

Stantec

**BROOKE-ALVINSTON WIND FARM
DESIGN AND OPERATIONS REPORT**

Appendix C

Property Line Setback Assessment



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**BROOKE-ALVINSTON WIND FARM
PROPERTY LINE SETBACK
ASSESSMENT REPORT**

Stantec File No. 160960567
February 2011

Prepared for:

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1.0 Introduction

1.1 PROJECT OVERVIEW

Zephyr Farms Limited (Zephyr Farms) is proposing to develop the Brooke-Alvinston Wind Farm (the Project) in the Township of Brooke-Alvinston, Lambton County, Ontario. The Project has been awarded a Power Purchase Agreement with the Ontario Power Authority (RESOP 11836). The basic components of the Project include four Samsung Heavy Industries 2.5 MW wind turbine generators for a total installed nameplate capacity of 10 MW, transformers at each turbine, electrical collector lines and fibre optic data lines, a switchyard with associated control room, a meteorological tower (met tower) and associated power and data cabling, and turbine access roads. The electrical transmission system would transport the electricity generated from each turbine to Hydro One Networks Inc.'s (HONI's) distribution network. The Project also includes interconnection equipment and installations specified by HONI. All Project components will be situated on private land and municipal road allowance.

Zephyr Farms has retained Stantec Consulting Ltd. (Stantec) to prepare a Renewable Energy Approval (REA) Application, as required under Ontario Regulation 359/09 - Renewable Energy Approvals under Part V.0.1 of the Act of the *Environmental Protection Act* (O. Reg. 359/09). According to subsection 6(3) of O.Reg.359/09, the Project is classified as a Class 4 Wind Facility and will follow the requirements identified in O.Reg.359/09 for such a facility.

1.2 REPORT REQUIREMENTS

Of the 4 potential turbine sites being assessed for the Project, 1 is located closer to a property line than the height of the turbine (80 metres). The potential turbine site is not located less than the length of the turbine blades plus 10 metres (i.e. 58.7 metres) from a property line. The potential turbine site meets the minimum setback requirement of 550 metres to the nearest noise receptor.

The purpose of the Property Line Setback Assessment Report is to provide a review of potential adverse impacts and preventative measures for wind turbines located within the prescribed setback from non-participating parcels of land (i.e. where there is no agreement with the land owner specifically permitting a closer setback).

The Property Line Setback Assessment Report has been prepared in accordance with s.53 of O.Reg.359/09, which sets out specific content requirements as provided in the following table (Table 1.1).

**BROOKE-ALVINSTON WIND FARM
PROPERTY LINE SETBACK ASSESSMENT REPORT**

Introduction

February 2011

Table 1.1: Property Line Assessment Report Requirements: O.Reg. 359/09

Required Documentation	Requirement Met	Location in Submission
As part of an application for the issues of a renewable energy approval or a certificate of approval in respect of the construction, installation or expansion of the wind turbine, the person who is constructing, installing or expanding the wind turbine submits a written assessment,		
1. Demonstrating that the proposed location of the wind turbine will not result in adverse impacts on nearby business, infrastructure, properties or land use activities, and	✓	Section 2.0
2. Describing any preventative measures that are required to be implemented to address the possibility of any adverse impacts.	✓	Sections 2.0

2.0 Property Line Setback Analysis

Description of Features within Overlap

The turbine setback overlaps with agricultural cash crop land by 46.6 metres. The distance of the potential turbine site from the non-participating property line is 61.9 metres.

Potential Adverse Impacts

Adverse impacts to agricultural land, including crop damage and soil compaction, may occur in the unlikely event of turbine collapse.

Preventative Measures

The turbines would be constructed and designed by professional engineers, undergo regular maintenance and monitoring by operational staff, and contain shutdown mechanisms in instances such as extreme weather. All of these measures are standard best practices detailed in the Renewable Energy Application documents. In the unlikely event of damage to agricultural land due to turbine collapse, landowners would be compensated by Zephyr Farms for any crop damage, and measures are outlined in the Renewable Energy Application documents to mitigate soil compaction. Given the above measures, no additional preventative measures are required for the change in setback.

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3.0 Closure

The Brooke-Alvinston Wind Farm Property Line Setback Assessment Report has been prepared by Stantec Consulting Ltd. for Zephyr Farms Limited in accordance with O.Reg. 359/09.

This report has been prepared by Stantec for the sole benefit of Zephyr Farms Limited, and may not be used by any third party without the express written consent of Zephyr Farms Limited. The data presented in this report are in accordance with Stantec's understanding of the Project as it was presented at the time of reporting.

STANTEC CONSULTING LTD.



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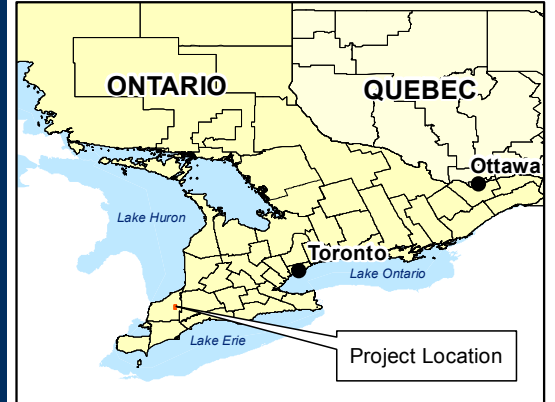
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Appendix A

Figure



- Legend**
- Road
 - Existing Transmission Line
 - Property Line
 - Property Line Buffer (58.7 From Turbine Base)
 - Potential Turbine Location Center Point
 - Potential Turbine Location (Blade Reach 49.9m)



- Notes**
1. Coordinate System: UTM Zone 17 NAD 83.
 2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Ontario Gas and Salt Resources Library, 2010.
 3. Image Sources: © First Base Solutions, 2010 - Imagery Date: Spring, 2006.

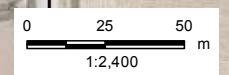


Stantec February 2011
160960567

Client/Project
ZEPHYR FARMS LIMITED
BROOKE-ALVINSTON WIND FARM

Figure No.
1

Title
**PROPERTY LINE
SETBACK ASSESSMENT**



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