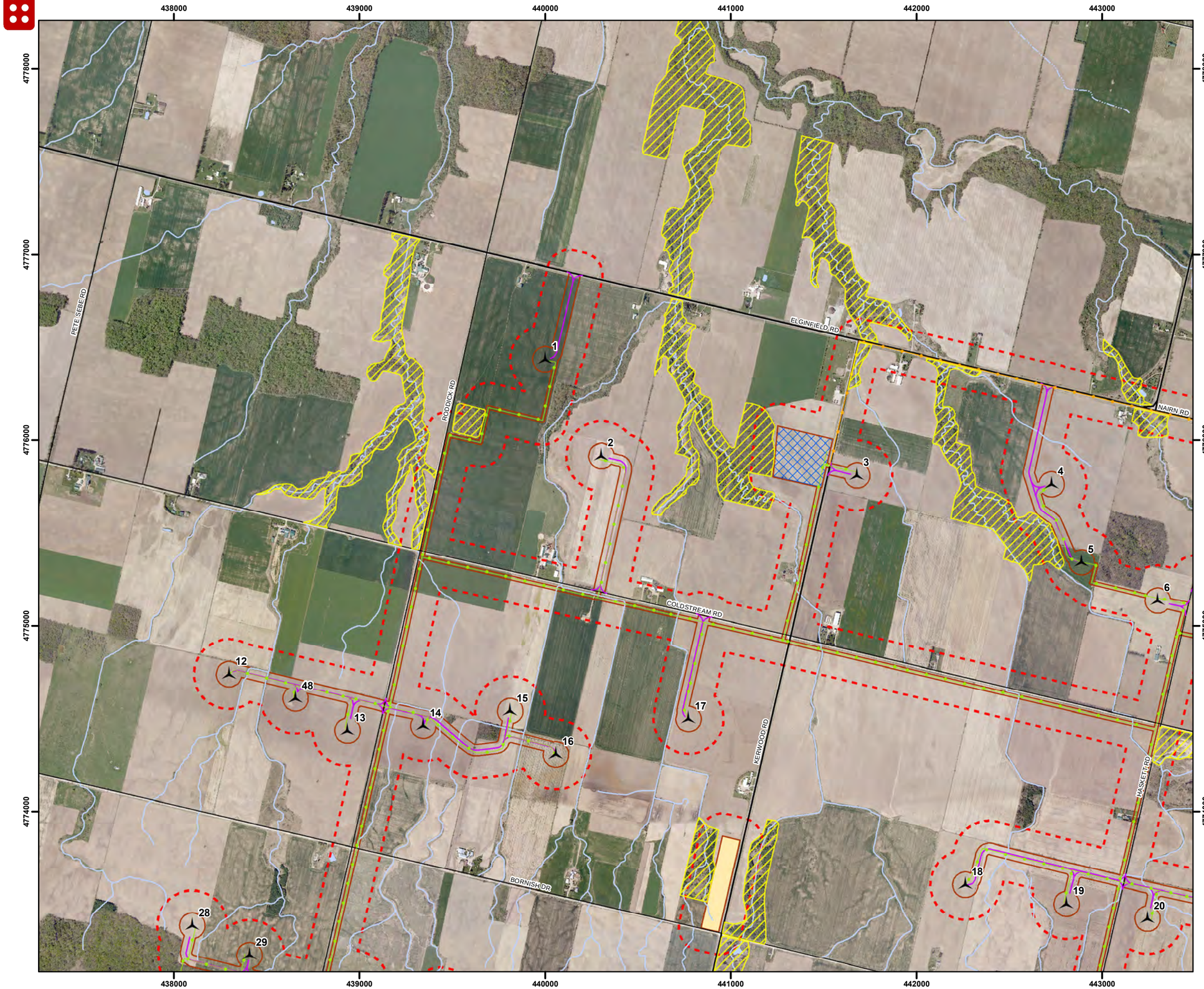
Figure 13

Bornish Wind Energy Centre

Generalized Wildlife Habitat - Northwest



Legend

- Project Area (120m)
- Generalized Mitigation Habitat
- Project Location
- Turbine
- Access Road
- Transmission Line
- Collector System
- Staging Area
- Interconnection Facilities
- Substation
- Existing Transmission Line
- Primary Road
- Secondary Road
- Railroad
- Intermittent Watercourse
- Permanent Watercourse
- Waterbody

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Project: 1231 Date: February 24, 2012	NAD83 - UTM Zone 17 Scale: 1:20,000 (11x17")

