

APPENDIX M  
COMMUNITY ENGAGEMENT

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# Project Benefits



## THE FUTURE IS GREEN

- **Provincial Energy Independence** – This project will be one of many steps to fulfill Nova Scotia's goal of 40% renewable sources by 2020.
- **Local Electricity Generation** – Nearly all the electricity generated by the project will be consumed locally with minimal upgrades to the existing electrical grid infrastructure.
- **Making the Local Price of Electricity More Stable** – All the electricity will be produced at a fixed price for the next 20 years and when combined with other wind projects, will reduce future increases in the price of electricity.



## INVESTING IN LOCAL COMMUNITIES

- **Local Community Education** – Once constructed, the project will fund The Millbrook Community Renewable Education Program. This program will be managed by a local committee and provide an annual scholarship for members of the local community who want to expand their education in an undergraduate or postgraduate field related to renewable energy or sustainability.
- **Local Community Investment and Economic Development** – Nova Scotia based companies will provide project development services such as environmental consulting, long-term management, construction, and website development.

# MILLBROOK COMMUNITY WIND

*Local Economic Development, Part of a Global Solution.*

## PROJECT DESCRIPTION

**Millbrook Community Wind** is a proposed wind energy generation facility located on private land, approximately 5 km southwest of Truro, Nova Scotia. In early 2012, the project received approval under the Nova Scotia Department of Energy's Community Feed-In-Tariff program to proceed with development, which will occur over the next few years. The project will require a full Environmental Assessment to ensure it is developed in a manner fitting of the biological and cultural surroundings. Once constructed, the project will likely consist of two to three wind turbines capable of generating approximately 6 megawatts of energy. This is enough energy to power more than 1,800 Nova Scotia homes with stable, local, renewable energy.



## MEET YOUR TEAM



**Millbrook First Nation** is the lead proponent and majority owner of the project. Millbrook First Nation will be instrumental in ensuring the project is compatible with the local community and cultural surrounding and will help the team maximize local economic benefits through job creation and the utilization of local contractors.



**Community Wind Farms** is the local project developer and will be responsible for all day to day development, community relations, and permitting work associated with the project. Community Wind Farms is working with municipalities, First Nations, community groups and landowners across Nova Scotia to develop a portfolio of wind farms under the Community Feed-In Tariff (COMFIT) program introduced by the Nova Scotia Department of Energy.

## YOUR INPUT IS IMPORTANT TO US ...

Your comments and feedback on the proposed wind project are important to us. For additional information please visit the project website [www.millbrookwindfarm.ca](http://www.millbrookwindfarm.ca) or email us at [info@millbrookwindfarm.ca](mailto:info@millbrookwindfarm.ca)

... **THANK YOU FOR COMING!**



**juwi Wind Canada's** role will be to lead technical aspects of wind project development, to fund early development activities, and to be the lead arranger in project financing and construction. The juwi Group has an extensive track record of completing community based projects with local investment opportunities, as well as turnkey projects for local municipalities and co-operatives.

## ASSESSMENT AND DEVELOPMENT

- Baseline studies are ongoing to determine and mitigate any effects of the project on the environment and local interests.
- Public consultation is an integral part of this process.
- Provincial and federal government stakeholders will also have an opportunity to review the Environmental Assessment and provide comments.



Fig. 1 - Regulatory Review Process

### Baseline studies will include:

- Birds, Bats and General Wildlife
- Plants and Wetlands
- Watercourses and Fish Habitat
- Groundwater and Geology
- Sound and Shadow Flicker
- Visual Aesthetics
- Cultural and Heritage Resources
- Socio-economic Conditions
- Mi'kmaq Ecological Knowledge Study

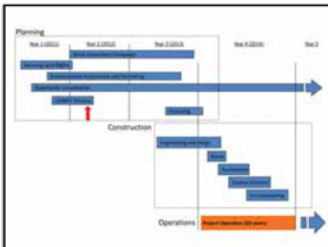


Fig. 2 - Project Timeline

## Wind Farm Viewscape



Photo 1  
Looking southwest at the project site.  
Photo location: Tideview Drive



Photo 2  
Looking southwest at the project site.  
Photo location: Just northeast of the junction of Kent Road (west branch) and the power line right of way.

## FACTS ABOUT SOUND AND SHADOW FLICKER

- You can stand below a wind turbine and carry on a normal conversation.
- Wind turbines have an aerodynamic blade design and sound-proofed generator enclosures.
- A sound analysis is currently in progress for the project using guidelines developed by the Ontario Ministry of the Environment. Results will be presented in the Environmental Assessment Registration Document.
- All turbines for the project will be located a minimum of **1800 m** from any residence or unidentified building.

