Ravenswood Line

TWH-03

JER3348

Roe-yes

2 * Vantage Point

Legend

- Wind Energy Centre Study Area
- Transmission Line Study Area
- Municipal Division
- Roads
- Railway

Natural Feature

- Watercourse (ABCA, SCRCA)
- Watercourse (MNR)
- 120m Area of Investigation

Project Location

- GE Turbine
- Permanent Meterological Tower
- Collection Line
- Access Road
- Crane Path
- Transmission Line
- Substation & Laydown Area
- Disturbance Area

Properties

- Denied
- Granted

Turtle Wintering Habitat

- Candidate Significant Wildlife Habitat
- Location of Vantage Point

Transect/point count/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or landowner consultation)

Metres

0 1.5 3 6 9 12

UTM Zone 17N, NAD 83 1:300

Jericho Wind Energy Centre
Natural Heritage Assessment Report

Significant Wildlife Habitat Field Map - TWH-03

January 2013
Project 60155032

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Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shoney + Jess Pickle
Feature ID: TWO-03	

Fill in survey form for each vantage point. **Vantage Point Number:** VP1

Vantage Point UTM Easting: 425315 Northing: 4780207	Date: 05/01/2013 Start Time: 12:30 P.m End Time: 12:50 P.m

Weather Conditions

Temperature (C°): 22% Wind (Dir.): SE Wind (B.S.): 3

Cloud Cover (%): 0 Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

- large Pond
- Beaver activity
- Abundance of basking habitat

Turtle species observed during monitoring period (Yes/No): Yes *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits
Painted Turtle		5-10cm		3	Basking on Floating log

Additional Notes

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
39/40	Looking East

AECOM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shorney + Jess Pichè
Feature ID: TWH-03	

Fill in survey form for each vantage point. **Vantage Point Number:** VP2

Vantage Point UTM Easting: 425191 Northing: 4780196	Date: 05/01/2013 Start Time: 12:55 p.m. End Time: 1:15 p.m.

Weather Conditions

Temperature (C°): 22°C Wind (Dir.): S Wind (B.S.): 3

Cloud Cover (%): 0 Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

- Pond Adjacent to Baverswood Road
- Woodlot and agricultural land surrounding

Turtle species observed during monitoring period (Yes/No): NO *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits

Additional Notes

- Am. Toads are actively breeding
- fish observed in pond

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
41/42	Pond

AECOM

Legend
Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Roads
Railway
Natural Feature
Watercourse (ABCA, SCRCA)
Watercourse (MNR)
120m Area of Investigation
Project Location
GE Turbine
Permanent Meterological Tower
Collection Line
Access Road
Crane Path
Transmission Line
Substation & Laydown Area
Disturbance Area
Properties
Denied
Granted
Turtle Wintering Habitat
Candidate Significant Wildlife Habitat
Location of Vantage Point
Ravenswood Line
Roadside Survey
TWH-03
JER3348
Roe = NO
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Metres
0 1.5 3 6 9 12
UTM Zone 17N, NAD 83 1:500
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Field Map - TWH-03
January 2013
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* Survey completed from road *

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Stevens + Justin Trumbal
Feature ID: TWH-03	

Fill in survey form for each vantage point. **Vantage Point Number:** VP1 (from Road)

Vantage Point UTM See Round #1 Notes Easting: Northing:	Date: May 17, 2013 Start Time: 11:15am End Time: 11:35am

Weather Conditions

Temperature (C°): 13°C Wind (Dir.): SW Wind (B.S.): 2

Cloud Cover (%): 55% Percipitation: Nil None

Description of Local Habitat Conditions and Adjacent Land Use:

- Agriculture / Deciduous forest

Turtle species observed during monitoring period (Yes/No): Yes *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits
Painted Turtle		5cm		1	Basking

Additional Notes

- Beaver Activity within pond

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
160-161	Pond

AECOM


Legend
Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Roads
Railway
Natural Feature
Watercourse (ABCA, SCRCA)
Watercourse (MNR)
120m Area of Investigation
Project Location
GE Turbine
Permanent Meteorological Tower
Collection Line
Access Road
Crane Path
Transmission Line
Substation & Laydown Area
Disturbance Area
Properties
Denied
Granted
Turtle Wintering Habitat
Candidate Significant Wildlife Habitat
Location of Vantage Point
Ravenswood Line
Roadside Survey
TWH-03
JER3248
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Field Map - TWH-03
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Turtle Wintering Area Survey Form

Study Area: Jemseg	**Observers:** Jess Pietta + Justin Munro
Feature ID: TWO-03	

Fill in survey form for each vantage point. **Vantage Point Number:**

Vantage Point UTM See round 1 Easting: Northing:	Date: 2015-05-27 Start Time: 2:11 pm End Time: 2:35 pm

Weather Conditions

Temperature (C°): 19°C Wind (Dir.): SE Wind (B.S.): 20 Km/h

Cloud Cover (%): 20% Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use: See round 1

No turtles observed

Turtle species observed during monitoring period (Yes/No): No *.If yes, fill in the table below.*

Description of Turtles Observed

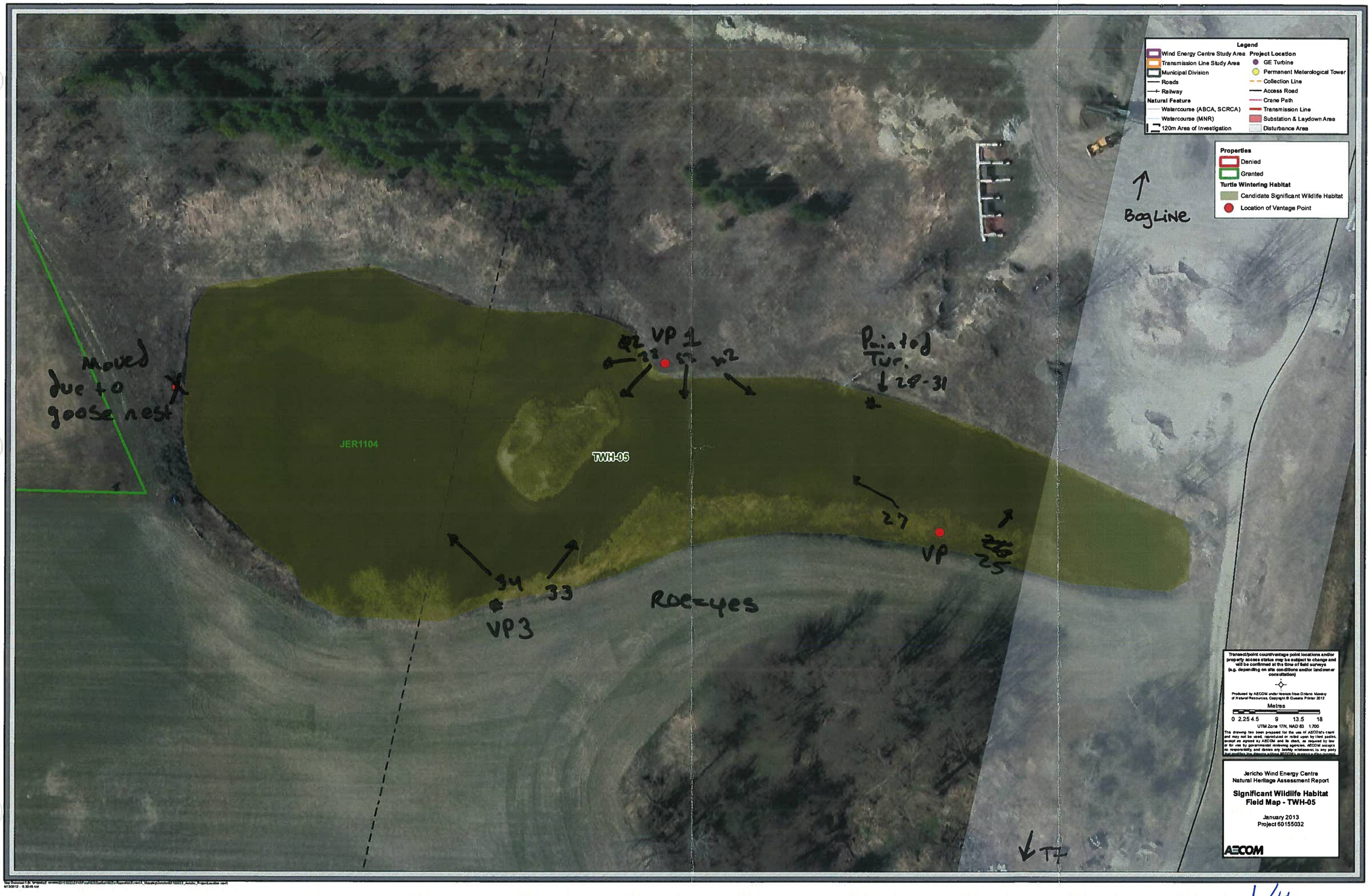
Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits

Additional Notes

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
6	S R pond

AECOM


Legend
Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Roads
Railway
Natural Feature
Watercourse (ABCA, SCRCA)
Watercourse (MNR)
120m Area of Investigation
Project Location
GE Turbine
Permanent Meterological Tower
Collection Line
Access Road
Crane Path
Transmission Line
Substation & Laydown Area
Disturbance Area
Properties
Denied
Granted
Turtle Wintering Habitat
Candidate Significant Wildlife Habitat
Location of Vantage Point
Bog Line
Moved due to goose nest
JER1104
TWH-05
VP 1
Painted Turt. 29-31
27
VP
25
34
33
VP3
Roe-yes
T7
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Metres
0 2.25 4.5 9 13.5 18
UTM Zone 17N, NAD 83 1:700
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Significant Wildlife Habitat
Field Map - TWH-05
January 2013
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1/4

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shorey + Jess Piette
Feature ID: TWH-05	

Fill in survey form for each vantage point. **Vantage Point Number:** 1

Vantage Point UTM 17T 429223, 4983	Date: 04/15/2013
Easting: 429923 Northing: 4783393	Start Time: 10:10 am End Time: 10:30am

Weather Conditions

Temperature (C°): 9°C	Wind (Dir.): SE	Wind (B.S.): 1	
Cloud Cover (%): 30%	Percipitation: Sunny		

Description of Local Habitat Conditions and Adjacent Land Use:

Surrounded by a combination of Agricultural land and Top Soil depot

Turtle species observed during monitoring period (Yes/No): NO *If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits
—	—	—	—	—	—

Additional Notes

Species: Common merganser, Blue heron, mallards, Turkey Vulture, red-winged Blackbird, Robin, mussell sp

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
21-24	On Pond and Surrounding land use

AECOM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shorney + Jess Pichè
Feature ID: TWH-05	

Fill in survey form for each vantage point. **Vantage Point Number:** 2

Vantage Point UTM 17T	Date: 04/15/2013
Easting: 430013 Northing: 4783339	Start Time: 10:35am End Time: 10:55am

Weather Conditions

Temperature (C°): 9°C Wind (Dir.): SE Wind (B.S.): 1

Cloud Cover (%): 30% Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

Surrounding land use Agriculture land and Top Soil Depot

Turtle species observed during monitoring period (Yes/No): Yes *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits
Painted Turtle		15-20cm	Unkno	1	Basking on Log over Pond

Additional Notes

Species: Mallard, Red-Winged Blackbird, Am. Robin, Sparrow Sp., Turkey Vulture

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
25, 27	Pond
26	mussell species
28-31	Painted Turtle

AECOM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shorney + Jess Pettle
Feature ID: TWH-05	

Fill in survey form for each vantage point. **Vantage Point Number:** 3

Vantage Point UTM 17T	Date: 04/15/2013
Easting: 429895 Northing: 4983343	Start Time: 10:59 am End Time: 11:19 am

Weather Conditions

Temperature (C°): 13°C Wind (Dir.): SE Wind (B.S.): 2

Cloud Cover (%): 60% Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

Surrounding land use includes combination of Agriculture Land and Top Soil Depot

Turtle species observed during monitoring period (Yes/No): NO *If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits

Additional Notes

Species: killdeer, muskrat, Female goose over nest, killdeer

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
33-34	Pond

AECOM

Legend

Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Roads
Railway

Natural Feature

Watercourse (ABCA, SCRCA)
Watercourse (MNR)
120m Area of Investigation

Project Location

GE Turbine
Permanent Meterological Tower
Collection Line
Access Road
Crane Path
Transmission Line
Substation & Laydown Area
Disturbance Area

Properties

Denied
Granted

Turtle Wintering Habitat

Candidate Significant Wildlife Habitat
Location of Vantage Point

Bog Line.

