally, William Moorsom's *Letters from Nova Scotia* includes the notation:

> The road to Antigonishe (or Dorchester) and Cape Breton crosses the West River as well as the middle and east rivers of Pictou, leaving the harbour about three miles on the left, and proceeds by New Glasgow along the Gulf shore through the scattered settlements of Merigomishe and Arisaig. The settlers are Scotch, chiefly from the Highlands. I met here a fine old man, upwards of eighty, walking stoutly along the road, clad in the veritable costume of his ancestors, except that his hose were of plain grey worsted. He seemed much to regret my inability of comprehension: "Plenty Gaëlich, no English," was all I could make out. Gaëlic is the language of this part of the country, – I mean, it is that tongue which you hear in every cottage, and that which strikes the ear on passing through the street of each little village.[12]

Local settlements in these highland regions appear to have remained small since their initial settlement. Cloverville, a village located immediately south of the study area, was initially settled by Irish immigrants who migrated from Guysborough County in the mid 19th century. Their descendents continued to live in the area but the population did not increase rapidly. By 1956, the population was still only 52 persons.[13]

[10] NSARM Card Catalogues: Communities – Antigonish.

[11] Howe 1830:206.

[12] Moorsom 1830:331-332.

[13] Fergusson 1967:136.

The North Grant area is also considered to be the "eastern section of the Yankee Grant," first settled by a man named MacCann prior to 1824. He reportedly built a frame house using four standing trees as the house's corner posts, somewhere along the road from Antigonish to the Gulf shore.[14] In the 1820s and 1830s more settlers arrived, including family names like MacKinnon, Campbell, Delaney, Grant, Johnston, Kennedy, McDonald, McIsaac, McLeod, MacPherson, Ronnan, and Siggins. Several decades later Irish families arrived by way of Newfoundland and Guysborough County.

Fairmont itself was known as Fairmount until recent years, "because of the beauties of the countryside by act of the Nova Scotia Legislature in 1892."[15] Prior to this, it was known as the "Upper Hallowell Grant." Another small settlement, it hosted a store and a church by 1898, supporting a population of 70. A. F. Church's 1879 map of Antigonish County shows a scattering of houses across the landscape, suggesting isolated farmsteads (Figure 3.2-2). Around this time there appear to have been few structures located on the leased lands indicated for use on the wind farm project, as an 1893 geological survey map has indicated (Figure 3.2-3). In the 1960s Fergusson noted that "many of the farms are now vacant [and] the school has been closed and the school district became part of the 'Fringe Area' in 1958. The population in 1956 was 73."[16] The study area includes elements of several original land grants: John Stealing Connor, Maron MacDonald, Michael Sipple, and Samuel Hood (Figure 3.2-4).

[14] Fergusson 1967:136.

[15] Fergusson 1967:203.

[16] Fergusson 1967:203.

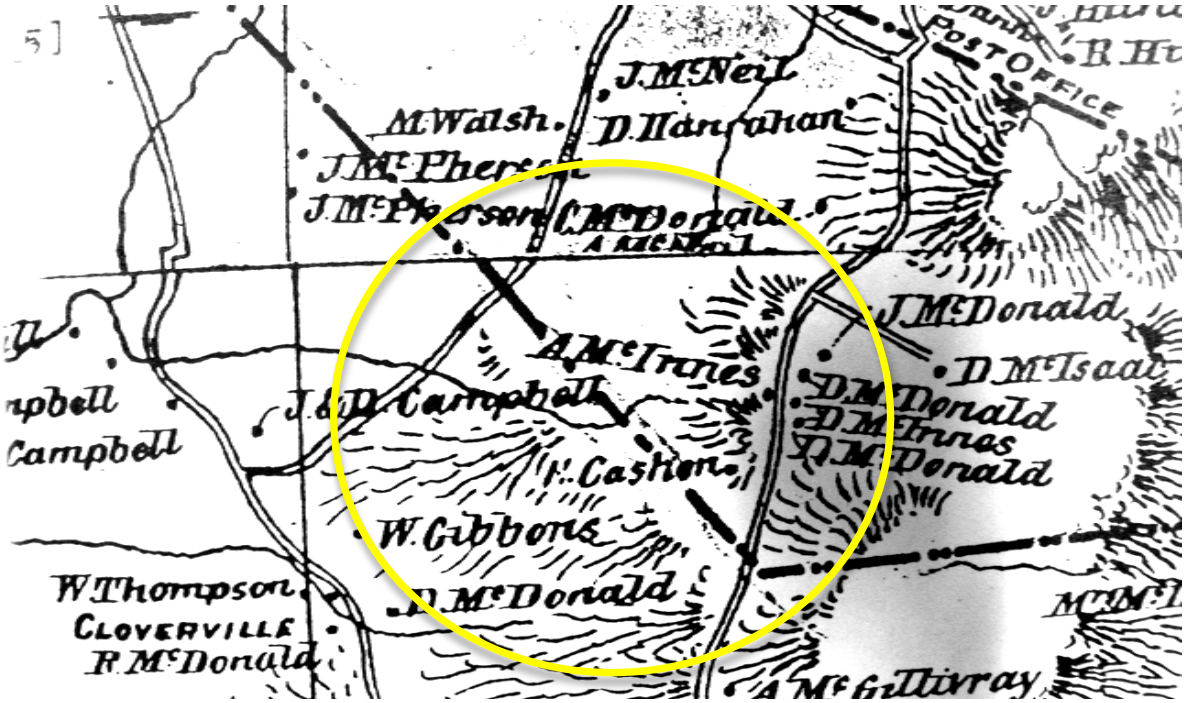


*Figure 3.2 -2: Detail from Church's 1879 map of Antigonish County. Note that the map is not as accurate as later mapping, and therefore the study area is indicated more approximately.*

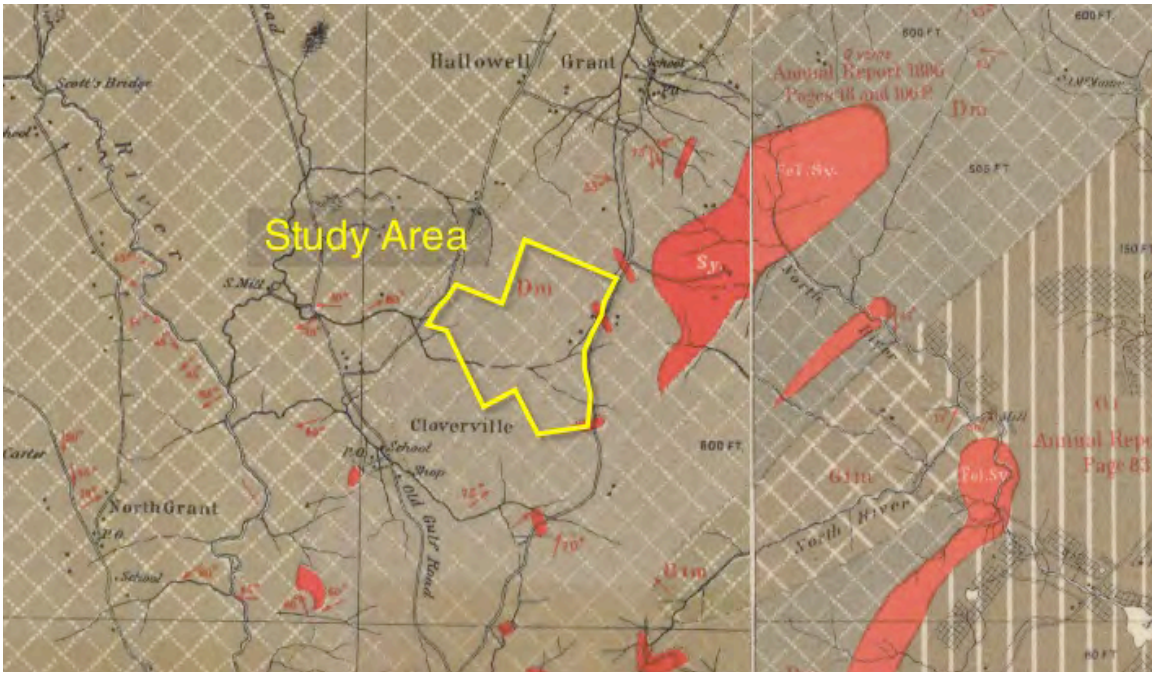


*Figure 3.2 -3: Detail of an 1893 geological survey map of Fairmont and its surroundings, showing the study area in yellow.*[17]

[17] Faribault and Fletcher, 1893.

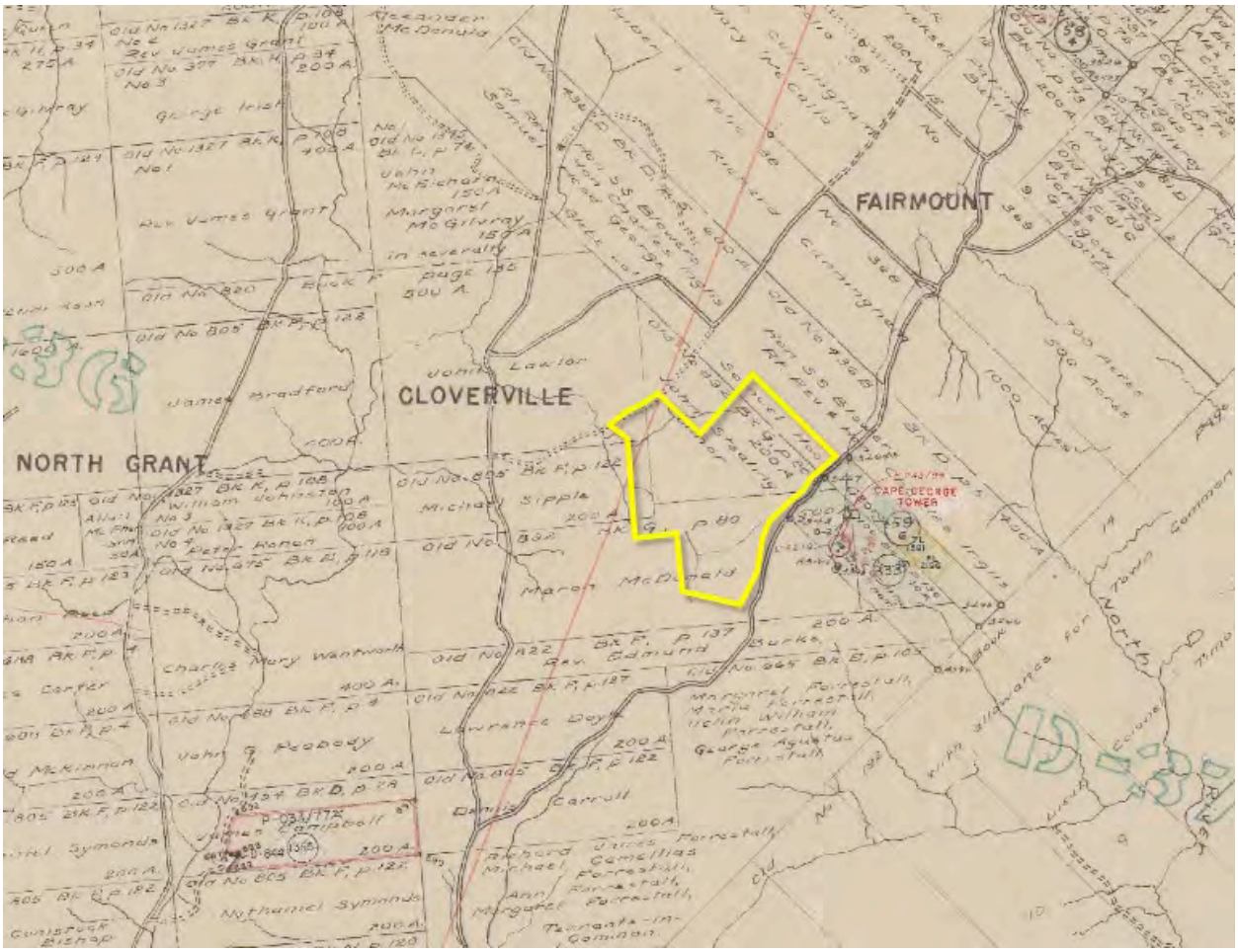


***Figure 3.2 -4: A land grant map of Fairmont and its surroundings, showing the study area in yellow.***[18]

## 3.3 Field Reconnaissance

A field reconnaissance was conducted on October 27, 2010. A team of two qualified archaeologists completed a walkover survey of both turbine locations, allowing for a buffer zone of 100 metres to allow for relocation of the turbines to within 50 metres of the provided locations.

[18] Department of Lands and Forests c.1949.

The first turbine site, located at 20 T 578584 5059144, rests on a slight slope facing south towards the town of Antigonish. The area is wooded, but has been cleared by the landowner within the past decade (Plate 1). Small spruce trees, birch, and young hardwoods are reclaiming the cleared area. No evidence of historical or Precontact cultural activity could be found.

The second turbine site, positioned at coordinates 20 T 578500 5059364, is located to the northwest of the first turbine and higher on the same slope. It rests at the cleared edge of a wooded ravine to the southwest, and overlooks the current site of a tower and sonar unit erected to the southeast to test wind currents and other environmental variables in the area (Plate 2). Spruce saplings and small brush is beginning to re-grow over the cleared area. Like the first turbine site, no evidence of historical or Precontact cultural activity could be found. Bedrock in the area was found to be extremely shallow and somewhat soft, exhibiting heavy scarring from glaciers and other natural effects.

Whilst in the field for the survey of the two turbine locations, archaeologists encountered landowner Charlie Teasdale accompanying Wind Prospect representative Andy MacCallum. Mr. Teasdale has owned and worked the study area land since 1953, when he took ownership of it. He guided the team to a narrow stone-lined cellar feature in a cleared field near the main Fairmont road, where several apple trees had flagged the area for archaeological survey following a visit to the turbine sites (NAD83 20 T 0578995 5059275). Mr. Teasdale revealed that all apple trees except one, located approximately five metres from the cellar, had been planted by him after 1953. The original tree appears to be associated with the cellar and house site. Two coarse bricks, likely from the nineteenth or very early twentieth century, were noted on the ground nearby (Plate 3).

The cellar is lined with large stones of the same type as the local bedrock, and is unusually long and narrow, being about 4 metres wide east-west by 7 metres long north-south (Plate 4). The site is overgrown, but the rough outline of a house, 6 metres longer to the north than the cellar and appearing to have also had an “ell” addition to the east, is barely visible. A rough stone staircase, 4 metres long and 1.5 metres wide, extends upwards from the southeast corner of the cellar, forming an external exit. Part of this staircase has been repaired with coarse concrete mixed on-site (Plate 5), consistent with a

date of pre- to ante-WWII. Garbage from the past fifty years or so has been dumped into the cellar, including pop cans, glass bottles, rubber shoes and boots, and spray paint cans. A metal pipe extends from a gap in the stone at the bottom of the southwest corner, though it is suspected that this is intrusive (Plate 6). The cellar is approximately 1.5 metres deep. Although no sign of burning remains, Mr. Teasdale reported that the house had burned down circa 1939. He also suggested that it may have been occupied by members of the MacNeil family, who also owned the next farm down the road. Mr. Teasdale's property in Fairmont represents three former farms in total. He noted that a barn foundation and a well were also present in association with the house, but neither could be located in the overgrowth on the site.

## 4.0 RESULTS AND DISCUSSION

Although a nineteenth to early twentieth century farm site has been identified and recorded within the study area, this site is not threatened by the current wind farm development. It is significantly off the current roadbed, and is not in proximity to either turbine location. So long as current construction plans do not change, the site is likely to be preserved. Mr. Teasdale expressed interest in preserving such historic sites, increasing the likelihood that the site will remain untouched, as the land is being leased from him rather than purchased.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

Archaeological research and reconnaissance has yielded no evidence of archaeological resources within the impact area, though historical resources are known within the study area. As a result, so long as construction plans remain unchanged, no further archaeological mitigation is recommended at this time.

Avoidance is the preferred method of mitigation in all instances where archaeological resources are present. This investigation has indicated that nothing of archaeological significance will be impacted during construction activities. However, should any ar-

chaeological resources be encountered during ground disturbance activities, it is recommended that all activity cease and the Coordinator of Special Places, Laura Bennett (902-424-6475) be contacted immediately to determine a suitable method of mitigation.

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# PLATES

*Plate 1: Turbine location one, looking north.*

*Plate 2: Turbine location two, looking southwest. Note the sonar unit to the left (southeast).*

*Plate 3: Two bricks noted near the cellar.*

*Plate 4: The southeast corner of the cellar showing the stone lining. An overall shot was not available due to obscuring vegetation.*

*Plate 5: Coarse concrete reinforcements support the corner of the cellar wall bordering the entrance stairway. Looking south.*

*Plate 6: A metal pipe, possibly intrusive, at the south-eastern cellar corner.*

# APPENDIX A: HERITAGE RESEARCH PERMIT

NOVA SCOTIA
Tourism, Culture and Heritage

Heritage Division

Special Places Protection Act. R.S.N.S. 1989

# Heritage Research Permit (Archaeology)

(Original becomes Permit when approved by the Executive Director of the Heritage Division)

**Office Use Only**
Permit Number:
A2010NS104

*Greyed out fields will be made publically available. Please choose your project name accordingly*

| | |
|---|---|
| Surname de Boer | First Name Laura |
| Project Name Fairmont Wind Farm | |
| Name of Organization Davis MacIntyre and Associates | |
| Representing (if applicable) | |
| Permit Start Date 20 October 2010 | Permit End Date 30 December 2010 |

**General Location**: Antigonish County

**Specific Location**: *(cite Borden numbers and UTM designations where appropriate and as described separately in accordance with the attached Project Description. Please refer to the appropriate Archaeological Heritage Research Permit Guidelines for the appropriate Project Description format)*

20 T 578500 5059364
20 T 578584 5059144

**Permit Category**:
Please choose one:

☐ Category A - Archaeological Reconnaissance
☐ Category B - Archaeological Research
☒ Category C - Archaeological Resource Impact Assessment

☒ I certify that I am familiar with the provisions of the *Special Places Protection Act* of Nova Scotia and that I have read, understand and will abide by the terms and conditions listed in the Heritage Research Permit Guidelines for the above noted category.

☐ I currently hold a treasure trove license or pending application for a licence related to this Heritage Research Permit.

| | |
|---|---|
| Signature of applicant | Date 19 Oct 2010 |
| Approved by Executive Director | Date Oct 21/2010 |

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*APPENDIX K*

# MI'KMAQ ECOLOGICAL KNOWLEDGE STUDY

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# MI'KMAQ ECOLOGICAL KNOWLEDGE STUDY

# Fairmont Wind Farm Project

Prepared for
Wind Prospect Inc.
1791 Barrington Street, Suite 1030
Halifax, Nova Scotia
B3J 3L1

CMM Environmental Services
The Confederacy of Mainland Mi'kmaq
P.O. Box 1590
57 Martin Crescent, Truro, Nova Scotia, B2N 5V3
Tel: (902) 895-6385
Fax: (902) 893-1520

June 2011

TABLE OF CONTENTS

TABLE OF FIGURES

# 1.0 INTRODUCTION

## 1.1 Confederacy of Mainland Mi'kmaq Environmental Services

CMM Environmental Services is a program operated by the Lands, Environment, and Natural Resources Directorate of The Confederacy of Mainland Mi'kmaq (CMM) that provides fee for service environmental consulting. CMM provides advisory services to six Mi'kmaw communities in the province of Nova Scotia: the Paqtnkek First Nation, Annapolis Valley First Nation, Bear River First Nation, Glooscap First Nation, Millbrook First Nation, and Pictou Landing First Nation.

**CMM Environmental Services Contact Information:**

Sidney Peters
Director of Lands, Environment and Natural Resources
The Confederacy of Mainland Mi'kmaq
P.O. Box 1590
57 Martin Crescent
Truro NS, B2N 5V3
(902) 895-6385 ext. 237
(902) 893-1520
sidney@cmmns.com

## 1.2 Project Description

Wind Prospect Inc., founded in 1992, is a wind development company and has established locations in places like Canada, United States, Ireland, etc. The company is owned by its directors and staff.

Wind Prospect Inc. is developing The Fairmont Wind Farm Project, which is situated 6 kilometers north of Antigonish, Antigonish County, Nova Scotia. The projected amount for electric production is 4 megawatts (MW).

Research includes the Antigonish area and covers the northwest section of Antigonish County and north eastern section of Pictou County. For the purposes of this study, use and occupation will demonstrate how the Mi'kmaq have traveled along the major waterways, traveled across the land following both marine and land animals.

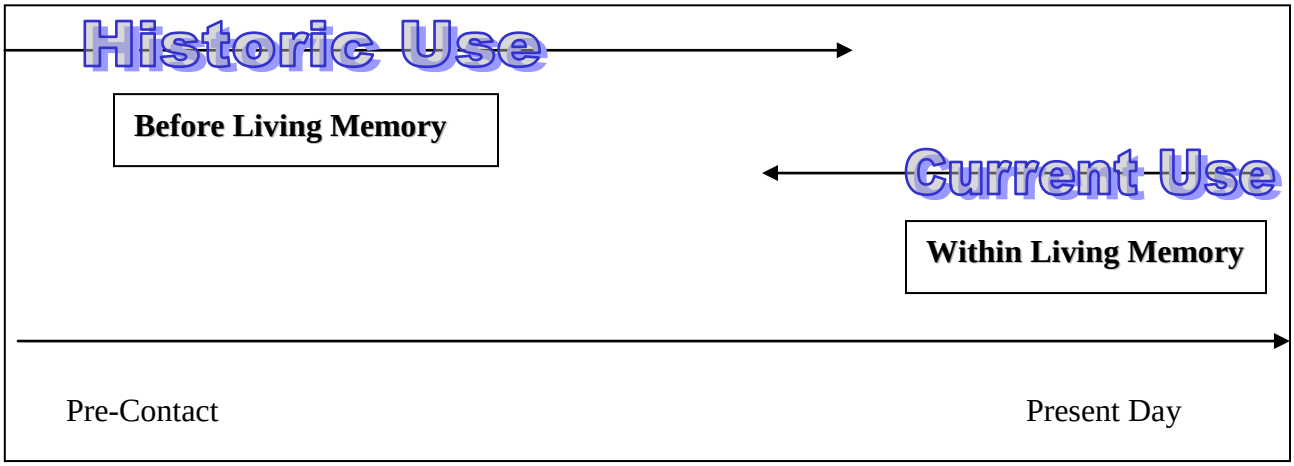
## 2.0 DEFINITION OF TERMS

**Living Memory** is the memory of living Mi'kmaw. The period of time included in living memory varies from knowledge holder to knowledge holder. Living memory often extends to the parent and grandparent of the knowledge holder and can be estimated at three to four generations.

**Current Mi'kmaq Land and Resource Use** occurred within living memory or is occurring at the present day (Figure 1).

**Historic Mi'kmaq Land and Resource Use** occurred before living memory (Figure 1).

**Figure 1: Historic and Current Use Timeline**




**Mi'kmaw Ecological Knowledge** is the collective body of knowledge that the Mi'kmaq possess based on their intimate relationship with their natural surroundings, which involves exploitation, conservation and spiritual ideologies, and has been passed on from generation to generation, "*kisaku kinutemuatel mijuijij"*, elder to child.

**Mi'kmaq Land and Resource Use Sites** are locations where Mi'kmaq land and resource use activities have taken place or are taking place at present day. These sites may or may not display physical evidence of Mi'kmaq use.

**Mi'kmaw/Mi'kmaq** Mi'kmaq means the Family and is an undeclined form. The variant form, *Mi'kmaw,* plays two grammatical roles: 1) it is the singular of Mi'kmaq, and 2) it is an adjective in circumstances where it precedes a noun.

**Mi'kma'ki** is the Mi'kmaw homeland (Atlantic Provinces and Gaspé Peninsula).

**Specific Land Claim** arises when a First Nation alleges that the federal government has not honoured its treaties, agreements or legal responsibilities. According to federal policy, a valid specific claim exists when a First Nation can prove the government has an "outstanding lawful obligation." The Mi'kmaq is currently pursuing several specific land claims in Nova Scotia.

**Comprehensive Claim** is based on underlying Aboriginal Title to traditional territory that has not been dealt with by treaty or other means. Aboriginal Title to lands exists as a legal right derived from First Nation historical occupation and possession of their tribal lands. The process of negotiating the settlement of comprehensive claims, which is known as modern-day treaty making, clarifies access and ownership to land and resources. Currently, the Mi'kmaq has a comprehensive claim to all lands within the province of Nova Scotia including all inland and adjacent waters.

# 3.0 PURPOSE AND SCOPE OF THE MI'KMAQ ECOLOGICAL KNOWLEDGE STUDY (MEKS).

## 3.1 Purpose of the Mi'kmaq Ecological Knowledge Study

The purpose of the Mi'kmaq Ecological Knowledge Study is to support the integration of Mi'kmaq knowledge of use and occupation of Mi'kma'ki into development decisions via the environmental assessment process.

## 3.2 Scope of the Mi'kmaq Ecological Knowledge Study

This MEKS includes:

1) a study of historic and current Mi'kmaq land and resource use;
2) an evaluation of the potential impacts of the Project on Mi'kmaq use and occupation and constitutionally based rights;
3) an evaluation of the significance of the potential impacts of the Project on Mi'kmaq use and occupation; and
4) Recommendations to proponents and regulators that may include recommendations for mitigation measures, further study, or consultation with Mi'kmaq.

## 3.3 Not included in the scope of the Mi'kmaq Ecological Knowledge Study

### *3.3.1 Section 35 Consultation*

This MEKS study is not consultation for justification of the infringement of constitutionally protected aboriginal and treaty rights. If the project involves possible infringements of Mi'kmaq constitutional rights, the MEKS recommends further action.

### *3.3.2 Archaeological Screening and Resource Impact Assessment*

This MEKS study is not an Archaeological Screening or Archaeological Resource Impact Assessment. Results presented in this study can inform and be informed by archaeological screenings and assessments.

### *3.3.3 Notification of Mi'kmaw individuals or communities of the Project*

This MEKS study is not intended to inform or notify Mi'kmaw individuals or communities of the Project, solicit the opinions or concerns of Mi'kmaw individuals or communities on the Project, or promote the Project to Mi'kmaw individuals or communities.

# 4.0 METHODOLOGY

## 4.1 Historic Mi'kmaq Land and Resource Use

Historic Mi'kmaq land and resource use occurred before living memory. The study of historic land and resource use paints a broad portrait of Mi'kmaq use and occupation of Mi'kma'ki in centuries past.

### *4.1.1 Study Area*

The historic land and resource use study area is in the Mi'kmaq District of Epekwitk (lying in the water) aq (and) Piktuk (the explosive place) and encompasses a part of Pictou County, a part of Antigonish County, and also Prince Edward Island (CMM, 2007, p. 11).

