Adelaide Wind Energy Centre
Water Body Site Investigation Report

Prepared for:
NextEra Energy Canada
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Burlington, ON, L7L 6W6

Project No. 1230

Date: August 2012

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

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Water Body Site Investigation Report

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Report submitted on August 17, 2012

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1.0 Introduction

Natural Resource Solutions Inc. (NRSI) was retained in April 2011 by GL Garrad Hassan, on behalf of Kerwood Wind, Inc., a wholly-owned subsidiary of NextEra Energy Canada ULC, to conduct a water body resource assessment for the proposed Adelaide Wind Energy Centre, in accordance with the Renewable Energy Approval (REA) Regulation. This assessment includes a records review, site investigations, and environmental impact assessment (EIS) of water bodies located within the Adelaide Wind Energy Centre project area. The analysis of the water bodies is one issue being considered. Other factors, such as natural heritage, land ownership, social impacts, and cultural impacts are also being assessed under separate covers as outlined by the REA Regulation.

The Adelaide Wind Energy Centre ('Adelaide'), proposed by NextEra Energy Canada, is located in the geographic Township of Adelaide Metcalfe, approximately 13km northwest of the Town of Strathroy. The general project area is roughly bordered by Centre Road, Townsend Line, Sexton Road, and Napperton Drive. In addition, a transmission line is proposed to run north along Kerwood Road from Cuddy Drive north to Nairn Road. This transmission line is then proposed to continue eastward along Nairn Road to an existing 500kV line and substation located west of Petty Street. The Adelaide wind energy generating facility is proposed to consist of up to thirty-eight GE 1.6-100 (1.62 MW) turbines for a total installed capacity of up to 61.56 MW. The proposed GE 1.6-100 turbine is a 3-bladed, upwind, horizontal-axis turbine. The total rotor diameter of the turbine is 100 m, resulting in a swept area of 7,854 m^2, and is designed to operate at between 9.75 and 16.18 revolutions per minute (rpm). The turbine rotor and nacelle are mounted on top of an 80m tubular tower which is manufactured in sections from steel plate. Each turbine is mounted on a steel reinforced concrete foundation and equipped with a transformer, located outside the base of the tower.

As defined by REA Regulation, the proposed layout of these features is collectively referred to as the 'project location'. This includes turbines and associated infrastructure as described above, as well as any areas that may be used temporarily during construction (i.e. staging areas, crane pads, crane walks etc.) For the purposes of this

report, NRSI will refer to the areas within 120m of the project location as the ‘project area’.

