

NextEra Energy Canada, ULC

## **Addendum to the Turbine Specifications Report – Bluewater Wind Energy Centre**

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**Project Number:**

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## Glossary of Terms

EIS .....	Environmental Impact Study
MNR .....	Ontario Ministry of Natural Resources
NextEra .....	NextEra Energy Canada, ULC
O.Reg. 359/09.....	Ontario Regulation 359/09
The Project.....	Bluewater Wind Energy Centre
REA.....	Renewable Energy Approval



# 1. Introduction

Varna Wind, Inc., a wholly owned subsidiary of NextEra Energy Canada, ULC (NextEra) is proposing to construct a wind energy centre project in the Municipalities of Bluewater and Huron East in Huron County, Ontario. The following sections of this Addendum describe the proposed modifications to this Project and resulting updates to the Turbine Specifications Report.

## 1.1 The Proponent

The Project will be owned and operated by Varna Wind, Inc., a subsidiary of NextEra. NextEra’s indirect parent company is NextEra Energy Resources, LLC. The proponent has not changed from the initial REA submission.

The primary contacts for the Project are as follows:

Project Proponent	Project Consultant
Nicole Geneau Director NextEra Energy Canada, ULC 390 Bay Street, Suite 1720 Toronto, ON M5H 2Y2  Phone:.....1-416-364-9714 Email: .....Bluewater.Wind@NextEraEnergy.com Website: ..www.NextEraEnergyCanada.com	Marc Rose Senior Environmental Planner AECOM 300-300 Town Centre Blvd. Markham, Ontario L3R 5Z6  Phone: .....905-477-8400 x388 Email:.....marc.rose@aecom.com

## 1.2 Project Study Area

The proposed Project is located in Huron County, within the Municipalities of Bluewater and Huron East (refer to Figure 2-1). The Project Study Area has not changed from the initial REA submission.

The following co-ordinates define the external boundaries of the Project Study Area:

Longitude	Latitude
<b>-81.680043</b>	43.553413
<b>-81.350138</b>	43.534437
<b>-81.402727</b>	43.471275
<b>-81.679229</b>	43.433866

## 2. Proposed Project Modifications

NextEra is proposing modifications to the Project. These proposed Project modifications are summarized in Table 2-1 and Figure 2-1.

Table 2-1 summarizes and documents the following about each of the proposed modifications:

1. A description of the modification and a rationale for why the modification is proposed; and
2. New potential environmental effects and corresponding mitigation measures.

Figure 2-1 illustrates the modified project location.

**Table 2-1 Summary of Project Modifications**

Label on Figure 2-1	Proposed Modification	Rationale for Proposed Modification	New Potential Environmental Effects	New Mitigation Measures
<b>A</b>	<b>A1:</b> Removal of Turbine 20 and associated access road and collection line, and provision of new access road to Turbine 19	Land owner no longer participating in project.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A
	<b>A2:</b> Addition of meteorological (met) tower and associated infrastructure on private property	The met tower is required to obtain critical data to ensure the safe and efficient operation of the Project. As per amendment to O.Reg. 359/09, met towers are now considered to be part of a renewable energy generation facility and therefore this tower was added to the assessment.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A
	<b>A3:</b> Relocation of collection line to Turbine 19 (from Turbine 21) – to travel west on north side of private property and north in the Goshen Line right-of-way	Relocation of the collection line is necessary following the removal of Turbine 20.	Cultural Heritage: • Locations 33 and 34 documented.	Cultural Heritage: • Stage 3 assessment of Locations 33 and 34.
<b>B</b>	<b>B1:</b> Relocation of access road to Turbine 9 – to be relocated to south side of private property – and minor shift to disturbance area associated with Turbine 10	As per land owner request for relocation of access road.  Minimize impacts to current land use and agricultural practices.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A
	<b>B2:</b> Addition of met tower and associated infrastructure on private property	The met tower is required to obtain critical data to ensure the safe and efficient operation of the Project. As per amendment to O.Reg. 359/09, met towers are now considered to be part of a renewable energy generation facility and therefore this tower was added to the assessment.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A
<b>C</b>	<b>C1:</b> Realignment of access road and collection line to Turbine 17 – to travel directly back from Bronson Line	As per land owner request for separate access road.  Minimize impacts to current land use and agricultural practices.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A
	<b>C2:</b> Addition of crane path between Turbines 17 and 18 (located primarily within footprint of infrastructure that is being removed)	Proposed to reduce cost of construction.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A
	<b>C3:</b> Realignment of access road and collection line to Turbine 18 – to travel directly back from Bronson Line	As per land owner request for separate access road.  Minimize impacts to current land use and agricultural practices.	Natural Heritage: • Access road proposed within 120 m of natural area 450. Feature previously studied; identified as Significant Woodland (Woodland E) and Generalized Candidate Significant Wildlife Habitat (Amphibian Woodland Breeding Habitat and Habitat for Species of Conservation Concern). Feature treated as Significant Amphibian Woodland Breeding Habitat (AWO-12) with commitment to complete pre-construction evaluation of significance studies. New potential effects associated with access road construction near this feature include: • Accidental intrusion into natural feature resulting in habitat damage; • Disruption of amphibians moving to breeding pools and home range; • Possible indirect effects on breeding pool condition through changes to surface water drainage patterns resulting from access road construction; and • Risk of mortality to amphibians moving between breeding pools and home range due to vehicular collisions along access road	Natural Heritage: • For Amphibian Woodland Breeding Habitat AWO-12 (if determined to be significant), mitigation measures will be the same as described in the approved NHA for other access roads proposed near amphibian woodland breeding habitat features (Section 5.4).
	<b>C4:</b> Realignment of collection line at Bronson Line / Kippen Road to follow Bronson Line right of way	Land owner no longer participating in project.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A
<b>D</b>	Realignment of access road to Turbine 31 – to travel directly back from Blind Line	As per land owner request for realignment of access road.  Minimize impacts to current land use and agricultural practices.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A