### *4.1.2 Methods*

Research resources from the following institutes were consulted: The Confederacy of Mainland Mi'kmaq Research Department Library, The Nova Scotia Public Archives, Dalhousie University, Saint Mary's University, St. Francis Xavier University, and The Nova Scotia Museum.

### *4.1.3 Limitations*

It is, also, important to discuss the limitations of this research. Mi'kmaq history tends to be more of an oral history than a written history, especially during the pre-contact period. This having been said, the information provided about Mi'kmaq history has, for the most part, been written by people of a different culture. This difference means that the available history that exists may not be completely accurate, or some pieces of history may be missing or not available.

## 4.2 Current Mi'kmaq Land and Resource Use

Current Mi'kmaq land and resource use occurred within living memory or is presently occurring. This MEKS includes a study of:

1) Current Mi'kmaq land and resource use sites
2) Species of significance to Mi'kmaq
3) Mi'kmaw Communities.

### *4.2.1 Study Areas*

The study areas are described in Figure 2.

#### 4.2.1.1 Current Mi'kmaq Land and Resource Use Sites

The study area for current Mi'kmaq land and resource use sites is the proposed area of development – five kilometer radius surrounding proposed project site.

#### 4.2.1.2 Species of Significance to Mi'kmaq

Study areas are marked on Figure 2.

#### 4.2.1.3 Mi'kmaw Communities

The study area for Mi'kmaw communities is a five kilometer radius surrounding the proposed project site.

### *4.2.2 Methods*

#### 4.2.2.1 Current Mi'kmaq Land and Resource Use Sites

Mi'kmaq Knowledge on current land and resource sites was gathered through a review of information collected through oral interviews with Mi'kmaw knowledge holders.

All individuals, who were interviewed, signed a consent form. Knowledge was gathered in accordance within the spirit of the *Mi'kmaq Ecological Knowledge Protocol* and an application to complete research was submitted to Mi'kmaw Ethics Watch.

Knowledge collected is reported in a general format only. No names or specific locations are published. Collected knowledge will be digitized and compiled to allow for an analysis of potential impacts of the project on current Mi'kmaq land and resource use.

#### 4.2.2.2 Species of Significance to Mi'kmaq

A system of stratified random sampling was employed to identify flora species present in the study areas of significance to Mi'kmaq. Plants were surveyed in the fall 2010 and the spring 2011. Information collected is reported in a general format only. The names of the species are not recorded.

#### 4.2.2.3 Mi'kmaw Communities

A review of outstanding specific land claims within the study was undertaken by CMM. There are no known specific land claims identified within the project area, however, the record of outstanding specific land claims in no way infers that a specific land claims may not arise in the future.

### *4.2.3 Limitations*

While every attempt was made to document all available Mi'kmaw knowledge, the knowledge gathering process may not have captured some available Mi'kmaw knowledge. It is also recognized that over generations of cultural and political suppression, much Mi'kmaq knowledge has been irretrievably lost.

# 5.0 RESULTS

Results of the study are divided into two categories:

1) historic land and resource use, that is, use that occurred before living memory, and
2) current land and resource use, or use that occurred within living memory or is occurring at the present day

Land and resource use may be for hunting, burial/birth, ceremonial, gathering, or habitation purposes.

## 5.1 Historic Mi'kmaq Land and Resource Use

### *5.1.1 Pre-Contact Introduction*

An Antigonish historian, Patrick F. Walsh offers a point a view on what a pre-contact Mi'kmaq person may have been: "We can speculate on the qualities of the [Mi'kmaq] before contact with Europeans from their own tradition and the observations of the first explorers. The ideal [person] to the [Mi'kmaq] was restrained and dignified in all [their] actions, solid in all circumstances, depriving [themselves] to care for the poor, aged, or sick, generous and hospitable to strangers…"[1]

Another view is offered by Membertou about Mi'kmaq during the pre-European contact era. Before this contact, the Mi'kmaq were in great numbers as described by Membertou, a great District Chief of Kespukwitk, who was baptized as a Christian in 1610. "Membertou claims that, in his youth [he had lived to be over a hundred years old], there had been people [Mi'kmaq] 'as thickly planted there as the hairs upon his head' "[2] With such a large population, the Mi'kmaq occupied a large territory, which they called Mi'kma'ki.

[1] Patrick Walsh. The History of Antigonish. p.18
[2] Paul Chiasson. The Island of Seven Cities: Where the Chinese Settled When They Discovered North America. p.148

Within the political realm, the "Mi'kmaw Nation was part to the Wabanaki Confederacy. This Confederacy included the Mi'kmaq, the Maliseet, the Passamaquoddy, the Penobscot, and the Abenaki tribes".[3] "All the tribes respected the territory occupied by the Mi'kmaq, who divided it into seven hunting and fishing districts"[4]. The seven districts were Kespek (last water), Siknikt (drainage area), Epekwitk aq Piktuk (lying in water and the explosive place), Kespukwitk (last flow), Eskikewa'kik (skin dresser's territory), and Unama'kik (Mi'kmaw Territory).[5] The Mi'kmaw Homeland includes areas in Quebec, New Brunswick, Prince Edward Island, and Nova Scotia. The proposed project lies within the Mi'kmaq District of Epekwitk aq Piktuk.

Within the seven Mi'kmaq Districts, the Mi'kmaq chose places to live where clean water was available. This choice of habitation, based on water resources, is described by Natalie Stoddard: "The Indians [Mi'kmaq] preferred spring water for drinking and cooking, and thus tried always to camp near a spring. Any water in which leeches were found was deemed not fit to drink".[6]

Historically, the Mi'kmaq moved freely within their territory to harvest foods and other natural resources. Some parts of their territory were more favourable at certain times of the year. For instance, spawning fish, migrating birds, etc, may be more plentiful near the waterways in the warmer months of the year, while in the colder months, bigger game animals would be more plentiful in the wooded areas of the Mi'kmaq territory. These favourable locations were later identified as winter villages or summer villages. Bernard Hoffman writes about these summer villages: "Approximately 46 [Mi'kmaq] summer villages are known to us; of these, 35 are located near the mouths of respectable rivers, while the remainder lay on favourable locations on saltwater lagoons, coves, and bays".[7] Included in among the villages are Pigtog or Pictou River and Tlagatig or Tracadie. The Pictou area had a large shore fish population.[8]

Within the St. Georges Bay area, there were many areas where the Mi'kmaq occupied and survived with all the resources that were available. This availability of resources is

[3] Confederacy of Mainland Mi'kmaq. Kekina'muek: Learning about the Mi'kmaq of Nova Scotia. p. 73
[4] Ibid
[5] Native Council. Mi'kmaw Resource Guide. p.3
[6] Natalie B. Stoddard. Micmac Indians of Nova Scotia. p.15
[7] Bernard Gilbert Hoffman. Historical Ethnography of the Micmac of the Sixteenth and Seventeenth Centuries. p.130
[8] Ibid. p.131

evident in the historic occupation and pre-contact occupation within the vicinity of the proposed area. Patrick F. Walsh, in 1989, describes this occupation. Walsh writes: "The ancestors of the present-day [Mi'kmaq] occupied the shores around the perimeter of what we call today St. Georges Bay".[9]

### *5.1.2 General Overview of the Study Area*

Geographically, Epekwitk aq Piktuk lies within the Avalon Terrane in Nova Scotia. The Avalon Zone covers the mid-northern mainland of Nova Scotia. The proposed area mainly is composed of sandstone, limestone, gypsum, anhydrite, salt, shale and conglomerate.[10] Earlier in history, there was much geological activity with the combination of volcanic ash and other material which was deposited in the Arisaig area. This combination was deposited in the sea, which soon became shallower.[11]

In the early stages of Epekwitk aq Piktuk, ancient land formation occurred in many ways, and in the area, there are tertiary watersheds, which most of them find their way into St. Georges Bay. With so much water in the area, there may be flood plains "…along many of the Antigonish area streams and rivers…".[12]

Specifically, "[i]n the South River area, a valley extends southwards through Lochaber Lake across the southern uplands to the St. Mary's River estuary. This may have been the course of an ancestral river that flowed northwards from the Scotian Shelf and was superimposed upon the resistant rocks that the valley now crosscuts".[13]

In some of the river systems, there are "[t]ypical freshwater fish species [like] White Suckers, perch, shiners, Brown Bullhead Trout, American Eel and Gaspereau. Three isolated populations of Yellow Perch exist in the Lochaber Lake".[14]

[9] Patrick Walsh. The History of Antigonish. p.15
[10] Derek Davis and Sue Browne. Natural History of Nova Scotia, Volume 1: Topics and Habitats. P.16
[11] Ibid, p.19
[12] Derek Davis and Sue Browne. Natural History of Nova Scotia, Volume 2: Theme Regions. p.142
[13] Ibid, p.142
[14] Ibid, p.142

Patrick F. Walsh concurrently writes about the historic description of the Mi'kmaq occupation of the area, and he also provides a description of the shoreline. Walsh writes that the area would have been conducive to human habitation and the Mi'kmaq were drawn to this area for habitation. St. Georges Bay has "[s]everal ocean currents in the area, and their complex circular patterns produced a rich and diverse marine life. St. George was a shallow, warm bay, drawing water from the Northumberland Strait. At Antigonish an estuary was formed by the South and West rivers, as well as several streams. All the estuaries have islands and barriers at their entrances. The [Mi'kmaq] were never more than two days from the sea by canoe from any point in the area".[15]

Specifically, Walsh also writes about several locations in the area: "The [Mi'kmaq] settled the lowlands and the estuaries selectively. Around the rim of St. Georges Bay the most important village was at TLAGATIG ("settlement"), now called Tracadie. Other settlements were at POGOMGEG ("dry sand"), now called Pomquet, and at NALIGITONEITJG ("broken branches"). The fact Tracadie was called THE "settlement" coupled with archeological evidence, indicates it was one of the, if not *the*, primary pre-historic [Mi'kmaq] settlements".[16]

In Walsh's closing chapter about the Mi'kmaq, he writes, a mournful description and with biblical reference, about a past era in Antigonish: "[t]his paradise of a thousand years ago in NALIGITGONIETJG, like its paradigm in Eden, came to ruin with the coming of knowledge, not of good and of evil, but with the coming of the Europeans with their new ways".[17]

### *5.1.3 Results*

Although there is some controversy about Henry St. Clair, in 1398, it "…is believed… [that Sinclair, a Scottish explorer,]…landed in Guysborough Harbour and travelled to Pictou and Stellarton".[18] So it is possible that St. Clair would have been one the first Europeans to visit the mid-northern section of Epekwitk aq Piktuk.

[15] Patrick Walsh. The History of Antigonish p.15
[16] Ibid, p.15
[17] Ibid, p.18
[18] Native Council of Nova Scotia. Mi'kmaw Resource Guide. p.2

In 1534, Jacques Cartier records landing in the Mi'kmaq District of Epekwitk aq Piktuk. He writes about the landscape as "…flat and low-lying, and the most beautiful imaginable, full of goodly trees and meadows".[19] Upon landing, he observes Mi'kmaq crossing a river in a canoe. Later, "…we perceived a man running behind our boat, which were coasting the shore, and making many signs to us to turn toward this cape. Seeing these signs we began to approach him, but on seeing our coming he took to his heels. We landed, and laid before him a knife and a woolen belt on a stick, and thereupon returned to our vessels".[20] This account is one of the earlier records of trade between the Mi'kmaq and the Europeans.

There is an account that describes the early relationship between the Mi'kmaq and Christianity. In 1570, Portuguese fishermen were requesting that priests be brought over to convert the Mi'kmaq, "…but there is no evidence that any priests were able to come before the beginning of the seventeenth century. According to written records, Canso was the site of the first Masses which were offered within the confines of the present Diocese of Antigonish, and it was also the point at which the first Jesuit missionaries set foot upon the New World".[21]

Although not near the proposed site, there was an extensive archaeological discovery on October 10, 1955, in Lowedens Beach near Pictou, N.S.: "the copper-pot burial discovered that day, and the second burial site found nearby a year later, have provided a wealth of information, through the quality and quantity of both the Native-made and European-made grave gifts, and their relatively good state of preservation. At first, the discoverers thought the site to be a cache of Acadian treasure, hidden in the face of the English expulsion in 1755. Almost immediately, this was revised to the theory of a cache of travel-goods by the French in the 1600s".[22] The site was later identified as being of 1580 -1590 origin.

In 1632, Nicholas Denys, an entrepreneur from France, arrives in the mid-southwestern section of (now known as) Nova Scotia. He is involved in various business ventures. Due to some business loses, he returns to France and again returns to Nova Scotia. Later on,

[19] Ruth Holmes Whitehead. The Old Man Told Us: Excerpts from Mi'kmaw History 1500-1950. p.8
[20] Ibid, p.9
[21] Rev. Angus Anthony Johnston. History of the Catholic Church in Eastern Nova Scotia: Volume 1. p.5
[22] Ruth Holmes Whitehead. Nova Scotia: The Protohistoric Period, 1500-1630. p.49

he begins to write about his experience in Nova Scotia; his writings were published in 1672. In one of his entries, Denys describes his voyage into Antigonish Harbour: "Then having advanced about six leagues, continuing the route along the coast, there occurs a river [according to William F. Ganong, this may be the Pomquet] by which the Indians [Mi'kmaq] come in canoes in the spring to bring furs…"[23] to trade with the European fishermen.

Denys continues and writes about a bay: "[c]ontinuing the tour of the bay, the land is diversified with ponds and meadows, with the exception of places covered with Firs and Cedars. In the extremity of this bay, there is a little entrance between two points leading into a great cove, all flat, in which there is a channel admitting boats. At a good cannon shot from this entrance is found the river of Mirliguesche (a misspelling of Antigonish, according to William F. Ganong) which gives its name to the bay. It is deep and extends far into the country. During the spring and the autumn, this cove is quite covered with Wild Geese, Ducks, Teal and all other kinds of game. The number is so great that it cannot be imagined. They remained there until after All Saints. In this place there are excellent Oysters, and at the entrance of the river on the left, there are still more of them".[24]

Denys travels further beyond the bay and he writes: "[t]his being passed the lands are good for three leagues along both banks, and covered with fine trees, large and very high, intermixed with Oaks and some Pines. At the end of these three leagues one meets with other rivers forming a fork, which empty into the former. These come from inland and by them the Indians, who live there in great number, come in the spring to trade their furs".[25]

During his time with the Mi'kmaq, Nicholas Denys had the opportunity to observe Mi'kmaq fishing techniques. He records that "[d]uring the spring and autumn there are caught a great quantity of Bass, which is a very good fish of two and three feet in length. The [Mi'kmaq] take them with a lance fastened of about seven feet in length, which they thrust at the fish when they perceive; and in an hour they load a canoe with them, which means about two hundred of these fish".[26]

[23] Nicholas Denys. The Description and Natural History of the Coasts of North America. p.172
[24] Ibid, p.172
[25] Ibid, p.173
[26] Ibid, p.173

"In 1686 Monsignor Saint-Valleir wrote an account of his first visit to Acadie, made in the spring of that year, when he was still Vicar General and not yet consecrated. In it he says: As I had to do my best to visit all the French settlements of Acadie, in order to learn for myself the state of the new colony. I called at…Cape Louis [now Cape George], the most northerly point of Antigonish County…".[27] The Monsignor also writes about the fishing that took place in the area.

"Although French itinerant missionaries had visited the Antigonish Harbour since the mid-seventeenth century, Father Antoine Gaulin around 1720 initiated the first permanent agricultural mission settlement in the area. Gaulin's endeavors undoubtly proved one of the reasons why this Native community demonstrated an affinity for agriculture generally lacking among the Mi'kmaq elsewhere in the province. By 1722, Gaulin could record 21 families residing near his mission, totaling 93 individuals, with Jean Chebeoang as their head chief".[28]

In 1735, Abbé Maillard from France, is welcomed by the Mi'kmaq. He spent 27 years of his life working with the Mi'kmaq.[29] The Mi'kmaq called him Mosi Meial. "Highly educated, Father Maillard had a genius for languages and soon mastered the difficult Micmac tongue; and for this reason, as well as for his apostolic zeal and devotion, he was genuinely loved by the Indians. He lived with them as they moved from one encampment to another, and they soon became convinced that his aim was that of championing their interests, both spiritual and material".[30] "He was occupied exclusively in the care of Indians of Cape Breton, Antigonish, [and] Pictou…".[31]

Chief Arguimault [L'kimu], a Mi'kmaq Shaman as interviewed by Abbé Maillard in 1740, recalls life among the Mi'kmaq during pre-contact time. Agruimault tells about the easy accessibility of birds, animals, and fish: "All we needed to do in those times was to leave our wigwams, sometimes with our arrows and spears, and sometimes without, and at a very short distance from our village we would find all we needed. If at any time we did not wish to eat meat we would go to the lakes or rivers nearest to our village, or to the nearest sea-shore, and there we would catch all sorts of fish to eat".[32]

[27] Rev. Angus Anthony Johnston. A History of the Catholic Church in Eastern Canada: Volume 1. p.24
[28] Janet Chute. Research draft paper on Pomquet. p.10
[29] Rev. Angus Anthony Johnston. A History of the Catholic Church in Eastern Canada: Volume 1. p.65
[30] Ibid, p.67
[31] Ibid. p.68
[32] Ruth Holmes Whitehead. The Old Man Told Us: Excerpts from Mi'kmaw History, 1500-1950. pp. 9& 10

Chief Arguimault continues and talks about Mi'kmaq travel by water: "We have had our canoes, Father, from time immemorial, and they have always been the same as you see now. In the olden times, instead of birchbark we use now, our ancestors used moose skins, from which they had plucked the hair, and which they had scraped and rubbed so thoroughly that they were like your finest skins. They soaked them as we do with birchbark today, fitted them, stretched them and fixed them by sewing them, sometimes with animal tendons, sometimes with spruce roots, and thus they sailed from the coast to a nearby island without ever going too far away from the shore…".[33]

The Mi'kmaq District of Pigtogeog (Piktuk) and Epegoitg (Epekwitk) was an important political location because a Mi'kmaq District Chief lived there. Bernard Hoffman writes about this significance: "… [p]assing westward from Antigonish around Cape George, the first important site…is Maligomitjg ("many coves"), now known as Merigomish. During the 18th century this was the headquarters of the district chief; in 1761, this individual was Jeanneoville Pectougawash, also known as Paul Chackegonouet".[34]

There is another example of the importance of the area for the Mi'kmaq, and it is described as a major gathering place for the Mi'kmaq. In 1779, "…in the month of September they [Mi'kmaq] assembled in large numbers, from Prince Edward Island, Antigonish and other places, their usual place of rendez-vous being either this Fraser's Pt. [near Trenton, on the East River] or Middle River Pt. A person brought up at the latter place, has told me that he has counted one hundred canoes at one time drawn up on the shore, and it was said that they would sometimes number one hundred and fifty. Sometimes two days would be spent in racing or similar amusements".[35] Hoffman continues to describe the event and that twelve barrels of porridge had been prepared and two moose were also served as part of the meal.

Despite the importance of the area, the Mi'kmaq were losing parts of their homeland. Land became valuable as veteran soldiers, of the American Revolution, were migrating to Nova Scotia. In approximately 1784 "[t]he more fertile soil of Indian Gardens, the Intervale at the confluence of the 'forked river' soon attracted the attention of the

[33] Ibid, p.20

[34] Bernard Gilbert Hoffman. The Historical Ethnography of the Micmac of the Sixteenth and Seventeeth Centuries. p.547

[35] Ibid, p.549

overhasty settlers at Town Point…"[36] With such land transaction activity, it was not long before Chief Anthony Bernard, of the Mi'kmaq, was granted a Licence of Occupation for this area, and by 1797, the land (2,600 acres) had been lost through land grants to Major Hierlihy and other people (CMM data source). Rev. D.J. Rankin describes some the land that the Mi'kmaq lost: the "…land included the whole of Indian Gardens, and the rich land which surrounds the lower half of the Town of Antigonish".[37]

In 1794, there is a description of Mi'kmaq harvesting activity in the West River area: the Mi'kmaq of Antigonish "…were on a fishing and hunting expedition".[38] The Mi'kmaq traveled, with Alexander Fraser, "…through the forest from the West River to Lochaber Lake. They had a wigwam or camp at Gaspereau Lake, one at the Ohio Lake, now called St. Joseph's Lake, and one at Lochaber Lake. They had canoes made out of moose hides, which they carried between them from lake to lake. Their tables were abundantly supplied with moose and bear meat. The lakes and rivers teemed with various kinds of fish. The [Mi'kmaq] used to drive down the salmon from the West River to their permanent homes. They had fish dams constructed at Indian Gardens, by means of which they could take as many fish as they wished. Another source of supply they found in the fur of the martin, which they sold in town in exchange for tea and tobacco".[39]

As new settlement increased in the area, new road construction became necessary, and approximately in the late 1700's, road building engineering was evident in the Mi'kmaq culture when Joe Snake, a Mi'kmaq, was hired by Zephaniah Williams to find and clear a course from William's Point to the Hartshorne Grant (Hartshorne Grant was in the Addington Forks area and approximately 25 kilometers south west of William's Point); Snake was hired to find "the shortest route from William's Point to the Hartshorne Grant. Setting out one morning they made a blaze upon the trees as they went along. This became a guide for other travelers until a footpath became a cart road. Clearings were made along this road and houses built, until now the path taken by Williams and Joe Snake has become the principal street of the town of Antigonish".[40]

[36] H.M. MacDonald. Memorable Years in the History of Antigonish, p.44
[37] Rev. D.J. Rankin. A History of the County of Antigonish. p.25
[38] Raymond MacLean. History of Antigonish: Volume 1. p.76
[39] Ibid
[40] Ibid p.11

This is an example of travel route engineering by the Mi'kmaq; this engineering was evident in 1807 when Europeans arrived in the Lochaber Lake area: "There was then no road but a blaze between the head of Lochaber Lake and the Ohio River, following which the [Mi'kmaq] carried their canoes".[41] The carrying of canoes from one waterway to another was called a portage and was an intricate part of the Mi'kmaq travel system.

Mi'kmaq leadership was often long term, as evident in Chief Bouta's career. Janet Chute describes Bouta's activities and the area that he lived in: "By the early 1800's, [the] Mi'kmaq …maintained an encampment site on the south side of Pomquet Harbour, on land granted in 1810 to an absentee landlord named William McWhinnie. In the fall, they retreated inland to fish along the Little River, hunt in the woods during the winter, and in the spring, plant potatoes in interior clearings. One of their chiefs, Jean Baptiste Bouta, had been well known within the broad Mi'kmaq community for over forty years. Bouta traded furs for supplies at Canso prior to 1770 and later years visited the trading establishment of Joseph Rhuhaws at Torbay, on Nova Scotia's eastern shore. Bouta's hunting territory ranged from the Antigonish highlands to the headwaters of the Guysborough River. This chief lived to be an exceedingly old man, …[and] by the early 1800's, he was delegating much of his chiefly power to his son, Peter Baptiste, who by 1929 had become his successor".[42]

The Mi'kmaq had major gatherings in the summer, and these gatherings were later incorporated into the celebration of the Mi'kmaq patron saint, Saint Anne. In 1862, Father Julien Courteau, the pastor of L'Ardoise, and neighboring priests assisted in the St. Anne's Day Celebrations. As a significant gathering place, "Chapel Island was the spiritual headquarters of the [Mi'kmaq] of Cape Breton, but the other members of their race living in the Diocese of Arichat had a church at Pomquet in Antigonish County and another on Indian Island near Merigomish in Pictou County".[43]

In the Antigonish area, Mi'kmaq women were always involved in the survival of their families, and Stanley-Blackwell and Maclean provide a description of some of the work that was done by Mi'kmaq women in 1890: "[i]n the Mi'kmaw communities, native women supplemented family income with their handiwork. They made a wide range of practical items for local sale such as potato, apple, picnic, egg, and berry baskets. They

[41] Rev. D.J. Rankin. A History of the County of Antigonish p.16).
[42] Janet Chute. Research draft paper on Pomquet pp.16 & 17.
[43] Rev. Angus Anthony Johnston. A History of the Catholic Church in Eastern Canada: Volume 1. p.447

also produced fancier work such as woven containers for gloves, and handkerchiefs, scissor and thimble cases, sewing baskets, and hat baskets; many of these were aimed at the summer tourist trade. It was customary for Mi'kmaw women from the Afton Reserve (now Paqtnkek Reserve), east of Heatherton, to travel to Antigonish via the morning 'way freight' with its passenger coach. Their arrival at the Antigonish railway station seldom went unnoticed, for they arrived bearing baskets made of ash splints and sweet grass, which they sold door to door".[44]

In 1924, "[t]he residents [Mi'kmaq] of Antigonish County displayed a considerable ingenuity in the construction of their early dwellings. The traditional Mi'kmaw wigwam was constructed primarily from spruce poles and layered sheets of birchbark. It was waterproof and easily erected, well suited to the seasonal movement of hunters and gatherers".[45]

A modern tradition reveals the ancient connection the Mi'kmaq had with the area, and how contemporary Mi'kmaq maintain this connection. This connection is described by Raymond A. Maclean: "[i]t is said that Pictou was the centre of the [Mi'kmaq] district extending along the north shore of Nova Scotia. The [Mi'kmaq] of Pictou, Antigonish and Cape Breton had frequent meetings or councils. In their councils, the Cape Breton "Sachkamou" or chief held precedence over all the other chiefs in settling all the disputes that came before them. The Indians of today seek out ancient haunts and encampments of their fathers. There is a tradition among them of flourishing encampments in Pomquette and down the harbor. They naturally kept near the shore as a favorable position for their frequent wanderings to other places and for fishery in the Gulf. The sea furnished them with abundance of fish, lobsters and seals. They roamed through the forest in pursuit of game. They had trails out through the forest to Lochaber Lake and St. Joseph's Lake".[46]

In the settlement of Antigonish by Europeans, construction for the past several centuries has resulted in the loss of an ancient Mi'kmaq settlement in the area, and a description of the area along with food resources is described by Patrick F. Walsh: northeast of the aforementioned lakes, Antigonish Harbor is described as being "…about ten kilometers long and from one-third of a kilometer to four kilometers wide in places. The site of the present town was, in pre-historic times, probably a seasonal settlement where the

[44] Laurie Stanley-Blackwell and R.A. Maclean. Historic Antigonish: Town and County. p.108
[45] Ibid, p.22
[46] Raymond A. MacLean. History of Antigonish: Volume 1. p.14

[Mi'kmaq] set up weirs during the spring run of the Gaspereau, a type of herring. Along the bay, the [Mi'kmaq] diet was supplemented by mollusks, shellfish, and oysters, softshell clams, surf or hen clams, and a few blue mussels. The Antigonish site was occupied intermittently for more than a millennium, and was known after contact with Europeans as Indian Gardens. Traces of the late Woodland Age have been obliterated by the development of the town, but occasional small sites have been located elsewhere in the harbour".[47]

Antigonish Harbour and the surrounding area provided an excellent environment for fish, and fishing was important to the Mi'kmaq as stated in a report prepared by *The Social Research for Sustainable Fisheries and The Paq'tnkek Fish and Wildlife Society (SRSF & PFWS)*; the report describes the importance of the Ka't (American Eel): "The Mi'kmaq share a long cultural history with eel [Ka't], as they do with many other marine life forms".[48] Specifically, the "[e]el was a traditional and important food source for many of the Mi'kmaq people throughout the year" (Ibid. p.5). SRSF & PFWS's comment, on the eel as an important food source, is augmented in an early interview in 1740 when Chief Arguimault talks about the eel: "the [e]el was our favourite catch as it is today".[49] "The area surrounding the Paq'tnkek community (Antigonish) has being identified as an important fishing ground for eel and other fish. The Mi'kmaq have been known to camp in the Antigonish area during the winter season".[50]

In addition to its importance as a food source, "Kat is also considered to have many spiritual qualities as evident by its use as a ceremonial offering and in its place in various legends".[51] "One legend concerning the 'the Storm Maker' (mighty bird), tells of the plentiful supply of eels and other fish in the sea which were the main food source for the Mi'kmaq people during the 'hunger moons of winter.' This was the case until the arrival of the Storm Maker. The Storm Maker caused all the fish and eels to be swept out to sea by the wind created by the flapping of its wings. A Mi'kmaq tricked the Storm Maker and bound its wings to prevent it from driving the fish and eels out to sea. But, a scum covered the water so that the people were unable to see the eels and fish. At this point, the

[47] Patrick Walsh. The History of Antigonish. p.16
[48] Social Research for Sustainable Fisheries. The Paq'tnkek Mi'kmaq and Kat (American Eel - Anguilla rostrata). p.5
[49] Ruth Holmes Whitehead. The Old Man Told Us: Excerpts from Mi'kmaw History, 1500-1950. p.10.
[50] Social Research for Sustainable Fisheries. The Paq'tnkek Mi'kmaq and Kat (American Eel - Anguilla rostrata). p.5
[51] Ibid, p.6

Storm Maker's wings were unbound by the Mi'kmaq after giving promise not to cause such strong winds. The Storm Maker did create enough wind, though, to blow away the scum and allow the people to once again to see the eels and fish."[52]

**Census:**

In 1722, there are 45 Mi'kmaq in Pictou (Wicken, 1994, p. 96).

