



## ***North Kent Wind 1 Project*** **Natural Heritage Environmental Impact Study Report**

Prepared for:

AECOM

105 Commerce Valley Drive West, 7<sup>th</sup> Floor

Markham, ON

L3T 7W3

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**NATURAL RESOURCE SOLUTIONS INC.**

Aquatic, Terrestrial and Wetland Biologists

***North Kent Wind 1 Project***  
**Natural Heritage Environmental Impact Study Report**

**Project Team:**

<b>Staff</b>	<b>Role</b>
Andrew G. Ryckman	Project Advisor
Pamela Hammer	Project Manager/Biologist
Erin Thompson	Terrestrial and Wetland Biologist
Kaitlin Boddaert	GIS Technician

Report submitted on October 26, 2015



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Andrew Ryckman  
Senior Terrestrial and Wetland Biologist

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## 1.0 Project Description

Natural Resource Solutions Inc. (NRSI) was retained in March 2015 by AECOM, on behalf of North Kent Wind 1 LP, by its general partner, North Kent Wind 1 GP Inc. (North Kent Wind 1), to conduct a Natural Heritage Assessment (NHA) in accordance with the Renewable Energy Approval (REA) Regulation, Ontario Regulation 359/09. This assessment includes a records review, site investigation, evaluation of significance, and environmental impact study of any potentially significant natural features or wildlife habitats at a proposed wind energy generating facility of up to 50 permitted wind turbines, with a nameplate capacity of up to 100 megawatts (MW). The total number of operational turbines will depend on the nominal turbine power rating of each turbine.

The North Kent Wind 1 Project (Project) is being proposed by North Kent Wind 1. North Kent Wind 1 is a joint venture limited partnership owned by affiliates of Pattern Renewable Holdings Canada ULC (Pattern Development) and Samsung Renewable Energy Inc. (Samsung Renewable Energy). North Kent Wind 1 is proposing to develop the Project north of the City of Chatham in the Municipality of Chatham-Kent, Ontario. The Project will be located on both public and private lands. The Project Study Area is generally bounded by Oldfield Line to the north, Bear Line Road to the west, Pioneer Line and Pine Line / Darrell Line to the south, and Centre Sideroad and Caledonia Road to the east. The Project will be located primarily on privately owned land with some components (e.g., electrical collector lines) being placed along public right-of-ways, none of which are proposed on provincial Crown land.

According to Ontario Regulation (O. Reg.) 359/09, as amended, and as per the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012), the Project Location is defined as “...a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project and any air space in which a person is engaging in or proposes to engage in the project”. As described therein, the Project Location boundary is the outer limit of where site preparation and construction activities will occur (i.e., disturbance areas described below) and where permanent infrastructure will be located, including the air space occupied by turbine blades.

In accordance with Section 38 of the REA Regulation, O.Reg. 359/09, NRSI has prepared an Environmental Impact Study (EIS) that identifies and assesses negative environmental effects on significant natural features located within 120m of the Project Location. This includes areas within 120m of proposed turbines, measured from blade tip, as well as within 120m of any areas that may be used as temporary lay-down areas, crane pads, access roads, operations and maintenance (O&M) building, collection, distribution, and transmission lines, as needed, and an interconnection station, defined as the point of interconnection (POI). For the purposes of this report, NRSI will refer to the areas within 120m of the Project Location as the 'Project Area'. See Map 1 for an illustration of the Project Area and natural features.

## 2.0 REA Requirements

Ontario Regulation (O. Reg.) 359/09 – *Renewable Energy Approvals* under *Part V.0.1 of the Act* (herein referred to as the REA Regulation), made under the *Environmental Protection Act*, identifies the requirements for the development of renewable energy projects in Ontario. In accordance with the REA Regulation, the North Kent Wind 1 Project is classified as a Class 4 wind facility and is required to complete a REA.

Section 38 of the REA Regulation specifies that no development activities shall be permitted within 120m of a significant natural feature unless an EIS report is prepared in accordance with any procedures established by the Ministry of Natural Resources and Forestry (MNR). As per Subsection 2, this report should:

1. Identify and assess any negative environmental effects of the project on a natural feature, provincial park or conservation reserve,
2. Identify mitigation measures in respect of any negative environmental effects mentioned in the subclause above,
3. Describe how the environmental effects monitoring plan...addresses any negative environmental effects mentioned in subclause 1, and
4. Describe how the construction plan report...addresses any negative environmental effects mentioned in subclause 1.

This NHA report has been organized and prepared to satisfy the requirements of the EIS as outlined in the REA Regulation.

Additional information relating to the development of this project, including detailed descriptions of the construction activities, has been provided in the *Construction Plan Report* (AECOM 2015a). This document provides construction details and potential environmental impacts associated with the construction of the North Kent Wind 1 Project. Additional information relating to the operation and decommissioning of this project has been provided in the *Design and Operations Report* (AECOM 2015b) and *Decommissioning Plan Report* (AECOM 2015c). A summary of the potential environmental effects, proposed mitigation measures, and monitoring programs that will be implemented during the construction and operational phases of the Project is also provided in Table 4-4 of the *Construction Plan Report* (AECOM 2015a) and Table 6-2 of the *Design and Operations Report* (AECOM 2015b) to satisfy the requirements as outlined in the REA Regulation.

Section 23.1 of the REA Regulation states that “a person who proposes to engage in a renewable energy project in respect of a Class 3, 4 or 5 wind facility shall prepare an environmental effects monitoring plan in respect of birds and bats. O. Reg. 521/10, s. 14”. As per Subsection 2, this Environmental Effects Monitoring Plan (EEMP) should be prepared in accordance with the following MNRF publications:

1. “Birds and Bird Habitats: Guidelines for Wind Power Projects” dated October 2010, as amended from time to time and available from the Ministry of Natural Resources.
2. “Bats and Bat Habitats: Guidelines for Wind Power Projects” dated March 2010, as amended from time to time and available from the Ministry of Natural Resources.

Updates to the above MNRF publications were made in December 2011, and July 2011 respectively.

A separate Bird and Bat EEMP report will be prepared to satisfy the requirements as outlined in the REA Regulation. The Bird and Bat EEMP will be completed in a manner that fully implements monitoring, methodologies, thresholds and proposed mitigation measures as outlined in the most current guidelines released by the MNRF with respect to Birds and Bats as outlined in Section 23.1 of O. Reg. 359/09. The Bird and Bat EEMP for the North Kent Wind 1 Project will be provided to the MNRF for review prior to the submission of an application to the Ministry of the Environment and Climate Change (MOECC) for a REA.

### 3.0 Summary of Evaluation of Significance

In accordance with the REA Regulation, NRSI biologists have completed a detailed evaluation of significance of all potentially significant natural features or wildlife habitats within the North Kent Wind 1 Project Area. The results of these determinations have been discussed in detail within the *North Kent Wind 1 Project: Natural Heritage Evaluation of Significance Report* (NRSI 2015), and are summarized in Table 1. This table summary includes the results of the evaluation of significance for the woodlands, wetlands, and significant wildlife habitat (SWH), including species of conservation concern, and whether each of these features or wildlife habitats require detailed consideration as part of this EIS. All significant natural features (woodlands and wetlands) are mapped on Maps 3-1 to 3-9. The locations of SWHs are mapped on Maps 4-1 to 4-9 through 6-1 to 6-9. Generalized SWHs are mapped on Maps 7-1 to 7-9.

**Table 1. Summary of Candidate Significant Natural Features and Wildlife Habitats Identified During Evaluations of Significance for the North Kent Wind 1 Project**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	Significant/ EIS Required (Y/N)
<b>Woodlands</b>				
WOD-001	>120	CL, CA – Overlapping*	N/A	<b>Yes</b>
WOD-002	37 (T28)	CL, CA – Overlapping*	N/A	<b>Yes</b>
WOD-003	>120	CL, CA – Overlapping*	N/A	<b>Yes</b>
WOD-004	>120	CA – 86	N/A	<b>Yes</b>
WOD-005	>120	CA – 67	N/A	<b>Yes</b>
WOD-006	>120	CA – 85	N/A	<b>Yes</b>
WOD-007	>120	CL, CA – Overlapping*	N/A	<b>Yes</b>
WOD-008	>120	AR, CL, CA, SI – >0.1**	N/A	<b>Yes</b>
WOD-009	>120	AR, CL, CA, SI – >0.1**	N/A	<b>Yes</b>
WOD-010	>120	CL, CA – Overlapping*	N/A	<b>No</b>
WOD-011	92 (T31)	AR, CL, CA – >0.1**	N/A	<b>Yes</b>

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	Significant/ EIS Required (Y/N)
WOD-012	>120	CL, CA – Overlapping*	N/A	Yes
WOD-013	>120	CL, CA – Overlapping*	N/A	No
WOD-016	>120	CL, CA – 23	N/A	Yes
WOD-017	>120	CL, CA – Overlapping*	N/A	Yes
WOD-018	16 (T26)	AR, CL, CA – >0.1**	N/A	No
<b>Wetlands</b>				
WET-001	37 (T28)	CL, CA – Overlapping*	N/A	Yes
WET-002	>120	CL, CA – Overlapping*	N/A	Yes
WET-004	>120	AR, CL, CA – 99	N/A	Yes
WET-005	>120	CA, SI – >0.1**	N/A	Yes
WET-006	92 (T31)	AR, CL, CA – >0.1**	N/A	Yes
<b>Candidate Significant Wildlife Habitats</b>				
WST-001	>120	AR, CA, SI – Overlapping	WT- >120	No
WST-002	10 (T7)	CL, CA – >0.1**	WT – 10 (T7)	No
WST-003	>120	CL, CA – >0.1**	WT – >120	No
WST-004	Overlapping (T48)	AR, CL, CA – Overlapping	WT – Overlapping (T48)	No
WST-005	Overlapping (T48)	AR, CL, CA – Overlapping	WT – Overlapping (T48)	No
BMA-001	37 (T28)	CL, CA – Overlapping*	WT – 37 (T28)	Yes (Treated as Significant)
BMA-002	92 (T31)	AR, CL, CA – >0.1**	WT – 92 (T31)	Yes (Treated as Significant)
CBT-001	37 (T28)	CL, CA – Overlapping*	WT – 37 (T28) AR – 12	Yes (Treated as Significant)
OGF-001	61 (T28)	AR, CL, CA – 12	AR – 12	Yes (Treated as Significant)
ORV-001	>120	AR, CL, CA – 85	AR – 85	Yes (Treated as Significant)
WFN-001	37 (T28)	CL, CA – Overlapping*	WT – 37(T28)	Yes (Treated as Significant)

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	Significant/ EIS Required (Y/N)
AWO-001	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
AWO-002	>120	AR, CL, CA – 85	AR – 85	Yes (Treated as Significant)
MBB-001	37 (T28)	CL, CA – Overlapping*	WT – 37 (T28)	Yes (Treated as Significant)
EWP-001	37 (T28)	CL, CA – Overlapping*	WT – 37 (T28)	Yes (Treated as Significant)
EWP-002	92 (T31)	AR, CL, CA – >0.1**	WT – 92 (T31)	Yes (Treated as Significant)
EWP-003	16 (T26)	AR, CL, CA – >0.1**	WT – 16 (T26)	Yes (Treated as Significant)
WTH-001	61 (T28)	AR, CL, CA – 12	WT – 61 (T28)	Yes (Treated as Significant)
PMI-001	102 (T30)	CL, CA – Overlapping*	AR – 62	Yes (Treated as Significant)
PAW-001	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
PAW-002	>120	AR, CL, CA – 85	AR – 85	Yes (Treated as Significant)
MSE-001	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
MSE-002	>120	AR, CL, CA – 85	AR – 85	Yes (Treated as Significant)
MSE-003	>120	AR, CL, CA – 86	AR – 86	Yes (Treated as Significant)
MSE-004	>120	AR, CL, CA – 99	AR – 99	Yes (Treated as Significant)
MSE-005	92 (T31)	AR, CL, CA – >0.1**	AR – >0.1**	Yes (Treated as Significant)

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	Significant/ EIS Required (Y/N)
MSE-006	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
MSE-007	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
MSE-008	16 (T26)	AR, CL, CA – >0.1**	AR – >0.1**	Yes (Treated as Significant)
RSE-001	102 (T30)	CL, CA – Overlapping*	AR – 62	Yes (Treated as Significant)
RFP-001	>120	AR, CL, CA – 68	AR – 68	Yes (Treated as Significant)
RFP-002	>120	AR, CL, CA – 67	AR – 67	Yes (Treated as Significant)
BAS-001	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
BAS-002	>120	AR, CL, CA – 85	AR – 85	Yes (Treated as Significant)
SRM-001	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
SRM-002	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
BGU-001	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
BGU-002	>120	AR, CL, CA – 85	AR – 85	Yes (Treated as Significant)
BGU-003	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
NFO-001	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
NFO-002	>120	AR, CL, CA – 86	AR – 86	Yes (Treated as Significant)

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	Significant/ EIS Required (Y/N)
NFO-003	>120	AR, CL, CA – 99	AR – 99	Yes (Treated as Significant)
NFO-004	>120	AR, CL, CA – 85	AR – 85	Yes (Treated as Significant)
NFO-005	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
NFO-006	92 (T31)	AR, CL, CA – >0.1**	AR – >0.1**	Yes (Treated as Significant)
NFO-007	102 (T30)	CL, CA – Overlapping*	AR – 62	Yes (Treated as Significant)
NFO-008	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
SHU-001	>120	AR, CL, CA – 99	AR – 99	Yes (Treated as Significant)
SHU-002	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
SHU-003	>120	AR, CL, CA – 85	AR – 85	Yes (Treated as Significant)
GPC-001	>120	AR, CL, CA – 68	AR – 68	Yes (Treated as Significant)
GPC-002	>120	AR, CL, CA – 67	AR – 67	Yes (Treated as Significant)
CPR-001	102 (T30)	CL, CA – Overlapping*	AR – 62	Yes (Treated as Significant)
LTA-001	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
LTA-002	>120	AR, CL, CA – 85	AR – 85	Yes (Treated as Significant)
LTA-003	>120	AR, CL, CA – 86	AR – 86	Yes (Treated as Significant)

