

# BORNISH WIND ENERGY CENTRE

## Stage 1 and 2 Archaeological Assessment Reports Summary

APRIL 2012

Bornish Wind LP is proposing to develop the Bornish Wind Energy Centre (the "Project"). Bornish Wind LP is a wholly-owned subsidiary of NextEra Energy Canada ULC. The parent company of NextEra Energy Canada ULC is NextEra Energy Resources, LLC, with a current portfolio of nearly 8,500 operating wind turbines across North America. The Project is located in the Municipality of North Middlesex and will consist of 45, 1.62 MW turbines with a total nameplate capacity of 72.9 MW, though 48 turbine locations will be permitted.

The purpose of a Stage 1 Archaeological Assessment is to find out whether there are any known archaeological sites on or near the Project area. If the Stage 1 Assessment determines there is archaeological potential, a Stage 2 Assessment is completed to identify any archaeological resources and confirm if further archaeological studies are required.



# BORNISH WIND ENERGY CENTRE

## Stage 1 and 2 Archaeological Assessment Reports Summary

### STAGE 1 ARCHAEOLOGICAL ASSESSMENT

The Stage 1 Archaeological Assessment was completed in 2009-2011 and involved reviewing background research, such as land use history and historic maps of the area, a property inspection and a review of the Ontario Archaeological Sites Database.

#### CONCLUSIONS

The presence of 31 pre-contact Aboriginal sites has been documented to be within 1 km of the Project Study Area. They span from early Archaic to the Late woodland periods, indicating that this area was favoured by pre-contact Aboriginal peoples for over 10,000 years. Due to the proximity of the Study Area to the Ausable River watershed, which functioned as a potable water source and a transportation route, as well as the presence of a historic reference to a homestead within the Study Area, the proximity of the Study Area to the historic communities of Bornish, Nairn, and Parkhill and to historic transportation routes, the potential for historic Euro-Canadian resources was judged to be high.



# BORNISH WIND ENERGY CENTRE

## Stage 1 and 2 Archaeological Assessment Reports Summary

### Stage 2 Archaeological Assessment

#### FIELD METHODS

The Stage 2 Assessment was completed in February 2012. The study involved “pedestrian surveys” (i.e. archaeologists walking ploughed fields). Pedestrian surveys were completed for approximately 95% of the Study Area, the remaining 5% was deemed to be disturbed by previous construction activity.

Three First Nations monitors also participated in the stage 2 Archaeological Assessment.

#### CONCLUSIONS

A total of 67 archaeological sites were identified through pedestrian surveys; these included:

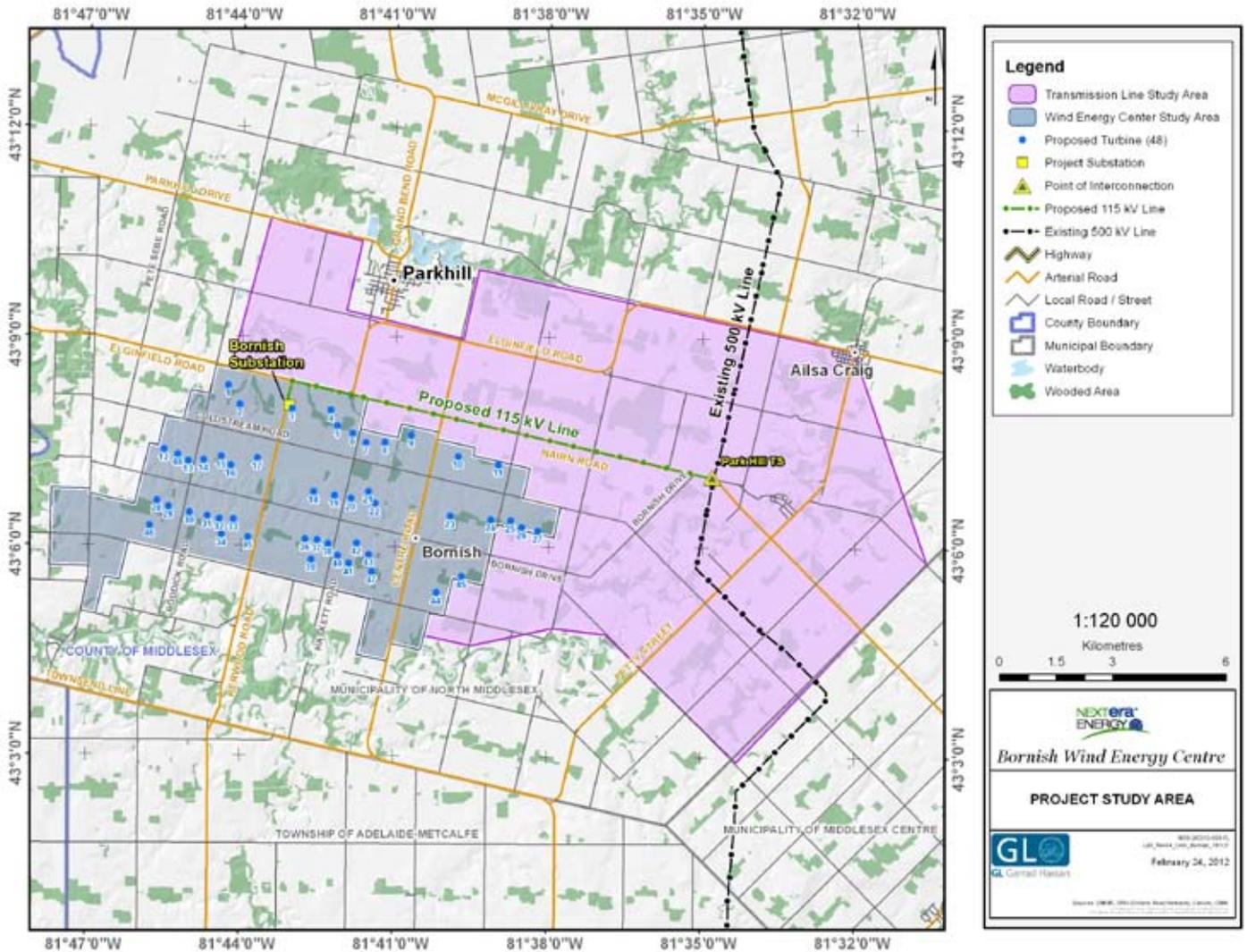
- 45 pre-contact Aboriginal, 14 recommended for stage 3
- 21 euro-Canadian, 19 recommended for stage 3
- 1 multi component find, 1 recommended for stage 3