In 1735, there are 127 Mi'kmaq in Antigonish (spelled Antigoniche at the time) and 63 Mi'kmaq in Pictou (Wicken, 1994, p. 96).

In 1801, there are 25 Mi'kmaq in Pictou district (Whitehead, 1991, p. 185).

In 1838, there are 1, 425 Mi'kmaq in Nova Scotia and approximately half were living in Diocese of Antigonish (Johnston, 1972, p.109).

In 1847, Abraham Gesner of Indian Affairs states there are 1461 Mi'kmaq living in Nova Scotia and Cape Breton. He further states that there are 5290 Mi'kmaq living in Nova Scotia, Cape Breton, New Brunswick, District of Gaspe, St Pierre and Miquelon, and Prince Edward Island. And after examining French historic records, Gesner notices an exponential decline in the Mi'kmaq population; in 1745, the population was 15,000 Mi'kmaq and in 1847, there are 5290 Mi'kmaq. At this decline, he foresees catastrophic results (CMM records via NSARM.JLANS J_104, Appendix 24, pp. 110 – 126).

In 1871, there are 91 Mi'kmaq in Antigonish County, and there are 225 Mi'kmaq living in Pictou County. CMM records.

In 1901, there are 96 Mi'kmaq in Antigonish County, and there are 149 Mi'kmaq in Pictou County. CMM records.

[52] Robertson, Marion. Red Earth: tales of the Micmacs with an introduction to the customs and beliefs of the Micmac Indians. pp. 46-48.

## 5.2 Current Mi'kmaq Land and Resource Use

The study of current Mi'kmaq land and resource use is comprised of a study of current Mi'kmaq land and resource use sites, species of significance to Mi'kmaq, and Mi'kmaw communities.

### *5.2.1 Current Mi'kmaq Land and Resource Use Sites*

Current Mi'kmaq land and resource use activities are divided into five categories:

1) kill/hunting
2) burial/birth
3) ceremonial
4) gathering food/ medicinal
5) occupation/habitation

Table 1 provides a description of activities undertaken at the sites.

**Table 1: Description of Activities Undertaken in Current Mi'kmaq Land and Resource Use Sites**

| TYPE OF SITE | DESCRIPTION OF ACTIVITIES IN STUDY AREA |
|---|---|
| HUNTING/KILL | Deer is harvested west of the Fairmont area. |
| BURIAL/BIRTH | A burial site was identified east of Antigonish Centre. |
| CEREMONIAL | |
| GATHERING | Medicine plants are gathered east of Antigonish in the marsh area. |
| HABITATION | A dwelling site was identified east of Fairmont, east of Harbour Centre, near the shoreline. |

There are no Burial or Ceremonial sites identified within the project footprint.

### *5.2.2 Species of Significance to Mi'kmaq present in study area*

Species of significance to Mi'kmaq in the study area are divided into three categories:

1) Medicinal
2) Food/Beverage
3) Craft/Art

The following table describes the number of plants of significance present in the study areas during the fall and spring surveys.

**Table 2: Number of Species of Significance to Mi'kmaq Present in the Study Areas Spring 2011**

| TYPE OF USE | NUMBER OF SPECIES PRESENT SPRING 2011 |
|---|---|
| MEDICINAL | 49 |
| FOOD/BEVERAGE | 16 |
| CRAFT/ART | 9 |

**Table 3: Number of Species of Significance to Mi'kmaq Present in the Study Areas Fall 2010**

| TYPE OF USE | NUMBER OF SPECIES PRESENT FALL 2010 |
|---|---|
| MEDICINAL | 58 |
| FOOD/BEVERAGE | 23 |
| CRAFT/ART | 14 |

### *5.2.3 Mi'kmaw Communities*

There are several Mi'kmaw reserves located nearby the study area. Reserves being defined as those lands that had been set-aside for the use and benefit of Indians under Federal Legislation of the Indian Act:

Pomquet-Afton (IR – 23) established in 1820 and is 24 kilometers east of Antigonish.

Summerside (IR – 38) established in 1865 and is 18 kilometers east of Antigonish.

Pictou Land First Nation has Fisher's Grant (IR 24), which was established in 1866 and is 9.6 kilometers north of New Glasgow.

Fisher's Grant (IR 24G) established in 1927 and is 3.2 kilometers southeast of Pictou Landing.

Boat Harbour (IR 37) established in 1961 and is 8 kilometer north of New Glasgow.

Merigomish Harbour (IR 31) established in 1865 and is 12.8 kilometers east of New Glasgow.

Note: Indian Reserve (IR)

# 6.0 LAND CLAIMS

Currently, there no land claims within the proposed project area. Land claims for Paqtnkek First Nation are listed below.

## 6.1 Paqtnkek Land Claims

First claims are being worked on or have been submitted the second list is the complete list of Paqtnkek's Claims.

10072-505 – River Philip, License of Occupation, an illegal disposition of Indian Lands 1783
Beneficiary Bands – Paqtnkek and Pictou Landing First Nations
Progress – Legal review being conducted, expected completion this fiscal year 2011/12.

00019-504 & 00024-506 – Anthony Bernard License of Occupation December 18, 1783
Beneficiary Bands – Paqtnkek and Pictou Landing First Nations
Progress – Legal review being conducted expected completion this fiscal year 2011/12.

00019-602 & 00024-606 – Shiminicas, Breach of obligation arising out of the Indian Act
Beneficiary Bands – Paqtnkek and Pictou Landing First Nations
Progress – Legal review being conducted expected completion this fiscal year 2011/12.

00019-503 – McChesney Grant, Loss of Reserve land 1827 alienation of Afton & Pomquet Indian Reserve No. 23
Beneficiary Band – Paqtnkek First Nation
Progress – Legal Review completed presentation to the claimant band completed, changes being made to Legal Review/Statement of Claim. BCR's for submission signed and claim submitted to SCB.

00019-601 – H.H. Cogswell Summerside property, Failure to follow proper procedures of legate in setting aside portion of land for the Indians of "Summerside"
Beneficiary Band – Paqtnkek First Nation
Progress – Legal review completed claim submitted to SCB returned did not meet minimum standards, documents transcribed claim to be represented to Paqtnkek and resubmitted to SCB estimated time of completion early this fiscal year 2011.

| Claims no. | Claims description |
|---|---|
| 00019-301 | Pomquet #23, illegal surrender, post confederation |
| 00019-302 | Franklin Manor #22, illegal surrender, timber |
| 00019-303 | Loss of merchantable timber, 1891 surrender of IR #22, timber sale. Joint claim with Pictou Landing Band |

00019-401 Breach of fiduciary trust responsibility, highway right-of-way, Afton IR #23, Sept. 24, 1968. (Claim submitted to SCB counter research completed and reviewed claim re-submitted to SCB to move forward to DOJ)

00019-402 Pomquet #23, Department of Highways, road allowance

00019-403 Afton #23, Department of Highways road allowance

00019-404 Afton #23 CNR easement

00019-501 Afton #23, Summerside land grant, loss of reserve land

00019-502 Franklin Manor #22, Loss of reserve land post confederation this is a joint claim with Pictou Landing Band.

00019-503 Loss of reserve land, 1827 alienation of Afton & Pomquet IR #23.

00019-504 Loss of reserve land, 1783 Licence of Occupation to Anthony Bernard et al, December 18, 1783, Antigonish Harbour, NS. (Claim under Legal Review)

00019-505 An illegal disposition of Indian lands 1783 Licence of Occupation to Indians, River Philip, Cumberland County, NS. (Claim prepared for Legal Review)

00019-601 Failure to follow proper procedures of Legatte in setting aside Summerside as an Indian Reserve. Portion of H.H. Cogswell property. (Claim prepared for Legal Review)

6.2 The following is a list of Mi'kmaq place names:

Antigonish (river and harbour)…….. Nalikitquniejk
Arisaig……Klatuowe'sk
Barneys River……... Skikiankataqank
Bowman Head……Metkatpawliek

Cape Blue……...Mijikue'katik (turtles' home).
Cape George……...Memkejk (clear field).
Cape Jack……... Ki'kli'kwe'ji'jk (chickens' home)
Harbour Boucher……Nulo'qnek (little stopping for…)
Indian Gardens……...Mekwasek
Knoydart Brook……. Walatek
Little Tracadie……Poqomkuakitk (flowing over dry sand)
Mahoneys Beach……Tuiten
Malignant Cove……..Amnipenek (frightening)
McArras Brook…….. Apsaqaqnji'jk
Monks Head……...Mulansek
Morristown…….Kaqaio'qikejk (lime banks)
North River…… Kaqaio'qijej'jk
Pomquet……. Poqomkek (dry sand).
Pomquet and Afton Reserves…….Poqomkek Utan
Pomquet Beach…….. Pataluti'jk
Pomquet Ferry……Pqotmau'taqnek
Pomquet Forks……... Niktui Psitenij (forks)
Pomquet Island…….. Paqtnkek Mmiku
Pomquet Point……Pkawikn (facing the island)
Pomquet River……... Amasipukeuk (long river)
Pomquet Road……Skitamka'taqnk
South River…… Peskikuktukwek (branching off)
Summerside……Niktue'k
Tracadie……..Tlaqatik
West River……. Wisike'ji'jk
William Point……Maqtewatqek

# 7.0 POTENTIAL PROJECT IMPACTS ON MI'KMAQ LAND AND RESOURCE USE

The following table presents potential project impacts on historic and current Mi'kmaq land and resource use.

**Table 4: Potential Project Impacts on Mi'kmaq Land and Resource Use**

| POTENTIAL IMPACTS ON MI'KMAQ LAND AND RESOURCE USE | |
|---|---|
| 6.01 | The historic review of Mi'kmaq use and occupation documents historic Mi'kmaq use and occupation in the study area, and potentially the project area. A potential impact of the project is the disturbance of archaeological resources. |
| 6.02 | Several species of significance to Mi'kmaq have been identified in the study area. Permanent loss of some specimens is a potential impact of the project. |

# 8.0 SIGNIFICANCE OF POTENTIAL PROJECT IMPACTS ON MI'KMAQ LAND AND RESOURCE USE

The concept of significance in the Mi'kmaq Knowledge Study is distinct from the concept of significance under the *Canadian Environmental Assessment Act* or the *Nova Scotia Environmental Assessment Regulations*. Significance to Mi'kmaq is evaluated only in accordance with the criteria listed below. The MEKS evaluation of the significance of the potential project impacts on Mi'kmaq should be used by regulators to inform their determination of the significance of the environmental effects of the Project.

## 8.1 Significance Criteria

The following criteria are used to analyze the significance of the potential project impacts on Mi'kmaq use:

1) Uniqueness of land or resource
2) Culture or spiritual meaning of land or resource
3) Nature of Mi'kmaq use of land or resource
4) Mi'kmaq constitutionally protected rights in relation to land or resource

## 8.2 Evaluation of Significance

**Table 5: Significance of Potential Project Impacts on Mi'kmaq Land and Resource Use**

| POTENTIAL IMPACT | EVALUATION OF SIGNIFICANCE |
|---|---|
| 6.01 The historic review of Mi'kmaq use and occupation documents Mi'kmaq use and occupation in the study area, and potentially the project area. A potential impact of the project is the disturbance of archaeological resources. | 7.2.01 Mi'kmaq archaeological resources are extremely important to Mi'kmaq as a method of determining Mi'kmaq use and occupation of Mi'kma'ki and as an enduring record of the Mi'kmaq nation and culture across the centuries. Archaeological resources are irreplaceable. Any disturbance of Mi'kmaq archaeological resources is significant. |
| 6.02 Several species of significance to Mi'kmaq have been identified in the study area. Permanent loss of some species is a potential impact of the Project. | 7.2.02 The plant species of significance to Mi'kmaq identified within the study area exist within the surrounding area. The destruction of some specimens within the study area does not pose a threat to Mi'kmaq use of the species. The impact of the permanent loss of some specimens of plants species of significance to Mi'kmaq is evaluated as not a threat. |

# 9.0 CONCLUSIONS AND RECOMMENDATIONS

8.01 In the event that Mi'kmaw archaeological deposits are encountered during construction or operation of the Project, all work should be halted and immediate contact should be made with Laura Bennett, Special Places Co-ordinator, Nova Scotia Museum and Janice Maloney, Executive Director, KMKNO (Kwilmu'kw Maw-klusuagn Negotiation Office).

8.02 There are no land claims registered with the Specific Claims branch of Indian and Northern Affairs Canada in Ottawa for any of the Mi'kmaq communities in Nova Scotia, within the project area. However, that does not suggest that any other Mi'kmaw claimants for this area may not submit land claims in the future.

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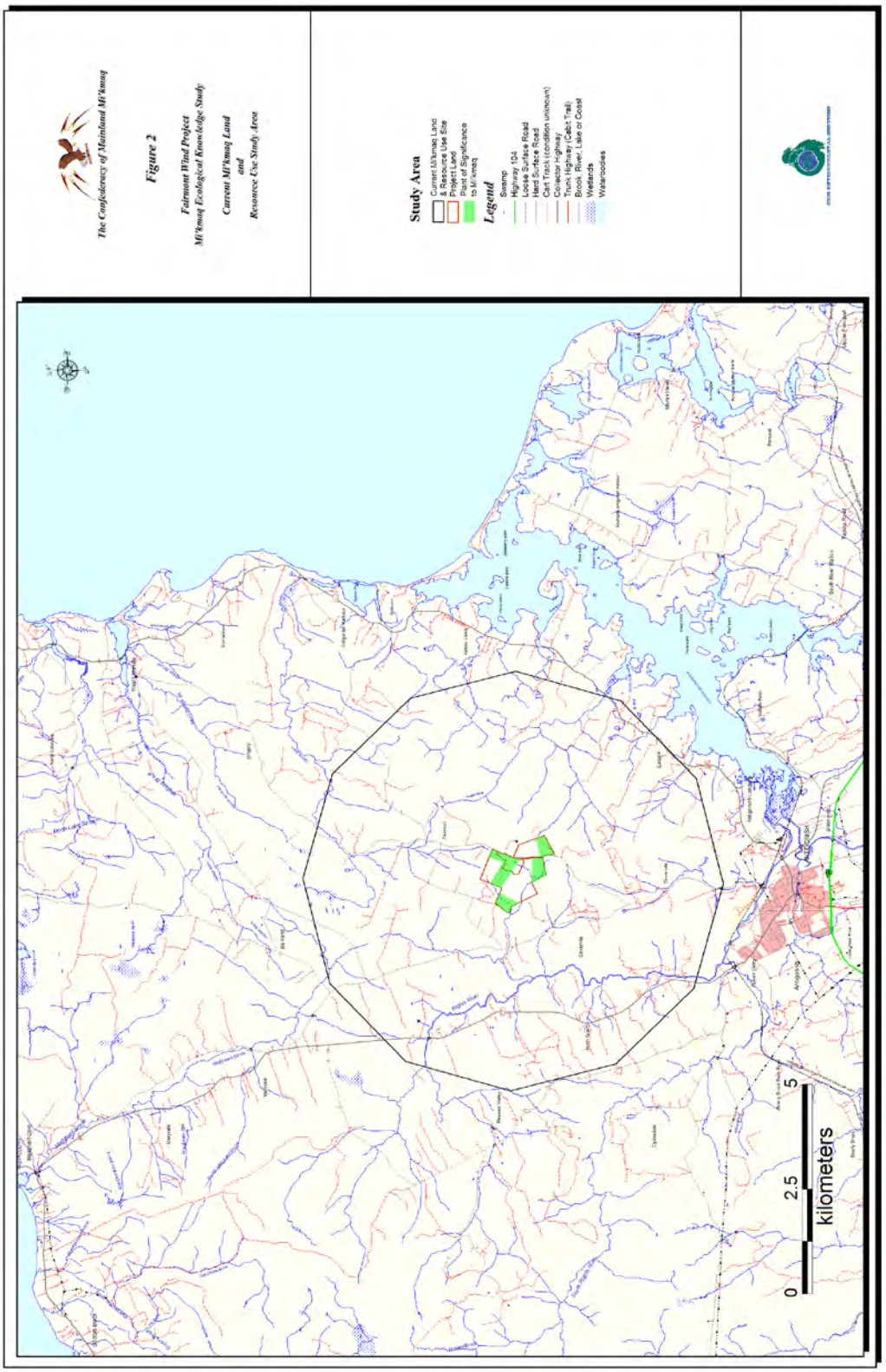
RG 1 Volume 430

RG 1 Volume 431

RG 1 Volume 432

Figure 2: Current Mi'kmaq Land and Resource Use Study Areas



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*APPENDIX L*

# RADIO COMMUNICATIONS SYSTEMS IMPACT ASSESSMENT REPORT

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***OLDHAM Engineers Inc.***
125 Joseph Zatzman Drive
Dartmouth, Nova Scotia
B3B 1W1

April 15th, 2011

Andy MacCullan
Development Manager
Wind Prospect Inc.
1791 Barrington Street
Suite 1030
Halifax, NS
B3J 3L1

Dear Andy

Oldham Engineers Inc. is pleased to offer our engineering services to Wind Prospects Inc. to examine the impact that a proposed wind farm near Antigonish may have on existing radio communications systems in the area. Attached is our report that outlines our findings. Please review and let me know you have any questions or concerns.

Regards

Keith MacNeil, P. Eng.

**Fairmont Wind Farm – Impact Assessment on Existing Radio Systems – Rev 1 (April 15, 2011)**

**Background:**

Wind Prospect Inc. intends to build a wind turbine farm north of Antigonish, Nova Scotia near Fairmont. The wind farm will consist of two wind turbines with defined locations at:

North Turbine: 45°-41'-00"N 61°-59'-30"W

South Turbine: 45°-40'-53"N 61°-59'-27"W

**Scope:**

Oldham Engineers Inc. (OEI) was asked to investigate the potential impact the proposed wind turbines may have on existing radio communication systems in the area in accordance with RABC Guidelines (April 2007). As part of their own investigations, Wind Prospect Inc. previously prepared a risk assessment for other types of radio systems identified in the RABC report - weather radar, navigational and defence radar systems, satellite links and seismoaucoustic systems. OEI's scope of work examined the impact on local radio systems, namely point-to-point microwave and land mobile radio systems near the proposed wind farm.

**Methodology:**

Existing radio communication systems were initially identified by reviewing Industry Canada's TAFL and our own knowledge of the systems in the area. The TAFL is a database of radio licences and is operated/ maintained by Industry Canada, the federal agency responsible for management of radio communication spectrum (i.e. frequencies). The TAFL does not include non-licensed radio systems such as spread spectrum radios or very low power devices.

Field visits were later performed at existing radio sites with radio systems flagged as potential candidates for interference with the proposed development.

**Technical Discussion:**

When an obstruction encroaches on a radio signal transmission, it results in diffraction loss which in turn lowers the received signal at the receiving end. The level of diffraction loss depends on factors such as the size of the obstruction in relation to the signal's wavelength (inversely proportional to its frequency), and the proximity of the obstruction in relation to the source or receiver. The minimum required clearance to avoid diffraction loss is defined as the Fresnel zone. Obstructions encroaching in 60% of the 1st Fresnel zone cause diffraction loss.

Another radio propagation phenomenon that impacts radio performance is reflections. Reflections are secondary signals that add or subtract from the main signal and can be destructive depending on the phase and level of the reflected signal(s).

**Findings:**

The existing radio site in Fairmont was identified as a concern based on our review of the TAFL and its close proximity to the proposed wind farm . The radio site is owned by the Province of Nova Scotia (PNS) and is used as part of their existing Province-wide radio systems (NSIMRS and TMR). The site lies approximately 1km from the proposed wind farm.

Existing systems at the Fairmont radio site include LMR (Land Mobile Radio), point to multipoint (PTMP) and microwave point-to-point (PTP) radio links.

The LMR systems at this site employ non-directional antennas and operate at VHF (150MHz), UHF (450MHz) and 800MHz. The 900MHz PTMP system at Fairmont utilized sector type antennas (60 degree beamwidth) and is used to provide wireless network communications. Due to the low operating frequencies, the non-directional antenna patterns and the distance from the proposed wind farm, we do not anticipate the LMR and PTMP systems to be significantly impacted by the proposed development.

There are a number of pt-to-pt microwave radio systems operating at this site which were examined closely. The Site Owner (PNS) and NSP were consulted regarding new antenna systems planned for addition to the Fairmont tower in hopes to identify/avoid future conflicts prior to construction.

Microwave links typically utilize highly direction antennas (narrow beamwidth) and operate at higher frequencies (shorter wavelength) which make them susceptible to encroaching obstructions and reflection points along their path. Of the existing microwave systems at the Fairmont site, only one was flagged as having a potential issue with the proposed wind farm, that being a 900MHz link to Maple Ridge, owned by Nova Scotia Power (NSP). It was found that the proposed southern wind turbine is close to the link but does not encroach on the first Fresnel zone.

**Calculations:**

Operating Frequency = 960 MHz

Link Length = 10.8 km

Distance from Fairmont Site to Southern Wind Turbine = 0.95km

60% F1 Radius at Turbine = 10m (wrt to center of radio beam)

Turbine Blade Length (m) = 45m (wrt to center of turbine)

Distance between Center of Radio Beam and Closest Turbine Blade = 17m

Clearance = 7m

**Conclusions:**

Our findings indicate the end of the turbine blade comes close (within 7m) to the 60% F1 clearance of the existing NSP radio link between the Fairmont site and the Maple Ridge site but is not expected to encroach on it. In the event that the blade were to encroach on the beam due to small errors in the location of the turbines, the size and proximity of the blade (approximately 3m wide, 1km away) is not expected to cause significant diffraction loss on the link. Furthermore the shape (i.e. rounded) of the blades and tower structure of the turbine are not expected to cause significant reflections that will negatively impact the performance of the radio link.

As mentioned earlier, the wind turbines are not expected to significantly impact the performance of other radio systems at the Fairmont site operating at lower frequencies and utilizing non-directional antennas (i.e. omni-direction or sector type antennas) with the possible exception being high EMI or local signal scatter negatively impacting radio receivers operating very near the wind turbines.

