NextEra Energy Canada, ULC

EAST DURHAM WIND ENERGY CENTRE - PARCEL BOUNDARY SETBACK REDUCTION ANALYSIS

JUSTIFICATION REPORT

JANUARY 2013

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Purpose

The purpose of this report is to provide an assessment of proposed wind turbine locations within the East Durham Wind Energy Centre that do not meet the required setback of "turbine height minus blades" from the base of the wind turbine to the boundary of parcels of land on which the turbine is located.

IBI Group was retained by NextEra Energy Canada, ULC to undertake an analysis of five (5) turbines within the East Durham Wind Energy Centre. The analysis will look at what impacts the reduced setback may have on nearby business, infrastructure, properties or land use activities, and will describe any required preventative measures to be used to address any adverse impacts.

From an agricultural planning perspective, it is generally considered advantageous to farmers to have turbines located as close as possible to lot lines (or fence lines located between fields), in order to cause the least amount of disruption to farming practices, in particular field crop planting and harvesting. This coincides with traditional locations for farm access roads along fence lines, which in turn are preferred locations for new or improved turbine access roads.

1.2 Legislation

Ontario Regulation 359/09 outlines the regulations for the development and approval of renewable energy projects within the Province of Ontario. Section 53 of the regulation outlines setback requirements for Class 3, 4, and 5 wind facilities, with the East Durham Wind Energy Centre being a Class 4 wind facility. It states in subsection 53 (1) (b) that no person shall erect a Class 4 wind facility unless:

> ***the distance between the base of the wind turbine and all boundaries of the parcel of land on which the wind turbine is constructed, installed or expanded is equivalent to, at a minimum, the height of the wind turbine, excluding the length of any blades.***

And furthermore under subsection 53 (3), states that clause 53 (1) (b) does not apply if the distance from the base of the turbine to the property boundary is at least blade length plus 10 metres and:

> ***as part of an application for the issue 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,***

(i) 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

(ii) describing any preventative measures that are required to be implemented to address the possibility of any adverse impacts mentioned in subclause (i).

This report is intended to fulfill the above requirements of subsection 53 (3) of Ontario Regulation 359/09.

1.3 Project Description

The proposed East Durham Wind Energy Centre is located in Grey County in the Municipality of West Grey, east of the Community of Durham and west of the Village of Priceville in south-western Ontario. More specifically, the area being studied for the wind turbine locations is located south of Concession Road 6, west of Sideroad 40, Artemesia-Glenelg Townline and Side Road 50, north of the West Grey/Southgate Municipal boundary and east of Baseline.

The wind turbine technology proposed for this Project is the GE 1.6-100 model wind turbine. With a total maximum nameplate capacity of up to 23 MW, the Project is categorized as a Class 4 facility. The project consists of up to 16 GE model wind turbines with 14 turbines that are 1.6-100 (1.62 MW), Turbine 6 is 1.34-100 (1.34 MW) and Turbine 2 is 1.39-100 (1.39 MW) wind turbine generator locations and pad mounted step-up transformers are proposed for permitting (a maximum of 14 turbines will ultimately be constructed). The sound power level of the turbine model is expected to be greater than 102 dBA. Based on this turbine model the absolute minimum setback from a property boundary would be 60 metres (blade length + 10 metres). However, in the event that the turbines are sited closer than 60 metres, an agreement is required which would allow for a setback less than 60 metres (blade length + 10 metres).

For this project there are five (5) turbines which require justification for the reduced property boundary setback.

TURBINE NO.	Host Land Parcel		Turbine Distance from Lot Line (metres)	Direction of Neighbouring Land Parcel from Turbine	Neighbouring Land Parcel		Notes
	Lot	Concession			Lot	Concession	
2	Lot 28	2 NDR Glenelg	61	west	27	2 NDR Glenelg	Assessment Conducted
7	Pt Lot 34	1 NDR Glenelg	79.4	west	Pt Lot 31-33	1 NDR Glenelg	Assessment Conducted
8	Lot 39-40 Pt Lot 37-38	1 NDR Glenelg	61	west	Pt Lot 36	1 NDR Glenelg	Assessment Conducted
11	Pt Lot 35	1 SDR Glenelg	66.2	east	Pt Lot 36-37	1 SDR Glenelg	Assessment Conducted
15	Lot 24	4 NDR Glenelg	8.1	east	Lot 25	4 NDR Glenelg	Agreement will be in place as per Section 53(2) (b) / Assessment Conducted

2. ANALYSIS

The methodology for this report was to identify turbines that were less than 80 metres from a lot line; undertake an analysis of the local surrounding land use characteristics; determine the potential impacts of the wind turbine on the surrounding land uses; and discuss what if any preventative measures should be employed to mitigate such impacts.