Twenty-four of the 67 finds have been recommended for a Stage 3 Assessments.



# BORNISH WIND ENERGY CENTRE

## Stage 1 and 2 Archaeological Assessment Reports Summary



### Have A Question?

We hope you find this Plain Language Summary helpful. In case you would like additional information or have any questions, please contact us directly:

#### Project Proponent

##### Derek Dudek

Community Relations Consultant  
NextEra Energy Canada, ULC  
5500 North Service Road, Suite 205  
Burlington, Ontario, L7L 6W6  
Phone: 1-877-257-7330  
Email: [Bornish.Wind@NextEraEnergy.com](mailto:Bornish.Wind@NextEraEnergy.com)

#### Project Consultant

##### Nancy O'Blenes

Environment and Permitting  
GL Garrad Hassan  
19 Carmody Lane  
Uxbridge, Ontario, L9P 1A5  
Phone: 416-801-6822  
Email: [nancy.oblenes@gl-garradhassan.com](mailto:nancy.oblenes@gl-garradhassan.com)

# BORNISH WIND ENERGY CENTRE

## Decommissioning Plan Report Summary

APRIL 2012

Bornish Wind LP is proposing to develop the Bornish Wind Energy Centre (the "Project"). Bornish Wind LP is a wholly-owned subsidiary of NextEra Energy Canada ULC. The parent company of NextEra Energy Canada ULC is NextEra Energy Resources, LLC, with a current portfolio of nearly 8,500 operating wind turbines across North America. The Project is located in the Municipality of North Middlesex and will consist of 45, 1.62 MW turbines with a total nameplate capacity of 72.9 MW, though 48 turbine locations will be permitted.

The purpose of the Decommissioning Plan Report is to describe all activities involved in dismantling or decommissioning the Project at the end of the operations phase. The report also explains the Project owner will restore the land and manage excess water or waste.



# BORNISH WIND ENERGY CENTRE

## Decommissioning Plan Report Summary

### DECOMMISSIONING PLAN OVERVIEW

The anticipated life of the Project is approximately 30 years. Decommissioning typically occurs following the operations phase.

At the end of the Project life, the wind turbines may be 're-powered', meaning turbine components could be replaced to extend the life of the Project and delay any decommissioning activities. Alternatively, the wind turbines may be decommissioned. Project decommissioning will follow the Ontario Health and Safety Act along with any applicable municipal, provincial and federal regulations and standards.

The following components will be removed during dismantling:

1. Turbines;
2. Overhead lines and poles; and,
3. Transformer substation.

### RESTORATION OF LAND AND WATER

All areas, including the access roads, transformer pads and crane pads will be restored as much as practical to their original condition with native soils and seeding.