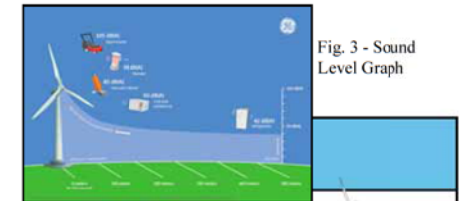


Fig. 3 - Sound Level Graph



Fig. 4 - Shadow Flicker Schematic

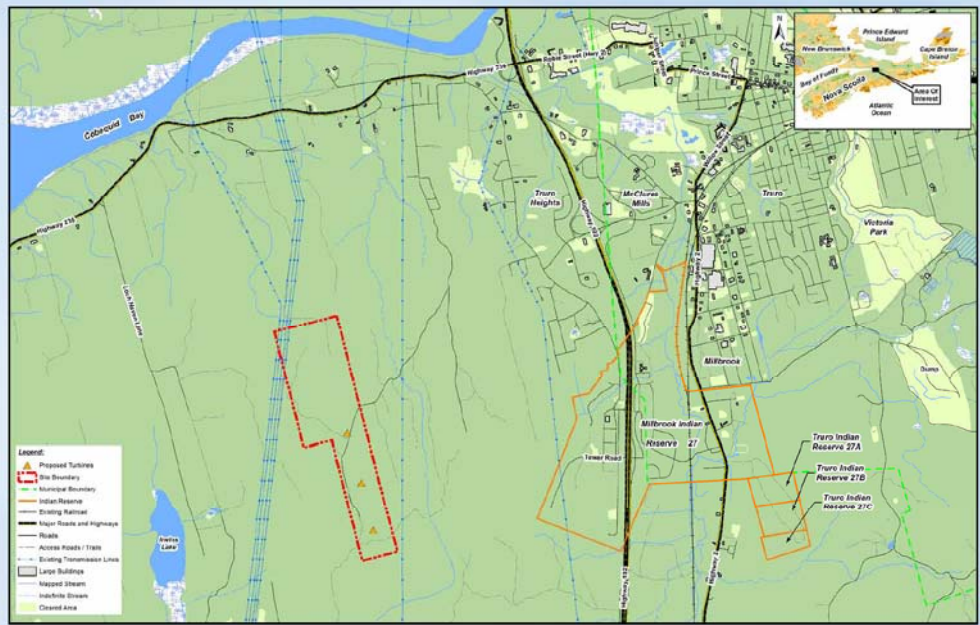
- Shadow flicker occurs when rotating wind turbine blades cast shadows upon stationary objects.
- Shadow flicker only appears during very specific conditions:
  - The sun is shining and there is no cloud cover, fog, etc.
  - Windows of the residence have to directly face the wind turbine.
  - No obstructions (trees, hills, other structures) are in sight.
  - Turbine blades directly face toward or away from the sun.
- A shadow flicker analysis is currently in progress for the project. Results will be presented in the Environmental Assessment Registration Document.



# MILLBROOK COMMUNITY WIND



Local Economic Development, Part of a Global Solution.



## YOUR INPUT IS IMPORTANT TO Us ...

Your comments and feedback on the proposed wind project are important to us. Please ask questions and be sure to pick up a handout before you leave.

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Questions? Please contact:  
[info@millbrookwindfarm.ca](mailto:info@millbrookwindfarm.ca)

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# MILLBROOK COMMUNITY WIND



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## PROJECT BENEFITS

### INVESTING IN LOCAL COMMUNITIES

- **Local Community Education** – Once constructed, the project will fund The Millbrook Community Renewable Education Program. This program will be managed by a local committee and provide an annual scholarship for members of the local community who want to expand their education in an undergraduate or postgraduate field related to renewable energy or sustainability.



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# MILLBROOK COMMUNITY WIND

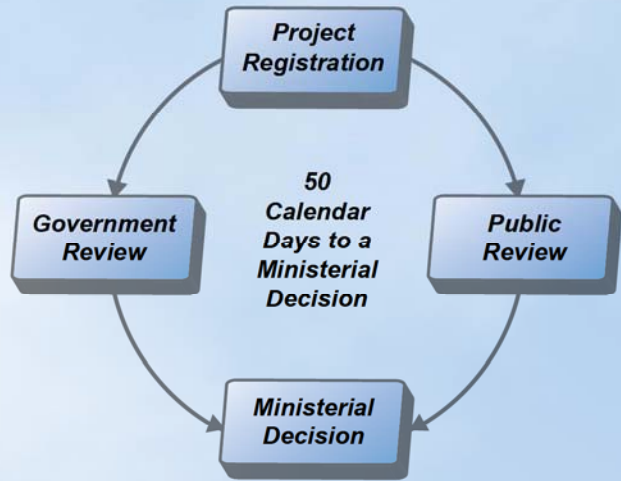


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## ASSESSMENT AND DEVELOPMENT

### ENVIRONMENTAL ASSESSMENT:

- Baseline studies are ongoing to determine and mitigate any effects of the project on the environment and local interests.
- Public consultation is an integral part of this process.
- Provincial and federal government stakeholders will also have an opportunity to review the Environmental Assessment and provide comments.

