Appendix D:

Correspondence with MNRF

Ministry of Natural Resources and Forestry

Regional Resources Section
Southern Region
Regional Operations Division
300 Water Street
Peterborough, ON K9J 3C7
Tel: 705-755-1328
Fax: 705-755-3233

Ministère des Richesses naturelles et des Forêts

Ressources régionales article
Région du Sud
Division des opérations régionales
300, rue Water
Peterborough (ON) K9J 3C7
Tél: 705-755-1328
Téléc: 705-755-3233

Ontario

January 9, 2015

Sean Fairfield (Sean.Fairfield@algonquinpower.com)
Windlectric Inc.
354 Davis Road
Oakville, ON
L6J 2X1

RE: Modifications to Amherst Island Wind Energy Project, Re-Confirmation

Dear Mr. Fairfield:

The Ministry of Natural Resources and Forestry (MNRF) has received your correspondence dated December 1, 2014 and January 7, 2015 describing project modifications associated with the Amherst Island Wind Energy Project. The following modifications have been made subsequent to MNRF's letter confirming the Natural Heritage Assessment (NHA) in respect of the project:

- Reduction in the number of turbines from 36 to 27 (including removal of S06, S08, S10, S15, S17, S23, S25, S32, S35) and removal of associated collector lines (including along public road allowances) and access roads;
- Addition of underground collector line along previously approved access road between Turbines S16/S23 and Turbine S35;
- Addition of underground collector line along South Shore Road and up to S13;
- Removal of the portions of the proposed underground collector line along the following public road allowances:
  - Stella Forty Foot Rd. from the potential O&M building location north of Second Concession to Front Road;
  - on Front Road through Stella and to S30; also,
  - along all portions of Second Concession Road west of the entrance to S01.

Upon review of these modifications, MNRF is satisfied that the NHA requirements of Ontario Regulation 359/09 have been met. Please add this letter as an addendum to the confirmation letter issued Dec 14, 2012 along with subsequent confirmation letters, for the Amherst Island Wind Energy Project.

If you wish to discuss, please contact Clairissa Myschowoda, Acting Renewable Energy Coordinator, at clairissa.myschowoda@ontario.ca or at 705-755-1362.

Sincerely,

Kazia Milian
Acting Land Use Planning Supervisor
Regional Resources Section, Southern Region

c. Clairissa Myschowoda, Acting Renewable Energy Coordinator, MNRF
Susanne Edwards, Senior Project Evaluator, MOEEC
Katherine St. James, Stantec Consulting

Stantec Consulting Ltd.
70 Southgate Drive, Suite 1
Guelph ON N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

December 1, 2014
File: 160960595

Attention: Clairissa Myschowoda
Ontario Ministry of Natural Resources and Forestry
Peterborough District
1st Floor, South Tower
300 Water St
Peterborough ON K9J 8M5

Dear Ms. Mychowoda,

Reference: Amherst Island Wind Energy
Notification of Technical Project Change

The purpose of this letter is to provide the Ministry of Natural Resources and Forestry (MNRF) with detail regarding technical updates to the Amherst Island Wind Energy Project (the "Project"). These Project updates have been discussed with the Ministry of the Environment and Climate Change (MOECC), who has verified that the updates are a Technical Change as pursuant to the classification system outlined in the Ministry of the Environment's Technical Guide to Renewable Energy Approvals (October, 2013). Given the nature of these technical updates, they do not require any modifications to the Natural Heritage Assessment and Environmental Impact Study (NHA/EIS). As such, the update is being provided for MNRF's information; a re-confirmation of the NHA/EIS is not required. A separate letter, detailing the collector line to S13 and Zone of Investigation area changes requiring an NHA amendment, was submitted previously.

The technical updates are as follows:

- The reduction in the number of Wind Turbines by changing the Turbine Model (12 2.942 MW turbines and 15 2.772 MW turbines) (see **Figure 1, Attachment 1**); and,
- The addition of an underground collector line along a previously approved access road between T16/T23 and T35 (see **Figure 1, Attachment 1**).

The first update involves changing the Project's turbines from a combination of Siemens 2.3 MW and 2.221 MW to a combination of Siemens 2.942 MW and 2.772 MW, and thereby reducing the number of turbines from 36 to 27. The new turbines would be physically identical, specifically with a hub height of 99.5 m and rotor diameter of 113 m. The modification will decrease the Project Location size by reducing the number of turbine sites from 36 to 27. All of these 27 turbine sites are in previously studied and proposed locations.

The second update would involve the addition of an underground collector line along a previously approved access road between T16/T23 and T35. This underground collector line has been incorporated into the design of the access road between T16/23 and T35.

Because the collector line will use the same corridor as the previously studied and proposed access road, the Project Location will not be changed, and therefore there will be no new features to be considered within 120 m of the Project Location. The addition of the underground

collector line route provides Windlectric Inc. with greater design flexibility. The construction and installation activities for this underground collector line will be completed in the same manner (using the same mitigation measures) as the collector lines which are described in the Construction Plan Report, submitted as part of the Renewable Energy Application (REA).

Changes to Assessment of Impacts

The removal of these turbines and their associated access roads and underground cabling will not expand the Project Location into new areas, but will reduce the overall size of the Project Location. As a result, a number of significant features will no longer be within the 120 m Zone of Investigation. Specifically, the following features are no longer within 120 m of the Project Location:

- Wetlands 3 and 12;
- Woodlands 1, 2 and 32;
- Raptor Winter Area RWA-1;
- Old-Growth Forest OGF2; and,
- Open Country Bird Breeding OCB-1.

As identified in the Natural Heritage Assessment Report, these significant features were not anticipated to be negatively affected by the Project in any event. As such, mitigation measures, as outlined in Tables 14B, 15B and 16B of the NHA/EIS will not be required for these features as a result of the removal of turbines and related infrastructure. The Project changes have also resulted in an increased distance between some significant features and the Project Location. **Table 1** below summarizes the revised distance calculations. These significant habitat features are shown on **Figure 2, Attachment 1**.

Table 1: Summary of Changes to Significant Natural Features

Feature ID	Feature Type	Old Distance to Project Infrastructure Within 120 m (m)	New Distance to Project Infrastructure Within 120 m (m)	Significant? (Y/N)
Wetlands				
4	Wetland	WT-76 UL-14 AR-45 TC-39	WT-76 UL-41 AR-38 TC-39	Yes
9	Wetland	WT-68 UL-18 AR-99	UL-18 AR-99	Yes

Reference: Amherst Island Wind Energy
Notification of Technical Project Change

Table 1: Summary of Changes to Significant Natural Features

Feature ID	Feature Type	Old Distance to Project Infrastructure Within 120 m (m)	New Distance to Project Infrastructure Within 120 m (m)	Significant? (Y/N)
		TC-61		
10 (PSW)	Wetland – Nut Island Duck Club Marsh	WT-3 UL-13 AR-74 TC-3	UL-13 AR-74 TC-96	Yes
13	Wetland	UL-1 AR-100	UL-95 AR-100	Yes
16	Wetland	UL-19 AR-10	UL-19	Yes
Woodlands				
4	Woodland	WT-48 UL-overlapping AR-3 TC-23	WT-72 UL-overlapping AR-3 TC-63	Yes
Seasonal Concentration Areas				
RWA-4	Raptor Wintering Area	WT – overlapping AR – overlapping UL – overlapping TC – overlapping BU – overlapping	WT – 84 AR – overlapping UL – overlapping TC – 47 BU – overlapping	Yes
ML1	Landbird Migratory Stopover Areas	WT – 48 UL – 3 AR – 3 TC – 23	WT – 72 UL – 3 AR – 3 TC – 47	Yes
Habitat for Species of Conservation Concern				
ABB1	Woodland Area-Sensitive Breeding Bird Habitat	WT – 48 UL – 3 AR – 3 TC – 23	WT – 72 UL – 3 AR – 3 TC – 63	Yes
OCB-4	Open Country Bird Breeding Habitat	WT – overlapping AR – overlapping UL – overlapping TC – overlapping	WT – 84 AR – overlapping UL – overlapping TC – 47	Yes

Reference: Amherst Island Wind Energy
Notification of Technical Project Change

Table 1: Summary of Changes to Significant Natural Features

Feature ID	Feature Type	Old Distance to Project Infrastructure Within 120 m (m)	New Distance to Project Infrastructure Within 120 m (m)	Significant? (Y/N)
		BU – overlapping	BU – overlapping	
SSB1	Shrub/Early Successional Bird Breeding Habitat	UL – 20 AR – 16	UL – 82 AR – 86	Yes

Legend: WT: Wind Turbine; UL: Underground Transmission Line; AR: Access Road, OL: Overhead Transmission Line, TC: Temporary Construction Areas, BU: Building/Substation

Mitigation measures as outlined in Tables 14B, 15B and 16B of the NHA/EIS will continue to be required, as applicable, for features listed in **Table 1**.

Furthermore, the removal of the turbines and associated components reduces the total amount of Open Country Breeding Bird/Short-eared Owl habitat removal from 17.2 ha to 11.6 ha permanently (0.6% to 0.4% of the total habitat area identified – 3113 ha) and from 67.8 ha to 41.6 ha temporarily (2.1% to 1.3% of the total habitat area identified). These significant habitat features are shown on **Figure 3, Attachment 1**.

The removal of the turbines and associated components also reduces the total amount of Raptor Wintering Area habitat removal from 17.7 ha to 12.2 ha permanently (0.5% to 0.3% of the total habitat area identified – 3742 ha) and from 68.6 ha to 42.3 ha temporarily (1.8% to 1.1% of the total habitat area identified). These significant habitat features are shown on **Figure 3, Attachment 1**.

Changes to the Environmental Effects Monitoring Plan

The Project change will result in minor changes to the Environmental Effects Monitoring Plan (EEMP). Raptor Wintering Area RWA-1 and Open Country Bird Breeding OCB-1 are no longer within 120 m of the Project Location. As such, post-construction monitoring requirements in the EEMP are no longer required for these features.

Post-construction mortality monitoring is required at 30% of turbines, to a minimum of 10 turbines. As such, regardless of the reduction in the number of turbines, the current requirement in the EEMP to conduct mortality monitoring at 10 turbines will remain unchanged, although the 10 turbines chosen to be included in this mortality monitoring must change based on the removal of turbines in this technical Project update.

The proposed subset of turbines to be included in the post-construction monitoring, as indicated on Figure 2 of the EEMP, will be revised to accommodate the removal of some turbines in the

Reference: Amherst Island Wind Energy
Notification of Technical Project Change

subset. The final subset of turbines to be included in the post-construction monitoring will be determined in consultation with the MNRF prior to the beginning of the monitoring program.

All other commitments within the EEMP for post-construction monitoring, mitigation and contingency measures remain unchanged.

CLOSING

Stantec Consulting Ltd. prepared this letter report for Windlectric Inc. for the Amherst Island Wind Energy Project. Windlectric Inc. is committed to implementing the appropriate protection and mitigation measures as they apply to the construction and operation of the proposed Project.

Regards,

STANTEC CONSULTING LTD.

Katherine St. James, M.Sc.
Terrestrial Ecologist
Phone: (519) 836-6050
Fax: (519) 836-2493
Katherine.stjames@stantec.com

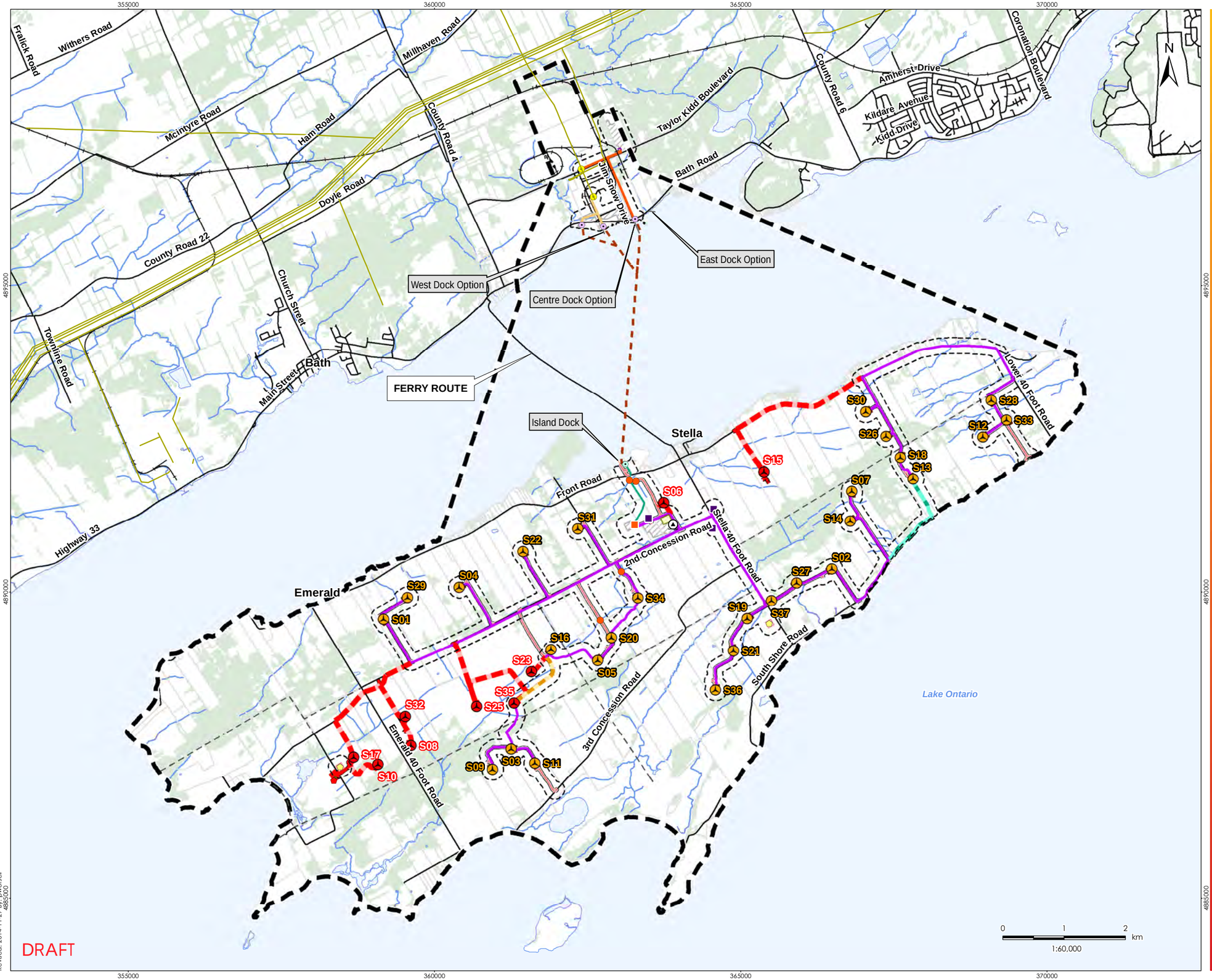
c. Alex Tsopelas, Algonquin Power Co.
Sean Fairfield, Algonquin Power Co.
Kerrie Skillen, Stantec Consulting Ltd.

Attachments:

Attachment 1: Updates to NHA Figures

ks \\cd1220-f02\root\work_group\01609\active\60960595\reports\03_modification reports\rep_modification_no. 3_draft\mnr letters\turbine removal letter\ltr_60595_aiwip-technical_update_20141201_final.docx

Attachment 1
Updates to NHA Figures



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Revised: 2014-11-27 By: pworsell

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine (No Changes Proposed)
- Turbine (Removed)
- Met Tower - Potential Location (No Changes Proposed)
- Met Tower - Potential Location (Removed)
- Substation (Potential Location)
- Access Road (No Changes Proposed)
- Access Road (Removed)
- Collector Line (Removed)
- Collector Line (New) – within previously approved access road
- Collector Line (Additional Project Design Change Modification)
- Collector Line (No Proposed Changes)
- Submarine Cable Path
- Laydown Area and Crane Pad (No Changes Proposed)
- Laydown Area and Crane Pad (Removed)
- Turbine Blade Tip (No Changes Proposed)
- Turbine Blade Tip (Removed)
- Operation and Maintenance Building (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area (No Proposed Changes)
- Constructible Area (Removed)
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Waterbody
- Wooded Area
- Property Line

Notes

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November 2014
160960595

Client/Project

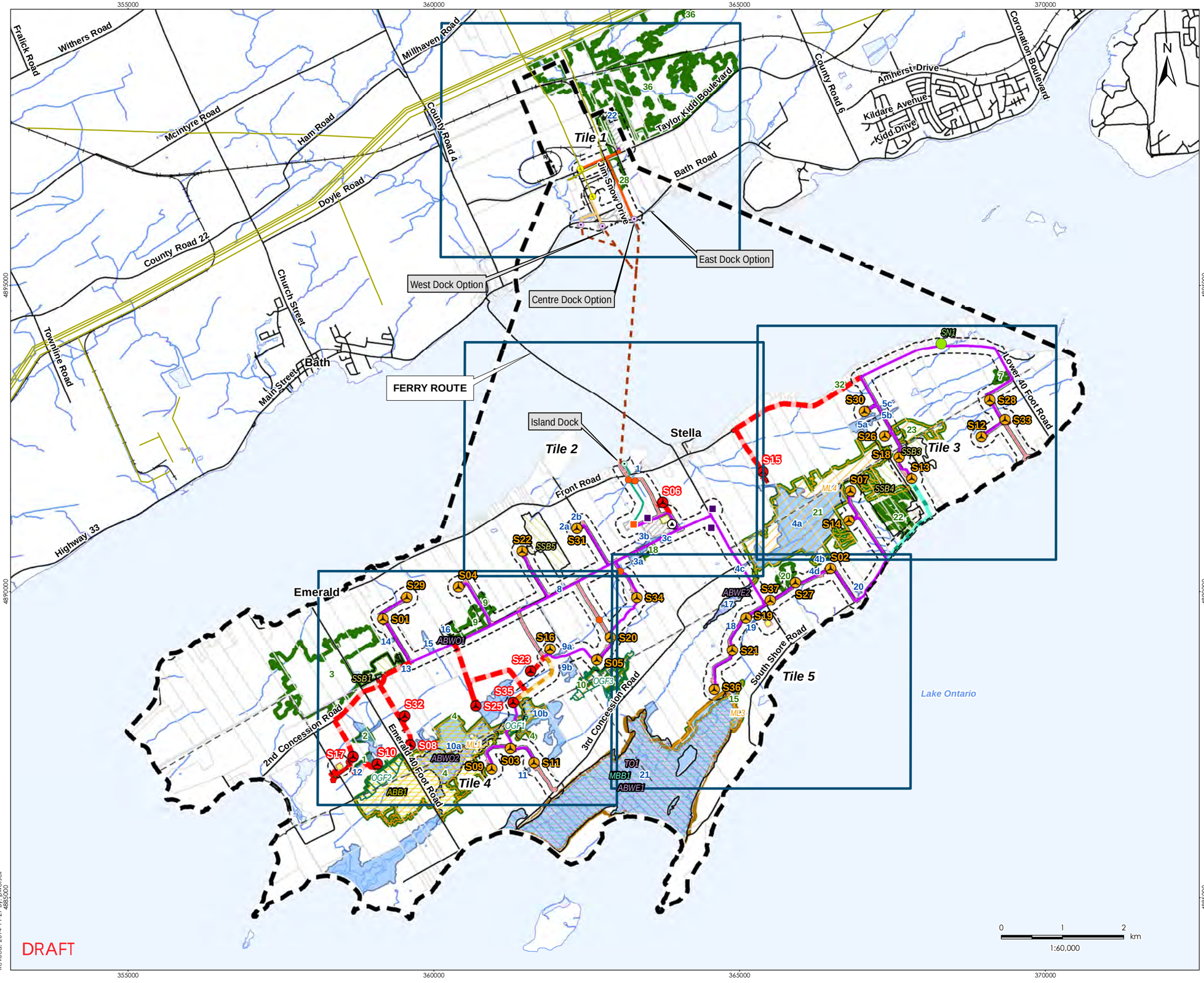
Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
1.0

DRAFT

Title

Project Location - Modification #3: Overview



Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine (No Changes Proposed)
- Turbine (Removed)
- Met Tower - Potential Location (No Changes Proposed)
- Met Tower - Potential Location (Removed)
- Substation (Potential Location)
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- Potential Culvert Location
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- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area (No Proposed Changes)
- Constructible Area (Removed)
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Waterbody
- Amherst Bay Life Science ANSI
- Property Line

Significant Wildlife Habitat Features

- Snake Hibernacula (SN)
- Amphibian Breeding (ABWO & ABWE)
- Area-Sensitive Breeding Bird (ABB)
- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Landbird Migratory Stopover Area (ML)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Significant Woodland
- Significant Wetland

Notes

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Amherst Island Wind Energy Project