0 200 400 600 800 1,000 Metres

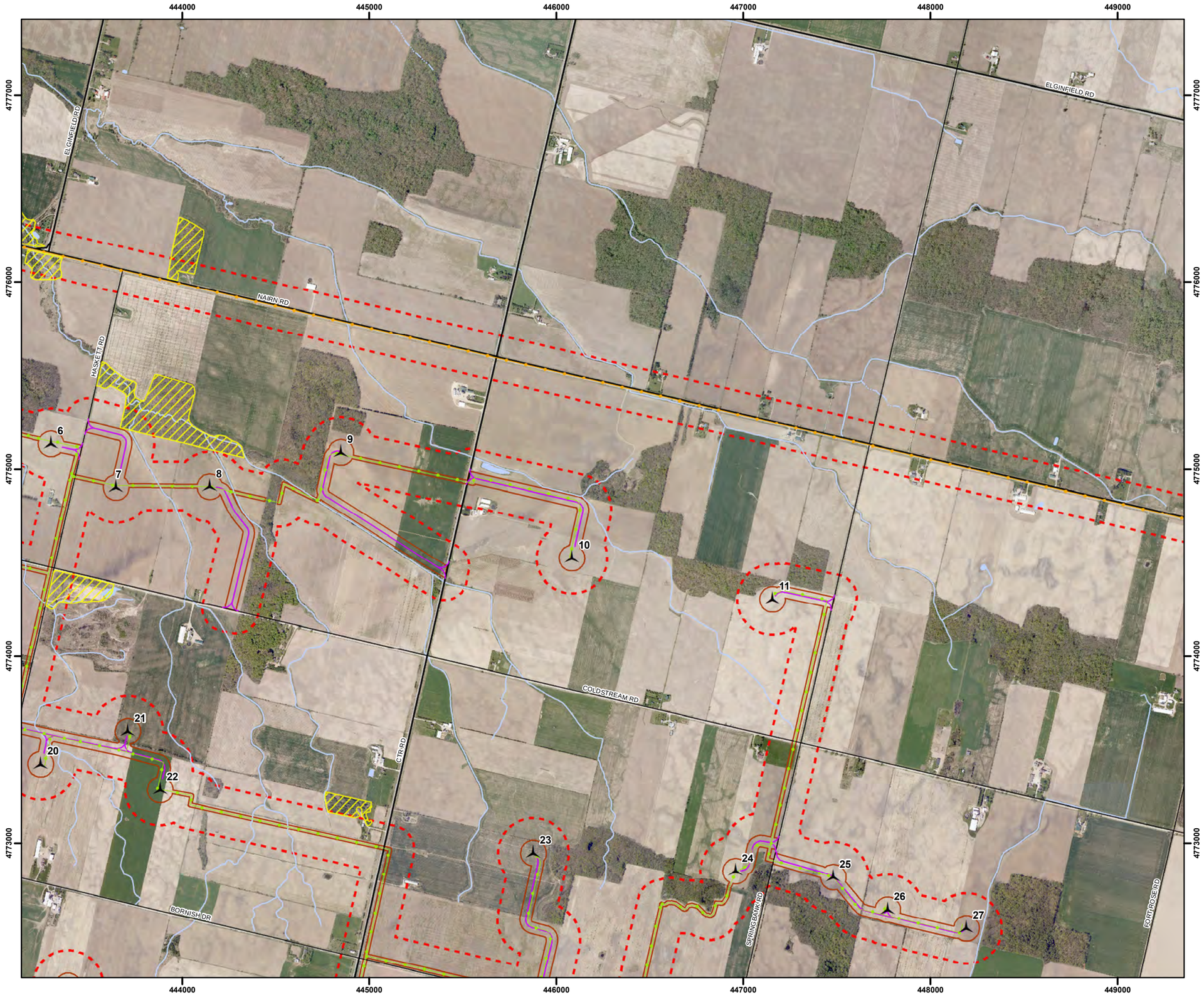
N

Path: X:\1231_BornishWindFarm\SI_EOS_Mapping\NRSI_1231_Fig13_BornishWF_EOS_GeneralHabitat_50K_2012_02_27_KEB.mxd

Figure 14

Bornish Wind Energy Centre

Generalized Wildlife Habitat - Northeast



Legend

- Project Area (120m)
- Generalized Mitigation Habitat
- Project Location
- Turbine
- Access Road
- Transmission Line
- Collector System
- Staging Area
- Interconnection Facilities
- Substation
- Existing Transmission Line
- Primary Road
- Secondary Road
- Railroad
- Intermittent Watercourse
- Permanent Watercourse
- Waterbody

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: 1231
Date: February 24, 2012

NAD83 - UTM Zone 17
Scale: 1:20,000 (11x17")