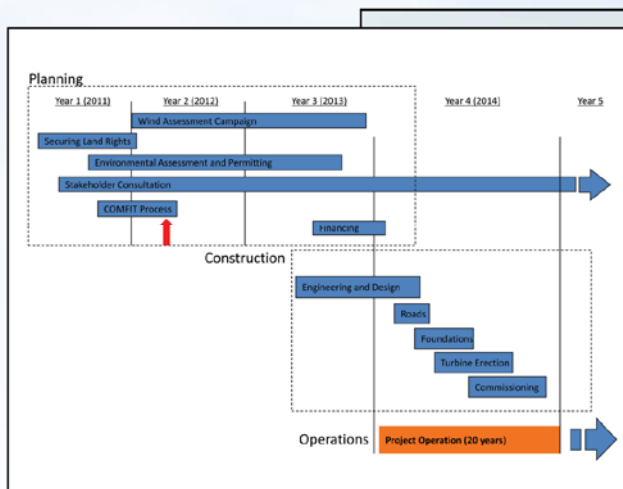


### BASELINE STUDIES:

- Birds, Bats and General Wildlife
- Plants and Wetlands
- Watercourses and Fish Habitat
- Groundwater and Geology
- Sound and Shadow Flicker
- Visual Aesthetics
- Cultural and Heritage Resources
- Socio-economic Conditions
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### DEVELOPMENT PROCESS:



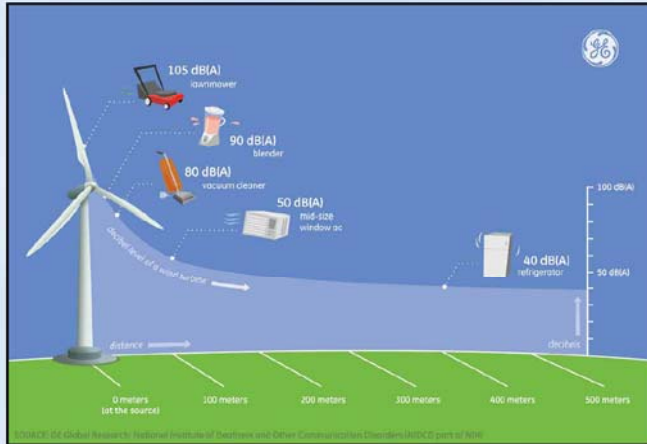
# MILLBROOK COMMUNITY WIND



Local Economic Development, Part of a Global Solution.

## FACTS ABOUT SOUND AND SHADOW FLICKER

### WIND TURBINE SOUND LEVELS ARE LOW ...



- You can stand below a wind turbine and carry on a normal conversation.
- Wind turbines have an aerodynamic blade design and sound-proofed generator enclosures.
- A sound analysis is currently in progress for the project using guidelines developed by the Ontario Ministry of the Environment. Results will be presented in the Environmental Assessment Registration Document.
- All turbines for the project will be located a minimum of **1800 m** from any residence or unidentified building.

### TYPICAL SOUND PRESSURE LEVELS

Source	Distance from Source		Sound Pressure Levels in dB (A)
	feet	meters	
Freight Train	100	30	70
Freeway	100	30	70
Wind in Trees	40	12	55
Light Traffic	100	30	70
Average Home			50
Soft Whisper	5	2	30
Quiet Bedroom			20

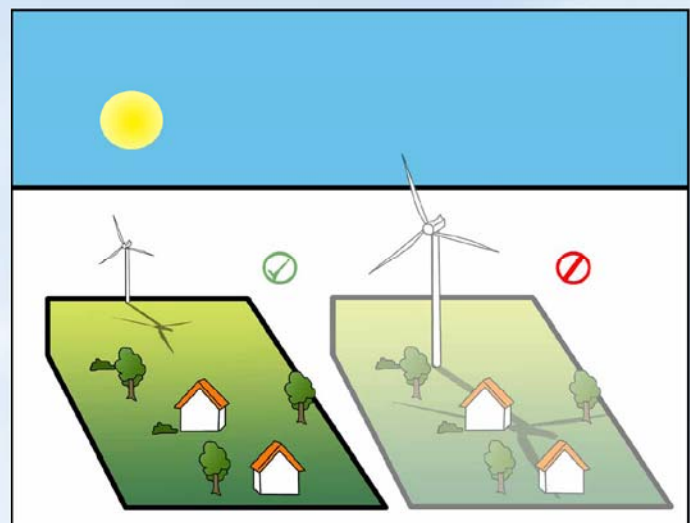
Source: AWEA 2011

### SHADOWS ARE NOT TAKEN LIGHTLY ...

- Shadow flicker occurs when rotating wind turbine blades cast shadows upon stationary objects.

- Shadow flicker only appears during very specific conditions:

- The sun is shining and there is no cloud cover, fog, etc.
- Windows of the residence have to directly face the wind turbine.
- No obstructions (trees, hills, other structures) are in sight.
- Turbine blades directly face toward or away from the sun.