2.1 Turbine 2 – Lot 28, Concession 2 NDR Glenelg

2.1.1 DESCRIPTION

Turbine 2 is located 61 metres from the closest lot line (west side lot line) which is 19 metres less than required as the standard setback. The adjacent lands are almost entirely used for field crop purposes with no buildings, structures, or infrastructure located on the lands. A wooded area is located on the adjacent lands, approximately 225 metres southwest of the turbine. A hedge row is also present along the west side lot line. Land use within the vicinity of the proposed turbine would be restricted to seasonal farming activities with otherwise minimal human activities (See Turbine 2 Map in Appendix 1).

2.1.2 POTENTIAL IMPACTS

Impacts to the neighbouring parcel from the reduced setback may include damage to crops or trees as a result of turbine failure. However, this impact is already present at an 80 metre setback and is not enhanced significantly by a reduction of 19 metres. There is no adverse impact on buildings or structures on the adjacent parcel. An impact on the adjacent woodlot is not expected at a distance of approximately 225 metres.

2.1.3 PREVENTATIVE MEASURES

Preventative measures to address potential damage to neighbouring crops and trees include design certification of the wind turbine by professional engineers; regular maintenance and ongoing monitoring of the wind turbine by operations staff; and turbine shutdown mechanisms and protocols in extreme weather instances to prevent damage to wind turbines. All of these measures are standard best practices and no additional preventative measures are required for the change in setback.

2.2 Turbine 7 – Part Lot 34, Concession 1 NDR Glenelg

2.2.1 DESCRIPTION

Turbine 7 is located 79.4 metres from the closest lot line (west side lot line) which is 0.6 metres less than required as the standard setback. The adjacent lands are almost entirely used for field crop purposes. A wooded area is located on the adjacent lands, approximately 175 metres northwest of

the turbine and a hedgerow is located along the subject lot boundary line. The closest dwelling is located approximately 700 metres southwest of the turbine. A closed rail right of way is located on the adjacent lands, approximately 280 metres southwest of the turbine. Land use within the immediate vicinity of the proposed turbine would be restricted to seasonal farming activities with otherwise minimal human activities (See Turbine 7 Map in Appendix 1).

2.2.2 POTENTIAL IMPACTS

Impacts to the neighbouring parcel from the reduced setback may include damage to crops as a result of turbine failure. However, this impact is already present at an 80 metre setback and is not enhanced significantly by a reduction of 0.6 metres. There is no adverse impact on adjacent buildings or structures.

2.2.3 PREVENTATIVE MEASURES

Preventative measures to address potential damage to neighbouring crops and uses include design certification of the wind turbine by professional engineers; regular maintenance and ongoing monitoring of the wind turbine by operations staff; and turbine shutdown mechanisms and protocols in extreme weather instances to prevent damage to wind turbines. All of these measures are standard best practices and no additional preventative measures are required for the change in setback.

2.3 Turbine 8– Lot 39-40, Concession 1 NDR Glenelg

2.3.1 DESCRIPTION

Turbine 8 is located 61 metres from the closest lot line (west side lot line) which is 19 metres less than required as the standard setback. The adjacent lands are almost entirely used for field crop purposes, with no building or dwellings located on the property. Several wooded areas are located on the adjacent lands, with the closest being approximately 100 metres southwest of the turbine. A closed rail right of way is located on the adjacent lands, approximately 200 metres northwest of the turbine. Land use within the immediate vicinity of the proposed turbine would be restricted to seasonal farming activities with otherwise minimal human activities (See Turbine 8 Map in Appendix 1).

2.3.2 POTENTIAL IMPACTS

Impacts to the neighbouring parcel from the reduced setback may include damage to crops or trees as a result of turbine failure. However, this impact is already present at an 80 metre setback and is not enhanced significantly by a reduction of 19 metres. There is no adverse impact on adjacent buildings or structures.