VP1

60

Moved due to Goose Nest

JER1104

TWH-05

Snapping Turtle

direction of Travel

62

3 Painted Turtles

55

VP2

VP3

Painted Turtle

Roe-yes

Transect/point count/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or landowner consultation)

Metres

0 2.25 4.5 9 13.5 18

UTM Zone 17N, NAD 83 1:700

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Natural Heritage Assessment Report

Significant Wildlife Habitat Field Map - TWH-05

January 2013
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6/13/2013 9:30:46 AM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shoveny + Jess Pieh
Feature ID: TWA-05	

Fill in survey form for each vantage point. **Vantage Point Number:** VP1

Vantage Point UTM See Round #1 Notes Easting: Northing:	Date: 05/01/2013 Start Time: 3:31 P.m End Time: 3:51 P.m

Weather Conditions

Temperature (C°): 26°C Wind (Dir.): S Wind (B.S.): 2

Cloud Cover (%): 0% Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

- Surrounding land use Agriculture and Top Soil depot

Turtle species observed during monitoring period (Yes/No): Yes *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits
Snapping Turtle		15-20cm		1	Travelling around gravel pit towards Pond
Painted Turtle		8-12cm		3	Basking on fallen Log

Additional Notes

- Am. Toads Actively calling

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
60	Pond

AECOM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Stanley + Jess Pilette
Feature ID: TWH-05	

Fill in survey form for each vantage point. **Vantage Point Number:** VP2

Vantage Point UTM See Round 1 Notes Easting: Northing:	Date: 05/01/2013 Start Time: 3:10 P.m End Time: 3:30 P.m

Weather Conditions

Temperature (C°): 26°C Wind (Dir.): S Wind (B.S.): 2

Cloud Cover (%): 0% Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

- Surrounding land use includes Top Soil depot / Agricultural land

Turtle species observed during monitoring period (Yes/No): No *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits

Additional Notes

- Am To calling in pond
- Anuran Sp. (Blue)

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
55	

AECOM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shorney + Jess Piette
Feature ID: TWH-05	

Fill in survey form for each vantage point. **Vantage Point Number:** VP3

Vantage Point UTM See Round 1 Notes Easting: Northing:	Date: 05/01/2013 Start Time: 3:53 P.m End Time: 4:13 P.m

Weather Conditions

Temperature (C°): 26°C Wind (Dir.): S Wind (B.S.): 2

Cloud Cover (%): 0% Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

- Adjacent to Agricultural lands and Typ Soil depod

Turtle species observed during monitoring period (Yes/No): Yes *.If yes, fill in the table below.*

Description of Turtles Observed

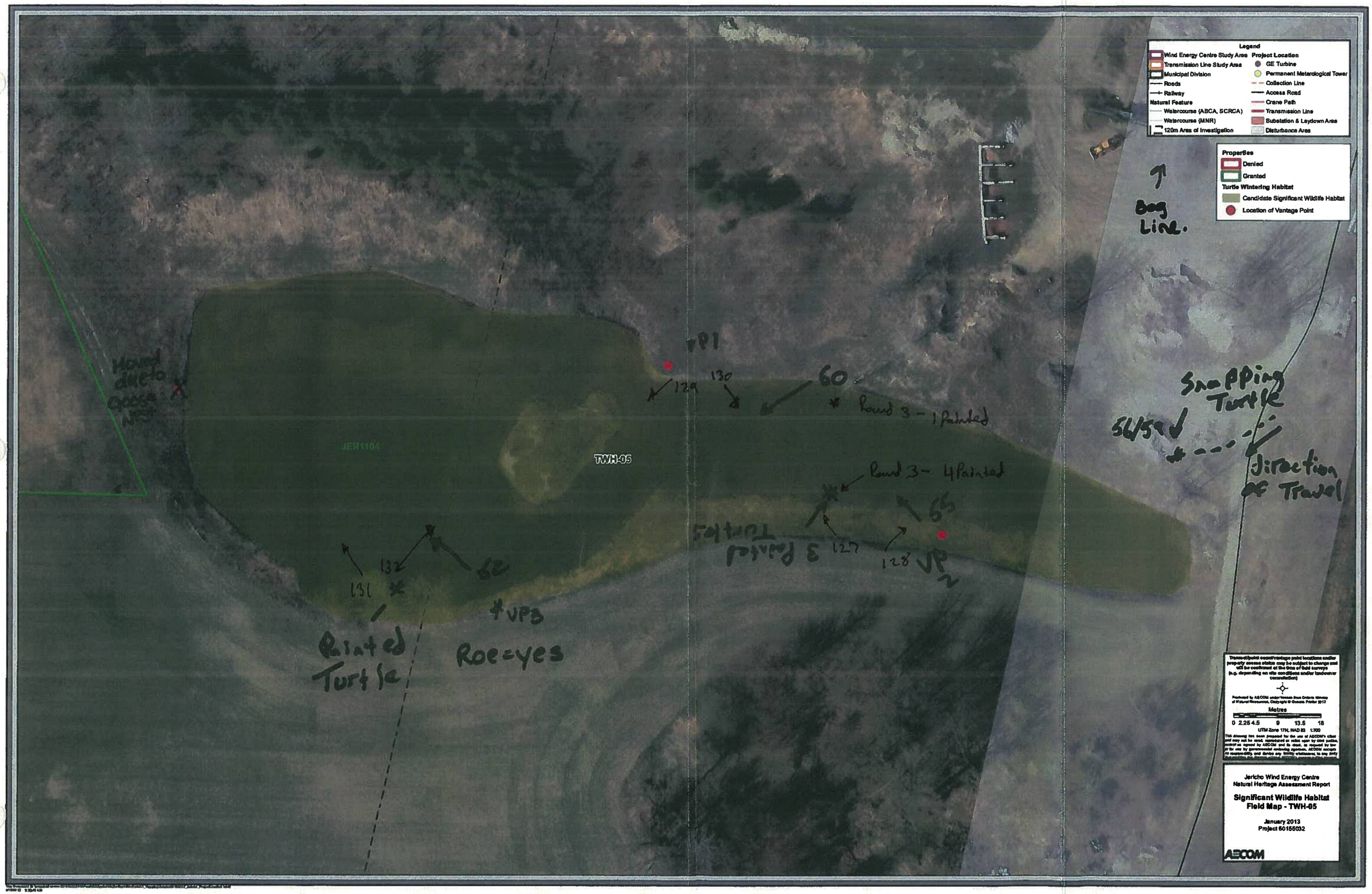
Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits
Painted Turtle		10		2	Basking on fallen log

Additional Notes

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
42	Pond

AECOM


Legend
Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Roads
Railway
Natural Feature
Watercourse (ABCA, SCRCA)
Watercourse (MNR)
120m Area of Investigation
Project Location
GE Turbine
Permanent Meteorological Tower
Collection Line
Access Road
Crane Path
Transmission Line
Substation & Laydown Area
Disturbance Area
Properties
Denied
Granted
Turtle Wintering Habitat
Candidate Significant Wildlife Habitat
Location of Vantage Point
Bog Line.
Snapping Turtle
Direction of Travel
Found dead Goose Nest
JER1104
TWH-05
VP1
129
130
60
Found 3 - 1 Painted
Found 3 - 4 Painted
3 Painted Turtles
127
128
65
VP2
131
132
62
VP3
Roeeyes
Painted Turtle
Transcribed point coordinate/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or landowner consultation)
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0 2.25 4.5 9 13.5 18
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Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shorney + Jestin Munro
Feature ID: TWH-05	

Fill in survey form for each vantage point. **Vantage Point Number:** VP1

Vantage Point UTM See Round #1 Notes Easting: Northing:	Date: May 16, 2013 Start Time: 10:000am End Time: 10:20am

Weather Conditions

Temperature (C°): 15°C Wind (Dir.): SW Wind (B.S.): 2

Cloud Cover (%): 0% Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

- Soil depot Adjacent
- Cultural meadow along shore

Turtle species observed during monitoring period (Yes/No): yes *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits
Painted Turtles		10-15		4	All basking on same log

Additional Notes

- large amount of Background Noise

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
129-130	Pond

AECOM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Stronay + Justin Munro
Feature ID: TWH-05	

Fill in survey form for each vantage point. **Vantage Point Number:** VP2

Vantage Point UTM see Round #1 Notes	Date: May 16, 2013
Easting: Northing:	Start Time: 9:38 a.m. End Time: 9:58 a.m.

Weather Conditions

Temperature (C°): 12°C Wind (Dir.): SW Wind (B.S.): 2

Cloud Cover (%): 0% Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

- Soil depot adjacent
- machinery working

Turtle species observed during monitoring period (Yes/No): Yes *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits
Painted Turtle		15cm		1	Basking on log near VP1
Unknown		15cm		1	Floating at surface of Pond

Additional Notes

- machinery creating loud noise

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
127-128	Pond

AECOM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shorney + Justin Munro
Feature ID: TWH-05	

Fill in survey form for each vantage point. **Vantage Point Number:** VP3

Vantage Point UTM See Round #1 Notes Easting: Northing:	Date: May 16, 2013 Start Time: 10:22am End Time: 10:42am

Weather Conditions

Temperature (C°): 15°C Wind (Dir.): SW Wind (B.S.): 2

Cloud Cover (%): 10% Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

- Surrounded by Sand depod, Cultural meadow and agriculture

Turtle species observed during monitoring period (Yes/No): NO *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits

Additional Notes

- Breeding at this VP - which may be affecting basking conditions

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
131-132	Pond

AECOM

↖ T8
↑ Bog Line
← Gordon Road
Roe=yes
VP1
50
51
TWH-06
JER3723
Roe = NO
Legend
Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Roads
Railway
Natural Feature
Watercourse (ABCA, SCRCA)
Watercourse (MNR)
120m Area of Investigation
Project Location
GE Turbine
Permanent Meterological Tower
Collection Line
Access Road
Crane Path
Transmission Line
Substation & Laydown Area
Disturbance Area
Properties
Denied
Granted
Turtle Wintering Habitat
Candidate Significant Wildlife Habitat
Location of Vantage Point
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Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shorney + Jess Pietto
Feature ID: TWH-06	

Fill in survey form for each vantage point. **Vantage Point Number:** 1

Vantage Point UTM 17T Easting: 431378 Northing: 4782535	Date: 04/15/13 Start Time: 1:46 Pm End Time: 2:06 Pm.
Weather Conditions Temperature (C°): 14°C Wind (Dir.): SE Wind (B.S.): 3 Cloud Cover (%): 85% Percipitation: None	

Description of Local Habitat Conditions and Adjacent Land Use:

Agricultural land use

Turtle species observed during monitoring period (Yes/No): _____ *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits

Additional Notes

Species: Flushed 3 Wood ducks from pond, flickers, Turkey Vulture, Song Sparrow

- Banks along length of pond very steep
- Banks at both ends - gradual slope for nesting Access

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
50	West - Pond
51	East - Pond

AECOM

T8 ↑ Bog Line

← Gordon Rd

JER1427

Roe-yes

76 ↘

TWH-06

JBR3723

Roe-NO

← NO Access →

Legend

Wind Energy Centre Study Area	**Project Location**
Transmission Line Study Area	GE Turbine
Municipal Division	Permanent Meterological Tower
Roads	Collection Line
Railway	Access Road
Natural Feature	Crane Path
Watercourse (ABCA, SCRCA)	Transmission Line
Watercourse (MNR)	Substation & Laydown Area
120m Area of Investigation	Disturbance Area

Properties
- Denied
- Granted

Turtle Wintering Habitat
- Candidate Significant Wildlife Habitat
- Location of Vantage Point

Transect/point count/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or landowner consultation)

Metres

0 1.252.5 5 7.5 10

UTM Zone 17N, NAD 83 1:400

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Natural Heritage Assessment Report

Significant Wildlife Habitat Field Map - TWH-06

January 2013
Project 60155032

AECOM

Turtle Wintering Area Survey Form

Study Area: Jeanette	**Observers:** Tom Sharkey + Jess Piette
Feature ID: TWH-06	

Fill in survey form for each vantage point. **Vantage Point Number:** VP1

Vantage Point UTM See Round 1 Notes **Easting:** **Northing:**	**Date:** May 1, 2013 **Start Time:** 10:15 am **End Time:** 10:35 am

Weather Conditions

Temperature (C°): 18°C Wind (Dir.): SE Wind (B.S.): 2

Cloud Cover (%): 10% Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

- Surrounding land use agricultural

Turtle species observed during monitoring period (Yes/No): No *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits

Additional Notes

- Am To and Pickerel frog calling

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
76	Pond - from Vantage Point

AECOM


T8
Bog Line
Gordon Rd
Legend
Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Roads
Railway
Natural Feature
Watercourse (ABCA, SCRCA)
Watercourse (MNR)
120m Area of Investigation
Project Location
GE Turbine
Permanent Meteorological Tower
Collection Line
Access Road
Crane Path
Transmission Line
Substation & Laydown Area
Disturbance Area
Properties
Denied
Granted
Turtle Wintering Habitat
Candidate Significant Wildlife Habitat
Location of Vantage Point
Rae-yes
VP
76
VP
TWH-06
(P1)
VP
(P2)
Snapper
NO ACCESS
Metres
0 1.252.5 5 7.5 10
UTM Zone 17N, NAD 83 1:400
Jericho Wind Energy Centre
Natural Heritage Assessment Report
Significant Wildlife Habitat
Field Map - TWH-06
January 2013
Project 60155032
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Turtle Wintering Area Survey Form

Study Area: JER	**Observers:** Rob + Rayna
Feature ID: TWH-06 / P1 + P2	

Fill in survey form for each vantage point. **Vantage Point Number:**

Vantage Point UTM See map • VP. Easting: Northing:	Date: 05.16.13 Start Time: 1:30 End Time: 2:10
Weather Conditions Temperature (C°): ~20 Wind (Dir.): SW. Wind (B.S.): 2. Cloud Cover (%): 0%. Percipitation:	

Description of Local Habitat Conditions and Adjacent Land Use:

Agriculture / woodlot.

Turtle species observed during monitoring period (Yes/No): YES *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits
Snapping	See Map.	±2ft	?	1	Sunning in P2.