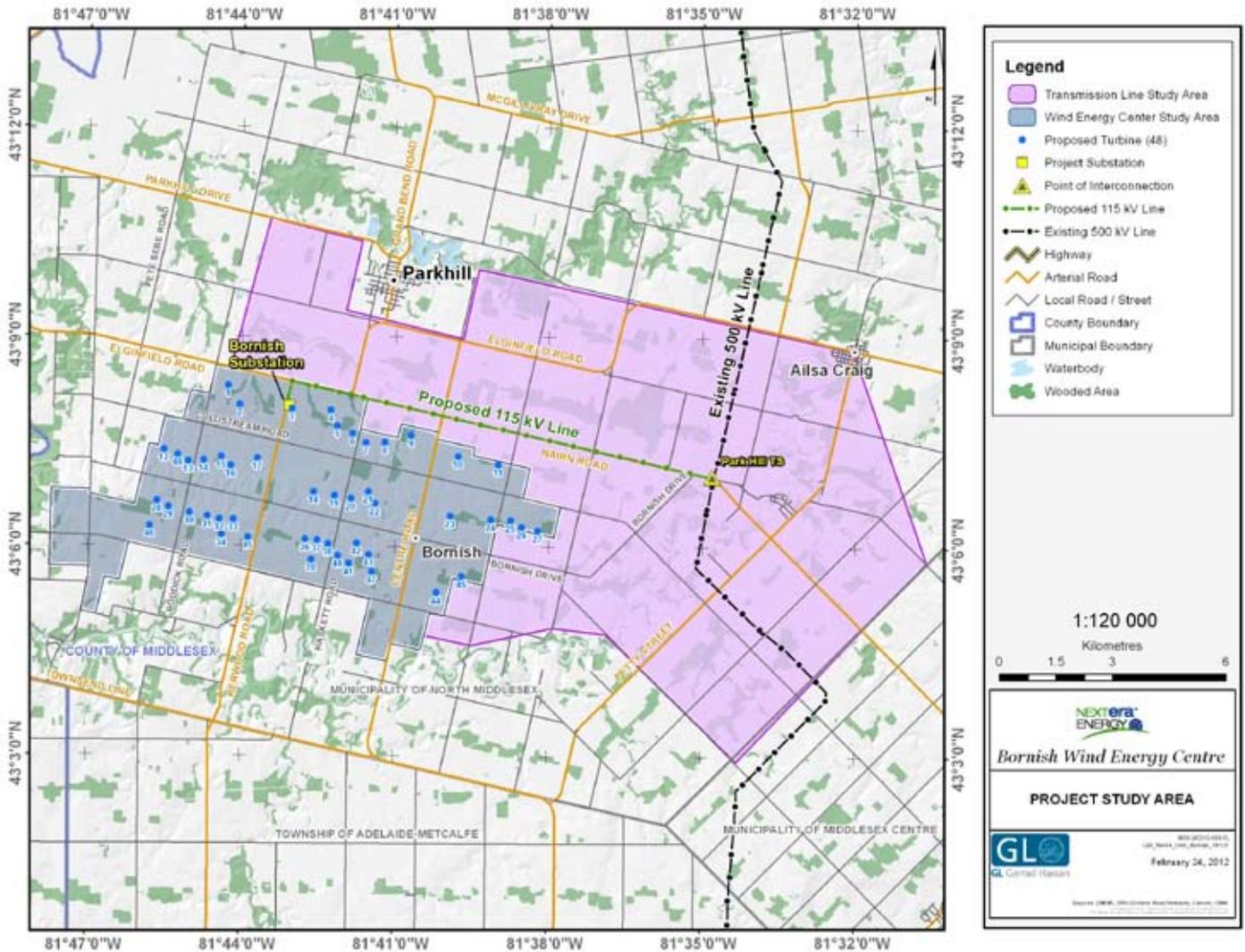
# BORNISH WIND ENERGY CENTRE

## Decommissioning Plan Report Summary



# BORNISH WIND ENERGY CENTRE

## Decommissioning Plan Report Summary



### Have A Question?

We hope you find this Plain Language Summary helpful. In case you would like additional information or have any questions, please contact us directly:

#### Project Proponent

##### Derek Dudek

Community Relations Consultant  
NextEra Energy Canada, ULC  
5500 North Service Road, Suite 205  
Burlington, Ontario, L7L 6W6  
Phone: 1-877-257-7330  
Email: [Bornish.Wind@NextEraEnergy.com](mailto:Bornish.Wind@NextEraEnergy.com)

#### Project Consultant

##### Nancy O'Blenes

Environment and Permitting  
GL Garrad Hassan  
19 Carmody Lane  
Uxbridge, Ontario, L9P 1A5  
Phone: 416-801-6822  
Email: [nancy.oblenes@gl-garradhassan.com](mailto:nancy.oblenes@gl-garradhassan.com)

# BORNISH WIND ENERGY CENTRE

## Heritage Assessment Report Summary

APRIL 2012

Bornish Wind LP is proposing to develop the Bornish Wind Energy Centre (the "Project"). Bornish Wind LP is a wholly-owned subsidiary of NextEra Energy Canada ULC. The parent company of NextEra Energy Canada ULC is NextEra Energy Resources, LLC, with a current portfolio of nearly 8,500 operating wind turbines across North America. The Project is located in the Municipality of North Middlesex and will consist of 45, 1.62 MW turbines with a total nameplate capacity of 72.9 MW, though 48 turbine locations will be permitted.

The purpose of the Heritage Assessment Report is to identify known and potential heritage resources in the Study Area in order to identify potential effects on these areas from the Project.