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	Significant/ EIS Required (Y/N)
LTA-004	>120	AR, CL, CA – 99	AR – 99	Yes (Treated as Significant)
LTA-005	92 (T31)	AR, CL, CA – >0.1**	AR – >0.1**	Yes (Treated as Significant)
LTA-006	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
LTA-007	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
LTA-008	16 (T26)	AR, CL, CA – >0.1**	AR – >0.1**	Yes (Treated as Significant)
WSE-001	16 (T26)	AR, CL, CA – >0.1**	AR – >0.1**	Yes (Treated as Significant)
WSE-002	>120	AR, CL, CA – 85	AR – 85	Yes (Treated as Significant)
WSE-003	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
WSE-004	>120	AR, CL, CA – 86	AR – 86	Yes (Treated as Significant)
WSE-005	>120	AR, CL, CA – 99	AR – 99	Yes (Treated as Significant)
WSE-006	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
WSE-007	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
WSE-008	92 (T28)	AR, CL, CA – >0.1**	AR – >0.1**	Yes (Treated as Significant)
WSE-009	102 (T30)	CL, CA – Overlapping*	AR – 62	Yes (Treated as Significant)
CUP-001	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	Significant/ EIS Required (Y/N)
CUP-002	>120	AR, CL, CA, SI – >0.1**	AR – >0.1*	Yes (Treated as Significant)
CUP-003	92 (T31)	AR, CL, CA – >0.1**	AR – >0.1**	Yes (Treated as Significant)
CUP-004	102 (T30)	CL, CA – Overlapping*	AR – 62	Yes (Treated as Significant)
RGL-001	102 (T30)	CL, CA – Overlapping*	AR – 62	Yes (Treated as Significant)
SLT-001	102 (T30)	CL, CA – Overlapping*	AR – 62	Yes (Treated as Significant)
WIS-001	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
WIS-002	>120	AR, CL, CA – 86	AR – 86	Yes (Treated as Significant)
WIS-003	>120	AR, CL, CA – 99	AR – 99	Yes (Treated as Significant)
WIS-004	>120	AR, CL, CA – 85	AR – 85	Yes (Treated as Significant)
WIS-005	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
WIS-006	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
WIS-007	92 (T31)	AR, CL, CA – >0.1**	AR – >0.1**	Yes (Treated as Significant)
WIS-008	16 (T26)	AR, CL, CA – >0.1**	AR – >0.1**	Yes (Treated as Significant)
GIW-001	>120	AR, CL, CA – 86	AR – 86	Yes (Treated as Significant)
GIW-002	>120	AR, CL, CA – 99	AR – 99	Yes (Treated as Significant)

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	Significant/ EIS Required (Y/N)
GIW-003	92 (T31)	AR, CL, CA – >0.1**	AR – >0.1**	Yes (Treated as Significant)
GIW-004	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
GIW-005	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
GIW-006	>120	AR, CL, CA, SI – >0.1**	AR – >0.1**	Yes (Treated as Significant)
GIW-007	>120	AR, CL, CA – 85	AR – 85	Yes (Treated as Significant)
GIW-008	102 (T30)	CL, CA – Overlapping*	AR – 62	Yes (Treated as Significant)
VCR-001	102 (T30)	CL, CA – Overlapping*	AR – 62	Yes (Treated as Significant)
CVI-001	37 (T28)	CL, CA – Overlapping*	AR – 12	Yes (Treated as Significant)
<b>Generalized Candidate Significant Wildlife Habitats</b>				
Waterfowl Stopover and Staging Areas (Terrestrial)	N/A	N/A	WT – >120	Yes
Bat Maternity Colonies	N/A	N/A	WT – >120	Yes
Turtle Wintering Areas	N/A	N/A	No development within habitat	Yes
Snake Hibernaculum	N/A	N/A	WT – >120 AR – >120	Yes
Colonially – Nesting Bird Breeding Habitat (Tree/Shrubs)	N/A	N/A	WT – >120 AR – >120	Yes
Amphibian Breeding Habitat (Woodland)	N/A	N/A	AR – >120	Yes

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	Significant/ EIS Required (Y/N)
Marsh Bird Breeding Habitat	N/A	N/A	WT – >120	<b>Yes</b>
Terrestrial Crayfish	N/A	N/A	No development within habitat	<b>Yes</b>
Grasshopper Sparrow	N/A	N/A	WT – >120	<b>Yes</b>
Common Nighthawk	N/A	N/A	WT – >120	<b>Yes</b>
Eastern Wood-Pewee	N/A	N/A	WT – >120	<b>Yes</b>
Wood Thrush	N/A	N/A	WT – >120	<b>Yes</b>
Red-headed Woodpecker	N/A	N/A	No development within habitat	<b>Yes</b>
Pawpaw	N/A	N/A	AR – >120	<b>Yes</b>
Muskingum Sedge	N/A	N/A	AR – >120	<b>Yes</b>
Rigid Sedge	N/A	N/A	AR – >120	<b>Yes</b>
Hoary Tick-trefoil	N/A	N/A	AR – >120	<b>Yes</b>
Round-Fruited Panic Grass	N/A	N/A	AR – >120	<b>Yes</b>
Blue Ash	N/A	N/A	AR – >120	<b>Yes</b>
Swamp Rose-mallow	N/A	N/A	AR – >120	<b>Yes</b>
American Lotus	N/A	N/A	AR – >120	<b>Yes</b>
Black Gum	N/A	N/A	AR – >120	<b>Yes</b>
Northern Fogfruit	N/A	N/A	AR – >120	<b>Yes</b>
Shumard Oak	N/A	N/A	AR – >120	<b>Yes</b>
Gray-headed Prairie Coneflower	N/A	N/A	AR – >120	<b>Yes</b>
Climbing Prairie Rose	N/A	N/A	AR – >120	<b>Yes</b>
Lizard's Tail	N/A	N/A	AR – >120	<b>Yes</b>
Wild Senna	N/A	N/A	AR – >120	<b>Yes</b>
Cup-Plant	N/A	N/A	AR – >120	<b>Yes</b>
Southern Slender Ladies' Tresses	N/A	N/A	AR – >120	<b>Yes</b>
Wing-stem	N/A	N/A	AR – >120	<b>Yes</b>
Giant Ironweed	N/A	N/A	AR – >120	<b>Yes</b>
Virginia Culver's-root	N/A	N/A	AR – >120	<b>Yes</b>

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	Significant/ EIS Required (Y/N)
Cream Violet	N/A	N/A	AR – >120	<b>Yes</b>
Blue-ringed Dancer	N/A	N/A	No development within habitat	<b>Yes</b>
Blue-tipped Dancer	N/A	N/A	No development within habitat	<b>Yes</b>
Variegated Meadowhawk	N/A	N/A	No development within habitat	<b>Yes</b>

*\* Directional drilling will be used to bore beneath this feature in order to avoid impacts to the feature itself.*

*\*\* On the mapping, this woodland appears to be overlapped; however, all project components, including the construction disturbance area, will be located adjacent to the woodland (>0.1m).*

#### **Legend**

WT: Wind Turbine

AR: Access Road

CL: Collector Lines

CA: Construction Activity/Temporary Infrastructure/Balance of Operations

SI: Supporting Infrastructure - Building/Substation/Laydown Area/Point of Interconnect

## 4.0 Description of the Proposed Undertaking

In accordance with the REA Regulation, the presence of significant natural features within the North Kent Wind 1 Project Area has been reviewed by NRSI biologists. Based on natural features, vegetation communities, and wildlife species present within the Project Area, summarized in the previous section, NRSI biologists have examined the potential for this project to impact the surrounding features. NRSI biologists have completed a detailed records review, site investigation, and evaluation of significance of all potentially significant natural features and wildlife habitats within the North Kent Wind 1 Project Area in accordance with the NHA Guide for Renewable Energy Projects (OMNR 2012), SWH Technical Guide (OMNR 2000), and the SWH Criteria Schedules for Ecoregion 7E (MNRF 2015). NRSI biologists have identified several significant, or treated as significant, natural features and wildlife habitats within the North Kent Wind 1 Project Area.

Additional information relating to the development of this project, including detailed descriptions of the construction activities, has been provided in the *Construction Plan Report* (AECOM 2015a). This document provides construction details and potential environmental impacts associated with the construction of the North Kent Wind 1 Project. Additional information relating to the operation and decommissioning of this project has been provided in the *Design and Operations Report* (AECOM 2015b) and *Decommissioning Plan Report* (AECOM 2015c). The specific environmental impacts relating to the natural features and wildlife habitats are discussed in detail within the following sections. All identified impacts are discussed in this section assuming no mitigation measures are applied, and therefore are described as a “worst case scenario” for impacts to natural features and wildlife habitats. Recommendations to mitigate identified impacts as well as monitoring of effectiveness of these proposed mitigation measures are discussed in Section 5.0.

### 4.1 Site Preparation and Servicing

Several site preparation activities will be required at the North Kent Wind 1 Project in advance of specific construction activities. These activities include clearing and leveling

of the Project Location. Potential vegetation removal and grading activities associated with the development of this Project have been considered in Table 2.

**Table 2. Summary of Site Preparation and Servicing Activities and Potential Negative Environmental Effects within the North Kent Wind 1 Project Area**

Project Activity	Extent of Effect	Potential Negative Effects
Vegetation Removal (Shoreline/Riparian Habitat)	<p>A total of 62 water bodies exist within the North Kent Wind 1 Project Area, and the Project Location overlaps with 53 of these water bodies. As the Project Location may cross a given water body at multiple locations, a total of 127 individual crossing locations have been identified.</p> <p>Minor removal of riparian vegetation may occur where watercourse crossings are required. In addition, these watercourse crossing locations may overlap with SWH.</p> <p>Areas of vegetation removal will be extremely limited, and in most cases will occur perpendicular to watercourses to limit the amount of vegetation (if any) that may require removal. Details of proposed crossing locations including structure and specific location are not known at this time and will be addressed during the permitting phase of the Project.</p>	<ul style="list-style-type: none"> <li>• Loss of shade, resulting in possible increase in water temperatures</li> <li>• Reduced bank stability</li> <li>• Increased erosion, sedimentation and turbidity</li> <li>• Reduced stability and increased erosion of sensitive landforms</li> <li>• Loss or disturbance of riparian vegetation and wildlife species</li> </ul>
Vegetation Removal (Wetland Habitat)	None expected	N/A
Vegetation Removal (Upland Habitat)	<p>The detailed site investigation and evaluation of significance have confirmed that no vegetation removal will occur within significant woodlands.</p> <p>Site preparation activities are proposed immediately adjacent to some of these woodlands, and incidental vegetation damage/removal</p>	<ul style="list-style-type: none"> <li>• Loss of vegetation and wildlife habitat</li> <li>• Loss of natural linkages and corridors for animal movement</li> <li>• Temporary disturbance of wildlife species</li> </ul>

Project Activity	Extent of Effect	Potential Negative Effects
	may occur.  Other areas of upland vegetation clearing will be limited to hedgerow crossings or roadside right-of-ways which will occur perpendicular to the hedgerow orientation and/or be limited to the right-of-way.	
Grading	Relatively minor grading activities are expected to occur throughout the Project Area. Grading is important to ensure crane pads, staging areas, and other construction areas are level.	<ul style="list-style-type: none"> <li>• Increased erosion, sedimentation and turbidity</li> <li>• Changes in natural drainage and altered surface runoff</li> <li>• Changes in soil moisture</li> <li>• Soil compaction</li> <li>• Disturbance of wildlife species</li> </ul>

## 4.2 Construction

The construction phase of the North Kent Wind 1 Project will involve the installation of up to 50 permitted wind energy generating turbines, as well as all supporting infrastructure, such as temporary construction offices, temporary lay-down areas, crane pads, an O&M building, access roads, meteorological towers, pad mount transformers, collection lines, collector substation, microwave tower, transmission lines, as needed, and the POI. The details of these construction activities and potential negative effects that may be associated with each activity are outlined in Table 3.

**Table 3. Summary of Construction Activities and Potential Negative Environmental Effects within the North Kent Wind 1 Project Area**

Project Activity	Extent of Effect	Potential Negative Effects
Ancillary Facility Construction	Five types of supporting facilities may be associated with the North Kent Wind 1 Project. These include a collector substation, a microwave tower, up to 2 meteorological towers, a POI, and an O&M building.	<ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture and compaction</li> <li>• Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Increase in impervious surfaces and increased surface run-off</li> <li>• Temporary noise, and potential avoidance or disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> </ul>
Turbine Erection	A total of 50 proposed turbine locations will be permitted for the North Kent Wind 1 Project.	<ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> </ul>

Project Activity	Extent of Effect	Potential Negative Effects
	<p>It is proposed that approximately 40 wind turbines will be constructed. The total number of turbines will depend on the nominal turbine power rating of each turbine.</p> <p>As part of the turbine erection, laydown areas and crane pads will be placed around the base of the turbine.</p> <p>The crane pads, measuring approximately 0.2 acres, will require the removal of topsoil and subsoil, and crane pad locations will be filled with a varying mixture of granular base material and crushed gravel depending on site-specific conditions.</p> <p>Following the erection of wind turbines, the crane pad areas will be restored so that existing land uses can continue., It is possible that during excavation for turbine foundations, groundwater or precipitation entering the excavation will require pumping.</p>	<ul style="list-style-type: none"> <li>• Changes in soil moisture and compaction</li> <li>• Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Increase in impervious surfaces and increased surface run-off</li> <li>• Changes in surface water drainage</li> <li>• Disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> </ul> <p>If dewatering of excavated wind turbine foundations is required:</p> <ul style="list-style-type: none"> <li>• Reduced groundwater discharge</li> <li>• Reduced stream baseflows and upwelling</li> <li>• Increased water temperatures</li> <li>• Reduced water quality (i.e. increased turbidity)</li> <li>• Increased water quantity to receiving area or water body.</li> </ul>
Roads – Water Crossings	<p>A total of 53 water bodies will be crossed by the Project Location at 127 individual locations (the Project Location may cross a given water body at multiple locations)</p> <p>Most of these represent crossings with collection lines along the road right-of-way. The type of collector lines (overhead vs. underground) to be used in the road right-of-way is still being finalized, and impacts associated with each type are considered as part of this EIS.</p> <p>The remaining watercourses will be crossed on private property by underground collector lines, either through horizontal directional drilling or through open cut burying in dry conditions and/or by access roads following appropriate in-water guidelines (if applicable).</p>	<ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Changes in stream alignment or flow regimes</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture and compaction</li> <li>• Increase in impervious surfaces and increased surface run-off</li> <li>• Changes in surface water drainage</li> <li>• Loss of riparian vegetation</li> <li>• Interruption of a linkage along a watercourse</li> <li>• Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Barriers to wildlife movement</li> <li>• Increased wildlife mortality due to vehicle collisions</li> <li>• Disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> </ul>

Project Activity	Extent of Effect	Potential Negative Effects
	<p>Several of the crossing locations are associated with new access roads, requiring the installation of a new water crossing structure.</p> <p>Additional water crossing locations situated along existing municipal roads may also require upgrades, and therefore new crossing structures. However, the need for these upgrades and exact locations (if any) must be determined through consultation with the contractors completing this work.</p>	
Roads	<p>Access roads will be constructed to be up to 15m wide during the construction phase in order to accommodate cranes and transportation equipment. After construction, these roads may be reduced in size to approximately 8-12m in width, to allow access to turbines and associated infrastructure for maintenance and repairs.</p>	<ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Increased surface runoff and reduced infiltration</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Changes in surface water drainage.</li> <li>• Changes in soil moisture and compaction</li> <li>• Increase in impervious surfaces and increased surface run-off</li> <li>• Loss of wildlife habitat</li> <li>• Barriers to wildlife movement</li> <li>• Increased wildlife mortality due to vehicle collisions</li> <li>• Disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> </ul>
Collector Lines	<p>Underground and overhead collector lines are both being considered as options for this Project.</p> <p>Most of the underground collector lines within the Project Area will be installed by way of open cut trenches. This will include all collector lines on private land and all of the roadside collector system. Where possible, underground electrical collector lines will be installed within the access road construction disturbance area in order to minimize the area of disturbed land. Underground electrical collector lines will be buried at a minimum depth of approximately 1.2m.</p> <p>Horizontal directional drilling will also be required within the North</p>	<p><u>Underground Collector Lines – Open Cut/ Directional Drilling</u></p> <ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture and compaction</li> <li>• Disturbance of wildlife species</li> <li>• Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Potential for 'frac-out' (the escape of drilling mud and/or fluids into the environment as a result of a spill, drilling tunnel collapse or rupture of mud to the surface due to excessive pressure from an obstruction within the borehole) into significant natural features and/or wildlife habitats where directional drilling is proposed</li> <li>• Reduced water quality (i.e. increased turbidity)</li> <li>• Reduced infiltration and groundwater discharge</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> <li>• Removal of vegetation within the existing municipal road right-of-way</li> </ul>

Project Activity	Extent of Effect	Potential Negative Effects
	<p>Kent Wind 1 Project Area. Directional drilling will be used in some locations to extend collector lines beneath natural features, wildlife habitats, or water bodies without direct impact. Although the exact locations of directional drilling are currently unknown, impacts associated with this construction activity have been considered as part of this EIS.</p> <p>If overhead electrical collector lines are required, they will be constructed on either wood, steel or concrete hydro pole structures.</p>	<p><u>Overhead Collector Lines</u></p> <ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture and compaction</li> <li>• Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> <li>• Removal of vegetation within the existing municipal road right-of-way</li> </ul>
Construction Staging Area	<p>A temporary construction staging area will be located within the North Kent Wind 1 Project Area and will range in size from 10-15ha.</p> <p>Topsoil and subsoil will be stripped and stockpiled on site and the construction staging areas will be constructed of compacted surface material suitable for vehicular traffic and equipment / component storage. The depth of the graveled areas will vary and will be dependent on conditions encountered during the time of construction.</p> <p>Following construction, the temporary construction laydown area will be restored to pre-existing conditions to allow agricultural or prior activities to resume, at the discretion of landowners.</p>	<ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Changes in soil moisture and compaction</li> <li>• Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Increase in impervious surfaces and increased surface run-off</li> <li>• Changes in surface water drainage</li> <li>• Disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> </ul>

### 4.3 Operation

The operational phase of the North Kent Wind 1 Project will include the operation of up to 50 wind energy generating turbines, as well as all associated regular maintenance activities. The potential negative effects of this facility during the operational phase of the Project are summarized in Table 4.