Additional Notes

- GRCA - COGR
- WAVI - NOHE
- VESP
- TUVU
- AMCR

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)

AECOM


Roeeyes
JER3598
TWH-07
T58
Northville Road
Legend
Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Roads
Railway
Natural Feature
Watercourse (ABCA, SCRCA)
Watercourse (MNR)
120m Area of Investigation
Project Location
GE Turbine
Permanent Meterological Tower
Collection Line
Access Road
Crane Path
Transmission Line
Substation & Laydown Area
Disturbance Area
Properties
Denied
Granted
Turtle Wintering Habitat
Candidate Significant Wildlife Habitat
Location of Vantage Point
Transect/point count/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or landowner consultation)
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Metres
0 1 2 4 6 8
UTM Zone 17N, NAD 83 1:300
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Jericho Wind Energy Centre
Natural Heritage Assessment Report
Significant Wildlife Habitat
Field Map - TWH-07
January 2013
Project 60155032
AECOM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shorney & Jess Pirie
Feature ID: TWH-07	

Fill in survey form for each vantage point. **Vantage Point Number:** 1

Vantage Point UTM 17T Easting: 428238 Northing: 4974209	Date: 04/15/2013 Start Time: 3:45 P.m End Time: 4:05 P.m

Weather Conditions

Temperature (C°): 21°C Wind (Dir.): S Wind (B.S.): 4

Cloud Cover (%): 90% Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

Next to farm → laneway adjacent to pond

Turtle species observed during monitoring period (Yes/No): NO *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits

Additional Notes

- Extremely windy very little structure for basking
- No Turtles observed

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
53-54	North / South Photos

AECOM


Legend
Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Roads
Railway
Natural Feature
Watercourse (ABCA, SCRCA)
Watercourse (MNR)
120m Area of Investigation
Project Location
GE Turbine
Permanent Meterological Tower
Collection Line
Access Road
Crane Path
Transmission Line
Substation & Laydown Area
Disturbance Area
Properties
Denied
Granted
Turtle Wintering Habitat
Candidate Significant Wildlife Habitat
Location of Vantage Point
JER3598
TWH-07
Roe-yes
TS8
← access from Northville Road
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Jericho Wind Energy Centre
Natural Heritage Assessment Report
Significant Wildlife Habitat
Field Map - TWH-07
January 2013
Project 60155032
AECOM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shoung + Jess Pieffe
Feature ID: TWO-07	

Fill in survey form for each vantage point. **Vantage Point Number:** VP1

Vantage Point UTM See Round 1 Notes Easting: Northing:	Date: 05/01/2013 Start Time: 2:03 P.m End Time: 2:23 P.m

Weather Conditions

Temperature (C°): 26°c Wind (Dir.): S Wind (B.S.): 3

Cloud Cover (%): 0 Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

- Surrounding land use agricultural
- Water quality in pond murky

Turtle species observed during monitoring period (Yes/No): Yes *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits
Snapping Turtle		30cm		1	Basking in weeds along shoreline, still in water

Additional Notes

- Several minnows in pond
-

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
45/46/47	Pond

AECOM


Legend
Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Roads
Railway
Natural Feature
Watercourse (ABCA, SCRCA)
Watercourse (MNR)
120m Area of Investigation
Project Location
GE Turbine
Permanent Materological Tower
Collection Line
Access Road
Crane Path
Transmission Line
Substation & Laydown Area
Disturbance Area
Properties
Denied
Granted
Turtle Wintering Habitat
Candidate Significant Wildlife Habitat
Location of Vantage Point
JER3598
TWH-07
Roe - yes
TS8
← access from Northville Road
Transect/point count/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or land owner consultation)
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Metres
0 1 2 4 6 8
UTM Zone 17N, NAD 83 1:300
Jericho Wind Energy Centre
Natural Heritage Assessment Report
Significant Wildlife Habitat
Field Map - TWH-07
January 2013
Project 60155032
AECOM

Turtle Wintering Area Survey Form

Study Area: SER	**Observers:** Rob / Rayna
Feature ID: TWH/07	

Fill in survey form for each vantage point. **Vantage Point Number:**

Vantage Point UTM See Round 1 Notes Easting: Northing:	Date: May 16, 2013 Start Time: 11:35 am End Time: 11:55 am
Weather Conditions Temperature (C°): 20 Wind (Dir.): SW Wind (B.S.): 2 Cloud Cover (%): 0 Percipitation:	

Description of Local Habitat Conditions and Adjacent Land Use:

Agri land / farm house / equipment pile.

Turtle species observed during monitoring period (Yes/No): _____ *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits

Additional Notes

- RWBL
- AMRO
- Bat hanging on shrub looks injured/sick/dying
- Minnows
- Green Frog
- Bird Nest in SW corner of pond (empty

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)

AECOM

Birnam Line
VP1
TWH-08
JER2946
Roe=yes
T102
T103
Legend
Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Roads
Railway
Natural Feature
Watercourse (ABCA, SCRCA)
Watercourse (MNR)
120m Area of Investigation
Project Location
GE Turbine
Permanent Meterological Tower
Collection Line
Access Road
Crane Path
Transmission Line
Substation & Laydown Area
Disturbance Area
Properties
Denied
Granted
Turtle Wintering Habitat
Candidate Significant Wildlife Habitat
Location of Vantage Point
Transect/point count/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or landowner consultation)
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Metres
0 2 4 8 12 16
UTM Zone 17N, NAD 83 1:600
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Jericho Wind Energy Centre
Natural Heritage Assessment Report
Significant Wildlife Habitat
Field Map - TWH-08
January 2013
Project 60155032
AECOM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Stoney + Jess Pethe
Feature ID: TWH-08	

Fill in survey form for each vantage point. **Vantage Point Number:** 1

Vantage Point UTM 17T Easting: 433399 Northing: 4766773	Date: 04/15/13 Start Time: 5:05 p.m. End Time: 5:25 p.m.
Weather Conditions Temperature (C°): 21°C Wind (Dir.): S Wind (B.S.): 4 Cloud Cover (%): 100 % Percipitation: None	

Description of Local Habitat Conditions and Adjacent Land Use:

- Surrounding land Agricultural

Turtle species observed during monitoring period (Yes/No): NO *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits

Additional Notes

- Appears some work has been done around pond
  - exposed soils → potentially a restoration project
- nesting geese along shore

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
58	North Portion of Pond
59	South Portion of Pond

AECOM

↑ Birnam Line

1 Painted

Pic 72-74

TWH-08

JER2946

Rocky es

3 Painted

T102

T103

Legend

Wind Energy Centre Study Area	**Project Location**
Transmission Line Study Area	GE Turbine
Municipal Division	Permanent Meterological Tower
Roads	Collection Line
Railway	Access Road
Natural Feature	Crane Path
Watercourse (ABCA, SCRCA)	Transmission Line
Watercourse (MNR)	Substation & Laydown Area
120m Area of Investigation	Disturbance Area

Properties

Denied

Granted

Turtle Wintering Habitat

Candidate Significant Wildlife Habitat

Location of Vantage Point

Transect/point count/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or landowner consultation)

Metres

0 2 4 8 12 16

UTM Zone 17N, NAD 83 1:800

Jericho Wind Energy Centre
Natural Heritage Assessment Report

Significant Wildlife Habitat Field Map - TWH-08

January 2013
Project 60155032

AECOM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** Tom Shorney + Jess Piette
Feature ID: TWH-08	

Fill in survey form for each vantage point. **Vantage Point Number:** VP1

Vantage Point UTM See Round #1 Notes Easting: Northing:	Date: 05/02/2013 Start Time: 9:15 am End Time: 9:35 am

Weather Conditions

Temperature (C°): 19°C Wind (Dir.): SE Wind (B.S.): 4

Cloud Cover (%): 10% Percipitation: None

Description of Local Habitat Conditions and Adjacent Land Use:

- Surrounding land use a combination of pasture and natural area
- Appears to be restoring area
- No real changes since Round 1 Visit.

Turtle species observed during monitoring period (Yes/No): Yes *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits
Painted Turtle		8-12cm	—	4	3 Basking on log, 1 basking on bank

Additional Notes

- Flushed mallard from Pond

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)
72/74	Painted Turtles in Pond

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↑ Binom Line

Legend

Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Roads
Railway
Natural Feature
Watercourse (ABCA, SCRCA)
Watercourse (MNR)
120m Area of Investigation

Project Location
GE Turbine
Permanent Meterological Tower
Collection Line
Access Road
Crane Path
Transmission Line
Substation & Laydown Area
Disturbance Area

Properties
Denied
Granted
Turtle Wintering Habitat
Candidate Significant Wildlife Habitat
Location of Vantage Point

1 Painted

TWH-08

Rocks

3 Painted

T102

T103

Transmission/wind ground/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or landowner consultation)

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Metres

0 2 4 8 12 16

UTM Zone 17N, NAD 83 1:200

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Jericho Wind Energy Centre
Natural Heritage Assessment Report

Significant Wildlife Habitat Field Map - TWH-08

January 2013
Project 60155032

AECOM

Turtle Wintering Area Survey Form

Study Area: Jericho	**Observers:** RA, RC
Feature ID: TWH-08	

Fill in survey form for each vantage point. **Vantage Point Number:** 1

Vantage Point UTM See Round 1 Notes Easting: Northing:	Date: May 16, 2013 Start Time: 10:00am End Time: 10:20am

Weather Conditions

Temperature (C°): 20°C Wind (Dir.): SE Wind (B.S.): 2

Cloud Cover (%): 0% Percipitation:

Description of Local Habitat Conditions and Adjacent Land Use:

Agricultural land, grass field. Area surrounding pond cleared, spoke with landowner who said area was cleared and was going to plant native wildflowers.

Turtle species observed during monitoring period (Yes/No): No *.If yes, fill in the table below.*

Description of Turtles Observed

Species	UTMs	Length	Sex	#	Behaviour/ Description of visible traits

Additional Notes

BASV observed foraging over fields/ponds

Photo Log

Photo ID	Decription (locations, direction, observation, etc.)

AECOM

Appendix C

Vascular Plant Species List

BOTANICAL NAME		COMMON NAME	Coefficient of Conservatism	Wetness Index	Weediness Index	Provincial Status	OMNR Status	COSEWIC Status	Global Status	Local Status Lambton County	Local Status Huron County																						
												1-Aug-13	17-May-12		31-May-12		31-May-12	2-Apr-13		1-May-12	26-Jul-12		2-Apr-13					14-Jun-13		9-Jul-13	4-Jul-13	1-Aug-13	9-May-12
												90	117		118		119	145		172	233		290					293			298	340	383
			Oldham et al 2003	Oldham et al	Oldham et al	Newmaster			Newmaster	Tiedje 2004	Oldham 1993	CUM1-1	CUP1-3	CUM1-1	SWD2-2	FOD5-2	FOD5-2	FOD6-4	SWD3-3	CUT1b	FOD5a	CUP2-1	FOD7-2	FOD9-3	CUM1-1	FOD7-4	FOD6-1	FOD9-4	CUW1	CUW1	CUM1-1	CUM1-1	FOD6-5
PTERIDOPHYTES		**FERNS & ALLIES**																															
Aspleniaceae		**Spleenwort Family**																															
Asplenium	*platyneuron*	Ebony Spleenwort	6	3		S4			G5	R1												U											
Dryopteridaceae		**Wood Fern Family**																															
Athyrium	*filix-femina var. angustum*	Northern Lady Fern	4	0		S5			G5T5		X											R											
Dryopteris	*carthusiana*	Spinulose Wood Fern	5	-2		S5			G5		X						U					U											
Dryopteris	*marginalis*	Marginal Wood Fern	5	3		S5			G5	L4	X						U																
Onoclea	*sensibilis*	Sensitive Fern	4	-3		S5			G5		X				F		R											R					
Polystichum	*acrostichoides*	Christmas Fern	5	5		S5			G5		X					U	U																
Equisetaceae		**Horsetail Family**																															
Equisetum	*Arvense*	Field Horsetail				S5			G5	s																		R					
Equisetum	*pratense*	Meadow Horsetail	8	-3		S5			G5	L1	X				R																		
GYMNOSPERMS		**CONIFERS**																															
Cupressaceae		**Cedar Family**																															
Juniperus	*virginiana*	Eastern Red Cedar	4	3		S5			G5		X										R												
Juniperus	*communis*	Common Juniper				S5			G5			R															R						
Thuja	*occidentalis*	Eastern White Cedar	4	-3		S5			G5		X			R		U																	
Pinaceae		**Pine Family**																															
Picea	*abies*	Norway Spruce		5	-1	SE3			G?							U																	
Pinus	*strobus*	Eastern White Pine	4	3		S5			G5	L3	X										R	F											
Pinus	*sylvestria*	Scotch Pine		5	-3	SE5			G?	JL	I	R		U																			R
DICOTYLED		**DICOTS**																															
Aceraceae		**Maple Family**																															
Acer	*saccharinum*	Silver Maple	5	-3		S5			G5		X							U					R	R			D						
Acer	*saccharum*	Sugar Maple	4	3		S5			G5T?		X				D	F	D	D										F					U
Acer X	*negundo*	Manitoba Maple	0	-2		S5			G5	C																				U			
Acer	*nigrum*	Black Maple	7	3		S4?			G5Q		X																	R					U
Acer X	*freemanii*	Freeman's Maple				SNR			GNA		L4		U	U					D		D		U	F									
Anacardiaceae		**Sumac or Cashew Family**																															
Rhus	*coriaria*	Staghorn Sumac	1	5		S5			G5	C		U								U										U			
Toxicodendron	*radicans ssp. negundo*	Climbing Poison-ivy	5	-1		S5			G5T		X		R		U		F	R	U	U			F	F									
Toxicodendron	*rydbergil*	Ground Poison-ivy	0	0		S5			G5T						F	F	U			U	U							D					
Apiaceae		**Carrot or Parsley Family**																															
Daucus	*carota*	Wild Carrot		5	-2	SE5			G?		I	U		U				U		U									U	U	U	U	
Apocynaceae																																	
Apocynum	*cannabinum*	Indian Hemp				S5			GNR																					R			
Asclepiadaceae																																	
Asclepias	*syriaca*	Common Milkweed				S5			G5																					U	U	U	
Asteraceae		**Composite or Aster Family**																															
Achillea	*milliefolium*	Common Yarrow				SNA			G5T5?																						U		
Ambrosia	*artemisiifolia*	Common Ragweed				S5			G5																					U	U		
Ambrosia	*trifida*	Giant Ragweed				S5			G5																					U	U		
Arctium	*minus*	Common Burdock		5	-2	SE5			G?T?		I							R	R				U						F	U			
Symphyotrichum	*ericoides*	Heath Aster				S5			S5T5																					U			
Symphyotrichum	*lanceolatum*	Tall White Aster	3	-3		S5			G5T?		X				F				U				F							U	F	U	
Symphyotrichum	*lateriflorum*	Calico Aster	3	-2		S5			G5T5		X		R		F	F	F	F	F	U			U										
Symphyotrichum	*novae-angliae*	New England Aster	2	-3		S5			G5	C										R										U	U		
Symphyotrichum	*puniceus*	Purple-stemmed Aster				S5			G5T?	L3	X		U							U													
Cichorium	*intybus*	Chicory		5	-1	SE5			G?		I																		U				
Cirsium	*arvense*	Canada Thistle				SNA			GNR																					U		U	
Cirsium	*vulgare*	Bull Thistle		4	-1	SE5			G5		I						R	R															
Cirsium	*species*	Thistle Species																													U		
Erigeron	*annus*	Eastern Daisy Fleabane	0	1		S5			G5						U						U												
Erigeron	*philadelphicus ssp. philadelph*	Philadelphia Fleabane	1	-3		S5			G5T?		X		R	U	U															U	U		
Eupatorium	*perfoliatum*	Perfoliate Thoroughwort/Boneset	2	-4		S5			G5		X				U		R																
Leucanthemum	*vulgare*	Ox-eye Daisy				SNA			GNR																					U	U		
Prenanthes	*altissima*	Tall White Lettuce	5	3		S5			G5?	L4	X	U				R	U																
Solidago	*altissima*	Tall Goldenrod	1	3		S5					X		F	F					U	U			F		U					F		F	
Solidago	*canadensis*	Canada Goldenrod	1	3		S5			G5		X					R			U	U	R	U	F		U				F				