**Table 2-1 Summary of Project Modifications**

Label on Figure 2-1	Proposed Modification	Rationale for Proposed Modification	New Potential Environmental Effects	New Mitigation Measures
E	Realignment of collection line between Turbines 13, 14 and 24	Land owner no longer participating in project	<p>Natural Heritage:</p> <ul style="list-style-type: none"> <li>Collection line proposed to be installed beneath natural area 487 via directional drilling. Feature previously studied; identified as Significant Woodland (Woodland K), Candidate Significant Amphibian Woodland Breeding Habitat (AWO-06), and Generalized Candidate Significant Wildlife Habitat (Bat Maternity Colony, Mature Forest Stand, and Habitat for Species of Conservation Concern). New potential environmental effects associated with collection line installation under these features: <ul style="list-style-type: none"> <li>Potential for unplanned intrusion into Significant Woodland Feature K in event of equipment malfunction due to installation of collection line via horizontal directional drilling; and</li> <li>Potential for unplanned intrusion into Significant Amphibian Woodland Breeding Habitat (AWO-06) and Generalized Candidate Significant Wildlife Habitat in natural area 487 in the event of equipment malfunction due to installation of collection line via horizontal directional drilling.</li> </ul> </li> </ul> <p>Water Bodies:</p> <ul style="list-style-type: none"> <li>Effects associated with new crossing of a water body include: <ul style="list-style-type: none"> <li>Release of pressurized drilling fluids into watercourses from fractures in substrate (also known as 'frac-out').</li> <li>Change to groundwater flow patterns, which may affect groundwater discharge to watercourses.</li> <li>Increase in erosion and sedimentation from the entry and exit drill holes required for the directional drilling activities.</li> <li>Release / discharge of sediment laden runoff from the construction area.</li> <li>Soil/water contamination by oils, grease and other materials from accidental spills and release of contaminants from equipment.</li> </ul> </li> </ul>	<p>Natural Heritage:</p> <ul style="list-style-type: none"> <li>For Significant Woodland K, Amphibian Woodland Breeding Habitat AWO-06 (if determined to be significant) and Generalized Candidate Significant Wildlife Habitat in natural area 487, additional mitigation measures included in the EIS that are the same as described in the approved NHA for collection line installation via directional drilling beneath other Significant Woodlands (Section 5.5) and Generalized Candidate Significant Wildlife Habitat (Section 5.3.2.1).</li> </ul> <p>Water Bodies:</p> <ul style="list-style-type: none"> <li>Correct maintenance of machinery.</li> <li>Minimize vehicle traffic on exposed soils and sensitive slopes.</li> <li>Locate facilities where contaminants are handled at least 30 m away from water bodies.</li> <li>Develop and implement an erosion and sediment control plan.</li> <li>Develop a spill response plan.</li> <li>Control soil / water contamination through best management practices.</li> <li>Conduct all drilling by licensed drillers in accordance with Ontario Water Resources Act, R.S.O. 1990.</li> <li>Locate drill entry and exit pits at least 30 m from water bodies.</li> <li>Collect drill cuttings as they are generated, and place in a soil bin or bag for off-site disposal.</li> <li>Ensure drill depth is at an appropriate depth below the water body to reduce the risk of a 'frac-out'.</li> <li>Monitor water bodies for signs of surface disturbance.</li> <li>Develop a 'frac-out' contingency plan.</li> </ul>