**Table 4. Summary of Operation Activities and Potential Negative Environmental Effects within the North Kent Wind 1 Project Area**

Project Activity	Extent of Effect	Potential Negative Effects
Water Taking (Ground Water)	During operation of the Project, it is expected that approximately 15 full time employees will regularly use the O&M building. Non-potable water taking during operation will be limited to regular personnel requirements, such as washroom facilities, sinks, etc.	<ul style="list-style-type: none"> <li>• Reduced groundwater discharge</li> <li>• Reduced stream baseflows and upwelling</li> <li>• Increased water temperatures</li> </ul>
Application of Herbicides	None expected	N/A
Overhead Collector Line Operation	<p>Collector lines will carry the electricity from the pad-mounted transformers to either an adjacent wind turbine generator that is connected in parallel, or to a junction box that is connected to several other wind turbine generators that are within the same electrical circuit. From the junction box, the electrical power is then carried to the collector substation.</p> <p>Mechanical vegetation control will be required around overhead transmission/collector lines to prevent any damage to the lines and ensure safe operation. The vegetation is typically cleared by mechanized equipment (e.g., chainsaw / hydro axe).</p>	<ul style="list-style-type: none"> <li>• Loss of natural vegetation</li> <li>• Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Direct mortality to local wildlife during mechanical vegetation control</li> <li>• Direct wildlife (avian) mortality due to collisions with lines</li> </ul>
Turbine Operation	A total of 50 proposed turbine locations will be permitted for the North Kent Wind 1 Project. It is proposed that approximately 40 wind turbines will be operational. The total number of turbines will depend on the nominal turbine power rating of each turbine.	<ul style="list-style-type: none"> <li>• Disturbance to wildlife species</li> <li>• Direct wildlife (avian and bat) mortality due to collisions with turbines</li> </ul>
Turbine Maintenance	<p>Regular maintenance will occur at all of the operational turbines at the North Kent Wind 1 Project.</p> <p>In addition to regularly scheduled maintenance, occasional unscheduled maintenance activities may be required.</p>	<ul style="list-style-type: none"> <li>• Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Disturbance to wildlife species</li> <li>• Increased wildlife mortality due to vehicle collisions</li> </ul>

#### 4.4 Decommissioning

The decommissioning phase of the North Kent Wind 1 Project will include the disassembly and removal of the Project infrastructure associated with this project. The details of this project phase, along with potential negative effects, are provided in Table 5.

**Table 5. Summary of Decommissioning Activities and Potential Negative Environmental Effects Within the North Kent Wind 1 Project Area**

Project Activity	Extent of Effect	Potential Negative Effects
Removal of Ancillary Facilities	<p>Five types of supporting facilities may be associated with the North Kent Wind 1 Project. These include a collector substation, a microwave tower, up to 2 meteorological towers, a POI, and an O&amp;M building.</p> <p>The collector substation, microwave tower, and O&amp;M building, as well as all associated infrastructure, will be dismantled and removed from the Project Area.</p> <p>A single microwave tower, and up to 2 meteorological towers will be permitted for construction and all constructed microwave and meteorological towers will be removed unless otherwise requested by the Municipality of Chatham-Kent or local aviation groups (and agreed to by North Kent Wind 1 and the property owner) for them to remain in place.</p>	<ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Change in soil moisture and compaction</li> <li>• Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Temporary noise, and potential avoidance or disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> </ul>
Removal of Turbine Infrastructure	<p>A total of 50 proposed turbine locations will be permitted for the North Kent Wind 1 Project. All turbines constructed will be removed as per the decommissioning plan.</p> <p>A crane pad and wind turbine laydown area will be constructed at each turbine location to accommodate the dismantling of the wind turbine generators.</p> <p>Following the removal of turbines, crane pads will be removed and the land will be restored to land use similar to what was present prior to turbine installation, to allow for agricultural activities to continue.</p> <p>Removal of turbine components will</p>	<ul style="list-style-type: none"> <li>• Accidental vegetation removal</li> <li>• Increased erosion, sedimentation, and turbidity</li> <li>• Fugitive dust emission</li> <li>• Changed in soil moisture and compaction</li> <li>• Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>• Changes in surface water drainage</li> <li>• Disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> </ul> <p>If dewatering of excavated wind turbine foundations is required:</p> <ul style="list-style-type: none"> <li>• Reduced groundwater discharge</li> <li>• Reduced stream baseflows and upwelling</li> <li>• Increased water temperatures</li> <li>• Reduced water quality (i.e. increased turbidity)</li> </ul>

Project Activity	Extent of Effect	Potential Negative Effects
	also include the removal of 1m of the underground foundation. Excavated foundation areas will be backfilled with subsoil and topsoil to match the original soil horizons and elevation, and the area will be graded and contoured.	<ul style="list-style-type: none"> <li>Increased water quantity to receiving area or water body.</li> </ul>
Removal of Access Roads	Access road removal will be dependent on the requirements and agreements in place with the individual landowner. Impacted lands will be restored to land use present prior to access road construction, at the discretion of landowners.	<ul style="list-style-type: none"> <li>Accidental vegetation removal</li> <li>Increased erosion, sedimentation, and turbidity</li> <li>Fugitive dust emission</li> <li>Changes in soil moisture and compaction</li> <li>Changes in surface water drainage</li> <li>Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>Disturbance of wildlife species</li> <li>Increased vegetation species competition through introduction of invasive vegetation species</li> </ul>
Removal of Collector Lines	<p>Underground and overhead collector lines are both being considered as options for this Project.</p> <p>Overhead cables and transmission poles that are not shared with Hydro One or other utilities will be removed. Underground collector lines are expected to remain in place at the end of the Project life; however, at the connection points, where the underground collector lines come to the surface, the collector lines will be cut to a depth of approximately 1m below grade.</p> <p>Any collector lines located at directionally drilled watercourse crossings or underneath significant natural features and wildlife habitats will remain in place; however, the connection point will be severed at a point located outside of the Lower Thames Valley Conservation Authority (LTVCA) and St. Clair Region Conservation Authority (SCRCA) Regulated Areas, where possible, and outside of significant natural features and/or wildlife habitats.</p>	<p><u>Underground Collector Lines – Open Cut/ Directional Drilling</u></p> <ul style="list-style-type: none"> <li>Accidental vegetation removal</li> <li>Increased erosion, sedimentation, and turbidity</li> <li>Fugitive dust emission</li> <li>Changes in soil moisture and compaction</li> <li>Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>Disturbance of wildlife species</li> <li>Increased vegetation species competition through introduction of invasive vegetation species</li> <li>Removal of vegetation within the existing municipal road right-of-way</li> </ul> <p><u>Overhead Collector Lines</u></p> <ul style="list-style-type: none"> <li>Accidental vegetation removal</li> <li>Increased erosion, sedimentation, and turbidity</li> <li>Fugitive dust emission</li> <li>Changes in soil moisture and compaction</li> <li>Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> <li>Disturbance of wildlife species</li> <li>Increased vegetation species competition through introduction of invasive vegetation species</li> <li>Removal of vegetation within the existing municipal road right-of-way</li> </ul>
Construction Staging Area	Upon decommissioning of the Project, temporary staging and laydown areas will be constructed and appropriate decommissioning activities will be carried out within these designated areas.	<ul style="list-style-type: none"> <li>Accidental vegetation removal</li> <li>Increased erosion, sedimentation, and turbidity</li> <li>Fugitive dust emission</li> <li>Changes in soil moisture and compaction</li> <li>Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features</li> </ul>

Project Activity	Extent of Effect	Potential Negative Effects
		<ul style="list-style-type: none"> <li>• Increase in impervious surfaces and increased surface run-off</li> <li>• Changes in surface water drainage</li> <li>• Disturbance of wildlife species</li> <li>• Increased vegetation species competition through introduction of invasive vegetation species</li> </ul>

#### 4.5 Approach to Impact Assessment

For the purposes of this report, the analysis of potential impacts has been divided into the different classifications of significant natural features, as identified by the evaluation of significance section of this report, with SWH further subdivided based on the distance to Project Location, type of wildlife habitat, and methods of determining significance, as follows:

- Significant Woodlands
- Significant Wetlands
- SWH
  - Project Location within SWH
  - Project Location within 120m of SWH Treated as Significant
  - Generalized Impacts to Wildlife Habitat

Potential impacts on each of the significant features or wildlife habitats within the North Kent Wind 1 Project Area are discussed collectively based on their respective distance to the closest Project Location. Although grouped by closest distance to Project Location, all potential impacts of the proposed development within 120m of each feature are encompassed within the tables. Given the potential impacts at various distances to Project Location, NRSI has grouped the natural features or wildlife habitats that are within 120m of the Project Location into 3 more specific distance categories from the Project Location with an operational impact: overlapping, 0-30m, and greater than 30m to 120m. These distance categories have been chosen as they each have the potential for different types of impacts on wildlife habitats and natural features. Although there is an expected gradual increase in potential impacts as development occurs closer to natural features or wildlife habitats, a distance of 30m has been chosen as a suitable division between specific types of impacts. For areas where the Project Location is within 30m of a natural feature or SWH, there is increased potential for impacts relating to sedimentation and erosion, visual and noise disturbance to wildlife, impacts from accidental spills, and other localized impacts. The impacts within each of these distance categories are expected to be relatively consistent within the given distance, with slightly different impacts (and related proposed mitigation measures) associated with each distance category.

## 5.0 Environmental Impact Study

In accordance with the REA Regulation, the presence of significant natural features within the North Kent Wind 1 Project Area has been reviewed by NRSI biologists. Based on natural features, vegetation communities, and wildlife habitats present within the Project Area, summarized in previous sections, NRSI biologists have evaluated the Project Area for potentially significant natural areas and wildlife habitats. NRSI biologists have identified several significant, or treated as significant, natural features and wildlife habitats within the North Kent Wind 1 Project Area in accordance with the NHA Guide for Renewable Energy Projects (OMNR 2012) and the SWH Criteria Schedules for Ecoregion 7E (MNR 2015).

Each of these significant natural features are discussed in more detail below, including potential impacts and proposed mitigation measures. Additional consideration will be given to mitigation measures and monitoring programs for this Project in the Bird and Bat EEMP, which will be prepared under a separate cover. This report identifies potential environmental effects of the Project, proposed mitigation measures, and details the monitoring programs that will be implemented during the various phases of the North Kent Wind 1 Project. A summary of the potential environmental effects, proposed mitigation measures, and monitoring programs that will be implemented during the construction and operational phases of the Project is also provided in Table 4-4 of the *Construction Plan Report* (AECOM 2015a) and Table 6-2 of the *Design and Operations Report* (AECOM 2015b).

### 5.1 Significant Natural Areas

No natural areas, including provincial parks, conservation reserves, or provincially significant Areas of Natural and Scientific Interest (Life Science or Earth Science) were identified within the North Kent Wind 1 Project Area.

### 5.2 Significant Woodlands and Wetlands

NRSI biologists have identified several significant woodlands and wetlands within the North Kent Wind 1 Project Area. Potential negative impacts and proposed mitigation measures for each of these features is detailed in Table 6. This table discusses each of

these natural feature types (woodland and wetland) based on the general distances that they are found from the Project Location. As described above, for the purposes of impact assessment and recommended mitigation measures, the general distance categories have been established as overlapping, 0-30m, and greater than 30m to 120m from the Project Location. As most of the potential negative impacts and proposed mitigation measures for each of the features detailed in Table 6 apply during the construction and decommissioning phases of the Project, impacts and mitigation measures relating to the operation of the Project are specifically noted where they occur.