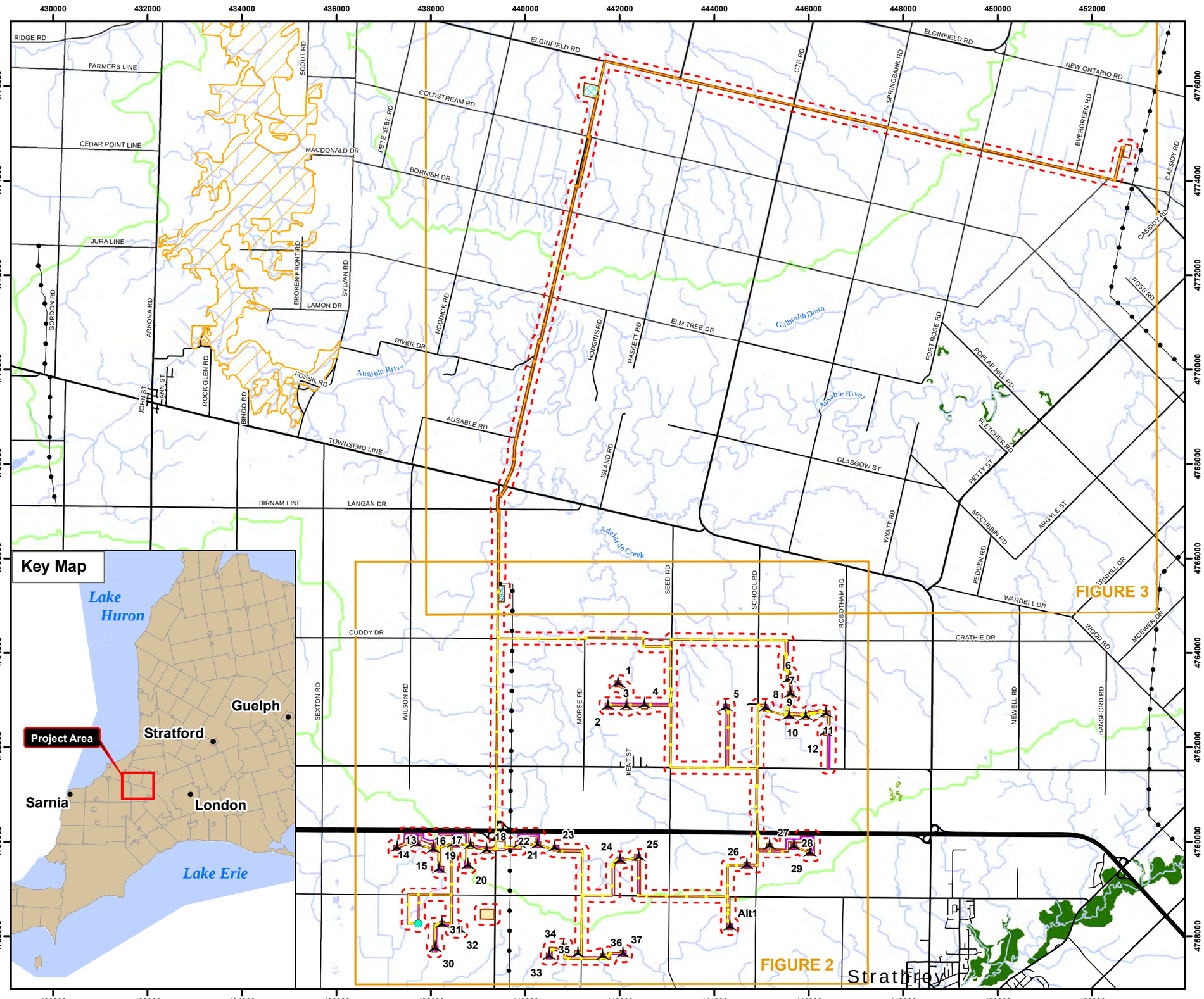
In accordance with the Renewable Energy Approval (REA) Regulation, NRSI has conducted site investigations to identify and characterize water bodies (lakes, seepages, intermittent/permanent watercourses) within 120m of the project location and Lake Trout (*Salvelinus namaycush*) lakes within 300m of the project area. Site investigations were conducted to confirm the presence/absence of water bodies identified during the records review (NRSI 2012), pinpoint any corrections to features identified during the records review, and document new water bodies not previously identified. Field investigations also focused on the characterization of the identified features.

As part of this project, NRSI has considered all aspects relating to provincially Threatened and Endangered species. However, since these species are addressed as part of the *Endangered Species Act* (2007), they have not been discussed within any of these Water Body reports. These species will be addressed in full detail, including a habitat description and results of field assessments, potential impacts, and recommended mitigation measures, as part of a separate *Approval and Permitting Requirements Document (APRD)* to be submitted to the OMNR under separate cover, where necessary.

Figure 1

Adelaide Wind Energy Centre

Project Area and Water Bodies



NRSI_1230_AdelaideWF_PotentialAquaticPoints_Fig1_80K_2012_07_04_GCS

Legend

- Project Area (120m)
- Figure Extents
- Turbine
- MET
- Access Road
- Collector System (Underground Cabling)
- Transmission Line (Aboveground Cabling)
- Project Location
- Staging Area
- Substation
- Operations & Maintenance Buildings
- Railroad
- Existing Transmission Line
- Highway
- Primary Road
- Secondary Road
- Watercourse
- Waterbody
- Watershed Boundaries
- Provincially Significant Wetland (PSW)
- Other Wetland
- ANSI, Life Science
- ANSI, Earth Science

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Project: 1230	NAD83 - UTM Zone 17
Date: July 4, 2012	Scale: 1:80,000 (11x17")

0 1,000 2,000 3,000 4,000 5,000 Meters

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