F	<p><b>F1:</b> Relocation of transmission line from municipal right-of-way onto private property</p> <p><b>F2:</b> Relocation of transmission line from municipal right-of-way onto private property</p> <p><b>F3:</b> Relocation of transmission line from municipal right-of-way onto private property</p>	<p>Landowner has agreed to participate in project.</p> <p>Avoid conflicts with existing infrastructure in the right-of-way.</p> <p>Landowner has agreed to participate in project.</p> <p>Avoid conflicts with existing infrastructure in the right-of-way.</p> <p>Landowner has agreed to participate in project.</p> <p>Avoid conflicts with existing infrastructure in the right-of-way.</p>	<p>None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.</p> <p>Natural Heritage:</p> <ul style="list-style-type: none"> <li>Transmission line is proposed within natural area 514 (vegetation removal required). New site investigation and evaluation of significance studies completed; feature confirmed to be a Significant Woodland (Woodland AJ) and treated as a Significant Bat Maternity Colony (BMC-15) with commitment to complete pre-construction evaluation of significance studies. New potential effects associated with tree removal in these features include: <ul style="list-style-type: none"> <li>Loss of up to 0.1 ha of forest cover in Significant Woodland Feature AJ;</li> <li>Clearing of vegetation for maintenance of the transmission line, resulting in accidental damage to Significant Woodland AJ;</li> <li>Displacement and/or mortality of nursing female and juvenile bats resulting from vegetation clearing for transmission line construction within Bat Maternity Colony BMC-15;</li> <li>Removal of confirmed significant cavity trees or other suitable cavity trees resulting from vegetation clearing for the transmission line within Bat Maternity Colony BMC-15; and</li> <li>Noise disturbance to and/or avoidance behaviour of bats during construction within Bat Maternity Colony BMC-15.</li> </ul> </li> </ul> <p>None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.</p>	<p>N/A</p> <p>Natural Heritage:</p> <ul style="list-style-type: none"> <li>Establish an area of forest equal in area to the cleared area through tree planting and management (e.g., in partnership with a local Conservation Authority). Details of the afforestation plan will be provided to MNR in a Compensation Plan.</li> <li>Perform vegetation clearing for construction outside of the breeding bird season and bat maternal period (May 1 to July 31). If this is not possible, MNR will be consulted regarding mitigation measures that may be required.</li> <li>Clearly stake area to be cleared.</li> <li>Fell trees with a chainsaw toward the construction area to reduce damage to adjacent vegetation being retained.</li> <li>Damaged tree roots will be cut clean as soon as possible and exposed roots covered in approved topsoil. This work to be carried out under supervision of an Arborist or Forester.</li> <li>Prepare a tree preservation plan which identifies specific trees to be removed and whether each tree contains a cavity suitable for potential use as a bat maternity colony.</li> <li>For each suitable cavity tree to be removed, a bat house will be installed in the closest suitable woodland habitat (the remainder of the woodland for the affected habitat). Details will be determined through consultation with MNR.</li> <li>Tree removal will occur during daylight hours.</li> <li>Schedule vegetation clearing for operational maintenance to occur outside of the breeding bird season (May 1 to July 31). Undertake active nest surveys if vegetation removal must take place during this period.</li> </ul> <p>N/A</p>