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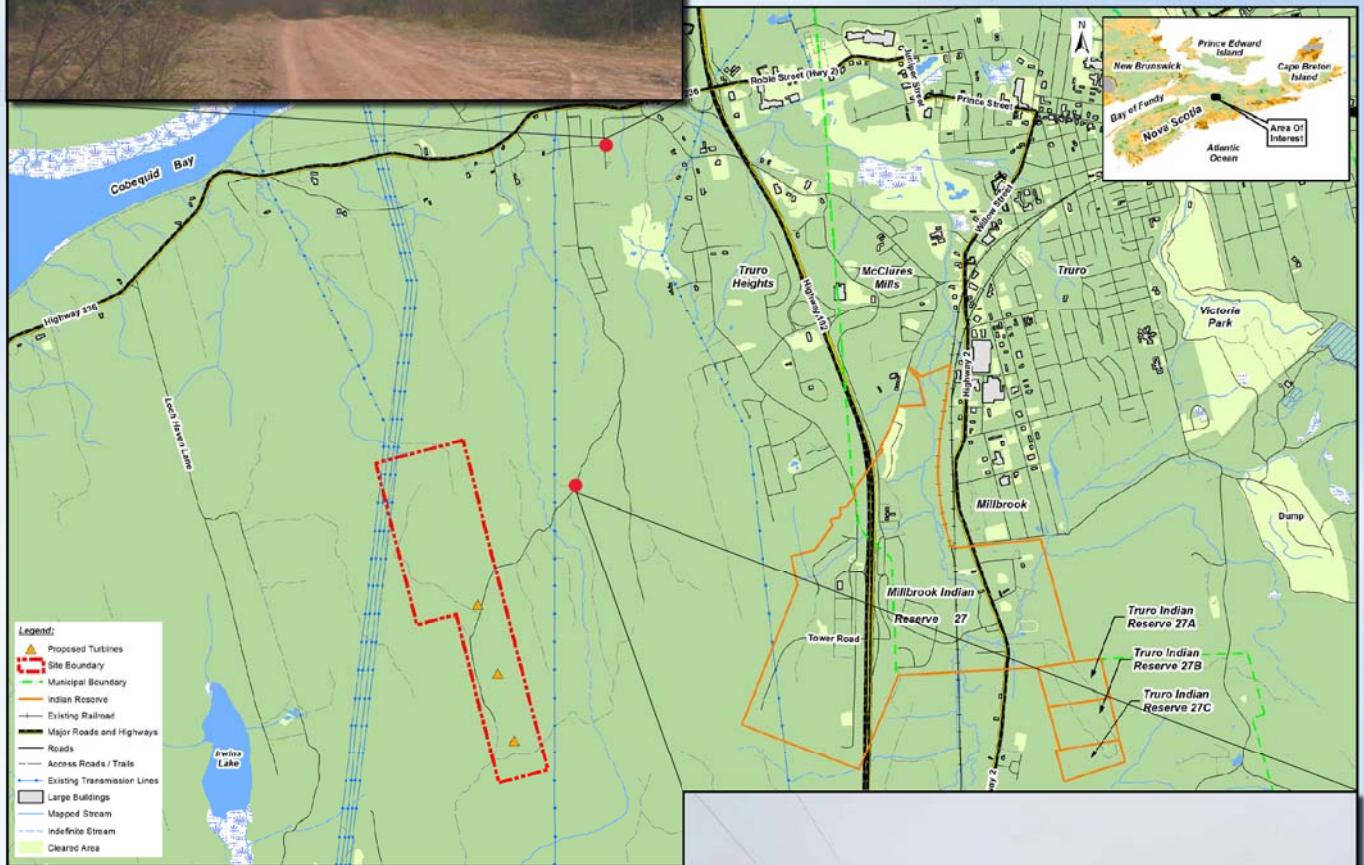


Local Economic Development, Part of a Global Solution.

## WIND FARM VIEWSCAPE



*Photo 1*  
Looking southwest at the project site.  
Photo location: Tideview Drive



*Photo 2*  
Looking southwest at the project site.  
Photo location: Just northeast of the junction of Kent Road (west branch) and the power line right of way.





***Community Wind Farms Inc.***  
*... working with communities across Atlantic Canada*



The Confederacy of Mainland Mi'kmaq (Main Office)  
PO Box 1590 (57 Martin Crescent, B2N 6N7)  
Truro, NS B2N 5V3

October 3, 2012

To whom it may concern,

We are writing to inform you of the on-going plans for the Millbrook/Truro Heights Community Wind Project located in the County of Colchester. We are currently proposing the development of a wind energy generation facility located close to the community of Hilden, approximately 6km southeast of the Town of Truro, in Colchester County, NS. The land is privately owned. The Project coordinates are 45°19'23"N, 63°20'30"W.

The Project will consist of five wind turbines generating a total capacity of 10.4 megawatts. The proposed turbines will be connected to the existing distribution system.

Currently, the Millbrook/Truro Heights Community Wind Project is in the assessment and planning stages. As part of the development process, an Environmental Assessment (EA) is being undertaken to determine and mitigate any effects of the Project on the environment and local interests. Baseline studies which will be conducted as part of the EA process consist of:

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- Mi'kmaq Ecological Knowledge Study.