BOTANICAL NAME		COMMON NAME	Coefficient of Conservatism	Wetness Index	Weediness Index	Provincial Status	OMNR Status	COSEWIC Status	Global Status	Local Status Lambton County	Local Status Huron County	1-Aug-13	17-May-12		31-May-12		31-May-12	2-Apr-13		1-May-12	26-Jul-12		2-Apr-13					14-Jun-13		9-Jul-13	4-Jul-13	1-Aug-13	9-May-12
												90	117		118		119	145		172	233		290					293			298	340	383
			Oldham et al 2003	Oldham et al	Oldham et al	Newmaster			Newmaster	Tiedje 2004	Oldham 1993	CUM1-1	CUP1-3	CUM1-1	SWD2-2	FOD5-2	FOD5-2	FOD6-4	SWD3-3	CUT1b	FOD5a	CUP2-1	FOD7-2	FOD9-3	CUM1-1	FOD7-4	FOD6-1	FOD9-4	CUW1	CUW1	CUM1-1	CUM1-1	FOD6-5
Solidago	*flexicaulis*	Zig-zag Goldenrod	6	3		S5			G5	L	X						U																
Solidago	*gigantea*	Giant Goldenrod	4	-3		S5			G5		X				F															U			
Solidago	*species*	Goldenrod species																															
Sonchus	*arvensis*	Field Sow-thistle				SNA			GNRTNR																					F			
Taraxacum	*officinale*	Common Dandelion		3	-2	SE5			G5		I		R	U			U			U										R			
Tragopogon	*pratensis*	Common Goatsbeard																												U			U
Balsaminaceae		**Touch-me-not Family**																															
Impatiens	*capensis*	Spotted Jewelweed	4	-3		S5			G5		X				D	U																	
Berberidaceae		**Barberry Family**																															
Podophyllum	*peltatum*	May-apple	5	3		S5			G5		X						U											U					U
Betulaceae		**Birch Family**																															
Betula	*papyrifera*	White Birch																										U					
Carpinus	*caroliniana ssp. virginiana*	Blue Beech	6	0		S5			G5T		X				D	F				U								R					
Corylus	*americana*	American Hazel				S5			G5																			U					
Ostrya	*virginiana*	Ironwood	4	4		S5			G5		X				F	U	U	F										U					U
Brassicaceae		**Mustard Family**																															
Alliaria	*petiolata*	Garlic Mustard		0	-3	SE5			G5		I						F	U	U				F					F	D	R	R		U
Barbarea	*vulgaris*	Yellow Rocket		0	-1	SE5			G?		I					R																	
Cardamine	*concatenata*	Cut-leaf Toothwort	6	3		S5			G5		X					R	R																U
Capsella	*bursa-pastoris*	Common Shepherd's Purse				SNA			GNR																				U				
Hesperis	*matronalis*	Dame's Rocket		5	-3	SE5			G4G5		I																	U	U	U			
Caprifoliaceae		**Honeysuckle Family**																															
Lonicera	*dioica*	Glaucous Honeysuckle	5	3		S5			G5		X		R									R											
Lonicera	*tatarica*	Tartarian Honeysuckle		3	-3	SE5			G?		I									R		R											
Sambucus	*canadensis*	Common Elderberry	5	-2		S5			G5		X											R											
Sambucus	*racemosa var. racemosa*	Red-berried Elderberry	5	2		S5			G5T4T5	L3	X												R										
Sambucus	*nigra*	Black-berried Elder				SEH			G?								R																
Viburnum	*acerifolium*	Maple-leaf Viburnum	6	5		S5			G5		X	R																					
Viburnum	*lentago*	Nannyberry	4	-1		S5			G5		X						R			U										R			
Caryophyllaceae																																	
Silene	*vulgaris*	Bladder Campion				SNA			GNR																				U				
Celastraceae		**Staff-tree Family**																															
Celastrus	*scandens*	Climbing Bittersweet	3	3		S5			G5		X											R											
Euonymus	*obovata*	Running Strawberry-bush	6	5		S5			G5		X					F	F																U
Chenopodiaceae																																	
Chenopodium	*album*	Common Lambsquaters				SNA			G5TNR																					U			
Convolvulaceae																																	
Convolvulus	*arvensis*	Field Bindweed				S5			G5																					U			
Cornaceae		**Dogwood Family**																															
Cornus	*alternifolia*	Alternate-leaved Dogwood	6	5		S5			G5		X										U	U											
Cornus	*amomum ssp. obliqua*	Silky Dogwood	5	-4		S5			G5T?		X																			R			
Cornus	*racemosa*	Grey dogwood	2	-2		S5			G5?		X	U		F		U		U	U	U	R		U	F			U	U		U			
Cornus	*Rugosa*	Round-leaved Dogwood				S5			G5																			U					
Cornus	*sericea*	Red-osier Dogwood	2	-3		S5			G5		X			R						U			U	U	U		U			U			
Dipsacaceae		**Teasel Family**																															
Dipsacus	*fullonum ssp. sylvestris*	Wild Teasel		5	-1	SE5			G?T?		I			U				U					U		R					U	U	U	
Elaeagnaceae		**Oleaster Family**																															
Elaeagnus	*umbellata*	Autumn Olive		3	-3	SE3			G?	IR	IR	U								U													
Ericaceae		**Heath Family**																															
Lotus	*corniculatus*	Bird's-foot Trefoil		1	-2	SE5			G?		I									R													
Fabaceae		**Pea Family**																															
Medicago	*lupulina*	Black Medick				SNA			GNR																				U	U	U		
Medicago	*sativa*	Alfalfa				S5			G5																						R		
Melilotus	*alba*	White Sweet-clover				S5			G5																					U	U		
Robinia	*pseudoacacia*	Black Locust				SNA			G5																					R			
Trifolium	*pratense*	Red Clover		2	-2	SE5			G?		I																			R	U		
Trifolium	*repens*	White Clover				SNA			GNR																						U		
Vicia	*cracca*	Cow Vetch				S5			G5																						U		
Fagaceae		**Beech Family**																															

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												90	117		118		119	145		172	233		290					293			298	340	383
			Oldham et al 2003	Oldham et al	Oldham et al	Newmaster			Newmaster	Tiedje 2004	Oldham 1993	CUM1-1	CUP1-3	CUM1-1	SWD2-2	FOD5-2	FOD5-2	FOD6-4	SWD3-3	CUT1b	FOD5a	CUP2-1	FOD7-2	FOD9-3	CUM1-1	FOD7-4	FOD6-1	FOD9-4	CUW1	CUW1	CUM1-1	CUM1-1	FOD6-5
Fagus	*grandifolia*	American Beech	6	3		S5			G5		X					F	F	R			U							R					F
Quercus	*alba*	White Oak				S5			G5																			U					
Quercus	*macrocarpa*	Bur Oak	5	1		S5			G5		X				R		R	U					F	D			U	F					U
Quercus	*rubra*	Red Oak	6	3		S5			G5		X				R		R										U	U					
Quercus	*bicolor*	Swamp white oak	8	-4		S4			G5						R																		
Geraniaceae		**Geranium Family**																															
Geranium	*maculatum*	Spotted Geranium	6	3		S5			G5		X				F	D	F			U													U
Grossulariaceae		**Currant Family**																															
Ribes	*americanum*	Wild Black Currant	4	-3		S5			G5		X				F	U	U			U									U				U
Ribes	*cynosbati*	Prickly Gooseberry	4	5		S5			G5		X						F				U	R	U					U					U
Ribes	*rubrum*	Red Currant		5	-2	SE5			G4G5						U													U					
Ribes	*species*	Currant Species																					D										
Guttiferae		**St. John's-wort Family**																															
Hypericum	*perforatum*	Common St. John's-wort		5	-3	SE5			G?		I	U								R										U			
Hamamelidaceae		**Witch-hazel Family**																															
Hamamelis	*virginiana*	Witch-hazel	6	3		S5			G5		X				U																		
Hydrophyllaceae		**Water-leaf Family**																															
Hydrophyllum	*virginianum*	Virginia Water-leaf	6	-2		S5			G5	L4	X					U	U											F					
Juglandaceae		**Walnut Family**																															
Carya	*cordiformis*	Bitternut hickory	6	0		S5			G5		X							R	R				U					F					
Carya	*ovata var. ovata*	Shagbark Hickory	6	3		S5			G5		X				U	U	U						R	U			U	D					U
Juglans	*nigra*	Black Walnut	5	3		S4			G5		X	U	D	U							U	U	U	R	U	D	R					U	U
Lamiaceae		**Mint Family**																															
Lycopus	*americanus*	Cut-leaved Bungleweed	4	-5		S5			G5		X				U																		
Lauraceae		**Laurel Family**																															
Lindera	*benzoin*	Spicebush	6	-2		S5			G5		X				F													U					
Menispermaceae		**Moonseed Family**																															
Menispermum	*canadense*	Moonseed	7	0		S4			G5		X						U																
Moraceae																																	
Morus	*Species*	Mulberry Species										R																					
Oleaceae		**Olive Family**																															
Fraxinus	*americana*	White Ash	4	3		S5			G5		X						U	U									U	U			R		
Fraxinus	*nigra*	Black Ash	7	-4		S5			G5		X				F																		
Fraxinus	*pennsylvanica*	Green Ash	3	-3		S5			G5	C		U	U		F		U		F	U	R	R	D	F		F	U			U	R	U	
Onagraceae		**Evening-primrose Family**																															
Circaea	*lutetiana*	Enchanter's Nightshade	3	3		S5			G5T5		X					F	D				U							U					U
Oenothera	*biennis*	Common Evening-primrose				S5			G5																					U	R		
Orobanchaceae		**Broom-rape Family**																															
Epifagus	*virginiana*	Beech-drops	6	5		S5			G5	L4	X						R																R
Oxalidaceae		**Wood Sorrel Family**																															
Oxalis	*stricta*	Yellow Wood-sorrel	0	3		S5			G5		X											U								U		
Papaveraceae		**Poppy Family**																															
Sanguinaria	*canadensis*	Bloodroot	5	4		S5			G5		X					U	R																
Plantaginaceae		**Plantain Family**																															
Plantago	*major*	Common Plantain		-1	-1	SE5			G5		I										R												
Polygonaceae		**Smartweed Family**																															
Polygonum	*virginianum*	Virgina Knotweed	6	0		S4			G5							U																	
Rumex	*acetosella*	Sheep Sorrel				SNA			GNRTNR																					U			
Rumex	*Crispus*	Curly-leaf Dock		-1	-2	SE5			G?	IC	I																			R			
Primulaceae		**Primrose Family**																															
Lysimachia	*nummularia*	Moneywort		-4	-3	SE5			G?		I										R		R							F			
Ranunculaceae		**Buttercup Family**																															
Actaea	*pachypoda*	White Baneberry	6	5		S5			G5		X					R																	
Actaea	*rubra*	Red Baneberry	5	5		S5			G5		X											R											
Actaea	*species*	Baneberry Species															R																U
Anemone	*acutiloba*	Sharp-Lobed Hepatica	6	5		S5			G5		VU					U	U																
Anemone	*canadensis*	Canada Anemone				S5			G5																			F					
Anemone	*virginiana var. virginiana*	Thimbleweed	4	5		S5			G5T		X									U	U												
Anemone	*quinquefolia*	Wood anemone	7	0		S5			G5	X	X						R																