Figure 1 - Fairmont Radio Site

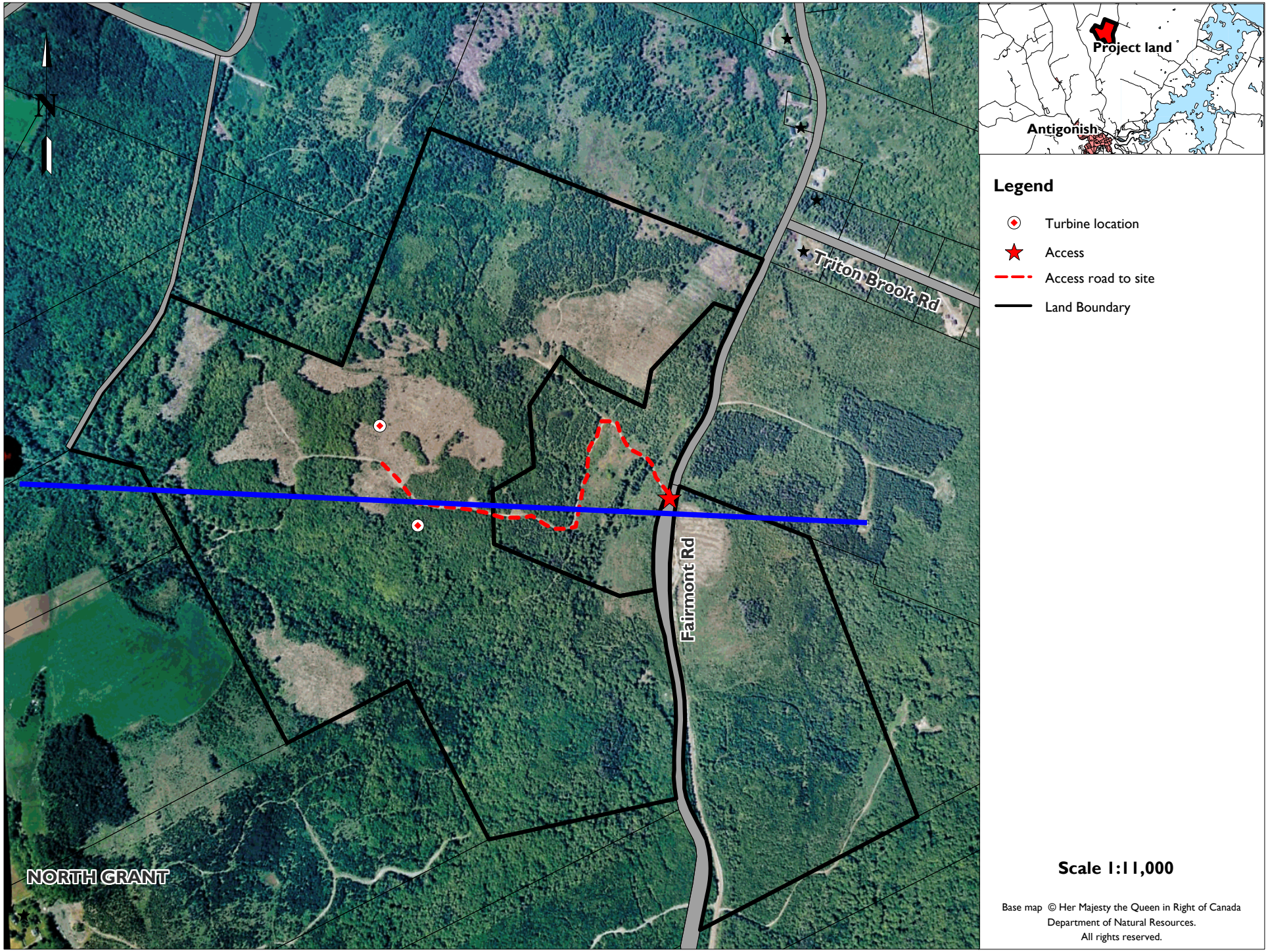
**Figure 2 - Fairmont Antenna Systems**

Figure 3 - Maple Ridge Radio Site

Figure 1 - Fairmont Radio Site

**Figure 2 - Fairmont Antenna Systems**

Figure 3 - Maple Ridge Radio Site



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*APPENDIX M*

# ENERCON E82 TURBINE SPECIFICATIONS

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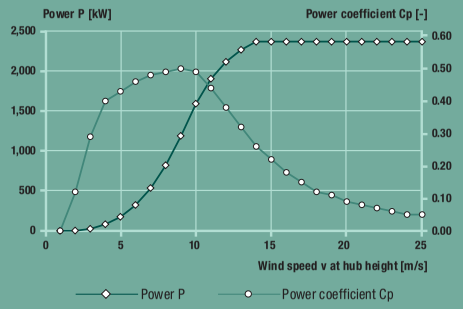
# E82

## 2,300 kW

## Calculated power curve




| Wind [m/s] | Power P [kW] | Power coefficient Cp [-] |
|---|---|---|
| 1 | 0.0 | 0.00 |
| 2 | 3.0 | 0.12 |
| 3 | 25.0 | 0.29 |
| 4 | 82.0 | 0.40 |
| 5 | 174.0 | 0.43 |
| 6 | 321.0 | 0.46 |
| 7 | 532.0 | 0.48 |
| 8 | 815.0 | 0.49 |
| 9 | 1,180.0 | 0.50 |
| 10 | 1,580.0 | 0.49 |
| 11 | 1,890.0 | 0.44 |
| 12 | 2,100.0 | 0.38 |
| 13 | 2,250.0 | 0.32 |
| 14 | 2,350.0 | 0.26 |
| 15 | 2,350.0 | 0.22 |
| 16 | 2,350.0 | 0.18 |
| 17 | 2,350.0 | 0.15 |
| 18 | 2,350.0 | 0.12 |
| 19 | 2,350.0 | 0.11 |
| 20 | 2,350.0 | 0.09 |
| 21 | 2,350.0 | 0.08 |
| 22 | 2,350.0 | 0.07 |
| 23 | 2,350.0 | 0.06 |
| 24 | 2,350.0 | 0.05 |
| 25 | 2,350.0 | 0.05 |

$\rho$ = 1.225 kg/m³

For more information on the ENERCON power curve, please see the last page.

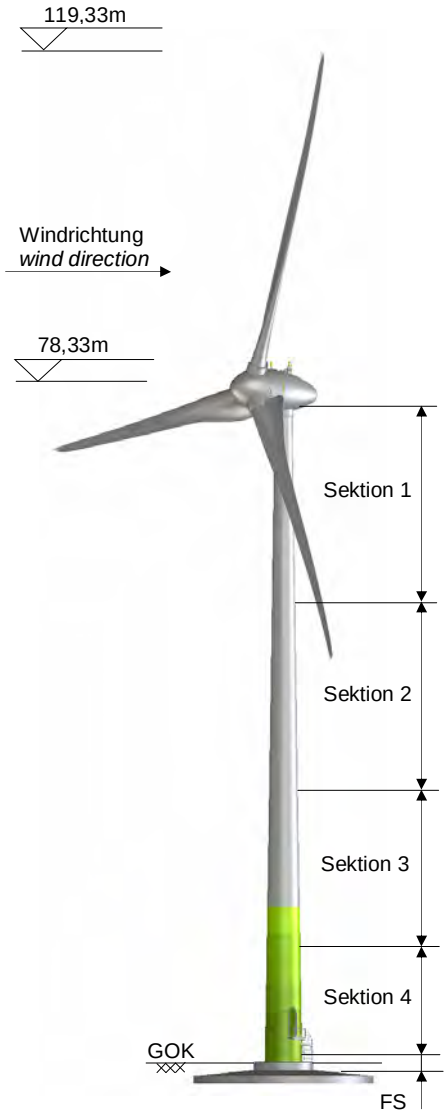
## Technical specifications E-82 E2

| | |
|---|---|
| Rated power: | 2,300 kW |
| Rotor diameter: | 82 m |
| Hub height: | 78 m / 85 m / 98 m / 108 m / 138 m |
| Wind zone (DIBt): | WZ III |
| Wind class (IEC): | IEC/NVN IIA |
| **WEC concept:** | Gearless, variable speed<br>Single blade adjustment |
| **Rotor** | |
| Type: | Upwind rotor with active pitch control |
| Rotational direction: | Clockwise |
| No. of blades: | 3 |
| Swept area: | 5,281 m² |
| Blade material: | GRP (epoxy resin);<br>Built-in lightning protection |
| Rotational speed: | Variable, 6 – 18 rpm |
| Pitch control: | ENERCON single blade pitch system;<br>one independent pitch system per rotor blade with allocated emergency supply |
| **Drive train with generator** | |
| Hub: | Rigid |
| Main bearing: | Double-row tapered/cylindrical roller bearings |
| Generator: | ENERCON direct-drive annular generator |
| **Grid feed:** | ENERCON inverter |
| **Brake systems:** | – 3 independent pitch control systems with emergency power supply<br>– Rotor brake<br>– Rotor lock |
| **Yaw system:** | Active via yaw gear, load-dependent damping |
| **Cut-out wind speed:** | 28 – 34 m/s<br>(with ENERCON storm control*) |
| **Remote monitoring:** | ENERCON SCADA |

*For more information on the ENERCON storm control feature, please see the last page.


1 Main carrier
2 Yaw drive
3 Annular generator
4 Blade adapter
5 Rotor hub
6 Rotor blade

| ENERCON ENERGY FOR THE WORLD | Gewichte und Abmessungen<br>*Weights and Dimensions*<br>E-82/S/77/4F/01 | Page<br>1 of 1 |
|---|---|---|



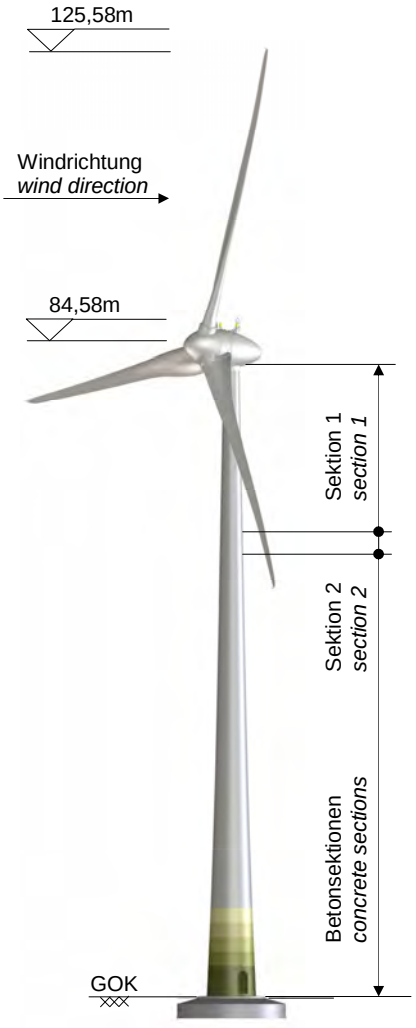

| | |
|---|---|
| Gesamthöhe ab Gelände<br>*Total height from territory* | 119,33 m |
| Nabenhöhe ab Gelände<br>*Hub height above ground* | 78,33 m |
| Turmlänge ab Fundamentoberkante<br>*Tower height above upper foundation edge* | 77,10 m |
| Bauart / *Design* | Stahlturm /<br>*steel tower* |
| Windzone WZ (DIBt) | DIBt III[1] |
| WTGS Class (IEC 61400-1/ NVN 11400-0) | IEC II A[1] |
| Anzahl der Sektionen / *Number of sections* | 4 + Fundamentsektion /<br>*4 + foundation section* |

| | Länge<br>*length* | $D_{oben}$<br>*diam$_{op}$* | $D_{unten}$<br>*diam$_{bottom}$* | Gewicht<br>weight |
|---|---|---|---|---|
| | m | m | m | to |
| Sektion 1 /<br>*section 1* | 24,00 | 2,00 / 2,21[3] | 2,71 | ca. 35 |
| Sektion 2 /<br>*section 2* | 21,80 | 2,71 | 3,35 | ca. 48 |
| Sektion 3 /<br>section 3 | 18,20 | 3,35 | 3,91 | ca. 55 |
| Sektion 4 /<br>*section 4* | 12,35 | 3,91 | 4,30 | ca. 61 |
| | | | | |
| | | | | |
| Fundamentsektion /<br>*foundation section* | 2,00 | 4,30 | 4,51 /<br>4,853[3] | ca. 15 |
| Gesamtgewicht Turm / *total weight tower* | | | | ca. 214 |

[1] Typenprüfung vorhanden /*Certification Report available*
[2] Typenprüfung in Arbeit/ *Certification report in process*
[3] Flanschaußendurchmesser / *outside flange diameter*




| **Document information:** | | | |
|---|---|---|---|
| Author/ date: | AS / 28.02.06 | | |
| Department: | WRD | Translator / date: | - |
| Approved / date: | MKR / 30.10.06 | Revisor / date: | AS / 30.10.06 |
| Revision / date: | 02 | Reference: | WRD-K-04-GuA.E-82.S.77.4F.01-Rev02_0-ger-eng.doc |




| | |
|---|---|
| Gesamthöhe ab Gelände<br>*Total height from territory* | 125,58 m |
| Nabenhöhe ab Gelände<br>*Hub height above ground* | 84,58 m |
| Turmlänge ab Fundamentoberkante<br>*Tower height above upper foundation edge* | 83,30 m |
| Bauart / *Design* | Betonfertigteilturm<br>*precast concrete tower* |
| Windzone WZ (DIBt) | WZ 4 GK I[1] |
| WTGS Class (IEC 61400-1 / NVN 11400-0) | II A[1] |
| Anzahl der Sektionen / *Number of sections* | 2 Stahl / *steel*<br>15 Beton / *concrete* |

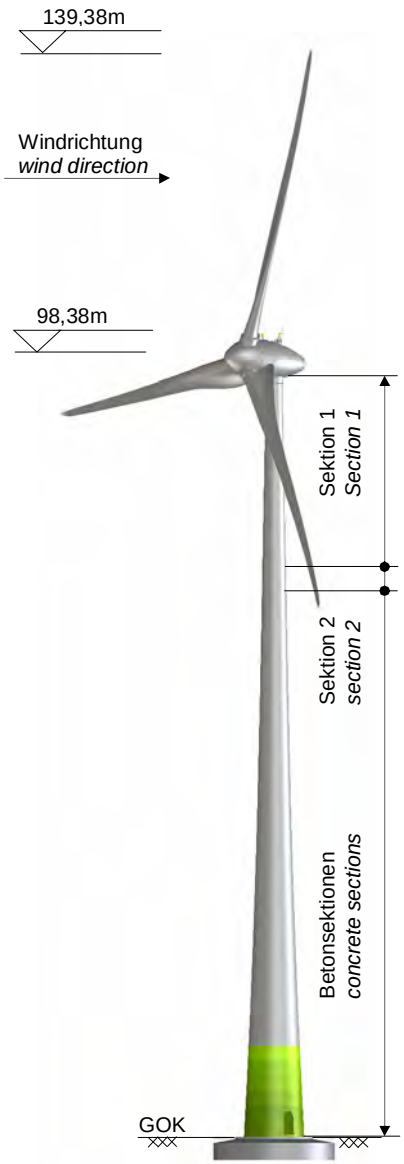
| | Länge<br>*length* | $D_{oben}$<br>*diamt*$_{op}$ | $D_{unten}$<br>*diam*$_{bottom}$ | Gewicht<br>weight |
|---|---|---|---|---|
| | m | m | m | to |
| Sektion 1 /<br>*section 1* | 22,91 | 2,00 /<br>2,21[3] | 2,91 | ca. 35 |
| Sektion 2 /<br>*section 2* | 3,00 | 2,91 | 3,019 | ca. 14 |
| Betonsektionen /<br>*concrete sections* | 57,39 | 3,019 | 6,369 | ca. 555 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Gesamtgewicht Turm / *total weight tower* | | | | ca. 604 |

[1] Typenprüfung vorhanden /*Certification Report available*
[2] Typenprüfung in Arbeit/ *Certification report in process*
[3] Flanschaußendurchmesser / *outside flange diameter*



| **Document information:** | | | |
|---|---|---|---|
| Author/ date: | AS / 11.05.2006 | | |
| Department: | WRD | Translator / date: | - |
| Approved / date: | MKR / 11.02.2008 | Revisor / date: | AS / 11.02.2008 |
| Revision / date: | 02 | Reference: | WRD-K-04-GuA.E-82.BF.83.17.01-Rev02_0-ger-eng |

| ENERCON ENERGY FOR THE WORLD | Gewichte und Abmessungen<br>*Weights and Dimensions*<br>E-82/BF/97/20/02 | Page<br>1 of 1 |
|---|---|---|




| | |
|---|---|
| Gesamthöhe ab Gelände<br>*Total height from territory* | 139,38 m |
| Nabenhöhe ab Gelände<br>*Hub height above ground* | 98,38 m |
| Turmlänge ab Fundamentoberkante<br>*Tower height above upper foundation edge* | 97,10 m |
| Bauart / *Design* | Stahl / Betonfertigteilturm<br>*steel / precast concrete tower* |
| Windzone WZ (DIBt) | DIBt III[1] |
| WTGS Class (IEC 61400-1/ NVN 11400-0) | IEC II A[1] |
| Anzahl der Sektionen / *Number of sections* | 2 Stahl / *steel*<br>18 Beton / *concrete* |

| | Länge<br>*length* | $D_{oben}$<br>*diam$_{op}$* | $D_{unten}$<br>*diam$_{bottom}$* | Gewicht<br>weight |
|---|---|---|---|---|
| | m | m | m | to |
| Sektion 1 /<br>*section 1* | 25,232 | 2,00 / 2,21[3] | 2,91 | ca. 38 |
| Sektion 2 /<br>*section 2* | 3,00 | 2,91 | 3,019 | ca. 16 |
| Betonsektionen /<br>*concrete sections* | 18 x<br>3,826 | 3,019 | 7,50 | ca. 727 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Gesamtgewicht Turm / *total weight tower* | | | | ca. 781 |

[1] Typenprüfung vorhanden /*Certification Report available*
[2] Typenprüfung in Arbeit/ *Certification report in process*
[3] Flanschaußendurchmesser / *outside flange diameter*



| **Document information:** | | | |
|---|---|---|---|
| Author/ date: | AS / 28.02.06 | | |
| Department: | WRD | Translator / date: | - |
| Approved / date: | MKR / 30.10.06 | Revisor / date: | AS / 30.10.06 |
| Revision / date: | 01 | Reference: | WRD-K-04-GuA.E-82.BF.97.20.02-Rev01_0-ger-eng.doc |

*APPENDIX N*

# MARKING AND LIGHTING OF WIND TURBINES AND WIND FARMS (TRANSPORT CANADA)

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## *621.19.12 - Marking and Lighting of Windturbines and Windfarms*

**12.1 Scope.** A windturbine and a windturbine farm shall be marked and lighted in accordance with the requirements set out in this chapter.

> *Information Note 1: The application of these requirements can vary in accordance with the provisions of this Standard depending on terrain features, geographic location, overall layout of the structures, and normal angles of approach.*
>
> *Information Note 2 : The provision of lighting on windturbines and windfarms should be done in a fashion as to minimize the possibility of bird fatalities and interference with nighttime astronomical study. Refer Technical Circular XXX*

**12.2 Definitions**

(a) Windturbine - A structure intended for the production of electrical power; comprising a support mast on which is installed a nacelle containing a generator unit and which in turn supports rotor blades that are caused to rotate by the wind. The total height of the obstruction is the height of the nacelle, above ground level (AGL), plus the length of one of the blades held in a vertical position.

(b) Windfarm - A grouping of 3 or more windturbines.

> *Information Note: The definition of windfarm is based on the premise that the installation of 3 windturbines is the first instance for which certain omission of lighting might be made. Since the exterior windturbines [on the perimeter] of a windfarm are to be lighted, should a grouping consist of only two windturbines, it would not be different from the lighting of two single windturbines.*

(c) Windfarm Indicators - Light units installed with specified spacing on certain selected windturbines and serving to indicate the location of a windfarm to pilots.

**12.3 Windturbines of Total Height Equal to or Less than 150m**

**(1) Marking Requirements** A single windturbine and windturbines of a windfarm having a total height equal to or less than 150m shall be marked as follows:

**(a)** For a single windturbine:

(i) each rotor blade shall be painted aviation white and marked, front and back, with aviation orange paint for the end third of each tip, as indicated in Figure 12-1.
(ii) where the windturbine is of a vertical axis design, each rotor blade shall be painted aviation white with aviation orange for the top third of the blade.
(iii) the support structure shall be painted aviation white with the exception that the bottom 20m or one third of the structure may be left unpainted.

(b) The windturbines of a windfarm:

(i) Shall be painted white for those located on the perimeter of the windfarm.

(ii) Windturbines located inside the perimeter of the windfarm and thus shielded by those located on the perimeter, do not require specified painting.

**(2) Lighting Requirements** A single windturbine and windturbines of a windfarm a total height equal to or less than 150m shall be lighted as illustrated in Figure 12-2 and as follows:

(a) For a single windturbine,

(i) A windturbine shall be lighted with use of a CL-864 medium intensity red flashing beacon for nighttime hours.

(ii) The additional provision of a CL-865 medium intensity white flashing beacon and operation during daytime and twilight hours, may be used in lieu of paint marking.

(iii) the lighting fixtures required under subparagraphs (i) and (ii) shall be mounted to ensure an unobstructed view by a pilot approaching from all angles of aircraft approach.

(b) For a windfarm;

(i) The group of windturbines composing a windfarm shall be indicated to pilots by installation of CL-864 medium intensity red flashing beacons on specified windturbines on the perimeter of the windfarm.

(ii) The "windfarm indicators" of subparagraph (i) shall be located so as to define the windfarm and spaced at a horizontal distance in the order of 900m for given directions of aircraft approach.

(iii) In addition to the windfarm indicators of subparagraph (ii) the dominant [highest in absolute height] windturbine within the windfarm may also be required to be lighted. This requirement for lighting is dependent upon the degree of dominance deemed to produce a hazard to air navigation.

(iv) A tower or other structure within the windfarm, which in being lighted provides the same level of safety, may be used for installation of a windfarm indicator.

(v) Because of the variation in configuration of windfarms, the provision of lighting shall also be also be subject to a risk assessment taking into account such factors as the general profile of the group, the location of the windfarm in relation

to nearby aerodromes or recognized VFR flight routes, and the anticipated air traffic.

(vi) All indicator lighting provided for a windfarm shall flash simultaneously.

**12.4 Windturbines of Total Height Exceeding 150m.** The provision of marking and lighting for windturbines higher than 150m shall be determined through means of an aeronautical evaluation.

**12.5 Continued Illumination.**

(a) The lighting provided for a windturbine or windfarm shall be so designed such that it can draw power from the electrical grid for continued illumination even though the windturbine on which it is mounted ceases operation.

*Information Note: The above standard is based upon the premise that the lighting of a non-operating windturbine can obtain power from the grid. However, it also recognizes that continued illumination will not be possible should the electrical grid itself fail.*

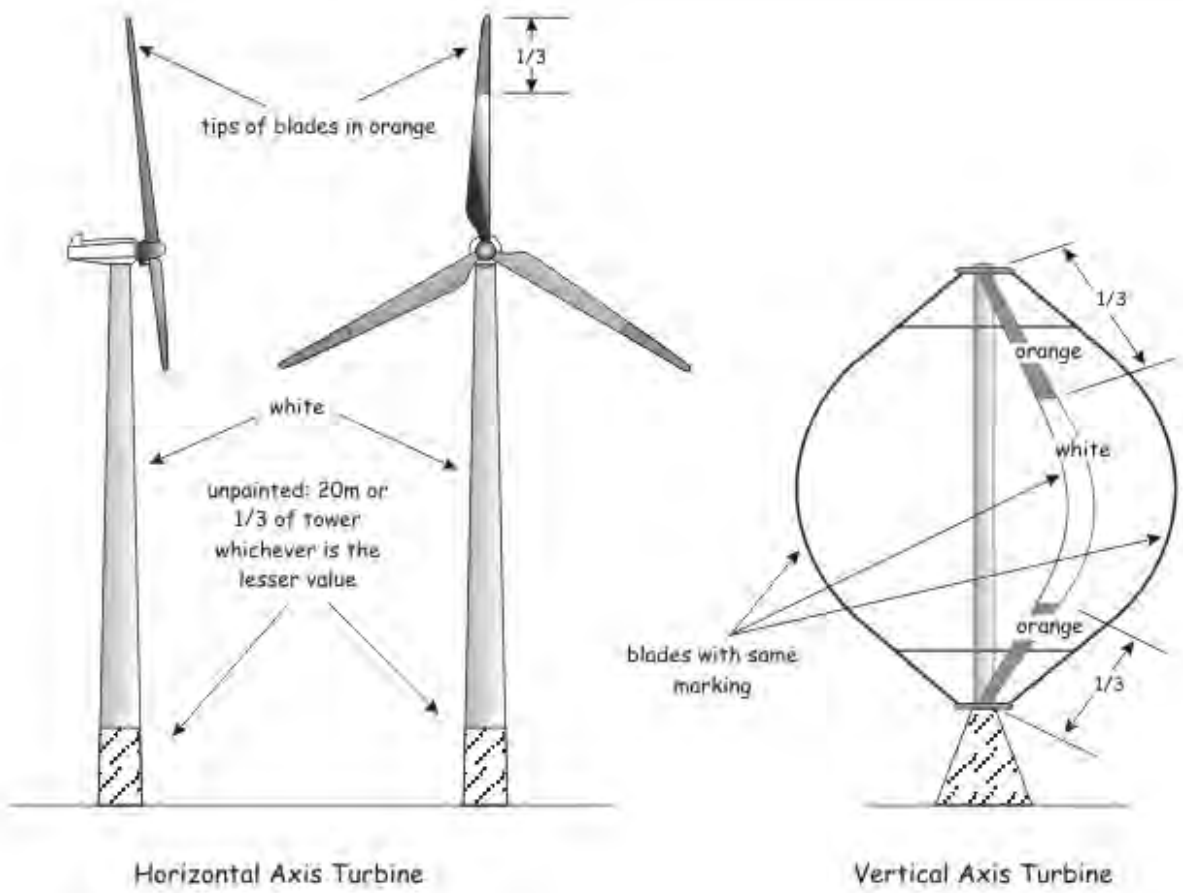


Figure 12-1: Marking of single windturbines
(less than 150m height)

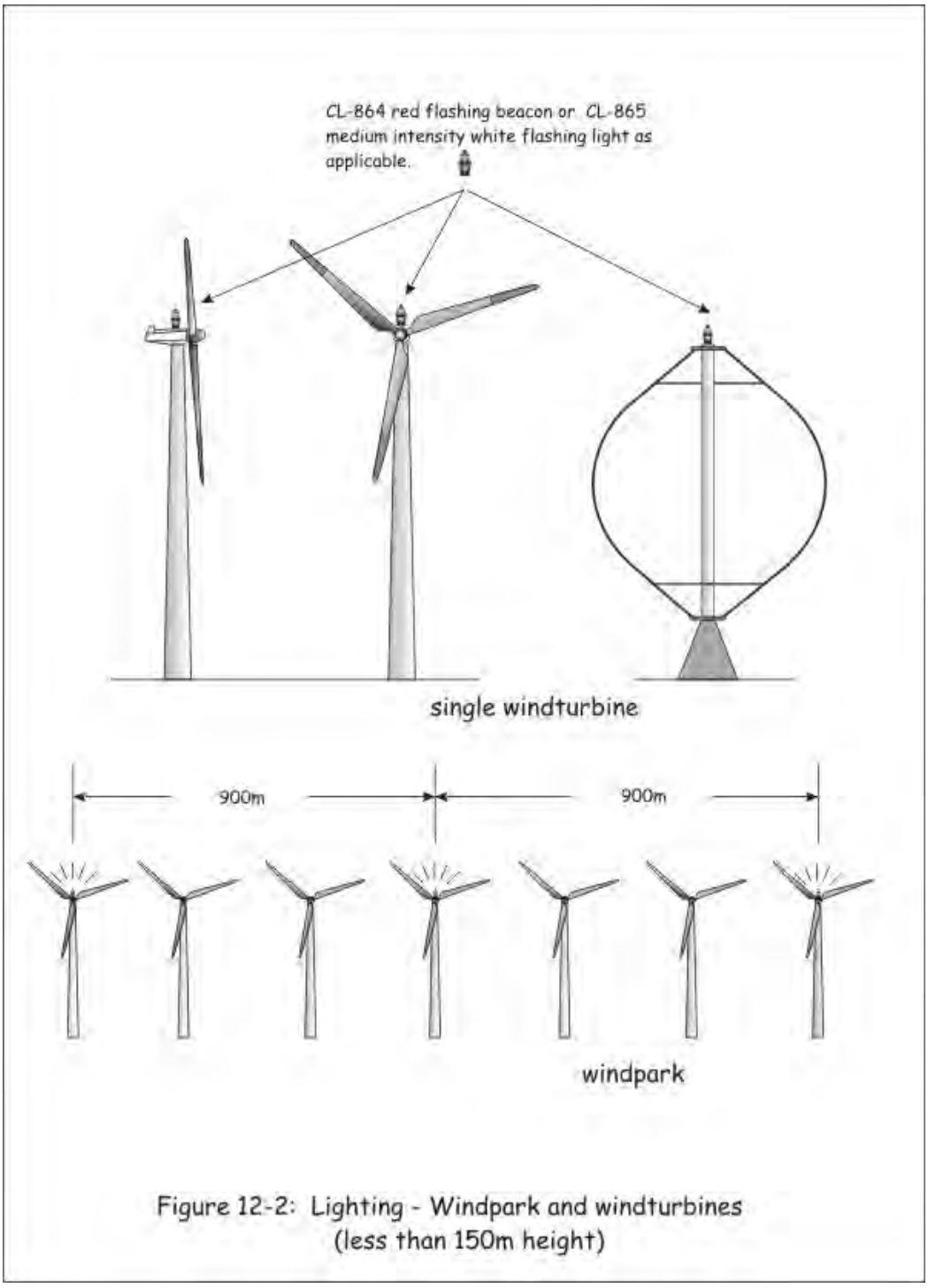


Figure 12-2: Lighting - Windpark and windturbines (less than 150m height)

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*APPENDIX O*

# STAKEHOLDER CONSULTATION

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*APPENDIX O I*

# PUBLIC MEETING MEDIA

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# NOTICE

## Registration of Undertaking for Environmental Assessment ENVIRONMENT ACT

This is to advise that on **July 13th 2011**, **WIND PROSPECT INC.** registered the **Fairmont Wind Farm** for an environmental assessment, in accordance with Part IV of the Environment Act.