Community engagement is an integral part of this process and all those interested in the Project are encouraged to become involved and provide feedback. We would like to invite members of the Mi'kmaq First Nations to participate. If you have any questions, suggestions, or concerns, feel free to contact the undersigned at (902) 527-3158 or by email at [keith@communitywind.ca](mailto:keith@communitywind.ca).

Sincerely yours,

Keith Towse  
Community Wind Farms Inc.

***Community Wind Farms Inc.***  
*... working with communities across Atlantic Canada*



Kwilmu'kw Maw-Klusuaqn Negotiation Office  
Attn: Consultation Liaison Officer  
851 Willow Street,  
Truro, B2N 6N8

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*... working with communities across Atlantic Canada*



Native Council of Nova Scotia (NCNS)  
Grace Conrad (Chief and President )  
129 Truro Heights Road  
P.O. Box 1320, Truro, NS B2N 5N2

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Unama'ki Institute of Natural Resources  
PO Box 8096 (4102 Shore Road)  
Eskasoni NS B1W 1C2

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Union of Nova Scotia Indians (Environmental Services)  
for Attention of Kim Paul  
47 Maillard St, Membertou, Nova Scotia B1S 2P5

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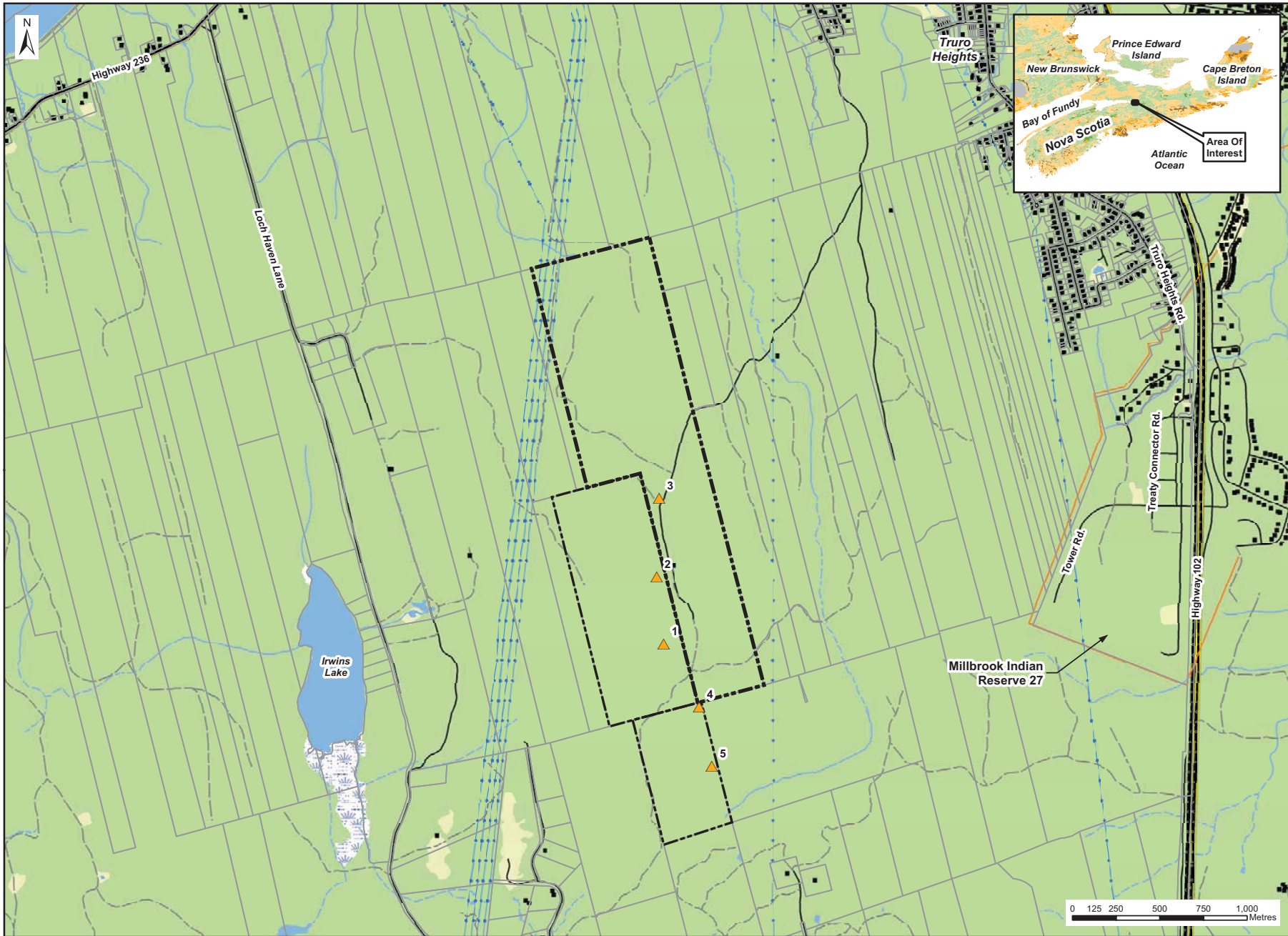
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Community Wind Farms Inc.