Figure No.
2.0

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Title

Significant Natural Features & Wildlife Habitat - Overview

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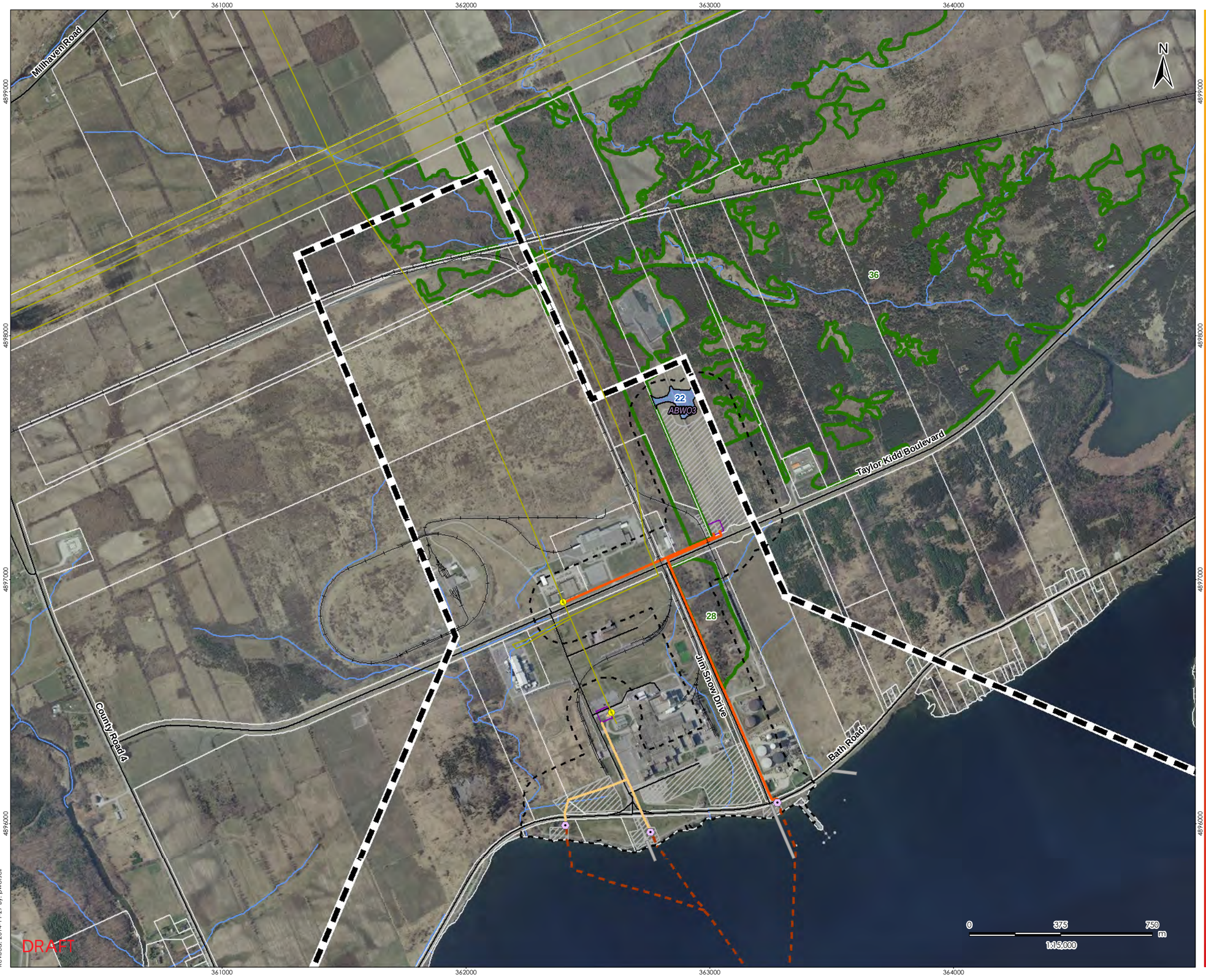
Revised: 2014-11-27 By: pworsell



Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine (No Changes Proposed)
- Turbine (Removed)
- Met Tower - Potential Location (No Changes Proposed)
- Met Tower - Potential Location (Removed)
- Access Road (No Changes Proposed)
- Access Road (Removed)
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- Constructible Area (No Proposed Changes)
- Constructible Area (Removed)
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- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Amherst Bay Life Science ANSI
- Property Line

Significant Wildlife Habitat Features

- Snake Hibernacula (SN)
- Amphibian Breeding (ABWO & ABWE)
- Area-Sensitive Breeding Bird (ABB)
- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Shorebird Migratory Stopover (SM)
- Landbird Migratory Stopover Area (ML)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Significant Woodland
- Significant Wetland

Notes

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Client/Project

Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
2.1

DRAFT

Title

Significant Natural Features & Wildlife Habitat

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Revised: 2014-11-27 By: pworsell

361000 362000 363000 364000 365000

4894000 4893000 4892000 4891000

N

SM1 Mcdonalds Lane Front Road Kerr Point Road Stella 40 Foot Road 2nd Concession Road 3rd Concession Road

S06 S31 S22

1 2a 2b 3a 3b 3c 4a 4c 18 21

SSB5 ML4

DRAFT

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1:15,000

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Revised: 2014-11-27 By: pworsell

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components

- Turbine (No Changes Proposed)
- Turbine (Removed)
- Met Tower - Potential Location (No Changes Proposed)
- Met Tower - Potential Location (Removed)
- Access Road (No Changes Proposed)
- Access Road (Removed)
- Collector Line (Removed)
- Collector Line (New) – within previously approved access road
- Collector Line (Additional Project Design Change Modification)
- Collector Line (No Proposed Changes)
- Submarine Cable Path
- Laydown Area and Crane Pad (No Changes Proposed)
- Laydown Area and Crane Pad (Removed)
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip (No Changes Proposed)
- Turbine Blade Tip (Removed)
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area (No Proposed Changes)
- Constructible Area (Removed)
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Amherst Bay Life Science ANSI
- Property Line

Significant Wildlife Habitat Features

- Snake Hibernacula (SN)
- Amphibian Breeding (ABWO & ABWE)
- Area-Sensitive Breeding Bird (ABB)
- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Shorebird Migratory Stopover (SM)
- Landbird Migratory Stopover Area (ML)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Significant Woodland
- Significant Wetland

Notes

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Client/Project

Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
2.2

DRAFT

Title

Significant Natural Features & Wildlife Habitat

366000 367000 368000 369000 370000

4894000 4893000 4892000 4891000

N

Front Road
Lower 40 Foot Road
South Shore Road
SM1
SN1
ML4
ML5
SSB3
SSB4
32
7
5a
5b
5c
21
22
23
4a
4b
S07
S12
S13
S14
S15
S18
S26
S28
S30
S33

DRAFT

0 375 750 m
1:15,000

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Revised: 2014-11-27 By: pworsell

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Legend

Study Area
120m Zone of Investigation

Project Components

Turbine (No Changes Proposed)
Turbine (Removed)
Met Tower - Potential Location (No Changes Proposed)
Met Tower - Potential Location (Removed)
Access Road (No Changes Proposed)
Access Road (Removed)
Collector Line (Removed)
Collector Line (New) – within previously approved access road
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Collector Line (No Proposed Changes)
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Turbine Blade Tip (No Changes Proposed)
Turbine Blade Tip (Removed)
Substation (Potential Location)
Potential Culvert Location
Point of Common Coupling
Mainland Cable Vault (Potential Location)
Island Cable Vault
Aboveground Storage Tanks (Potential Location)
Constructible Area (No Proposed Changes)
Constructible Area (Removed)
Mainland Dock (Potential Location)
Island Dock
Batch Plant (Potential Location)
Site Office (Potential Location)
Storage Shed

Transmission Lines

Mainland Option1
Mainland Option 2
Island Transmission Line

Land Use

Central Staging Area
Switching Station (Potential Location)

Existing Features

Road
Unopened Road Allowance
Railway
Hydro Line
Watercourse
Amherst Bay Life Science ANSI
Property Line

Significant Wildlife Habitat Features

Snake Hibernacula (SN)
Amphibian Breeding (ABWO & ABWE)
Area-Sensitive Breeding Bird (ABB)
Marsh Breeding Bird (MBB)
Shrub/Early Successional Bird Breeding (SSB)
Turtle Overwintering (TO)
Shorebird Migratory Stopover (SM)
Landbird Migratory Stopover Area (ML)
Waterfowl Stopover & Staging - Terrestrial (WT)
Old Growth Forest (OGF)
Significant Woodland
Significant Wetland

Notes

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Client/Project

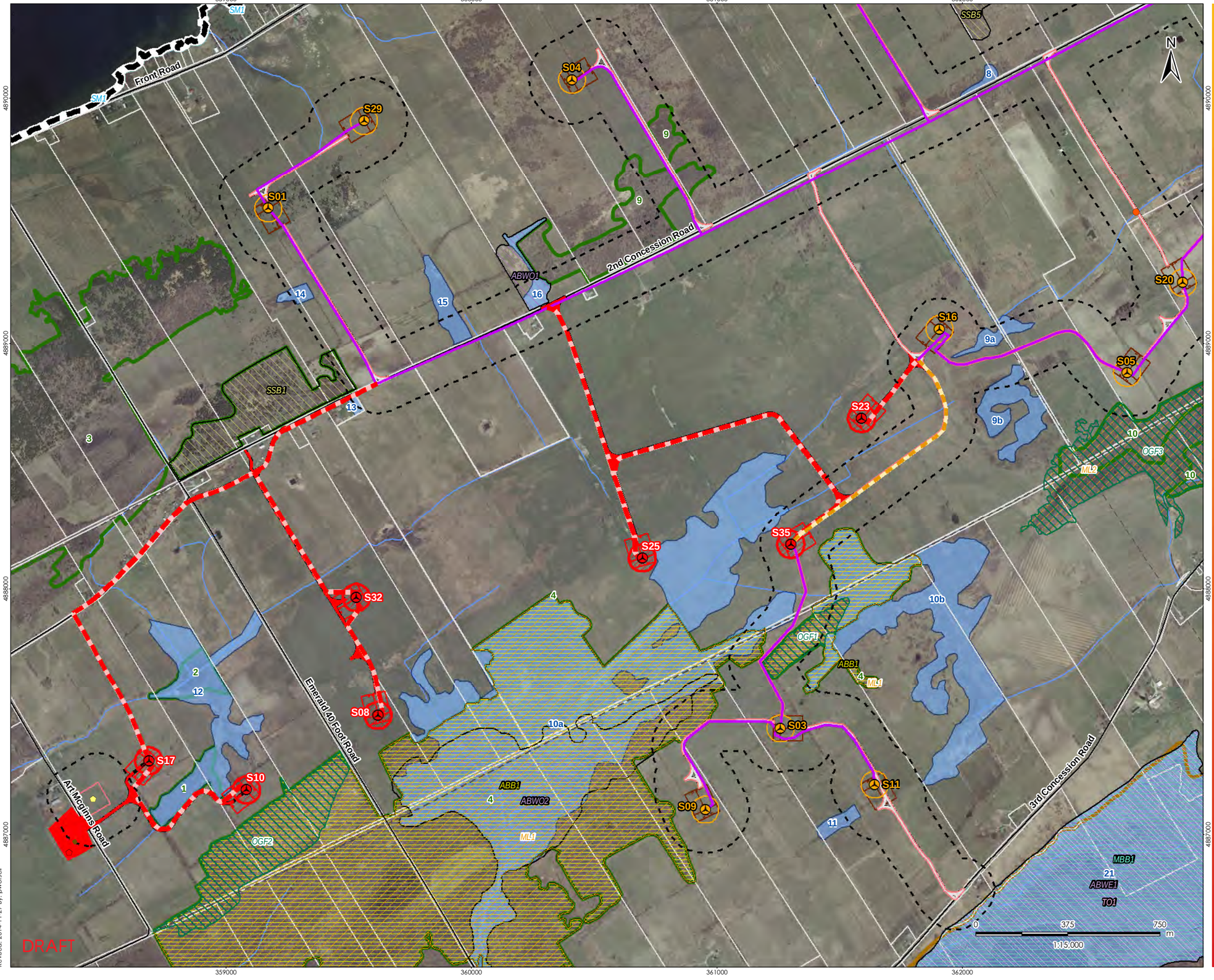
Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
2.3

DRAFT

Title

Significant Natural Features & Wildlife Habitat



Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine (No Changes Proposed)
- Turbine (Removed)
- Met Tower - Potential Location (No Changes Proposed)
- Met Tower - Potential Location (Removed)
- Access Road (No Changes Proposed)
- Access Road (Removed)
- Collector Line (Removed)
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- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

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- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Amherst Bay Life Science ANSI
- Property Line

Significant Wildlife Habitat Features

- Snake Hibernacula (SN)
- Amphibian Breeding (ABWO & ABWE)
- Area-Sensitive Breeding Bird (ABB)
- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Shorebird Migratory Stopover (SM)
- Landbird Migratory Stopover Area (ML)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Significant Woodland
- Significant Wetland

Notes

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Client/Project

Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
2.4

DRAFT

Title

Significant Natural Features & Wildlife Habitat

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Revised: 2014-11-27 By: pworsell

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Revised: 2014-11-27 By: pworsell

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components

Turbine (No Changes Proposed)
Turbine (Removed)
Met Tower - Potential Location (No Changes Proposed)
Met Tower - Potential Location (Removed)
Access Road (No Changes Proposed)
Access Road (Removed)
Collector Line (Removed)
Collector Line (New) – within previously approved access road
Collector Line (Additional Project Design Change Modification)
Collector Line (No Proposed Changes)
Submarine Cable Path
Laydown Area and Crane Pad (No Changes Proposed)
Laydown Area and Crane Pad (Removed)
Operation and Maintenance Building (Potential Location)
Turbine Blade Tip (No Changes Proposed)
Turbine Blade Tip (Removed)
Substation (Potential Location)
Potential Culvert Location
Point of Common Coupling
Mainland Cable Vault (Potential Location)
Island Cable Vault
Aboveground Storage Tanks (Potential Location)
Constructible Area (No Proposed Changes)
Constructible Area (Removed)
Mainland Dock (Potential Location)
Island Dock
Batch Plant (Potential Location)
Site Office (Potential Location)
Storage Shed

Transmission Lines

Mainland Option1
Mainland Option 2
Island Transmission Line

Land Use

Central Staging Area
Switching Station (Potential Location)

Existing Features

Road
Unopened Road Allowance
Railway
Hydro Line
Watercourse
Amherst Bay Life Science ANSI
Property Line

Significant Wildlife Habitat Features

Snake Hibernacula (SN)
Amphibian Breeding (ABWO & ABWE)
Area-Sensitive Breeding Bird (ABB)
Marsh Breeding Bird (MBB)
Shrub/Early Successional Bird Breeding (SSB)
Turtle Overwintering (TO)
Shorebird Migratory Stopover (SM)
Landbird Migratory Stopover Area (ML)
Waterfowl Stopover & Staging - Terrestrial (WT)
Old Growth Forest (OGF)
Significant Woodland
Significant Wetland

Notes

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Client/Project

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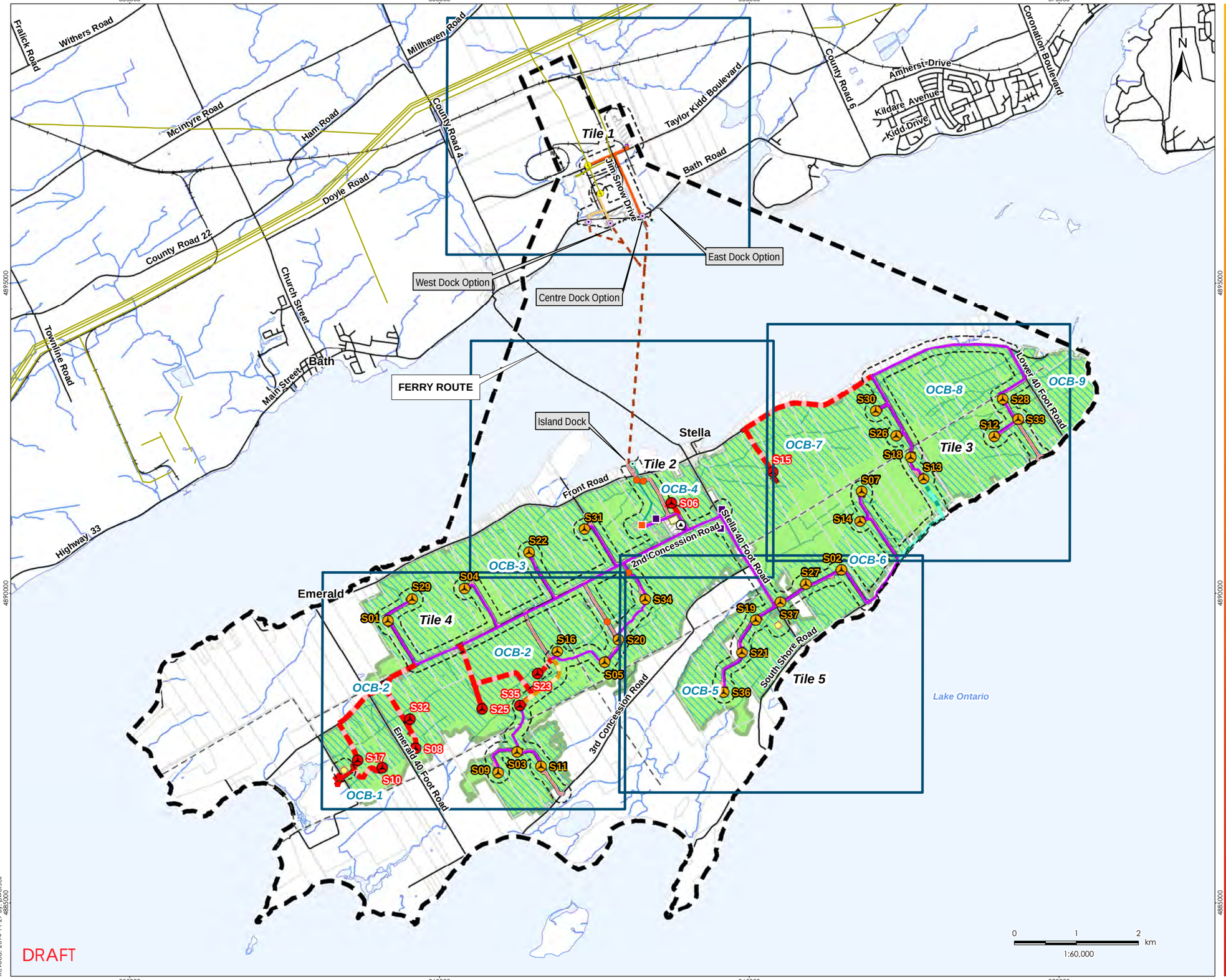
Amherst Island Wind Energy Project

Figure No.
2.5

DRAFT

Title

Significant Natural Features & Wildlife Habitat



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Revised: 2014-11-27 By: pvorsell

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine (No Changes Proposed)
- Turbine (Removed)
- Met Tower - Potential Location (No Changes Proposed)
- Met Tower - Potential Location (Removed)
- Substation (Potential Location)
- Access Road (No Changes Proposed)
- Access Road (Removed)
- Collector Line (Removed)
- Collector Line (New) – within previously approved access road
- Collector Line (Additional Project Design Change Modification)
- Collector Line (No Proposed Changes)
- Submarine Cable Path
- Laydown Area and Crane Pad (No Changes Proposed)
- Laydown Area and Crane Pad (Removed)
- Turbine Blade Tip (No Changes Proposed)
- Turbine Blade Tip (Removed)
- Operation and Maintenance Building (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area (No Proposed Changes)
- Constructible Area (Removed)
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Waterbody
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

Notes

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Figure No.
3.0

DRAFT

Title

Significant Open Country Breeding Bird & Raptor Wintering Areas - Overview

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Revised: 2014-11-27 By: pworsell

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components

- Turbine (No Changes Proposed)
- Turbine (Removed)
- Met Tower - Potential Location (No Changes Proposed)
- Met Tower - Potential Location (Removed)
- Access Road (No Changes Proposed)
- Access Road (Removed)
- Collector Line (Removed)
- Collector Line (New) – within previously approved access road
- Collector Line (Additional Project Design Change Modification)
- Collector Line (No Proposed Changes)
- Submarine Cable Path
- Laydown Area and Crane Pad (No Changes Proposed)
- Laydown Area and Crane Pad (Removed)
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip (No Changes Proposed)
- Turbine Blade Tip (Removed)
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area (No Proposed Changes)
- Constructible Area (Removed)
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

Notes

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Amherst Island Wind Energy Project

Figure No.
3.1

DRAFT

Title

Significant Open Country Breeding Bird & Raptor Wintering Areas

361000 362000 363000 364000 365000

4894000 4893000 4892000 4891000

N

Mcdonalds Lane
Front Road
Kerr Point Road
Stella 40 Foot Road
2nd Concession Road
3rd Concession Road

OCB-7
RWA-6
OCB-4
S06
RWA-4
S31
RWA-3
OCB-3
S22
OCB-2
RWA-2
OCB-6

0 375 750 m
1:15,000

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Revised: 2014-11-27 By: pworsell

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components

- Turbine (No Changes Proposed)
- Turbine (Removed)
- Met Tower - Potential Location (No Changes Proposed)
- Met Tower - Potential Location (Removed)
- Access Road (No Changes Proposed)
- Access Road (Removed)
- Collector Line (Removed)
- Collector Line (New) – within previously approved access road
- Collector Line (Additional Project Design Change Modification)
- Collector Line (No Proposed Changes)
- Submarine Cable Path
- Laydown Area and Crane Pad (No Changes Proposed)
- Laydown Area and Crane Pad (Removed)
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip (No Changes Proposed)
- Turbine Blade Tip (Removed)
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area (No Proposed Changes)
- Constructible Area (Removed)
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

Notes

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Client/Project

Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
3.2

DRAFT

Title

Significant Open Country Breeding Bird & Raptor Wintering Areas

366000 367000 368000 369000 370000

4894000 4893000 4892000 4891000

N

Front Road

Lower 40 Foot Road

South Shore Road

OCB-8 OCB-9 OCB-7 OCB-6 OCB-6

RWA-8 RWA-7 RWA-6

S30 S28 S33 S26 S12 S18 S13 S15 S07 S14

0 375 750 m

1:15,000

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Revised: 2014-11-27 By: pworsell