Table 6. Summary of Significant Woodlands and Wetlands within the North Kent Wind 1 Project Area

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Proposed Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
Woodlands				
WOD-001 WOD-002 WOD-003 WOD-007 WOD-012 WOD-017	Overlapping (horizontal directional drilling under feature)	<ul style="list-style-type: none"><li>Accidental vegetation removal (direct vegetation removal is not anticipated due to directional drilling at these locations)</li></ul>	<ul style="list-style-type: none"><li>Clearly delineate work area using erosion fencing or other barrier to avoid accidental damage to retained species.</li><li>Where construction is within 10m of a significant woodland, erect erosion fencing, or other barrier, to correspond to the disturbance area limits.</li><li>Place the erosion fencing, or other barrier, as far away as possible from the significant woodland and no closer to the significant woodland than the dripline.</li><li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to significant woodlands. This could include instances where the significant woodland is at higher elevation than the occurring construction activity. The environmental monitor will be a contractor with experience providing environmental recommendations on a large-scale construction site.</li><li>No use of herbicides (Project related activities only) within significant woodlands during the construction, operation, and decommissioning phases.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Minimize direct impacts on vegetation communities and protect rare/sensitive habitats</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Undertake regular monitoring of the dripline within 10m of construction activities for the duration of the construction and decommissioning phases of this Project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant woodland.</li><li>Undertake regular monitoring of the dripline to ensure the work area is clearly delineated and dripline boundaries are respected when construction is anticipated to occur within 10-30m of significant woodlands, at a minimum frequency of once per month.</li></ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"><li>Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques.</li><li>Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species, depending on the extent of damage incurred.</li></ul>
		<ul style="list-style-type: none"><li>Disturbance of local wildlife</li></ul>	<ul style="list-style-type: none"><li>Avoid construction activities during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>), wherever possible, to limit disturbance of local wildlife.</li><li>If construction activities must occur during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>), a biologist will conduct nest searches in areas where natural vegetation will be removed, to ensure there will be no impact to breeding birds. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</li><li>Schedule construction activities within 30m of significant woodlands to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever possible.</li><li>If construction activities within 30m of significant woodlands must occur outside of daylight hours, spotlights will be directed downward and/or away from the woodland to limit potential light disturbance to breeding birds.</li><li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Avoid direct impacts on breeding birds and their habitats.</li><li>Minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances.</li></ul> <p>No monitoring or contingency plan required.</p>
		<ul style="list-style-type: none"><li>Sedimentation and erosion</li></ul>	<ul style="list-style-type: none"><li>Implement a sediment and erosion control plan.</li><li>Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area for the duration of the construction or decommissioning activities, as identified within the sediment and erosion control plan.</li><li>Erect erosion fencing, or other barrier, to correspond to the construction disturbance area limits.</li><li>Place the erosion fencing, or other barrier, as far away as possible from the significant woodland and no closer to the significant woodland than the dripline.</li><li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing, when appropriate.</li><li>Utilize erosion blankets, silt fencing, straw bales, etc. for construction activities within 30m of significant woodlands.</li><li>Store any stockpiled material more than 30m from significant woodlands throughout the construction, operation, and decommissioning phases.</li><li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li><li>Locate all directional drill entry and exit pits a sufficient distance from the edge of the significant woodlands to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone.</li><li>Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal.</li><li>Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Minimize impacts to significant woodlands and associated wildlife habitats.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place.</li><li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li><li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li><li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li><li>An environmental monitor will be present when active directional drilling is occurring.</li></ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"><li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions.</li><li>If ‘frac-out’ occurs, immediately implement ‘frac-out’ contingency plan.</li><li>If sedimentation and erosion control measures fail or/and degradation of the natural feature occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas, depending on the extent of degradation incurred.</li><li>If fugitive dust control measures fail and degradation of the natural feature occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li><li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all</li></ul>
		<ul style="list-style-type: none"><li>Fugitive dust emission</li></ul>	<ul style="list-style-type: none"><li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li><li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor and construction team. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li><li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li><li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li></ul>	
		<ul style="list-style-type: none"><li>Spills (i.e. oil,</li></ul>	<ul style="list-style-type: none"><li>Develop a spill response plan and train staff on appropriate procedures.</li></ul>	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Proposed Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
		gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases	<ul style="list-style-type: none"><li>• Develop a ‘frac-out’ contingency plan and train staff on appropriate procedures during the construction phase.</li><li>• Keep emergency spill kits on site.</li><li>• Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li><li>• Dispose of waste material by authorized and approved off-site vendors.</li><li>• Store hazardous materials in designated areas.</li><li>• Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from significant woodlands.</li></ul>	<p>efforts are made to completely remediate affected areas, especially prior to rain events.</p> <ul style="list-style-type: none"><li>• If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li></ul>
		<ul style="list-style-type: none"><li>• Changes in soil moisture and compaction</li></ul>	<ul style="list-style-type: none"><li>• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li><li>• Minimize paved surfaces and design roads to promote infiltration.</li><li>• Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and topsoil removal.</li><li>• Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or other barrier.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>• Minimize impact to soil moisture regime and vegetation species composition.</li></ul> <p>No monitoring or contingency plan required.</p>
WOD-008 WOD-009 WOD-011 WOD-016	0-30m	<ul style="list-style-type: none"><li>• Accidental vegetation removal (the Project Location is sited outside of woodlands - impact to vegetation is not anticipated)</li></ul>	<ul style="list-style-type: none"><li>• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to retained species.</li><li>• Where construction is within 10m of a significant woodland, erect erosion fencing, or other barrier, to correspond to the disturbance area limits.</li><li>• Place the erosion fencing, or other barrier, as far away as possible from the significant woodland and no closer to the significant woodland than the dripline.</li><li>• Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include situations where the natural feature is at higher elevation than construction activity.</li><li>• No use of herbicides (Project related activities only) within significant woodlands during the construction, operation, and decommissioning phases.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>• Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>• Undertake regular monitoring of the dripline to ensure the work area is clearly delineated within 10m of construction activities for the duration of the construction and decommissioning phases of this Project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant woodland.</li><li>• Undertake regular monitoring of the dripline to ensure the work area is clearly delineated and dripline boundaries are respected when construction is anticipated to occur within 10-30m of significant woodlands, at a minimum frequency of once per month.</li></ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"><li>• Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques.</li><li>• Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species, depending on the extent of damage incurred.</li></ul>
		<ul style="list-style-type: none"><li>• Disturbance of local wildlife</li></ul>	<ul style="list-style-type: none"><li>• Avoid construction activities within 30m of significant woodlands during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>), wherever possible, to limit disturbance of local wildlife.</li><li>• If construction activities will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</li><li>• Schedule construction activities within 30m of significant woodlands to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever possible.</li><li>• If construction activities within 30m of significant woodlands must occur outside of daylight hours, any spotlights will be directed downward and/or away from the woodland to limit potential light disturbance to breeding birds.</li><li>• On site speed limits will be clearly posted, applied, and followed by construction staff.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>• Avoid direct impacts on breeding birds and their habitats.</li><li>• Minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances.</li></ul> <p>No monitoring or contingency plan required.</p>
		<ul style="list-style-type: none"><li>• Sedimentation and erosion</li></ul>	<ul style="list-style-type: none"><li>• Implement a sediment and erosion control plan.</li><li>• Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area for the duration of the construction or decommissioning activities, as identified within the sediment and erosion control plan.</li><li>• Erect erosion fencing, or other barrier, to correspond to the construction disturbance area limits.</li><li>• Place the erosion fencing, or other barrier, as far away as possible from the significant woodland and no closer to the significant woodland than the dripline.</li><li>• Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>• Utilize erosion blankets, silt fencing, straw bales, etc. for construction activities within 30m of significant woodlands.</li><li>• Store any stockpiled material more than 30m from a significant woodland during the construction, operation, and decommissioning phases.</li><li>• Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if high runoff volume is noted or excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li><li>• Re-vegetate areas adjacent to the woodland as soon as possible after construction activities are complete.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>• Minimize impacts to significant woodlands and associated wildlife habitats.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>• Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place.</li><li>• Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li><li>• Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li><li>• Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li></ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"><li>• If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions.</li><li>• If sedimentation and erosion control measures fail and degradation of the natural feature(s) occurs,</li></ul>
		<ul style="list-style-type: none"><li>• Fugitive dust emission</li></ul>	<ul style="list-style-type: none"><li>• On site speed limits will be clearly posted, applied, and followed by construction staff.</li><li>• Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor.</li></ul>	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Proposed Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			<p>Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</p> <ul style="list-style-type: none"> <li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> <li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> </ul>	<p>appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</p> <ul style="list-style-type: none"> <li>If fugitive dust control measures fail and degradation of the significant woodland occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>
		<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, etc.) during the construction, operation, and decommissioning phases</li> </ul>	<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> <li>Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from significant woodlands.</li> </ul>	
		<ul style="list-style-type: none"> <li>Changes in soil moisture and compaction</li> </ul>	<ul style="list-style-type: none"> <li>Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li> <li>Minimize paved surfaces and design roads to promote infiltration.</li> <li>Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li> <li>Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or other barrier.</li> </ul>	
WOD-004 WOD-005 WOD-006	>30-120m	<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, etc.) during the construction, operation, and decommissioning phases</li> </ul>	<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impacts to significant woodlands and associated wildlife habitats.</li> </ul> <p>Monitoring:</p> <ul style="list-style-type: none"> <li>None required.</li> </ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>
<b>Wetlands</b>				
WET-001 WET-002	Overlapping (horizontal directional drilling under feature)	<ul style="list-style-type: none"> <li>Reduced flood attenuation</li> </ul>	<ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to retained wetland vegetation and to avoid impacting hydrological connectivity.</li> <li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li> <li>Where the temporary construction area is proposed to be within 5m of, but not overlapping by a method other than directional drilling, a wetland (excluding along existing municipal roads), design any permanent infrastructure (i.e., access roads) to be 5m from the wetland edge and plant native vegetation in the 5m buffer between the infrastructure and wetland edge as soon as reasonably possible after construction.</li> <li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.</li> <li>Minimize impacts to hydrological connectivity.</li> <li>Minimize impacts to water quality.</li> </ul> <p>Monitoring:</p> <ul style="list-style-type: none"> <li>Undertake regular monitoring of the wetland to ensure the work area is clearly delineated within 10m of construction activities for the duration of the construction and decommissioning phases of the Project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant wetland.</li> <li>Undertake regular monitoring of the wetland to ensure the work area is clearly delineated and respected when construction is anticipated to occur within 10-30m of significant wetlands, at a minimum frequency of once per month. Depending on the season and site-specific conditions, such as topography, surface water flow patterns, and the presence or absence of vegetative buffers, monitoring frequency will be increased at the discretion of the environmental monitor.</li> </ul> <p>Contingency Plan:</p> <ul style="list-style-type: none"> <li>If sedimentation and erosion or fugitive dust control measures fail and degradation of the natural feature occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>If negative impacts such as reduced water quality (i.e. increased turbidity), infiltration and/or groundwater discharge, as a result of construction activities, are observed, consult the MNRF to determine appropriate contingency measures.</li> </ul>
		<ul style="list-style-type: none"> <li>Reduced water quality (i.e. increased turbidity)</li> </ul>	<ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to retained wetland vegetation and to avoid impacting water quality.</li> <li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li> <li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li> <li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li> <li>Re-vegetate areas adjacent to the wetland as soon as possible after construction activities are complete.</li> <li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> <li>No use of herbicides (Project related activities only) within significant wetlands during the construction, operation, and decommissioning phases.</li> </ul>	
		<ul style="list-style-type: none"> <li>Reduced</li> </ul>	<ul style="list-style-type: none"> <li>Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e.</li> </ul>	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Proposed Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
		infiltration and groundwater discharge	gravel) to increase infiltration, and reduce surface water runoff.  <u>For groundwater taking (if necessary):</u> <ul style="list-style-type: none"> <li>Monitor rate of water pumping and timing to meet requirement of less than 50,000L per day, and contact the MOECC if a situation arises where this cannot be met.</li> <li>Restrict taking of groundwater and surface water during extreme low flow time periods.</li> <li>Control quantity and quality of stormwater discharge using best management practices, and avoid direct discharge into wetlands or watercourses.</li> </ul>	
		<ul style="list-style-type: none"> <li>Disturbance of local wildlife</li> </ul>	<ul style="list-style-type: none"> <li>Avoid construction activities during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>), wherever possible, to limit the disturbance of local wildlife.</li> <li>If construction activities will occur during the breeding bird season (May 1<sup>st</sup>-July 31<sup>st</sup>), a biologist will conduct nest searches, where natural vegetation is to be removed, to ensure there will be no impact to breeding birds. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</li> <li>Schedule construction activities within 30m of significant wetlands to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever possible.</li> <li>If construction activities within 30m of significant wetlands must occur outside of daylight hours, spotlights will be angled downwards and/or away from the wetland to limit the potential impact to breeding birds.</li> <li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li> <li>No use of herbicides (Project related activities only) within significant wetlands during the construction, operation, and decommissioning phases.</li> </ul>	Performance Objective: <ul style="list-style-type: none"> <li>Avoid direct impacts on breeding birds and their habitats.</li> <li>Minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances.</li> </ul> No monitoring or contingency plan required.
		<ul style="list-style-type: none"> <li>Sedimentation and erosion</li> </ul>	<ul style="list-style-type: none"> <li>Implement a sediment and erosion control plan.</li> <li>Install, monitor, and maintain erosion and sediment control measures (i.e., erosion fencing) around the construction area for the duration of the construction or decommissioning activities, as identified within the sediment and erosion control plan.</li> <li>Erect erosion fencing, or other barrier, to correspond to the construction disturbance area limits.</li> <li>Place the erosion fencing, or other barrier, as far away as possible from the significant wetland and no closer to the significant wetland than the dripline.</li> <li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing, when appropriate.</li> <li>Utilize erosion blankets, silt fencing, straw bales, etc. for construction activities within 30m of significant wetlands.</li> <li>Store any stockpiled material more than 30m from a significant wetland during the construction, operation, and decommissioning phases.</li> <li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li> <li>Locate all directional drill entry and exit pits a sufficient distance from the edge of the significant wetland to maintain a vertical depth of at least 1.5m at all times below the significant wetland to protect the critical root zone.</li> <li>Collect directional drill cuttings as they are generated and place in a soil bin or bag for off-site disposal.</li> <li>Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.</li> </ul>	Performance Objective: <ul style="list-style-type: none"> <li>Minimize impacts to natural features and associated wildlife habitats.</li> </ul> Monitoring: <ul style="list-style-type: none"> <li>Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place.</li> <li>Monitor sediment and control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li> <li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li> <li>Correct silt fencing, or other applicable sediment and erosion control measure, that is not working properly.</li> <li>An environmental monitor will be present when active directional drilling is occurring.</li> </ul> Contingency Measure: <ul style="list-style-type: none"> <li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.</li> <li>If ‘frac-out’ occurs, immediately implement ‘frac-out’ contingency plan.</li> <li>If sedimentation and erosion control measures fail and degradation of the significant wetland(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>If fugitive dust control measures fail and degradation of the natural feature occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>
		<ul style="list-style-type: none"> <li>Fugitive dust emission</li> </ul>	<ul style="list-style-type: none"> <li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li> <li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li> <li>Re-vegetate areas adjacent to the wetland as soon as possible after construction activities are complete.</li> <li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> </ul>	
		<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li> </ul>	<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Develop a ‘frac-out’ contingency plan and train staff on appropriate procedures during the construction phase.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> <li>Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from significant wetlands.</li> </ul>	
		<ul style="list-style-type: none"> <li>Changes in soil moisture and compaction</li> </ul>	<ul style="list-style-type: none"> <li>Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e., gravel) to increase infiltration, and reduce surface water runoff.</li> <li>Minimize paved surfaces and design roads to promote infiltration.</li> </ul>	Performance Objective: <ul style="list-style-type: none"> <li>Minimize impact to soil moisture regime and vegetation species composition.</li> </ul>