- Notes:**
- Reference: Digital Topographic Mapping By Nova Scotia Geomatics Centre.
  - Projection: NAD83(CSRS), UTM Zone 20 North.

- Legend:**
- ▲ Proposed Turbine
  - ▭ Project Site Boundary
  - ▭ Adjacent Properties
  - Building
  - ▬ Major Roads and Highways
  - ▬ Roads
  - ▬ Access Roads / Trails
  - ▬ Existing Transmission Lines
  - ▬ Mapped Stream
  - ▬ Indefinite Stream
  - Water Bodies
  - ▨ Mapped Wet Area
  - Cleared Area

**Millbrook And Truro Heights Community Wind Projects**



Date: August 2012	Project #: 12-4328
Scale: 1:20,000	Drawing #: <b>1</b>
Drawn By: H. Serhan	
Checked By: M. Henley	







Presents Guest Speaker Dr. Lukas Swan, PEng

# Wind Energy 101

Open to the public



April 25<sup>th</sup> – 7:00pm @ Hilden Fire Hall  
1414 Highway 2 – Hilden – Nova Scotia B0N 1C0

May 2<sup>nd</sup> – 7:00pm @ Glooscap Heritage Centre  
65 Treaty Trail – Truro Power Center – Nova Scotia B6L 1W3

## Topics to include:

- energy and how we use it
- Nova Scotia's renewable energy policy
- wind energy technology
- wind energy benefits and impacts
- placement & permitting



## AN INVITATION

# TWO PUBLIC OPEN HOUSE INFORMATION SESSIONS FOR TRURO HEIGHTS AND MILLBROOK WIND FARMS

GLOOSCAP HERITAGE CENTRE ON MAY 13<sup>TH</sup>, 6:00 – 9:00 PM

HILDEN FIRE HALL ON MAY 14<sup>TH</sup>, 6:00 – 9:00 PM

### Key Facts About Millbrook & Truro Heights Wind Farms

The projects will provide Colchester County with nearly \$2m in property tax over the project life time

Through the Community Sustainability Fund, the communities of Millbrook and Hilden will receive nearly \$1m over the life of the project

The projects will contribute in creating the next generation of clean energy jobs for Nova Scotians

The projects represent an investment of more than \$20m in Colchester County, much of which will come from outside the province. A significant portion of that capital will be invested in contracting with Nova Scotian companies for development, construction, and operations services.

The projects will create steady, stable, long term revenues for the Millbrook and Eskasoni First Nations in an investment which is in line with the Mi'kmaw environmental ethic.

The projects will generate enough clean electricity for more than 3000 local homes and will help to stabilize Nova Scotia's volatile electricity prices.

The projects have undergone an extensive Environmental Assessment which will be submitted in May. That process has found that, "*there are no significant environmental concerns or impacts (residual or cumulative) that may result from the Project[s] that cannot be effectively mitigated or monitored.*"

The projects meet and in many cases far exceed all Federal, Provincial and Municipal Permitting Requirements

The environmental and economic benefits of this project far outweigh the negative impacts.





## **Truro Heights and Millbrook Wind Farms – update**

After more than one year of environmental, archaeological and sociological studies, the proponents behind the co-located Millbrook Community Wind and Truro Heights Community Wind have completed all the critical studies to help determine where we will locate the turbines, and to discuss and quantify all the potential impacts of the project on the natural environment, archaeological resources, and on potential project neighbour's. Through the publication of our Environmental Assessment report and the Open House information sessions, we are sharing all of the information we have learned about the project site as widely as possible, including our plans for construction and operation. The Environmental Assessment report details how we will meet, and in many cases far exceed federal, provincial and municipal permit requirements (including those about noise and visual impact). The report also provides a full analysis of the potential impacts these projects may have.

The Environmental Assessment process provides the public an opportunity to make comment on our project and we will advertise the submission of the Environmental Assessment in the local newspaper. We will be holding two public open houses to provide you with an opportunity to meet the teams who worked on the documents, at Glooscap Heritage Centre on May 13th and Hilden Fire Hall on May 14th. We will be posting our Environmental Assessment documents on the project specific websites ([www.truroheightswindfarm.ca](http://www.truroheightswindfarm.ca) and [www.millbrookwindfarm.ca](http://www.millbrookwindfarm.ca)) and will provide a web link to Nova Scotia Environment's website, where they will also be available. You can make comments directly to Nova Scotia Environment through their website. Additionally, copies of the document will be available to read at Truro Public Library, Colchester County Courthouse, Millbrook Band office and Glooscap Heritage Centre. A very brief summary of some of the most pertinent results relating to impacts on potential neighbors of the EA is given below - please come out to the meetings or contact me directly with your questions.

Finally, we are in the process of setting up a **Community Liaison Committee** to ensure that any concerns from the community can be quickly addressed, both during the construction period (expected to be summer 2014) and when the wind farm is operating. We will also establish a **Community Sustainability Fund**, which will receive 1% of the revenue from the projects when they are operating, and which will be managed and directed by the local community – we expect this fund will receive approx. \$15,000 per year for Truro Heights Wind Farm and \$22,000 per year for Millbrook Wind Farm.