# BORNISH WIND ENERGY CENTRE

## Heritage Assessment Report Summary

### STUDY PROCESS

A self-assessment was conducted for the Bornish Wind Energy Centre, the self-assessment is allowed under the Renewable Energy Approvals regulation (O.Reg. 359/09) issued under the Environmental Protection Act (2009). A self-assessment will determine if there are archaeological or heritage resources at the project location, and confirm if there will be any anticipated, direct or indirect, impact on those resources. Consultation with the Ontario Heritage Trust, the Municipal/Deputy Clerk and a property inspection was conducted to ensure that there were no properties, protected, or of potential heritage significance or interest, on the areas of proposed infrastructure or areas of indirect impact. A heritage resource may be a building, structure or landscape that has cultural heritage value or interest.

### EVALUATION

Following the assessment, it was determined that no protected properties or cultural heritage landscapes with heritage value or interest are situated at the Project Location or beside the Project Location (the Heritage Assessment Report defines Project Location as the participating parcels within the Study Area where project components are proposed to be located).

A field visit was conducted on October 27th, 2011. All areas that were to be impacted by access roads, substations and turbines were investigated, and it was determined that there were no buildings, structures, monuments, etc. of any kind located on the proposed development areas. There were no other identified areas of cultural heritage concern, as determined by the checklist system of the Ministry of Tourism, Culture and Sport, or by the property visit conducted.



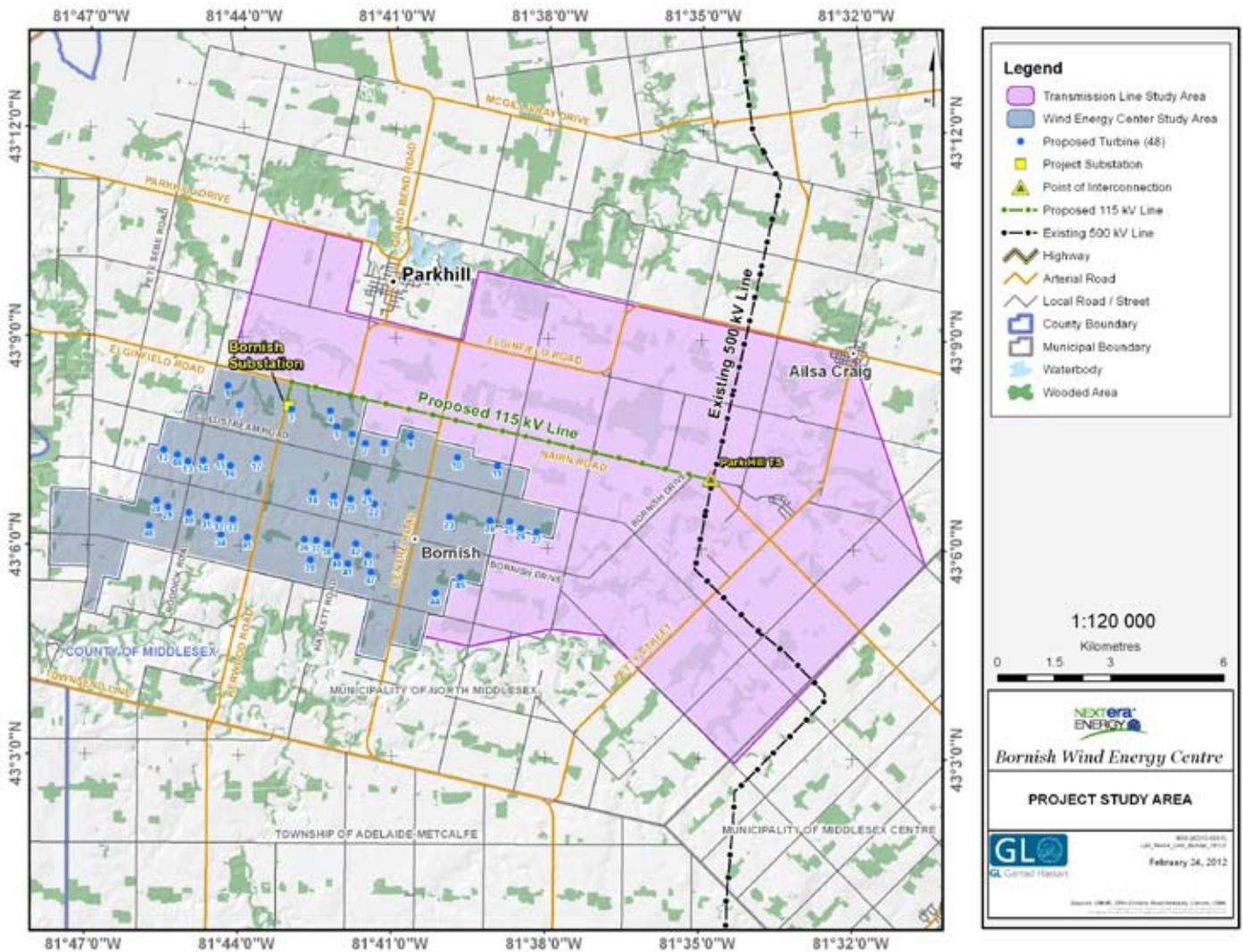
# BORNISH WIND ENERGY CENTRE

## Heritage Assessment Report Summary



# BORNISH WIND ENERGY CENTRE

## Heritage Assessment Report Summary



### Have A Question?

We hope you find this Plain Language Summary helpful. In case you would like additional information or have any questions, please contact us directly:

#### Project Proponent

##### Derek Dudek

Community Relations Consultant  
NextEra Energy Canada, ULC  
5500 North Service Road, Suite 205  
Burlington, Ontario, L7L 6W6  
Phone: 1-877-257-7330  
Email: [Bornish.Wind@NextEraEnergy.com](mailto:Bornish.Wind@NextEraEnergy.com)

#### Project Consultant

##### Nancy O'Blenes

Environment and Permitting  
GL Garrad Hassan  
19 Carmody Lane  
Uxbridge, Ontario, L9P 1A5  
Phone: 416-801-6822  
Email: [nancy.oblenes@gl-garradhassan.com](mailto:nancy.oblenes@gl-garradhassan.com)

# BORNISH WIND ENERGY CENTRE

## Natural Heritage Assessment Report Summary

APRIL 2012

Bornish Wind LP is proposing to develop the Bornish Wind Energy Centre (the "Project"). Bornish Wind LP is a wholly-owned subsidiary of NextEra Energy Canada ULC. The parent company of NextEra Energy Canada ULC is NextEra Energy Resources, LLC, with a current portfolio of nearly 8,500 operating wind turbines across North America. The Project is located in the Municipality of North Middlesex and will consist of 45, 1.62 MW turbines with a total nameplate capacity of 72.9 MW, though 48 turbine locations will be permitted.

The purpose of the Natural Heritage Assessment Report is to first identify ecologically significant natural features (for example, important wildlife habitat) within 120 metres (m) of the proposed Project Location (the Project Location is defined as the outer limit of where disturbance may occur due to construction or operation of the Project), and then to determine potential effects, mitigation measures and residual effects, in any. Residual effects are "left over" effects once mitigation measures have been applied for these natural features.



# BORNISH WIND ENERGY CENTRE

## Natural Heritage Assessment Report Summary

### RECORDS REVIEW

Information gathered during this stage of the process was used to determine if there are any of the following natural features within the Study Area:

- ✦ Provincial Parks and Conservation Reserves;
- ✦ Wetlands;
- ✦ Woodlands;
- ✦ Valleylands;
- ✦ Rare species and significant wildlife habitats; and,
- ✦ Areas of Natural and Scientific Interest (ANSIs).

This involved contacting the Ministry of Natural Resources (MNR), the Ministry of the Environment (MOE), the local Conservation Authority and the Municipalities to obtain any records they keep of these natural features within the Study Area.

### SITE INVESTIGATION

After the Records Review, Site Investigations were conducted to confirm that the findings of the Records Review were correct, to identify any additional natural features not documented in the Records Review, and, finally, to define the boundaries and characteristics of the features (for example, what types of plants and animals live in a particular woodland).

The results of the Site Investigation revealed:

- ✦ 10 wetlands;
- ✦ 35 woodlands;
- ✦ 2 valleylands;
- ✦ 14 candidate Significant Wildlife Habitats, including important habitats for bats, birds, and amphibians; and,
- ✦ 13 candidate generalized Significant Wildlife Habitats.

These natural features were carried forward to the evaluation of significance stage.

### EVALUATION OF SIGNIFICANCE

At this stage, natural features are evaluated to determine if they are significant according to provincial criteria. If a feature is determined to be significant, an Environmental Impact Study (EIS) must be conducted to identify potential effects, propose mitigation measures, and describe how the potential effects will be addressed through the environmental effects monitoring plan.

Of the natural features identified through the Site Investigation, the following were determined to be significant and therefore will be addressed in the EIS:

- ✦ 10 wetlands;
- ✦ 30 woodlands;
- ✦ 2 valleylands;
- ✦ 11 Significant Wildlife Habitats; and,
- ✦ 13 generalized Significant Wildlife Habitats.

A detailed evaluation of significance of all potentially significant natural features and wildlife habitats within 120 m of the Bornish Wind Energy Centre Project area was completed. Of those evaluated as significant, 30 woodlands, 10 wetlands, 2 valleylands, 1 raptor wintering area, 7 bat maternity colonies, and 3 amphibian breeding habitats (woodland) required detailed consideration as part of the Environmental Impact Study.

In addition to wildlife habitats that have been confirmed to be significant through the completion of the evaluation of significance, several other wildlife habitats that could be considered to be significant have been identified. For the purpose of the NHA submission these habitats will be treated as significant with a commitment for additional pre-construction surveys to be undertaken during the appropriate season, prior to any construction activities. Wildlife habitats that have been treated as significant for the purpose of this EIS include 1 raptor wintering area, 7 bat maternity colonies, and 3 amphibian breeding habitats – woodlands.