The purpose of the proposed undertaking is to develop the Fairmont Wind Farm, located in the Municipality of the County of Antigonish, Nova Scotia. The project site is approximately 6 km due north of the town of Antigonish. The project will consist of two Enercon E82 wind turbines, with a total rated capacity of 4.6 MW. Project activities are scheduled as follows:

- Pre-construction activities: Fall/Winter 2011
- Construction: Winter 2011/Spring 2012
- Commissioning: Spring/Summer 2012

Copies of the environmental assessment registration information may be examined at the following locations:

X ***Antigonish Central Public Library,*** 283 Main St
Antigonish, NS B2G 1X6

X ***Antigonish Town Hall,*** 274 Main Street
Antigonish, Nova Scotia, B2G 2C4

X Nova Scotia Environment, Library, 5151 Terminal Road, Halifax, NS

X EA website (when available) http://www.gov.ns.ca/nse/ea

The public is invited to submit written comments to:

Environmental Assessment Branch
Nova Scotia Environment
P.O. Box 442, Halifax, NS, B3J 2P8

on or before ***August 12th 2011*** or contact the department at (902) 424-3230, (902) 424-0503 (Fax), or e-mail at EA@gov.ns.ca.

All submissions received, including personal information, will be made available for public review in the Nova Scotia Environment Library, Halifax Office, 5151 Terminal Road.

Published by:

***WIND PROSPECT INC***
1791 Barrington St., suite 1030
Halifax, NS, B3J 3L1


# FAIRMONT WIND FARM

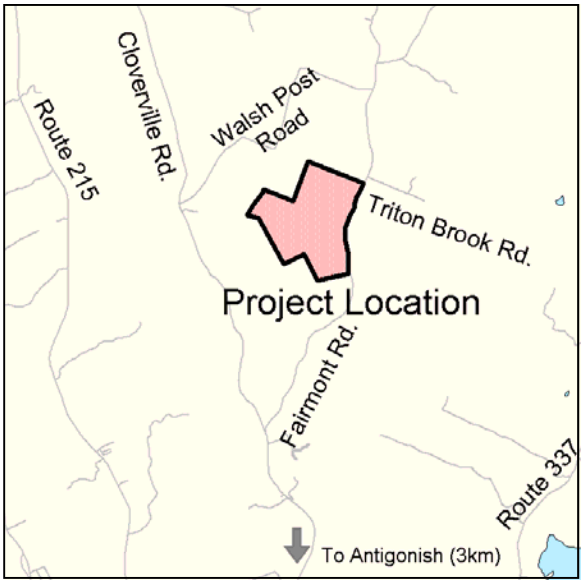
## Invitation to First Public Open House

Wind Prospect Inc is proposing to develop a 2 turbine wind energy project with a nameplate capacity of 4.0 megawatts in the County of Antigonish. The proposed project will be entirely located within the project area shown on the map to the right.

We are pleased to invite you to our first public open house for the project on April 29th. The primary purpose of this open house is to introduce the project to the public and gather valuable public input on the project's Provincial Environmental Assessment.

Wind Prospect brings a wealth of experience in developing, constructing and operating wind farms in Canada and worldwide. We believe our success is based on locating and scaling wind farms to best fit the local environment while liaising closely with local communities.

**Date:** Thursday, April 29th, 2010
**Time:** 5:30pm—8:30pm
**Place:** St. Andrew Junior School
2 Appleseed Dr., Antigonish




**For More Information:**

| | |
|---|---|
| Company: | Wind Prospect Inc. |
| Contact: | Austen Hughes, Development Manager |
| Email: | austen.hughes@windprospect.com |
| Project Web Site: | www.fairmontwindfarm.ca |
| Company Web Site: | www.windprospect.ca |

Fairmont wind farm Public meeting #1 - questionnaire responses

| How did you find out about the PM? | | | DO YOU SUPPORT: | | | Was this PM informative? | Did you take material? |
|---|---|---|---|---|---|---|---|
| FLYER | PAPER | OTHER | Wind energy in General? | Wind Energy in this County? | The Fairmont project? | | |
| Yes | No | - | Yes | Yes | Yes | No | Yes |
| No | Yes | - | Yes | Yes | Yes | Yes | No |
| Yes | No | Mailing list | - | - | - | - | - |
| Yes | No | - | Yes | Yes | No | Yes | Yes |
| Yes | Yes | - | Yes | Yes | Yes | No | Yes |
| Yes | Yes | - | Yes | Yes | Yes | Yes | No |
| Yes | Yes | - | Yes | Yes | Yes | No | No |
| Yes | Yes | - | Yes | Yes | Yes | No | Yes |
| No | Yes | - | Yes | Yes | Yes | Yes | Yes |
| Yes | Yes | - | Yes | Yes | Yes | Yes | Yes |
| - | - | - | - | - | - | - | - |
| -YES - 8<br>-NO - 2<br>80% | -YES - 13<br>-NO -5<br>72% | | -YES - 9<br>-NO -0 | -YES - 9<br>-NO -1 | -YES - 9<br>-NO -1 | -YES - 5<br>-NO -4 | -YES - 6<br>-NO -3 |

# Fairmont Wind Farm

## Online Newsletter #1 - May 2010

Dear Resident,

I am pleased to introduce our first newsletter for the proposed Fairmont Wind Farm. The purpose of this newsletter is to inform you of the progress of this project and provide a summary of the first open house.

The first public open house for the Fairmont Wind Farm proposal was held on the evening of April 29th, 2010 at the St. Andrew's Junior School in Antigonish. We feel consultation with the public is an important part of the environmental assessment process. Your opinion is important to us and we are eager to consult widely on this project with all interested stakeholders. Thank you to those who attended the open house and provided feedback.

A preliminary project design was presented at the open house as well as images of what the proposed project may look like. Comments received from local residents and other stakeholders during this meeting or via the project website will be reflected in the Environmental Assessment & Registration Document and ultimately in the layout and design of the project.

Together, the 2 wind turbines at the Fairmont Wind Farm could provide the equivalent amount of clean, emission-free electricity as would be used per year by about 1,000-1,500 average Canadian homes. In addition it would help in the fight against climate change and the associated environmental impacts by offsetting an estimated 10,500 tonnes of carbon dioxide emissions every year.

Wind Prospect is excited to be developing projects in Nova Scotia—the province we all call home—where the provincial government has recently committed to reducing its dependence on fossil fuels in large part by incorporating more wind energy into the province's energy generation mix. On a more local level, we look forward to working alongside the County of Antigonish to design a wind farm which meets their expectations and contributes to the entire community.

We hope that this newsletter provides a clear summary of the status of this project. If you have any questions, please do not hesitate to contact me by phone toll free at 1-877-425-9663 extension 215 or via email. I look forward to hearing from you.

Yours sincerely,

Austen Hughes
Fairmont Project Manager

## Proposed Project Timeline

**2010**

- Preliminary stakeholder engagement starts
- **Environmental assessment starts with Public Open House**
- Meteorological test tower erected
- Avian surveying starts (12 months)
- Bat surveying starts (3 months)
- Remaining field studies underway

**2011**

- Submission of Draft Environmental Assessment & Registration Document
- Submission of Planning Application
- **Second Public Open House**
- **Public Hearing - Antigonish Council**
- Submission of Final Environmental Assessment & Registration Document
- Department of Environment Minister decision on proposal
- Construction starts, following favourable planning and environmental assessment decisions

**2012**

- **Expected operation**



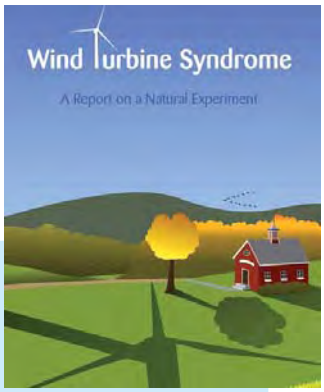

**Wind Prospect Inc.**
1791 Barrington Street, Suite 1030
Halifax, NS B3J 3L1
Toll Free: 1-877-425-9663
austen.hughes@windprospect.ca
www.windprospect.ca

**Think before you print:** 1 ream of paper = 6% of a tree and 12lb of $CO_2$ in the atmosphere; 4 sheets of paper = 1gallon of water

# Wind Turbines and Health Concerns

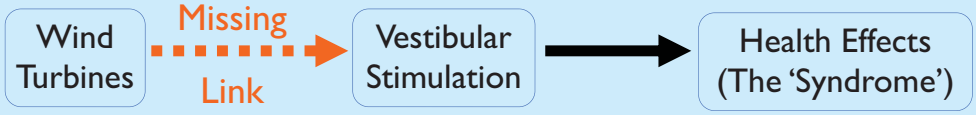
## Uncovering the Real Story

Due in part to awareness of climate change and other environmental issues, the wind industry in Canada has enjoyed fast growth in the past decade, and media attention devoted to the industry has grown with it. Recently, concerns have been raised by various special interest groups that wind turbines may be causing unwanted health effects.




Nearly every concern that can be found on various anti-wind publications traces its roots to a book written by Nina Pierpont (Wind Turbine Syndrome, 2009) which attempts to create a link between turbines and a wide variety of symptoms.

### The Missing Link in Pierpont's Research




In short, Pierpont's research points to a link she sees between Wind Turbines and Vestibular Stimulation. There is **simply no evidence** on which to base this link. **Pierpont misunderstood and misquoted research** by Manchester University's Dr. Neil Todd when making this connection. Dr. Todd has since **repudiated her findings publicly** [Britain's 'The Independent', August 9, 2009] yet this reference remained in the book., as without this vital link, Pierpont has no theory.

It is not coincidental that **Pierpont hasn't been able to publish her findings in a single peer-reviewed medical or scientific journal**, despite numerous attempts to do so. The science simply isn't there.

# Wind Turbines Are Part of the Climate Solution

The IPCC's (Intergovernmental Panel on Climate Change) 4th Assessment report has shown that if we are to stand a 50% chance of keeping global temperature increase below 2 degrees, industrialised countries must reduce their GHG emissions by at least 25-40% below 1990 levels by 2020.


40% of global $CO_2$ emissions (46% in Nova Scotia) are produced by the power sector. Nova Scotia's Climate Change Action Plan states that our short and medium term goals (2013 and 2020) for $CO_2$ reduction will need to be met in large part by new renewable energy. The NS Ministry of Energy has recently committed to supplying 25% of electricity from renewable resources by 2015.

# Public Open House #1 - Questions & Answers

The following is a sample of the most common questions asked at the first public open house. Please feel free to contact us if your question has not been answered or if you require further information.

**Will a more detailed noise assessment be included that takes into consideration the wind direction? What happens if the noise model predictions are found to be incorrect, will the turbines be dismantled?**

A full noise assessment report will be included in the Environmental Assessment ("EA") document and presented at the next open house. The model used predicts the theoretical worst case scenario by assuming that all dwellings around the project area are downwind, since the perceived noise is greater downwind from a wind turbine (turbines face upwind direction). Incorporating the predominant wind direction produces a more conservative result for the dwellings upwind, thus that method will not be used.

It is highly unlikely for noise disturbance given the County setback requirements; however, if the project was built and there were noise annoyance issues once the turbines were operating, the project would not be dismantled. If there was a problem, the turbines could be programmed to mitigate the disturbance, i.e. for specific wind directions and conditions, the turbine operation could be modified to lower the noise output.

**What will the final project size be? Is there a chance for more towers to be built at the site in the future?**

Wind Prospect has no intentions for a second phase of the project. We submitted a proposal to NSPI's 'Small RFP' for a 4 MW project. This project size was largely determined from the results of the initial connection feasibility study that had been carried out by NSPI prior to the project submission. A wind project larger than 4 MW would create negative impacts to the reliability of the grid, so it is unlikely that additional industrial scale turbines could be connected on the distribution feeder along Fairmont Road.

**Will the wind farm affect local property values?**

Several studies in North America have examined the impact on resale value, and the results have been varied. Two studies recently performed in Ontario (where roughly 1/3 of Canada's total wind energy capacity is installed) showed no negative impact. (Click links to read studies: Chatham-Kent, ON, Dufferin County, ON, USA)

**Who would be responsible for the maintenance of the power lines (feeder) and clearing of the right-of-way?**

The feeder route would follow the existing right-of-way for power lines currently in place along Fairmont. The feeder would become a 3 phase circuit, so there would be 2 additional lines, and the new conductors would be larger than the one currently installed. NSPI would be responsible for maintaining a clean right-of-way.

**What direction are the prevailing winds?**

We have not yet put up a meteorological tower (met tower) which will record on-site wind speeds and directions, thus we do not know for certain what direction the prevailing winds are. Generally speaking, in Nova Scotia winds blow predominantly from the south or southwest in the summer, and in the coldest months the predominant direction is from the west and northwest.

**Are other renewable energy technologies being considered such as solar or tidal energy?**

Nova Scotia Premier Darrell Dexter recently announced the Renewable Electricity Plan which sets out a 10-year program to move the province away from carbon-based electricity toward greener, more local sources. The plan focuses on wind energy and energy conservation in the short terms; however, they intend to invest in R&D for tidal energy and establish feed-in tariff rates for tidal projects connected at distribution and transmission levels.

The document is quite reader-friendly and I strongly encourage checking it out online Renewable Electricity Plan April 2010 (the link will open a page on the Government of Nova Scotia website).

**Will the removal of trees be required on the project land? How would this affect the views of the towers?**

The turbines will be set back several hundred metres from the roads; therefore, shielding from trees along the road and property boundaries will likely remain as shown at the public open house in the preliminary photomontages.

**What impact would the project construction have on the condition of Fairmont Road? And on local traffic?**

During the construction phase, various types of trucks would be used to deliver everything from turbine components to gravel to the site. The project site access point from Fairmont Road will require modification to accommodate the large turning radius of the trucks. A permit would be required from the County to do so. Any damage to the roads as a result of project construction would be our responsibility to repair.

The scheduling of deliveries would be made in order to avoid morning and afternoon commute times, when the normal road traffic is likely to be higher, in order to reduce impact on local traffic. Potential impacts and mitigation measures for all construction activities will be detailed in the EA document which will be available for public viewing and comment in late 2010 or early 2011.

# Public Open House #1 - Questions & Answers (continued)

**What does an Environmental Assessment entail? Will local and rare flora and fauna be taken into consideration?**
An environmental assessment is carried out to identify all facets of the environment that could be impacted by the construction or operation of the wind farm. Desktop studies will determine what flora and fauna is present and if any are at risk in the area, the location of waterways, houses, and communication systems, just to name a few. Field studies will include avian and bat monitoring, floral surveys, and archaeology. Where potential impacts are identified, mitigation measures will be developed to, for example, prevent contamination to nearby streams, reduce road traffic near the site, or be alert for reptile species on site during construction.

**Will the wind turbines impact birds and wildlife?**
The effects of a wind farm on birds can include habitat fragmentation and collision mortality. To address these concerns, we are conducting a 12-month bird surveying plan. The survey, approved by the NS Dept. of Natural Resources and Environment Canada, will help us to understand the number and species of birds that frequent the area during the year. Bird collisions with turbines do occur, but in North America are estimated to be at a rate of 1 or 2 birds per turbine each year. This number is far less than the number of collisions birds have with the average sky scraper or transmission tower. The Avian report will be included in the final Environmental report which will be posted on the project website.

## AIR IN MOTION

Wind is created by the uneven heating of the earth's surface by the sun. As the sun shines it heats the air over land more quickly than the air over the water. The warm air over the land expands and rises and the heavier cooler air over water moves in to take its place, creating local winds.

Wind is considered a renewable resource because wind will be produced as long as the sun shines on the earth. Wind energy is a pollution free source which does not require the burning of fossil fuels or the removal and storage of any waste or by-product.

## WIND TURBINES TODAY

Wind mills were originally used to grind wheat and corn, pump water and cut wood. Today, wind energy is the fastest growing electricity producer in Canada. Worldwide, wind turbines can be found in more than 55 countries.

Improvements to the design of wind turbines in the past two decades have realized quiet, safe, and sleek models. In most cases, a single wind turbine and associated access roads will take up less than 2 acres of land. The surrounding lands remain for regular land use activities.

Also, the turbines do not require municipal servicing so projects provide a source of revenue to the local municipality through property taxes without any municipal maintenance.

## WHY DO WE NEED RENEWABLES?

We all depend on electricity every day, and right now over 80% of the power generated in Nova Scotia comes from burning fossil fuels. There is widespread concern of fossil fuel supply and ever increasing prices, as well as climate change.

Half of green house gas (GHG) emissions in Nova Scotia are from electricity. Nova Scotia has set GHG reduction targets for 2020. The province plans to reduce emissions by:

- Efficiency and conservation (e.g. houses, vehicles)
- New renewable energy projects online between now until 2013 and new air quality regulations
- New renewable energy project target beyond 2013, GHG emission caps, clean energy imports from other provinces

For more details check out the Jan. 2009 NS Energy Strategy

## MORE RESOURCES

Try these websites for more information on wind energy:

**Canadian Wind Energy Association (CanWEA)**
http://www.canwea.ca

**Government of Nova Scotia**
http://www.gov.ns.ca/energy/renewables/

## ABOUT WIND PROSPECT

Wind Prospect is a leading and successful wind energy company with over 17 years experience in developing, constructing and operating wind farms.

Wind Prospect believes its success is based on locating and scaling wind farms to best fit the local environment while liaising closely with local communities. Our goal is to find the right balance between the global benefits and the impact of wind farms on the local environment. Check us out online at: www.windprospect.com

**Think before you print:** 1 ream of paper = 6% of a tree and 12lb of $CO_2$ in the atmosphere; 4 sheets of paper = 1gallon of water

# Environmental Assessment & Planning Timelines

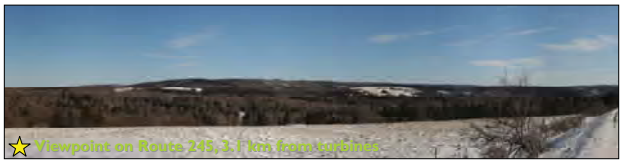
## What to expect...

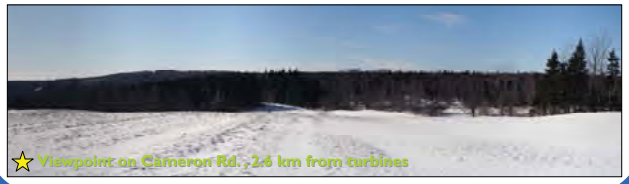
- The environmental assessment of the Fairmont Wind Farm proposal is an integral part of the project development
- For a proposal of this scale, an environmental assessment is mandated by the province of Nova Scotia but more importantly, it provides a robust framework for responsible and sustainable development
- The environmental assessment covers numerous elements of the natural, cultural and socio-economic environments
- The Antigonish County Municipal Planning Strategy and Land Use By-law are formal documents used to regulate the development of small and large scale renewable

| | |
|---|---|
| **Spring 2010** | Preliminary stakeholder engagement starts |
| | Environmental assessment starts - **This Public Meeting!** |
| **Summer 2010** | Meteorological test tower erected |
| | Seasonal surveying starts *(birds, 12 month expected duration)* |
| | Consultancy work starts |
| **Fall 2010** | Seasonal surveying starts *(bats, 3 month expected duration)* |
| **Winter 2010-11** | Preparation of Antigonish Planning materials |
| | Draft Environmental Assessment & Registration Document submitted |
| **Spring 2011** | Submission of Planning Application |
| | Second Public Meeting |
| **Summer 2011** | |
| | Public Hearing, Antigonish Council |
| **Fall 2011** | Final Environmental Assessment & Registration Document submitted |
| **Winter 2011-12** | Minister decision on proposal made |
| | Construction starts, following favorable planning and environmental assessment decisions |
| **Spring 2012** | |
| **Summer 2012** | **Expected operation** |

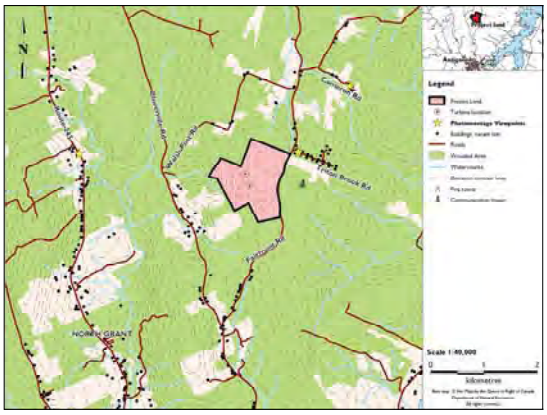
# Proposed Fairmont Wind Farm

## Photomontages


## Project Location and Wind Farm Characteristics




- The wind farm will have 2 turbines, each rated to 2 megawatts (MW)
- Each turbine will have a rotor with 3 blades, each blade will be 41 metres long
- The tower height will be about 80 metres
- The wind farm will not require a transformer substation, the electricity will be fed into the local distribution system along Fairmont Rd.

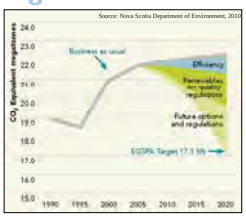
## Green House Gas Reduction

### Nova Scotia Targets for 2020

**Half of GHG emissions in NS are from electricity**

**The province plans to reduce emissions by:**

- Efficiency and conservation (houses, vehicles)
- New renewable energy projects from now until 2013, and air quality regulations
- Future options: including a new renewable energy project target beyond 2013, importing clean energy from other provinces, GHG emission caps




## Wind Farm Facts & Figures

### Benefits of the Fairmont Wind Farm

**The 4 MW project would:**

- Produce about 12,000 Megawatt-hours of electricity per year
- Provide clean, emission–free electricity to about 1,000 to 1,500 homes
- Reduce carbon dioxide emissions in Nova Scotia by about 10,500 tonnes each year by relying less on coal plants to produce electricity in the province
- Provide additional revenue to the County of Antigonish through the payment of property taxes, which would benefit all residents
- Increase demand for local services—from construction materials to restaurants and hotels—during the development and construction phases

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*APPENDIX O2*

# PROVINCIAL AND FEDERAL AGENCY CONSULTATION

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# PROVINCIAL AND FEDERAL COMMUNICATION HISTORY

| Name | Ministry/Agency/Company | Date | Method of Communication | | | | Content |
|---|---|---|---|---|---|---|---|
| | | | Phone | Meeting | Letter | Email | |
| Norm Cook, Technical Advisor Public Safety and Field Communications | Nova Scotia Transportation and Infrastructure Renewal | Jun-09 | | | | ✓ | Email correspondence addressing radio communication tower interference |
| Chuck Victor, customer operations | Nova Scotia Power Inc | Jun-09 | ✓ | | | | Phone conversation addressing radio communication tower interference |
| Steve Sanford, Environmental Assessment Officer | Environmental Assessment Branch, Nova Scotia Environment | Jan-10 | ✓ | | | ✓ | Discussions and related email correspondence regarding EA requirements |
| | | Apr-10 | | | ✓ | | Public meeting invitation and comment request |
| | | May-10 | ✓ | | | ✓ | Discussion on Fairmont Public open house & upcoming KMK presentation |
| Mark Elderkin, Provincial Biologist (Species-at-Risk) | Nova Scotia Department of Natural Resources | Feb-10 | | ✓ | | | Introduction meeting for the Fairmont wind farm & species at risk |
| | | Apr-10 | | | ✓ | | Public meeting invitation and comment request |
| | | May-11 | | | ✓ | | Public meeting invitation and comment request |
| Mark Pulsifer, Regional Wildlife Biologist | Nova Scotia Department of Natural Resources - Regional Office | Apr-10 | | | ✓ | | Public meeting invitation and comment request |
| | | Nov-10 | ✓ | | | ✓ | Discussion on management options for Mainland moose & Wood turtles |
| | | Dec-10 | | | | ✓ | Discussion on Endangered and threatened species management options |
| | | May-11 | | | ✓ | | Public meeting invitation and comment request |
| Heritage Officer | Nova Scotia Department of Tourism, Culture and Heritage | Apr-10 | | | ✓ | | Public meeting invitation and comment request |
| | | May-11 | | | ✓ | | Public meeting invitation and comment request |
| Regional Biologist | Canadian Wildlife Service | Apr-10 | | | ✓ | | Public meeting invitation and comment request |
| | | May-11 | | | ✓ | | Public meeting invitation and comment request |
| Administrator | Fisheries and Oceans Canada - Habitat Management Division | Apr-10 | | | ✓ | | Public meeting invitation and comment request |
| | | May-11 | | | ✓ | | Public meeting invitation and comment request |
| Andrew J. Risk, AEC Liaison Officer | representing : Department of National Defence | Aug-10 | | | | ✓ | Phone conversation addressing radio communication tower interference |
| Lee H Goldberg, Wind Farm Coordinator | Canada Coast Guard | Aug-10 | | | | ✓ | Phone conversation addressing radio communication tower interference |
| Lillian Yao, Observing Systems and Engineering | Meteorological Service of Canada | Aug-10 | | | | ✓ | Phone conversation addressing radio communication tower interference |

# PROVINCIAL AND FEDERAL COMMUNICATION HISTORY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Lawrence Benjamin, Wildlife Technician | NS Department of Natural Resources - Wildlife Division | Nov-10 | ✓ | | | ✓ | NSDNR significant species database search request |
| Stefen Gerriets, Snr. Data Manager | Atlantic Canada Conservation Data Centre | Nov-10 | ✓ | | | ✓ | AC-CDC database search request |

Ref: 01_06-00009

July 14, 2011

**Vanessa Margueratt**,
Environmental Assessment Branch
Policy & Corporate Services
Nova Scotia Environment
5151 Terminal Road, 5th Floor,
PO Box 442 Halifax, Nova Scotia, B3J 2P8

**RE: FAIRMONT WIND FARM - NOTICE OF COMPLETION AND FINAL ENVIRONMENTAL ASSESSMENT SCREENING REPORT**

Dear Mrs. Margueratt,

I am pleased to submit to Nova Scotia Department of the Environment a Notice of Completion of the Final Fairmont Wind Farm Environmental Assessment (EA), along with 36 hard copies and 36 digital copies of the EA. Wind Prospect Inc. understands the importance of stakeholder input, and welcomes any feedback that you may have.