2.3.3 PREVENTATIVE MEASURES

Preventative measures to address potential damage to neighbouring crops and uses include design certification of the wind turbine by professional engineers; regular maintenance and ongoing monitoring of the wind turbine by operations staff; and turbine shutdown mechanisms and protocols in extreme weather instances to prevent damage to wind turbines. All of these measures are standard best practices and no additional preventative measures are required for the change in setback.

2.4 Turbine 11– Part Lot 35, Concession 1 SDR Glenelg

2.4.1 DESCRIPTION

Turbine 11 is located 66.2 metres from the closest lot line (east side lot line) which is 13.8 metres less than required as the standard setback. The adjacent lands are characterized almost entirely as wooded, with a watercourse/wetland located approximately 225 metres southeast of the turbine, with no building or dwellings located on the property. Land use within the immediate vicinity of the proposed turbine would be restricted with otherwise minimal human activities (See Turbine 11 Map in Appendix 1).

2.4.2 POTENTIAL IMPACTS

Impacts to the neighbouring parcel from the reduced setback may include damage to natural vegetation as a result of turbine failure. However, this impact is already present at an 80 metre setback and is not enhanced significantly by a reduction of 13.8 metres. There is no adverse impact on adjacent buildings or structures.

2.4.3 PREVENTATIVE MEASURES

Preventative measures to address potential damage to neighbouring vegetation include design certification of the wind turbine by professional engineers; regular maintenance and ongoing monitoring of the wind turbine by operations staff; and turbine shutdown mechanisms and protocols in extreme weather instances to prevent damage to wind turbines. All of these measures are standard best practices and no additional preventative measures are required for the change in setback.

2.5 Turbine 15– Lot 24, Concession 4 NDR Glenelg

2.5.1 DESCRIPTION

Turbine 15 is located 8.1 metres from the closest lot line (east side lot line) which is 71.9 metres less than required as the standard setback without undertaking any further analysis. The adjacent lands are almost entirely used for field crop purposes, with the closest dwelling located

approximately 525 metres northeast of the turbine. A woodlot is located approximately 135 metres southeast of the turbine. Several trees are located within proximity of the proposed turbine location which would be impacted by construction. Land use within the vicinity of the proposed turbine would be restricted to seasonal farming activities with otherwise minimal human activities (See Turbine 15 Map in Appendix 1). Despite requiring an agreement for a reduced setback, further analysis is also required. It should also be noted that the neighbouring property is participating as Turbine 14 is located on these lands.

2.5.2 POTENTIAL IMPACTS

Impacts to the neighbouring parcel from the reduced setback would include removal of several mature trees as a result of construction, and may also include damage to crops as a result of turbine failure. Potential impact to crops is already present at an 80 metre setback and is not significantly enhanced by any such reduction and there is no anticipated adverse impact on adjacent buildings or structures. No significant residual effects are anticipated as a result of tree removal as these trees were assessed as part of the Natural Heritage Assessment and they are not considered significant in terms of type of species or as part of any larger natural heritage area, as described in the Natural Heritage Assessment Report. Finally, the adjacent parcel is under easement for the part of the foundation location over the grove of trees and the easement includes mediation for the loss of the trees.