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Clematis	*virginiana*	Virgin's-bower	3	0		S5			G5		X									U															
Ranunculus	*abortivus*	Kidney-leaf Buttercup	2	-2		S5			G5		X				U		U																		
Ranunculus	*recurvatus var. recurvatus*	Hooked Buttercup	4	-3		S5			G5		X										U														R
Thalictrum	*dioicum*	Early Meadow-rue	5	2		S5			G5		X						U																		
Rhamnaceae		**Buckthorn Family**																																	
Frangula	*alnus*	Glossy Buckthorn		-1	-3	SE5			G?		I																		U						
Rhamnus	*cathartica*	Common Buckthorn		3	-3	SE5			G?		I				U			U		U			U	U		U	U		U	U					
Rosaceae		**Rose Family**																																	
Agrimonia	*gryposepala*	Tall Agrimony	2	2		S5			G5		X		R							U	R	R						U							
Crataegus	*crus-galli*	Cockspur Thorn	4	0		S5			G5											U															
Crataegus	*monogyna*	English Hawthorn				S5			G5																				F	R					
Crataegus	*species*	Hawthorn species											U	U							R		R			U	U		F	R	F			U	
Fragaria	*vesca ssp. americana*	Woodland Strawberry	4	4		S5			G5T?	L1	X						U																	U	
Fragaria	*virginiana*	Virginia Strawberry	2	1		SU			G5T?		X		F	F						U															
Geum	*aleppicum*	Yellow Avens	2	-1		S5			G5	L2	X				U	U	F			U	U	F						U		U					
Geum	*canadense*	White Avens	3	0		S5			G5		X				U	F	F											U							
Geum	*species*	Avens Species																					U											U	
Malus	*pumila*	Common Apple		5	-1	SE5			G5		I												R							F	R				
Potentilla	*recta*	Rough-fruited Cinquefoil		5	-2	SE5			G?	I	I																			U					
Potentilla	*simplex*	Common Cinquefoil	5	4		SU			G5	R1	X						R																		
Prunus	*avium*	Sweet Cherry		5	-2	SE4			G?		I							U																	U	
Prunus	*pensylvanica*	Pin Cherry	3	4		S5			G5		X					R															R				
Prunus	*serotina*	Black Cherry	3	3		S5			G5		X					R	R				U													R	
Prunus	*virginiana*	Choke Cherry	2	1		S5			G5T?		X				F	F	F	U			F													F	
Rosa	*multiflora*	Multiflora Rose				SNA			GNR																			U							
Rosa	*species*	Rose Species																					U												
Rubus	*allegheniensis*	Common Blackberry	2	2		S5			G5		X						U						F							U					
Rubus	*idaeus*	Wild Red Raspberry				SE1			G5T5							U	U	F			U	F						U		F	R				
Rubus	*occidentalis*	Black Raspberry	2	5		S5			G5		X		F	U						U											R			U	
Spiraea	*alba*	Narrow-leaved Meadow-sweet	3	-4		S5			G5		X									R															
Rubiaceae		**Madder Family**																																	
Galium	*aparine*	Cleavers	4	3		S5			G5								U																		
Rutaceae		**Rue Family**																																	
Zanthoxylum	*americanum*	American Prickly-ash	3	5		S5			G5		X									U	U							U							
Salicaceae		**Willow Family**																																	
Populus	*deltoides ssp. deltoides*	Eastern Cottonwood	4	-1		SU			G5T?		X					R									U			U		F		U		
Populus	*tremuloides*	Trembling Aspen	2	0		S5			G5		X				U	U	U			U														R	
Salix	*species*	Willow species																												R					
Salix	*amygdaloides*	Peach-leaved Willow				S5			G5																					R					
Salix X	*rubens*	Hybrid Crack Willow		-4	-3	SE4			HYB							R									R					U					
Saxifragaceae		**Saxifrage Family**																																	
Tiarella	*cordifolia*	False Mitrewort / Foamflower	6	1		S5			G5		X				U																				
Scrophulariaceae		**Figwort Family**																																	
Linaria	*linaria vulgaris*	Butter & Eggs				SNA			GNR																					U					
Verbascum	*thapsus*	Common Mullein		5	-2	SE5			G?		I						R	U	R																
Solanaceae		**Nightshade Family**																																	
Solanum	*dulcamara*	Bitter Nightshade		0	-2	SE5			G?		I				F																				
Tiliaceae		**Linden Family**																																	
Tilia	*americana*	American Basswood	4	3		S5			G5		X				F	U	U	U	U				R	U			U			R	R			U	
Ulmaceae		**Elm Family**																																	
Ulmus	*americana*	White Elm	3	-2		S5			G5?		X				F			F	U	U	R							U							
Ulmus	*pumila*	Siberian Elm				SNA			GNR																			U							
Ulmus	*rubra*	Slippery Elm	6	0		S5			G5							R														R					
Violaceae		**Violet Family**																																	
Viola	*conspersa*	Dog Violet	4	-2		S5			G5		X										U														
Viola	*pubescens*	Yellow Violet	5	4		S5			G5		X						U																		
Viola	*sororia*	Common Blue Violet	4	1		S5			G5		X		R				U			U															
Viola	*species*	Violet Species																										U							
Vitaceae		**Grape Family**																																	

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Parthenocissus	*vitacea*	Thicket-creeper	6	1		S4?			G5			U	F		F	F					F	F							F			F
Vitis	*riparia*	Riverbank Grape	0	-2		S5			G5		X		U				U	U		U	U	U	F					U		D	F		U
MONOCOTYLEDONS		**MONOCOTS**																														
Araceae		**Arum Family**																														
Arisaema	*triphyllum*	Jack-in-the-pulpit	5	-2		S5			G5T5		X		U		U	U	F				U							U				U
Cyperaceae		**Sedge Family**																														
Carex	*arctata*	Drooping Wood Sedge	5	5		S5			G5?	L1	X						U															
Carex	*blanda*	Woodland Sedge	3	0		S5			G5?		X						R															
Carex	*bromoides*	Brome-like Sedge	7	-4		S5			G5	C	VU				R																	
Carex	*deweyana*	Dewey's Sedge	6	4		S5			G5	L2	X						R															
Carex	*gracillima*	Graceful Sedge	4	3		S5			G5		X				U		U				U											
Carex	*granularis*	Meadow Sedge	3	-4		S5			G5		X										R											
Carex	*lacustris*	Lake-bank Sedge	5	-5		S5			G5	C					U																	
Carex	*leptonervia*	Finely-nerved Sedge	5	0		S5			G4	U	VU						R															
Carex	*lupulina*	Hop Sedge	6	-5		S5			G5		X				R																	
Carex	*pedunculata*	Long-stalked Sedge	5	5		S5			G5		X				R		R															
Carex	*plantaginea*	Plantain-leaved Sedge	7	5		S5			G5	L2	X						R															
Carex	*projecta*	Necklace Sedge				S5			G5	U	RH				U																	
Carex	*radiata*	Radiate Sedge	4	5		S5			G4		X						U															
Carex	*species*	Sedge species																					U	U								
Carex	*stipata*	Awl-fruited Sedge	3	-5		S5			G5		X				U																	
Liliaceae		**Lily Family**																														
Allium	*tricoccum*	Wild Leek	7	2		S5			G5	L4	X																					R
Convallaria	*majalis*	Garden Lily-of-the-valley		5	-2	SE5			G5	IR	I		R																			
Erythronium	*americanum ssp. americanum*	Yellow Trout Lily	5	5		S5			G5T5		X					U	R			U												F
Lilium	*michiganense*	Michigan Lily	7	-1		S5			G5		X									U												
Maianthemum	*canadense*	Wild Lily-of-the-valley	5	0		S5			G5		X						R					U						U				
Maianthemum	*racemosum ssp. racemosum*	False Solomon's Seal	4	3		S5			G5T		X				U	F	F											U				U
Maianthemum	*stellatum*	Star-flowered Solomon's Seal	6	1		S5			G5		X				D						U	U										
Ornithogalum	*umbellatum*	Sleepydick		1	-1	SE3			G2?	IR	I		R																			
Polygonatum	*pubescens*	True Solomon's Seal	5	5		S5			G5		X						U															
Trillium	*erectum*	Purple Trillium	6	1		S5			G5		X						F															U
Trillium	*grandiflorum*	White Trillium	5	5		S5			G5		X						F															U
Uvularia	*grandiflora*	Large-flowered Bellwort	6	5		S5			G5								U															
Orchidaceae		**Orchid Family**																														
Epipactis	*helleborine*	Common Helleborine		5	-2	SE5			G?		I						R															
Poaceae		**Grass Family**																														
Bromus	*inermis ssp. inermis*	Awnless Brome		5	-3	SE5			G4G5T?		I	R				R		U		U									U	F	D	
Bromus	*species*	Bromus Species																										U	U			
Dactylis	*glomerata*	Orchard Grass		3	-1	SE5			G?		I	U								U	R	U							U	D	U	
Echinochloa	*crus-galli*	Barnyard Grass				S5			G5												R	R										
Elymus	*repens*	Quack Grass				SNA			GNR																				U			
Festuca	*speceis*	Fesuca Specis										D																			U	
Glyceria	*striata*	Fowl Meadow Grass	3	-5		S5			G5		X				F		U															
Leersia	*oryzoides*	Rice Cut Grass				S5			G5																			U				
Poa	*species*	Grass Species																							D					D		
Phalaris	*arundinacea*	Reed Canary Grass	0	-4		S5			G5		X		D		U																U	
Phragmites	*australis*	Common Reed	0	-4		S5			G5			U											R		U							
Pleum	*pratense*	Meadow Timothy				S5			G5			R																				
Poa	*pratensis ssp. pratensis*	Kentucky Bluegrass	0	1		S5			G5T		X	F		D		R					U										F	
Setaria	*pumila*	Yellow Foxtail				SNA			GNR																					R		
Smilacaceae		**Catbrier Family**																														
Smilax	*hispida / tamnoides*	Bristly Greenbrier	6	0		S4			G5Q		X				U		R															
Typhaceae		**Cattail Family**																														
Typha	*latifolia*	Broad-leaved Cattail	3	-5		S5			G5		X																			R		
Dioscoreales																																
Dioscoreaceae																																
Lythrum	*salicaria*	Purple Loosestrife		-5	-3	SE5			G5	IC	I				U																	
Menispermum	*canadense*	Moonseed	7	0		S4			G5	X	X						U															

EXPLANATION OF TERMINOLOGY

Botanical and Common Name: From Integrated Taxonomic Information System (IT IS). 2012.
Co-efficient of Conservatism: This value, ranging from 0 (low) to 10 (high), is based on a species tolerance of disturbance and fidelity to a specific habitat integrity.
Wetness Index: This value, ranging from -5 (obligate wetland) to 5 (upland) provides the probability of a species occurring in wetland or upland habitats.
Weediness Index: This value, ranging from -1 (low) to -3 (high) quantifies the potential invasiveness of non-native plants. In combination with the percentage of non-native plants, it can be used as an indicator of disturbance.
Provincial Status: Provincial ranks are used by the NHIC to set protection priorities for rare species and natural communities. These ranks are not legal designations. S4 and S5 species are generally uncommon to common in the province. Species ranked S1-S3 are considered to be rare in Ontario.
Local Status:
VU: native and very uncommon
X: native and not rare or very uncommon
C: native and common
R: native and rare
I: introduced and persisting outside of cultivation.
Ir: introduced and rare
Ih: introduced and known only from historic records
Ivu: introduced and very uncommon
Iu: introduced and uncommon
Ic: introduced and common
Annotations: Provides comments on general distribution and abundance on the subject lands. Definitions of terminology and abbreviations used as follows.
Abundance
Dominant: represented by large numbers; generally forming >10% ground cover or >25% vegetation in any one stratum
Fairly common: generally widespread; represented by fairly large numbers of individual clumps; usually forming >10% ground cover
Uncommon: present as widespread scattered individuals or represented by one or more clumps of many individuals
Rare: represented in the polygon by less than about five individuals or small clumps

DETAILED EXPLANATION OF TERMS

Floral Quality Index and Coefficient of Conservatism Values

Vegetation species and community sensitivity was assessed through the application of coefficient of conservatism values (CC), assigned to each native species in southern Ontario (Oldham, et. al, 1995). The value of CC, ranging from 0 (low) to 10 (high), is based on a species tolerance of disturbance and fidelity to specific habitat integrity. The occurrence of species with a CC of 9 or 10 can be good indicators of undisturbed conditions such as mature forests, fens or bogs.

General habitat values associated with the CC values are:
0-3: species found in a wide variety of communities, including disturbed sites
4-6: species associated with a specific community, but tolerate moderate disturbance
7-8: species associated with a community in an advanced successional stage, tolerant of minor disturbances
9-10: species with a high degree of fidelity to a narrow range of synecological parameters

The floristic quality of an area is reflected in the mean value of CC. For example, an old field or grazed woodlot would tend have a low mean CC; these habitats are dominated by opportunistic species that occur in a wide range of site conditions and are tolerant of disturbance. A bog, prairie or intact forest would have a higher value, reflecting the specific habitat requirements of many of the species and a generally undisturbed condition. The following provides an example of interpretation of CC values:
mean CC value / % spp CC >8 / Condition of the Landscape
5 / 27 / intact
3.5 / 19 / slightly degraded
1.3 / 2 / severely degraded

The FQI accounts for the species diversity of the area by equating the number of native species with the mean CC value. The FQI is generally used for comparing natural areas. The CC value and FQI of the study area were calculated for the entire study area.

Weediness Index
The sensitivity of natural areas can be assessed through application of the Weediness Index. The Weediness Index quantifies the potential invasiveness of non-native plants, and, in combination with the percentage of non-native plants can be used as an indicator of disturbance. Values (ranging from 1- to -3) have been assigned to most non-native species based on the potential impact each species can have in natural areas:
-1: little or no impact on natural areas (most non-native plants are in this category)
-2: occasional impacts on natural areas, generally infrequent or localized
-3: major potential impacts on natural areas

Wetness Index
All plants in southern Ontario have been assigned a wetland category, based on the designations developed for use by the United States Fish & Wildlife Service. Plants are designated into the following categories:
OBL (Obligate Wetland): occurs almost always in wetlands under natural conditions (estimated >99% probability)
FACW (Facultative Wetland): usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67-99% probability)
FAC (Facultative): equally likely to occur in wetlands or non-wetlands (estimated 34-66% probability)
FACU (Facultative Upland): occasionally occurs in wetlands, but usually occurs in non-wetlands (estimated 1-33% probability)
UPL (Upland): occurs almost never in wetlands under natural conditions (estimated <1% probability)

Further refinement of the Facultative categories are denoted by a “+” or “-” to express exaggerated tendencies for those species. The “+” denotes a greater estimated probability occurring in wetlands than species in the general indicator category, but a lesser probability than species occurring in the next higher category. The "-" denotes a lesser estimated probability of occurring in wetlands than species in the general indicator category, but a greater probability than species occurring in the next lower general category.

Each wetland category has been assigned a numerical value to facilitate the quantification of the wetness index. The wetland categories and their corresponding values are as follows:

OBL : -5
FACW+: -4
FACW: -3
FACW-: -2
FAC+: -1
FAC: 0
FAC-: 1
FACU+: 2
FACU: 3
FACU-: 4
UPL: 5

Provincial Status
Provincial ranks are used by the NHIC to set protection priorities for rare species and natural communities. These rankings are based on the total number of extant Ontario populations and the degree to which they are potentially or actively threatened with destruction. The ranks are:
S1: Critically Imperiled—Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province
S2: Imperiled—Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province
S3: Vulnerable—Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation
S4: Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5:Secure—Common, widespread, and abundant in the nation or state/province

SH: Possibly Extirpated (Historical)—Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years. A species or community could become NH or SH without such a 20-40 year delay if the only known occurrences in a nation or state/province were destroyed or if it had been extensively and unsuccessfully looked for. The NH or SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences
SNR Unranked—Nation or state/province conservation status not yet assessed
SX: Presumed Extirpated—Species or community is believed to be extirpated from the nation or state/province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered
SNA Not Applicable —A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
SU: Unrankable—Currently unrankable due to lack of information or due to substantially conflicting information about status or trends
Rank ranges, e.g. S2S3, indicate that the rank is either S2 or S3, but that current information is insufficient to differentiate.
S#S# Range Rank —A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

REFERENCES
Nomenclature based on:
Integrated Taxonomic Information System (IT IS). 2012: (http://www.itis.gov)
Co-efficient of Conservatism, Wetness & Weediness:
Oldham, M.J., W.D. Bakowsky and D.A. Sutherland. 1995. Floristic quality assessment for southern Ontario. OMNR, Natural Heritage Information Centre, Peterborough. 68 pp.