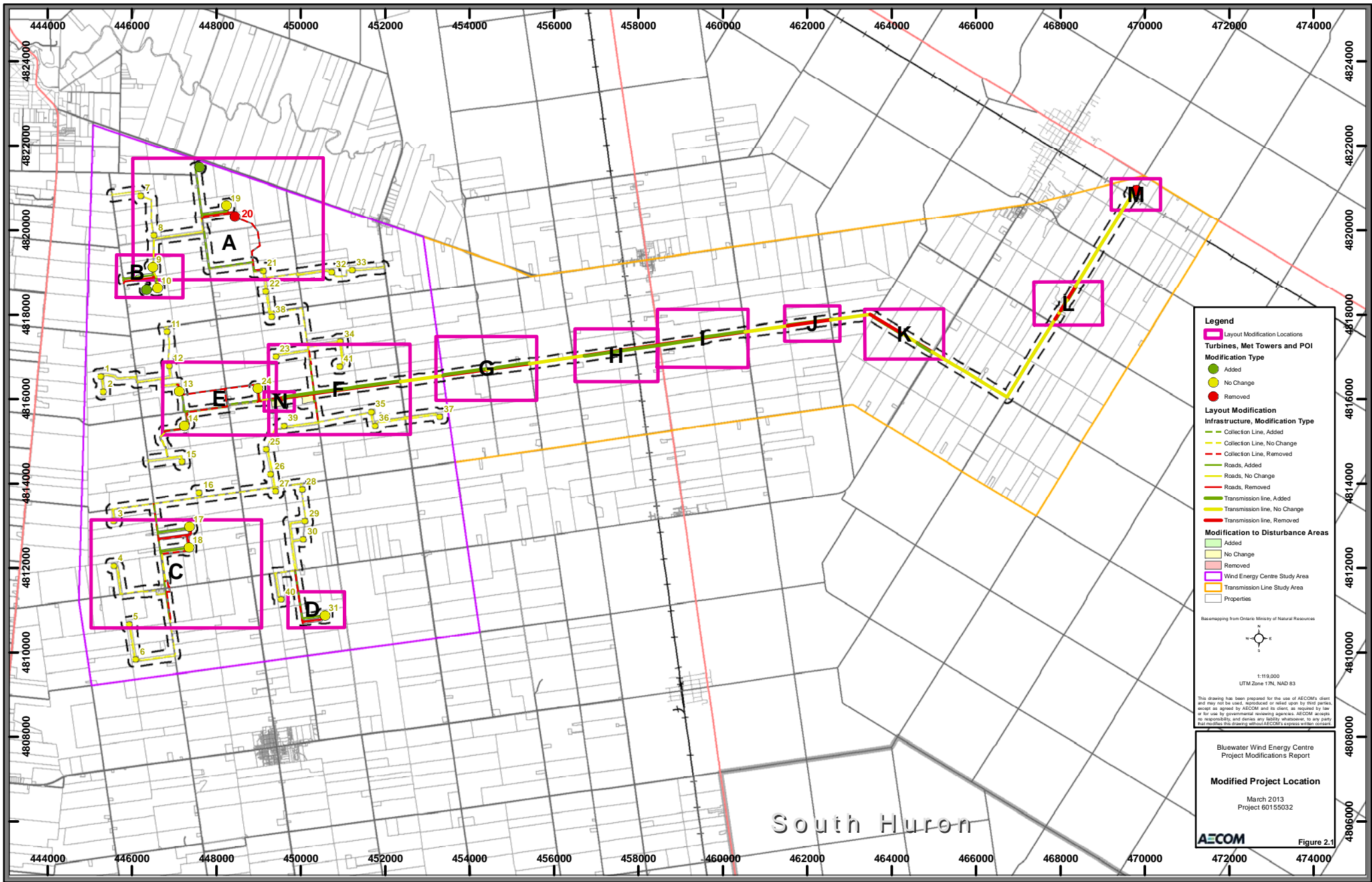


**Table 2-1 Summary of Project Modifications**

Label on Figure 2-1	Proposed Modification	Rationale for Proposed Modification	New Potential Environmental Effects	New Mitigation Measures
<b>G</b>	<b>G1:</b> Relocation of transmission line from municipal right-of-way onto private property	Landowner has agreed to participate in project. Avoid conflicts with existing infrastructure in the right-of-way.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A
	<b>G2:</b> Relocation of transmission line from municipal right-of-way onto private property	Landowner has agreed to participate in project. Avoid conflicts with existing infrastructure in the right-of-way.	Water Bodies: • No effects provided that transmission poles are set back 10-15 m from top of bank.	N/A
	<b>G3:</b> Relocation of transmission line from municipal right-of-way onto private property	Landowner has agreed to participate in project. Avoid conflicts with existing infrastructure in the right-of-way.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A
<b>H</b>	Relocation of transmission line from municipal right-of-way onto private property	Landowner has agreed to participate in project. Avoid conflicts with existing infrastructure in the right-of-way.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A
<b>I</b>	<b>I1:</b> Relocation of transmission line from municipal right-of-way onto private property	Landowner has agreed to participate in project. Avoid conflicts with existing infrastructure in the right-of-way.	Natural Heritage: • None – no new natural heritage features within 120 m. Water Bodies: • No effects provided that transmission poles are set back 10-15 m from top of bank.	N/A
	<b>I2:</b> Relocation of transmission line from municipal right-of-way onto private property	Landowner has agreed to participate in project. Avoid conflicts with existing infrastructure in the right-of-way.	Natural Heritage: • Transmission line is proposed within natural area 551 (vegetation removal required). New site investigation and evaluation of significance studies completed; feature confirmed to be a Significant Woodland (Woodland AO) and Habitat for Bird Species of Conservation Concern (Red-Headed Woodpecker) (SCB-02). New potential effects associated with tree removal in these features include: • Loss of up to 0.2 ha of forest cover in Significant Woodland Feature AO; • Clearing of vegetation for maintenance of the transmission line, resulting in accidental damage to Significant Woodland AO; • Removal of vegetation (up to 0.1 ha) within significant feature resulting in habitat damage from clearing for transmission line in Red-headed Woodpecker Habitat Feature SCB-02; • Red-Headed Woodpecker Breeding Habitat Feature (SCB-02) may be disturbed by routine maintenance of the transmission line corridor; and • Noise disturbance to breeding Red-headed Woodpeckers during transmission line construction within Red-headed Woodpecker Habitat Feature SCB-02. Water Bodies: • No effects provided that transmission poles are set back 10-15 m from top of bank.	