2.5.3 PREVENTATIVE MEASURES

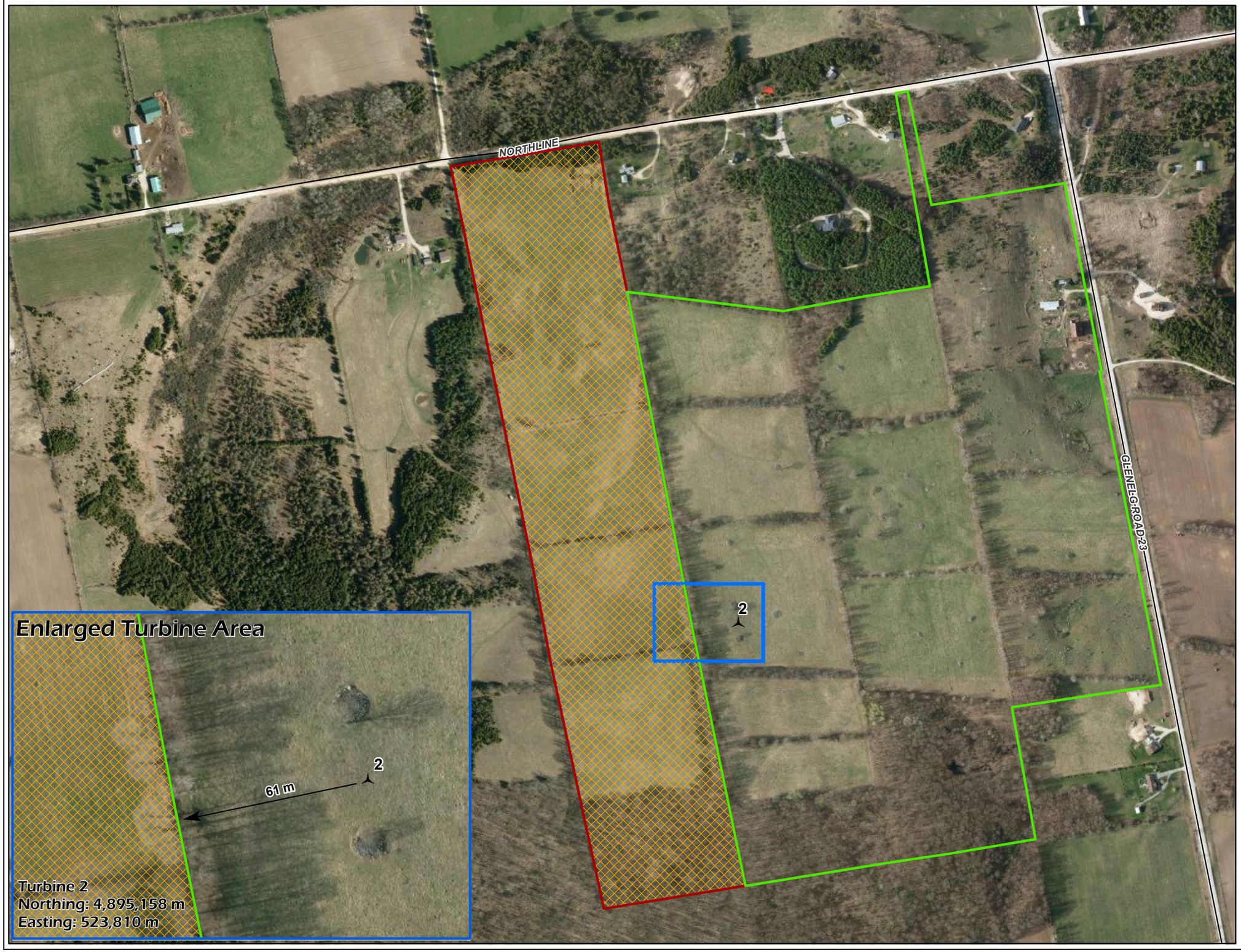
Preventative measures to address potential damage to neighbouring crops and uses include design certification of the wind turbine by professional engineers; regular maintenance and ongoing monitoring of the wind turbine by operations staff; and turbine shutdown mechanisms and protocols in extreme weather instances to prevent damage to wind turbines. All of these measures are standard best practices and no additional preventative measures are required for the change in setback.

3. CONCLUSION

Based on the preceding analysis of the proposed five (5) turbine locations considered for reduced setbacks from property boundaries, it is our opinion that there would be no adverse impacts as a result of the setback reductions, and that standard preventative measures implemented through best practices address any change in impacts that may be encountered.

J:\15633-Next-Era\10.0 Reports\Durham East\PTRboundary_reduction_Final2013-01-11.docx\

Appendix 1 – Individual Map Schedules



NEXTera ENERGY RESOURCES

East Durham
Wind Energy Centre

Grey County, Ontario

Parcel Boundary Setback Reduction Analysis

Legend

- Turbine Location
- Host Land Parcel
  Lot 28 Con 2 Ndr Glenelg
- Neighbouring Land Parcel
  Lot 27, Con 2 Ndr Glenelg

Required Lotline Setback

- Agreement Will Be in Place With Assessment - No Setback Required
- No Agreement - 60m Setback With Assessment