For your convenience, the report includes 3 volumes: **Volume 1 (Main Text)** provides a detailed description of the proposed wind farm development. **Volume 2 (Figures)** contains all the illustrative material referred to in the main text, including regional and local maps, site design details, photomontages, photographs, and technical diagrams. **Volume 3 (Appendices)** offers further details about survey data, technical details, stakeholder consultation, and relevant background information.

All comments received from the various government departments on the Fairmont draft EA have been incorporated into the Final EA document. In order to facilitate your review of the EA, a Table of Concordance has been created (provided below) that outlines all the comments received and the corresponding sections where they have been addressed.

**Table 1: Table of Concordence**

# Table of Concordance

| Government Department | Official | Comment | Addressed in section |
|---|---|---|---|
| Health Canada | Allison Denning | Provide a Public Complaint Response procedure, if any noise impacts are indicated. | Vol. 3 Appdx x |
| Environment Canada | Suzanne Wade | *Level of Concern Category*: Argues that project is of a level 4 rather than 2 | Vol. 1 Sect.6.9.2-6.9.6 |
| | | *Avian Survey:* Provide greater detail of methodology in Avian Study | Vol. 1 Sect. 6.9.8-6.9.12 |
| | | *Species of Special Concern and Migratory Birds:* Provide mitigation strategy for migratory birds and species of concern (ie Canada Warbler, Bobolink) on how to avoid avian collisions. Refer to updated guides. | Vol. 3 Appdx B Sect 5.1-5.3 |
| | | *Interior Forest Habitat:* Identify interior forest habitats to be avoided, which may be of importance for migratory birds. Provide mitigation for interior forest impacts. | Vol. 3 Appdx B Sect 5.4 |
| | | *Wetlands:* Identify and provide greater information on wetlands in project area and provide mitigation strategies | Vol. 1 Sect.6.9. ; Vol 3 Appendx B Sect. 4.1 |
| | | *Facility Lighting:* Abide by appropriate facility lighting | Vol. 3 Appdx B Sect 5.2 |
| | | *Invasive Species:* Being aware of and mitigating spread of invasive plant species | Vol. 3 Appdx B Sect 5.4 |
| | | *Hazardous Materials:* Address potential hazardous materials to be used and provide necessary contingency plan on their accidental release | Vol. 3 Appdx B Sect 3.2 |
| Dep. of Energy | John M. Drage | No comment on Groundwater | N/A |
| Dep. of Agriculture | Lorne M. Crozier | No comment on agriculture impacts or shadow flicker | N/A |
| Dep. of Defence | Andrew Risk | No comment on radio communication<br>Provide greater detail on Moose study objectives and methods | N/A |
| Dep. of Natural Resources | Hugh Gillis | Error in eco-region name | - |
| | | Provide greater Surficial geology information | Vol. 1 Sect. 7.4.6 |

| | | | |
|---|---|---|---|
| | | Exclude 7.5.4 statements | - |
| | | Provide a Moose pellet inventory in May | Vol. 1 Sect. 7.5.37 Vol 3 Appdx G |
| | | Provide greater detail on Moose study objectives and methods | Vol. 1 Sect. 7.5.37 Vol 3 Appdx G |
| | | Provide a more detailed and focused map (identifying wetlands, floodplains, mature forest) | Vol 2, Fig 13 |
| Dep. of Environment | Darell Taylor | Identify wetlands and watercourses in project area | Vol 2, Fig 13 |
| | | Provide explicit identification of activities and uses on any wetland or watercourse | Vol. 3, Appendix Sect. 4 |
| | | Be aware that Rights River is a tributary to main water shed of Antigonish | Vol. 1 Sect. 7.3.2 |
| | | Outline potential impact project may have on watercourses | Vol. 3 Appdx B Sect 4 |
| | | Provide some mitigation measures to reduce impact on water quality (ie. Erosion and Sediment Control Plans) | Vol. 3 Appdx B Sect 2 |
| | | Provide a Spill Contingency Plan | Vol. 3 Appdx B Sect 6 |
| | | Commit to pre & post- development water quality and quantity | Vol. 3, Appendix Sect. 4 |
| Dep. of Transportation | Angela Swaine | Abide by Nova Scotia Temporary Workplace Traffic Control Manual | Vol. 1 Sect. 5.5.4 |
| | | Be aware of traffic controls to accommodate turning radius for large trucks | Vol. 1 Sect. 5.5.5 |
| | | Be aware of any oversize/weight permits that may be required for heavy and over-dimensional loads | Vol. 1 Sect.5.5.8 |
| | | Be aware of potential Breaking soils permit needed | Vol. 1 Sect.5.5.7 |
| Dep. of Health & Wellness | Bill Rideout | Provide 'participatory receptors' in Noise Impact Assessment (NIA) and in the Shadow Flicker Assessment' (SFA) | Vol. 1 Sect. 6.9.14 |
| | | Provide the project's EMF emissions potential | Vol. 1 Sect. 8.6 |
| Dep. of | Jennifer | | N/A |

| Economy and Tourism | McKeane | Comments to be provided once project is registered | |
|---|---|---|---|
| Dep. of Community, culture and Heritage | Laura Bennett | *Archaeological and Historical Sites and Remains*: Abide by recommendations provided by Davis MacIntyre & Associates report (app. J) | - |
| | | *Natural Heritage- Zoology:* Use Latin taxonomy of species and provide noise information within critical frequencies of 20-60 kHz | Vol. 1 Sect. 7.5.24-.25 |
| | | *Natural Heritage- Botany:* Inconsistency in timing of plant surveys, recommended they are conducted in June | Vol. 1 Sect. 7.5.5 ; vol. 3 Appdx E |
| | | *Natural Heritage- Palaeontology:* Provide greater detail of the geophysical environment, and outline the possibility of encountering fossils | Vol. 1 Sect. 7.4.1-7.4.3 |

On behalf of Wind Prospect, I would like to thank you in advance for your valued time and input in the environmental assessment review process. If there are any questions or concerns, please do not hesitate to contact me. I look forward to hearing from you soon.

Yours Sincerely,

WIND PROSPECT INC.,

Per:

Andy MacCallum, Senior Development Officer
Fairmont Wind Farm Project Manager
andy.maccallum@windprospect.com
Office: 902.422.9663 Ext 214

| | |
|---|---|
| **From:** | Lorne M Crozier |
| **To:** | Helen MacPhail |
| **Cc:** | Gerald A Post |
| **Subject:** | RE: DRAFT Fairmont Wind Farm EA |
| **Date:** | January-01-01 12:00:00 AM |

---

Hello Helen.

I have been asked to comment on the draft of the Fairmont Wind Farm Environmental Assessment.

I have reviewed the data and information in the Environmental Assessment of the proposed Fairmont Wind Farm. There does not appear to be any agricultural activity within the 1 km buffer zone around the site. Therefore, there does not appear to be any concerns or impacts on agriculture from noise, or shadow flicker caused by the operation of the wind farm.

We welcome the opportunity to participate in the review process when the project is officially registered.

Sincerely,

Lorne Crozier

**********

Lorne M. Crozier, MSc, PAg
Resource Management Specialist
Minor Use Coordinator
Resource Stewardship Division
Nova Scotia Dept. of Agriculture
PO Box 550, Truro, NS, B2N 5E3

902-893-6548 Fax 902-893-0244
e-mail crozielm@gov.ns.ca

| | |
|---|---|
| **From:** | Peter N Labor |
| **To:** | Helen MacPhail |
| **Cc:** | John C Brazner; David B Hopper |
| **Subject:** | Re: DRAFT Fairmount Wind Farm EA |
| **Date:** | January-01-01 12:00:00 AM |

---

Helen,

We have not noted any issues in the draft environmental assessment report that raise significant concerns from a protected areas or wetlands perspective.

Peter

Peter Labor, Director
Protected Areas & Wetlands
Nova Scotia Environment
Box 442, 5151 Terminal Road,
Halifax, Nova Scotia, Canada,
B3J 2P8
Tel; (902) 424-2117
Fax; (902) 424-0501
Email; laborpn@gov.ns.ca
www.gov.ns.ca/nse/protectedareas

>>> Helen MacPhail 2011-05-10 1:24 PM >>>
Dear All,

In the interest of saving paper, I am distributing this DRAFT environmental assessment document electronically. You can access a copy of it at www.fairmontwindfarm.ca

The Fairmont Wind Farm is located in the Municipality of the County of Antigonish, Nova Scotia. The project site is approximately 6 kilometers due north of the town of Antigonish. The site is bounded by the Fairmont Road to the east, Cloverville Road to the west, and Walsh Post Road to the north.The total rated capacity of the project is approximately 4.6 MW. It is anticipated that the project will consist of two Enercon E82 wind turbines. Each turbine will have a rated capacity of approximately 2.3 MW. Wind Prospect Inc. the Proponent, is required to register this project as a Class I Undertaking pursuant to the Environmental Assessment Regulations under the Nova Scotia Environment Act.

Please provide your comments on this DRAFT Environmental Assessment document by Monday, May 30, 2011. Your comments will be considered preliminary, and you will have another opportunity to submit comments when the project is officially registered. I hope this draft will give you the opportunity to provide the proponent with constructive comments early in the process. Please note that all comments will be forwarded to the proponent as written.

If you have any questions, please contact me at 424-3960 or by e-mail at macphafh@gov.ns.ca

F. Helen MacPhail
Environmental Assessment Officer
Nova Scotia Environment
5151 Terminal Road
5th Floor
PO Box 442

NOVA SCOTIA

PO Box 442
Halifax, Nova Scotia
B3J 2P8

Tel: (902) 424-3600
Fax:(902) 424-0503

*Our File Number:* **40100-30-**

**Environment**

**EMORANDUM**

**TO:** Helen MacPhail, Environmental Assessment Officer

**FROM:** Darrell Taylor, Environmental Analyst

**COPY:** David Briggins, Director Water & Wastewater Branch
John Drage, Hydrogeologist

**DATE:** May 30, 2011

**SUBJECT:** **Fairmont Wind Farm Project - Draft EA Registration Report**

---

I have reviewed the draft EA registration document dated May 2011 for the above referenced project. My comments are provided for your consideration related to surface water resources. Note that general comment on wetlands are provided only, with specific comments likely provided by other reviewers.

1. This proposed facility is to be located 6 km north of the Town of Antigonish, and in the Municipality of the County of Antigonish. It involves a wind farm of 2 turbine generators and involves typical construction and operational activities and potential sources of impact to surface waters.

2. The draft report indicates no lakes or wetlands in the project area, but identifies 1 intermittent stream - requiring a watercourse crossing for an access road. One turbine is also shown in Figure 3, Volume 2 as being located relatively close to this stream. The report notes this stream as being tributary to the Rights River, which flows towards the Town of Antigonish.

3. It should be noted that a well field located near the Rights River is the municipal water supply for the Town of Antigonish, and as such needs to be protected. This currently is not mentioned in the report, but needs to be addressed - recognizing this as an important water resource and priority use, with suitable measures proposed for protection.

4. The report should include the water uses for the on-site stream and the Rights River – presumably fish habitat and possibly municipal water supply. Discussions also should be included in the report of

what the potential impacts from the proposed project are to both watercourses, alone with appropriate mitigation measures.

5. Activities associated with the project which can impact surface water resources include the development of gravel pits, road construction, stream crossings, blasting, concrete use and disposal, and petroleum products from turbines and heavy ground moving equipment. Although some of these activities have been cursorily mentioned, all pertinent activities should be explicitly mentioned and considered in the assessment.



6. Standard avoidance and mitigation measures should assure protection of surface water resources, if proposed and applied properly. Although some measures are proposed in the report to reduce land erosion and siltation of watercourses, the Erosion and Sedimentation handbook prepared through NSE is not referenced that I could find. This area could be expanded somewhat more thoroughly in the report.

7. Contingency plans for accidental spills should also be developed to address protection of water resources. Similarly, this area could be expanded somewhat more thoroughly in the report.

8. It may be prudent to capture baseline pre- and post- development water quality and quantity in the on-site stream to be able to assess impacts and EA predictions. If this stream is protected, the likelihood of negatively impacting the Rights River and the associated well field some distance downstream might be considered remote. The consultant should address this situation in the report when assessing impacts and developing protection plans.

## Sheila Lucas

**From:** John M Drage [dragejo@gov.ns.ca]
**Sent:** May-25-11 10:33 AM
**To:** Helen MacPhail
**Cc:** David R Briggins
**Subject:** Re: Fwd: DRAFT Fairmount Wind Farm EA

Hi Helen,

I have reviewed the above referenced draft EA and I have no comments associated with groundwater resources and water wells.

- John

>>> David R Briggins 2011-05-10 1:28 PM >>>
John/Darrell:

For your review and comment. Please respond to Helen and copy me.

Thanks. - - David

>>> Helen MacPhail 05/10/11 01:24 PM >>>
Dear All,

In the interest of saving paper, I am distributing this DRAFT environmental assessment document electronically. You can access a copy of it at www.fairmontwindfarm.ca

The Fairmont Wind Farm is located in the Municipality of the County of Antigonish, Nova Scotia. The project site is approximately 6 kilometers due north of the town of Antigonish. The site is bounded by the Fairmont Road to the east, Cloverville Road to the west, and Walsh Post Road to the north.The total rated capacity of the project is approximately 4.6 MW. It is anticipated that the project will consist of two Enercon E82 wind turbines. Each turbine will have a rated capacity of approximately 2.3 MW. Wind Prospect Inc. the Proponent, is required to register this project as a Class I Undertaking pursuant to the Environmental Assessment Regulations under the Nova Scotia Environment Act.

Please provide your comments on this DRAFT Environmental Assessment document by **Monday, May 30, 2011**. Your comments will be considered preliminary, and you will have another opportunity to submit comments when the project is officially registered. I hope this draft will give you the opportunity to provide the proponent with constructive comments early in the process. Please note that all comments will be forwarded to the proponent as written.

If you have any questions, please contact me at 424-3960 or by e-mail at macphafh@gov.ns.ca

F. Helen MacPhail
Environmental Assessment Officer
Nova Scotia Environment
5151 Terminal Road
5th Floor
PO Box 442
Halifax, NS B3J 2P8

**From:** Angela Swaine
**To:** Helen MacPhail
**Subject:** Re: DRAFT Fairmount Wind Farm EA
**Date:** January-01-01 12:00:00 AM

---

Hi Helen;

I know these comments are late but I thought I would send them along as I just received them from our traffic folks this morning. Nothing out of the ordinary so I don't believe it will be an issue if they don't make it back to the Proponent prior to issue of the final registration report.

TIR has reviewed the draft registration report for the Fairmount Wind Farm EA and offer the following:

1. Any work areas that are on any provincially owned roads during the construction, operating and decommissioning phases (such as the referenced staging areas and site entrances) would need to be in compliance with the appropriate guidelines in the Nova Scotia Temporary Workplace Traffic Control Manual .

2. Any modifications to the intersection required for access to the project area will need to have appropriate traffic controls as indicated above. There will need to be an appropriate turning radius to accommodate the large trucks expected as well. I believe that this should be with the site entrance permit.

3. For the heavy loads there would be a requirement for appropriate oversize/overweight permits. The roads identified would need to be checked to ensure that there are no weight restrictions on these roads, and if passing under bridge structures, height restrictions as well.

4. I did not see a reference to a breaking soils permit from the local Area Manager. This would be a requirement for any new construction of any access roads, even on private land.

TIR has no further comments at this time.

Angela

Angela Swaine
Environmental Analyst
Nova Scotia Transportation and Infrastructure Renewal
Johnston Building, 3rd Floor, 1672 Granville Street, PO Box 186
Halifax, Nova Scotia, B3J 2N2

Tel: (902) 424-8057
Fax: (902) 424-7544
Cell: (902) 497-9847
E-mail: swainab@gov.ns.ca

>>> Helen MacPhail 5/10/2011 1:24 PM >>>
Dear All,

In the interest of saving paper, I am distributing this DRAFT environmental assessment document electronically. You can access a copy of it at www.fairmontwindfarm.ca

The Fairmont Wind Farm is located in the Municipality of the County of Antigonish, Nova Scotia. The project site is approximately 6 kilometers due north of the town of Antigonish. The site is bounded by the Fairmont Road to the east, Cloverville Road to the west, and Walsh Post Road to the north.The total rated capacity of the project is approximately 4.6 MW. It is anticipated that

| | |
|---|---|
| **From:** | +WindTurbines@forces.gc.ca |
| **To:** | macphafh@gov.ns.ca |
| **Cc:** | MARIO.LAVOIE2@forces.gc.ca |
| **Subject:** | RE: DRAFT Fairmount Wind Farm EA |
| **Date:** | May-10-11 4:07:21 PM |

---

Helen

From the description you have provided we have completed an initial analysis of the proposed wind farm under the project name Fairmount Wind Farm near Antigonish, NS. We have assigned a DND case number of WTA-1131, please include this number in any future requests related to this site. I suspect we may have reviewed this site already under a different name (Antigonish wind farm WTA-0031 in Aug, 2010). I am just confirming with the consultant I dealt with to keep our records straight. If you know more on this please advise.

The assessment has revealed no impact to the Department of National Defence; Air Traffic Control, Air Defence Radars. Therefore with respect to these sites as well as DND airports and NAVAIDS we have no objections with your project as submitted. Should there be any changes to the site please re-submit the proposal for another assessment.

Mr Lavoie (Cc'd) will be able to provide input from the radio side of the house for DND.

Thanks for the opportunity to be able to provide feedback at what appears to be the early stage of development for this proponent.

>Risk, J. Andrew
>Capt
>AEC Liaison Officer
>CCISF/ESICC
>ATESS/ESTTMA
>Défense nationale | National Defence
>8 Wing Trenton, Astra, ON K0K 3W0
>TEL: 613 392-2811 Ext4834 (CSN: 827-4834)
>FAX: 613 965-3200
>Gouvernement du Canada | Government of Canada

>

-----Original Message-----
From: Helen MacPhail [mailto:macphafh@gov.ns.ca]
Sent: Tuesday, 10, May, 2011 12:25 PM
To: mike.atkinson@ceaa.gc.ca; paulette.general@dfo-mpo.gc.ca; FCR_Tracker@EC.GC.CA; Risk Capt JA@ATESS@Trenton; Andrew Paton; Laura Bennett; David R Briggins; Don A Feldman; Barry Gillis; Jay E Hartling; Bruce C. Hennebury; Jason N Hollett; Paul J Keats; Peter N Labor; Linda Passerini; Don A MacLean; Heather MacMillan; Maureen Baikie; Jennifer W McKeane; Andrew J (ENV) Murphy; Bob D Petrie; Gerald A Post; Scott McCoombs; Angela Swaine; Allison Denning
Subject: DRAFT Fairmount Wind Farm EA

Dear All,

In the interest of saving paper, I am distributing this DRAFT environmental assessment document electronically. You can access a copy of it at *www.fairmontwindfarm.ca

The Fairmont Wind Farm is located in the Municipality of the County of Antigonish, Nova Scotia. The project site is approximately 6 kilometers due north of the town of Antigonish. The site is bounded by the Fairmont Road to the east, Cloverville Road to the west, and Walsh Post Road to the north.The total

| | |
|---|---|
| **From:** | MARIO.LAVOIE2@forces.gc.ca |
| **To:** | macphafh@gov.ns.ca |
| **Cc:** | +WindTurbines@forces.gc.ca |
| **Subject:** | RE: DRAFT Fairmount Wind Farm EA |
| **Date:** | May-10-11 4:40:00 PM |

---

I have reviewed your proposal in respect to DND's radio communication systems, and I have no objections or concerns.
Thank you for coordinating with DND.
Have a good Day.
Mr. Mario Lavoie
Spectrum Engineering Technician
National Defence | Défense nationale
Ottawa, Canada K1A 0K2
mario.lavoie2@forces.gc.ca
Telephone | Téléphone 613-992-3479
Facsimile | Télécopieur 613-991-3961
Government of Canada | Gouvernement du Canada
-----Original Message-----
From: +WindTurbines@ATESS@TRENTON
Sent: Tuesday, 10, May, 2011 15:07 PM
To: 'Helen MacPhail'
Cc: Lavoie MJ@ADM(IM) DIMTPS@Ottawa-Hull
Subject: RE: DRAFT Fairmount Wind Farm EA

Helen

From the description you have provided we have completed an initial analysis of the proposed wind farm under the project name Fairmount Wind Farm near Antigonish, NS. We have assigned a DND case number of WTA-1131, please include this number in any future requests related to this site. I suspect we may have reviewed this site already under a different name (Antigonish wind farm WTA-0031 in Aug, 2010). I am just confirming with the consultant I dealt with to keep our records straight. If you know more on this please advise.

The assessment has revealed no impact to the Department of National Defence; Air Traffic Control, Air Defence Radars. Therefore with respect to these sites as well as DND airports and NAVAIDS we have no objections with your project as submitted. Should there be any changes to the site please re-submit the proposal for another assessment.

Mr Lavoie (Cc'd) will be able to provide input from the radio side of the house for DND.

Thanks for the opportunity to be able to provide feedback at what appears to be the early stage of development for this proponent.

>Risk, J. Andrew
>Capt
>AEC Liaison Officer
>CCISF/ESICC
>ATESS/ESTTMA
>Défense nationale | National Defence
>8 Wing Trenton, Astra, ON K0K 3W0
>TEL: 613 392-2811 Ext4834 (CSN: 827-4834)
>FAX: 613 965-3200
>Gouvernement du Canada | Government of Canada

| | |
|---|---|
| **From:** | Andrew.Risk@forces.gc.ca |
| **To:** | macphafh@gov.ns.ca; mike.atkinson@ceaa.gc.ca; paulette.general@dfo-mpo.gc.ca; FCR_Tracker@EC.GC.CA; APATON@gov.ns.ca; BENNETLE@gov.ns.ca; BRIGGIDR@gov.ns.ca; FELDMADA@gov.ns.ca; GILLISBJ@gov.ns.ca; HARTLIJ@gov.ns.ca; HENNEBUB@gov.ns.ca; HOLLETJN@gov.ns.ca; KEATSPJ@gov.ns.ca; LABORPN@gov.ns.ca; Linda.Passerini@gov.ns.ca; MACLEAND@gov.ns.ca; MACMILHJ@gov.ns.ca; Maureen.Baikie@gov.ns.ca; MCKEANJW@gov.ns.ca; MURPHYAJ@gov.ns.ca; PETRIERD@gov.ns.ca; POSTGA@gov.ns.ca; SRMCCOOM@gov.ns.ca; SWAINAB@gov.ns.ca; allison.denning@hc-sc.gc.ca |
| **Subject:** | RE: DRAFT Fairmount Wind Farm EA |
| **Date:** | May-11-11 8:53:31 AM |

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It was determined that in fact we did see this proposal before. The WTA reference number will be WTA-0031 (not WTA-1131).

>Risk, J. Andrew
>Capt
>AEC Liaison Officer
>CCISF/ESICC
>ATESS/ESTTMA
>4834
>

-----Original Message-----
From: Helen MacPhail [mailto:macphafh@gov.ns.ca]
Sent: Tuesday, 10, May, 2011 12:25 PM
To: mike.atkinson@ceaa.gc.ca; paulette.general@dfo-mpo.gc.ca; FCR_Tracker@EC.GC.CA; Risk Capt JA@ATESS@Trenton; Andrew Paton; Laura Bennett; David R Briggins; Don A Feldman; Barry Gillis; Jay E Hartling; Bruce C. Hennebury; Jason N Hollett; Paul J Keats; Peter N Labor; Linda Passerini; Don A MacLean; Heather MacMillan; Maureen Baikie; Jennifer W McKeane; Andrew J (ENV) Murphy; Bob D Petrie; Gerald A Post; Scott McCoombs; Angela Swaine; Allison Denning
Subject: DRAFT Fairmount Wind Farm EA

Dear All,

In the interest of saving paper, I am distributing this DRAFT environmental assessment document electronically. You can access a copy of it at *www.fairmontwindfarm.ca

The Fairmont Wind Farm is located in the Municipality of the County of Antigonish, Nova Scotia. The project site is approximately 6 kilometers due north of the town of Antigonish. The site is bounded by the Fairmont Road to the east, Cloverville Road to the west, and Walsh Post Road to the north.The total rated capacity of the project is approximately 4.6 MW. It is anticipated that the project will consist of two Enercon E82 wind turbines. Each turbine will have a rated capacity of approximately 2.3 MW. Wind Prospect Inc. the Proponent, is required to register this project as a Class I Undertaking pursuant to the Environmental Assessment Regulations under the Nova Scotia Environment Act.

Please provide your comments on this DRAFT Environmental Assessment document by Monday, May 30, 2011. Your comments will be considered preliminary, and you will have another opportunity to submit comments when the project is officially registered. I hope this draft will give you the opportunity to provide the proponent with constructive comments early in the process. Please note that all comments will be forwarded to the proponent as written.

Environmental Stewardship Branch
16th Floor Queen Square
45 Alderney Drive
Dartmouth, NS B2Y 2N6

June 1st, 2011

Helen MacPhail
Environmental Assessment Officer
Nova Scotia Environment
PO Box 442
Halifax, NS B3J 2P8

Dear Ms. MacPhail:

**RE: Fairmont Wind Farm – Draft EA Registration EAS# 2010-214B**
**Antigonish County, NS**

Environment Canada (EC) has reviewed the *draft* document "Fairmont Wind Farm Proposal, Environmental Assessment – Draft, May 2011" which was received electronically on May 10th, 2011, for the above-noted project. Based on the information provided, it is understood the proponent intends to develop and operate a 4.6MW wind farm, which would consist of two Enercon E82 wind turbines. Each turbine would have a maximum height of 139m from base to blade tip. The turbines would be located 6km north of the town of Antigonish. The project site is located on privately owned, partially forested land totalling 406 acres. One stream crossing may be required to access the project land. A total of 900m of internal site roads would be required, most of which would follow existing lanes maintained by the landowners. There are no lakes or wetlands within the project area. Turbines would be operational for 20 years, which is based on the purchase power agreement signed between Nova Scotia Power and Wind Prospect Inc. (the proponent).

It is understood that the proposal is not eligible for federal funding from Natural Resources Canada (NRCan) under the Clean Energy Fund program for this project. The information provided was reviewed in accordance with Section 6 of the Federal Coordination Regulations under the Canadian Environmental Assessment Act (CEAA) and it is not likely that EC has a power, duty or function in relation to the project which would trigger an environmental assessment (EA). However, EC has specialist knowledge and information which should be considered in the EA of the proposed project.