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components

- Turbine (No Changes Proposed)
- Turbine (Removed)
- Met Tower - Potential Location (No Changes Proposed)
- Met Tower - Potential Location (Removed)
- Access Road (No Changes Proposed)
- Access Road (Removed)
- Collector Line (Removed)
- Collector Line (New) – within previously approved access road
- Collector Line (Additional Project Design Change Modification)
- Collector Line (No Proposed Changes)
- Submarine Cable Path
- Laydown Area and Crane Pad (No Changes Proposed)
- Laydown Area and Crane Pad (Removed)
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip (No Changes Proposed)
- Turbine Blade Tip (Removed)
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area (No Proposed Changes)
- Constructible Area (Removed)
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

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Amherst Island Wind Energy Project

Figure No.
3.3

DRAFT

Title

Significant Open Country Breeding Bird & Raptor Wintering Areas

359000 360000 361000 362000

4890000 4889000 4888000 4887000

Front Road
2nd Concession Road
Emerald 40 Foot Road
Art Mcguinnis Road
3rd Concession Road

S01 S04 S08 S09 S10 S11 S16 S17 S20 S23 S25 S29 S32 S35 S03 S05

RWA-1 RWA-2 RWA-3
OCB-1 OCB-2 OCB-3

DRAFT

0 375 750 m
1:15,000

N

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components

- Turbine (No Changes Proposed)
- Turbine (Removed)
- Met Tower - Potential Location (No Changes Proposed)
- Met Tower - Potential Location (Removed)
- Access Road (No Changes Proposed)
- Access Road (Removed)
- Collector Line (Removed)
- Collector Line (New) – within previously approved access road
- Collector Line (Additional Project Design Change Modification)
- Collector Line (No Proposed Changes)
- Submarine Cable Path
- Laydown Area and Crane Pad (No Changes Proposed)
- Laydown Area and Crane Pad (Removed)
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip (No Changes Proposed)
- Turbine Blade Tip (Removed)
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area (No Proposed Changes)
- Constructible Area (Removed)
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

Notes

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Figure No.
3.4

DRAFT

Title

Significant Open Country Breeding Bird & Raptor Wintering Areas

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Revised: 2014-11-27 By: pworsell

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Revised: 2014-11-27 By: pworsell

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components

- Turbine (No Changes Proposed)
- Turbine (Removed)
- Met Tower - Potential Location (No Changes Proposed)
- Met Tower - Potential Location (Removed)
- Access Road (No Changes Proposed)
- Access Road (Removed)
- Collector Line (Removed)
- Collector Line (New) – within previously approved access road
- Collector Line (Additional Project Design Change Modification)
- Collector Line (No Proposed Changes)
- Submarine Cable Path
- Laydown Area and Crane Pad (No Changes Proposed)
- Laydown Area and Crane Pad (Removed)
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip (No Changes Proposed)
- Turbine Blade Tip (Removed)
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area (No Proposed Changes)
- Constructible Area (Removed)
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

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160960595

Client/Project

Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
3.5

DRAFT

Title

Significant Open Country Breeding Bird & Raptor Wintering Areas

Stantec Consulting Ltd.
70 Southgate Drive, Suite 1
Guelph ON N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

January 7, 2015
File: 160960595

Attention: Clairissa Myschowoda
Ontario Ministry of Natural Resources and Forestry
Peterborough District
1st Floor, South Tower
300 Water St
Peterborough ON K9J 8M5

Dear Ms. Mychowoda,

Reference: Amherst Island Wind Energy Project Modifications - FINAL

This letter is submitted as an addendum to the Amherst Island Wind Energy Project Renewable Energy Approval Application – Natural Heritage Assessment and Environmental Impact Study (NHA/EIS, Stantec 2012) that was submitted to the Ministry of Natural Resources and Forestry (MNRF) in December 2012 and received a confirmation letter on December 12, 2012. This letter report should be read in association with that document.

The purpose of this letter is to provide the MNRF with an understanding of a modification that has been made to the location of underground collector lines since the NHA/EIS was confirmed by the MNRF, and to provide an assessment of the proposed modification in order to identify any additional potential effects, mitigation measures, or monitoring requirements that were not included in the NHA/EIS. This modification includes, specifically:

- The location of an underground collector line along South Shore Road and up to S13 (see **Figure 1**, **Attachment 1**).
- Removal of the portions of the proposed underground collector line along Stella 40 Foot Road and Front Road.

Site investigations had previously been completed at the location along South Shore Road and up to S13. As a result, additional site visits were not required to determine the status and boundary of natural features. Natural features that occur in or within 120 m of the revised Project Location are already identified on the maps provided within the NHA/EIS.

In addition to the modifications described above, a set of technical updates to the Project are also being proposed. These updates include a change in turbine model and associated reduction in the number of turbines, as well as the removal of associated access roads and collector line. These updates have been discussed with the Ministry of the Environment and Climate Change (MOECC), who has verified that the updates are a Technical Change as pursuant to the classification system outlined in the Ministry of the Environment's Technical Guide to Renewable Energy Approvals (October, 2013).

Reference: Amherst Island Wind Energy Project Modifications

Given the nature of the technical updates, they do not require modifications to the NHA/EIS or a re-confirmation of the NHA/EIS. A notification detailing this change will be MNRF under a separate cover.

DESCRIPTION OF PROJECT MODIFICATION

The Project modification involves the addition of an underground collector line along South Shore Road within the road right-of-way and on private land from the access road for S14 to S13. The modification would include removing portions of the underground collector line along Stella 40 Foot Road and Front Road (**Figure 1, Attachment 1**).

This proposed modification would involve rerouting the collection system to avoid the Village of Stella. In doing so, this modification would remove a significant portion of the existing collection system from S30 entrance along Front Road, including removing approximately 4 km of road allowance trenching (including through Stella). The modification would also require a new collection corridor from S13 to South Shore Rd. and west to S14 entrance, which would consist of approximately 1 km in road allowance and 700 m in pasture field.

The modification will decrease the Project Location size by resulting in a net reduction of approximately 2 km of collection system trenching. It will require only minimal additional natural heritage assessment along the additional 1.7 km of new collector line. As mentioned above, this additional area had been previously assessed as part of the December 2012 NHA, and no additional site visits were required.

The construction and installation activities for this underground collector line will be completed in the same manner (using the same mitigation measures) as the collector lines which are described in the Construction Plan Report, submitted as part of the REA Application.

CHANGE TO IDENTIFICATION OF NATURAL FEATURES WITHIN 120 M OF THE NEW PROJECT LOCATION

Changes to Records Review

A full Records Review for the area within 120 m of the new underground collector line was conducted. No changes are required to the Records Review of the NHA/EIS as the previous Records Review included the areas within the new Project location. Records Review methodology from the December 2012 NHA/EIS is provided in **Attachment 2**.

Results of the Records Review are provided in **Figure 1B, Attachment 1**. The Records Review identified one type of natural heritage feature within 120m of the new Project Location; significant woodlands as mapped by the Cataraqui Region Conservation Authority (CRCA).

Changes to Site Investigation

The methodology for the Site Investigation has not changed from the December 2012 NHA/EIS; methodology from the NHA/EIS is provided in **Attachment 3**.

Reference: Amherst Island Wind Energy Project Modifications

All natural heritage features described in the December 2012 NHA/EIS remain within 120 m of Project Location. As such, the Project modification does not result in removal of any discussion of natural features from the NHA/EIS. In addition, the modification results in only one new feature being within 120 m of the Project Location. A woodland feature is located within 120 m of the new underground collector line running along South Shore Road. This feature was identified in the mapping in the December 2012 NHA/EIS but was not located within the Zone of Investigation at that time. It is shown on **Figure 3, Attachment 1** as new Woodland Feature 22. A site investigation of this feature was completed on July 28, 2011. It is comprised of fresh-moist ash lowland deciduous forest (Ecological Land Classification code FOD7-2).

Table 7B in the NHA/EIS is updated with woodland feature 22. Additions to **Table 7B** are summarized below in **Attachment 2**.

Other candidate significant natural heritage features that occur within 120 m of the new section of underground collector line, which are Woodland 21, Shrub/early successional breeding birds (SSB4), Shorebird migratory stopover area (SM1) and Open country breeding bird areas (OCB-6 and OCB-7), were previously identified in the December 2012 NHA/EIS. Therefore, no further site investigations are required for these candidate significant features as a result of the proposed modifications.

The summary of candidate features in **Table 3.9** in the NHA/EIS is updated to include Woodland 22 and the distance calculation to candidate wildlife habitat feature SSB4. Distance calculations to candidate wildlife habitat features RWA-6, OCB-6 and SM1 have not changed from the December 2012 NHA/EIS. The updates to **Table 3.9** are provided below in **Attachment 2**. **Figures 3** and **4, Attachment 1** show the location of candidate natural heritage features.

Changes to Evaluation of Significance

The methodology for the Evaluation of Significance has not changed from the December 2012 NHA/EIS; methodology from the NHA/EIS is provided in **Attachment 3**.

As mentioned above, as a result of the proposed modifications, only one new feature occurs within 120 m of the Project Location requiring an Evaluation of Significance; Woodland 22. The woodland is 15.03 ha in size and is separated from Woodland Feature 21 by a band of cultural meadow of approximately 100 m wide, forming a distinct new woodland feature. The new woodland feature 22 is considered significant, as it is over 4 ha in size and provides a linkage function. **Table 10B** in the NHA/EIS is updated to include the evaluation of woodland feature 22. Additions to **Table 10B** are summarized below in **Attachment 2**.

As mentioned above, other candidate significant natural heritage features that occur within 120 m of the new section of underground collector line were previously identified in the December 2012 NHA/EIS. These include Woodland 21, Shrub/early successional breeding birds (SSB4), Shorebird migratory stopover area (SM1) and Open country breeding bird areas (OCB-6 and OCB-7):

- Woodland 21 is comprised of lowland deciduous forest, deciduous swamp and thicket habitat. It was identified in the December 2012 NHA and evaluated as significant.
- Shrub/early successional breeding birds (SSB4), is comprised of a complex of cultural thicket and woodland which is within 120 m of the new underground collector line running south from S13 and along South Shore Road. SSB4 was identified in the December 2012 NHA and evaluated as significant.
- Shorebird migratory stopover area (SM1) occurs along the Amherst Island shoreline and is within 120 m of the of the new underground collector line running along South Shore Road. SM1 was identified in the December 2012 NHA and evaluated as significant.
- Open country breeding bird areas (OCB-6 and OCB-7) occur within 120 m of the new underground collector line. The new underground collector line that runs south of S13 overlaps with OCB-7. The new underground collector line running along South Shore Road is adjacent to OCB-6. Both OCB-6 and OCB-7 were identified in the December 2012 NHA and evaluated as significant.
- The new underground collector line that runs south of S13 overlaps with raptor wintering area RWA-6. The new underground collector line running along South Shore Road is also adjacent to RWA-6. RWA-6 was identified in the December 2012 NHA and evaluated as significant.

The evaluation of significance of these features in the December 2012 NHA does not change as a result of the Project modifications.

Given the above, the summary of significant features in **Table 4.8** in the NHA/EIS is updated to include Significant Woodland 22 and the distance calculation to significant wildlife habitat feature SSB4. No changes are required to distance calculations to significant wildlife habitat features RWA-6, OCB-6 and SM1. The updates to **Table 4.8** are provided below in **Attachment 2**. **Figures 5** and **6, Attachment 1** show the location of significant natural heritage features.

Change to Assessment of Impacts and Mitigation Measures

Minor changes to the EIS are required to address the new woodland feature 22, changes in Project distance to SSB-4 and temporary removal of habitat in RWA-6 and OCB-7.

Section 5.3.1 is herein updated to indicate 16 significant woodlands occur within 120 m of the Project Location, which includes the new woodland feature 22. There will be no direct encroachment or removal of vegetation in the woodland feature. The discussion of potential impacts to woodland from construction remains the same. The discussion of potential impacts to woodlands during operation in **Section 5.5.2** also remains unchanged. **Table 14B** is herein revised to include woodland feature 22 in the list of significant woodlands. No changes to impacts, mitigation, monitoring or contingency of impacts to woodlands in **Table 14B** are required.

Reference: Amherst Island Wind Energy Project Modifications

Because underground collector line was already present within significant wildlife habitat features RWA-6 and OCB-6, the discussion in **Sections 5.3.3** and **5.5.3** on potential impacts to significant wildlife habitat remains the same, with the exception of **Section 5.3.3.9** which is herein updated to indicate the closest Project components is the underground collector line that is 1 m away from the SSB4 in a public right of way. This will not require any vegetation removal. No additional potential impacts, beyond those discussed in **Sections 5.3.3** and **5.5.3** are anticipated to feature SSB4.

Table 13B is herein updated to include the portion of underground collector line in RWA-6 and OCB-7, between S13 and South Shore Road, in the amount of habitat that will be removed for short-term duration. Distances between Project components and these features have not changed; however, the total amount of raptor wintering area, open country breeding bird and short-eared owl habitat that will be temporarily removed is revised to increase by 0.56 ha.

Within 120 m of the new underground collector line, no wintering raptors were observed during the 2011/2012 winter raptor surveys. Two raptors were observed foraging in RWA-6 feature – Snowy Owl and Rough-legged Hawk. No Short-eared Owls were observed in RWA-6. As such, the results indicate the area of the new Project Location may support foraging habitat, but not roost habitat function.

Table A summarizes the potential impacts and recommended mitigation measures from the December 2012 NHA/EIS, for significant features within 120m of the new underground collector line. General construction mitigation from the NHA/EIS, which will be implemented during construction of the new underground collector line, is provided in **Attachment 3**.

Table A. Summary of Significant Features Located within 120 m of New Underground Collector Line

Feature	Original Distance to Project Components	Updated Distance to Project Components	Potential Impacts to Feature	Recommended Mitigation Measures
Woodland 21 and 22	WT-44 UL-3 AR-39 TC-40	UL – 82	Indirect impacts to significant woodlands resulting from construction activities, such as dust generation, sedimentation and erosion are expected to be short term, temporary in duration and mitigable through the use of standard site control measures. No impacts are anticipated during the operation of the new underground collector line.	Standard site control measures as described in Section 5.4 of NHA/EIS, which includes all measures for vegetation removal (including timing for impacts to wildlife), sediment and erosion control, and other general mitigation measures. Section 5.4 of NHA/EIS can be found in **Attachment 3**. In addition, the following mitigation measures apply that were committed to in the original NHA/EIS (Table 14B):

Reference: Amherst Island Wind Energy Project Modifications

Table A. Summary of Significant Features Located within 120 m of New Underground Collector Line

Feature	Original Distance to Project Components	Updated Distance to Project Components	Potential Impacts to Feature	Recommended Mitigation Measures
				• *The boundaries of the limit of construction within grassland habitat will be delineated and flagged / staked in the field by a qualified ecologist prior to construction to assist with the demarcation of the construction area, to ensure construction activities do not encroach beyond the limited construction area.* • *Workers will be advised not to trespass beyond the boundary of the marked area.* • *Erect silt fencing to prevent sedimentation within critical root zones* • *Implement a sedimentation and erosion control plan.* • *Any issues should be resolved in a timely fashion.* • *Implement dust suppression (i.e. watering) on access roads as required.* • *All maintenance activities, vehicle refueling or washing and chemical storage will be located more than 30m from significant woodlands.* • *Implement infiltration (i.e. minimize paved surfaces and design roads to promote infiltration) techniques to the maximum extent possible to avoid changes in soil moisture and compaction.*
SSB4	WT – 65 UL – 70 AR – 66 TC - 65	WT – 65 UL – 1 AR – 66 TC - 65	There will be no direct loss of habitat or function to the significant shrub/successional breeding bird features. Indirect impacts during construction could include	Standard site control measures as described in Section 5.4 of NHA/EIS, which includes all measures for vegetation removal (including timing for impacts to wildlife), sediment and erosion

Reference: Amherst Island Wind Energy Project Modifications

Table A. Summary of Significant Features Located within 120 m of New Underground Collector Line

Feature	Original Distance to Project Components	Updated Distance to Project Components	Potential Impacts to Feature	Recommended Mitigation Measures
			disturbance or disruption to breeding birds. Disturbance from construction activities, such as increased traffic, noise, or dust, may result in avoidance of habitats by birds. These effects may be greatest if disturbance occurs during critical life stages such as courtship or nesting. No impacts are anticipated during the operation of the new underground collector line.	control, and other general mitigation measures. Section 5.4 of NHA/EIS can be found in **Attachment 3**. In addition, the following mitigation measures apply that were committed to in the original NHA/EIS (Table 14B): • *Erect silt fencing to prevent sedimentation* • *Implement a sedimentation and erosion control plan* • *Any issues should be resolved in a timely fashion* • *Implement dust suppression (i.e. watering) on access roads as required* • *All maintenance activities, vehicle refueling or washing and chemical storage will be located more than 30m from significant features*
SM1	UL – overlapping AR – overlapping	UL – overlapping AR – overlapping	The new underground collector line is located outside of this feature; therefore, no loss of habitat will occur for the construction of this Project component. Potential indirect impacts to migratory shorebirds from the Project during construction include disturbance due to increased traffic, noise, or dust. The most adverse impacts associated with construction noise typically occur if critical life cycle activities are disrupted (i.e. nesting, mating) (NWCC 2002). Because migrating shorebirds in general are able	Standard site control measures as described in Section 5.4 of NHA/EIS, which includes all measures for vegetation removal (including timing for impacts to wildlife), sediment and erosion control, and other general mitigation measures. Section 5.4 of NHA/EIS can be found in **Attachment 3**. In addition, the following mitigation measures apply that were committed to in the original NHA/EIS (Table 14B): • Erect silt fencing to prevent sedimentation • *Implement a sedimentation and erosion control plan* • *Any issues should be resolved in*

Reference: Amherst Island Wind Energy Project Modifications

Table A. Summary of Significant Features Located within 120 m of New Underground Collector Line

Feature	Original Distance to Project Components	Updated Distance to Project Components	Potential Impacts to Feature	Recommended Mitigation Measures
			to use a much wider range of habitat types during migration compared to the breeding season, it is expected that the effects of disturbance would be less significant during migration than during the breeding season. No impacts are anticipated during the operation of the new underground collector line.	*a timely fashion* • *Implement dust suppression (i.e. watering) on access roads as required* • *All maintenance activities, vehicle refueling or washing and chemical storage will be located more than 30m from significant features*
RWA-6	WT – overlapping AR – overlapping UL – overlapping TC – overlapping BU – overlapping	WT – overlapping AR – overlapping UL – overlapping TC – overlapping BU – overlapping	As the majority of the island is comprised of grassland habitat, avoidance of this habitat type was not possible; most Project components are sited in significant raptor wintering areas. Ground roosting sites for Short-eared Owls do not appear to be a limiting factor on Amherst Island. This small loss of habitat temporarily during construction is anticipated to have a negligible impact on the availability of roost sites within the Study Area. In most cases, Short-eared Owls would be are expected to continue using sites adjacent to Project components, as documented on other wind projects (i.e. Wolfe Island). Because wintering raptors can use nearby habitats, this temporary disturbance is not anticipated to impact raptors using this feature. Potential impacts to this feature include disturbance	Standard site control measures as described in Section 5.4 of NHA/EIS, which includes all measures for vegetation removal (including timing for impacts to wildlife), sediment and erosion control, and other general mitigation measures, will be applied to the underground collector line located within this significant wildlife habitat. Any disturbed areas will be re-seeded immediately after construction. Section 5.4 of NHA/EIS can be found in **Attachment 3**. In addition, the following mitigation measures apply that were committed to in the original NHA/EIS (Table 14B): • *The boundaries of the limit of construction within grassland habitat will be delineated and flagged / staked in the field by a qualified ecologist prior to construction to assist with the demarcation of the construction area, to ensure construction activities do not encroach beyond the limited*

Reference: Amherst Island Wind Energy Project Modifications

Table A. Summary of Significant Features Located within 120 m of New Underground Collector Line

Feature	Original Distance to Project Components	Updated Distance to Project Components	Potential Impacts to Feature	Recommended Mitigation Measures
			due to increased traffic and noise, dust generation, sedimentation and erosion during construction. No permanent habitat loss will occur from the construction of the new underground collector line. No impacts are anticipated during the operation of the new underground collector line.	*construction area.* • *Implement dust suppression (i.e. watering) on access roads as required.*
OCB-7	WT – overlapping AR – overlapping UL – overlapping TC – overlapping BU – overlapping	WT – overlapping AR – overlapping UL – overlapping TC – overlapping BU – overlapping	As the majority of the island is comprised of grassland habitat, avoidance of this habitat type was not possible; most project components are sited in the significant open country breeding bird habitat and Short-eared Owl breeding habitat. Within 120m of the new collector line, habitat consists of actively managed hay fields. The implementation of mitigation measures such as avoiding activities that could disturb or destroy nests during key periods or protecting active nests with buffer zones reduces potential impacts to nests. Construction activities have the potential to result in disturbance or disruption to breeding birds. Disturbance from construction activity, such as increased traffic, noise, or dust, may result in	Standard site control measures as described in Section 5.4 of NHA/EIS, which includes all measures for vegetation removal (including timing for impacts to wildlife), sediment and erosion control, and other general mitigation measures, will be applied to the underground collector line located within this significant wildlife habitat. Any disturbed areas will be re-seeded immediately after construction. Section 5.4 of NHA/EIS can be found in **Attachment 3**. In addition, the following mitigation measures apply that were committed to in the original NHA/EIS (Table 14B): • *Construction activities have the potential to result in disturbance or disruption to breeding birds. Disturbance from construction activity, such as increased traffic, noise, or dust, may result in avoidance of habitats by birds. These effects may be greatest if disturbance occurs during*

Reference: Amherst Island Wind Energy Project Modifications

Table A. Summary of Significant Features Located within 120 m of New Underground Collector Line

Feature	Original Distance to Project Components	Updated Distance to Project Components	Potential Impacts to Feature	Recommended Mitigation Measures
			avoidance of habitats by birds. These effects may be greatest if disturbance occurs during critical life stages such as courtship or nesting Wiggins et al. (2006) reports that nests from previous years may occasionally be reused. However, Short-eared Owl research on Amherst Island in 2009 and 2010 (Keyes 2011) found low site fidelity between years. As such, breeding territories from previous years may not be a good indicator of territory location during construction. No impacts are anticipated during the operation of the new underground collector line.	*critical life stages such as courtship or nesting.* • *Identification of potential Short-eared Owl breeding territories. Restricted construction activities in proximity to potential breeding territories.* • *The boundaries of the limit of construction within grassland habitat will be delineated and flagged / staked in the field by a qualified ecologist prior to construction to assist with the demarcation of the construction area, to ensure construction activities do not encroach beyond the limited construction area.* • *Implement dust suppression (i.e. watering) on access roads as required.*

Legend: WT: Wind Turbine; UL: Underground Transmission Line; AR: Access Road, OL: Overhead Transmission Line, TC: Temporary Construction Areas, BU: Building/Substation

OVERALL ASSESSMENT OF CHANGES TO NHA/EIS

The Project modification will result in minor changes to the NHA/EIS, including addition of significant woodland feature 22 and revised distance calculations to significant wildlife habitat feature SSB4. The changes result in revisions to the Site Investigation (**Section 4.2.2**, **Table 3.9** and **7B**), Evaluation of Significance (**Section 5.3.1**, **5.3.3.9, Tables 4.8** and **10B**) and the EIS (**Tables 13B** and **14B**) of the NHA/EIS as discussed above.