N

0 200 400 600 800 1,000 Metres

Path: X:\1231_BornishWindFarm\SI_EOS_Mapping\NRSI_1231_Fig14_BornishWF_EOS_GeneralHabitat_50K_2012_02_27_KEB.mxd

436000 437000 438000 439000 440000 441000

4774000 4773000 4772000 4771000 4770000

BORNISH DR
ELM TREE DR
RIVER DR
LAMON DR
SYLVAN RD
RODDICK RD
KERWOOD RD
MCADAM RD
HODGINS RD
WATSON RD

28 29 30 31 32 33 34 35 46

Path: X:\1231_BornishWindFarm\SI_EOS_Mapping\NRSI_1231_Fig15_BornishWF_EOS_GeneralHabitat_50K_2012_02_27_KEB.mxd

Figure 15

Bornish Wind Energy Centre

Generalized Wildlife Habitat - Southwest

Legend

- Project Area (120m)
- Generalized Mitigation Habitat
- Project Location
- Turbine
- Access Road
- Transmission Line
- Collector System
- Staging Area
- Interconnection Facilities
- Substation
- Existing Transmission Line
- Primary Road
- Secondary Road
- Railroad
- Intermittent Watercourse
- Permanent Watercourse
- Waterbody

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Project: 1231
Date: February 24, 2012

NAD83 - UTM Zone 17
Scale: 1:20,000 (11x17")

