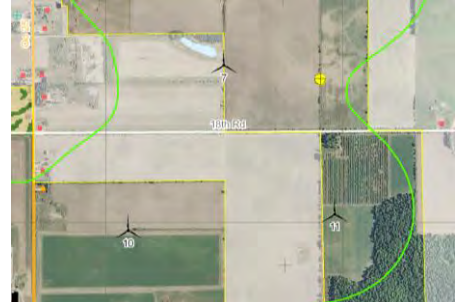




ADELAIDE WIND ENERGY CENTRE
RENEWABLE ENERGY APPROVAL APPLICATION
DESIGN AND OPERATIONS REPORT
APPENDIX E



Adelaide Wind Energy Centre **Water Body Records Review Report**

Prepared for:
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5500 North Service Road, Suite 205
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Project No. 1230

Date: August 2012



NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

**Adelaide Wind Energy Centre
Water Body Records Review Report**

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TABLE OF CONTENTS

1.0	Introduction	1
2.0	REA Requirements.....	6
3.0	Records Review Methodology	7
4.0	Records Review Findings	8
4.1	Lakes	8
4.1.1	Lake Trout Lakes	8
4.1.2	Other Lakes	8
4.2	Permanent or Intermittent Watercourses.....	8
4.2.1	Ausable River Watershed.....	9
4.2.2	Sydenham River Watershed	13
4.3	Seepage Areas	13
4.4	Species of Conservation Concern.....	13
5.0	Summary of Records Review.....	14
6.0	References.....	15

List of Tables

Table 1.	Summary of Records Consulted for the Adelaide Wind Energy Centre.	7
Table 2.	Summary of Water Bodies Records Review of the Adelaide Wind Energy Centre Project Area.	14

List of Figures

Figure 1.	Project Area and Water Bodies	3
Figure 2.	Project Area and Water Bodies (Southern Project Area).....	4
Figure 3.	Project Area and Water Bodies (Northern Project Area)	5

Appendices

Appendix I	Municipal Drainage Mapping
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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 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 m², 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.

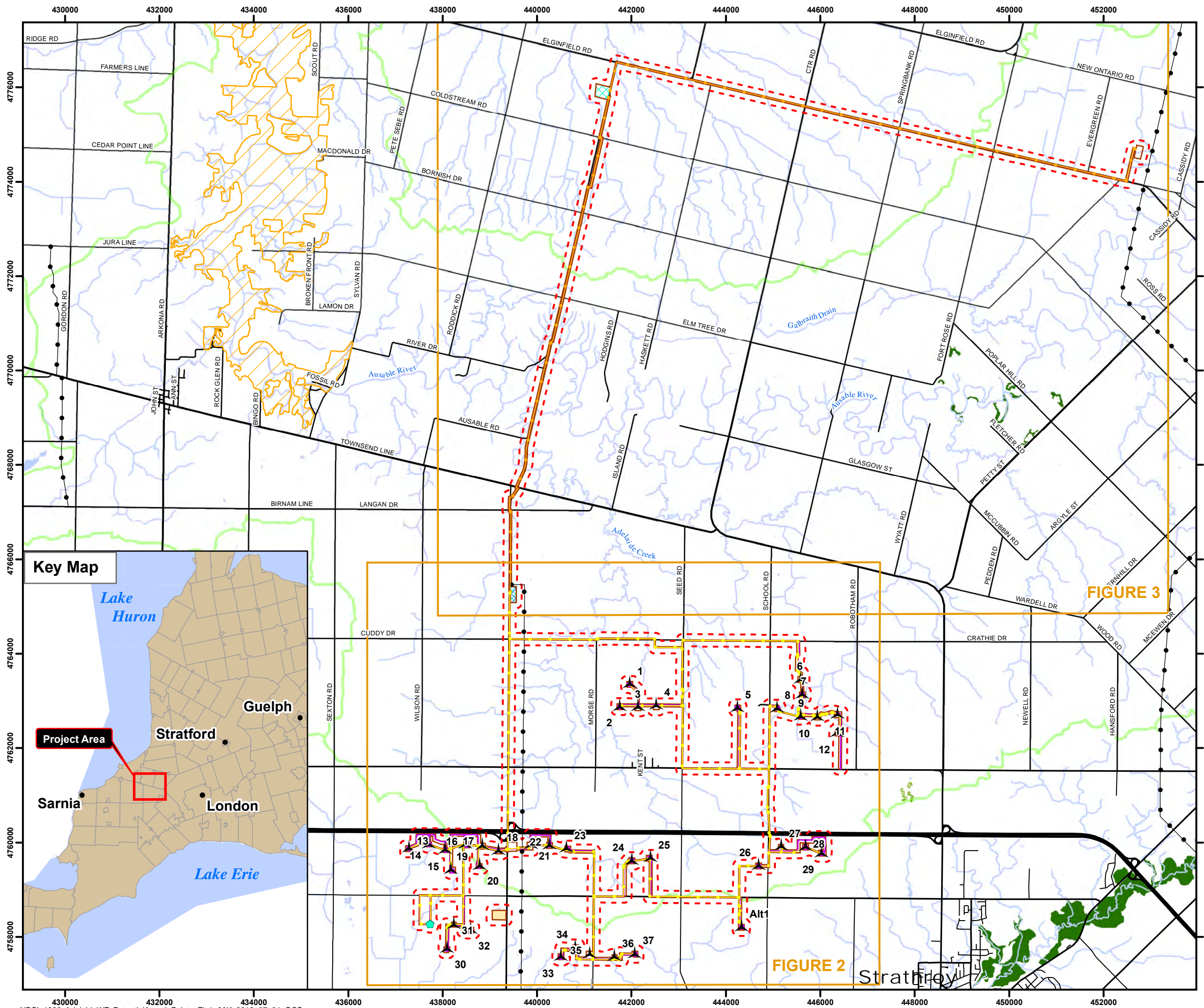
As defined by REA Regulation, the proposed layout of these features is collectively referred to as the 'project location'. This includes turbines and associated infrastructure as described above, as well as any areas that may be used temporarily during construction (i.e. staging areas, crane pads, crane 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 REA Regulation, NRSI has conducted a records review to identify and characterize water bodies (lakes, seepages, intermittent/permanent watercourses) within 120m of the project location, or Lake Trout (*Salvelinus namaycush*) lakes within 300m of the project location. This assessment includes a detailed review of available background information from a variety of sources, including the Ministry of Natural Resources (MNR), the Ausable Bayfield Conservation Authority (ABCA), St. Clair Region Conservation Authority (SCRCA), municipal files, existing biological studies, digital imagery and elevation data, and other available online and/or published resources.

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



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



FIGURE 3

FIGURE 2

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Map Produced by Natural Resource Solutions Inc. This map is proprietary and confidential and must not be duplicated or distributed by any means without express written permission of NRSI. Source: Data provided by MNR. Copyright: Queen's Printer Ontario

Project: 1230 Date: July 4, 2012	NAD83 - UTM Zone 17 Scale: 1:80,000 (11x17")
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0 1,000 2,000 3,000 4,000 5,000 Meters