Reference: Amherst Island Wind Energy Project Modifications

CLOSING

Stantec Consulting Ltd. prepared this letter report for Windlectric Inc. for the Amherst Island Wind Energy Project. Windlectric Inc. is committed to implementing the appropriate protection and mitigation measures as they apply to the construction and operation of the proposed Project.

Regards,

STANTEC CONSULTING LTD.

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Sean Fairfield, Algonquin Power Co.
Kerrie Skillen, Stantec Consulting Ltd.

Attachments:

Attachment 1: Updates to NHA Figures
Attachment 2**:** Updates to NHA Table
Attachment 3: Sections of NHA/EIS

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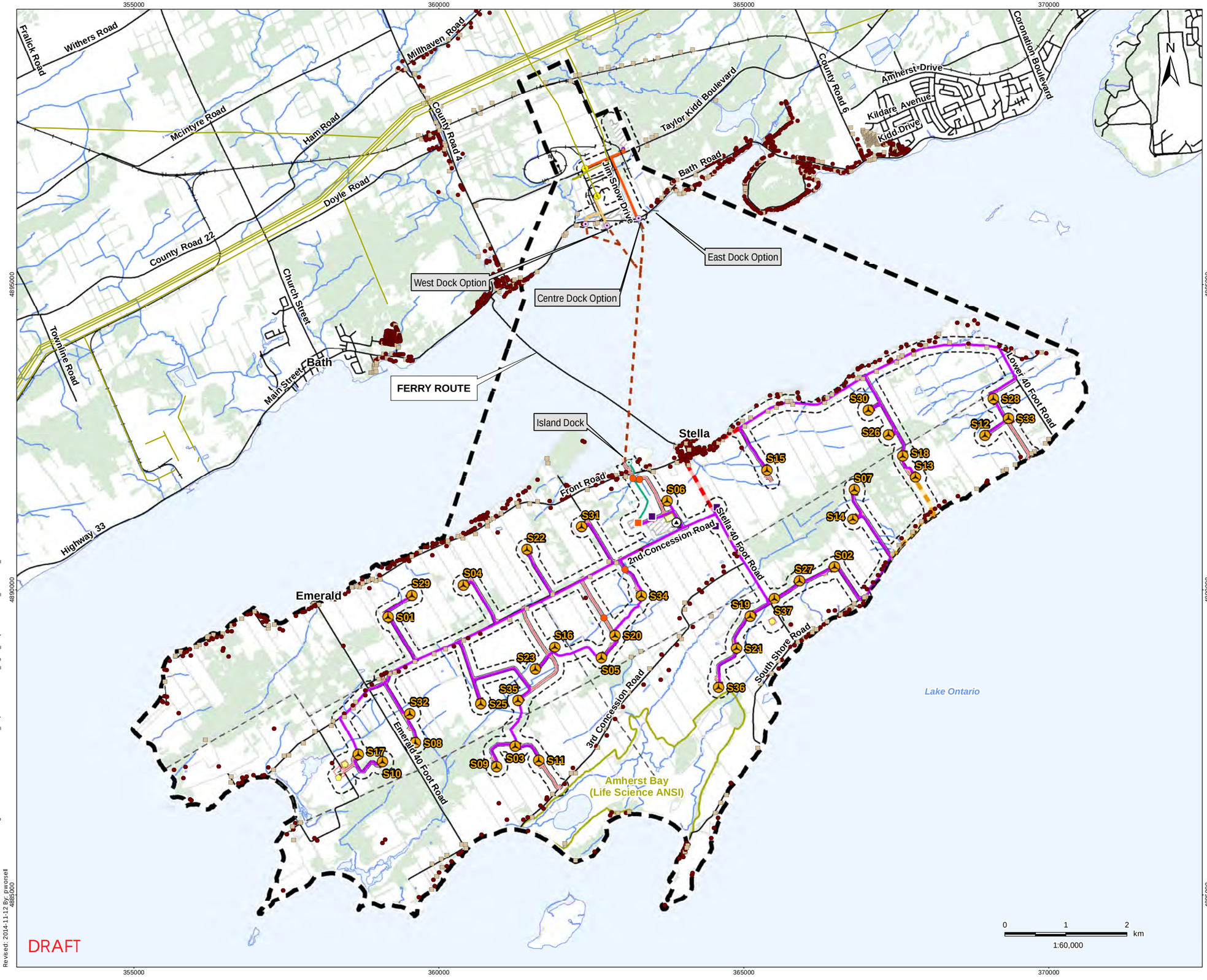
Attachment 1
Updates to NHA Figures



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Revised: 2014-11-12 By: pvorisel

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Substation (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Noise Receptors

- Existing
- Vacant

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Waterbody
- Wooded Area
- ANSI Boundary
- Property Line

Notes

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Figure No.
1A

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Title

Project Location & Study Area

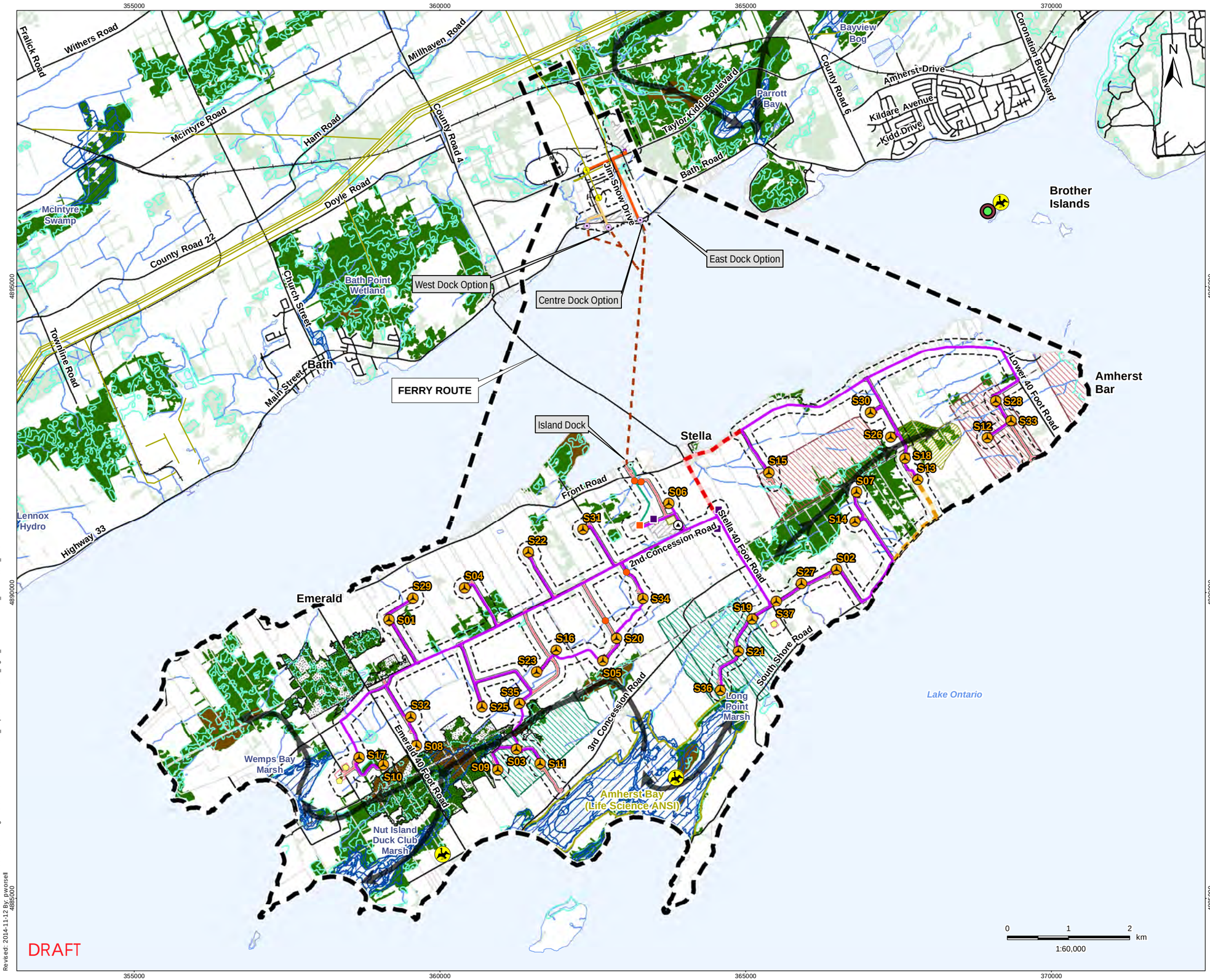

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Figure No.
1B

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Title

Natural Features - Records Review

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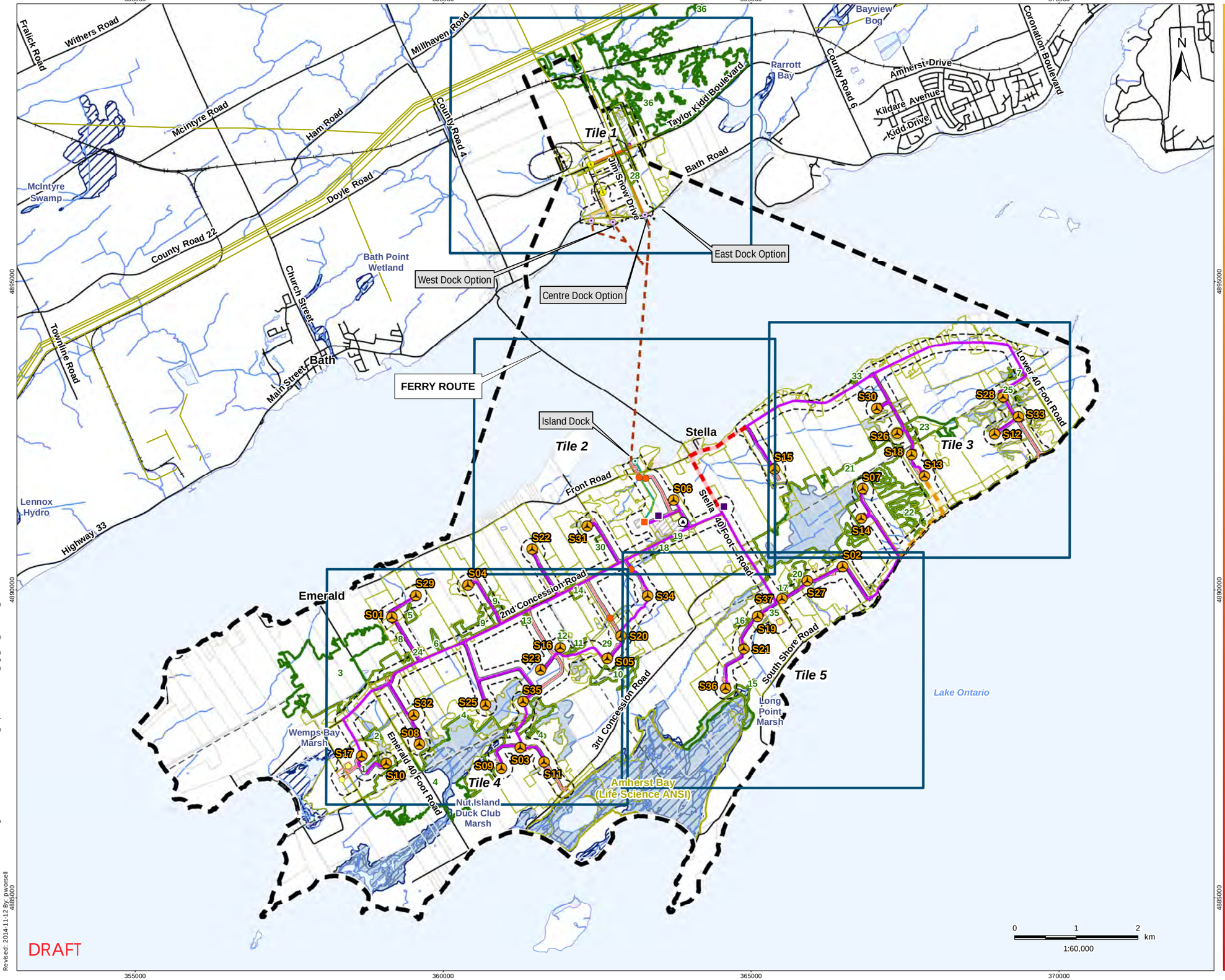
Revised: 2014-11-12 By: pworsell



Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Substation (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Waterbody
- ANSI Boundary
- Property Line
- Provincially Significant Wetland (MNR)
- Woodland Delineation (Stantec)
- Wetland Delineation (Stantec)
- ELC Boundary

Notes

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Figure No.
2.0

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Title

ELC Vegetation Communities & Woodland/Wetland Natural Features - Overview

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Revised: 2014-11-12 By: pworsell

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Provincially Significant Wetland (MNR)
- Woodland Delineation (Stantec)
- Wetland Delineation (Stantec)
- ELC Boundary

Notes

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Amherst Island Wind Energy Project

Figure No.
2.1

DRAFT

Title

ELC Vegetation Communities & Woodland/Wetland Natural Features

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Revised: 2014-11-12 By: pworsell

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Provincially Significant Wetland (MNR)
- Woodland Delineation (Stantec)
- Wetland Delineation (Stantec)
- ELC Boundary

Notes

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Figure No.
2.2

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Title

ELC Vegetation Communities & Woodland/Wetland Natural Features

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Revised: 2014-11-12 By: pworsell

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
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- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Provincially Significant Wetland (MNR)
- Woodland Delineation (Stantec)
- Wetland Delineation (Stantec)
- ELC Boundary

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Figure No.
2.3

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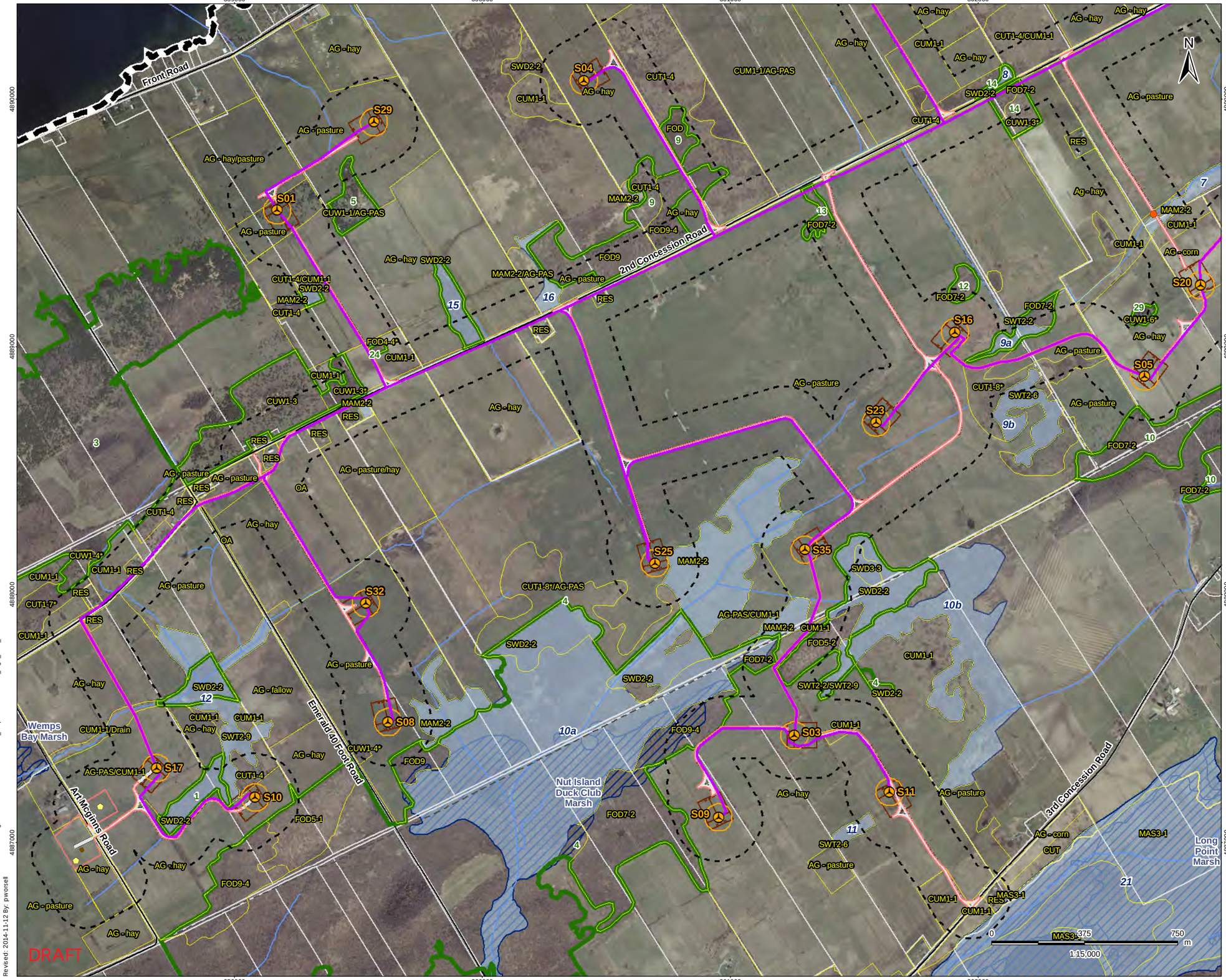
Title

ELC Vegetation Communities & Woodland/Wetland Natural Features



Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
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- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
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- Hydro Line
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Figure No.
2.4

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Title

ELC Vegetation Communities & Woodland/Wetland Natural Features

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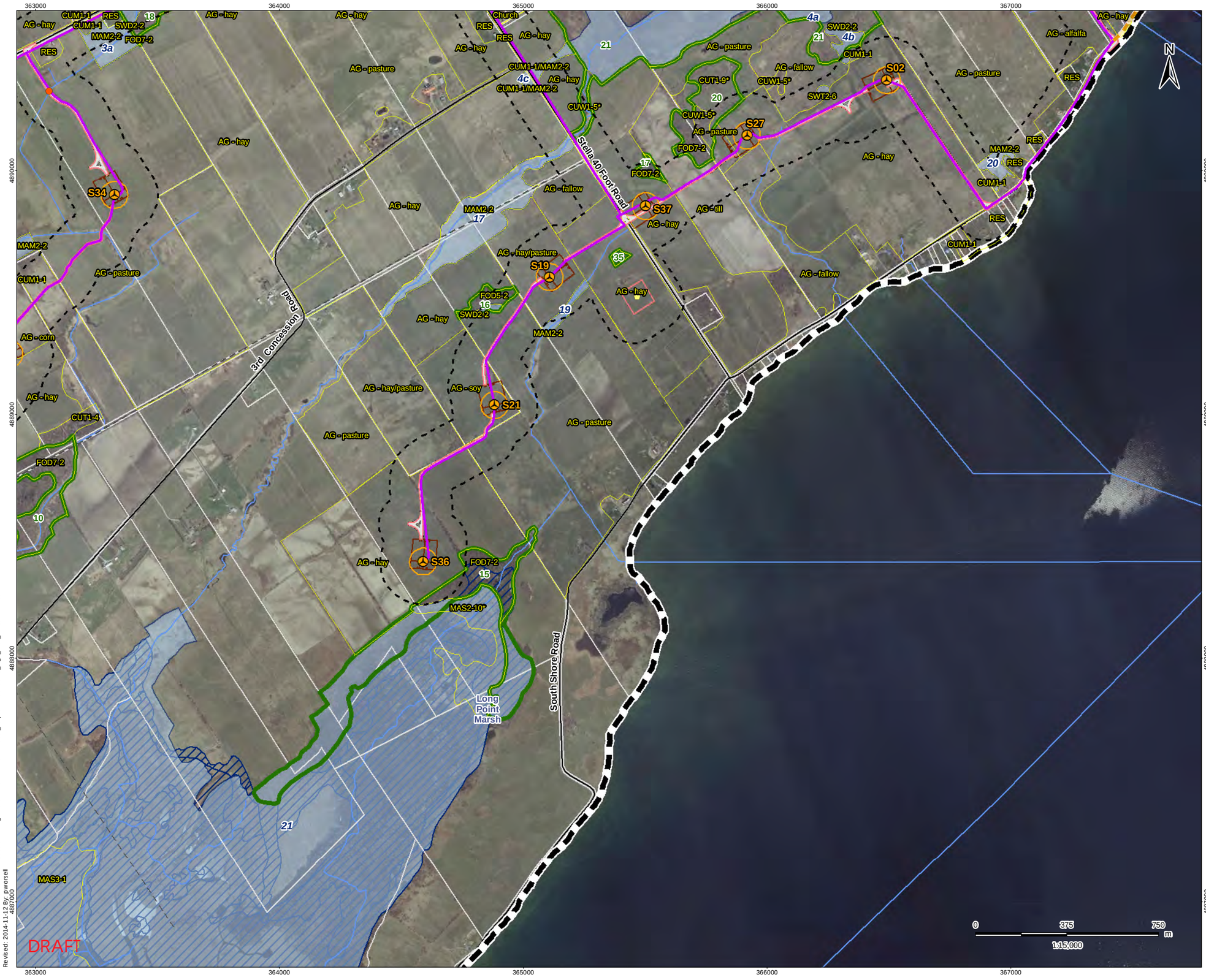