## **SUMMARY OF ACTIVITIES & IMPACTS RELATED TO POTENTIAL NEIGHBOURS OF THE PROJECT:**

### **The EA document includes results of preliminary noise modeling.**

As part of our Environmental Assessment, we have conducted noise modeling, which provides a “worst-case” scenario for the potential noise impacts of the turbines at each residence. The map showing results of those studies is on our web site, which shows that all residential properties and farm buildings will experience noise levels significantly below the provincial regulations of 40 dB(A). We will carry out post-construction noise monitoring to ensure that our noise modeling is accurate and we will share the results of the studies with the Nova Scotia Department of Environment and the local community.

### **We have carried out pre-construction noise monitoring.**

We have measured the current ambient noise conditions at locations close to the project site, which shows that existing background noise levels in the area are approx. 50 dB(A).

### **The project will meet or exceed all applicable municipal and provincial noise and distance setbacks.**

For Colchester County, turbines must be at a minimum 700 meters away from the nearest residence. The closest residence is 910 meters from the nearest turbine, there are only two residences within 1 km of the turbine, and there are 41 residences within 2km of the project.

### **Visual Impacts**

We have prepared visual impact simulations showing the visual impact of the turbines from several points around the project site. These can be found on our web site and in the Environmental Assessment.

### **The project meets industry standards for shadow flicker**

The turbines and their turning blades have the ability to cast shadows. Typically those shadows are the longest in the morning and evening and can sometimes reach several hundred meters in length. We have conducted a shadow flicker analysis which will be able to tell individual residences the number of hours a year the proposed project is likely to produce shadows at a residence. There are no municipal, provincial, or federal guidelines related to shadow flicker, but many jurisdictions have adopted the industry standard of no more than 30 hours of shadow flicker per year, or no more than 30 minutes of shadow flicker on the worst day of the year. These guidelines were used in the shadow flicker assessment for the Project. As the turbines are so far away from residences and the area is so heavily wooded, no residences will experience shadow flicker which exceed these guidelines.

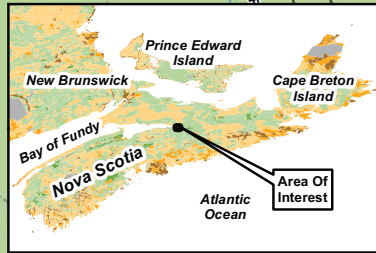
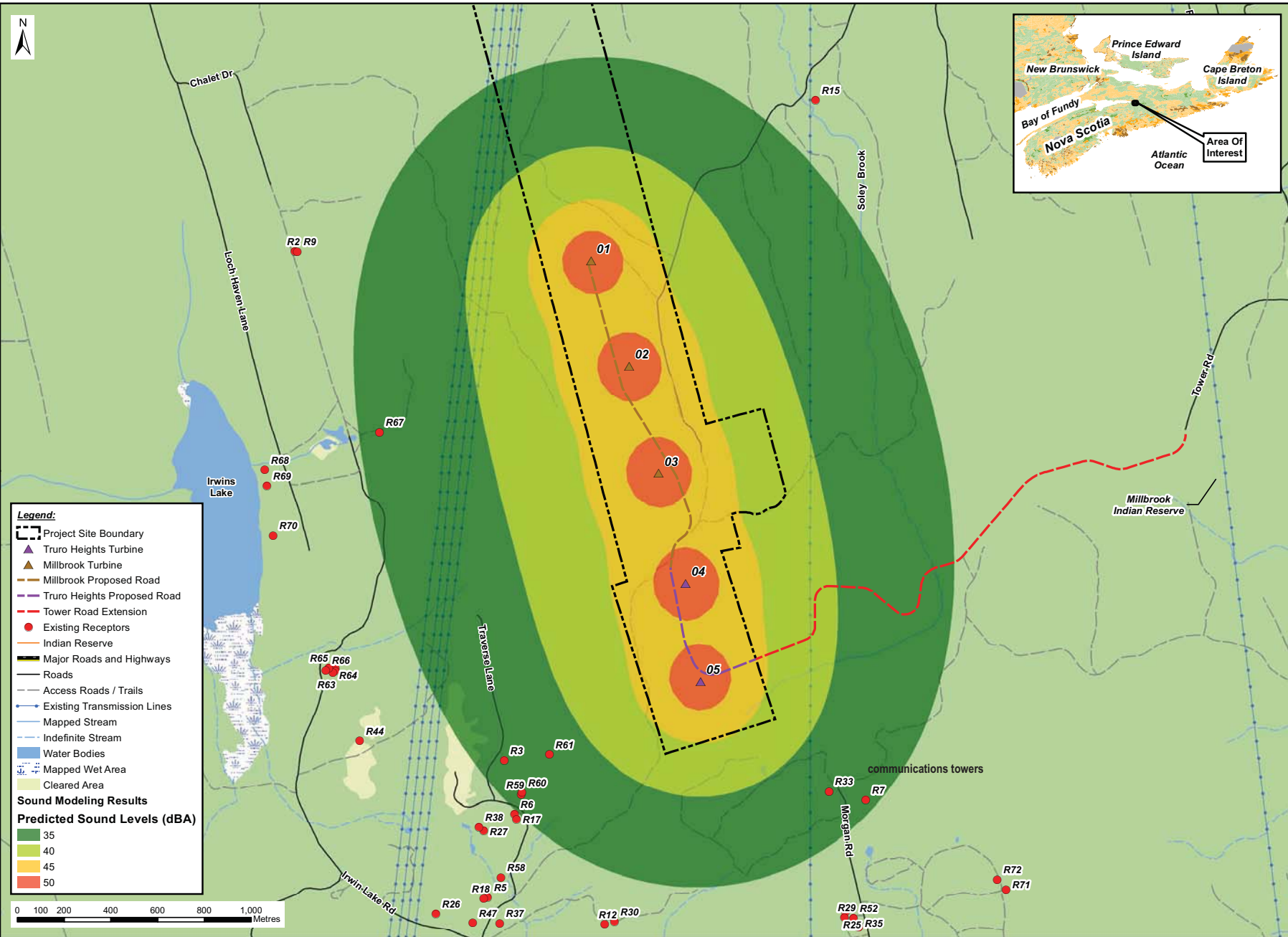
Sincerely,