Provincial (Ontario) Status:
Natural Heritage Information Centre (NHIC). 2000. Provincial status of plants, wildlife and vegetation communities database. http://www.mnr.gov.on.ca/MNR/nhic/nhic.html. OMNR, Peterborough.

Local Status:
Oldham, M.J. 1993. Distribution and Status of the Vascular Plants of Southwestern Ontario. OMNR

Appendix D

Jericho Wind Energy Centre Bat Monitoring Report and Environmental Impact Study Amendment (NRSI, 2013)

DRAFT

JERICHO WIND ENERGY CENTRE
Bat Monitoring Report and Environmental Impact Study Amendment

Prepared for:
AECOM
300 Town Centre Blvd., Suite 300
Markham, ON
L3R 5Z6

Project No. 1077D Date: August 2013

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

DRAFT

JERICHO WIND ENERGY CENTRE
Bat Monitoring Report and Environmental Impact Study Amendment

Project Team:

Staff	Role
Andrew G. Ryckman	Project Manager/Biologist
Christy Humphrey	Terrestrial and Wetland Biologist
Jessica Walker	Terrestrial and Wetland Biologist
Kaitlin Boddaert	GIS Technician

Report submitted on August 12, 2013

Andrew G. Ryckman

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1.0 Project Description

Natural Resource Solutions Inc. (NRSI) was retained in June 2010 by AECOM, on behalf of NextEra Energy Canada, ULC (NextEra), to conduct a natural environment resource assessment specific to bats and bat habitat, in accordance with the Renewable Energy Approval (REA) Regulation. This assessment included a records review, site investigation, evaluation of significance and impact assessment of any potentially significant bat habitats at a proposed wind energy facility located in the Municipality of Lambton Shores and the Township of Warwick, in Lambton County, Ontario, and the Municipality of North Middlesex, in Middlesex County, Ontario. This wind energy project is proposed by Jericho Wind, Inc., a wholly owned subsidiary of NextEra. The Project is referred as the Jericho Wind Energy Centre (the "Project"). The Project will be owned and operated by Jericho Wind, Inc. NextEra Energy Canada's indirect parent company is NextEra Energy Resources, LLC.

The proposed Project is located in the Municipality of Lambton Shores and the Township of Warwick, in Lambton County, Ontario and in the Municipality of North Middlesex, in Middlesex County, Ontario. The Project study area consists of the areas being studied for the wind energy component, as well as for the interconnection route (i.e., the area being studied for transmission lines to connect the Project to the electrical grid). The Project is proposed to be up to 150MW in size, and consist of 98 GE 1.6-100 Wind Turbine generator locations and pad mounted step-up transformers (however, only approximately 92 turbines will ultimately be constructed), as well as supporting infrastructure and development activities. This includes turbine laydown and storage areas (including temporary staging areas, crane pads, and turnaround areas surrounding each wind turbine), construction laydown areas, a transformer substation and ancillary equipment, 34.5kV electrical collection lines, a 115kV transmission line, turbine access roads, permanent meteorological towers, and an operations/maintenance building and ancillary equipment.

As identified the REA Regulation, the proposed layout of these features is collectively referred to as the 'Project location'. In accordance with Section 25 of the REA Regulation (O. Reg. 359/09 of the Environmental Protection Act), NRSI has conducted a thorough records review of available background resources to identify any potentially

significant natural features within 120m of the Project location. This includes areas within 120m of turbine blade tip as well as other supporting infrastructure and development activities. For the purposes of this report, NRSI will refer to the areas within 120m of the Project location as the 'Project area'.

The Project area represents habitat and landscape features typical of a southern Ontario landscape, and is dominated by agricultural habitats, including both actively tilled cropland and pasture. Fallow fields, hedgerows, woodlots, creek valleys and wetlands are also present throughout the Project area.

The records review, site investigation, evaluation of significance, and environmental impact study (EIS) pertaining to bat habitats for the Jericho Wind Energy Centre were completed by NRSI over the course of 2010 to 2012 as part of the Natural Heritage Assessment (NHA). The Jericho Wind Energy Centre NHA (AECOM 2013) confirmation was granted in February 2013 by the Ministry of Natural Resources' Renewable Energy Operations Team. As part of this confirmation, several pre-construction commitments were identified along with the commitment for the proponent to inform the MNR of any changes made to the Project that would alter the NHA.

In order to obtain the greatest efficiency in utilities placement and avoid impacts to other resources in the area, the location of some Project components have been modified from the proposed original location that was presented in the approved NHA. This document identifies and discusses layout changes that have been made to the Jericho Wind Energy Centre Project location as they pertain to bat habitats since receiving the NHA confirmation from the MNR. The updated Project layout addressed in this report is provided in Figures 1-3.

Figure 1

Jericho Wind Energy Centre: Bat Habitat

Layout Comparison and Candidate SWH North Section

Natural Resource Solutions Inc.
Aquatic, Terrestrial and Wetland Biologists

August 12, 2013
Project: NRSI-1077
Scale: 1:40 000 (11 x 17")
UTM Zone 17 NAD83

Legend

- Study Area Boundary
- Turbine
- Removed Turbine
- 120m from Blade Tip
- Removed 120m from Blade Tip
- Project Layout
- Removed Project Location
- New Project Footprint
- Removed Footprint
- Transmission Line
- Highway
- Primary Road
- Local Street
- Railway
- Waterbody
- Woodland - LIO
- 250 Feature #
- Candidate Significant Bat Maternity Colony (BMA)
- Woodland - AECOM (<120m From Turbine or Intersecting Project Location)

BMA-382 382
BMA-214 214
BMA-217 217
BMA-216 216
BMA-188 188
BMA-168 168
BMA-155 155
BMA-179 179
BMA-090A 90A
BMA-090B 90B
90C

Meters
0 1,000 2,000

Path: X:\1077_Jericho\NRSI_1077_Fig1-3_LayoutComparison_CandidateSWH_40K_2013_08_12_KEB.mxd

Figure 2

Jericho Wind Energy Centre: Bat Habitat

Layout Comparison and Candidate SWH Central Section

Natural Resource Solutions Inc.
Aquatic, Terrestrial and Wetland Biologists

August 12, 2013
Project: NRSI-1077
Scale: 1:40 000 (11 x 17")
UTM Zone 17 NAD83

Legend

- Study Area Boundary
- Turbine
- Removed Turbine
- 120m from Blade Tip
- Removed 120m from Blade Tip
- Project Layout
- Removed Project Location
- New Project Footprint
- Removed Footprint
- Transmission Line
- Highway
- Primary Road
- Local Street
- Railway
- Waterbody
- Woodland - LIO
- 250 Feature #
- Candidate Significant Bat Maternity Colony (BMA)
- Woodland - AECOM (<120m From Turbine or Intersecting Project Location)

BMA-168, BMA-179, BMA-155, BMA-147, BMA-143, BMA-145, BMA - 098, BMA-097, BMA- 120, BMA- 102B

KINNAIRD RD, CEDAR POINT LINE, ARMY CAMP RD, NORTHVILLE RD, GORDON RD, FARMERS LINE, ARKONA RD, JURA LINE, PETTICOAT LINE, JERICHO RD, HICKORY CREEK LINE, FIRST SCHOOL RD, BETHEL RD, NAUVOO RD, TAMARACK LINE, JOHN ST, ANN ST, ROCK GLEN RD, BINGO RD, WISBEACH RD, SEXTON RD, BROKEN FRONT RD, LAMON DR, ELM TREE DR, RIVER DR, FOSSIL RD, WATSON RD, TOWNSEND LINE, 90C

Meters
0 1,000 2,000

N

422000 424000 426000 428000 430000 432000 434000 436000
4776000 4774000 4772000 4770000 4768000

Path: X:\1077_Jericho\NRSI_1077_Fig1-3_LayoutComparison_CandidateSWH_40K_2013_08_12_KEB.mxd

Figure 3

Jericho Wind Energy Centre: Bat Habitat

Layout Comparison and Candidate SWH South Section

Natural Resource Solutions Inc.
Aquatic, Terrestrial and Wetland Biologists

August 12, 2013
Project: NRSI-1077
Scale: 1:40 000 (11 x 17")
UTM Zone 17 NAD83

Legend

- Study Area Boundary
- Turbine
- Removed Turbine
- 120m from Blade Tip
- Removed 120m from Blade Tip
- Project Layout
- Removed Project Location
- New Project Footprint
- Removed Footprint
- Transmission Line
- Highway
- Primary Road
- Local Street
- Railway
- Waterbody
- Woodland - LIO
- 250 Feature #
- Candidate Significant Bat Maternity Colony (BMA)
- Woodland - AECOM (<120m From Turbine or Intersecting Project Location)

0 1,000 2,000 Meters

N

Path: X:\1077_Jericho\NRSI_1077_Fig1-3_LayoutComparison_CandidateSWH_40K_2013_08_12_KEB.mxd

2.0 Staff Roles

The requirements of the REA process indicate that the name and qualifications of all staff participating in the NHA should be provided. This staffing information is provided in the Jericho Wind Energy Centre NHA and its appended Bat Monitoring Report and Environmental Impact Study (AECOM 2012). The qualifications and roles of key staff participating in the amendment to this Project's NHA as it pertains to bat habitats have been outlined below.

Andrew G. Ryckman, B.Sc.
Andrew is a Terrestrial and Wetland Biologist with 8 years of environmental experience. He routinely manages the natural heritage aspects of renewable energy projects, with specific expertise relating to bats and herpetofauna. Andrew is certified in Ecological Land Classification (2010), and has successfully completed a Bat Conservation International (BCI) Acoustic Monitoring Workshop (2008).

Andrew's role in the Project was to act as the project manager, overseeing all aspects of the records review, site investigation, evaluation of significance, and environmental impact study, including all associated field work and reporting.

Christy Humphrey, B.E.S.
Christy is a Terrestrial and Wetland Biologist with more than 3 years of environmental consulting experience, working on a variety of projects tasks. Her areas of expertise are vegetation mapping and floral inventories, as well as acoustic bat monitoring, but she has experience conducting bird assessments, amphibian studies, and other fauna assessments. Christy is certified in both the ELC for Southern Ontario (2010) and Northeastern ELC (2010), as well as the OMNR Wetland Evaluation System (2012). She has also participated in the Ontario MNR Bat Monitoring Workshop for Wind Power Projects (2010) and has received training in Eastern Bat Acoustic Field Techniques (Bat Conservation and Management Inc. 2012).

Christy organized field work for the site investigation, and compiled, interpreted, and reported on the results of the site investigation. She was the primary author of this report.

Jessica R. Walker, M.E.S.
Jessica graduated from the University of Waterloo with a B.E.S. and an M.E.S. in Environmental Studies. She has a wide range of field skills including bird, amphibian, reptile, bat, and plant identification, and she is certified in the ELC System for Southern Ontario (2012).

Jessica conducted site specific habitat assessments for the Jericho Wind Energy Centre, quantitatively assessing the number of cavity trees per hectare within woodlands.

3.0 Overview of Project Changes

In the time since MNR confirmation was received for the Jericho Wind Energy Centre's NHA, several minor changes have been made to this Project's layout, resulting in adjustments to the NHA. The types of changes made and addressed in this report include:

- Distances from Project components to natural features
- Removal and addition of turbines
- Access road and collection line routes
- Disturbance area modifications

Many changes to the Project layout are minor with minimal changes to the overall Project area. Layout alterations that resulted in re-positioning Project components <5m away from their NHA submission position, that remained within the same land use as described in the NHA, and that did not result in the inclusion of additional natural features, will be considered insignificant and will not be specifically addressed in this report. Likewise, changes to the layout that resulted in land no longer being included in the Project area will not be discussed unless a bat habitat is no longer within 120m of the Project location and no longer requires consideration in the NHA.

Changes made to the Jericho Wind Energy Centre Project layout are outlined and discussed in Tables 1 and 2. Figures 1 to 3 provide a visual overlay of the differences between the NHA submission layout and the layout presented in this amendment, specific to areas where it relates to bat habitats, with notable changes highlighted. The Jericho Wind Energy Centre Project layout presented in the original NHA submission is provided for reference in Appendix II.