EC specialist knowledge stems from the department's mandate as set out in various statutes including the *Canadian Environmental Protection Act*, *Department of Environment Act*, *Fisheries Act* (Section 36), *Canada Water Act*, *Species at Risk Act,* and *Migratory Birds Convention Act*. EC is also the lead federal department in promoting a variety of policies and programs concerning the environment including: the *Federal Policy on Wetland Conservation*, *Wildlife Policy for Canada*, *Federal Water Policy*, *Toxic Substances Management Policy*, and *Pollution Prevention - A Federal Strategy for Action*. Through the Meteorological Service of Canada, EC has expertise related to weather, climatology, and atmospheric science.

## REVIEW COMMENTS

### General

It is understood the proponent consulted EC publications for guidance material regarding birds and wind turbines. It is noted in *Appendix C, Avian Survey*, of the EA document that a July 2006 protocol (i.e. Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds) was used. The Proponent should refer to the most updated version of the guidance material as follows:

> *Wind Turbines and Birds - A Guidance Document for Environmental Assessment* (EC, 2007)
> Available on-line at: http://ec.gc.ca/Publications/
>
> *Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds* (EC, 2007)
> Available on-line at: http://ec.gc.ca/Publications/

- As mitigation for effects on birds, the proponent indicates that "Natural habitat and sensitive areas will be avoided during construction". What habitats will be affected if not "natural habitat"? What does the proponent consider "sensitive areas" and how will these be avoided?

- Follow-up avian mortality surveys are identified as mitigation for avian mortalities due to turbine collisions. Post-construction monitoring is not considered "mitigation". What measures (if any) are proposed by the proponent to avoid avian collisions?

### Level of Concern Category

EC has reviewed the information provided and we do not agree that the project should be rated Category 2 based on the project size and site sensitivity. Even though the wind farm would be small, the presence of species at risk at the site elevates the site sensitivity to Very High, and thus the *Level of Concern is Category 4*. Pre-construction and post-construction should be consistent with EC's above-noted guidance documents and acceptable to EC and other regulatory authorities.

### Avian Survey (Appendix C)

- The bird report as presented in Appendix C is inadequate. We realize that the proponent has not yet completed avian field work, which may be why such a report was presented. In the final EIA, we expect the detailed methodology of surveys to be presented, as well as detailed results (including for each point count location) and analysis. For species at risk and species of conservation concern, any SARA listing or listing under provincial endangered species legislation should be provided, as well as COSEWIC, NSDNR and AC CDC ranking.

- The Gray-cheeked Thrush is identified as one of the species detected during field surveys. When was this bird identified? How was the identity of this bird determined (i.e. how was it determined that it was not another species of thrush).

### Species of Special Concern

The Canada Warbler, Threatened on Schedule 1 of SARA was identified as a resident during avian surveys, and Bobolink, listed as Threatened by COSEWIC, was identified as a migrant. For those

species listed on Schedule 1 of SARA, Section 79 requires that for federal EAs, adverse effects on the species and mitigation measures to avoid or lessen impacts be identified, and that effects are monitored. Federal Responsible Authorities for this project would be expected to send Section 79(1) notification to EC for Canada Warbler. In addition to SARA requirements, application of the precautionary principle and the consideration of potential impacts on all rare or imperilled species in Canada (e.g., species of conservation concern) is considered by EC to be a best practice approach to fulfilling EA responsibilities.

The proponent should therefore identify potential adverse effects of the project on Canada Warbler and Bobolink, and propose:

- measures to avoid or minimize impact to Canada Warbler, Bobolink and their habitat;
- measures to avoid disturbance to Canada Warbler and Bobolink; and
- monitoring measures, in order to determine the effectiveness of mitigation.

(See attached Applicable Legislation for more information on the SARA)

**Migratory Birds**

The proponent should be made aware that migratory birds, their eggs, nests, and young are protected under the *Migratory Birds Convention Act* (MBCA). Migratory birds protected by the MBCA generally include all seabirds except cormorants and pelicans, all waterfowl, all shorebirds, and most landbirds (birds with principally terrestrial life cycles). Most of these birds are specifically named in the EC publication, *Birds Protected in Canada under the Migratory Birds Convention Act*, Canadian Wildlife Service Occasional Paper No. 1, which can be made available upon request.

Under Section 6 of the *Migratory Birds Regulations* (MBR), it is forbidden to disturb, destroy or take a nest or egg of a migratory bird; or to be in possession of a live migratory bird, or its carcass, skin, nest or egg, except under authority of a permit. It is important to note that under the current MBR, no permits can be issued for the incidental take of migratory birds caused by development projects or other economic activities. Should migratory birds, or their nests, eggs, or chicks be harmed, charges can and have been laid. (see attached Applicable Legislation)

**Presence of Forest Habitat Important to Migratory Birds**

Some bird species, generally known as interior species, only prosper when the tracts of mature forest are relatively large and unfragmented (i.e. interior forest). It is desirable for projects to avoid causing further loss and fragmentation of these habitat types, and to avoid further fragmentation of the landscape. When assessing potential effects of the project on birds, a discussion on loss of interior forest habitat should be included, and should include:

- mapping that identifies mature interior forest habitat for migratory birds in both the study area and footprint area, along with a rationale as to why this habitat cannot be avoided through routing and siting of facilities;
- the total area (hectares) of interior forest habitat for migratory birds that would be lost as a result of the project;
- a description of the specific steps taken to minimize losses of interior habitat for migratory birds;

- an analysis of project impacts on interior forest habitat for migratory birds on a local scale taking into account cumulative losses (and taking into account the species of migratory birds that use these habitats, as demonstrated by bird surveys); and
- proposed mitigation for the predicted loss of interior forest habitat for migratory birds.

The fact that habitat fragmentation may already occur in the project area should not be used to "dismiss" potential effects of further loss or fragmentation of habitat, as this ignores potential for cumulative effects.

**Wetlands**

It is not clear what habitats are present in the project area. A small intermittent stream is mentioned; however, it is not clear how much wetland habitat is associated with this stream, or when the wetland delineation will be provided for review? The *Federal Policy on Wetland Conservation (FPWC)* applies to this project if federal funding is requested from Natural Resources Canada (NRCan) or other federal departments.

The Federal Government has adopted the *Federal Policy on Wetland Conservation* (FPWC) with its objective to "promote the conservation of Canada's wetlands to sustain their ecological and socio-economic functions, now and in the future." In support of this objective, the Federal Government strives for the goal of No Net Loss of wetland function on federal lands or when federal funding is provided. The goals of the policy are to be considered in these circumstances, and the hierarchical sequence of mitigation alternatives (avoidance, minimization, and as a last resort, compensation) recommended in the FPWC should be followed. For those wetlands where avoidance is not possible, a detailed description of the reasons why avoidance and minimization of impacts were determined to not be possible should be included in the EA of the project. Unavoidable effects on wetlands should be compensated at a ratio no less than 3:1.

**Facility Lighting**

Lights can result in adverse impacts on birds. In Atlantic Canada, nocturnal migrants and night-flying seabirds (e.g. storm-petrels) are the birds most at risk of attraction to lights especially during periods of fog, drizzle, and haze. Attraction to lights may result in collision with lit structures or their support structures, or with other birds. Disoriented birds are prone to circling a light source and may deplete their energy reserves and either die of exhaustion or drop to the ground where they are at risk of depredation.

Based on EC experience to date, it is important that turbine lighting options, as outlined in the above-noted EC guidance documents, be considered early-on in the EA process. Other lighting plans associated with the project should also reflect a consideration of potential effects on birds.

In assessing the impacts of lights, a focus should be placed on the most vulnerable species and the occurrence of infrequent, but potential large-scale events (e.g. events associated with weather conditions, migratory seasons). Proponents should take into consideration the following best management practices in planning their projects:

- Only the minimum amount of pilot warning and obstruction avoidance lighting should be used.
- Only lights with short flash durations and the ability to emit no light during the 'off phase' of the flash (e.g., as allowed by strobes and modern LED lights), should be used on tall structures at night.

These lights should operate at the minimum intensity and minimum number of flashes per minute (longest duration between flashes) allowable by Transport Canada.

- Only the minimum number of lights should be used as possible and the use of solid-burning or slow-pulsing warning lights at night should be avoided.
- The time of operation of exterior decorative lights, such as spotlights and floodlights, should be minimized or avoided in cases where such lights are only intended to highlight features of structures, or to illuminate an entire structure. Especially on humid, foggy or rainy nights, the glow of such lights can draw birds from considerable distances. In the interest of protecting birds, it would be best if these lights were turned off, at least during the migratory season, when the risk to birds is greatest.
- Task lighting, as well as lighting for the safety of the employees, should be shielded to shine down and only to where it is needed, without compromising safety.

Reference:

* Gehring, J. et al. (2009). "Communication towers, lights, and birds: successful methods of reducing the frequency of avian collisions." Ecological Applications 19(2): 505-514.

**Invasive Species**

If the project is approved, it is recommended that a variety of species of plants native to the general project area be used in revegetation efforts. Should seed mixes for herbaceous native species for the area not be available, it should be ensured that plants used in revegetation efforts are not known to be invasive.

EC also recommends that measures to diminish the risk of introducing invasive species be developed and implemented. These measures could include:

- cleaning and inspecting construction equipment prior to transport from elsewhere to ensure that no plant matter is attached to the machinery (e.g. use of pressure water hose to clean vehicles prior to transport); and
- regularly inspecting equipment prior to, during and immediately following construction in wetland areas and in areas found to support Purple Loosestrife to ensure that plant matter is not transported from one construction area to another.

**Hazardous Materials**

Hazardous materials (e.g. fuels, lubricants, hydraulic oil) and wastes (e.g. waste oil) should be managed so as to minimize the risk of chronic and/or accidental releases. For example, refueling and maintenance activities should be conducted on level terrain, at a suitable distance from environmentally sensitive areas including watercourses and wetlands, and on a prepared impermeable surface with a collection system.

Proponents are encouraged to prepare contingency plans that reflect a consideration of potential accidents and malfunctions and that take into account site-specific conditions and sensitivities. The Canadian Standards Association publication, *Emergency Preparedness and Response,* CAN/CSA-Z731-03, is a useful reference.

All spills or leaks, such as those from machinery, should be promptly contained and cleaned up (sorbents should be available for quick containment and recovery), and reported to the 24-hour environmental emergencies reporting system (Maritime Provinces 1-800-565-1633).

Please feel free to contact me at (902) 426-5035 or Suzanne.wade@ec.gc.ca if you have any questions or concerns.

Best regards,

*Original signed by Suzanne Wade*

Suzanne Wade
Environmental Assessment Section
Environmental Protection Operations Directorate, Atlantic

cc. R. Gautreau
B. Whittam
W. Barchard

## Applicable Legislation

### *Migratory Birds Convention Act (MBCA)*

The conservation of migratory birds is the joint responsibility of the countries these birds visit during the breeding, migration, and non-breeding seasons. Environment Canada is responsible for fulfilling Canada's obligations for the conservation of migratory birds through administration of the MBCA. Migratory birds protected by the Act generally include all seabirds except cormorants and pelicans, all waterfowl, all shorebirds, and most landbirds (birds with principally terrestrial life cycles). Most of these birds are specifically named in the Environment Canada publication, *Birds Protected in Canada under the Migratory Birds Convention Act*, Canadian Wildlife Service Occasional Paper No. 1 (available online at http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=97AC4B68-69E6-4E12-A85D-509F5B571564 ).

Under Section 6 of the *Migratory Birds Regulations* (MBR), it is forbidden to disturb, destroy or take a nest or egg of a migratory bird; or to be in possession of a live migratory bird, or its carcass, skin, nest or egg, except under authority of a permit. It is important to note that under the current MBR, no permits can be issued for the incidental take of migratory birds caused by development projects or other economic activities. Furthermore, under Section 5.1 of the MBCA describes prohibitions related to deposit of substances harmful to migratory birds:

"5.1 (1) No person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area.

(2) No person or vessel shall deposit a substance or permit a substance to be deposited in any place if the substance, in combination with one or more substances, results in a substance — in waters or an area frequented by migratory birds or in a place from which it may enter such waters or such an area — that is harmful to migratory birds."

It is the responsibility of the proponent to ensure that activities are managed so as to ensure compliance with the MBCA and regulations.

In fulfilling its responsibility for MBCA compliance, the proponent should take the following points into consideration:

- The breeding season for most birds within the Project area occurs between May 1st and August 31st; however some species protected under the MBCA nest outside this timeframe.
- While most bird species construct nests in trees and shrubs, a number of species of birds nest at ground level (e.g. Common Nighthawk, Killdeer), and some species may nest in burrows in stockpiles of soil or the banks of pits (e.g. Bank Swallows).

One method frequently used to minimize the risk of destroying bird nests consists of avoiding certain activities, such as clearing, during the nesting period for migratory birds in the region. Risk of impacting active nests or birds caring for pre-fledged chicks, discovered during project activities outside the May 1st to August 31st window, can be minimized by measures such as the establishment of vegetated buffer zones around nests, and minimization of activities in the immediate area until nesting is complete and

chicks have naturally migrated from the area. It is incumbent on the proponent to identify the best approach, based on the circumstances, to complying with the MBCA.

***Species at Risk Act (SARA)***

The proponent must ensure its activities are managed so as to comply with the *Species at Risk Act* (SARA). SARA is one of three elements of Canada's Strategy for the Protection of Species at Risk. The other two are the federal-provincial/territorial *Accord for the Protection of Species at Risk* and the Habitat Stewardship Program for Species at Risk.

The 1996 *Accord for the Protection of Species at Risk* commits the federal government, provinces and territories to establish complementary legislation and programs to protect Canada's species at risk. The Act complements the work being done by provincial and territorial governments while ensuring federal responsibilities and standards are met.

The goal of SARA is to prevent endangered or threatened wildlife from becoming extinct or lost from the wild, and to provide for the recovery of these species. The Act is also intended to manage species of special concern and to prevent them from becoming endangered or threatened. The Act recognizes that the protection of wildlife species is a joint responsibility and that all Canadians have a role to play in the protection of wildlife.

The Minister of Environment's responsibilities under the Act include the protection and recovery of migratory birds and species at risk on federal lands, other than those under the responsibility of the Minister of Fisheries and Oceans or those individuals under the responsibility of the Parks Canada Agency. The Minister of Fisheries and Oceans is responsible for aquatic species at risk.

Under the *Accord for the Protection of Species at Risk*, it is understood that the provinces and territories will undertake actions and enforce prohibitions for the conservation of species at risk that come under their management authority. SARA allows the federal government to enact protective prohibitions in cases where a province or territory fails to provide effective protection for a species or its critical habitat.

SARA amends the definition of "environmental effect" in CEAA to include "any change [a project] may cause to a listed wildlife species, its critical habitat or the residences of individuals of that species, as those terms are defined in subsection 2(1) of the *Species at Risk Act*". In addition, Section 79 of SARA confers specific duties to persons required by an Act of Parliament to ensure that an environmental assessment (EA) is conducted. "Persons" are defined to include Responsible Authorities of projects undergoing a federal EA. Responsible Authorities must identify adverse effects of a project on listed species and their critical habitat or residences. If the project is ultimately carried out, Responsible Authorities must ensure that measures are taken to avoid or lessen adverse effects and that effects are monitored. It should also be noted that while SARA prohibitions do not apply to species listed as Special Concern, section 79 of SARA does apply to these species.

In addition to SARA requirements, application of the precautionary principle and the consideration of potential impacts on all rare or imperilled species in Canada (e.g., species of conservation concern) is considered by Environment Canada to be a best practice approach to fulfilling EA responsibilities.

**From:** Bill Rideout
**To:** Helen MacPhail
**Subject:** Draft Fairmont Wind Farm EA
**Date:** January-01-01 12:00:00 AM

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Good afternoon Helen,

My apologies for not getting these comments to you sooner. We actually completed our review early but unintentionally neglected to forward our comments to you before May 30th.

This EA report appears to exempt "participatory receptors", ie. those with land lease agreements with the proponent, from established set back distances.

The noise impact assessment completed for the project seemingly exculded participatory receptors in the sound level impact analysis, whereas the draft national guidelines provide no exemption for these receptors with respect to assessment and analysis for noise. Participatory receptors were also seemingly excluded from the Shadow Flicker Assessment.

No discussion is provided on the proposed project's ability to generate and transmit EMFs to the surrounding environment/receptors. An assessment of EMF generating potential seems warranted.

thank you.

bill.

Bill Rideout
Environmental Health Consultant
N.S. Health and Wellness
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Sydney, NS B1P 5E7
Tel: 902-563-3761
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**From:** Allison Denning
**To:** Helen MacPhail
**Subject:** Re: DRAFT Fairmount Wind Farm EA
**Date:** May-13-11 11:30:58 AM
**Attachments:** graycol.gif

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Hi Helen, I've looked over the EA document and have one comment.

Although the nearest residence is ~1000 m from the nearest turbine (and thus elevated noise levels should not be an issue), it would be prudent for the proponent to have a complaint-response procedure in place (e.g. a telephone # or website/e-mail address where people could contact the company), and that this complaint-response procedure could include noise monitoring during operations in the event there are public complaints re: noise.

I know that this site is not that far from Glen Dhu and there had been some public opposition to that project based on the noise issue.

Thanks,
Allison

Allison Denning
Regional Environmental Assessment Coordinator
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B3J 3Y6
Tel: (902) 426-5575
Fax: (902) 426-4036
Allison.Denning@hc-sc.gc.ca

"Helen MacPhail" ---2011-05-10 01:25:06 PM---Dear All, In the interest of saving paper, I am distributing this DRAFT environmental assessment doc

From: "Helen MacPhail" <macphafh@gov.ns.ca>
To: <mike.atkinson@ceaa.gc.ca>, <paulette.general@dfo-mpo.gc.ca>, <FCR_Tracker@EC.GC.CA>, <Andrew.Risk@forces.gc.ca>, "Andrew Paton" <APATON@gov.ns.ca>, "Laura Bennett" <BENNETLE@gov.ns.ca>, "David R Briggins" <BRIGGIDR@gov.ns.ca>, "Don A Feldman" <FELDMADA@gov.ns.ca>, "Barry Gillis" <GILLISBJ@gov.ns.ca>, "Jay E Hartling" <HARTLIJ@gov.ns.ca>, "Bruce C. Hennebury" <HENNEBUB@gov.ns.ca>, "Jason N Hollett" <HOLLETJN@gov.ns.ca>, "Paul J Keats" <KEATSPJ@gov.ns.ca>, "Peter N Labor" <LABORPN@gov.ns.ca>, "Linda Passerini" <Linda.Passerini@gov.ns.ca>, "Don A MacLean" <MACLEAND@gov.ns.ca>, "Heather MacMillan" <MACMILHJ@gov.ns.ca>, "Maureen Baikie" <Maureen.Baikie@gov.ns.ca>, "Jennifer W McKeane" <MCKEANJW@gov.ns.ca>, "Andrew J (ENV) Murphy" <MURPHYAJ@gov.ns.ca>, "Bob D Petrie" <PETRIERD@gov.ns.ca>, "Gerald A Post" <POSTGA@gov.ns.ca>, "Scott McCoombs" <SRMCCOOM@gov.ns.ca>, "Angela Swaine" <SWAINAB@gov.ns.ca>, "Allison Denning" <allison.denning@hc-sc.gc.ca>
Date: 2011-05-10 01:25 PM
Subject: DRAFT Fairmount Wind Farm EA

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Dear All,

In the interest of saving paper, I am distributing this DRAFT environmental assessment document electronically. You can access a copy of it at www.fairmontwindfarm.ca

The Fairmont Wind Farm is located in the Municipality of the County of Antigonish, Nova Scotia. The project site is approximately 6 kilometers due north of the town of Antigonish. The site is bounded by the Fairmont Road to the east, Cloverville Road to the west, and Walsh Post Road to the north.The total rated capacity of the project is

20400-33-FA.11

# M E M O R A N D U M

**TO:** Vanessa Margueratt, Nova Scotia Environment

**FROM:** Hugh Gillis, NS Department of Natural Resources

**DATE:** June 2, 2011

**RE:** DRAFT Fairmont Wind Farm Environmental Assessment

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The Fairmont Wind Farm is located in the Municipality of the county of Antigonish, Nova Scotia. The project site is approximately 6 kilometers due north of the town of Antigonish. The site is bounded by the Fairmont Road to the east, Cloverville Road to the west, and Walsh Post Road to the north. The total rated capacity of the project is approximately 4.6 MW. It is anticipated that the project will consist of two Enercon E82 wind turbines. Each turbine will have a rated capacity of approximately 2.3 MW. Wind Project Inc. the Proponent, is required to register this project as a Class I Undertaking pursuant to the Environmental Assessment Regulations under the Nova Scotia Environment Act.

The Nova Scotia Department of Natural Resources (DNR) has reviewed the Draft Environmental Assessment document. DNR provides the following comments:

- Page 41, Volume 1 refers to the Pictou-Antigonish ecoregion. There isn't such a unit. The proponent likely means the Pictou-Antigonish Highlands Ecodistrict (sensu Webb and

Marshall, 1999). This minor error is repeated throughout Volume 1, and possibly elsewhere, although the correct name is also given. Webb and Marshall (1999) are incorrectly cited in section 16 of Volume 1 as "EENS 1999".

- Section 7.4.1 is limited to a description of bedrock geology. We suggest a similar description of surficial geology should be included in the draft EA. Suitable source data are summarized in Demont et al. 2009 (available at http://www.gov.ns.ca/natr/meb/data/pubs/10re01/10re01_02DeMont.pdf).

- Section 7.5.4 states that "Results of the survey show none of the plant communities within the proposed development footprint as rare or uncommon in Nova Scotia nor do they represent mature, high quality examples of provincially common plant communities." The independent botanist is qualified to make this kind of judgement but in the absence of standardized provincial conservation status ranks for plant communities we prefer that these types of statements be excluded from EAs.

- Section 7.5.31 states: "Mainland Moose have been sighted throughout the Pictou-Antigonish Highlands Ecoregion. The Nova Scotia Department of Natural Resources records moose sightings and has supplied the Proponent with a map of indicated moose sightings or signs of activity in the region. The map shows an absence of moose sightings within 3 km of the Project Area and shows only a few sightings recorded within a 5 km radius or the Project Area". Moose home ranges in Nova Scotia are approximately 40 square kilometers, so these records are relatively close (in biological terms) to the project area. We strongly support plans to conduct a moose pellet inventory in

early May of 2011 (section 7.5.33). We advise that geo-locations should be taken at every moose pellet pile and at sites with other reliable signs of moose presence.

- Section 7.5.2 states: "Large portions of the forest located on Project Land have been harvested by the landowners in the past decade. The majority of the existing forest has regenerated from clearcutting in the past 20-40 years. The extent of tree harvesting can be seen in photographs taken on site in FIGURE 2, VOLUME 2.". An additional map of vegetation cover (including recent clearcuts, forest stand types, farmland, wetlands, watercourses, non-forested natural vegetation, and other land features) is essential for interpreting local site ecology; determining the project's "ecological footprint"; and assessing possible impacts to local habitats, ecosystems, and components of landscape integrity. Figure 4 in Volume 2 presents an overly generalized representation of local "environmental features". Based on descriptions provided in Appendix C and F, we are concerned about possible impacts to small wetlands, floodplains, and mature forest patches located in and near-to the project footprint. For example, the caption in Figure 4 in Appendix E indicates: "Seepy streambed about 150 m upstream of proposed crossing of new access road. The access road crossing is proposed for an area with slightly less remnant forest cover and slightly narrower floodplain bottomland than is in this picture but is otherwise quite similar. The same streambed further upstream in the southwest corner of the property was similar within its floodplain but within more mature forest and a much deeper, steep-sided ravine." We need additional spatial data and more in-depth descriptions of these wetlands, the mature forest, and other ecologically significant values. [Note, bullet 7.3.4 states "there are no wetlands in the project area"]. We also need to know where

the forest referred to in Appendix E is [page 2, Appendix E: "the only concentration of mature forest on the property in question was along the streambed running south of the proposed development footprint and the associated steep slopes of the stream valley." ]

- Appendix G is titled "Mainland Moose Study" but it does not provide an outline of this study's objectives or methodological protocols. These study components are required for an adequate review.

These comments are provided to assist the proponent in the preparation and improvement of the environmental assessment document, and not as criticism of it, or comment on the undertaking itself.

| | |
|---|---|
| **From:** | Jennifer W McKeane |
| **To:** | Helen MacPhail |
| **Subject:** | Re: DRAFT Fairmount Wind Farm EA |
| **Date:** | January-01-01 12:00:00 AM |

Hi Helen,

I am writing to let you know that the Tourism Division of NS Economic and Rural Development has not submitted comments on this preliminary environmental assessment document but will submit comments when the project is officially registered.

Regards,

Jennifer McKeane
Tourism Development Officer
Tourism Division
Nova Scotia Economic and Rural Development and Tourism
1800 Argyle St, 6th Floor
PO Box 456
Halifax, NS B3J 2R5
Ph: (902) 424-4646
Email: mckeanjw@gov.ns.ca

Did you make it to Tourism InnovatioNS Days, April 26 & 27? It was a great event. Presentations are now on-line at: www.gov.ns.ca/econ/tourism/innovations.asp.

>>> Helen MacPhail 5/10/2011 1:24 PM >>>
Dear All,

In the interest of saving paper, I am distributing this DRAFT environmental assessment document electronically. You can access a copy of it at www.fairmontwindfarm.ca

The Fairmont Wind Farm is located in the Municipality of the County of Antigonish, Nova Scotia. The project site is approximately 6 kilometers due north of the town of Antigonish. The site is bounded by the Fairmont Road to the east, Cloverville Road to the west, and Walsh Post Road to the north.The total rated capacity of the project is approximately 4.6 MW. It is anticipated that the project will consist of two Enercon E82 wind turbines. Each turbine will have a rated capacity of approximately 2.3 MW. Wind Prospect Inc. the Proponent, is required to register this project as a Class I Undertaking pursuant to the Environmental Assessment Regulations under the Nova Scotia Environment Act.

Please provide your comments on this DRAFT Environmental Assessment document by **Monday, May 30, 2011**. Your comments will be considered preliminary, and you will have another opportunity to submit comments when the project is officially registered. I hope this draft will give you the opportunity to provide the proponent with constructive comments early in the process. Please note that all comments will be forwarded to the proponent as written.

If you have any questions, please contact me at 424-3960 or by e-mail at macphafh@gov.ns.ca

F. Helen MacPhail
Environmental Assessment Officer
Nova Scotia Environment
5151 Terminal Road
5th Floor
PO Box 442

NOVA SCOTIA

**Tourism, Culture & Heritage**

**Heritage Division**

1747 Summer Street
Halifax, Nova Scotia
B3H 3A6

*Tel:* (902) 424-6475
Fax: (902) 424-0560

TO: Helen MacPhail

FROM: Laura Bennett DATE: May 30, 2011

RE: **Environmental Registration**
**DRAFT EA 11-05-10 Fairmont Wind Farm**
**Nova Scotia Department of Environment and Labour**

Staff of the Heritage Division have reviewed the registration document for the Fairmont Wind Farm and have provided the following comments:

***Archaeological and Historical Sites and Remains***
Staff notes that the archaeological impact assessment conducted by Davis MacIntyre and Associates under heritage research permit A2010NS104 can be found in Volume III, Appendix J of the EA document. As long as the project development follows the recommendations of the DM&A report in Appendix J, staff have no further archaeological concerns for the development.