# BORNISH WIND ENERGY CENTRE

## Natural Heritage Assessment Report Summary

### ENVIRONMENTAL IMPACT STUDY

For each natural heritage feature identified as significant, potential effects were assessed and mitigation measures/ monitoring commitments proposed depending on the type of project infrastructure affecting the feature.



Below is a summary of some of the potential effects, mitigation measures and monitoring commitments from the effects assessment. For the full effects assessment, please refer to the Natural Heritage Assessment Report.

### POTENTIAL EFFECTS FROM CONSTRUCTION/DECOMMISSIONING:

- ✦ Increased erosion, sedimentation and turbidity (i.e. an increase in soil in wetlands, water bodies and other significant features) from clearing vegetation for construction of access roads, temporary crane paths, etc. To avoid or lessen these effects, erosion control fencing will be used and kept in place until the disturbed areas are stabilized, all stockpiled materials will be kept away from the features and periodic monitoring will occur during construction to ensure compliance with these mitigation measures.
- ✦ Damage to vegetation while operating construction equipment. To avoid or lessen these effects, protective fencing will be installed around construction areas to ensure that no work occurs outside the identified zones, and periodic monitoring will occur during construction to ensure compliance.
- ✦ Soil and water contamination from accidental spills of oils, gasoline or grease. To avoid or lessen these effects, a spill response plan will be developed to outline steps to be taken to contain any chemicals and avoid contamination of features. The Design and Operations Report contains an Emergency Response and Communication Plan which outlines action to be taken should a spill occur; including notifying the MOE's spills Action Centre, if required, and the local municipalities.

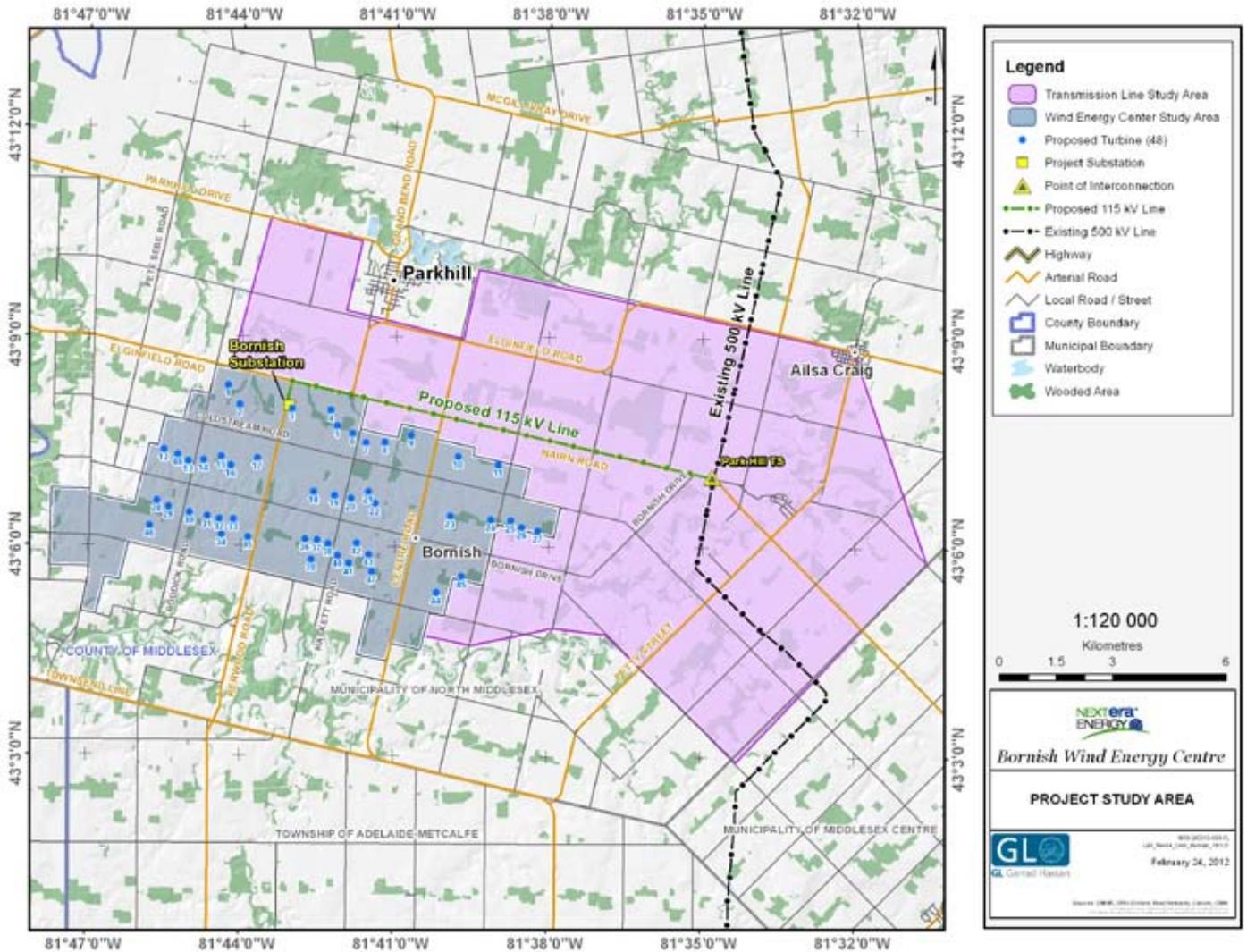
### POTENTIAL EFFECTS FROM OPERATION:

- ✦ Disturbance or mortality to wildlife (e.g. birds and bats) from collisions with turbines. To avoid or mitigate these effects, operational mitigation techniques will be implemented if impacts are observed to be above provincial thresholds. Monitoring will consist of three years of post-construction mortality surveys for birds and bats which will be submitted to the MNR.