Table 1. Changes to the Jericho Wind Energy Centre Layout

Project Component	Location	Description of Change	Closer to Features or Habitat Within 120m?	Affected Bat Habitats with a Potential Operational Effect	Reference Figure(s)
Turbine, Access Road, Collection, Disturbance Area	Turbine 1	Turbine and associated infrastructure have been shifted south.	No new bat habitats overlap the Project area. One woodland (assumed significant wildlife habitat for bat maternity colonies due to a lack of site access) is no longer within 120m of the Project location.	Feature 297	1
Turbine, Access Road, Collection, Disturbance Area	Turbine 2	Turbine and associated infrastructure have been moved to a different parcel.	One new natural area is found within 120m of the Project location (feature 293). A site investigation for bat maternity colonies was not completed for this habitat as AECOM's ELC information indicates the portion of this habitat within 120m of the proposed turbine location is a cultural woodland, thus not representing suitable bat habitat.	None	1
Turbine, Access Road, Collection, Disturbance Area, Meteorological Tower	Turbine 106	Turbine and associated infrastructure have been added, as well as a meteorological tower (west of T4).	One new woodlot overlaps the Project area, and is within 120m of a turbine. This woodlot requires a site investigation to determine if it qualifies as candidate significant bat maternity colony habitat.	Feature 290 (requires site investigation)	1
Turbine, Access Road, Collection, Disturbance Area	Turbine 5	Turbine and associated infrastructure have been removed.	No new candidate bat habitats overlap the Project area. One woodland (considered generalized candidate significant wildlife habitat for bat maternity colonies) is no longer within 120m of the Project location, where collection cabling travelled between T5 and T6.	None	1
Turbine, Access Road, Disturbance Area	Turbine 19	Turbine and associated infrastructure have been shifted slightly west.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	1
Access Road, Collection, Disturbance Area	Turbine 4	Access road and disturbance area shifted to enter private property off of Jericho Road instead of Kennedy Line. The collection has also shifted slightly with removal of access road from this	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	1

		area.			
Access Road, Collection, Disturbance Area	Turbine 6	Access road, collection, and disturbance area have been modified slightly. Access road will enter private land off of Northville Road instead of Elliot Road.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	1
Access Road, Collection, Disturbance Area	Turbine 13	Turbine, access road, collection, and disturbance area have been shifted slightly west.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	1
Turbine, Access Road, Collection, Disturbance Area	Turbine 7	Turbine and associated infrastructure have been shifted east.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	1
Turbine, Access Road, Collection, Disturbance Area	Turbine 31	Turbine and associated infrastructure have been removed.	No new candidate bat habitats overlap the Project area. One woodland, confirmed not to be a candidate significant bat maternity colony habitat (Feature 250), is no longer within 120m of a turbine, but it still within 120m of other infrastructure. As it was not identified as candidate habitat, it is not considered to be generalized candidate significant wildlife habitat for bat maternity colonies.	None	1
Disturbance Area	Turbine 32	The disturbance area around Turbine 32 has been modified slightly.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	1
Access Road, Collection, Disturbance Area	Turbine 24	Access road has been shifted to access the turbine from Turbine 22 instead of Northville Road.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	1
Access Road, Collection, Disturbance Area	Turbine 18	Access road, collection, and disturbance area have been shifted slightly north.	No new candidate bat habitats overlap the Project area. There are minor changes in distance between Project components and an assumed significant bat maternity colony habitat (BMA-188).	None	1
Turbine, Access Road, Collection, Disturbance Area	Turbine 26	Turbine has been shifted slightly northeast. Its access road has been shifted to access the turbine from Thomson Line instead of	No new candidate bat habitats overlap the Project area. A woodland confirmed not to be a candidate significant bat maternity colony habitat (Feature 172) is no longer within 120m of a turbine. This feature is closer to other Project components, however it will	None	1, 2

		Jericho Road. Collection cabling has been shifted to follow the access road and more closely follow the edge of Feature 172.	not be considered generalized candidate significant wildlife habitat for bat maternity colonies.		
Access Road, Collection, Disturbance Area	Turbine 46	Access road has been shifted to access the turbine from Cedar Point Line instead of Northville Road.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	2
Turbine, Access Road, Collection, Disturbance Area	Turbine 112	Turbine and associated infrastructure have been added.	No new candidate bat habitats overlap the Project area, as T59 is already within 120m of the adjacent bat habitat (BMA-145). There are minor changes in distance between Project components and this habitat.	BMA-145	2
Turbine, Access Road, Collection, Disturbance Area	Turbine 77	Turbine and associated infrastructure have been removed.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	2
Turbine, Access Road, Collection, Disturbance Area	Turbine 107	Turbine and associated infrastructure have been added.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	2
Access Road, Collection, Disturbance Area	Turbine 44	Access road, collection, and disturbance area have been shifted west.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	2
Access Road, Collection, Disturbance Area	Turbine 90	Collection line has been added along Townsend Line and Access Road, collection, and disturbance area for T90 has been shifted to access the turbine from Townsend Line instead of Hickory Creek Line. Infrastructure will follow an existing trailway between 2 wooded features.	Two new woodlands are found within the Project area (features 118 and 119). The access road, collection, and disturbance area for T90 will follow an existing laneway and will not result in vegetation removal within these features. As a result these will be considered generalized candidate significant wildlife habitat as they are not overlapped by the project location, nor are they within 120m of a Project component with an operational effect (turbine).	None	2
Access Road, Collection, Disturbance Area	Turbine 91	Access road, collection, and disturbance area for Turbine 91 have shifted slightly west.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	2, 3

Access Road, Collection, Disturbance Area	Turbine 63, Turbine 64	Access road, collection, and disturbance area have been removed from Townsend Line to T63 and added to connect T63 to T64.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	2, 3
Access Road, Collection, Disturbance Area	Turbine 76, Turbine 75	Access road, collection, and disturbance area to T76 have been shifted west and collection line to T75 has been shifted slightly south.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	2, 3
Turbine, Access Road, Collection, Disturbance Area	Turbine 109	Turbine and associated infrastructure have been added.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	2, 3
Collection, Disturbance Area	Nauvoo Road and Hickory Creek Line	Collection and disturbance area have been shifted off of private property and into the road right-of-way.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	2, 3
Turbine, Disturbance Area	Turbine 108	Turbine and associated infrastructure have been added.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	2, 3
Turbine, Access Road, Collection, Disturbance Area	Turbine 87	Turbine and associated infrastructure have been removed.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	2, 3
Disturbance Area	Turbine 102	Disturbance area has been shifted slightly east.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	2, 3
Disturbance Area	Turbine 104	Disturbance area has been shifted slightly north.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	3
Turbine, Access Road, Collection, Disturbance Area	Turbine 105	Turbine and associated infrastructure have been shifted slightly south.	No new candidate bat habitats overlap the Project area. There are also no resulting changes in distances between Project components and previously assessed bat habitats.	None	3

4.0 Amendments to the Records Review

The study area initially examined for the Jericho Wind Energy Centre Records Review Report extended beyond the previously proposed Project area to help compensate for any later changes in the Project's layout. Because the Project location has not changed considerably, all records examined in the approved Natural Heritage Assessment apply to the new Project location. Thus, there are no amendments to confirmed or candidate bat habitats needed for the purpose of the NH Records Review. Please refer to the Jericho Wind Energy Centre Records Review Report (AECOM 2013) and its appended Bat Monitoring Report and Environmental Impact Study (NRSI 2013) for a summary of records obtained.

5.0 Amendments to the Site Investigation

Through reviewing the changes made to the Jericho Wind Energy Centre layout since its NHA confirmation, it has been verified that these alterations have led to changes in distance between Project components and significant bat habitats as well as the addition of 1 woodland (290) which will require a site investigation to describe the potential for significant bat habitat. This results from the addition of a turbine within 120m of the woodland. As part of a review of a larger Project area, the site investigation of this woodland was conducted in May 2012. In accordance with the REA Regulation, NRSI recorded the date, time, duration, and weather conditions during the site investigation. This information has been summarized in Table 2 below. The crew lead for the survey is indicated in bold font within the table. Detailed descriptions of staff roles and qualifications can be found above, and detailed field forms have been appended to this report (Appendix I).

Table 2. Site Investigation Survey Dates

Purpose	General Methods	Feature ID	Date(s)	Time(s) and Duration	Weather	Staff
Bat Habitat Assessment	Quantitative assessment of wildlife trees	290	May 16, 2012	12:45 – 16:00 3 hrs 15 minutes	12°C, 80% Cloud Cover, Wind speed 5.	**Jessica Walker**, Jeremy Bannon

5.1 Identification of Bat Habitat

The Significant Wildlife Habitat Technical Guide Ecoregion 7E Criterion Schedule (OMNR 2012) outlines different types of bat habitats which may qualify as candidate significant wildlife habitat and which must be investigated for Natural Heritage Assessments. These include bat hibernacula, bat maternity colonies, and bat migratory stopover areas. Candidate significant bat hibernacula are found in caves, mine shafts, underground foundations, karsts or one of the following Community Types: Crevice (CCR), Cave (CCA). They do not include buildings (OMNR 2012). Bat maternity colonies can be found in any of the following Community Types: Deciduous Forest (FOD), Mixed Forest (FOM) that have greater than 10/ha wildlife trees (snags or cavity trees) which are greater than 25cm diameter at breast height (DBH). Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not

considered to be SWH). Maternity roosts are not found in caves and mines in Ontario (OMNR 2012). The location and characteristics of bat migratory stopover areas are generally unknown (OMNR 2012) and as a result are not able to be identified at this point.

The site investigation conducted for the woodland (290) which is proposed to be located within 120m of a turbine (T106) followed the most recent OMNR guidance document, *Bats and Bat Habitats: Guidelines for Wind Power Projects* (2011), which indicates that the number of cavity trees per hectare can be determined using 0.05ha plots (circular plots with a radius of 12.6m), which are randomly placed throughout each woodland being investigated. The document stipulates that a minimum of 10 plots should be used for woodlands which are 10ha or less in size, with one additional plot for every additional hectare for larger woodlands (up to a maximum of 35 plots). NRSI followed this protocol, randomly selecting circular plots 12.6m in radius within the portions of these woodlands for which access was granted. The number of cavity trees within these plots which were greater than 25cm DBH were counted. Field notes for these assessments are appended to this report (Appendix I).

5.2 Site Investigation Results

NRSI used habitat criteria outlined by the Significant Wildlife Habitat Ecoregion 7E Criterion Schedule (OMNR 2012) and Bats and Bat Habitat Guidelines (OMNR 2011) to compare site-specific habitat conditions to potential bat habitats. No candidate bat hibernacula were identified by NRSI or AECOM biologists within the revised Jericho Wind Energy Centre. NRSI also conducted assessments to determine the potential for candidate significant bat maternity colonies to occur in the additional woodland.

Feature 290 contains natural forested habitat within 120m of a proposed turbine. As a result, this woodland requires a determination of the presence of candidate significant bat maternity colony habitat using a plot-based approach to calculate the number of cavity trees per hectare within the woodland. The results of this exercise are included in Table 3 below. All of the woodlands in the Jericho Wind Energy Centre which have been identified as candidate significant bat maternity colony habitats are identified on Figures 1 – 3.

Table 3. Summary of Site Investigation Results and Consideration for Candidate Significant Bat Habitats

Feature ID	Size (ha)	Composition	Quantitative Assessment		Evaluation of Significance Required (Y/N)
			Number of Sample Plots	# Wildlife Trees per ha	
290	35.1	FOD7-2 FOD9-3 FOD6-1 FOD7-4 SWD	27*	5.19	**No**

**Note the number of plots sampled was limited by the size of forest found on properties for which access was granted.*

In addition, NRSI biologists have also reviewed the potential for additional generalized candidate significant wildlife habitat (GCSWH) that may be present within 120m of the updated Project location. Feature 286 was previously considered GCSWH but is no longer within 120m of the Project location, and will no longer be considered GCSWH for bat maternity colonies. Features 118 and 119 were not previously within 120m of the Project location but are now adjacent to, without overlapping, a proposed access road, collection cabling, and disturbance area leading to T90. As a result, these 2 woodlands will be considered GCSWH for bat maternity colonies.

5.3 Changes in Distances to Bat Habitats

Project layout alterations have led to changes in distance between Project components and significant or presumed significant bat habitats. Each of these specific instances has been outlined below in Table 5, including feature identification number and comparison of distances from Project location to the bat habitat between the presented layouts.

Table 4. Updated Distances between Project Components and Bat Habitats in the Jericho Wind Energy Centre Project Area

Feature ID	Feature Type	Distances from NHA Submission (m)	New Layout Distances (m)	Amendment to the EOS and/or EIS Required? (Y/N)
BMA-145	Bat Maternity Colony	WT – 36.5 (T59) AR – 87 CA – 48 SI – 31	WT – 36.5 (T59) AR – 37 CA – 46 SI – 30	No – EOS completed with NHA. Distances did not change enough to warrant amendment to the EIS.
BMA-188	Bat Maternity Colony	WT – 92.5 (T18) AR – >120 CA – 4 SI – 4	WT – 92.5 (T18) AR – 80 CA – 4 SI – 4	No - EOS completed with NHA. Distances did not change enough to warrant amendment to the EIS.
BMA-297	Bat Maternity Colony	WT – 31.5 (T1) AR – 82 CA – 82 SI – 29	WT – >120 AR – >120 CA – >120 SI – >120	Yes. EOS completed with NHA (Assumed Significant). The feature is no longer within 120m of the Project location and as a result does not require mitigation or monitoring outlined in the EIS.

Legend

WT: Wind Turbine
AR: Access Road
CA: Cabling
SI: Supporting Infrastructure (Laydown area, disturbance area, or MET station)
EOS: Evaluation of Significance
EIS: Environmental Impact Study

6.0 Amendments to the Evaluation of Significance

As part of this NHA amendment, NRSI biologists have reviewed the potential for changes to the Evaluation of Significance phase of this Project. After examining the changes in distances between Project components and natural features and completing a site investigations of 1 new natural feature, it has been determined that there are no new candidate significant bat habitats that potentially exist within 120m of the Project location that were not previously studied and discussed in the approved NHA. Therefore, no additional bat habitats require evaluation of significance at the Jericho Wind Energy Centre as a result of these modifications.

7.0 Amendments to the Environmental Impact Study

As part of this Jericho Wind Energy Centre NHA Amendment preparation, construction plans were reviewed and the changes to the presented Project location have been summarized in Section 3.0. These proposed changes include minor modifications to several aspects of the Project layout, including access roads, cabling, and disturbance areas, as well as the removal and addition of several turbines. Although adjustments have been noted, the construction details as presented in the original Natural Heritage Environmental Impact Study (i.e. site preparation and servicing, construction, operation, decommissioning, and approach to impact assessment) still provide relevant information pertaining to the type, extent, duration, and details of the proposed construction activities associated with the Jericho Wind Energy Centre.

For the purposes of this amendment, NRSI has reviewed three separate aspects relating to the potential for change to the EIS, as follows:

- Changes to Mitigation Measures (i.e. Project location now closer to a previously identified bat habitat)
- New Mitigation Measures (i.e. Project location within 120m of a new bat habitat)
- Changes to Monitoring Requirements

7.1 Changes to Mitigation Measures

NRSI biologists have reviewed the changes in Project location, including the distances of the Project location to the significant natural features, and have determined that the mitigation measures presented in the Natural Heritage Assessment (AECOM 2013) and its appended Bat Monitoring Report and Environmental Impact Study (NRSI 2013) are still suitable for the protection of the significant bat habitats from permanent and adverse impacts that may result from the development of the Jericho Wind Energy Centre.

Two new generalized candidate significant wildlife habitats for bat maternity colonies were identified as a result of an access road and collection cabling modification (features 118 and 119). Mitigation measures outlined within the original NHA are still suitable for the protection of these potential habitats during the construction of the Project. Refer to the original NHA for a list of these mitigation measures (AECOM 2013, NRSI 2013).

There are two changes required to mitigation measures outlined within the original Environmental Impact Study. One feature previously assumed significant for a bat maternity colony habitat (feature 297) and one feature previously considered generalized candidate significant wildlife habitat for bat maternity colony habitat (feature 286) are now no longer found within 120m of the project location. As a result, these habitats no longer require the mitigation measures outlined within the Natural Heritage Environmental Impact Study (AECOM 2013) and its appended Bat Monitoring Report and Environmental Impact Study (NRSI 2013).