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Revised: 2014-11-12 By: pworsell

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
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- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
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- Woodland Delineation (Stantec)
- Wetland Delineation (Stantec)
- ELC Boundary

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Amherst Island Wind Energy Project

Figure No.
2.5

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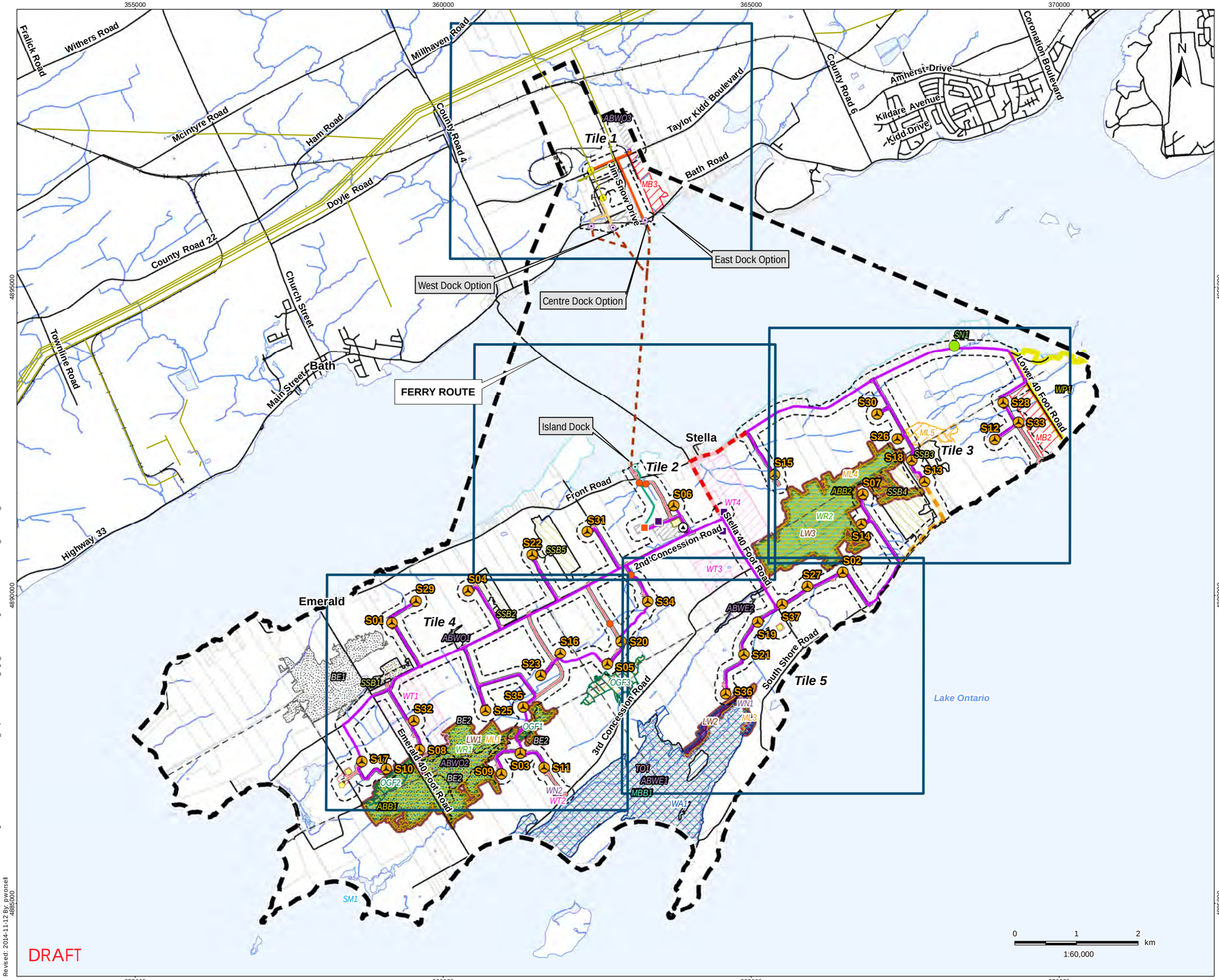
Title

ELC Vegetation Communities & Woodland/Wetland Natural Features



\\cd1220-f02\01609\active\160960595\drawing\MXD\Terrestrial\NHA\Mod_Report\160960595_Fig3_CandidateSignificantWildlifeHabitat_Overview_20141111.mxd
Revised: 2014-11-12 By: pworsell

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components

Turbine
Met Tower (Potential Location)
Substation (Potential Location)
Access Road
Collector Line
Collector Line (New)
Collector Line (Removed)
Submarine Cable Path
Laydown Area and Crane Pad
Operation and Maintenance Building (Potential Location)
Potential Culvert Location
Point of Common Coupling
Mainland Cable Vault (Potential Location)
Island Cable Vault
Aboveground Storage Tanks (Potential Location)
Constructible Area
Mainland Dock (Potential Location)
Island Dock
Batch Plant (Potential Location)
Site Office (Potential Location)
Storage Shed

Transmission Lines

Mainland Option1
Mainland Option 2
Island Transmission Line

Land Use

Central Staging Area
Switching Station (Potential Location)

Existing Features

Road
Unopened Road Allowance
Railway
Hydro Line
Watercourse
Waterbody
Property Line

Candidate Significant Wildlife Habitat Features

Snake Hibernacula (SN)
Louisiana Waterthrush Habitat (LW)
Waterfowl Nesting Area (WN)
Woodland Raptor Nesting Area (WR)
Shorebird Migratory Stopover (SM)
Wilson's Phalarope (WP)
Bald Eagle Nesting, Foraging, and Perching Habitat (BE)
Amphibian Breeding (ABWO & ABWE)
Area-Sensitive Breeding Bird (ABB)
Colonially-Nesting Birds - Trees/Shrubs (CNB)
Marsh Breeding Bird (MBB)
Shrub/Early Successional Bird Breeding (SSB)
Turtle Overwintering (TO)
Landbird Migratory Stopover Area (ML)
Migratory Butterfly Stopover Area (MB)
Waterfowl Stopover & Staging - Aquatic (WA)
Waterfowl Stopover & Staging - Terrestrial (WT)
Old Growth Forest (OGF)

Notes

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Client/Project

Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
3.0

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Title

Candidate Significant Natural Features & Wildlife Habitat - Overview

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Revised: 2014-11-12 By: pworsell

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components

Turbine
Met Tower (Potential Location)
Access Road
Collector Line
Collector Line (New)
Collector Line (Removed)
Submarine Cable Path
Laydown Area and Crane Pad
Operation and Maintenance Building (Potential Location)
Turbine Blade Tip
Substation (Potential Location)
Potential Culvert Location
Point of Common Coupling
Mainland Cable Vault (Potential Location)
Island Cable Vault
Aboveground Storage Tanks (Potential Location)
Constructible Area
Mainland Dock (Potential Location)
Island Dock
Batch Plant (Potential Location)
Site Office (Potential Location)
Storage Shed

Transmission Lines

Mainland Option1
Mainland Option 2
Island Transmission Line

Land Use

Central Staging Area
Switching Station (Potential Location)

Existing Features

Road
Unopened Road Allowance
Railway
Hydro Line
Watercourse
Property Line

Candidate Significant Wildlife Habitat Features

Snake Hibernacula (SN)
Amphibian Breeding (ABWO & ABWE)
Area-Sensitive Breeding Bird (ABB)
Marsh Breeding Bird (MBB)
Shrub/Early Successional Bird Breeding (SSB)
Turtle Overwintering (TO)
Louisiana Waterthrush Habitat (LW)
Waterfowl Nesting Area (WN)
Woodland Raptor Nesting Area (WR)
Shorebird Migratory Stopover (SM)
Bald Eagle Nesting, Foraging, and Perching Habitat (BE)
Landbird Migratory Stopover Area (ML)
Migratory Butterfly Stopover Area (MB)
Waterfowl Stopover & Staging - Aquatic (WA)
Waterfowl Stopover & Staging - Terrestrial (WT)
Old Growth Forest (OGF)
Wilson's Phalarope (WP)

Notes

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Amherst Island Wind Energy Project

Figure No.
3.1

DRAFT

Title

Candidate Significant Natural Features & Wildlife Habitat

361000 362000 363000 364000 365000

4894000 4893000 4892000 4891000

N

Front Road
Kerr Point Road
McDonalds Lane
2nd Concession Road
Stella
40 Foot
Road
3rd Concession Road

SM1
WT4
WT3
SSB5
SSB3
ML4
WR2
LW3
ABB2

S06
S31
S22

DRAFT

0 375 750 m
1:15,000

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Revised: 2014-11-12 By: pworsell

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components
- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines
- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use
- Central Staging Area
- Switching Station (Potential Location)

Existing Features
- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line

Candidate Significant Wildlife Habitat Features
- Snake Hibernacula (SN)
- Amphibian Breeding (ABWO & ABWE)
- Area-Sensitive Breeding Bird (ABB)
- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Louisiana Waterthrush Habitat (LW)
- Waterfowl Nesting Area (WN)
- Woodland Raptor Nesting Area (WR)
- Shorebird Migratory Stopover (SM)
- Bald Eagle Nesting, Foraging, and Perching Habitat (BE)
- Landbird Migratory Stopover Area (ML)
- Migratory Butterfly Stopover Area (MB)
- Waterfowl Stopover & Staging - Aquatic (WA)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Wilson's Phalarope (WP)

Notes

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Figure No.
3.2

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Title

Candidate Significant Natural Features & Wildlife Habitat

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Revised: 2014-11-12 By: pworsell

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line

Candidate Significant Wildlife Habitat Features

- Snake Hibernacula (SN)
- Amphibian Breeding (ABWO & ABWE)
- Area-Sensitive Breeding Bird (ABB)
- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Louisiana Waterthrush Habitat (LW)
- Waterfowl Nesting Area (WN)
- Woodland Raptor Nesting Area (WR)
- Shorebird Migratory Stopover (SM)
- Bald Eagle Nesting, Foraging, and Perching Habitat (BE)
- Landbird Migratory Stopover Area (ML)
- Migratory Butterfly Stopover Area (MB)
- Waterfowl Stopover & Staging - Aquatic (WA)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Wilson's Phalarope (WP)

Notes

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Client/Project

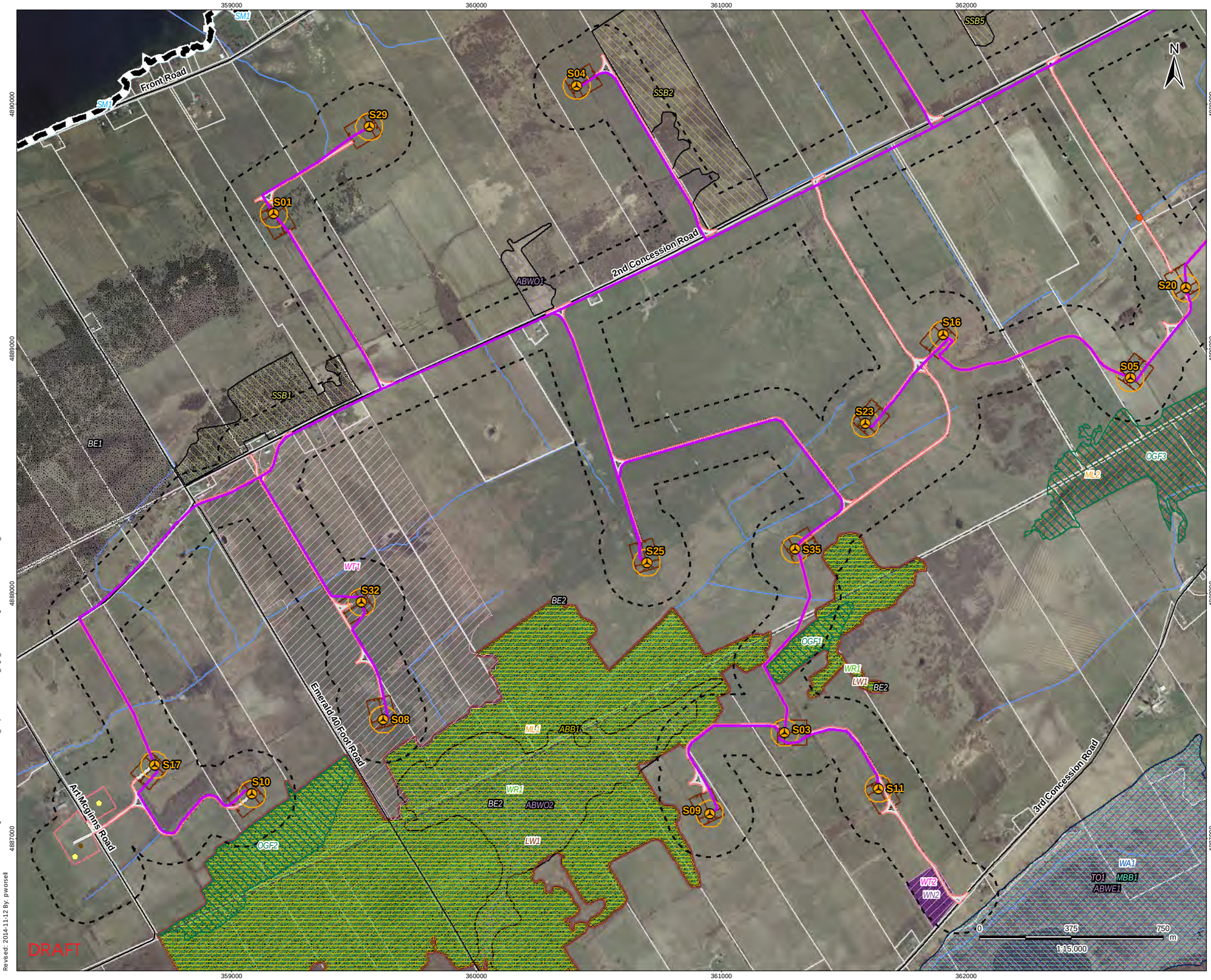
Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
3.3

DRAFT

Title

Candidate Significant Natural Features & Wildlife Habitat



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Revised: 2014-11-12 By: pvorsell

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line

Candidate Significant Wildlife Habitat Features

- Snake Hibernacula (SN)
- Amphibian Breeding (ABWO & ABWE)
- Area-Sensitive Breeding Bird (ABB)
- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Louisiana Waterthrush Habitat (LW)
- Waterfowl Nesting Area (WN)
- Woodland Raptor Nesting Area (WR)
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- Waterfowl Stopover & Staging - Terrestrial (WT)
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- Wilson's Phalarope (WP)

Notes

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Amherst Island Wind Energy Project

Figure No.
3.4

DRAFT

Title

Candidate Significant Natural Features & Wildlife Habitat

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line

Candidate Significant Wildlife Habitat Features

- Snake Hibernacula (SN)
- Amphibian Breeding (ABWO & ABWE)
- Area-Sensitive Breeding Bird (ABB)
- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Louisiana Waterthrush Habitat (LW)
- Waterfowl Nesting Area (WN)
- Woodland Raptor Nesting Area (WR)
- Shorebird Migratory Stopover (SM)
- Bald Eagle Nesting, Foraging, and Perching Habitat (BE)
- Landbird Migratory Stopover Area (ML)
- Migratory Butterfly Stopover Area (MB)
- Waterfowl Stopover & Staging - Aquatic (WA)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Wilson's Phalarope (WP)

Notes

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Figure No.
3.5

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Title

Candidate Significant Natural Features & Wildlife Habitat

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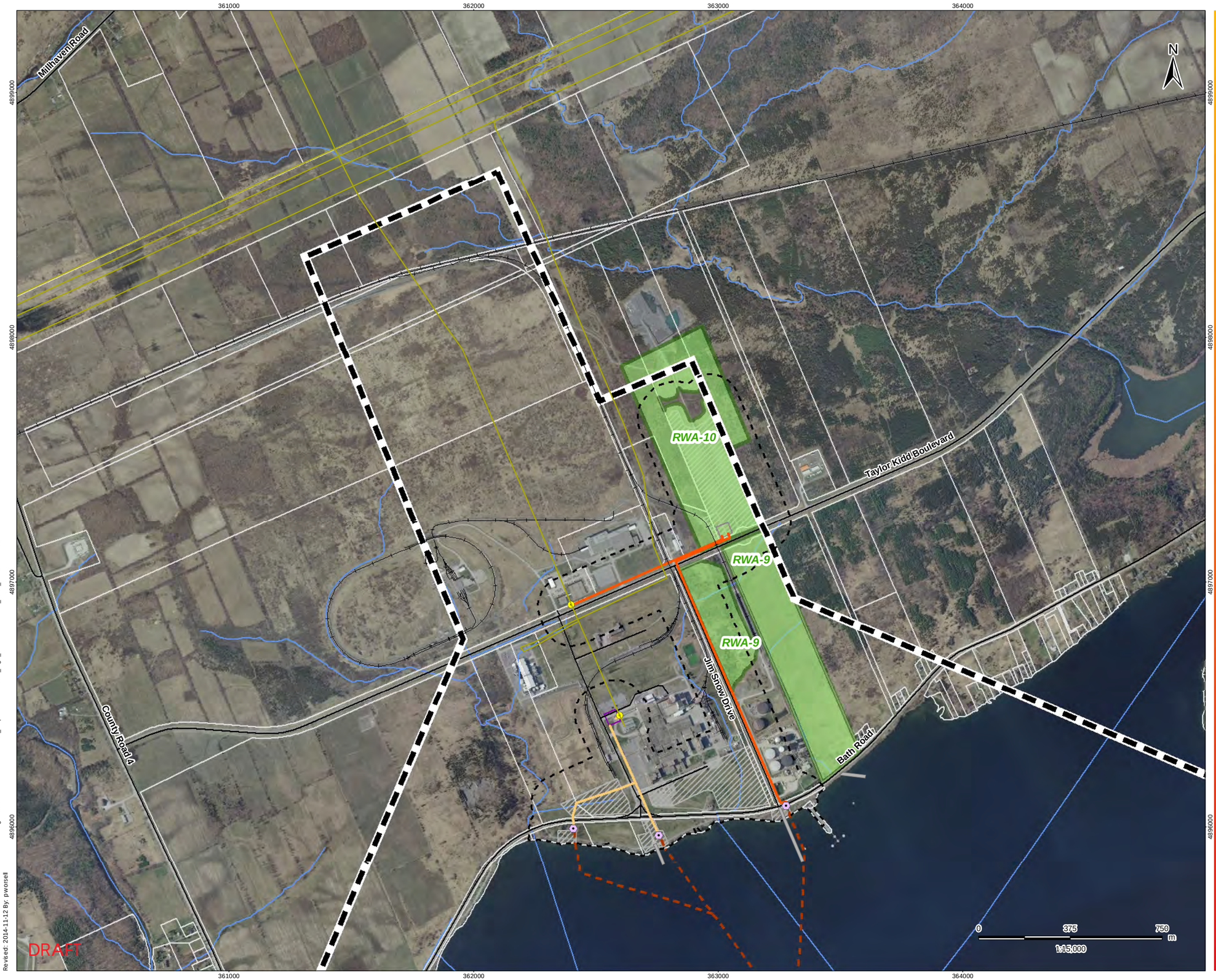
Revised: 2014-11-12 By: pworsell



Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

Notes

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Client/Project

Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
4.1

DRAFT

Title

Candidate Open Country Breeding Bird & Raptor Wintering Areas

\\cd1220-f02\01609\active\60960595\drawing\MXD\Terrestrial\NHA\Mod_Report\160960595_Fig4_CandidateRWA_OCB_20141111.mxd
Revised: 2014-11-12 By: pwrosell

361000 362000 363000 364000 365000

4894000 4893000 4892000 4891000

N

Mcdonalds Lane

Front Road

Kerr Point Road

2nd Concession Road

Stella 40 Foot Road

3rd Concession Road

OCB-7 RWA-6 OCB-4 RWA-4 OCB-3 RWA-3 OCB-2 RWA-2 OCB-6

S06 S31 S22

DRAFT

0 375 750 m

1:15,000

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

Notes

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Client/Project

Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
4.2

DRAFT

Title

Candidate Open Country Breeding Bird & Raptor Wintering Areas

\\cd1220-f02\01609\active\60960595\drawing\MXD\Terrestrial\NHA\Mod_Report\160960595_Fig4_CandidateRWA_OCB_20141111.mxd
Revised: 2014-11-12 By: pworsell

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
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- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

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Client/Project

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Amherst Island Wind Energy Project