Natural Heritage: • Establish an area of forest equal in area to the cleared area through tree planting and management (e.g., in partnership with a local Conservation Authority). Details of the afforestation plan will be provided to MNR in a Compensation Plan. • Perform vegetation clearing for construction outside of the breeding bird season (May 1 to July 31). If this is not possible: • maintain a 20 m buffer around any active Red-headed Woodpecker nest within which no vegetation removal will occur; and • MNR will be consulted regarding mitigation measures that may be required. • Clearly stake area to be cleared. • Fell trees with a chainsaw toward the construction area to reduce damage to adjacent vegetation being retained. • Damaged tree roots will be cut clean as soon as possible and exposed roots covered in approved topsoil. This work to be carried out under supervision of an Arborist or Forester. • Minimize the area of tree removal within the natural area to the extent possible. • Remove trees by hand-held equipment and drag them out of the natural area to minimize soil disturbance. If possible, leave some woody debris to decompose naturally. • Any vehicles used within the natural area will have wide-based tires. Tracked vehicles will be avoided. • Schedule vegetation clearing for operational maintenance to occur outside of the breeding bird season (May 1 to July 31). If vegetation clearing takes place during this timing window, nest searches will be conducted by qualified Biologist.
<b>J</b>	<b>J1:</b> Relocation of transmission line from municipal right-of-way onto private property	Landowner has agreed to participate in project. Avoid conflicts with existing infrastructure in the right-of-way.	Natural Heritage: • Transmission line is proposed within natural area 555. New site investigation and evaluation of significance studies completed; feature confirmed to be a Significant Woodland (Woodland AP). New potential effects associated with tree removal in this feature include: • Loss of up to 0.2 ha of forest cover in Significant Woodland Feature AP; and • Clearing of vegetation for maintenance of the transmission line, resulting in accidental damage to Significant Woodland AP. Cultural Heritage: • Location 29 documented.	Natural Heritage: • Establish an area of forest equal in area to the cleared area through tree planting and management (e.g., in partnership with a local Conservation Authority). Details of the afforestation plan will be provided to MNR in a Compensation Plan. • Perform vegetation clearing for construction outside of the breeding bird season (May 1 to July 31). If this is not possible, MNR will be consulted regarding mitigation measures that may be required. • Clearly stake area to be cleared. • Fell trees with a chainsaw toward the construction area to reduce damage to adjacent vegetation being retained. • Damaged tree roots will be cut clean as soon as possible and exposed roots covered in approved topsoil. This work to be carried out under supervision of an Arborist or Forester. • Schedule vegetation clearing for operational maintenance to occur outside of the breeding bird season (May 1 to July 31). Undertake active nest surveys if vegetation removal must take place during this period. Cultural Heritage: • Stage 3 assessment of Location 29.
	<b>J2:</b> Relocation of transmission line from municipal right-of-way to follow unopened municipal right-of-way	Avoid conflicts with existing infrastructure in the right-of-way.	Natural Heritage: • Transmission line is proposed within natural area 582. New site investigation and evaluation of significance studies completed; not a significant feature. Water Bodies: • No effects provided that transmission poles are set back 10-15 m from top of bank.	N/A