A handwritten signature in black ink that reads "Keith".

Keith Towse

902 527 3158

keith@communitywind.ca



- Notes:**
- Reference: Digital Topographic Mapping By Nova Scotia Geomatics Centre.
  - Projection: NAD83(CSRs), UTM Zone 20 North.

**Sound Modeling Results**



Date:	April 2013	Project #:	12-4328
Scale:	1:15,000	Drawing #:	<b>12.5</b>
Drawn By:	G. Gregory		
Checked By:	M. Smith		



Extensive consultation for the Project has been ongoing with Colchester County, local residents and local Mi'kmaq communities. A summary of the consultation process and a description of the forums used for public consultation for the Project are provided in Sections 11.0 and 13.0 of the EA Registration Document.

Issues and concerns raised by the public and other stakeholders throughout the consultation process can be grouped into five broad categories which have been assessed throughout the EA. Concerns include:

- Potential effects from sound generated by wind turbines;
- Potential effects on property values on lands near the Project site;
- Potential effects to the visual landscape around the Project site;
- Potential effects to birds and other wildlife from the construction and operation of wind turbines; and
- Concerns regarding public health and safety.

#### Sound

Residents living near the Project site expressed concerns over the potential for noise during construction and decommissioning phases of the Project, as well as annoyance from noise generated by turbine blades during operation.

Ambient sound monitoring was carried out to determine existing ambient sound levels near the Project site. Sound modeling was also completed to ensure that sound levels generated by operating turbines at all non-participating residential receptors will comply with the NSE standard of 40 dBA (exterior of the residence).

Additional details regarding sound assessment methodology and results are provided in Section 12.4 of the Environmental Registration Document. Infrasound is considered in the Human Health Literature Review provided in Appendix C.

#### Property Values

Potential effects on property values has been identified as a potential concern of neighboring residents. A review was completed on available literature related to the effect of wind farms on surrounding property values and a discussion is provided in Section 9.2 of the Environmental Registration Document.

#### Visual Landscape

Potential effects to the visual landscape (i.e. visibility of turbines) surrounding the Project site was modeled using the WindPRO version 2.8 software package to provide the public with an indication of turbine visibility. In addition, photos taken from locations near the Project site were used to create simulated images of the view plane for public viewing. Additional details and results of the visual assessment for the Project are provided in Section 12.3 of the EA Registration Document.

### Birds and Wildlife

The public has raised concerns about mortality of birds and bats resulting from collisions with wind turbines. Sensory disturbance, as well as habitat loss for birds, bats and other forms of wildlife are also common concerns.

Extensive desktop and field studies have been completed to assess birds, bats and other wildlife and associated habitats at or near the Project site. Extensive consultation has been ongoing with NSDNR and CWS to ensure due diligence is practiced with regards to wildlife. The Proponent has committed to ongoing monitoring as requested by these agencies.

Details on wildlife methodology and results for fish, terrestrial fauna, birds, and bats are provided in Sections 8.3, 8.6, 8.7 and 8.8 of the EA Registration Document, respectively.

### Public Health and Safety

The public is often concerned about the potential for effects to health and safety from wind turbines. In addition to sound levels, common concerns include infrasound, shadow flicker and the risk of ice throw.

A shadow flicker assessment was completed for the proposed Project to assess the potential impact on surrounding shadow receptors and to ensure compliance with industry-standard guidelines. Additional details and results from the shadow flicker assessment are provided in Section 12.2 of the EA Registration Document.

A literature review regarding additional potential for effects to health and from wind turbines was also completed. The main findings of this review are provided in Appendix C.