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Proposed Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			<ul style="list-style-type: none"><li>Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li><li>Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or other barrier.</li></ul>	No monitoring or contingency plan required.
WET-005 WET-006	0-30m	<ul style="list-style-type: none"><li>Reduced flood attenuation</li></ul>	<ul style="list-style-type: none"><li>Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to retained wetland vegetation and to avoid impacting hydrological connectivity.</li><li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>Where the temporary construction area is proposed to be within 5m of, but not overlapping by a method other than directional drilling, a wetland (excluding along existing municipal roads), design any permanent infrastructure (i.e., access roads) to be 5m from the wetland edge and plant native vegetation in the 5m buffer between the infrastructure and wetland edge as soon as reasonably possible after construction.</li><li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.</li><li>Minimize impacts to hydrological connectivity.</li><li>Minimize impacts to water quality.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Undertake regular monitoring of the wetland to ensure the work area is clearly delineated, within 10m of construction activities for the duration of the construction and decommissioning phases of the Project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant wetland.</li><li>Undertake regular monitoring of the wetland to ensure the work area is clearly delineated and respected when construction is anticipated to occur within 10-30m of significant wetlands, at a minimum frequency of once per month. Depending on the season and site-specific conditions, such as topography, surface water flow patterns, and the presence or absence of vegetative buffers, monitoring frequency will be increased at the discretion of the environmental monitor.</li></ul> <p>Contingency Plan:</p> <ul style="list-style-type: none"><li>If sedimentation and erosion or fugitive dust control measures fail and degradation of the natural feature(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li><li>If negative impacts, such as reduced water quality (i.e. increased turbidity), infiltration and/or groundwater discharge are observed as a result of construction activities, consult the MNRF to determine appropriate contingency measures.</li></ul>
		<ul style="list-style-type: none"><li>Reduced water quality (i.e. increased turbidity)</li></ul>	<ul style="list-style-type: none"><li>Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to retained wetland vegetation and to avoid impacting water quality.</li><li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li><li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li><li>Where the temporary construction area is proposed to be within 5m of, but not overlapping by a method other than directional drilling, a wetland (excluding along existing municipal roads), design any permanent infrastructure (i.e. access roads) to be 5m from the wetland edge and plant native vegetation in the 5m buffer between the infrastructure and wetland edge as soon as reasonably possible after construction.</li><li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li><li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li></ul>	
		<ul style="list-style-type: none"><li>Reduced infiltration and groundwater discharge</li></ul>	<ul style="list-style-type: none"><li>Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li></ul> <p><u>For groundwater taking (if necessary):</u></p> <ul style="list-style-type: none"><li>Monitor rate of water pumping and timing to meet requirement of less than 50,000L per day, and contact the MOECC if a situation arises where this cannot be met.</li><li>Restrict taking of groundwater and surface water during extreme low flow time periods.</li><li>Control quantity and quality of stormwater discharge using best management practices, and avoid direct discharge into wetlands or watercourses.</li></ul>	
		<ul style="list-style-type: none"><li>Disturbance of local wildlife</li></ul>	<ul style="list-style-type: none"><li>Avoid construction activities within 30m of significant wetlands during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>), wherever possible, to limit the disturbance of local wildlife.</li><li>If construction activities will occur during the breeding bird season (May 1<sup>st</sup>-July 31<sup>st</sup>), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</li><li>Schedule construction activities within 30m of significant wetlands to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever possible.</li><li>If construction activities within 30m of significant wetlands must occur outside of daylight hours, spotlights will be angled downwards and/or directed away from the wetland to limit potential impacts to breeding birds.</li><li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Avoid direct impacts on breeding birds and their habitats.</li><li>Minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances.</li></ul> <p>No monitoring or contingency plan required.</p>
		<ul style="list-style-type: none"><li>Sedimentation and erosion</li></ul>	<ul style="list-style-type: none"><li>Implement a sediment and erosion control plan.</li><li>Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area for the duration of the construction or decommissioning activities, as identified within the sediment and erosion control plan.</li><li>Erect erosion fencing, or other barrier, to correspond to the construction disturbance area limits.</li><li>Place the erosion fencing, or other barrier, as far away as possible from the significant wetland and no closer to the significant wetland than the dripline.</li><li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>Utilize erosion blankets, silt fencing, straw bales, etc. for construction activities within 30m of significant wetlands.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Minimize impacts to significant wetlands and associated wildlife habitats.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place.</li><li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li><li>Monitor sediment and erosion control measures weekly in areas where active construction is not</li></ul>

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Proposed Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			<ul style="list-style-type: none"> <li>Store any stockpiled material more than 30m from a significant wetland during the construction, operation, and decommissioning phases.</li> <li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li> <li>Where the temporary construction area is proposed to be within 5m of, but not overlapping by a method other than directional drilling, a wetland (excluding along existing municipal roads), design any permanent infrastructure (i.e. access roads) to be 5m from the wetland edge and plant native vegetation in the 5m buffer between the infrastructure and wetland edge as soon as reasonably possible after construction.</li> <li>Re-vegetate areas adjacent to the wetland as soon as possible after construction activities are complete.</li> </ul>	<p>occurring until the construction phase is complete.</p> <ul style="list-style-type: none"> <li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li> </ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"> <li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.</li> <li>If sedimentation and erosion control measures fail and degradation of the significant wetland(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>If fugitive dust control measures fail and degradation of the significant wetland(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>
		<ul style="list-style-type: none"> <li>Fugitive dust emission</li> </ul>	<ul style="list-style-type: none"> <li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li> <li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li> <li>Where the temporary construction area is proposed to be within 5m of, but not overlapping by a method other than directional drilling, a wetland (excluding along existing municipal roads), any permanent infrastructure (i.e. access roads) will be placed 5m from the wetland edge and native vegetation will be planted in the 5m buffer between the infrastructure and wetland edge.</li> <li>Re-vegetate areas adjacent to the wetland as soon as possible after construction activities are complete.</li> <li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impact to soil moisture regime and vegetation species composition.</li> </ul> <p>No monitoring or contingency plan required.</p>
		<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, etc.) during the construction, operation, and decommissioning phases</li> </ul>	<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> <li>Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from significant wetlands.</li> </ul>	
		<ul style="list-style-type: none"> <li>Changes in soil moisture and compaction</li> </ul>	<ul style="list-style-type: none"> <li>Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li> <li>Minimize paved surfaces and design roads to promote infiltration.</li> <li>Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or other barrier.</li> <li>Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li> </ul>	
WET-004	>30-120m	<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, etc.) during the construction, operation, and decommissioning phases</li> </ul>	<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impact to significant wetlands and associated wildlife habitats.</li> </ul> <p>Monitoring:</p> <ul style="list-style-type: none"> <li>None required.</li> </ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>

### 5.3 Significant Wildlife Habitat

NRSI biologists have completed an evaluation of significance of all potential SWHs within the North Kent Wind 1 Project Area. These studies have determined the presence of 89 SWH within the Project Area. None of these wildlife habitats have been confirmed as SWH, and have all been treated as significant with a commitment to conduct seasonal surveys to update the significant designation prior to the construction phase of the Project. In accordance with the REA Regulation, each of these features in, or within 120m of, a Project component with the potential to incur an operational impact, as per Appendix D of the NHA Guide (OMNR 2012), has been specifically addressed below. Other wildlife habitats, treated as significant, that are present within 120m of (but not overlapping) Project components that will not have an operational impact on the habitat have been collectively addressed as part of the generalized mitigation measures. As described above, for the purposes of impact assessment and recommended mitigation measures, the general distance categories have been established as overlapping, 0-30m, and greater than 30m to 120m from the Project Location. These measurements coincide with the distance from a SWH to the closest Project component.

#### 5.3.1 Project Location Overlapping Wildlife Habitat

NRSI biologists have identified a total of 29 individual SWHs, representing 25 habitat types, which overlap with the North Kent Wind 1 Project Location; however, in all cases, directional drilling will be used to bore beneath these SWHs and/or infrastructure will be placed outside of the SWHs, in order to avoid direct impacts to the SWHs themselves. All 29 of these SWHs have been treated as significant for the purpose of this report, and will be surveyed prior to the construction of the Project to confirm significance of each individual habitat. Each of these SWHs have been addressed in Table 7 below, including potential impacts of the development, pre-construction surveys, and recommended mitigation measures if pre-construction surveys confirm significance. As most of the potential negative impacts and proposed mitigation measures for each of the features detailed in Table 7 apply during the construction and decommissioning phases of the Project, impacts and mitigation measures relating to the operation of the Project are specifically noted where they occur.

Table 7. Potential Impacts, Mitigation Measures, and Survey Methods for Wildlife Habitats Overlapping the North Kent Wind 1 Project Location that have been Treated as Significant

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
BMA-001 Bat Maternity Colony	Overlapping (horizontal directional drilling under feature)	<ul style="list-style-type: none"><li>Accidental damage to habitat, including tree limbs (the Project Location is sited outside of SWH – vegetation removal is not anticipated)</li></ul>	<p>The presence of suitable cavity trees within this candidate bat maternity colony could not be verified during the site investigation phase of the Project as site access was denied. As such, no further surveys will be conducted and the habitat will be treated as significant; however, in the event that site access is granted prior to June 2016, a site investigation will be conducted to verify the presence of ≥10 wildlife trees per hectare, measured at ≥25cm diameter at breast height (dbh). If candidate significant habitat is determined to be absent, the habitat will be confirmed not significant. If candidate significant habitat is determined to be present, proposed pre-construction survey methods are identified below.</p> <p><u>Selection of monitoring sites:</u> Monitoring sites will be selected within candidate bat maternity colony habitats identified through the site investigation using the criteria outlined in the Bats and Bat Habitats guidelines (OMNR 2011a). A total of 12 suitable cavity trees will be selected within BMA-001 since it is 11.91ha in size.</p> <p><u>Monitoring:</u> Following the Bats and Bat Habitats guidelines (OMNR 2011a), exit surveys will be conducted during the month of June. Observers will choose a viewing station with a clear aspect of cavity opening or crevice. Cavity opening or crevice should be monitored from 30 minutes before dusk until 60 minutes after dusk for evidence of bats exiting. An acoustic bat detector paired with a digital recorder will be used in conjunction with visual surveys to determine species. Each candidate tree will only be monitored once. Night-vision or infrared video equipment may be substituted for observers. Once an evening's monitoring is completed (60 minutes after sunset), the cameras will be collected by the staff members conducting visual surveys in the same candidate significant habitat and the visual recordings for each video recorder will be reviewed for evidence of significant bat roosting activity.</p> <p>The locations of monitoring sites within the candidate significant habitat will be determined based on conditions of the site. The locations of the candidate significant habitat can be seen on Maps 4-1 to 4-9.</p>	<ul style="list-style-type: none"><li>Clearly delineate work area using erosion fencing or other barrier to avoid accidental damage to potentially significant bat roosting trees.</li><li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include instances where the natural feature is at a higher elevation than the occurring construction activity.</li><li>No use of herbicides (Project related activities only) within significant wildlife habitats during the construction, operation, and decommissioning phases.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Protection of bat maternity colony habitat.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Conduct post-construction disturbance monitoring of this feature for 3 years after construction, following pre-construction methods, for all features deemed significant. Full details of this monitoring will be provided in the Bird and Bat EEMP.</li><li>Conduct post-construction mortality monitoring at this facility for at least 3 years following MNRF guidelines (OMNR 2011a). The turbine closest to this habitat (T28) will be included with the subsample of turbines monitored during post-construction mortality monitoring, if this habitat is confirmed to be significant. Full details of this monitoring will be provided within the Bird and Bat EEMP.</li></ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"><li>Prune damaged trees through implementation of proper arboricultural techniques.</li><li>Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species depending on the extent of damage incurred</li><li>An annual report, which documents the results of disturbance monitoring, will be prepared following each year that disturbance monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.</li><li>An annual report, which documents the results of mortality monitoring, will be prepared following each year that mortality monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.</li></ul>
		<ul style="list-style-type: none"><li>Noise disturbance/avoidance behaviour during construction</li><li>Avoidance of habitat during operation phase</li></ul>		<ul style="list-style-type: none"><li>Schedule construction and regular (non-critical) maintenance activities to occur outside of the critical roosting period (June), unless specifically required in accordance with manufacturer specifications.</li><li>On site speed limits will be clearly posted, applied, and followed by construction staff throughout the construction, operation, and decommissioning phases.</li></ul>	<p>Performance Objective</p> <ul style="list-style-type: none"><li>Maintain vegetated buffers, including riparian zones.</li><li>Minimize impacts to bat maternity colony habitats.</li><li>Avoid contamination of bat maternity colony habitat.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place.</li><li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li><li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li><li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li><li>An environmental monitor will be present when active directional drilling is occurring.</li></ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"><li>Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.</li><li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend</li></ul>
		<ul style="list-style-type: none"><li>Direct mortality through collisions with operational turbines</li></ul>		<ul style="list-style-type: none"><li>Develop a Bird and Bat EEMP in accordance with MNRF's Bats and Bat Habitats (OMNR 2011a) guidance.</li></ul>	
		<ul style="list-style-type: none"><li>Sedimentation and erosion</li><li>Fugitive dust emission</li></ul>		<ul style="list-style-type: none"><li>Implement a sediment and erosion control plan.</li><li>Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area as identified within the sediment and erosion control plan.</li><li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li><li>Locate all directional drill entry and exit pits a sufficient distance from the edge of the significant bat maternity colony habitat to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone.</li><li>Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal.</li><li>Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.</li><li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li><li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency</li></ul>	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				<p>will vary, but will be determined by site-specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</p> <ul style="list-style-type: none"> <li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> <li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> </ul>	<p>remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.</p> <ul style="list-style-type: none"> <li>If ‘frac-out’ occurs, immediately implement ‘frac-out’ contingency plan.</li> <li>If sedimentation and erosion control measures fail and degradation of the habitat occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>If fugitive dust control measures fail and degradation of the habitat occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>
		<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li> </ul>		<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Develop a ‘frac-out’ contingency plan and train staff on appropriate procedures during the construction phase.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> <li>Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant habitats.</li> </ul>	<ul style="list-style-type: none"> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>
CBT-001  Colonially- Nesting Breeding Bird Habitat (Trees/ Shrubs)	Overlapping (horizontal directional drilling under feature)	<ul style="list-style-type: none"> <li>Accidental damage to habitat, including tree limbs (the Project Location is sited outside of SWH – vegetation removal is not anticipated)</li> </ul>	<p>The presence of nest bowls within the candidate colonially-nesting bird breeding habitat could not be identified during the site investigation phase of the Project as site access was denied. As such, no further surveys will be conducted and the habitat will be treated as significant; however, in the event that site access is granted prior to April 2016, a site investigation will be conducted to verify the presence of nest bowls within the candidate habitat. If candidate significant habitat is determined to be present, proposed evaluation methods are identified below. If candidate significant habitat is determined to be absent, the habitat will be confirmed not significant.</p> <p>Surveys will consist of a 15 minute point count during the breeding season from a suitable vantage point located in close proximity to where nest bowls are located, and will occur once in each of April, June, and August. The objective of this survey is to determine if active heron nests are present within the candidate colonially-nesting bird breeding habitat.</p> <p>All individuals will be recorded along with information on species, behaviour, movement and time observed.</p> <p>The locations of monitoring sites within the candidate significant habitat will be determined based on conditions of the site. The location of the candidate significant habitat can be seen on Maps 4-1 to 4-9.</p>	<ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing or other barrier to avoid accidental damage to trees within potentially significant colonially-nesting breeding bird habitat.</li> <li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include instances where the natural feature is at higher elevation than the occurring construction activity.</li> <li>No use of herbicides (Project related activities only) within significant habitats during the construction, operation, and decommissioning phases.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Protection of colonially-nesting breeding bird habitat (tree/shrub).</li> </ul> <p>Monitoring:</p> <ul style="list-style-type: none"> <li>Conduct post-construction monitoring of this feature for 3 years after construction, following pre-construction methods, for all features deemed significant. Full details of this monitoring will be provided in the Bird and Bat EEMP.</li> <li>Conduct post-construction mortality monitoring at this facility for a minimum of 3 years following MNRF guidelines (OMNR 2011b).</li> </ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"> <li>Prune damaged trees through implementation of proper arboricultural techniques.</li> <li>Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species depending on the extent of damage incurred.</li> <li>An annual report, which documents the results of disturbance monitoring, will be prepared following each year that disturbance monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.</li> <li>An annual report, which documents the results of mortality monitoring, will be prepared following each year that mortality monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.</li> </ul>
		<ul style="list-style-type: none"> <li>Noise disturbance/ avoidance behaviour during construction</li> </ul>		<ul style="list-style-type: none"> <li>Avoid scheduling construction or regular (non-critical) maintenance activities during the peak breeding season (April-August), wherever possible.</li> <li>If construction or regular maintenance must occur during peak breeding season, a biologist will be present to confirm nesting birds will not be impacted by construction or maintenance activities.</li> <li>On site speed limits will be clearly posted, applied, and followed by construction staff throughout the construction, operation, and decommissioning phases.</li> </ul>	
		<ul style="list-style-type: none"> <li>Avoidance of habitat during operation phase</li> </ul>		<ul style="list-style-type: none"> <li>Develop a Bird and Bat EEMP in accordance with MNRF guidelines (2011b).</li> </ul>	
		<ul style="list-style-type: none"> <li>Sedimentation and erosion</li> </ul>		<ul style="list-style-type: none"> <li>Implement a sediment and erosion control plan.</li> <li>Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area, as identified within the sediment and erosion control plan.</li> <li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li> </ul>	<p>Performance Objective</p> <ul style="list-style-type: none"> <li>Maintain vegetated buffers, including riparian zones.</li> <li>Minimize impacts to colonially-nesting breeding bird habitats.</li> <li>Avoid contamination of colonially-nesting breeding bird habitat.</li> </ul> <p>Monitoring:</p> <ul style="list-style-type: none"> <li>Undertake regular construction monitoring and routine inspections to ensure</li> </ul>