There are no other changes required to the mitigation measures.

7.2 New Mitigation Measures

There were no additional significant bat habitats located within the Project area as a result of the proposed changes, therefore there are no new mitigation measures which need to be implemented for this Project.

7.3 Changes to Monitoring Requirements

One feature previously assumed significant for bat maternity colony habitat (feature 297) and one feature previously identified as a generalized candidate significant wildlife habitat for bat maternity colony habitat (feature 286) are now located further than 120m from the project location, and as a result do not require monitoring associated with operation or construction mitigation measures.

Based on the proposed changes in Project location, NRSI has determined that all other monitoring requirements identified in the Jericho Wind Energy Centre Natural Heritage Environmental Impact Study (AECOM 2013) and its appended Bat Monitoring Report and Environmental Impact Study (NRSI 2013) are suitable for the monitoring of potential environmental effects at the proposed Jericho Wind Energy Centre.

8.0 Summary and Conclusions

In accordance with the REA Regulation, NRSI biologists have completed a comprehensive records review, site investigation, evaluation of significance, and EIS of the Jericho Wind Energy Centre Project area. Following the review of proposed adjustments to the Project location (as discussed above), NRSI has re-considered all aspects of the Natural Heritage Assessment for bats within this report to determine if there are new bat habitats, changes in distance to Project location, or new mitigation measures or monitoring commitments required to ensure that potential permanent or adverse environmental impacts for bats are mitigated or studied appropriately. The summary of the result of this review of changes to the Project location are summarized in Table 5 below.

Table 5. Summary of Natural Heritage Amendment for the Jericho Wind Energy Centre

Amendment Changes	Amendment Result
Significant Bat Habitats	There are no new significant bat habitats identified within 120m of the Project location.
Changes in Distances to Project Location	The distances from the Project location to candidate and significant bat habitats have changed due to minor adjustments to the Project layout. These minor changes in distances to Project location are associated with a total of 3 bat habitats. These changes are limited to Project components without an operational effect for 2 of the habitats. The 3rd habitat is no longer within 120m of any project component (feature 297). Changes in distances from the Project location to significant bat habitats are shown in Table 4 of this report.
Mitigation Measures	Based on the minor adjustments of the Project location, NRSI biologists have identified no additional significant features within 120m of the Project location that require mitigation measures to be applied. One feature identified as assumed significant bat maternity colony habitat (feature 297) and one feature identified as generalized candidate significant wildlife habitat for bat maternity colonies (feature 286) are no longer within 120m of the project layout, and as such do not require mitigation measures outlined within the original EIS to be applied. All other mitigation measures, as seen in the Natural Heritage Environmental Impact Study and its appended Bat Monitoring Report and Environmental Impact Study (AECOM 2013, NRSI 2013) will provide the appropriate protection to ensure any permanent and adverse impacts are mitigated.
Monitoring Commitments	One feature identified as assumed significant bat maternity colony habitat (feature 297) and one feature identified as generalized candidate significant wildlife habitat for bat maternity colonies (feature 286) are no longer within 120m of the project layout, and as such do not require monitoring associated with mitigation measures outlined within the original EIS to be applied. NRSI has identified that, based on the minor shifts in Project location, the monitoring commitments outlined in the Natural Heritage Environmental Impact Study and its appended Bat Monitoring Report and Environmental Impact Study (AECOM 2013, NRSI 2013) are still appropriate to monitor any potentially adverse impacts as a result of the construction and operation of this Project. No additional monitoring requirements are proposed as a result of the changes in Project location.

With this amendment, it is maintained that with the implementation of the planned mitigation measures, monitoring programs, and contingency plans as presented in the Jericho Wind Energy Centre Natural Heritage Environmental Impact Study (AECOM 2013) and its appended Bat Monitoring Report and Environmental Impact Study (NRSI 2013) there are unlikely to be any significant impacts to bat habitats.

9.0 References

Publications

AECOM. 2013. Jericho Wind Energy Centre Natural Heritage Assessment and Environmental Impact Study Report. Prepared for NextEra Energy Canada, ULC. February 2013. 338pp plus appendices.

Natural Resource Solutions Inc. (NRSI). 2013. Jericho Wind Energy Centre Bat Monitoring Report and Environmental Impact Study. Prepared for AECOM. February 2013. 93pp plus appendices.

Appendix I
Site Investigation Field Notes

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only: 290
Woodland Number:

Project Name: Jericho Project #: 1077-B

Start Time: 12:45 End Time: 16:00 Date: May 16, 2012 Observer(s): JBB JRW

Area # 290 Parcel Numbers: 1014, 3454 Weather Conditions: 12°C, wind: 5, cc: 80%,

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM	(Zone: 17+)	Comments
Plot 1	0	0426723	4783916	
Plot 2	0	0426719	4783876	7m accuracy
Plot 3	0	0426740	4783833	
Plot 4	0	0426772	4783851	
Plot 5	0	0426797	4783768	
Plot 6	1	0426854	4783731	
Plot 7	0	0426859	4783710	
Plot 8	1	0426869	4783701	
Plot 9	1	0426871	4783677	
Plot 10	0	0426896	4783674	
Plot 11	0	0426912	4783653	
Plot 12	1	0426915	4783622	
Plot 13	0	0426937	4783600	
Plot 14	0	0426966	4783572	
Plot 15	0	0427010	4783458	
Plot 16	1	0426990	4783352	
Plot 17	1	0426975	4783281	
Plot 18	0	0426949	4783151	
Plot 19	0	0426967	4783056	
Plot 20	0	0427007	4783150	
Plot 21	0	0426988	4783259	
☆ Plot 22	0	0426523	4783321	PLA do not count
☆ Plot 23	0	0426463	4783290	
☆ Plot 24	1	0426436	4783274	
☆ Plot 25	1	0426357	4783194	
Plot 26	1	0426999	4783188	
Plot 27	0	0426999	4783563	
Plot 28	0	0426955	4783640	
Plot 29	0	0426948	4783676	
Plot 30	0	0426893	4783729	
Plot 31	0	0426823	4783797	
☆ Plot 32	0	0426085	4783499	PLA do not count.
☆ Plot 33	0	0426290	4783604	
☆ Plot 34	0	0426554	4783782	
☆ Plot 35	0	0426618	4783842	

☆ PLA

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

☆ All starred points were conducted @ property line (half plots).

Identification of Suitable Candidate Wildlife Trees for Evaluation of Significance

Identify the best candidate wildlife trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 25

Tree #	Species	# of Cavities	DBH (cm)	UTM		Photo Number(s)
1	Freemans Maple	2	52	0426819	4783755	955 956
2	Freemans Maple	1	58	0426903	4783739	957, 958, 959
3	Sugar Maple? Dead	3	off property	0426354	4783638	960
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

This Section Office Use Only

Formula: Total # Candidate Trees / (# Plots x 0.05ha)

Final Wodland Tally = 7/(27×0.05) = 7/1.35 = 5.19 >10/ha? Yes (No)

If >10/ha: BMA-

Appendix II

Jericho Wind Energy Centre: Bat Habitat Layout Submitted with the NHA

Figure 3

Jericho Wind Energy Centre: Bat Habitat

Candidate Significant Bat Habitats North Section

Natural Resource Solutions Inc.
Aquatic, Terrestrial and Wetland Biologists

October 24, 2012
Project: NRSI-1077
Scale: 1:40 000 (11 x 17")
UTM Zone 17 NAD83

Legend

- Candidate Significant Bat Maternity Colony (BMA)
- Turbine Buffer (171m)
- Turbine
- Permanent Meterological Tower
- Access Road
- Collection Line
- Crane Path
- Transmission Line
- Substation & Laydown Area
- Disturbance Area
- Highway
- Primary Road
- Local Street
- Railway
- Waterbody
- Woodland - LIO
- 250 Feature #
- Woodland - AECOM (<120m From Turbine or Intersecting Project Location)

kms 0 1 2

Path: X:\1077_Jericho\NRSI_1077_Fig3_4_5_CandidateSignificantBatHabitat_40K_2012_10_23_KSR.mxd

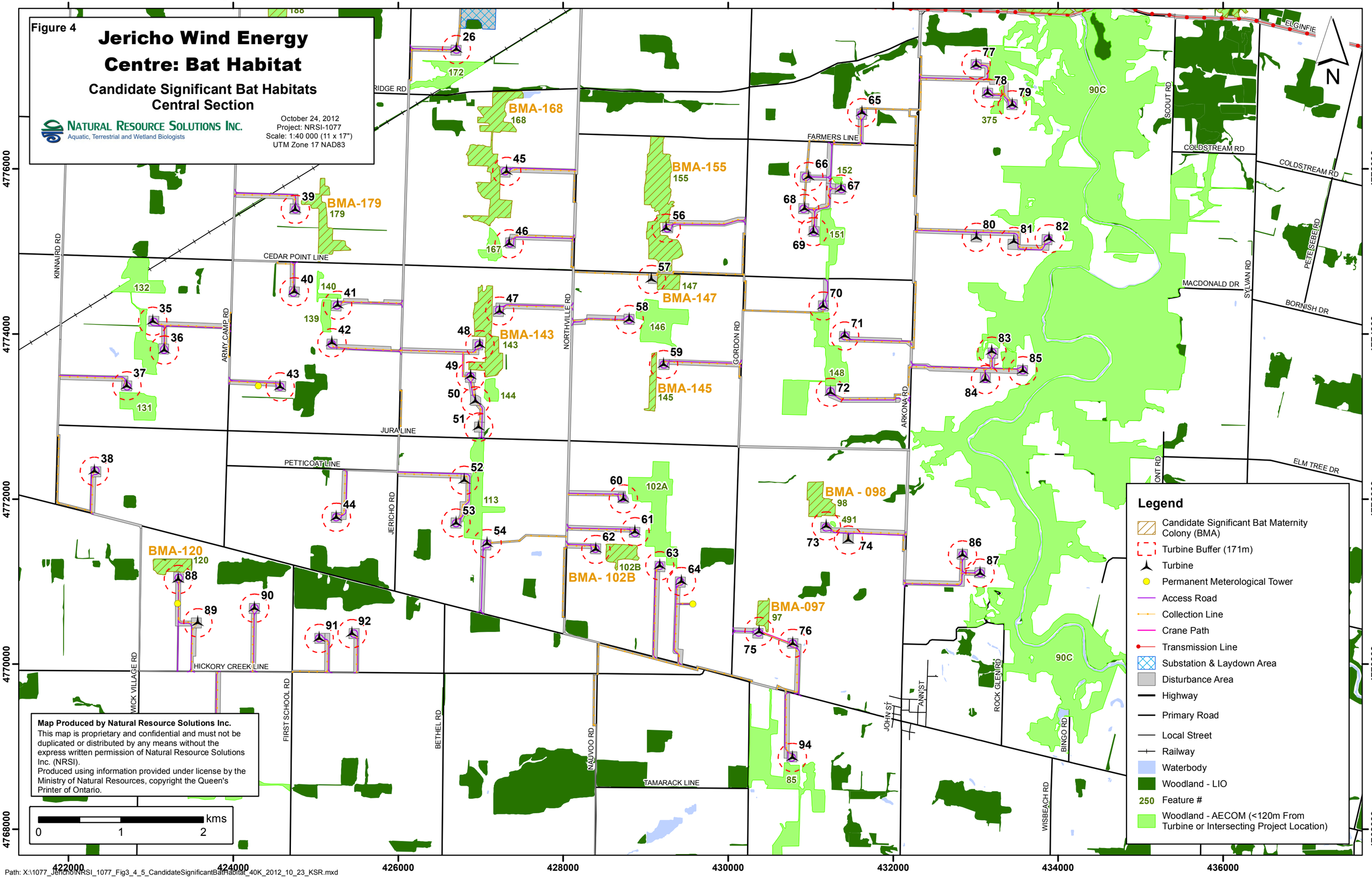
Figure 4

Jericho Wind Energy Centre: Bat Habitat

Candidate Significant Bat Habitats Central Section

Natural Resource Solutions Inc.
Aquatic, Terrestrial and Wetland Biologists

October 24, 2012
Project: NRSI-1077
Scale: 1:40 000 (11 x 17")
UTM Zone 17 NAD83



Path: X:\1077_Jericho\NRSI_1077_Fig3_4_5_CandidateSignificantBatHabitat_40K_2012_10_23_KSR.mxd

Figure 5

Jericho Wind Energy Centre: Bat Habitat

Candidate Significant Bat Habitats South Section

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

October 24, 2012
Project: NRSI-1077
Scale: 1:40 000 (11 x 17")
UTM Zone 17 NAD83

422000 424000 426000 428000 430000 432000 434000 436000

4770000 4768000 4766000 4764000 4762000

54 62 63 64 73 74 86 87 91 92 96 97 75 76 94 85 102 103 104 105

BMA- 102B (102B)

BMA-097 (97)

BMA-051 (51)

90C

JERICHO RD
NORTHVILLE RD
GORDON RD
WARWICK VILLAGE E
FIRST SCHOOL RD
BETHEL RD
JOHN ST
ANN ST
ROCK GLEN RD
BINGO RD
LAMON DR
SYLVAN
RIVER DR
FOSSIL RD
WATSON RD
LANGAN DR
TAMARACK LINE
BIRNAM LINE
CHALK LINE
BRICK YARD LINE
NAUVOO RD
ARKONA RD
ELIZABETH ST
EGREMONT RD

N

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0 1 2 kms

Legend

- Candidate Significant Bat Maternity Colony (BMA)
- Turbine Buffer (171m)
- Turbine
- Permanent Meterological Tower
- Access Road
- Collection Line
- Crane Path
- Transmission Line
- Substation & Laydown Area
- Disturbance Area
- Highway
- Primary Road
- Local Street
- Railway
- Waterbody
- Woodland - LIO
- 250 Feature #
- Woodland - AECOM (<120m From Turbine or Intersecting Project Location)

Path: X:\1077_Jericho\NRSI_1077_Fig3_4_5_CandidateSignificantBatHabitat_40K_2012_10_23_KSR.mxd