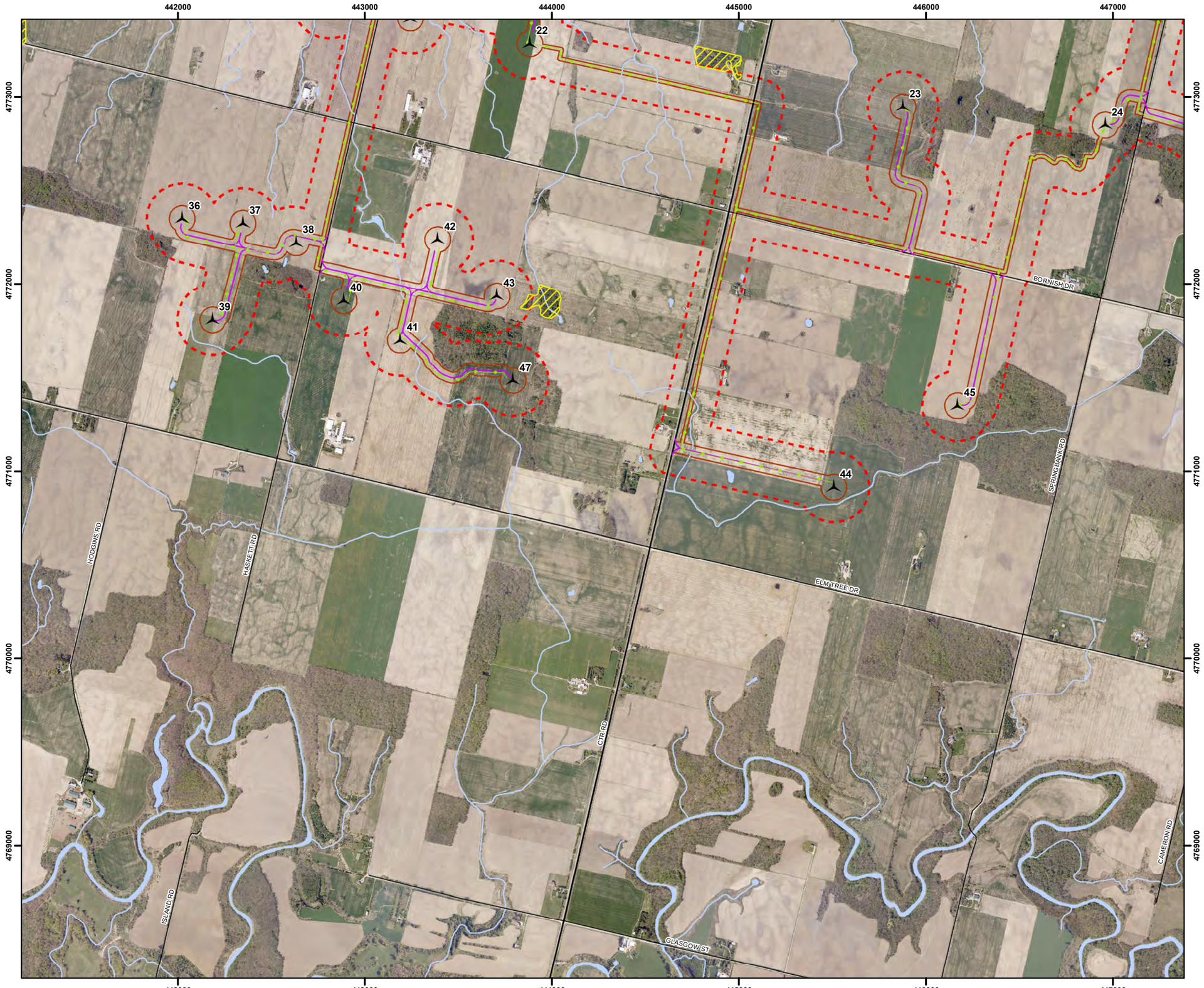
N

0 200 400 600 800 1,000 Metres

Figure 16

Bornish Wind Energy Centre

Generalized Wildlife Habitat - Southeast



Legend

- Project Area (120m)
- Generalized Mitigation Habitat
- Project Location
- Turbine
- Access Road
- Transmission Line
- Collector System
- Staging Area
- Interconnection Facilities
- Substation
- Existing Transmission Line
- Primary Road
- Secondary Road
- Railroad
- Intermittent Watercourse
- Permanent Watercourse
- Waterbody

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: 1231 Date: March 7, 2012	NAD83 - UTM Zone 17 Scale: 1:20,000 (11x17")

0 200 400 600 800 1,000 Metres

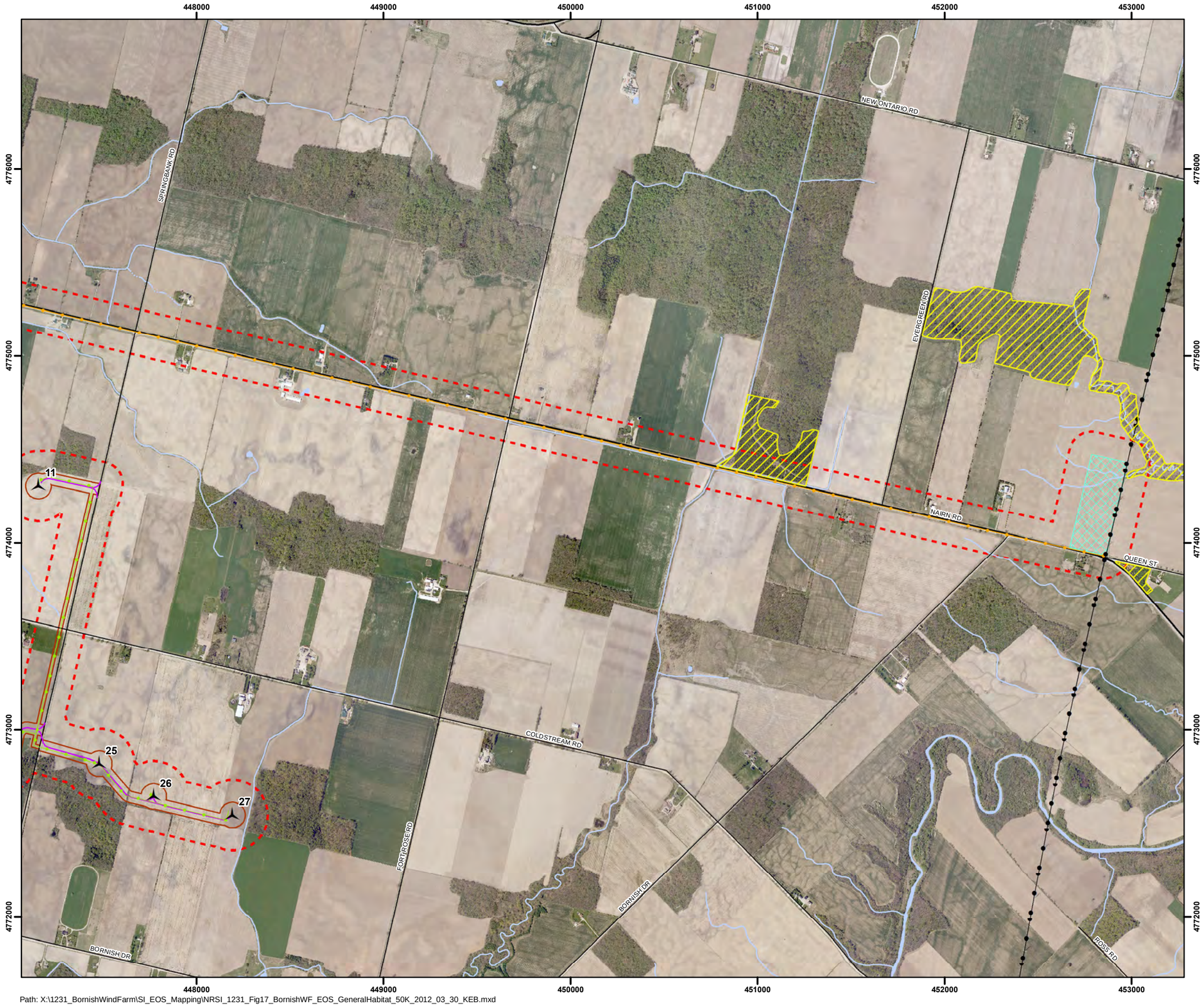
N

Path: X:\1231_BornishWindFarm\SI_EOS_Mapping\NRSI_1231_Fig16_BornishWF_EOS_GeneralHabitat_50K_2012_03_07_KEB.mxd