Turbine 2

0 50 100 200
Metres

1:5,000

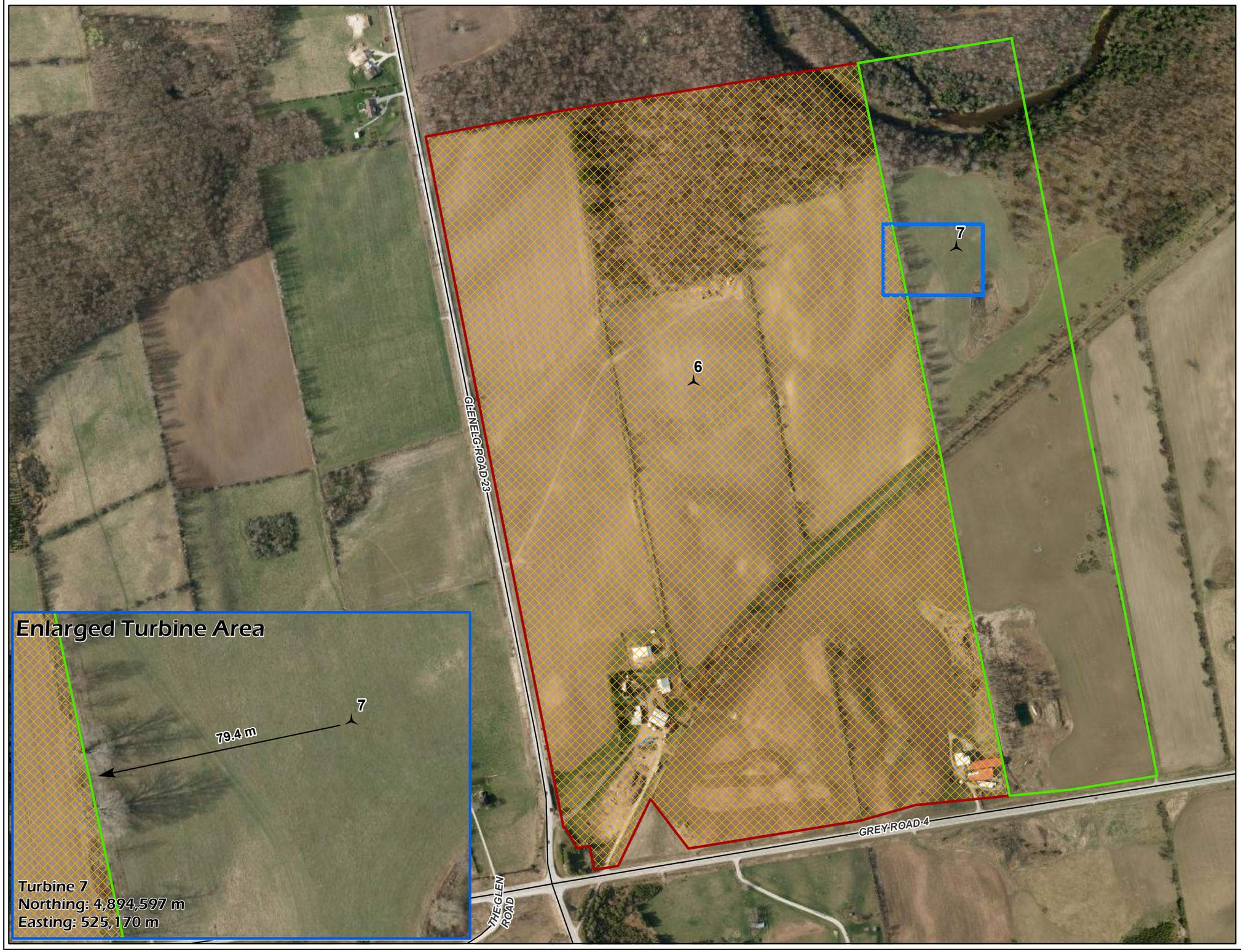
NAD 1983 UTM Zone 17N

NEXTera ENERGY RESOURCES

East Durham
Wind Energy Centre

Grey County, Ontario

Parcel Boundary Setback Reduction Analysis



Legend

- Turbine Location
- Host Land Parcel
  Pt Lot 34 Con 1 Ndr Glenelg
- Neighbouring Land Parcel
  Pt Lot 31-33, Con 1 Ndr Glenelg