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				<ul style="list-style-type: none"> <li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li> <li>Locate all directional drill entry and exit pits a sufficient distance from the edge of the significant colonially nesting breeding bird habitat (trees/shrubs) to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone.</li> <li>Collect directional drill cuttings as they are generated and place in a soil bin or bag for off-site disposal.</li> <li>Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.</li> </ul>	<p>proper installation of erosion control measures and that proper fugitive dust control measures are in place.</p> <ul style="list-style-type: none"> <li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li> <li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li> <li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li> <li>An environmental monitor will be present when active directional drilling is occurring.</li> </ul>
		<ul style="list-style-type: none"> <li>Fugitive dust emission</li> </ul>		<ul style="list-style-type: none"> <li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li> <li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site-specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li> <li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> <li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> </ul>	<p>Contingency Measure:</p> <ul style="list-style-type: none"> <li>Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.</li> <li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.</li> <li>If ‘frac-out’ occurs, immediately implement ‘frac-out’ contingency plan.</li> <li>If sedimentation and erosion control measures fail and degradation of the habitat occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>If fugitive dust control measures fail and degradation of the habitat occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>
		<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li> </ul>		<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Develop a ‘frac-out’ contingency plan and train staff on appropriate procedures during the construction phase.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> <li>Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant habitats.</li> </ul>	
		<ul style="list-style-type: none"> <li>Changes in soil moisture and compaction</li> </ul>		<ul style="list-style-type: none"> <li>Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li> <li>Minimize paved surfaces and design roads to promote infiltration.</li> <li>Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or other barrier.</li> <li>Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impact to soil moisture regime and vegetation species composition.</li> </ul> <p>No monitoring or contingency plan required.</p>
WFN-001 Waterfowl Nesting Area	Overlapping (horizontal directional drilling under feature)	<ul style="list-style-type: none"> <li>Accidental damage to habitat, including tree limbs (the Project Location is sited outside of SWH – vegetation removal is not anticipated)</li> </ul>	<p>The presence of a waterfowl nesting area within one woodland could not be verified during the site investigation phase of the Project as site access was denied. As such, no further surveys will be conducted, and the habitat will be treated as significant; however, in the event that site access changes prior to April 2016, a site investigation will be conducted to verify the presence of suitable permanent open water, in addition to shrubland/grassland or suitable cavity trees for nesting in upland areas &gt;40cm dbh. If candidate significant habitat is determined to be absent, the habitat will be confirmed not significant. If candidate significant habitat is determined to be present, proposed evaluation methods</p>	<ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to nesting habitat.</li> <li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include instances where the natural feature is at higher elevation than the occurring construction activity.</li> <li>No use of herbicides (Project related activities only) within significant habitats during the construction, operation, and decommissioning phases.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impacts to waterfowl nesting habitat.</li> </ul> <p>Monitoring:</p> <ul style="list-style-type: none"> <li>Conduct post-construction monitoring of this feature for 3 years after construction, following pre-construction methods, for all features deemed significant. Full details of this monitoring will be provided in the Bird and Bat EEMP.</li> <li>Conduct post-construction mortality monitoring at this facility for a minimum of 3 years following MNRF guidelines (OMNR 2011b).</li> </ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"> <li>Prune damaged trees through implementation of proper arboricultural</li> </ul>

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
			are identified below.  Area searches will be conducted within the candidate waterfowl nesting area. This method will involve walking the perimeter of the wetland and counting all observable waterfowl using the wetlands.  Surveys will be conducted on 3 separate visits, once in each of April, May, and June 2016, to capture both early and late nesting species.  Surveys will be carried out during the early morning (sunrise to 4 hours after sunrise). All individuals will be recorded along with information on species, behaviour, movement and time observed. Optimal weather conditions for these surveys are clear, sunny days with little to no precipitation. Surveys will be postponed and re-scheduled if poor weather conditions are encountered, specifically if high winds or heavy precipitation is noted.		techniques. • Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species depending on the extent of damage incurred.
		• Noise disturbance/avoidance behaviour during construction			Performance Objective: • Minimize disturbance to waterfowl species.
		• Avoidance of habitat during operation phase		• Avoid scheduling construction or regular (non-critical) maintenance activities during the peak waterfowl nesting season (April-June), if possible. • If construction or regular maintenance must occur during peak breeding season, a biologist will be present to confirm birds will not be impacted by construction or maintenance activities. • On site speed limits will be clearly posted, applied, and followed by construction staff throughout the construction, operation, and decommissioning phases.	Monitoring: • Conduct post-construction behavior surveys for 3 years following pre-construction survey methods to assess any potential changes to breeding habitats deemed significant. Full details of this monitoring will be provided within the Bird and Bat EEMP.  Contingency Measure: • An annual report, which documents the results of disturbance monitoring, will be prepared following each year that disturbance monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.
		• Direct mortality through collisions with operational turbines	The location of the candidate significant habitat can be seen on Maps 5-1 to 5-9.	• Develop a Bird and Bat EEMP in accordance with MNRF guidelines (OMNR 2011b).	Performance Objective: • Minimize the mortality of waterfowl through collisions with operational turbines.  Monitoring: • Conduct post-construction mortality monitoring at this facility for a minimum of 3 years following MNRF guidelines (OMNR 2011b).  Contingency Measure: • An annual report, which documents the results of mortality monitoring, will be prepared following each year that mortality monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.
		• Changes in surface hydrology		• Clearly delineate work area using erosion fencing, or other barrier, to avoid impacting hydrological functions associated with permanent open water. • Limit grading activities and changes in land contours, wherever possible. • Minimize paved surfaces and design roads to promote infiltration • Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.	Performance Objective: • Minimize impacts to hydrological functions associated with permanent open water. • Maintain existing surface water flow patterns.  Monitoring: • Undertake regular monitoring of the habitat when grading activities are located within 30m of waterfowl nesting area habitat at a minimum frequency of once per week. • Conduct post-construction behaviour surveys of this habitat for 3 years following pre-construction methods to assess the potential Project disturbance on the habitat if deemed significant. Full details of this monitoring will be provided in the Bird and Bat EEMP.  Contingency Plan: • If changes in surface hydrology are noted as a result of construction, appropriate mitigation measures will be implemented, which may include modifications to previous grading and/or constructed ditches depending on the extent of changes incurred.
		• Sedimentation and erosion		• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area, as identified within the sediment and erosion control plan. • Depending on site-specific conditions, such as steep topography and the	Performance Objective: • Maintain vegetated buffers, including riparian zones. • Minimize impacts to significant waterfowl nesting habitat. • Avoid contamination of waterfowl nesting area habitat.

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				<p>presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</p> <ul style="list-style-type: none"> <li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li> <li>Locate all directional drill entry and exit pits a sufficient distance from the edge of the significant waterfowl nesting area habitat to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone.</li> <li>Collect directional drill cuttings as they are generated and place in a soil bin or bag for off-site disposal.</li> <li>Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.</li> </ul>	<p>Monitoring:</p> <ul style="list-style-type: none"> <li>Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place.</li> <li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li> <li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li> <li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li> <li>An environmental monitor will be present when active directional drilling is occurring.</li> </ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"> <li>Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.</li> <li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.</li> <li>If ‘frac-out’ occurs, immediately implement ‘frac-out’ contingency plan.</li> <li>If sedimentation and erosion control measures fail and degradation of the habitat occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>If fugitive dust control measures fail and degradation of the habitat occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>
		<ul style="list-style-type: none"> <li>Fugitive dust emission</li> </ul>		<ul style="list-style-type: none"> <li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li> <li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li> <li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> <li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> </ul>	
		<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li> </ul>		<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Develop a ‘frac-out’ contingency plan and train staff on appropriate procedures during the construction phase.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> <li>Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant habitats.</li> </ul>	
		<ul style="list-style-type: none"> <li>Changes in soil moisture and compaction</li> </ul>		<ul style="list-style-type: none"> <li>Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li> <li>Minimize paved surfaces and design roads to promote infiltration.</li> <li>Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or other barrier.</li> <li>Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impact to soil moisture regime and vegetation species composition.</li> </ul> <p>No monitoring or contingency plan required.</p>
AWO-001 Amphibian Breeding Habitat (Woodland)	Overlapping (horizontal directional drilling under feature)	<ul style="list-style-type: none"> <li>Accidental damage to habitat, including tree limbs (the Project Location is sited outside of SWH – vegetation removal is not anticipated)</li> </ul>	<p>Three evening amphibian call surveys will be conducted, once in each of April, May and June 2016. Each survey will last 3 minutes, following the accepted Marsh Monitoring Program protocol, and will begin no earlier than one half hour after sunset and end before midnight. Semi-circular point counts will be conducted at the habitat to monitor calling amphibians. Several point counts may be required at a single habitat in order to adequately survey the area. Point counts will be located at least 500m apart to prevent counting duplicate</p>	<ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental vegetation damage within amphibian breeding habitat.</li> <li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include instances where the natural feature is at higher elevation than the occurring construction activity.</li> <li>Avoid direct impacts to specific breeding habitat (i.e. vernal pools or other aquatic habitat), or immediately surrounding woodland habitat.</li> <li>No use of herbicides (Project related activities only) within significant</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impacts to amphibian breeding habitat and minimize amphibian mortality.</li> <li>Minimize impacts to woodland/wetland integrity and diversity.</li> </ul> <p>Monitoring:</p> <ul style="list-style-type: none"> <li>Conduct post-construction amphibian call surveys for 1 year following pre-construction survey methods to assess any potential changes in amphibian breeding populations or species distribution for all habitats deemed significant.</li> <li>Undertake regular construction monitoring and routine inspections to ensure</li> </ul>

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
		<ul style="list-style-type: none"><li>Noise disturbance/avoidance behaviour during construction</li></ul>	<p>amphibian calls. These surveys will be conducted within habitats where site access has been granted. Where site access has not been granted, point counts will be conducted along the roadside or adjacent property.</p>	<p>habitats during the construction, operation, and decommissioning phases.</p> <ul style="list-style-type: none"><li>Schedule construction activities to occur outside of the peak frog breeding season (April 15<sup>th</sup>-June 15<sup>th</sup>).</li><li>If construction activities must occur during the peak frog breeding season, install temporary drift fencing (erosion fencing) to help control amphibian movements around construction activity.</li><li>Schedule construction or regular maintenance activities within 30m during daylight hours, wherever possible, to limit potential impacts from light, noise, or vehicle interactions.</li><li>If construction activities within 30m of significant amphibian breeding habitats must occur outside of daylight hours, spotlights will be directed downwards and/or away from the woodland to limit potential impacts to breeding amphibians.</li><li>On site speed limits will be clearly posted, applied, and followed by construction staff throughout the construction, operation, and decommissioning phases.</li></ul>	<p>proper installation of erosion control measures and that proper fugitive dust control measures are in place.</p> <ul style="list-style-type: none"><li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li><li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li><li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li><li>An environmental monitor will be present when active directional drilling is occurring.</li></ul>
		<ul style="list-style-type: none"><li>Avoidance of habitat during operation phase</li></ul>	<p>During each survey, biologists will record species and calling abundance codes, along with other appropriate information (date, time, weather, etc.). A UTM will be taken for each call location to ensure consistency between survey visits.</p> <p>Where site access has been granted, two amphibian egg mass searches will also be conducted during daylight hours. The exact timing of the surveys will be dependent on 2016 spring conditions and when amphibians are expected to be breeding within the general vicinity of the Project Area, but are expected to occur once in April and again in either May or June. A minimum search effort of 30 minutes will be used on each visit. These area searches will include walking within the wetland or vernal pool along the perimeter, looking for egg masses. Due to the composition and attributes of the candidate amphibian breeding habitats, special equipment will not be required to identify egg masses; however, visual surveys conducted in breeding ponds with high water levels will require the use of chest waders. This approach is expected to effectively identify egg masses, while minimizing any disturbance effects caused by sampling.</p>	<ul style="list-style-type: none"><li>Implement a sediment and erosion control plan.</li><li>Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area as identified within the sediment and erosion control plan.</li><li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li><li>Locate all directional drill entry and exit pits a sufficient distance from the edge of the significant amphibian breeding habitat to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone.</li><li>Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal.</li><li>Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.</li></ul>	<p>Contingency Measure:</p> <ul style="list-style-type: none"><li>Prune damaged trees through implementation of proper arboricultural techniques.</li><li>Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species depending on the extent of damage incurred.</li><li>Given the short-term and temporary nature of increased traffic and the restriction of construction activities to daylight hours, wherever possible, the timing restriction during breeding period, the risk of increased mortality during construction is considered low.</li><li>Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.</li><li>If the results of the monitoring indicate a feature is no longer significant, consult the MNRF to discuss the need (if any) for additional post-construction surveys.</li><li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.</li><li>If ‘frac-out’ occurs, immediately implement ‘frac-out’ contingency plan.</li><li>If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li><li>If fugitive dust control measures fail and degradation of the habitat(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li><li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li><li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li></ul>
		<ul style="list-style-type: none"><li>Sedimentation and erosion</li></ul>	<p>If candidate significant habitat (vernal pools) is determined to be not present during the first site visit, no specific studies will be conducted and the habitat(s) will be confirmed not significant.</p> <p>The locations of monitoring sites within the candidate significant habitat will be determined based on conditions of the site. The location of the candidate significant habitat can be seen on Maps 5-1 to 5-9.</p>	<ul style="list-style-type: none"><li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li><li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li><li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li><li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li></ul>	
		<ul style="list-style-type: none"><li>Fugitive dust emission</li></ul>		<ul style="list-style-type: none"><li>Develop a spill response plan and train staff on appropriate procedures.</li><li>Develop a ‘frac-out’ contingency plan and train staff on appropriate procedures during the construction phase.</li><li>Keep emergency spill kits on site.</li><li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li><li>Dispose of waste material by authorized and approved off-site vendors.</li><li>Store hazardous materials in designated areas.</li></ul>	
		<ul style="list-style-type: none"><li>Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li></ul>			