***The overall conclusion of the Natural Heritage Assessment Report is that this Project can be constructed and operated without any remaining effects that could harm the environment. Post-construction monitoring related to effects on wildlife, including birds and bats, will be undertaken to confirm this conclusion.***

# BORNISH WIND ENERGY CENTRE

## Natural Heritage Assessment Report Summary



### Have A Question?

We hope you find this Plain Language Summary helpful. In case you would like additional information or have any questions, please contact us directly:

#### Project Proponent

##### Derek Dudek

Community Relations Consultant  
NextEra Energy Canada, ULC  
5500 North Service Road, Suite 205  
Burlington, Ontario, L7L 6W6  
Phone: 1-877-257-7330  
Email: [Bornish.Wind@NextEraEnergy.com](mailto:Bornish.Wind@NextEraEnergy.com)

#### Project Consultant

##### Nancy O'Blenes

Environment and Permitting  
GL Garrad Hassan  
19 Carmody Lane  
Uxbridge, Ontario, L9P 1A5  
Phone: 416-801-6822  
Email: [nancy.oblenes@gl-garradhassan.com](mailto:nancy.oblenes@gl-garradhassan.com)

# BORNISH WIND ENERGY CENTRE

## Noise Assessment Report Summary

APRIL 2012

Bornish Wind LP is proposing to develop the Bornish Wind Energy Centre (the "Project"). Bornish Wind LP is a wholly-owned subsidiary of NextEra Energy Canada ULC. The parent company of NextEra Energy Canada ULC is NextEra Energy Resources, LLC, with a current portfolio of nearly 8,500 operating wind turbines across North America. The Project is located in the Municipality of North Middlesex and will consist of 45, 1.62 MW turbines with a total nameplate capacity of 72.9 MW, though 48 turbine locations will be permitted.

The purpose of the Noise Assessment Report is to ensure that sound produced from the operating wind turbines and the transformer substations remain within Provincial guidelines at certain Points of Reception (Points of Reception are defined on page 2).



# BORNISH WIND ENERGY CENTRE

## Noise Assessment Report Summary

### STUDY PROCESS

According to Ontario Regulation 359/09, the regulation governing renewable energy approvals in the Province, turbines must be sited 550 metres (m) from non-participating Points of Reception. In addition, sound levels at non-participating points of reception cannot exceed 40 decibels (dBA) once the turbines and transformer substations are in operation. The Ministry of Environment (MOE) also requires that the sound effects from existing wind turbines are included in the analysis.

The transformer substation at the point of interconnect (i.e. the Parkhill Substation) for this project was evaluated separately using the “Basic Comprehensive Certificates of Approval (Air) – User Guide”, due to the fact that it is greater than 5 km from the project site. This requires a search radius of up to 1,000 m for Points of Reception (POR). This study includes Points of Reception found within 2,000 m of the proposed main power transformer location in order to present modeling results up to 40 dBA.

### POINTS OF RECEPTION

A Point of Reception, or noise receptor, is a location where sound created by the Project is received. The following table describes the number and type of Points of Reception that were included in the noise analysis and whether MOE guidelines apply.

Points of Reception include buildings used for overnight stay, such as houses or apartments, in addition to schools, day care centres, churches, etc. Note that the noise analysis also considers potential Points of Reception on vacant lands where there are currently no buildings or structures. These are referred to as Vacant Lot Points of Reception.

#### Wind farm Points of Reception

Number of Points of Reception	Description	Remarks
66	Non-participating	MOE guidelines apply
31	Participating	MOE guidelines do not apply
86	Vacant Lot Receptors	MOE guidelines apply

#### Point of interconnect Points of Reception

Number of Points of Reception	Description	Remarks
19	Non-participating	MOE guidelines apply
21	Vacant Lot Receptors	MOE guidelines apply



# BORNISH WIND ENERGY CENTRE

## Noise Assessment Report Summary

Any Point of Reception classified as non-participating is subject to noise level limits outlined in the MOE guidelines. Participating Points of Reception are not subject to noise level limits because the parcels of land host infrastructure associate with the Project.