Required Lotline Setback

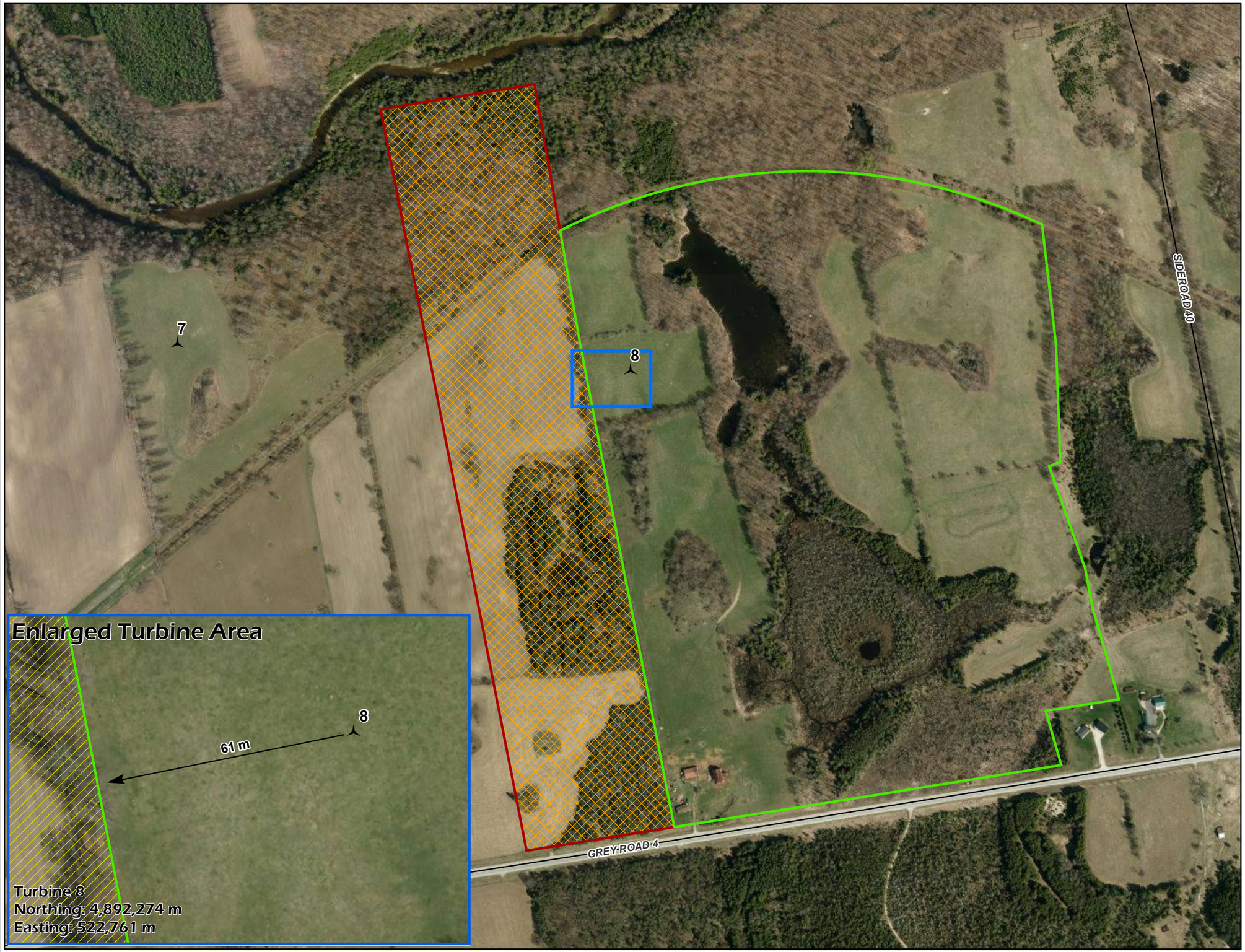
- Agreement Will Be in Place With Assessment - No Setback Required
- No Agreement - 60m Setback With Assessment

Turbine 7

0 50 100 200
Metres

1:5,000

NAD 1983 UTM Zone 17N



NEXTera ENERGY RESOURCES

East Durham
Wind Energy Centre
Grey County, Ontario

Parcel Boundary Setback Reduction Analysis

Legend

- Turbine Location
- Host Land Parcel
  Pt Lot 37-38 & Lot 39-40
  Con 1 Ndr Glenelg
- Neighbouring Land Parcel
  Pt Lot 36, Con 1 Ndr Glenelg