Figure 17

Bornish Wind Energy Centre

Generalized Wildlife Habitat - T-Line



Legend

- Project Area (120m)
- Generalized Mitigation Habitat
- Project Location
- Turbine
- Access Road
- Transmission Line
- Collector System
- Staging Area
- Interconnection Facilities
- Substation
- Existing Transmission Line
- Primary Road
- Secondary Road
- Railroad
- Intermittent Watercourse
- Permanent Watercourse
- Waterbody

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: 1231 Date: March 30, 2012	NAD83 - UTM Zone 17 Scale: 1:20,000 (11x17")

0 200 400 600 800 1,000 Metres

N

Path: X:\1231_BornishWindFarm\SI_EOS_Mapping\NRSI_1231_Fig17_BornishWF_EOS_GeneralHabitat_50K_2012_03_30_KEB.mxd

Table 13. Summary of Wildlife Habitat within the Bornish Wind Energy Centre Project Area

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
RWA 002 Raptor Wintering Area	62.4	23.5ha of OAGM2 adjacent to 38.9 ha of FODM5-6	WT - 93 AR - >0.1 OL - > 120 UL - >0.1 SI - > 120	**PROPOSED:** Thirty minute visual raptor surveys focused on identifying raptors along woodland and field edge habitat. Surveys will be conducted on 3 visits in January 2012, with another 3 visits occurring in February 2012 (depending on January results). A detailed survey protocol is provided in Appendix I.	To be confirmed through pre-construction surveys	Presence of 1 short-eared owl (provincially Special Concern) and/or the presence of two (2) indicator species.	Presumed	8,10	**Yes**
BMA 002 Bat Maternity Colony	11.0	FODM5-8	WT – 42 AR – 92 OL – >120 UL – 4 SI- >120	Ten nights each of evening point count surveys with use of bat detector and through-the-night abundance surveys with use of bat monitor in June/early July 2011 following guidance in the Bat and Bat Habitats (OMNR 2010b).	Overall Passage Rage: 2.4 passes/night Species: Myotis sp.; 60% (1.4 bats/night)	Maternity colonies include at least twenty (20) tricolored bats or northern long-eared bats, ten (10) big brown bats, twenty (20) little brown bats, or five	No	N/A	**No**

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
						(5) adult, female, silver-haired bats.			
BMA 003 Bat Maternity Colony	30.6	FODM5-8	WT – 44 AR – 7 OL – >120 UL – >0.1 SI- >120	Ten nights each of evening point count surveys with use of bat detector and through-the-night abundance surveys with use of bat monitor in June/early July 2011 following guidance in the Bat and Bat Habitats (OMNR 2010b).	Overall Passage Rage: 2.3 passes/night Species: Myotis sp.; 31% (0.7 bats/night) 30kHz; 27% (0.6 passes/night)	Maternity colonies include at least twenty (20) tricolored bats or northern long-eared bats, ten (10) big brown bats, twenty (20) little brown bats, or five (5) adult, female, silver-haired bats.	No	N/A	**No**
BMA 008 Bat Maternity Colony	11.7	FODM7-1	WT – 57 AR – >0.1 OL – >120 UL – >0.1 SI- >120	**PROPOSED:** A single 1.5hr visual point count surveys at each of up to 11 snags (depending on site access). Surveys will be in accordance with Bats and Bat Habitats (OMNR 2011). A detailed survey protocol is	To be confirmed through pre-construction surveys	Maternity colonies include at least twenty (20) tricolored bats or northern long-eared bats, ten (10) big brown bats, twenty (20) little brown	Presumed	11	**Yes**