Figure No.
4.3

DRAFT

Title

Candidate Open Country Breeding Bird & Raptor Wintering Areas

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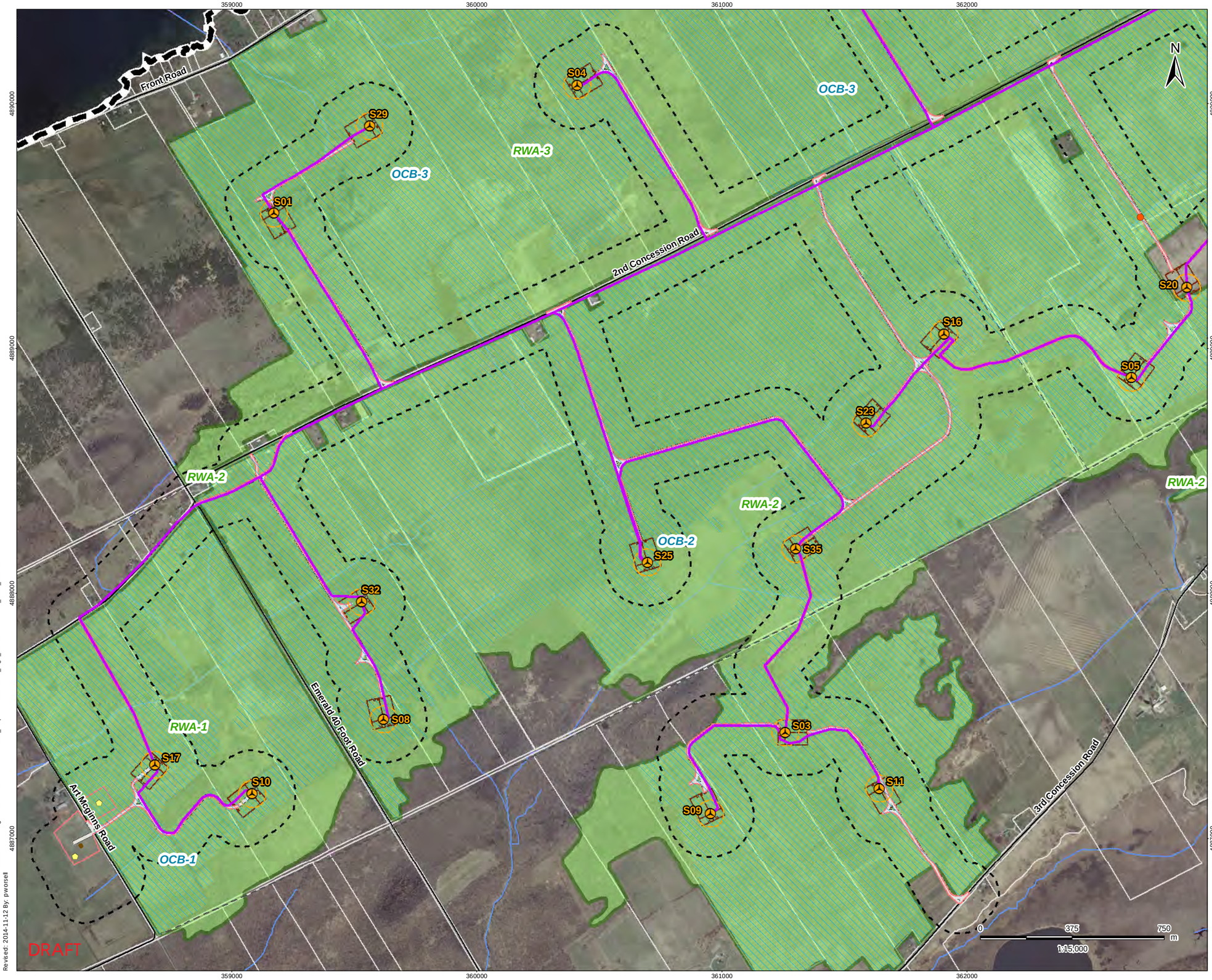
Revised: 2014-11-12 By: pwosell



Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

Notes

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Client/Project

Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
4.4

DRAFT

Title

Candidate Open Country Breeding Bird & Raptor Wintering Areas

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Revised: 2014-11-12 By: pworsell

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Revised: 2014-11-12 By: pworsell

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

Notes

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Client/Project

Windlectric Inc.
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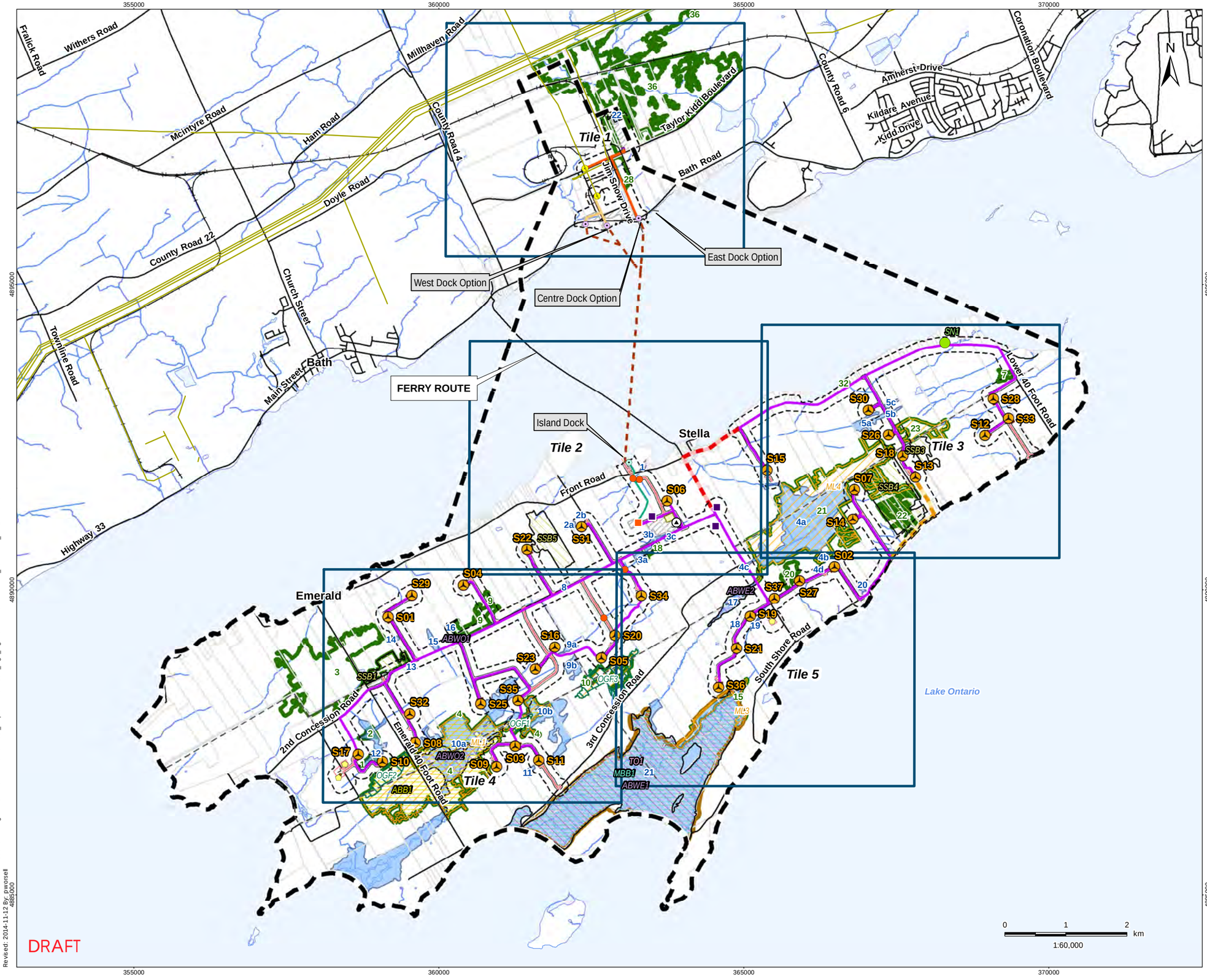
Figure No.
4.5

DRAFT

Title

Candidate Open Country Breeding Bird & Raptor Wintering Areas



Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Substation (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Waterbody
- Amherst Bay Life Science ANSI
- Property Line

Significant Wildlife Habitat Features

- Snake Hibernacula (SN)
- Amphibian Breeding (ABWO & ABWE)
- Area-Sensitive Breeding Bird (ABB)
- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Landbird Migratory Stopover Area (ML)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Significant Woodland
- Significant Wetland

Notes

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Client/Project

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Amherst Island Wind Energy Project

Figure No.
5.0

DRAFT

Title

Significant Natural Features & Wildlife Habitat - Overview

\\cd1220-f02\01609\active\160960595\drawing\MXD\Terrestrial\NHA\Mod_Report\160960595_Fig5_SignificantWildlifeHabitat_Overview_20141111.mxd
Revised: 2014-11-12 By: pworsell

361000 362000 363000 364000

4899000 4898000 4897000 4896000

Millhaven Road

N

36

22
ABWO3

28

Taylor Kidd Boulevard

Jim Snow Drive

Bath Road

County Road 4

0 375 750 m

1:15,000

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\\cd1220-f02\01609\active\60960595\drawing\MXD\Terrestrial\NHA\Mod_Report\160960595_Fig5_SignificantWildlifeHabitat_20141111.mxd
Revised: 2014-11-12 By: pwoisel

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Amherst Bay Life Science ANSI
- Property Line

Significant Wildlife Habitat Features

- Snake Hibernacula (SN)
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- Landbird Migratory Stopover Area (ML)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Significant Woodland
- Significant Wetland

Notes

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Figure No.
5.1

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Title

Significant Natural Features & Wildlife Habitat

361000 362000 363000 364000 365000

4894000 4893000 4892000 4891000

N

SM1

McDonalds Lane

Front Road

Kerr Point Road

2nd Concession Road

Stella 40 Foot Road

3rd Concession Road

S06 S31 S22

SSB5 ML4

1 2a 2b 3a 3b 3c 4a 4c 18 21

DRAFT

0 375 750 m

1:15,000

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Revised: 2014-11-12 By: pwoisell

Legend

Study Area
120m Zone of Investigation

Project Components
- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
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- Island Cable Vault
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- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines
- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use
- Central Staging Area
- Switching Station (Potential Location)

Existing Features
- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Amherst Bay Life Science ANSI
- Property Line

Significant Wildlife Habitat Features
- Snake Hibernacula (SN)
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- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Shorebird Migratory Stopover (SM)
- Landbird Migratory Stopover Area (ML)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Significant Woodland
- Significant Wetland

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Figure No.
5.2

DRAFT

Title

Significant Natural Features & Wildlife Habitat

366000 367000 368000 369000 370000

4894000 4893000 4892000 4891000

N

SN1 SM1 Front Road Lower 40 Foot Road South Shore Road

32 7 S28 S33 S30 5c 5b 5a S26 23 ML5 S12 SSB3 S18 S13 S15 S07 SSB4 21 ML4 22 S14 4a 4b

0 375 750 m

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Stantec

Legend

Study Area
120m Zone of Investigation

Project Components
- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines
- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use
- Central Staging Area
- Switching Station (Potential Location)

Existing Features
- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Amherst Bay Life Science ANSI
- Property Line

Significant Wildlife Habitat Features
- Snake Hibernacula (SN)
- Amphibian Breeding (ABWO & ABWE)
- Area-Sensitive Breeding Bird (ABB)
- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Shorebird Migratory Stopover (SM)
- Landbird Migratory Stopover Area (ML)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Significant Woodland
- Significant Wetland

Notes

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Figure No.
5.3

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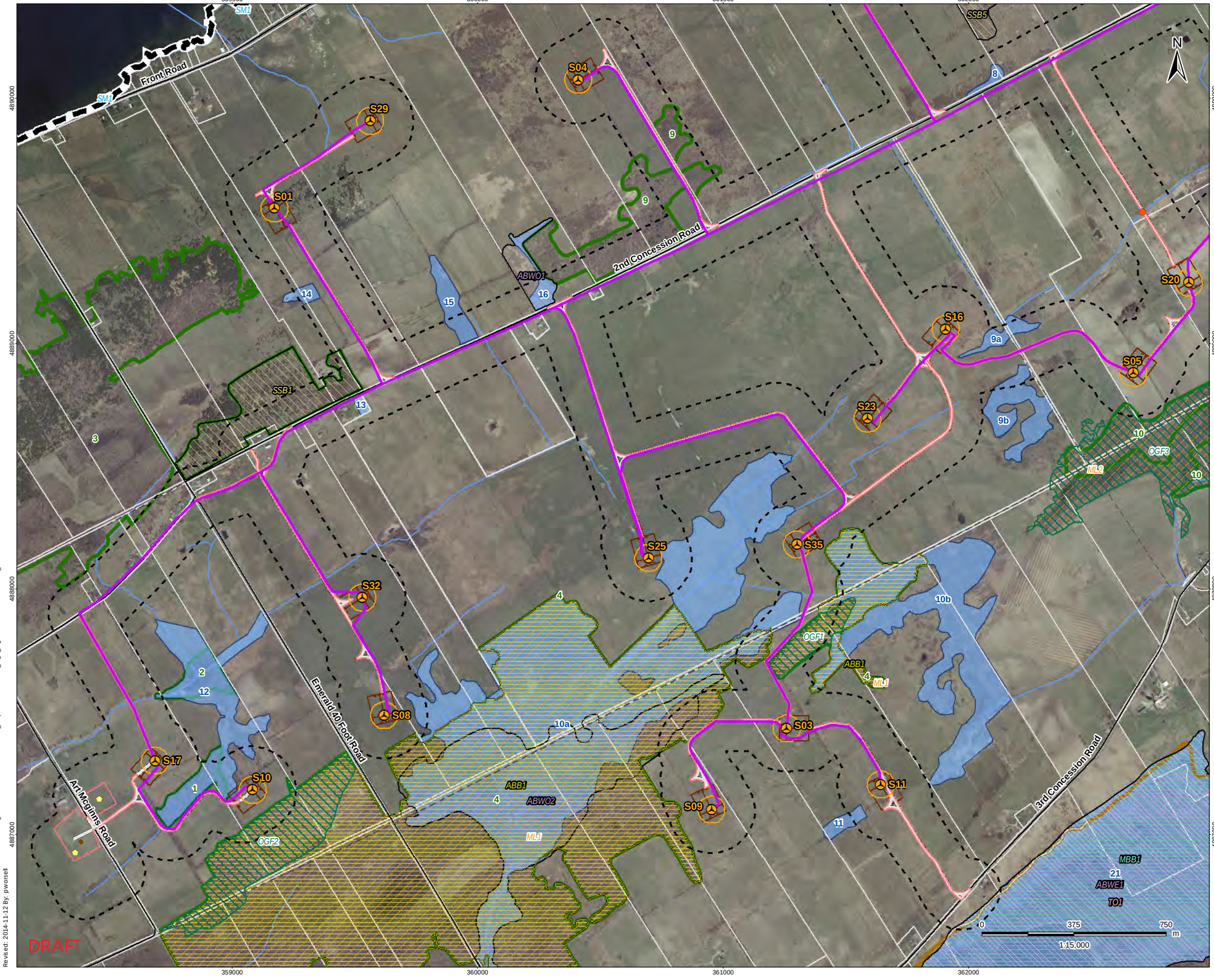
Title

Significant Natural Features & Wildlife Habitat



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Revised: 2014-11-12 By: pworsell

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Amherst Bay Life Science ANSI
- Property Line

Significant Wildlife Habitat Features

- Snake Hibernacula (SN)
- Amphibian Breeding (ABWO & ABWE)
- Area-Sensitive Breeding Bird (ABB)
- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Shorebird Migratory Stopover (SM)
- Landbird Migratory Stopover Area (ML)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Significant Woodland
- Significant Wetland

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Figure No.
5.4

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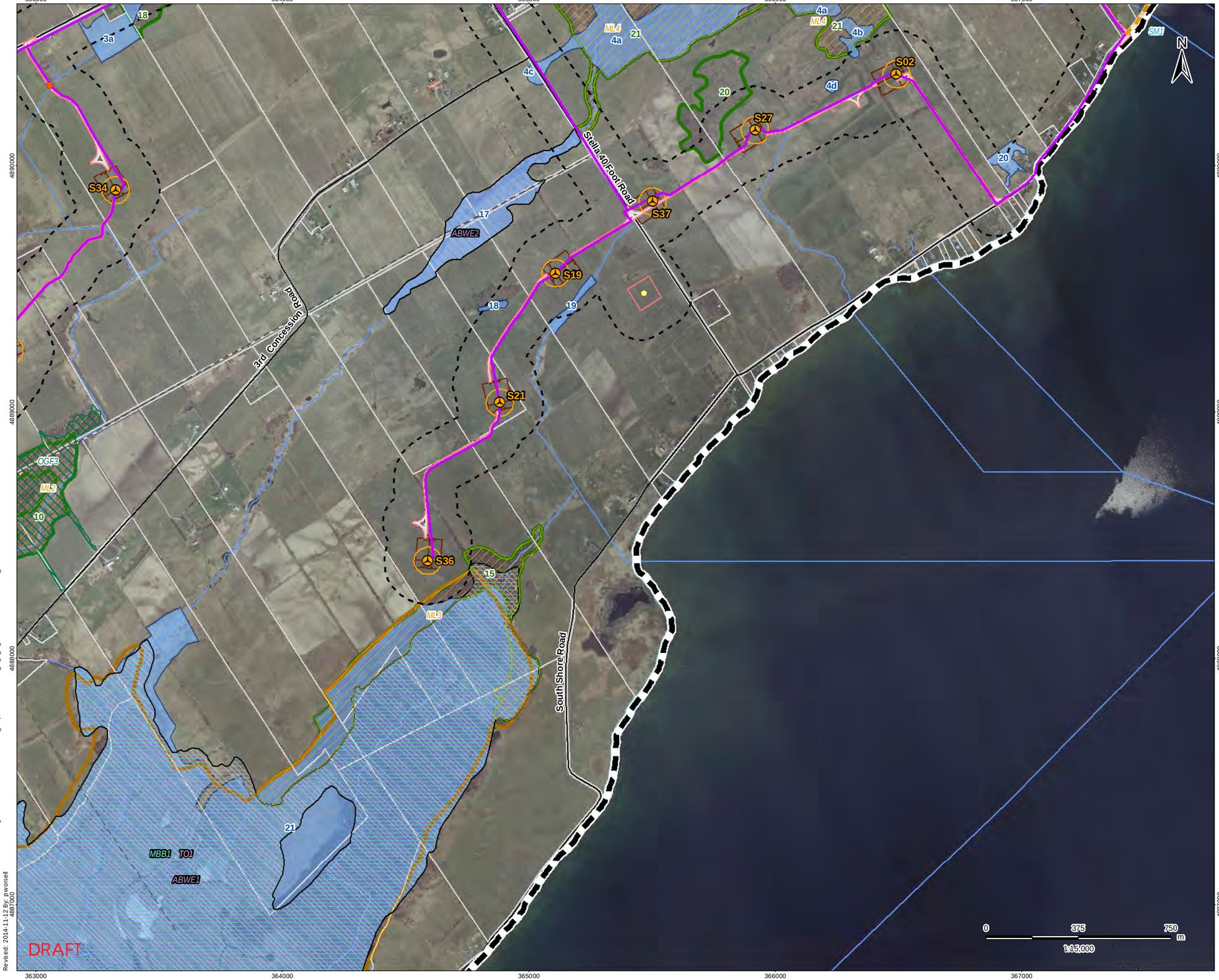
Title

Significant Natural Features & Wildlife Habitat



Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Amherst Bay Life Science ANSI
- Property Line

Significant Wildlife Habitat Features

- Snake Hibernacula (SN)
- Amphibian Breeding (ABWO & ABWE)
- Area-Sensitive Breeding Bird (ABB)
- Marsh Breeding Bird (MBB)
- Shrub/Early Successional Bird Breeding (SSB)
- Turtle Overwintering (TO)
- Shorebird Migratory Stopover (SM)
- Landbird Migratory Stopover Area (ML)
- Waterfowl Stopover & Staging - Terrestrial (WT)
- Old Growth Forest (OGF)
- Significant Woodland
- Significant Wetland

Notes

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Amherst Island Wind Energy Project

Figure No.
5.5

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Title

Significant Natural Features & Wildlife Habitat

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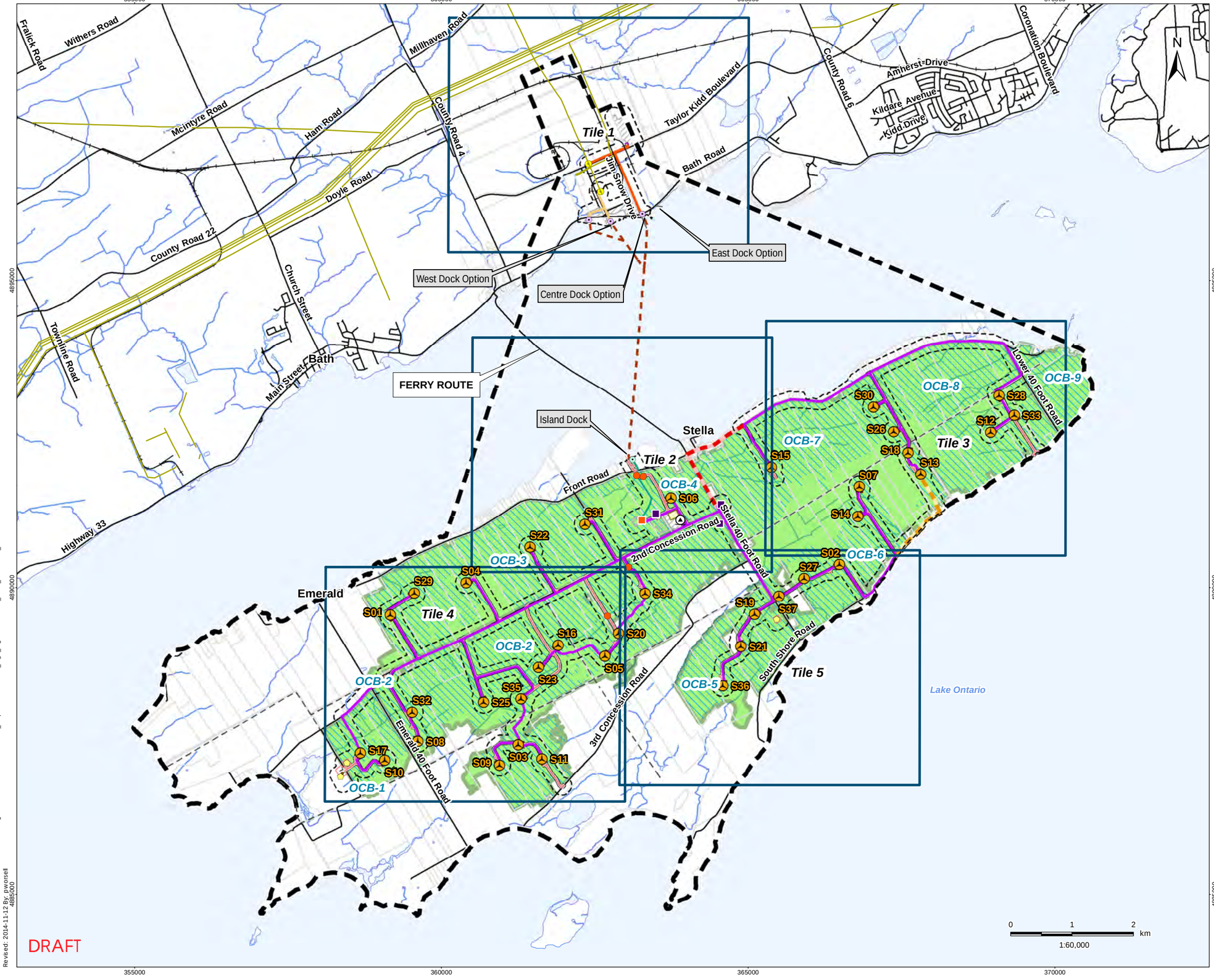
Revised: 2014-11-12 By: pworsell



Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Substation (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Waterbody
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

Notes

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Client/Project

Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
6.0

DRAFT

Title

Significant Open Country Breeding Bird & Raptor Wintering Areas - Overview

\\cd1220-f02\01609\active\160960595\drawing\MXD\Terrestrial\NHA\Mod_Report\160960595_Fig6_SignificantRWA_OCB_Overview_20141111.mxd
Revised: 2014-11-12 By: pworsell

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

Notes

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Client/Project

Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.