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				<ul style="list-style-type: none"><li>• Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant habitats.</li></ul>	
		<ul style="list-style-type: none"><li>• Changes in soil moisture and compaction</li></ul>		<ul style="list-style-type: none"><li>• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li><li>• Minimize paved surfaces and design roads to promote infiltration.</li><li>• Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or other barrier.</li><li>• Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li></ul>	Performance Objective: <ul style="list-style-type: none"><li>• Minimize impact to soil moisture regime and vegetation species composition.</li></ul> No monitoring or contingency plan required.
MBB-001  Marsh Bird Breeding Habitat	Overlapping (horizontal directional drilling under feature)	<ul style="list-style-type: none"><li>• Accidental damage to habitat, including tree limbs (the Project Location is sited outside of SWH – vegetation removal is not anticipated)</li></ul>	<p>Surveys will be conducted at the one candidate significant marsh bird breeding habitat within the Project Area. Surveys will consist of a 15 minute point count during the breeding season, occurring twice between mid-May and early July 2016, occurring no less than 10 days apart, following the accepted Marsh Monitoring Program protocol (Bird Studies Canada 2009). Each survey will be conducted in the morning (beginning 30 minutes before sunrise and ending no later than 1000hrs) or evening (occurring no earlier than 4 hours before sunset and ending before dark), when marsh birds are actively nesting in wetland habitats.</p> <p>Each survey will be conducted under near optimal weather conditions, on clear, warm (at least 16°C), evenings, with no precipitation and little or no wind.</p> <p>Point counts will be conducted within the habitat where site access has been granted, or from the property adjacent to the habitat, where site access has not been granted. Each point count will last for 15 minutes, and will be sub-divided into three 5 minute components: a 5 minute passive (silent) observation period, a 5 minute call playback period, and a second 5 minute passive observation period.</p> <p>If candidate significant habitat (shallow water with emergent aquatic vegetation) is determined to be not present on the first site visit, no specific studies will be conducted and the habitat(s) will be confirmed not significant.</p> <p>The locations of monitoring sites within the candidate significant habitat will be determined based on conditions of the site. The location of the candidate significant habitat can be seen on Maps 6-1 to 6-9.</p>	<ul style="list-style-type: none"><li>• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental vegetation damage within significant marsh bird breeding habitats.</li><li>• Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include instances where the natural feature is at higher elevation than the occurring construction activity.</li><li>• No use of herbicides (Project related activities only) within significant habitats during the construction, operation, and decommissioning phases.</li></ul>	Performance Objective: <ul style="list-style-type: none"><li>• Minimize impacts to marsh bird breeding habitat.</li><li>• Minimize disturbance to marsh breeding birds.</li><li>• Minimize impacts to wetland integrity and diversity.</li></ul> Monitoring: <ul style="list-style-type: none"><li>• Conduct post-construction monitoring of this feature for 3 years after construction, following pre-construction methods, for all features deemed significant. Full details of this monitoring will be provided within the Bird and Bat EEMP.</li></ul> Contingency Measure: <ul style="list-style-type: none"><li>• Prune damaged trees through implementation of proper arboricultural techniques.</li><li>• Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species depending on the extent of damage incurred</li><li>• An annual report, which documents the results of disturbance monitoring, will be prepared following each year that disturbance monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.</li></ul>
		<ul style="list-style-type: none"><li>• Noise disturbance/avoidance behaviour during construction</li></ul>		<ul style="list-style-type: none"><li>• Schedule construction and regular (non-critical) maintenance activities to occur outside of the peak marsh bird breeding season (mid-May to early July), wherever possible.</li><li>• If construction or regular maintenance must occur during this peak breeding season (mid-May to early July), have a biologist confirm birds will not be impacted by construction or maintenance activities.</li><li>• On site speed limits will be clearly posted, applied, and followed by construction staff throughout the construction, operation, and decommissioning phases.</li></ul>	
		<ul style="list-style-type: none"><li>• Avoidance of habitat during operation phase</li></ul>		<ul style="list-style-type: none"><li>• Develop a Bird and Bat EEMP in accordance MNRF's Birds and Bird Habitats (OMNR 2011b) guidance.</li></ul>	Performance Objective: <ul style="list-style-type: none"><li>• Minimize marsh bird mortalities from collisions with operational turbines.</li></ul> Monitoring: <ul style="list-style-type: none"><li>• Conduct post-construction mortality monitoring at this facility for at least 3 years following MNRF guidelines (OMNR 2011b). Full details of this monitoring will be provided within the Bird and Bat EEMP.</li></ul> Contingency Plan: <ul style="list-style-type: none"><li>• An annual report, which documents the results of mortality monitoring, will be prepared following each year that mortality monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.</li></ul>
		<ul style="list-style-type: none"><li>• Direct mortality through collisions with operational turbines</li></ul>		<ul style="list-style-type: none"><li>• Implement a sediment and erosion control plan.</li><li>• Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area as identified within the sediment and erosion control plan.</li><li>• Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>• Schedule grading to avoid times of high runoff volumes wherever possible</li></ul>	Performance Objective <ul style="list-style-type: none"><li>• Maintain vegetated buffers, including riparian zones.</li><li>• Minimize impacts to marsh bird breeding habitats.</li><li>• Avoid contamination of marsh bird breeding habitat.</li></ul> Monitoring: <ul style="list-style-type: none"><li>• Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place.</li></ul>
		<ul style="list-style-type: none"><li>• Sedimentation and erosion</li></ul>			

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				<p>and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</p> <ul style="list-style-type: none"> <li>Locate all directional drill entry and exit pits a sufficient distance from the edge of the significant marsh bird breeding habitat to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the natural form and function of the habitat.</li> <li>Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal.</li> <li>Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.</li> </ul>	<ul style="list-style-type: none"> <li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li> <li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li> <li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li> <li>An environmental monitor will be present when active directional drilling is occurring.</li> </ul>
		<ul style="list-style-type: none"> <li>Fugitive dust emission</li> </ul>		<ul style="list-style-type: none"> <li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li> <li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li> <li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> <li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> </ul>	<p>Contingency Measure:</p> <ul style="list-style-type: none"> <li>Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.</li> <li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.</li> <li>If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>If ‘frac-out’ occurs, immediately implement ‘frac-out’ contingency plan.</li> <li>If fugitive dust control measures fail and degradation of the habitat(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>
		<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li> </ul>		<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Develop a ‘frac-out’ contingency plan and train staff on appropriate procedures during the construction phase.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> <li>Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant habitats.</li> </ul>	
		<ul style="list-style-type: none"> <li>Changes in soil moisture and compaction</li> </ul>		<ul style="list-style-type: none"> <li>Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li> <li>Minimize paved surfaces and design roads to promote infiltration.</li> <li>Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or other barrier.</li> <li>Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impact to soil moisture regime and vegetation species composition.</li> </ul> <p>• No monitoring or contingency plan required.</p>
<p>Bird Species of Conservation Concern:</p> <p>EWP-001 (SCC-A) Eastern Wood-Pewee Habitat</p>	<p>Overlapping (horizontal directional drilling under feature)</p>	<ul style="list-style-type: none"> <li>Accidental damage to habitat, including tree limbs (the Project Location is sited outside of SWH – vegetation removal is not anticipated)</li> </ul>	<p>Ten-minute point count surveys will be conducted within the candidate habitat for bird species of conservation concern in June and early July 2016. Each point count station will be surveyed 3 times during early, mid and late season (spring and early summer) no less than 10 days apart.</p> <p>The number of point counts required within the habitat depends on the size and habitat diversity at the site. Following the Birds and Bird Habitat Guidelines for Wind Power Projects (OMNR 2011b), point counts will be spaced at least 250m apart, ideally with the centre point at least 100m from the habitat edge. Where more than one point count will be conducted within the habitat, a</p>	<ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing or other barrier to avoid accidental vegetation damage within significant bird species of conservation concern habitat.</li> <li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include instances where the natural feature is at higher elevation than the occurring construction activity.</li> <li>No use of herbicides (Project related activities only) within significant habitats during the construction, operation, and decommissioning phases.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impacts to bird species of conservation concern habitat.</li> <li>Minimize impacts to woodland/wetland integrity and diversity.</li> </ul> <p>Monitoring:</p> <ul style="list-style-type: none"> <li>Conduct post-construction behaviour surveys of this habitat for 3 years following pre-construction survey methods to assess the potential Project disturbance on this habitat. Full details of this monitoring will be provided within the Bird and Bat EEMP.</li> </ul> <p>Contingency Plan:</p> <ul style="list-style-type: none"> <li>Prune damaged trees through implementation of proper arboricultural techniques.</li> <li>Accidental damage to trees, or unexpected vegetation removal, may require</li> </ul>

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans	
			standardized transect will also be conducted between point count sites.		re-planting of similar, native species depending on the extent of damage incurred.	
		• Noise disturbance/avoidance behaviour during construction	Surveys will be conducted between dawn (one half hour before sunrise) and 3 hours after sunrise. These surveys will occur during a time period when males are expected to be actively singing and defending territories.  Days with high wind speeds and rain will be avoided. During each visit, the highest observed breeding evidence will be recorded for each species.  The monitoring site locations within the habitat will be determined based on conditions of the site. The location of the candidate significant habitats can be seen on Maps 6-1 to 6-9.	<ul style="list-style-type: none"><li>Schedule construction and regular (non-critical) maintenance activities located within 30m of significant bird species of conservation concern habitat to occur outside of the peak breeding bird season (May 1st – July 31st), whenever possible.</li><li>If construction or regular maintenance must occur during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>), have a biologist confirm birds will not be impacted by construction or maintenance activities.</li><li>On site speed limits will be clearly posted, applied, and followed by construction staff throughout the construction, operation, and decommissioning phases.</li></ul>	Performance Objective: <ul style="list-style-type: none"><li>Minimize noise disturbance/avoidance behavior of bird species of conservation concern.</li></ul> Monitoring: <ul style="list-style-type: none"><li>Conduct post-construction behaviour surveys of the habitat for 3 years following pre-construction survey methods to assess the potential Project disturbance on this habitat. Full details of this monitoring will be provided within the Bird and Bat EEMP.</li></ul> Contingency Plan: <ul style="list-style-type: none"><li>An annual report, which documents the results of disturbance monitoring, will be prepared following each year that disturbance monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.</li></ul>	
		• Avoidance of habitat during operation phase				Performance Objective: <ul style="list-style-type: none"><li>Minimize the mortality of bird species of conservation concern from collisions with operational turbines.</li></ul> Monitoring: <ul style="list-style-type: none"><li>Conduct post-construction mortality monitoring at this facility for at least 3 years following MNRF guidelines (OMNR 2011b). Full details of this monitoring will be provided within the Bird and Bat EEMP.</li></ul> Contingency Plan: <ul style="list-style-type: none"><li>An annual report, which documents the results of mortality monitoring, will be prepared following each year that mortality monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.</li></ul>
		• Direct mortality through collisions with operational turbines			<ul style="list-style-type: none"><li>Develop a Bird and Bat EEMP in accordance with the Birds and Bird Habitat Guidelines (OMNR 2011b).</li></ul>	
		• Sedimentation and erosion			<ul style="list-style-type: none"><li>Implement a sediment and erosion control plan.</li><li>Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area as identified within the sediment and erosion control plan.</li><li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li><li>Locate all directional drill entry and exit pits a sufficient distance from the edge of the significant bird species of conservation concern habitat to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone.</li><li>Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal.</li><li>Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.</li></ul>	Performance Objective <ul style="list-style-type: none"><li>Maintain vegetated buffers, including riparian zones.</li><li>Minimize impacts to bird species of conservation concern habitats.</li><li>Avoid contamination of bird species of conservation concern habitat.</li></ul> Monitoring: <ul style="list-style-type: none"><li>Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control and that proper fugitive dust control measures are in place.</li><li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li><li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li><li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li><li>An environmental monitor will be present when active directional drilling is occurring.</li></ul> Contingency Measure: <ul style="list-style-type: none"><li>Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.</li><li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend</li></ul>
• Fugitive dust emission	<ul style="list-style-type: none"><li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li><li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency</li></ul>					

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				<p>will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</p> <ul style="list-style-type: none"> <li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> <li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> </ul>	<p>remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.</p> <ul style="list-style-type: none"> <li>If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>If 'frac-out' occurs, immediately implement 'frac-out' contingency plan.</li> <li>If fugitive dust control measures fail and degradation of the habitat(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>
		<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li> </ul>		<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Develop a 'frac-out' contingency plan and train staff on appropriate procedures during the construction phase.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> <li>Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant habitats.</li> </ul>	
<p>Plant Species of Conservation Concern:</p> <p>PMI-001 (SCC-P) Prairie Milkweed Habitat</p> <p>PAW-001 (SCC-B) Pawpaw Habitat</p> <p>MSE-001 (SCC-A) Muskingum Sedge Habitat</p> <p>RSE-001 (SCC-P) Rigid Sedge Habitat</p> <p>BAS-001 (SCC-B) Blue Ash Habitat</p> <p>SRM-001 (SCC-E) Swamp Rose-mallow Habitat</p> <p>BGU-001 (SCC-A) Black Gum Habitat</p> <p>NFO-001 (SCC-A) NFO-007 (SCC-P) Northern Fogfruit Habitat</p> <p>SHU-002 (SCC-D) Shumard Oak Habitat</p> <p>CPR-001 (SCC-P)</p>	Overlapping (horizontal directional drilling under feature)	<ul style="list-style-type: none"> <li>Accidental damage to habitat, including tree limbs (the Project Location is sited outside of SWH – vegetation removal is not anticipated)</li> </ul>	One standardized area search will be conducted for each habitat. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted at a time of year when the species can be identified (refer to Table 10 for specific survey timing). The locations of the candidate significant habitats can be seen on Maps 6-1 to 6-9.	<ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to species to be retained and habitat.</li> <li>Where construction is within 10m of a significant plant species of conservation concern habitat, erect erosion fencing, or other barrier, to correspond to the disturbance area limits.</li> <li>Place the erosion fencing, or other barrier, as far away as possible from the significant plant species of conservation concern habitat, and no closer to the significant habitat than the dripline.</li> <li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include instances where the natural feature is at higher elevation than the occurring construction activity.</li> <li>No use of herbicides (Project related activities only) within significant habitats during the construction, operation, and decommissioning phases.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize direct impacts to plant species of conservation concern.</li> <li>Protect plant species of conservation concern habitat.</li> <li>Minimize impacts on current species composition.</li> <li>Reduce the potential spread of non-native or invasive species.</li> </ul> <p>Monitoring:</p> <ul style="list-style-type: none"> <li>Undertake regular monitoring of the dripline within 10m of construction activities for the duration of the construction and decommissioning phases of this Project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant tree species of conservation concern habitat.</li> <li>Undertake regular monitoring of the dripline to ensure the work area is clearly delineated and dripline boundaries are respected when construction is anticipated to occur within 10-30m of significant tree species of conservation concern habitat.</li> <li>Conduct post-construction monitoring in years 1, 3, and 5 of operation at a time of year when the species can be identified (refer to Table 10 for specific survey timing). Following pre-construction survey methods, one standardized area search will be conducted throughout each significant habitat. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Specific locations of plant species of conservation identified during pre-construction surveys will also be monitored post-construction. The results of the surveys will be compared to the results of the pre-construction surveys to assess any potential changes in species populations or distribution.</li> </ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"> <li>Prune damaged trees through implementation of proper arboricultural techniques.</li> <li>Replace any plant species of conservation concern which are damaged or destroyed at a 1:1 ratio with plantings in the habitat. The success of any planted specimens will be monitored for 2 years after planting.</li> <li>If degradation of the habitat(s) occurs as a result of construction, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>An annual report, which documents the results of the post-construction monitoring, will be prepared following each year that post-construction</li> </ul>