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
				provided in Appendix II.		bats, or five (5) adult, female, silver-haired bats.			
BMA 009 Bat Maternity Colony	37.2	FODM4-2	WT – 49 AR – 5 OL – >120 UL – 5 SI- >120	**PROPOSED:** A single 1.5hr visual point count surveys at each of up to 30 snags (depending on site access). Surveys will be in accordance with Bats and Bat Habitats (OMNR 2011). A detailed survey protocol is provided in Appendix II.	To be confirmed through pre-construction surveys	Maternity colonies include at least twenty (20) tricolored bats or northern long-eared bats, ten (10) big brown bats, twenty (20) little brown bats, or five (5) adult, female, silver-haired bats.	Presumed	11	**Yes**
BMA 010 Bat Maternity Colony	<1	FODM4-2	WT – 76 AR – 5 OL – >120 UL – 5 SI- >120	**PROPOSED:** A single 1.5hr visual point count surveys at each of up to 10 snags (depending on site access). Surveys will be in accordance with Bats and Bat Habitats (OMNR 2011). A detailed survey protocol is	To be confirmed through pre-construction surveys	Maternity colonies include at least twenty (20) tricolored bats or northern long-eared bats, ten (10) big brown bats, twenty (20) little brown	Presumed	8	**Yes**

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
				provided in Appendix II.		bats, or five (5) adult, female, silver-haired bats.			
BMA 011 Bat Maternity Colony	1.1	FODM4-2	WT – 48 AR – 0.4 OL –>120 UL – 0.4 SI- >120	**PROPOSED:** A single 1.5hr visual point count surveys at each of up to 10 snags (depending on site access). Surveys will be in accordance with Bats and Bat Habitats (OMNR 2011). A detailed survey protocol is provided in Appendix II.	To be confirmed through pre-construction surveys	Maternity colonies include at least twenty (20) tricolored bats or northern long-eared bats, ten (10) big brown bats, twenty (20) little brown bats, or five (5) adult, female, silver-haired bats.	Presumed	8	**Yes**
BMA 012 Bat Maternity Colony	38.9	FODM5-6	WT – 93 AR – 4 OL – >120 UL – >0.1 SI- >120	Ten nights each of evening point count surveys with use of bat detector and through-the-night abundance surveys with use of bat monitor in June/early July 2011 following guidance in the Bat and Bat Habitats (OMNR	Overall Passage Rage: 1.5 passes/night Species: Myotis sp.; 53% (0.8 bats/night)	Maternity colonies include at least twenty (20) tricolored bats or northern long-eared bats, ten (10) big brown bats, twenty (20) little brown	No	N/A	**No**

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
				2010b). A detailed survey protocol is provided in Appendix II.		bats, or five (5) adult, female, silver-haired bats.			
BMA 013 Bat Maternity Colony	18.2	FODM5-2	WT – 48 AR – 82 OL – >120 UL – 82 SI- >120	**PROPOSED:** A single 1.5hr visual point count surveys at each of up to 18 snags (depending on site access). Surveys will be in accordance with Bats and Bat Habitats (OMNR 2011). A detailed survey protocol is provided in Appendix II.	To be confirmed through pre-construction surveys	Maternity colonies include at least twenty (20) tricolored bats or northern long-eared bats, ten (10) big brown bats, twenty (20) little brown bats, or five (5) adult, female, silver-haired bats.	Presumed	9,12	**Yes**
BMA 016 Bat Maternity Colony	4.3	FODM5-8	WT – 63 AR – 14 OL – 90 UL – 14 SI- >120	**PROPOSED:** A single 1.5hr visual point count surveys at each of up to 10 snags (depending on site access). Surveys will be in accordance with Bats and Bat Habitats (OMNR 2011). A detailed survey protocol is	To be confirmed through pre-construction surveys	Maternity colonies include at least twenty (20) tricolored bats or northern long-eared bats, ten (10) big brown bats, twenty (20) little brown	Presumed	9,12	**Yes**

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
				provided in Appendix II.		bats, or five (5) adult, female, silver-haired bats.			
BMA 017 Bat Maternity Colony	21.0	FODM4-2	WT – 21 AR – 11 OL – 9 UL – 11 SI- >120	**PROPOSED:** A single 1.5hr visual point count surveys at each of up to 21 snags (depending on site access). Surveys will be in accordance with Bats and Bat Habitats (OMNR 2011). A detailed survey protocol is provided in Appendix II.	To be confirmed through pre-construction surveys	Maternity colonies include at least twenty (20) tricolored bats or northern long-eared bats, ten (10) big brown bats, twenty (20) little brown bats, or five (5) adult, female, silver-haired bats.	Presumed	9	**Yes**
Bat Maternity Colonies	<1 – 119.5	Various	WT - >120 AR – N/A OL – N/A UL – N/A SI – N/A	N/A	Greater than 120m from a project component with an operational impact – will be generalized	N/A	Generalized	13-17	**Generalized**
AWO 001 Amphibian Breeding Habitat	4.8	4.6 ha of WODM5-2 with two <1 ha of SAF_1-	WT – 88 AR – 10 OL – >120 UL –10	**PROPOSED:** Two daytime visits to conduct salamander egg	To be confirmed through pre-construction	Studies conducted during spring confirm the	Presumed	11	**Yes**