Required Lotline Setback

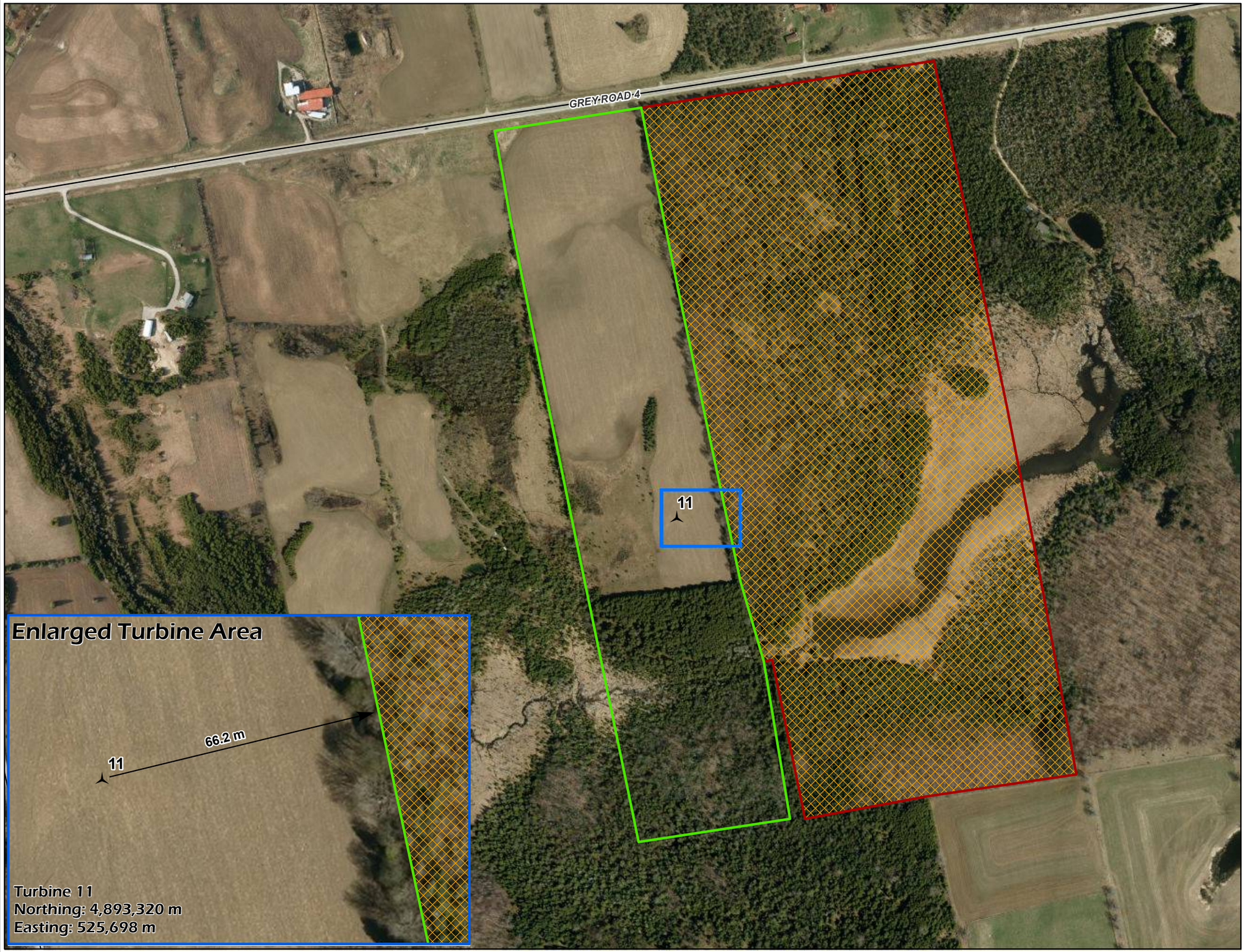
- Agreement Will Be in Place With Assessment - No Setback Required
- No Agreement - 60m Setback With Assessment

Turbine 8

0 50 100 200
Metres

1:5,000

NAD 1983 UTM Zone 17N



NEXTera ENERGY RESOURCES

East Durham
Wind Energy Centre

Grey County, Ontario

Parcel Boundary Setback Reduction Analysis

Legend

- Turbine Location
- Host Land Parcel
  Pt Lot 35 Con 1 Sdr Glenelg
- Neighbouring Land Parcel
  Pt Lot 36-37, Con 1 Sdr Glenelg

Required Lotline Setback

- Agreement Will Be in Place With Assessment - No Setback Required
- No Agreement - 60m Setback With Assessment