**Table 2-1 Summary of Project Modifications**

Label on Figure 2-1	Proposed Modification	Rationale for Proposed Modification	New Potential Environmental Effects	New Mitigation Measures
<b>K</b>	<b>K1:</b> Relocation of transmission line from municipal right-of-way onto private property	Landowner has agreed to participate in project. Avoid conflicts with existing infrastructure in the right-of-way.	None – no new natural heritage or water body features within 120 m. Area subsequently studied for cultural heritage – no new resources affected.	N/A
	<b>K2:</b> Relocation of transmission line from municipal right-of-way onto private property	Landowner has agreed to participate in project. Avoid conflicts with existing infrastructure in the right-of-way.	Water Bodies: • No effects provided that transmission poles are set back 10-15 m from top of bank.	N/A
	<b>K3:</b> Relocation of transmission line from municipal right-of-way onto private property	Landowner has agreed to participate in project. Avoid conflicts with existing infrastructure in the right-of-way.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A
<b>L</b>	Relocation of transmission line from municipal right-of-way onto private property	Landowner has agreed to participate in project. Avoid conflicts with existing infrastructure in the right-of-way.	Water Bodies: • No effects provided that transmission poles are set back 10-15 m from top of bank.	N/A
<b>M</b>	Relocation of Point of Interconnect (POI) from Seaforth substation property to private property	Land owner agreed to participate in the project Avoid conflicts with existing infrastructure.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A
<b>N</b>	Relocation of substation within the same property parcel	Original location was in a floodplain.	None – no new natural heritage or water body features within 120 m; area previously studied for cultural heritage.	N/A



**Legend**

- Layout Modification Locations
- Turbines, Met Towers and POI
  - Added
  - No Change
  - Removed
- Layout Modification Infrastructure, Modification Type
  - Collection Line, Added
  - Collection Line, No Change
  - Collection Line, Removed
  - Roads, Added
  - Roads, No Change
  - Roads, Removed
  - Transmission line, Added
  - Transmission line, No Change
  - Transmission line, Removed
- Modification to Disturbance Areas
  - Added
  - No Change
  - Removed
- Wind Energy Centre Study Area
- Transmission Line Study Area
- Properties

Basemapping from Ontario Ministry of Natural Resources

1:119,000  
UTM Zone 17N, NAD 83

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Bluewater Wind Energy Centre  
Project Modifications Report

**Modified Project Location**

March 2013  
Project 60155032

**AECOM** Figure 2.1

South Huron

### 3. Edits to the Turbine Specifications Report

Table 3-1 documents the edits to the Turbine Specifications Report resulting from the modifications described above.

**Table 3-1 Edits to Turbine Specifications Report**

<b>Section / Page</b>	<b>Original Text</b>	<b>Revised Text</b>
<b>Section 1/ page 1</b>	Although NextEra is seeking a Renewable Energy Approval (REA) for 41 wind turbines, up to a total of 37 are proposed to be constructed for the Project.	Although NextEra is seeking a Renewable Energy Approval (REA) for <u>40</u> 44 wind turbines, up to a total of 37 are proposed to be constructed for the Project.
<b>Section 1.2/page 1</b>	Project Proponent Nicole Geneau Project Director NextEra Energy Canada, ULC 5500 North Service Road, Suite 205 Burlington, Ontario L7L 6W6 Phone: 1-887-257-7330	Project Proponent Nicole Geneau Project Director NextEra Energy Canada, ULC <del>5500 North Service Road, Suite 205</del> <del>Burlington, Ontario L7L 6W6</del> <del>Phone: 1-887-257-7330</del> 390 Bay Street, Suite 1720 Toronto, ON M5H 2Y2 Phone: 1-416-364-9714
<b>Table 2-1/ page 2</b>	<b>Maximum Rotational Speed</b> 16.2 rpm	<b>Maximum Rotational Speed</b> 15.33 rpm