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
(Woodland)		3	SI- >120	mass surveys throughout areas in AWO 001 with standing water. The first visit will occur approximately two weeks after the first warm rain when ice break up is occurring (mid to late March) and the second in early to mid April. Three (3) evening amphibian call surveys (depending on site access), occurring once in each of April, May and June. Each survey will last 3 minutes, following accepted Marsh Monitoring Program protocol. During each survey, biologists will record species and calling	surveys	presence of a wetland, lake, or pond within or ≤120m from a woodland of any size, and presence of breeding population of ≥20 individuals (adult, juvenile, egg/larval mass) of ≥1 of the following: • Eastern Newt • Blue-spotted Salamander • Spotted Salamander • Gray Treefrog • Spring Peeper • Western Chorus Frog • Wood Frog			

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
				abundance codes, along with other appropriate information (date, time, weather, etc.), as well as identify any amphibian movement corridors. A detailed survey protocol is provided in Appendix III.					
AWO 002 Amphibian Breeding Habitat (Woodland)	38.9	FODM5-6 with <1 ha open water pond	WT – 93 AR – 4 OL – >120 UL – >0.1 SI – >120	**PROPOSED:** Two daytime visits to conduct salamander egg mass surveys throughout areas in AWO 002 with standing water. The first visit will occur approximately two weeks after the first warm rain when ice break up is occurring (mid to late March) and the second in early to mid April. Three (3) evening	To be confirmed through pre-construction surveys	Studies conducted during spring confirm the presence of a wetland, lake, or pond within or ≤120m from a woodland of any size, and presence of breeding population of ≥20 individuals (adult, juvenile, egg/larval mass) of ≥1 of the	Presumed	8,10	**Yes**

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
				amphibian call surveys (depending on site access), occurring once in each of April, May and June. Each survey will last 3 minutes, following accepted Marsh Monitoring Program protocol. During each survey, biologists will record species and calling abundance codes, along with other appropriate information (date, time, weather, etc.), as well as identify any amphibian movement corridors. A detailed survey protocol is provided in Appendix III.		following: • Eastern Newt • Blue-spotted Salamander • Spotted Salamander • Gray Treefrog • Spring Peeper • Western Chorus Frog • Wood Frog			
AWO 003 Amphibian	15.2	15.1 ha of WODM4-3	WT – 100 AR – 6	**PROPOSED:** Two daytime	To be confirmed	Studies conducted	Presumed	9,11,12	**Yes**

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
Breeding Habitat (Woodland)		with a <1 ha open water pond	OL – 35 UL – 6 SI- >120	visits to conduct salamander egg mass surveys throughout areas in AWO 003 with standing water. The first visit will occur approximately two weeks after the first warm rain when ice break up is occurring (mid to late March) and the second in early to mid April. Three (3) evening amphibian call surveys (depending on site access), occurring once in each of April, May and June. Each survey will last 3 minutes, following accepted Marsh Monitoring Program protocol. During each survey, biologists will record	through pre-construction surveys	during spring confirm the presence of a wetland, lake, or pond within or ≤120m from a woodland of any size, and presence of breeding population of ≥20 individuals (adult, juvenile, egg/larval mass) of ≥1 of the following: • Eastern Newt • Blue-spotted Salamander • Spotted Salamander • Gray Treefrog • Spring Peeper • Western Chorus Frog			

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
				species and calling abundance codes, along with other appropriate information (date, time, weather, etc.), as well as identify any amphibian movement corridors. A detailed survey protocol is provided in Appendix III.		• Wood Frog			
Amphibian Breeding Habitat (Woodland)	1.5	SWDM3-2	WT – 82 AR – 115 OL – >120 UL – 2 SI – >120	N/A	N/A	N/A	Generalized	16	**Generalized**
Snake Hibernaculum	15.6	WODM4-3	WT – 56 AR – >0.1 OL – 23 UL – >0.1 SI – >120	N/A	N/A	N/A	Generalized	13	**Generalized**
SCC: Woodland Vole	Various	Forest edges, meadows and grasslands	No development within woodland vole habitat	N/A	Greater than 120m from a project component with an operational impact – will be generalized	N/A	Generalized	13-17	**Generalized**
SCC: Carey's	Various	Hardwood	No	N/A	Greater than	N/A	Generalized	13-17	**Generalized**