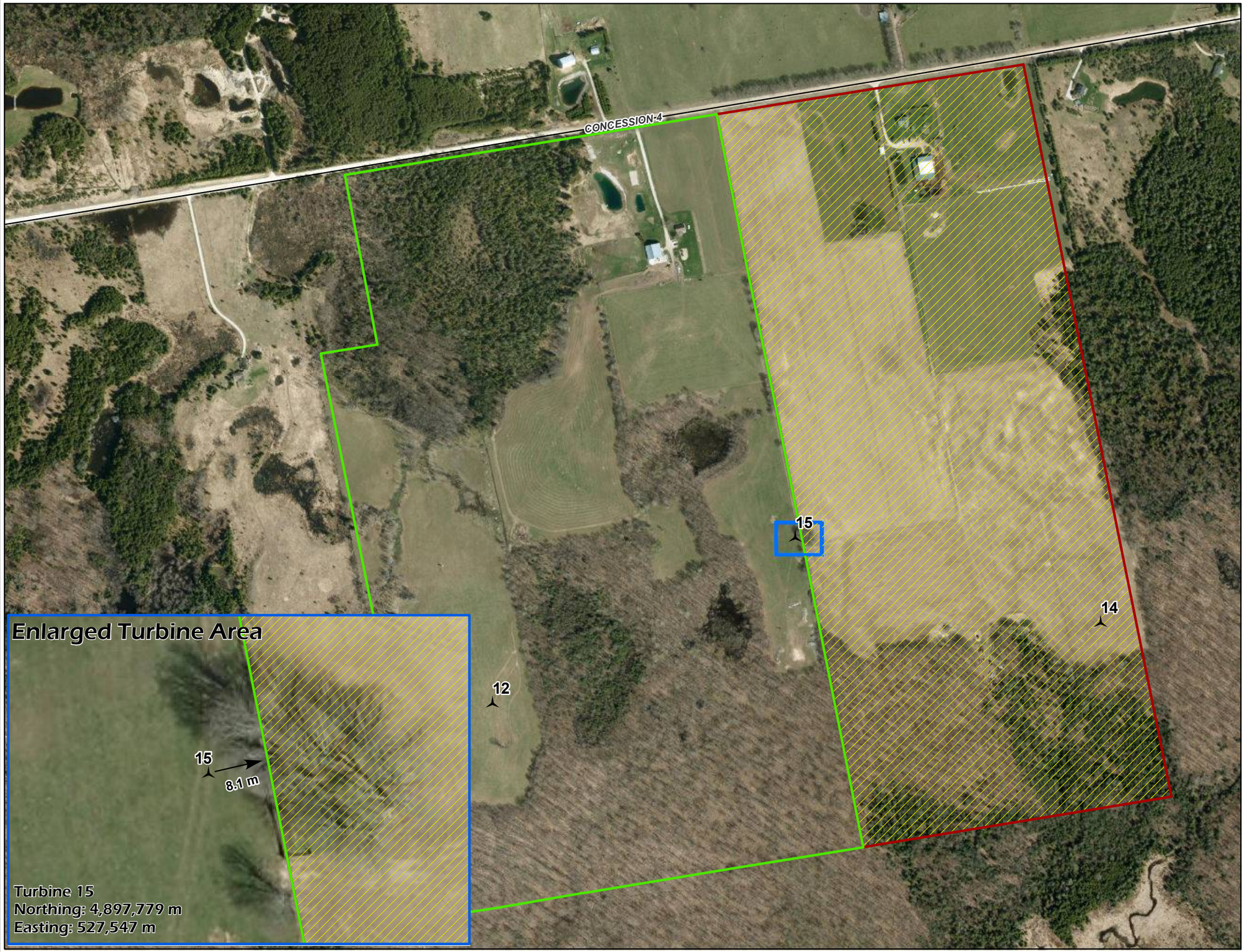
Turbine 11

0 50 100 200

Metres

1:5,000

NAD 1983 UTM Zone 17N



NEXTera ENERGY RESOURCES

East Durham
Wind Energy Centre

Grey County, Ontario

Parcel Boundary Setback Reduction Analysis

Legend

- Turbine Location
- Host Land Parcel
  Lot 24 Con 4 Ndr Glenelg
- Neighbouring Land Parcel
  Lot 25, Con 4 Ndr Glenelg

Required Lotline Setback

- Agreement Will Be in Place With Assessment - No Setback Required
- No Agreement - 60m Setback With Assessment

Turbine 15

0 50 100 200
Metres

1:5,000

NAD 1983 UTM Zone 17N