6.1

DRAFT

Title

Significant Open Country Breeding Bird & Raptor Wintering Areas

\\cd1220-f02\01609\active\60960595\drawing\MXD\Terrestrial\NHA\Mod_Report\160960595_Fig6_SignificantRWA_OCB_20141111.mxd
Revised: 2014-11-12 By: pworsell

361000 362000 363000 364000 365000

4894000 4893000 4892000 4891000

N

Mcdonalds Lane

Front Road

Kerr Point Road

2nd Concession Road

Stella 40 Foot Road

3rd Concession Road

OCB-7

RWA-6

OCB-4

S06

RWA-4

S31

RWA-3

OCB-3

S22

OCB-2

RWA-2

OCB-6

DRAFT

0 375 750 m

1:15,000

\\cd1220-f02\01609\active\160960595\drawing\MXD\Terrestrial\NHA\Mod_Report\160960595_Fig6_SignificantRWA_OCB_20141111.mxd
Revised: 2014-11-12 By: pwrosell

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components

Turbine
Met Tower (Potential Location)
Access Road
Collector Line
Collector Line (New)
Collector Line (Removed)
Submarine Cable Path
Laydown Area and Crane Pad
Operation and Maintenance Building (Potential Location)
Turbine Blade Tip
Substation (Potential Location)
Potential Culvert Location
Point of Common Coupling
Mainland Cable Vault (Potential Location)
Island Cable Vault
Aboveground Storage Tanks (Potential Location)
Constructible Area
Mainland Dock (Potential Location)
Island Dock
Batch Plant (Potential Location)
Site Office (Potential Location)
Storage Shed

Transmission Lines

Mainland Option1
Mainland Option 2
Island Transmission Line

Land Use

Central Staging Area
Switching Station (Potential Location)

Existing Features

Road
Unopened Road Allowance
Railway
Hydro Line
Watercourse
Property Line
Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
Raptor Wintering Area (RWA)

Notes

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Client/Project

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Amherst Island Wind Energy Project

Figure No.
6.2

DRAFT

Title

Significant Open Country Breeding Bird & Raptor Wintering Areas

366000 367000 368000 369000 370000

4894000 4893000 4892000 4891000

Front Road
Lower 40 Foot Road
South Shore Road

OCB-7 OCB-8 OCB-9 OCB-6 OCB-6
RWA-6 RWA-7 RWA-8

S30 S26 S28 S33 S12 S18 S13 S15 S07 S14

N

0 375 750 m
1:15,000

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Revised: 2014-11-12 By: pwoseli

Stantec

Legend

Study Area
120m Zone of Investigation

Project Components
- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
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- Island Cable Vault
- Aboveground Storage Tanks (Potential Location)
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Transmission Lines
- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use
- Central Staging Area
- Switching Station (Potential Location)

Existing Features
- Road
- Unopened Road Allowance
- Railway
- Hydro Line
- Watercourse
- Property Line
- Open Country Breeding Bird Area (OCB) (OCB habitats are transparent with hatching)
- Raptor Wintering Area (RWA)

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Client/Project

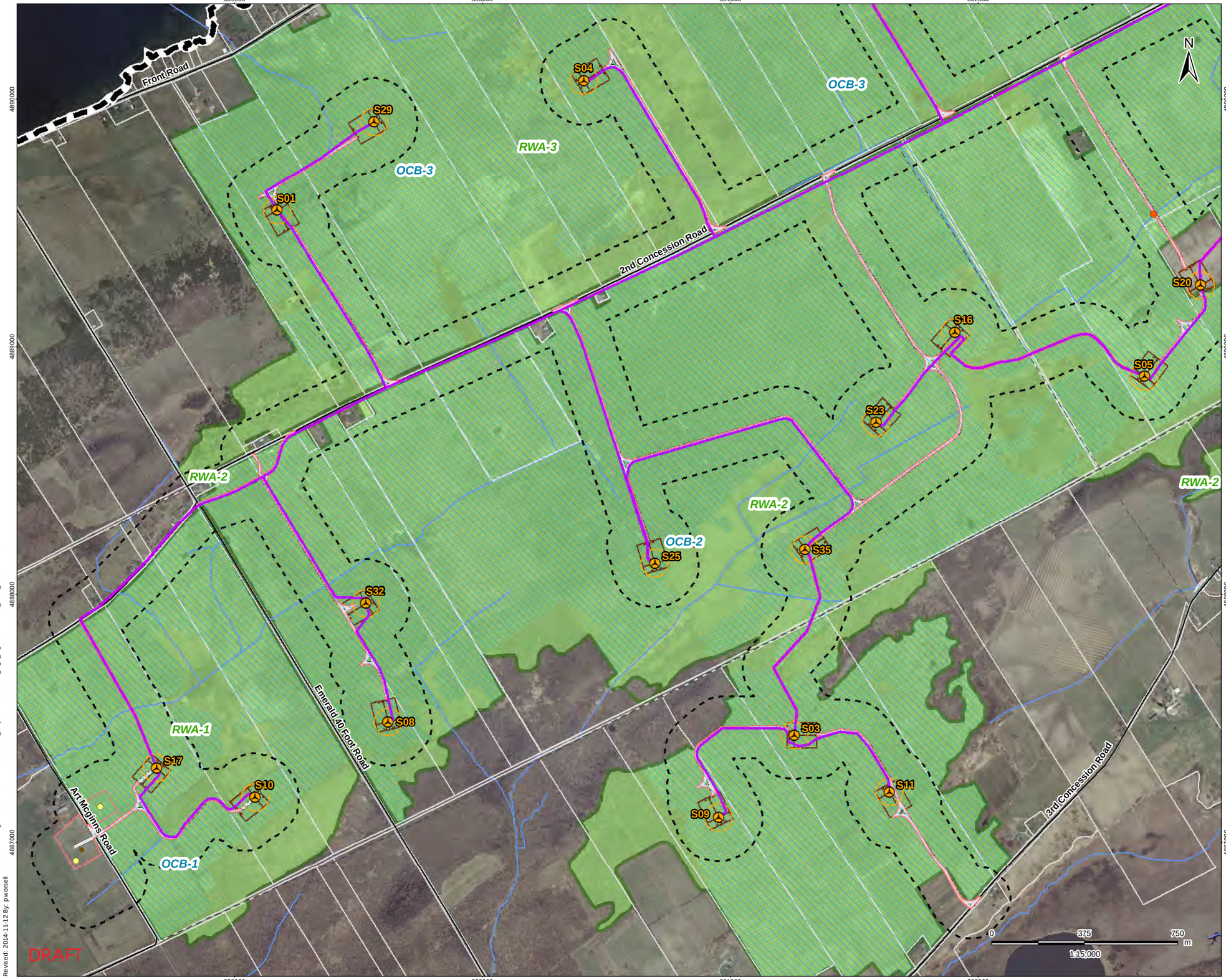
Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
6.3

DRAFT

Title

Significant Open Country Breeding Bird & Raptor Wintering Areas



Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
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- Island Cable Vault
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- Island Dock
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- Site Office (Potential Location)
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Amherst Island Wind Energy Project

Figure No.
6.4

DRAFT

Title

Significant Open Country Breeding Bird & Raptor Wintering Areas

\\cd1220-f02\01609\active\160960595\drawing\MXD\Terrestrial\NHA\Mod_Report\160960595_Fig6_SignificantRWA_OCB_20141111.mxd
Revised: 2014-11-12 By: pworsell

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Revised: 2014-11-12 By: pwoisel

Stantec

Legend

- Study Area
- 120m Zone of Investigation

Project Components

- Turbine
- Met Tower (Potential Location)
- Access Road
- Collector Line
- Collector Line (New)
- Collector Line (Removed)
- Submarine Cable Path
- Laydown Area and Crane Pad
- Operation and Maintenance Building (Potential Location)
- Turbine Blade Tip
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- Batch Plant (Potential Location)
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- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)

Existing Features

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- Unopened Road Allowance
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- Property Line
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160960595

Client/Project

Windlectric Inc.
Amherst Island Wind Energy Project

Figure No.
6.5

DRAFT

Title

Significant Open Country Breeding Bird & Raptor Wintering Areas

Attachment 2
Updates to NHA Tables

Update to Table 7B: Site Investigation Results - Woodlands

Woodland #	Feature Size (ha)	Figure #	Composition	Description	Attributes	Functions	Significance
22	15.03	3	FOD7-2 (Fresh-Moist Ash Lowland Deciduous forest)	Woodland feature 22 is found north of South Shore Rd and is separated from woodland feature 21 by a band of cultural meadow of approximately 100 m, forming a distinct woodland feature. Numerous areas of cultural meadow are found through this feature and are not included in the total area. Land use immediately surrounding the woodland feature is primarily managed agricultural lands, cultural meadow, and to the north woodland feature 21.	Snags were considered rare to occasional with abundant small snags <10 cm dbh. Age structure young to mid age (most trees <10 to 24 cm dbh); with some, rarely, >25 cm dbh No trees were observed that were >25 dbh and contained cavities. Overall canopy cover was primarily <60 %; characterized as open canopy. No specialized wildlife habitat features (hibernacula, stick nests, etc.) observed. Vernal pools absent. No disturbance noted.	• Large woodland • Provides connectivity between significant natural features	Unknown, requires Evaluation of Significance

Update to Table 3.9: Natural Features Carried Forward to Evaluation of Significance

Feature ID	Feature Type	Distance to Project Infrastructure Within 120 m (m)	Identified in Records Review	Evaluation of Significance Required
Woodlands				
21	Woodland	WT-44 UL-3 AR-39 TC-40	No	Yes
22	Woodland	UL - 82	No	Yes
Seasonal Concentration Areas				
RWA-6	Raptor Wintering Area	WT – overlapping AR – overlapping UL – overlapping TC – overlapping BU – overlapping	No	Yes
SM1	Shorebird Migratory Stopover Area	UL – overlapping AR – overlapping	No	Yes
Habitat for Species of Conservation Concern				
OCB-6	Open Country Bird Breeding Habitat	WT – overlapping AR – overlapping UL – overlapping TC – overlapping BU – overlapping	No	Yes
SSB4	Shrub/Early Successional Bird Breeding Habitat	WT – 65 UL – 1 AR – 66 TC - 65	No	Yes
Legend: WT: Wind Turbine; UL: Underground Transmission Line; AR: Access Road, OL: Overhead Transmission Line, TC: Temporary Construction Areas, BU: Building/Substation				

Update to Table 10B: Evaluation of Significance – Woodlands

Woodland #	Size (>4 ha)	Woodland Interior	Proximity to Other Significant Woodlands or Habitats	Linkages	Water Protection	Woodland Diversity Representation	Uncommon Characteristics	Significant Woodland
	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
22	Yes	No	No	Yes	No	No	No	Yes

Update to Table 4.8: Summary of Evaluation of Significance of Natural Features

Feature ID	Feature Type	Distance to Project Infrastructure Within 120 m (m)	Located in or within 120 m of Project Location	Significant? (Y/N)	Carried Forward to EIS (Y/N)
Woodlands					
21	Woodland	WT-44 UL-3 AR-39 TC-40	Within 120 m	Yes	Yes
22	Woodland	UL-82	Within 120 m	Yes	Yes
Seasonal Concentration Areas					
RWA-6	Raptor Wintering Area	WT – overlapping AR – overlapping UL – overlapping TC – overlapping BU – overlapping	In	Yes	Yes
SM1	Shorebird Migratory Stopover Area	UL – overlapping AR – overlapping	Within 120 m	Yes	Yes
Habitat for Species of Conservation Concern					
OCB-6	Open Country Bird Breeding Habitat	WT – overlapping AR – overlapping UL – overlapping TC – overlapping BU – overlapping	In	Yes	Yes
SSB-4	Shrub/Early Successional Bird Breeding Habitat	WT – 65 UL – 1 AR – 66 TC - 65	Within 120 m	Yes	Yes
Legend: WT: Wind Turbine; UL: Underground Transmission Line; AR: Access Road, OL: Overhead Transmission Line, TC: Temporary Construction Areas, BU: Building/Substation					

Attachment 3
Sections of NHA/EIS

note to reviewer: the following text has been copied from previously approved NHA/EIS

2.0 RECORDS REIVEW

2.1 Methods

This Records Review report was prepared in accordance with O. Reg. 359/09, s. 25 (3).

Background data were collected and reviewed to identify natural features located in, or within, 120 metres of the Project Location (i.e., the Zone of Investigation). Documents reviewed and agencies contacted as part of the Records Review included but were not limited to:

- Ontario Ministry of Natural Resources (MNR). Natural heritage data request and proposed Site Investigation work program submitted May 12, 2011. MNR provided a written response on natural heritage features and Provincially Significant Wetlands (PSW) for the Project Study Area on May 30, 2011 (including Provincially Significant Wetland Evaluations for Wemps Bay Marsh, Nut Island Duck Club Marsh and Long Point Marsh) and during a teleconference on June 3, 2011. Stantec has been in correspondence with the Renewable Energy Planning Ecologist for this region on an on-going basis;
- Natural Heritage Information Centre (NHIC 2010) database. February 2012. Natural Areas and Species records search. Biodiversity explorer, http:/nhic.mnr.gov.on.ca. OMNR, Peterborough. Accessed February 2012;
- Land Information Ontario (LIO). 2012. LIO digital mapping of natural heritage features;
- Renewable Energy Atlas: bat hibernacula mapping (LIO 2012);
- Ontario Parks Planning and Management Information (http://www.ontarioparks.com/english/plan-res.html).
- Historic air photos of Amherst Island (Northway-Photomap Remote Sensing Ltd 1948)

Conservation Authority

- Cataraqui Region Conservation Authority/Loyalist Township. Letter sent to Planner/Chief Building Official of Loyalist Township and copied to General Manager of CRCA on September 16, 2008. Response and screening maps received from Development Officer of CRCA September 26, 2008;
- Letter from Cataraqui Region Conservation Authority (CRCA) to Windlectric Inc. dated March 28, 2011;
- Background information request sent to the General Manager at CRCA on August 17, 2011;
- Windlectric and Stantec met with CRCA representatives on October 6, 2011;
- Cataraqui Region Conservation Authority mapping (2011);
- Cataraqui Region Conservation Authority. Natural Heritage Study Final Report. August 2006.
- Owl Woods Management Strategy (Ecological Services 2011)

Local Municipal Government

- Letter sent to Planner/Chief Building Official of Loyalist Township;
- Windlectric and Stantec met with Loyalist Township representatives on October 6, 2011;
- Loyalist Township Official Plan (2010) and associated Schedules A and B.

Other data sources

- Important Bird Areas (IBA) database (Bird Studies Canada and BirdLife International, undated);
- Ontbirds Archives;
- eBird Canada Checklist;
- Various wildlife atlases (birds, mammals, amphibians and reptiles);
- Kingston Field Naturalists (KFN). Meeting and site walk with Kurt Hennige and Erwin Batalla on May 20, 2011, to visit KFN property and discuss on-island bird communities. Request for bird nesting data sent to Kurt Hennige on June 2, 2011. Bird nesting data received June 24, 2011;
- Geographic and Habitat Fidelity in the Short-eared Owl (*Asio flammeus*) (Keyes 2011); including specific information regarding Short-eared Owls breeding on Amherst Island;
- Amherst Island Beacon Archives;
- Discussion with local bird expert Janet Scott regarding owl populations on Amherst Island;
- Golder and Associates. Report on Fall Migration Bird Monitoring on Amherst Island, Ontario. October 2008. Addendum to Fall Migration Bird Monitoring on Amherst Island, Ontario. December 2008.

3.0 SITE INVESTIGATION

3.1 Methods

The site investigations undertaken detailed the current conditions in and within 120 m of the Project Location, and were based on the information about the Project Location and siting that was current at the time of the respective survey. All surveys conducted within the Study Area were completed by qualified personnel. Land access was available for all land parcels where Project components are proposed, and areas within 120 m of the Project Location were traversed on foot during site investigations where land access was available.

All site investigations were carried out in accordance with O. Reg. 359/09 and the NHA Guide for Renewable Energy Projects (MNR 2011a), using guidance provided in the SWHTG and the Draft SWH Ecoregion 6E Criterion Schedule (MNR 2012).

3.1.1 Alternative Site Investigation Methods

Alternative site investigations consisted of assessments conducted from roadsides and property boundaries in locations within 120 m of the Project Location where access was not required. This occurred in locations where underground transmission lines are proposed within the road right-of-way and the adjacent property is active agriculture or residential property. Alternative site investigations, comprised of visual scans from roadsides and/or property boundaries in combination with air photos, were undertaken in these locations.

3.1.2 Vegetation Community and Vascular Plants Assessment

Ecological Land Classification (ELC) and preliminary botanical inventories of the vegetation communities in and within 120 m of the Project Location were conducted by Stantec on July 26-29, August 2-5, August 17-19, November 11, 2011 and March 27-28, May 18, and August 15, 2012.

Vegetation communities were delineated on aerial photographs and checked in the field. Vascular plant species lists were recorded separately for each community. Community characterizations were then based on the ELC system (Lee et al., 1998). English colloquial names and scientific binominals of plant species generally follow Newmaster et al. (1998). Specific emphasis was placed on searching for plant species of conservation concern identified through the records review with historical occurrences within the study area.

Plant species were considered rare if designated provincially as S1 (critically imperiled), S2 (imperiled) or S3 (vulnerable). Species having a high coefficient of conservatism (9 or 10) as designated by Oldham et al. (1995) were also considered species of note.

3.1.3 Wetland Confirmation and Delineation

Wetlands are defined in the REA regulation as features that are swamp, marsh, bog, or fen that are seasonally or permanently covered by shallow water or has the water table close to the surface, and have hydric soils and vegetation dominated by hydrophytic or water-tolerant plants (OMNR 2011a). Wetlands are identified during ELC surveys and are further evaluated using the Ontario Wetland Evaluation System (OWES).

Previously unidentified wetlands within 120 m of the Project Location identified during the course of the site investigations were delineated during the vegetation community assessment and vascular plant surveys described in **Section 3.1.2**. The wetland boundaries were mapped through reconciling aerial photographs and observations made during the site investigations in accordance with the methods outlined in the OWES Southern Manual (MNR 2002).

3.1.4 Woodlands

Woodlands include treed areas, woodlots, or forested areas, other than cultivated fruit or nut orchards or plantations established for the purpose of producing Christmas trees (OMNR 2011a).

The limits of all woodlands that occur, or partially occur, in or within 120 m of the Project Location were delineated through aerial photo interpretation and confirmed during site investigations.

Woodlands were delineated using the driplines of the trees. Information regarding woodland size, ecological function and uncommon characteristics was collected during ELC surveys and through GIS analysis. Historical air photos were used to determine the age and history of woodlands (Northway-Photomap Remote Sensing Ltd. 1948). Treed areas identified during vegetation surveys were compared to the definition of woodlands provided in O.Reg. 359/09 to delineate the limits of woodlands.