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
Sedge		forests and floodplain woods	development within carey's sedge habitat		120m from a project component with an operational impact – will be generalized				
SCC: Awnless Wild Rye	Various	Open forests	No development within awnless wild rye habitat	N/A	Greater than 120m from a project component with an operational impact – will be generalized	N/A	Generalized	13-17	**Generalized**
SCC: Yellow Stargrass	Various	Meadows	No development within yellow stargrass habitat	N/A	Greater than 120m from a project component with an operational impact – will be generalized	N/A	Generalized	13-17	**Generalized**
SCC: Winged Loosestrife	Various	Open woods	No development within winged loosestrife habitat	N/A	Greater than 120m from a project component with an operational impact – will be generalized	N/A	Generalized	13-17	**Generalized**
SCC: Slim-flowered	Various	Deciduous forests	No developme	N/A	Greater than 120m from a	N/A	Generalized	13-17	**Generalized**

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
Muhly			nt within slim-flowered muhly habitat		project component with an operational impact – will be generalized				
SCC: Woodland Bulrush	Various	Stream edges	No development within woodland bulrush habitat	N/A	Greater than 120m from a project component with an operational impact – will be generalized	N/A	Generalized	13-17	**Generalized**
SCC: Blue-ringed Dancer	Various	Well vegetated creeks and streams	No development within blue ringed-dancer habitat	N/A	Greater than 120m from a project component with an operational impact – will be generalized	N/A	Generalized	13-17	**Generalized**
SCC: Double-striped Bluet	Various	Ponds and slow moving streams	No development within double-striped bluet habitat	N/A	Greater than 120m from a project component with an operational impact – will be generalized	N/A	Generalized	13-17	**Generalized**
SCC: Pronghorn Clubtail	Various	Ponds and slow moving streams	No development within	N/A	Greater than 120m from a project	N/A	Generalized	13-17	**Generalized**

Feature ID	Size (ha)	Composition	Distance to Project Location	Evaluation Methods	Evaluation Results	Provincial Criteria	Significance	Figure	EIS Required (Y/N/Generalized)
			pronghorn clubtail habitat		component with an operational impact – will be generalized				

Legend

WT: Wind Turbine
AR: Access Road
OL: Overhead Line
UL: Underground Line
SI: Supporting Infrastructure

11.0 Evaluation of Significance Summary

In accordance with the REA Regulation, NRSI biologists have completed a comprehensive evaluation of significance of the natural features and wildlife habitat within the Bornish Wind Energy Centre project area. The results of the evaluation have been discussed in the preceding sections, and have been summarized in Table 14 below. This summary includes: woodlands, wetlands, valleylands, species of conservation concern and significant wildlife habitat, some of which will be carried forward to the environmental impact statement, as noted in the table.

Table 14. Summary of Evaluation of Significance of Natural Features and Wildlife Habitat within the Bornish Wind Energy Centre Project Area

Feature ID	Feature Type	Distance to Closest Turbine (from blade tip) (m)	Distance to Other Project Infrastructure (m)	Environmental Impact Study Required (Y/N/Generalized)
WOD-001	Woodland	>120	5	**Yes**
WOD-002	Woodland	78	6	**Yes**
WOD-003	Woodland	42	6	**Yes**
WOD-004	Woodland	56	>0.1	**Yes**
WOD-006	Woodland	93	Overlapping	**Yes**
WOD-007	Woodland	49	5	**Yes**
WOD-008	Woodland	44	Overlapping	**Yes**
WOD-009	Woodland	42	4	**Yes**
WOD-010	Woodland	55	>0.1	**Yes**
WOD-012/WOD 021	Woodland	47	92	**Yes**
WOD-013	Woodland	>120	28	**Yes**
WOD-014	Woodland	57	>0.1	**Yes**
WOD-015	Woodland	76	5	**No**
WOD-016	Woodland	48	0.4	**No**
WOD-018	Woodland	40	7	**Yes**
WOD-020	Woodland	>120	110	**No**
WOD-022	Woodland	48	82	**Yes**
WOD-023	Woodland	63	14	**Yes**
WOD-024	Woodland	21	9	**Yes**
WOD-025	Woodland	>120	35	**Yes**
WOD-027	Woodland	>120	6	**Yes**
WOD-028	Woodland	90	6	**Yes**
WOD-029	Woodland	82	2	**Yes**
WOD-030	Woodland	89	73	**Yes**
WOD-031	Woodland	70	64	**Yes**
WOD-038	Woodland	>120	72	**Yes**
WOD-039	Woodland	>120	37	**Yes**
WOD-045	Woodland	>120	15	**Yes**
WOD-046	Woodland	>120	12	**Yes**
WOD-047	Woodland	>120	20	**Yes**
WOD-048	Woodland	>120	5	**Yes**
WOD-050	Woodland	>120	3	**No**
WOD-051	Woodland	>120	51	**Yes**