***Natural Heritage - Zoology***
Staff notes that the document has a number of orthographic errors, possibly due to use of a Spell-Check type function rather than proofing. Staff suggests proponents use current taxonomy for species noted in the report as there have been changes in scientific names due to improved knowledge of phylogenetic relationships. This should be vetted before submission.

Staff would also like to note that there is an gap in the information concerning noise generation. Data are presented for sound range up to 9 kHz (8000 Hz). For many wildlife species frequencies that are critical are well above that level. Bat species identified in Nova Scotia use foraging sweeps from around 100 kHz to 20 kHz for both navigation as well as feeding. Critical frequencies are 40 and 60 kHz. Data concerning the generation of sound in those frequencies is important in an appropriate understanding of impacts of these turbines. Staff suggest the turbine suppliers provide these important data or the proponent arrange for measurement.

***Natural Heritage - Botany***
Staff have no comments other than an inconsistency in timing of the upcoming plant surveys. Table 4.1 listing Project Milestones shows the next botanical survey will occur during May 2011. Section 7.5.5 stated that the next plant survey will be conducted in June 2011. Staff recommends the latter. It would be more likely to cover off the spring ephemerals and the summer-fruiting species.

***Natural Heritage - Paleontology***
Staff have expressed concern with the description of the "Geophysical Environment". The draft describes the geology of the area in two sentences, using a generalized reference that is 15 years old. Staff would suggest that at minimum have a geologist write the section on the geology of the area. The geologist should use the most up-to-date fully referenced geological map of the area (readily available from the Nova Scotia Department of Natural Resources and other sources). Specific rock types should be listed and should be assigned to specific geological groups in as much detail as possible (group, formation, member, bed). Ages of the strata should also be indicated. It is not sufficient to state that there are "old crustal rocks". If fossils are known from the area, they should be listed and a plan created to protect/collect such fossils. If fossils are not known from this region it needs to be clearly stated, as well as what the possibility is for encountering fossils.

If you have any questions, please contact me at 424-6475.

Laura Bennett
Coordinator, Special Places

*APPENDIX O3*

# LOCAL AND MUNICIPAL CONSULTATION

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MUNICIPAL COMMUNICATION HISTORY

| Name | Municipality/ Organisation | Date | Method of communication | | | | Content |
|---|---|---|---|---|---|---|---|
| | | | Phone | Meeting | Letter | Email | |
| John Bain, Director | Eastern District Planning Commission | Aug-09 | ✓ | ✓ | | | meeting to discuss zoneing bylaws and project introduction |
| | | Feb-10 | ✓ | ✓ | | ✓ | meeting to discuss project & wind bylaw specifc issues |
| | | Jan-11 | ✓ | ✓ | | ✓ | meeting to give project update |
| | | Apr-11 | ✓ | | | | Public meeting invitation and council meeting planning for rezoning |
| Antigonish Warden & Council members | Municipality of the County of Antigonish | Mar-10 | | ✓ | | | Presentation to Antigonish Council presenting the Fairmont project |
| | | Apr-10 | | | ✓ | | Public meeting invitation and comment request |
| | | May-11 | ✓ | | ✓ | | Public meeting invitation and council meeting planning for rezoning |
| Alan Bond, Municipal Clerk/Treasurer | Municipality of the County of Antigonish | Mar-10 | ✓ | | | | Discussion on Council meeting presentation |
| | | Mar-11 | ✓ | | | | Discussion on wind farm municipal tax calcualtions & permitting issues |
| Director | Hiking and Biking Trails Association | May-11 | | | ✓ | | Public meeting invitation and comment request |

**From:** John Bain [jdbain@edpc.ca]
**Sent:** Wednesday, January 20, 2010 5:13 PM
**To:** Austen Hughes
**Subject:** Re: Antigonish Wind Farm Proposal - Meeting Request

Next week would be good yes. FYI you might want to look at www.edpc.ca/reports/SWI-Report.pdf for a wind farm proposal discussed at PAC last night and which is going to a Public Hearing next month.

Sincerely,
John Bain

Austen Hughes wrote:
> Good afternoon John,
>
>
>
> My name is Austen Hughes and I'm writing on behalf of Wind Prospect
> Inc., a wind development company based in Halifax, Nova Scotia. I
> understand that my colleague Andy MacCallum has spoken with you
> previously, but we are proposing to develop a 4MW wind farm in the
> County of Antigonish. I realize that EDPC is the acting planner for
> the County, and as such I was hoping to set up a meeting with you to
> discuss our proposal in a little more detail. I'll follow up with you
> tomorrow, but would you be available early next week?
>
>
>
> Kind regards,
>
> Austen
>
>
>
> *Austen Hughes **| Development Manager*
>
> *Wind Prospect Inc*
>
> 1791 Barrington Street | Suite 1030 | Halifax | NS | B3J 3L1
> t: +1 902 422 9663 x215| f: +1 902 425 7840 | m: +1 902 802 1981
> Skype: austenhughes
> www.windprospect.ca <http://www.windprospect.ca/> Save resources - do
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> ----------
> -- This e-mail message is intended for the use of the named recipient.
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> attachment to any other person.

--
- - - - - - - - - - - - - - - - - - - - - - John Bain, Director Eastern District Planning Commission
32 Paint Street, Unit #4
Port Hawkesbury, Nova Scotia  B9A 3J8
Ph; 902-625-5364
- - - - - - - - - - - - - - - - - - - - -

# CONTACT RECORD

| | | | |
|---|---|---|---|
| | ☑ CALL RECEIVED | ☐ CALL MADE | |
| FROM: | Councillor Donnie MacDonald | TO: | Austen Hughes |
| DATE: | January 12th 2011 | | |
| PROJECT: | FAIRMONT | | |
| REGARDING: | General update | | |

NOTES:

Councillor MacDonald called looking for a general update on the Fairmont project. Austen Hughes provided the update including:

- Birds
- Bats
- EA general
- Installation of mast and sodar
- Referenced www.fairmontwindfarm.com

Both Councillor MacDonald and Austen Hughes agreed that another face to face meeting is desired, and to schedule this the next time WP was back on site (follow up required within the next month).

TASKS/ ACTIONS:

Make sure the next time WPI is at the site, a meeting is scheduled with Councillor MacDonald.

02_01-00003

April 22nd, 2010

Mr. Alan Bond
County of Antigonish
285 Beech Hill Road
RR6
Antigonish Nova Scotia B2G0B4

**Re: Public Meeting, Fairmont Wind Farm Proposal, County of Antigonish.**

Dear Mr. Bond,

I am writing to you on behalf of Wind Prospect Inc. (Wind Prospect), a leading international renewable energy company. In January of 2010 Wind Prospect signed a Power Purchase Agreement with Nova Scotia Power, for a 4MW wind farm, located in the County of Antigonish, Nova Scotia.

Because of this, the feasibility and development phase of this wind farm proposal is now underway, and as a valued stakeholder, this letter is intended initiate our consultation with you. The Fairmont Wind proposal, comprising of two wind turbines, would be located approximately 6 kilometres north of the community of Antigonish, and 2 kilometres east of the community of Cloverville.

Our current development activities include desk-based environmental assessment, consultancy review and engagement, and government liaison. As part of the environmental assessment, a public information session has been scheduled to take place in the County of Antigonish, and will allow Wind Prospect to provide company specific information, as well as details on the Fairmont Wind Farm proposal. It will also provide you with the opportunity to ask questions, and to share any concerns you may have. The details of this exciting event are as follows:

**Date:** April 29th 2010

**Time:** 5:30pm – 8:30pm

**Where:** St. Andrew Junior School, 2 Appleseed Drive, Antigonish, Nova Scotia

As an integral part of our engagement program, a community website has been launched which can be used to obtain information about Wind Prospect, and the Fairmont Wind Farm proposal. To access this website, please log onto www.fairmontwindfarm.ca

To this end, I would like to thank you for your time, and look forward to seeing you on April 29th. If you have any questions or concerns regarding the Fairmont Wind Farm proposal, please do not hesitate to contact me via phone, fax, or email.

Yours sincerely

Austen Hughes, Development Manager

Wind Prospect Inc.

02_01-00003

April 22nd, 2010

Councillor Donnie McDonald
County of Antigonish
285 Beech Hill Road
RR6
Antigonish Nova Scotia  B2G0B4

**Re: Public Meeting, Fairmont Wind Farm Proposal, County of Antigonish.**

Dear Councillor McDonald,

I am writing to you on behalf of Wind Prospect Inc. (Wind Prospect), a leading international renewable energy company. In January of 2010 Wind Prospect signed a Power Purchase Agreement with Nova Scotia Power, for a 4MW wind farm, located in the County of Antigonish, Nova Scotia.

Because of this, the feasibility and development phase of this wind farm proposal is now underway, and as a valued stakeholder, this letter is intended initiate our consultation with you. The Fairmont Wind proposal, comprising of two wind turbines, would be located approximately 6 kilometres north of the community of Antigonish, and 2 kilometres east of the community of Cloverville.

Our current development activities include desk-based environmental assessment, consultancy review and engagement, and government liaison. As part of the environmental assessment, a public information session has been scheduled to take place in the County of Antigonish, and will allow Wind Prospect to provide company specific information, as well as details on the Fairmont Wind Farm proposal. It will also provide you with the opportunity to ask questions, and to share any concerns you may have. The details of this exciting event are as follows:

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Yours sincerely

Austen Hughes, Development Manager

Wind Prospect Inc.

02_01-00003

April 22nd, 2010

Canadian Wildlife Service
Regional Headquarters
45 Alderney Drive
Dartmouth Nova Scotia  B2Y 1N6

**Re: Public Meeting, Fairmont Wind Farm Proposal, County of Antigonish.**

Dear Sir or Madam,

I am writing to you on behalf of Wind Prospect Inc. (Wind Prospect), a leading international renewable energy company. In January of 2010 Wind Prospect signed a Power Purchase Agreement with Nova Scotia Power, for a 4MW wind farm, located in the County of Antigonish, Nova Scotia.

Because of this, the feasibility and development phase of this wind farm proposal is now underway, and as a valued stakeholder, this letter is intended initiate our consultation with you. The Fairmont Wind proposal, comprising of two wind turbines, would be located approximately 6 kilometres north of the community of Antigonish, and 2 kilometres east of the community of Cloverville.

Our current development activities include desk-based environmental assessment, consultancy review and engagement, and government liaison. As part of the environmental assessment, a public information session has been scheduled to take place in the County of Antigonish, and will allow Wind Prospect to provide company specific information, as well as details on the Fairmont Wind Farm proposal. It will also provide you with the opportunity to ask questions, and to share any concerns you may have. The details of this exciting event are as follows:

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To this end, I would like to thank you for your time, and look forward to seeing you on April 29th. If you have any questions or concerns regarding the Fairmont Wind Farm proposal, please do not hesitate to contact me via phone, fax, or email.

Yours sincerely

Austen Hughes, Development Manager

Wind Prospect Inc.

02_01-00003

April 22nd, 2010

Canadian Environmental Assessment Agency - Atlantic Region
1801 Hollis Street
Suite 200
Halifax Nova Scotia B3J 3N4

**Re: Public Meeting, Fairmont Wind Farm Proposal, County of Antigonish.**

Dear Sir or Madam,

I am writing to you on behalf of Wind Prospect Inc. (Wind Prospect), a leading international renewable energy company. In January of 2010 Wind Prospect signed a Power Purchase Agreement with Nova Scotia Power, for a 4MW wind farm, located in the County of Antigonish, Nova Scotia.

Because of this, the feasibility and development phase of this wind farm proposal is now underway, and as a valued stakeholder, this letter is intended initiate our consultation with you. The Fairmont Wind proposal, comprising of two wind turbines, would be located approximately 6 kilometres north of the community of Antigonish, and 2 kilometres east of the community of Cloverville.

Our current development activities include desk-based environmental assessment, consultancy review and engagement, and government liaison. As part of the environmental assessment, a public information session has been scheduled to take place in the County of Antigonish, and will allow Wind Prospect to provide company specific information, as well as details on the Fairmont Wind Farm proposal. It will also provide you with the opportunity to ask questions, and to share any concerns you may have. The details of this exciting event are as follows:

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To this end, I would like to thank you for your time, and look forward to seeing you on April 29th. If you have any questions or concerns regarding the Fairmont Wind Farm proposal, please do not hesitate to contact me via phone, fax, or email.

Yours sincerely

Austen Hughes, Development Manager

Wind Prospect Inc.

*APPENDIX O4*

# FIRST NATIONS CONSULTATION

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FIRST NATIONS COMMUNICATION HISTORY

| Name | Ministry/Agency/ Company | Date | Method of Communication | | | | Content |
|---|---|---|---|---|---|---|---|
| | | | Phone | Meeting | Letter | Email | |
| Wendy Casey Painting | Nova Scotia Aboriginal Affairs | Apr-10 | | | ✓ | | Public meeting invitation and comment request |
| Sir or Madam | The Confederacy of Mainland Mi'kmaq | Apr-10 | | | ✓ | | Public meeting invitation and comment request |
| | | May-11 | | | ✓ | | Public meeting invitation and comment request |
| Sir or Madam | Union of Nova Scotia Indians | Apr-10 | | | ✓ | | Public meeting invitation and comment request |
| | | May-11 | | | ✓ | | Public meeting invitation and comment request |
| Sir or Madam | Mi'kmaq Environments Resource Developments Secretariat (MERDS) | Apr-10 | | | ✓ | | Public meeting invitation and comment request |
| | | May-11 | | | ✓ | | Public meeting invitation and comment request |
| Sidney Peters, Director of Lands, Environment and Natural Ressources | Confederation of Mainland Mi'kmaq | Oct-10 | ✓ | | | ✓ | Discussion on scope of Mi'kmaq Ecological Knowledge study |
| Peter Clair, Knowledge Study Coordinator | | Jan-11 | ✓ | | | | Update on Mi'kmaq ecological knowledge study progress |

**From:** Austen Hughes
**Sent:** Friday, August 20, 2010 2:10 PM
**To:** Sidney Peters
**Cc:** Austen Hughes
**Subject:** RE: Fairmont Wind Farm Proposal - MI'KMAQ ECOLOGICAL KNOWLEDGE STUDY

**Categories:** FAIRMONT

Hi there Sidney,

Thanks for the email, and I'm happy that you're able to work within our 2010/11 timeframes. I look forward to your proposal in September.

Kind regards,

- Austen

**Austen Hughes** | **Senior Development Manager**
**Wind Prospect Inc**
1791 Barrington Street | Suite 1030 | Halifax | NS | B3J 3L1
t: +1 902 422 9663 x215 | f: +1 902 425 7840 | m: +1 902 802 1981
Skype: austenhughes
www.windprospect.ca



---

**From:** Sidney Peters [mailto:Sidney@cmmns.com]
**Sent:** August-20-10 1:56 PM
**To:** Austen Hughes
**Subject:** RE: Fairmont Wind Farm Proposal - MI'KMAQ ECOLOGICAL KNOWLEDGE STUDY

Good afternoon Austen, I am sorry we have not provided you with a estimate to date, however I will provide one by the end of the September 1st week. I am on vacation the next week. As for the time frame there would be no issue as to meet your deadline of the spring of 2011.
If I have any questions I will contact you on my return. I hope this doesn't effect your time line.
Thanks Sid

---

**From:** Austen Hughes [mailto:austen.hughes@windprospect.ca]
**Sent:** Wednesday, August 18, 2010 9:19 AM
**To:** Sidney Peters
**Subject:** FW: Fairmont Wind Farm Proposal - MI'KMAQ ECOLOGICAL KNOWLEDGE STUDY

Good morning Sidney,

Just a quick follow up to my request here – are there any follow questions from you at this point?

Thanks and will look forward to talking soon.

- Austen

**Austen Hughes** | **Senior Development Manager**
**Wind Prospect Inc**
1791 Barrington Street | Suite 1030 | Halifax | NS | B3J 3L1
t: +1 902 422 9663 x215| f: +1 902 425 7840 | m: +1 902 802 1981
Skype: austenhughes
www.windprospect.ca
Save resources - do not print this email unnecessarily


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**From:** Austen Hughes
**Sent:** August-06-10 2:34 PM
**To:** 'sidney@cmmns.com'
**Cc:** Austen Hughes
**Subject:** Fairmont Wind Farm Proposal - MI'KMAQ ECOLOGICAL KNOWLEDGE STUDY

Good afternoon Sidney, it was nice talking to you earlier.

As discussed, we are proposing to develop a 4MW wind farm in the County of Antigonish, and as part of this development I would like to start working with the Confederacy of Mainland Mi'kmaq, with the hope that you will be able to prepare the Mi'kmaq Ecological Knowledge Study for us, during the Fall of 2010, finishing in the spring of 2011. I have provided project specific information below, and I would also like to point you to our community website which we have set up to provide information about the project. Additionally, I have attached a PDF of a presentation I made to the KMK, hosted by the NS Department of Environment.

**PROJECT DETAIL:**
**Name**: Fairmont Wind Farm
**Location**: 6 km north of Antigonish
**Turbines**: 2
**Size**: 4 Megawatts (MW) total
**Acreage**: Private land, 300 acres - Austen
Community Website: www.fairmontwindfarm.com

If you have any questions, please do not hesitate to contact me at your convenience, and I'll look forward to hearing from you soon.

Kind regards,

Austen

**Austen Hughes** | **Senior Development Manager**
**Wind Prospect Inc**
1791 Barrington Street | Suite 1030 | Halifax | NS | B3J 3L1
t: +1 902 422 9663 x215| f: +1 902 425 7840 | m: +1 902 802 1981
Skype: austenhughes
www.windprospect.ca
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02_01-00004

April 22nd, 2010

The Confederacy of Mainland Mi'kmaq
Millbrook Multi-Purpose Centre
Millbrook Mi'kmaq Native Community 57 Martin Crescent
Truro Nova Scotia B2N 5V3

**Re: Public Meeting, Fairmont Wind Farm Proposal, County of Antigonish.**

Dear Sir or Madam,

I am writing to you on behalf of Wind Prospect Inc. (Wind Prospect), a leading international renewable energy company. In January of 2010 Wind Prospect signed a Power Purchase Agreement with Nova Scotia Power, for a 4MW wind farm, located in the County of Antigonish, Nova Scotia.

Because of this, the feasibility and development phase of this wind farm proposal is now underway, and as such, it is hoped that this letter will initiate our communications with you. The Fairmont Wind Farm proposal, comprising of two wind turbines, would be located approximately 6 kilometres north of the community of Antigonish, and 2 kilometres east of the community of Cloverville.

Our current development activities include desk-based environmental assessment, consultancy review and engagement, and government liaison. As part of the environmental assessment, a project information session has been scheduled to take place in the County of Antigonish, and will allow Wind Prospect to provide company specific information, as well as details on the Fairmont Wind Farm proposal. It will also provide you with the opportunity to ask questions, and to share any concerns you may have. The details of this exciting event are as follows:

**Date:** April 29th 2010

**Time:** 5:30pm – 8:30pm

**Where:** St. Andrew Junior School, 2 Appleseed Drive, Antigonish, Nova Scotia

As an integral part of our engagement program, a community website has been launched which can be used to obtain information about Wind Prospect, and the Fairmont Wind Farm proposal. To access this website, please log onto www.fairmontwindfarm.ca

To this end, I would like to thank you for your time, and look forward to seeing you on April 29th. If you have any questions or concerns regarding the Fairmont Wind Farm proposal, please do not hesitate to contact me via phone, fax, or email.

Yours sincerely

Austen Hughes.

Austen Hughes, Development Manager

Wind Prospect Inc.

02_01-00004

April 22nd, 2010

Union of Nova Scotia Indians
Sydney Nova Scotia B1P 6J4

**Re: Public Meeting, Fairmont Wind Farm Proposal, County of Antigonish.**

Dear Sir or Madam,

I am writing to you on behalf of Wind Prospect Inc. (Wind Prospect), a leading international renewable energy company. In January of 2010 Wind Prospect signed a Power Purchase Agreement with Nova Scotia Power, for a 4MW wind farm, located in the County of Antigonish, Nova Scotia.

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Yours sincerely

Austen Hughes.

Austen Hughes, Development Manager

Wind Prospect Inc.

02_01-00004
April 22nd, 2010

Mi'kmaq Enivironments Resource Developments Secretariat (MERDS)
Native Council of Nova Scotia
Box 8, 172 Truro Heights Road,
Truro Nova Scotia B2N 5A9

**Re: Public Meeting, Fairmont Wind Farm Proposal, County of Antigonish.**

Dear Sir or Madam,

I am writing to you on behalf of Wind Prospect Inc. (Wind Prospect), a leading international renewable energy company. In January of 2010 Wind Prospect signed a Power Purchase Agreement with Nova Scotia Power, for a 4MW wind farm, located in the County of Antigonish, Nova Scotia.

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**Date:** April 29th 2010

**Time:** 5:30pm – 8:30pm

**Where:** St. Andrew Junior School, 2 Appleseed Drive, Antigonish, Nova Scotia

As an integral part of our engagement program, a community website has been launched which can be used to obtain information about Wind Prospect, and the Fairmont Wind Farm proposal. To access this website, please log onto www.fairmontwindfarm.ca

To this end, I would like to thank you for your time, and look forward to seeing you on April 29th. If you have any questions or concerns regarding the Fairmont Wind Farm proposal, please do not hesitate to contact me via phone, fax, or email.

Yours sincerely

Austen Hughes, Development Manager

Wind Prospect Inc.

02_01-00003

April 22nd, 2010

Ms. Wendy Casey-Painting
Nova Scotia Aboriginal Affairs
Suite 910 Centennial Building
1660 Hollis Street
Halifax Nova Scotia B3J 2Y3

**Re: Public Meeting, Fairmont Wind Farm Proposal, County of Antigonish.**

Dear Ms. Casey-Painting,

I am writing to you on behalf of Wind Prospect Inc. (Wind Prospect), a leading international renewable energy company. In January of 2010 Wind Prospect signed a Power Purchase Agreement with Nova Scotia Power, for a 4MW wind farm, located in the County of Antigonish, Nova Scotia.

Because of this, the feasibility and development phase of this wind farm proposal is now underway, and as a valued stakeholder, this letter is intended initiate our consultation with you. The Fairmont Wind proposal, comprising of two wind turbines, would be located approximately 6 kilometres north of the community of Antigonish, and 2 kilometres east of the community of Cloverville.

Our current development activities include desk-based environmental assessment, consultancy review and engagement, and government liaison. As part of the environmental assessment, a public information session has been scheduled to take place in the County of Antigonish, and will allow Wind Prospect to provide company specific information, as well as details on the Fairmont Wind Farm proposal. It will also provide you with the opportunity to ask questions, and to share any concerns you may have. The details of this exciting event are as follows:

**Date:** April 29th 2010

**Time:** 5:30pm – 8:30pm

**Where:** St. Andrew Junior School, 2 Appleseed Drive, Antigonish, Nova Scotia

As an integral part of our engagement program, a community website has been launched which can be used to obtain information about Wind Prospect, and the Fairmont Wind Farm proposal. To access this website, please log onto www.fairmontwindfarm.ca

To this end, I would like to thank you for your time, and look forward to seeing you on April 29th. If you have any questions or concerns regarding the Fairmont Wind Farm proposal, please do not hesitate to contact me via phone, fax, or email.

Yours sincerely

Austen Hughes, Development Manager

Wind Prospect Inc.

# WIND PROSPECT INC.

## *RECORD OF MEETING*

**BETWEEN** Andy MacCallum, Wind Prospect

**AND**

**DATE** Peter Clair - CMM

**TIME** 10:30am, Telephone call, January 13 2011

**PROJECT** Fairmont Wind Farm

**SUBJECT:** Update on status of MEK study

## 1. Attendees

Andy MacCallum, Development Manager, Wind Prospect (AM)
Peter Clair, CMM (PC)

## 2. Apologies/Unavailable

None

## 3. Minutes from Previous Meeting

- Meeting was triggered through AM's call to Sidney Peters requesting update

## 4. Agenda

n/a

## 5. Discussion

- PC said 1st field study is complete
- Study is approximately 50% complete
- PC stated that usually 2nd field study is completed in spring
- AM stated that WPI would like to see field study completed asap as this is a significant constraint on the completion of our final EA
- PC agreed that they will run field study in early spring. AM said he would follow up as a reminder.
- PC stated there are no major issues regarding the MEK study so far.

## 6. Follow up

- AM to email PC and remind him that we want field study and final report as early as possible in the spring.

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*APPENDIX P*

# Public Complaint Response Procedure

# 1. Public Complaint Response Procedure

**Formal complaints procedure for Wind Prospect Inc. Fairmont Wind Farm**

Wind Prospect Inc. is committed to addressing any public concerns regarding the Fairmont Wind Farm in Antigonish. The intention is that this policy can inform the public on the ways that they can communicate their concerns to Wind Prospect Inc., and how complaints will be addressed.

## 1. PURPOSE:

1.1 The purpose of this policy is to ensure all public complaints are dealt with consistently and effectively. Wind Prospect Inc. aims to:

- Manage complaints openly, promptly and properly;
- Try to resolve complaints as soon as we can; and
- Learn from complaints and improve our services.

## 2. SCOPE:

2.1 This policy will address any complaint (written or spoken expression of dissatisfaction) with the following:

- Construction and operations of Turbines
- Noise

## 3. PROCEDURE:

3.1 All complaints of the Fairmont wind farm will be directed to the Project Manager, Andy MacCallum:

**Andy MacCallum** | Development Manager
Wind Prospect Inc.
1791 Barrington Street | Suite 1030 | Halifax | NS | B3J 3L1
Tel: +1 902 422 9663 x 214
Fax: +1 902 425 7840
For more information please refer to Wind Prospect Inc. website
www.windprospect.ca

3.2 Complainant will be notified upon receipt of the complaint.

3.3 The Development Manager will investigate complaints within 20 days of receiving the complaint, upon which complainant will be notified of how concern was or will be addressed.

3.4 Complaints dealing with noise will be assessed on whether noise monitoring is necessary.

- 3.4.1 If there are several complaints regarding noise from the Fairmont wind farm, then a noise monitoring program may be implemented.
- 3.4.2 Ways on reducing noise will be discussed with the wind farm operators.
- 3.4.3 Complainant(s) will be informed of noise mitigation strategies and will be followed up within a year of implemented noise reduction strategies. This procedure will ensure noise issue is resolved.

3.5 Complaints regarding operations and construction activities will be discussed with workers or contractors involved.

3.6 Solutions to the complaints will be established with worker(s) and contractor(s). Complainant will be informed of how issue was addressed.

3.7 If complaints persist, then worker(s) and contractor(s) will be dismissed.

3.8 If the complainant is not satisfied with the initial response, the complaint will be referred to a higher authority within the company to further to resolve the issue.