3.1.5 Valleylands

Valleylands are natural areas south and east of the Canadian Shield that have flowing or standing water for some period of the year. They are linear systems stretching across the landscape from headwater areas into other aquatic features such as lakes and wetlands. The boundaries of valleylands are defined based on their geomorphology, either by the stable top-of-bank, the flooding hazard limit, or limits of riparian vegetation. Conservation Authorities can provide regulated mapping and ELC surveys can provide further detail on these natural features. (OMNR 2011a)

Areas in and within 120 m of the Project Location were searched for the presence of characteristics of valleylands as defined within O. Reg. 359/09.

3.1.6 Areas of Natural and Scientific Interest (ANSI)

The Amherst Bay Life Science ANSI is located within 120 m of the Project Location and was identified in the Records Review.

3.1.7 Wildlife and Wildlife Habitat

Site investigations focused on determining whether candidate significant wildlife habitats, as identified during the Records Review, have the potential to occur in or within 120 m of the Project Location. Criteria used to identify candidate significant wildlife habitat were derived from the Significant Wildlife Habitat Technical Guide (MNR 2000) and the Draft SWH Ecoregion 6E Criterion Schedule. Specific emphasis was placed on determining whether the critical habitat features required to support significant wildlife habitat were present in natural features in or within 120 m of the Project Location. Methods for identifying candidate significant wildlife habitats are shown in **Tables 3.1** and **Table 3.3**.

Table 3.1: Characteristics Used to Identify Candidate Seasonal Concentration Areas

Candidate Seasonal Concentration Area	Criteria	Methods
Shorebird Migratory Stopover Area	• Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. • Great Lakes coastal shorelines, including groynes and other forms of amour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. • Sewage treatment ponds and storm water ponds do	• The shoreline of Lake Ontario, apart from residential areas, was considered candidate habitat. • The presence of shorebird migratory stopover areas within suitable ELC communities was assessed.

Table 3.1: Characteristics Used to Identify Candidate Seasonal Concentration Areas

Candidate Seasonal Concentration Area	Criteria	Methods
	not qualify as a significant wildlife habitat. • The following community types: Meadow Marsh (MAM), Beach/Bar (BB), or Sand Dune (SD)	
Raptor Wintering Area	• Presence of fields and woodlands. i.e. at least one of the following Community Types: Deciduous Forest (FOD), Mixed Forest (FOM) or Coniferous Forest (FOC), in addition to one of the following Upland Community Types: Meadow (CUM), Thicket (CUT), Savannah (CUS), Woodland (CUW) (<60% cover) that are >20 ha and provide roosting, foraging and resting habitats for wintering raptors. • The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. • Raptor wintering sites need to be > 20 ha with a combination of forest and upland, • Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15 ha) with adjacent woodlands. • Upland habitat (CUM, CUT, CUS, CUW), must represent at least 15 ha of the 20 ha minimum size.	• Vegetation community classifications and size calculations were utilized to assess features within 120 m of the Project Location that would support raptor wintering areas.

Table 3.2: Characteristics Used to Identify Candidate Habitat for Species of Conservation Concern

Candidate Habitat for Species of Conservation Concern	Criteria	Methods
Open Country Bird Breeding Habitat	• Grassland areas > 30 ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or intensive hay or livestock pasturing in the last 5 years, in the following Community Type: Meadow (CUM). • Condition of existing habitat at site (level of disturbance) is an important consideration. For example, fields with intensive agriculture are not considered candidate habitat. Fields with light grazing are considered candidate habitat) • Size and location of habitat • Potential for long-term protection of the habitat • Representation of species/habitat within the municipality.	• Site investigations were conducted to assess the potential for grassland communities in and within 120 m of the Project Location to support area-sensitive bird species, through the delineation and verification of grassland communities by ELC. • Swallow migratory staging was also included in this type of habitat for Amherst Island because these species use this habitat for foraging during fall migration. More information is provided in Section 4.2.3. • The farming practice of hay field cutting before the end of the breeding cycle for grassland birds can reduce breeding success for these species up to 94% and hayfields are not considered to support viable populations of grassland breeding bird species (COSSARO 2010); however, due to the importance of Amherst Island for bird migration and grassland species such as the Short-eared Owl, all hayfields, pastures, and cultural meadows have been identified as candidate significant wildlife

Table 3.2: Characteristics Used to Identify Candidate Habitat for Species of Conservation Concern

Candidate Habitat for Species of Conservation Concern	Criteria	Methods
		habitat.
Shrub/Early Successional Bird Breeding Habitat	• Oldfield areas succeeding to shrub and thicket habitats >10 ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or intensive hay or livestock pasturing in the last 5 years, in the following Community Types: Thickets (CUT), Savannahs (CUS), or Woodlands (CUW). • Condition of existing habitat at site. • Size and location of habitat. • Potential for long-term protection of the habitat – should have a history of longevity, either abandoned fields or pasturelands. • Representation of species/habitat within the municipality.	• Site investigations were conducted to assess the potential for this habitat type using ELC to delineate thicket and savannah type communities.

4.0 EVALUATION OF SIGNIFICANCE

4.1 METHODS

Wetlands and Life Science ANSIs were determined to be provincially significant if they had been identified as such by MNR. This information was obtained from NHIC and through correspondence with the local MNR District. Non-provincially significant wetlands are those that have been evaluated but did not receive sufficient points to be considered provincially significant. Wetlands that have yet to be examined are termed unevaluated. These unevaluated wetlands and those additional wetlands identified during field investigations were assessed during site investigations and desktop analyses using evaluation criteria or procedures established and accepted by MNR.

Valleylands, wildlife habitat and woodlands were considered to be significant if MNR has identified them as such or when evaluated as significant using procedures established by MNR.

Sources used in the Evaluation of Significance for the natural features within 120 m of the Project Location included:

- Ontario Wetland Evaluation System (MNR 2002);
- NHA Guide for Renewable Energy Projects (MNR 2011a);
- Significant Wildlife Habitat Technical Guide (MNR 2000); and
- Draft SWH Ecoregion 6E Criterion Schedule (MNR 2012).

Provincial designations for Special Concern species were obtained from the most recent Committee on the Status of Species at Risk in Ontario (COSSARO 2010) assessments. Federally, designations for Endangered, Threatened and Special Concern species were obtained from the most recent Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2010)

assessments and the schedules of the *Species at Risk Act* (SARA) were used to determine species protection.

Within the context of O. Reg 359/09, Endangered and Threatened species are addressed as part of MNR's *Approval and Permitting Requirements Document for Renewable Energy Projects* (APRD) requirements and are therefore not included as part of this NHA. Information required with regards to endangered and threatened species is being submitted to MNR under separate cover as part of the Amherst Island Wind Energy Project APRD Report. Where this information indicates that approvals or permits are required, these will be addressed separately through the applicable statute and its permitting process.

4.1.1 Wetlands

For the purposes of this evaluation, wetlands previously identified and confirmed by MNR as provincially significant or locally significant are considered to meet the requirements for a determination of significance. Unless field investigations provided evidence to contradict the existing MNR assessment of significance, the designation as assigned by MNR is used. Wetland boundaries as delineated by MNR were confirmed during site investigations by an Ontario Wetland Evaluation System (OWES) trained evaluator. Boundaries as delineated during field investigations were considered accurate for the purposes of this report; however, additional wetland ELC polygons surrounding the two PSWs (Nut Island Duck Club Marsh and Long Point Marsh) were identified, which were included in the final boundaries for these two wetlands (**Table 5B, Appendix A**).

During site investigations additional wetland communities were identified within 120 m of the Project Location. Data were collected through desktop procedures (e.g. aerial photograph interpretation) to supplement on-site field investigations. The Wetland Characteristics and Ecological Functions Assessment (WCEFA) for Renewable Energy Projects approach provided in Appendix C of the NHA Guide for Renewable Energy Projects (MNR 2011a) was used to assess previously-unevaluated wetlands identified in LIO (LIO 2012) and to assess additional wetlands identified during field investigations. Although this procedure does not evaluate the significance of these wetlands with the same level of rigour as the OWES, it provides a procedure by which the significance of these wetlands can be assumed and their functions assessed based on the criteria established within the OWES manual.

4.1.2 Woodlands

Guidance provided in Section 6.2.2 of the NHA Guide for Renewable Energy Projects (MNR 2011a) was used to evaluate woodlands. The local planning authority has a responsibility for designating significant woodlands, using criteria that are provided in the NHA Guide. The Study Area falls within the Township of Loyalist within the County of Lennox and Addington. For woodlands on Amherst Island, the CRCA study utilized a 4 ha minimum threshold when determining significance based on size. This 4 ha threshold was determined based on the 5–15% total percent woodland cover on Amherst Island alone as opposed to the total woodland cover within Loyalist Township. As described in **Section 3.2.3**, 32 woodlands were located within 120 m of the Project Location, and required an Evaluation of Significance.

4.1.3 Wildlife and Wildlife Habitat

Although specific site visits are assigned to target particular groups (i.e. amphibians, reptiles, birds), all visits were conducted by qualified ecologists. All observations made over the duration

of the field program are compiled within the list of wildlife for the Study Area and are considered in the assessment of wildlife use of the site.

Given a review of available background information and an analysis of candidate significant wildlife habitat components that occurred in or within 120 m of the Project Location, a four-season pre-construction field survey program was conducted.

Collectively, these multiple surveys, the habitats they cover, and the period over which they occur (season and time of day) offer a comprehensive set of field observations for fauna species on site. Methods for evaluating candidate significant wildlife habitats are shown in **Tables 4.1** and **Table 4.3**.

Table 4.1: Criteria and Methods Used to Evaluate Seasonal Concentration Areas of Animals

Candidate Seasonal Concentration Area	Criteria	Methods	Seasonal Timing
Shorebird Migratory Stopover Area	• Presence of 3 or more of listed species (Greater Yellowlegs, Lesser Yellowlegs, Marbled Godwit, Hudsonian Godwit, Black-bellied Plover, American Golden Plover, Semipalmated Plover, Solitary Sandpiper, Spotted Sandpiper, Semipalmated Sandpiper, Pectoral Sandpiper, White-rumped Sandpiper, Baird's Sandpiper, Least Sandpiper, Purple Sandpiper, Stilt Sandpiper, Short-billed Dowitcher, Red-necked Phalarope, Whimbrel, Ruddy Turnstone, Sanderling, Dunlin) and >1000 shorebird use days during spring or fall migration period • >100 Whimbrel for 3 or more years is considered significant	• Studies were completed during the spring migratory season. Evaluation methods followed "Bird and Bird Habitats: Guidelines for Wind Power Projects" for stopover driving transects and point counts • Stopover counts were conducted by driving a set transect, stopping at candidate habitats and conducting shorebird counts to estimate numbers and species • Counts were timed to coincide with peak numbers (dates and times)	• April-May
Raptor Wintering Area	• One or more Short-eared Owls or at least 10 individuals of two of the listed species (Rough-legged Hawk, Red-tailed Hawk, Northern Harrier, American Kestrel, and Snowy Owl) • Site must be used regularly (3 in 5 years) for a minimum of 20 days	• Studies were completed during the winter roosting season. Evaluation methods followed MNR protocols for raptor wintering area surveys • Walking transects were conducted along the interface of upland and forest transects once per week at each location, during daylight hours • Driving transects were also conducted between habitats to supplement data	• November - March

Table 4.2: Criteria and Methods Used to Evaluate Habitat for Species of Conservation Concern

Candidate Habitat for Species of Conservation Concern	Criteria	Methods	Seasonal Timing
Open Country Bird Breeding Habitat	• Presence of nesting or breeding of 2 or more of the listed species (Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, Northern Harrier, Savannah Sparrow) or a field with 1 or more breeding Short-eared Owl is considered significant wildlife habitat • Area of the significant wildlife habitat is contiguous ELC ecosite field areas • Swallow migratory staging is not included in the draft Ecoregion 6E Criteria as a significant wildlife habitat, but for the purposes of this study, it was included under open country breeding bird habitat as providing the ecological functions required for staging swallows	• Studies were completed in spring and early summer when birds were singing and defending their territories. Evaluation methods followed "Bird and Bird Habitats: Guidelines for Wind Power Projects" for standardized point counts and line transects • Staging swallow surveys were conducted during fall migration when swallows are migrating south, staging before crossing Lake Ontario. • Standardized point counts and walking transects were conducted within the candidate habitat during the early morning hours.	• May-June (grassland birds) • July-September (staging swallows)
Shrub/Early Successional Bird Breeding Habitat	• Presence of nesting or breeding of 1 of the indicator species (Brown Thrasher, Clay-coloured Sparrow) and at least 2 of the common species (Field Sparrow, Black-billed Cuckoo, Eastern Towhee, Willow Flycatcher), or a field with breeding Yellow-breasted Chat or Golden-winged Warbler is considered significant • Area of the significant wildlife habitat is the contiguous ELC ecosite field/thicket area	• Studies were completed in spring and early summer when birds were singing and defending their territories. Evaluation methods followed "Bird and Bird Habitats: Guidelines for Wind Power Projects" for standardized point counts and line transects • Standardized point counts and walking transects were conducted within the candidate habitat during the early morning hours	• May-June

5.0 ENVIRONMENTAL IMPACT STUDY

5.4 Other General Construction Mitigation

To fully identify all mitigation measures that are recommended for this development, the following section provides best management practices and other measures intended to minimize or mitigate potential adverse impacts on adjacent significant natural features. These measures will be implemented, where required and reasonable, during the construction and decommissioning of the various turbines, access roads and collector lines.

5.4.1 Vegetation Removal

Natural features where habitat will be removed include grasslands, wetlands and scattered trees. Where vegetation removal is proposed, the following mitigation measures will be applied:

- As appropriate, and prior to construction, the limits of vegetation clearing will be staked in the field. The Construction Contractor will ensure that no construction disturbance occurs beyond the staked limits and that edges of sensitive areas adjacent to the work areas are not disturbed. Regular monitoring of the limits of clearing will be implemented to ensure the objective of minimal disturbance. Should monitoring reveal that clearing occurred beyond defined limits, mitigation action will be taken that could include rehabilitation of the disturbed area to pre-disturbance conditions at the direction of a qualified ecologist (with enhancement of any disturbed areas).
- To the extent practical, tree and/or brush clearing and grassland removal will be completed prior to, or after, the core nesting season for breeding birds (May 1 to July 31). Should clearing be required during the breeding bird season, prior to construction, surveys will be undertaken by a qualified biologist to identify the presence/absence of nesting birds or breeding habitat. If a nest is located, a designated buffer will be marked off within which no construction activity will be allowed while the nest is active. The radius of the buffer will range from 5 - 60 m, depending on the species. Buffer widths are based on the species' sensitivity and on buffer width recommendations that have been reviewed and approved by Environment Canada.
- Prior to the start of construction activity, the topsoil/seedbank will be stripped and preserved; material will be reapplied in suitable rehabilitation areas post construction.
- Excavated soil from crane pads will be re-used on site, as feasible. If not feasible, the soil will be disposed of at an approved off-site facility. Temporary laydown areas will be returned to pre-construction conditions.
- Following construction, topsoil in areas of temporary disturbance will be replaced/restored. Disturbed areas in agricultural fields will be reseeded with a hay mix. Disturbed areas in wetlands 6 and 7 will be reseeded with a native wetland grass mix. Reseeded areas will be monitored for one year to ensure regeneration success.

5.4.2 Sediment and Erosion Control Measures

In order to minimize erosion and the introduction of sediment into significant natural features during grading and construction activities, erosion and sediment (E&S) control measures will be implemented prior to the initiation of any construction.

The proximity of adjacent significant natural features increases the risk of sedimentation within a construction area. As such, all significant natural features identified within 30 m of any proposed construction area are at higher risk of sediment transfer and erosion from grading and topsoil removal.

E&S control measures will be in installed to minimize erosion impacts adjacent to significant natural features, as appropriate. The following measures/guidelines will be implemented, as required, during the construction of the Amherst Island Wind Project components:

- Sediment control measures, which may include perimeter silt fencing, mud mats (access roads), check dams (rock or straw bales), and sediment bags (dewatering);
- Silt barriers (e.g., fencing) will be erected along wetland and woodland community edges located within 30 m of construction areas (including staging areas and laydown areas) to

minimize potential sediment transport to the significant natural features. These barriers will be regularly monitored and properly maintained during and following construction until soils in the construction area are re-stabilized with vegetation; and

- Where culverts are proposed within 30 m of a significant natural feature, enhanced sediment and erosion control measure (i.e. straw bales, double rows of sediment fencing, check dams) will be installed as added protection to filter runoff and further minimize potential sedimentation within the downstream features (wetland, woodland). This added protection is proposed to reduce environmental risk.

Specific E&S control measures will be selected, located and sized by an engineer during the detailed design stage to ensure proper functioning of these measures. All E&S controls will be installed prior to construction and will be maintained during and following construction to ensure their effectiveness at protecting the adjacent significant natural features.

5.4.3 Dewatering

Site specific geotechnical investigations to be completed prior to construction activities will provide further details related to geologic conditions. Dewatering requirements will be re-assessed as part of the geotechnical investigations.

If groundwater is encountered during excavations, good construction practices will be used, such as minimizing the length of time that the excavation is open and monitoring seepage into the excavation. Should pumping be required to dewater excavated areas, water will be directed into the nearest drain or spread across the buildable area and appropriate energy dissipation techniques will be used to reduce the potential for erosion and scouring. Discharge piping will be free of leaks and will be properly anchored to prevent bouncing and snaking during surging. The rate of discharge will be monitored to ensure no erosion or flooding occurs. If energy dissipation measures are found to be inadequate, the rate of dewatering will be reduced or ceased until satisfactory mitigation measures are in place.

In order to mitigate any impacts to significant natural features during dewatering activities, the following measures will be implemented, as required and necessary:

- The area to be used for dewatering will be clearly marked with flagging and/or snow-fencing prior to work commencing;
- During site preparation, silt fencing will be included to retain sediments on site so they do not enter any significant natural feature. All sediment control structures will be inspected regularly, and repaired/maintained as necessary;
- All water pumped during dewatering activities will be directed away from significant natural features and not directly into wetlands;
- The use of sediments bags (or filter rings) will be used as appropriate to filter out suspended sediment prior to discharge. Any sediment bags or filter rings will be monitored during pumping to ensure their efficacy, with any clogging or failures to be rectified immediately; and
- After the staging area and dewatering work area is no longer required, any remaining disturbed soils will be returned to pre-disturbance conditions and/or reseeded.

Further dewatering recommendations will be reviewed upon the completion of the detailed engineering design. Additional detail is provided in the Amherst Island Construction Plan Report (separate cover, Stantec 2012b).

5.4.4 Other General Mitigation Measures

Table 5.1 summarizes the general mitigation measures which will be implemented during construction, including the mitigation objective and specific location where each mitigation measure should be applied.

Table 5.1: Summary of Construction Phase Mitigation Measures Recommended

Mitigation Measure	Objective(s)	Location(s)
Any vegetation removal required along roadside collector lines should be minimized, and occur entirely within the road right-of-way.	Minimize vegetation removal and impacts on wildlife habitats	Underground Collector Lines/ or overhead collector lines
Any accidentally damaged trees should be pruned through the implementation of proper arboricultural techniques.	Protect tree species from permanent damage	Entire Project
Suspend work if high runoff volume is noted or excessive sediment discharge occurs.	Minimize erosion impacts on features when construction activities are proposed within 30 m of significant natural features	Within 30 m of any significant feature, including significant woodlands and wetlands and significant wildlife habitat*
No vehicle traffic on exposed soils, and no heavy machinery traffic on slopes	Limit unnecessary risk of increased erosion, turbidity or sedimentation	Entire Project
Re-vegetate temporary access roads or crane paths to pre-construction conditions as soon as possible.	Limit the potential for erosion or sedimentation due to exposed soil conditions	Entire Project
Maintain existing vegetation buffers around water bodies	Minimize the potential for erosion, and protect wildlife habitat, within riparian areas	Entire Project
Any stockpiled material will be stored more than 30 m from a significant wetland, woodland, or water body	Limit the potential for increased erosion within 30 m of significant natural features	Entire Project
All maintenance activities, vehicle refueling or washing, and chemical storage will be located more than 30 m from any significant feature.	Minimize the risk of contamination of chemical spill around significant natural features	Entire Project
Develop a spill response plan, train staff on appropriate procedures, and keep emergency spill kits on site.	Minimize potential long-term effects or significant contaminations in the event an accidental spill occurs	Entire Project
Dispose of waste material by authorized and approved offsite vendors	Limit the potential for contamination of significant natural features	Entire Project
Implement infiltration techniques to the maximum extent possible.	Minimize potential impacts to soil moisture regime and	Entire Project

Table 5.1: Summary of Construction Phase Mitigation Measures Recommended

Mitigation Measure	Objective(s)	Location(s)
	groundwater stores	
Design roads to promote infiltration.	Minimize potential impacts to soil moisture regime and groundwater stores	Entire Project
No herbicides will be used within significant features or wildlife habitats.	Avoid impacts to natural vegetation species, significant features, and wildlife habitats	Significant woodlands and wetlands, and significant wildlife habitat*
Minimize grading activities to maintain existing drainage patterns, to the fullest extent possible.	Maintain existing surface water drainage patterns	Entire Project
Control rate and timing of water pumping, and restrict taking of water during periods of extreme low flow.	Limit potential impacts on water temperature, surface water storage, and wildlife habitat	Entire Project
Implementation of storm water discharge best management practices.	Avoid potential contamination of water sources	Entire Project
Collect drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal	Limit the potential for soil or water contamination	Horizontal Directional Drilling
Restore and re-vegetate entry/exit pits to pre-construction conditions as soon as possible after construction	Minimize the presence of exposed soil to reduce the potential for erosion	Horizontal Directional Drilling

* Only if these habitats evaluated as significant in this report or are determined to be significant through pre-construction surveys described in **Section 5.6.3.3**