### RESULTS

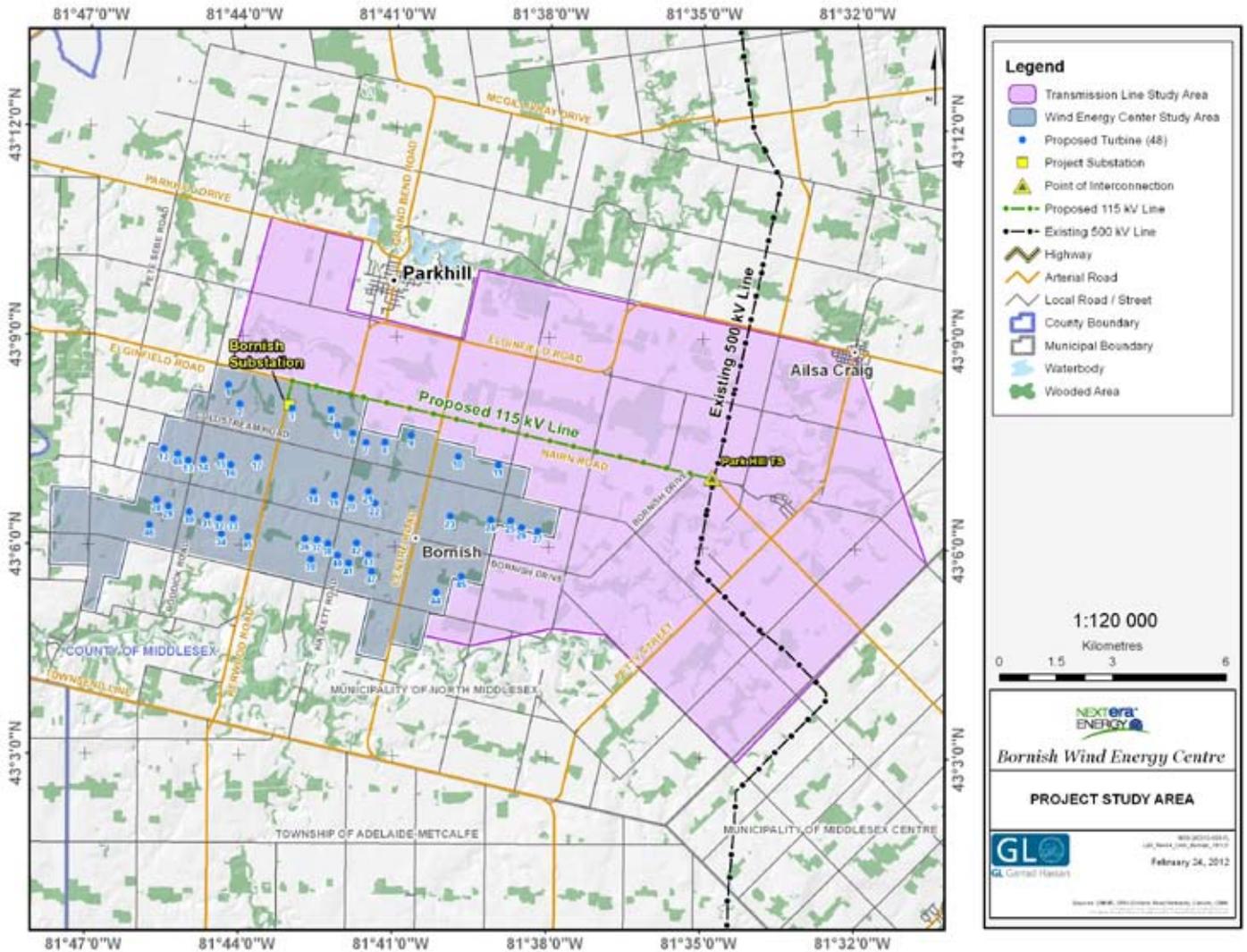
After modelling predicted noise levels from the proposed turbines, transformer substations and the proposed Napier Wind Farm, it was concluded that:

- All Non-Participating Points of Reception comply with MOE guidelines for wind turbines meaning that they are predicted to be below the 40 dBA noise threshold and are greater than 550 m from the nearest wind turbine.
- All Non-Participating Vacant Lot Points of Reception comply with MOE guidelines for wind turbines meaning that they are predicted to be below the 40 dBA noise threshold and are greater than 550 m from the nearest wind turbine.
- All Points of Reception comply with MOE guidelines for transformer substations.



# BORNISH WIND ENERGY CENTRE

## Noise Assessment Report Summary



### Have A Question?

We hope you find this Plain Language Summary helpful. In case you would like additional information or have any questions, please contact us directly:

#### Project Proponent

##### Derek Dudek

Community Relations Consultant  
NextEra Energy Canada, ULC  
5500 North Service Road, Suite 205  
Burlington, Ontario, L7L 6W6  
Phone: 1-877-257-7330  
Email: [Bornish.Wind@NextEraEnergy.com](mailto:Bornish.Wind@NextEraEnergy.com)

#### Project Consultant

##### Nancy O'Blenes

Environment and Permitting  
GL Garrad Hassan  
19 Carmody Lane  
Uxbridge, Ontario, L9P 1A5  
Phone: 416-801-6822  
Email: [nancy.oblenes@gl-garradhassan.com](mailto:nancy.oblenes@gl-garradhassan.com)