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans		
Climbing Prairie Rose Habitat					monitoring occurs (i.e. following years 1, 3, and 5 of operation). The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect these habitats.		
LTA-001 (SCC-A) Lizard's Tail Habitat		<ul style="list-style-type: none"><li>Sedimentation and erosion</li></ul>		<ul style="list-style-type: none"><li>Implement a sediment and erosion control plan.</li><li>Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area as identified within the sediment and erosion control plan.</li><li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li><li>Locate all directional drill entry and exit pits a sufficient distance from the edge of the plant species of conservation concern habitat to maintain a vertical depth of at least 1.5m at all times below the habitat to protect the critical root zone.</li><li>Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal.</li><li>Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.</li></ul>	Performance Objective <ul style="list-style-type: none"><li>Minimize impacts to plant species of conservation concern.</li><li>Protect plant species of conservation concern habitat.</li><li>Maintain vegetated buffers, including riparian zones.</li><li>Avoid contamination of plant species of conservation concern habitat.</li></ul>		
WSE-003 (SCC-D) WSE-009 (SCC-P) Wild Senna Habitat					Monitoring: <ul style="list-style-type: none"><li>Conduct post-construction monitoring in years 1, 3, and 5 of operation at a time of year when the species can be identified (refer to Table 10 for specific survey timing). Following pre-construction survey methods, one standardized area search will be conducted throughout each significant habitat. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Specific locations of plant species of conservation identified during pre-construction surveys will also be monitored post-construction. The results of the surveys will be compared to the results of the pre-construction surveys to assess any potential changes in species populations or distribution.</li><li>Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control and that proper fugitive dust control measures are in place.</li><li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li><li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li><li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li><li>An environmental monitor will be present when active directional drilling is occurring.</li></ul>		
CUP-001 (SCC-D) CUP-004 (SCC-P) Cup-Plant Habitat					<ul style="list-style-type: none"><li>Fugitive dust emission</li></ul>	<ul style="list-style-type: none"><li>On site speed limits will be clearly posted, applied, and followed by construction staff .</li><li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li><li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li><li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li></ul>	<ul style="list-style-type: none"><li>Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.</li><li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.</li><li>If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li><li>If 'frac-out' occurs, immediately implement 'frac-out' contingency plan.</li><li>If fugitive dust control measures fail and degradation of the habitat(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li><li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li><li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li><li>If any potential changes in species populations or distribution are noted during</li></ul>
RGL-001 (SCC-P) Riddell's Goldenrod Habitat							
SLT-001 (SCC-P) Southern Slender Ladies' Tresses Habitat							
WIS-001 (SCC-A) Wing-stem Habitat		<ul style="list-style-type: none"><li>Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases</li></ul>		<ul style="list-style-type: none"><li>Develop a spill response plan and train staff on appropriate procedures.</li><li>Develop a 'frac-out' contingency plan and train staff on appropriate procedures during the construction phase.</li><li>Keep emergency spill kits on site.</li><li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li><li>Dispose of waste material by authorized and approved off-site vendors.</li><li>Store hazardous materials in designated areas.</li><li>Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant habitats.</li></ul>			
GIW-004 (SCC-A) GIW-008 (SCC-P) Giant Ironweed Habitat							
VCR-001 (SCC-P) Virginia Culver's-root Habitat							
CVI-001 (SCC-B) Cream Violet Habitat		<ul style="list-style-type: none"><li>Increased vegetation species competition through introduction of invasive vegetation species</li></ul>		<ul style="list-style-type: none"><li>Clearly delineate work area using erosion fencing, or other barrier, to minimize seed transfer into suitable habitat.</li><li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion</li></ul>			

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				fencing, when appropriate. <ul style="list-style-type: none"><li>• Regularly clean vehicles and equipment.</li><li>• Vehicle use will occur primarily on access roads and in agricultural habitats, where invasive and non-native vegetation species are less likely to be concentrated.</li></ul>	post-construction surveys as a result of construction, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of changes to species population or distribution. <ul style="list-style-type: none"><li>• An annual report, which documents the results of the post-construction monitoring, will be prepared following each year that post-construction monitoring occurs (i.e. following years 1, 3, and 5 of operation). The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect these habitats.</li></ul>
		<ul style="list-style-type: none"><li>• Changes in soil moisture and compaction</li></ul>		<ul style="list-style-type: none"><li>• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li><li>• Minimize paved surfaces and design roads to promote infiltration.</li><li>• Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or other barrier.</li><li>• Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li></ul>	Performance Objective: <ul style="list-style-type: none"><li>• Minimize impact to soil moisture regime and vegetation species composition.</li><li>• No monitoring or contingency plan required.</li></ul>

### 5.3.2 Project Location within 120m of Wildlife Habitat Treated as Significant

NRSI biologists have identified a total of 60 individual wildlife habitats, representing 20 habitat types, which are within 120m of (but not overlapping) the North Kent Wind 1 Project Location. These wildlife habitats have been treated as significant for the purposes of this report, and will be surveyed in detail prior to construction to confirm the significance of each individual habitat. These wildlife habitats are specifically addressed in Table 8, including potential impacts of the development, pre-construction surveys, and recommended mitigation measures if pre-construction surveys confirm significance. As most of the potential negative impacts and proposed mitigation measures for each of the features detailed in Table 8 apply during the construction and decommissioning phases of the Project, impacts and proposed mitigation measures relating to the operation of the Project are specifically noted where they occur.

Table 8. Potential Impacts, Mitigation Measures, and Survey Methods for Wildlife Habitats within 120m of, but not Overlapping, the North Kent Wind 1 Project Location that have been Treated as Significant

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
OGF-001 Old Growth Forest	0-30m	<ul style="list-style-type: none"><li>Accidental damage to habitat, including tree limbs (the Project Location is sited outside of SWH – vegetation removal is not anticipated)</li></ul>	<p>The presence of an old growth forest within one woodland could not be confirmed during the site investigation phase of the Project, as site access was denied. As such, no further surveys will be conducted and the habitat will be treated as significant; however, in the event that site access status changes prior to July 2016, a site investigation will be conducted to confirm the age estimate of tree species being &gt;140 year old within the forest ecosite. If candidate significant habitat is determined to be absent, the habitat will be confirmed not significant.</p> <p>The location of the candidate significant habitat can be seen on Maps 5-1 to 5-9.</p>	<ul style="list-style-type: none"><li>Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental vegetation damage within the old growth forest.</li><li>Where construction is within 10m of the old growth forest, erect erosion fencing, or other barrier, to correspond to the disturbance area limits.</li><li>Place the erosion fencing, or other barrier, as far away as possible from the old growth forest and no closer to the feature than the dripline.</li><li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby significant old growth forest. This could include instances where the significant old growth forest is at higher elevation than the occurring construction activity.</li><li>No use of herbicides (Project related activities only) within significant habitats during the construction, operation, and decommissioning phases.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Undertake regular monitoring of the dripline to ensure the work area is clearly delineated within 10m of construction activities for the duration of the construction and decommissioning phases of this Project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of the old growth forest.</li><li>Undertake regular monitoring of the dripline to ensure the work area is clearly delineated and dripline boundaries are respected when construction is anticipated to occur within 10-30m of the old growth forest, at a minimum frequency of once per month.</li></ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"><li>Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques.</li><li>Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species depending on the extent of damage incurred.</li></ul>
		<ul style="list-style-type: none"><li>Sedimentation and erosion</li></ul>		<ul style="list-style-type: none"><li>Implement a sediment and erosion control plan.</li><li>Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area as identified within the sediment and erosion control plan.</li><li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li><li>Re-vegetate areas adjacent to the old growth forest as soon as possible after construction activities are complete.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Minimize impacts to significant old growth forest.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place.</li><li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li><li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li><li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li></ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"><li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions.</li><li>If sedimentation and erosion control measures fail and degradation of the significant old growth forest occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li><li>If fugitive dust control measures fail and degradation of the significant old growth forest occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li><li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li><li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li></ul>
		<ul style="list-style-type: none"><li>Fugitive dust emission</li></ul>		<ul style="list-style-type: none"><li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li><li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li><li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li><li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Minimize impact to soil moisture regime and vegetation species composition.</li></ul> <p>No monitoring or contingency plan required.</p>
		<ul style="list-style-type: none"><li>Spills (i.e. oil, gasoline, grease, etc.) during the construction, operation, and decommissioning phases</li></ul>		<ul style="list-style-type: none"><li>Develop a spill response plan and train staff on appropriate procedures.</li><li>Keep emergency spill kits on site.</li><li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li><li>Dispose of waste material by authorized and approved off-site vendors.</li><li>Store hazardous materials in designated areas.</li><li>Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from significant habitats.</li></ul>	
		<ul style="list-style-type: none"><li>Changes in soil moisture and compaction</li></ul>		<ul style="list-style-type: none"><li>Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li><li>Minimize paved surfaces and design roads to promote infiltration.</li><li>Clearly delineate the dripline and root zone of all trees within 10m of construction activities</li></ul>	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				with erosion fencing or other barrier. <ul style="list-style-type: none"><li>Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and topsoil removal.</li></ul>	
BMA-002  Bat Maternity Colony	0-30m	<ul style="list-style-type: none"><li>Accidental damage to habitat, including tree limbs (the Project Location is sited outside of SWH – vegetation removal is not anticipated)</li></ul>	<p><u>Selection of monitoring sites:</u> Monitoring sites will be selected within candidate bat maternity colony habitats identified through the site investigation using the criteria outlined in the Bats and Bat Habitats guidelines (OMNR 2011a).</p> <p>A total of 10 suitable cavity trees will be selected within BMA-002 candidate bat maternity colony habitat since it is less than 10ha in size.</p> <p><u>Monitoring:</u> Following the Bats and Bat Habitats guidelines (OMNR 2011a), exit surveys will be conducted during the month of June. Observers will choose a viewing station with a clear aspect of cavity opening or crevice. Cavity opening or crevice should be monitored from 30 minutes before dusk until 60 minutes after dusk for evidence of bats exiting. An acoustic bat detector paired with a digital recorder will be used in conjunction with visual surveys to determine species. Each candidate tree will only be monitored once. Night-vision or infrared video equipment may be substituted for observers. Once an evening's monitoring is completed (60 minutes after sunset), the cameras will be collected by the staff members conducting visual surveys in the same candidate significant habitat and the visual recordings for each video recorder will be reviewed for evidence of significant bat roosting activity.</p> <p>The locations of monitoring sites within the candidate significant habitat will be determined based on conditions of the site. The locations of the candidate significant habitat can be seen on Maps 4-1 to 4-9.</p>	<ul style="list-style-type: none"><li>Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to potentially significant bat roosting trees.</li><li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include instances where the natural feature is at higher elevation than the occurring construction activity.</li><li>No use of herbicides (Project related activities only) within significant habitats during the construction, operation, and decommissioning phases.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Protection of bat maternity colony habitat.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Conduct post-construction behavioural monitoring of this feature for 3 years after construction, following pre-construction methods, for all features deemed significant. Full details of this monitoring will be provided in the Bird and Bat EEMP.</li><li>Conduct post-construction mortality monitoring at this facility for at least 3 years following MNRF guidelines (OMNR 2011a). The turbine closest to this habitat (T31) will be included with the subsample of turbines monitored during post-construction mortality monitoring, if this habitat is confirmed to be significant. Full details of this monitoring will be provided within the Bird and Bat EEMP.</li></ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"><li>Prune damaged trees through implementation of proper arboricultural techniques.</li><li>Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species depending on the extent of damage incurred.</li><li>An annual report, which documents the results of disturbance monitoring, will be prepared following each year that disturbance monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.</li><li>An annual report, which documents the results of mortality monitoring, will be prepared following each year that mortality monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.</li></ul>
		<ul style="list-style-type: none"><li>Noise disturbance/avoidance behaviour during construction</li></ul>		<ul style="list-style-type: none"><li>Schedule construction and regular (non-critical) maintenance activities to occur outside of the critical roosting period (June), unless specifically required in accordance with manufacturer specifications.</li><li>On site speed limits will be clearly posted, applied, and followed by construction staff throughout the construction, operation, and decommissioning phases.</li></ul>	
		<ul style="list-style-type: none"><li>Avoidance of habitat during operation phase</li></ul>			
		<ul style="list-style-type: none"><li>Direct mortality through collisions with operational turbines</li></ul>		<ul style="list-style-type: none"><li>Develop a Bird and Bat EEMP in accordance with MNRF's Bats and Bat Habitats (OMNR 2011a) guidance.</li></ul>	
		<ul style="list-style-type: none"><li>Sedimentation and erosion</li></ul>		<ul style="list-style-type: none"><li>Implement a sediment and erosion control plan.</li><li>Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area as identified within the sediment and erosion control plan.</li><li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li><li>Re-vegetate areas adjacent to the bat maternity colony as soon as possible after construction activities are complete.</li></ul>	
		<ul style="list-style-type: none"><li>Fugitive dust emission</li></ul>		<ul style="list-style-type: none"><li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li><li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site-specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li><li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li><li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li></ul>	<p>Performance Objective</p> <ul style="list-style-type: none"><li>Maintain vegetated buffers, including riparian zones.</li><li>Minimize impacts to bat maternity colony habitats.</li><li>Avoid contamination of bat maternity colony habitat.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place.</li><li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li><li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li><li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li></ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"><li>Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.</li><li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.</li><li>If sedimentation and erosion control measures fail and degradation of the habitat occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li><li>If fugitive dust control measures fail and degradation of the habitat occurs, appropriate</li></ul>
		<ul style="list-style-type: none"><li>Spills (i.e. oil, gasoline, grease, etc.) during the construction, operation, and decommissioning phases</li></ul>		<ul style="list-style-type: none"><li>Develop a spill response plan and train staff on appropriate procedures.</li><li>Keep emergency spill kits on site.</li><li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li><li>Dispose of waste material by authorized and approved off-site vendors.</li><li>Store hazardous materials in designated areas.</li></ul>	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				<ul style="list-style-type: none"><li>Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant habitats.</li></ul>	<p>contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</p> <ul style="list-style-type: none"><li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li><li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li></ul>
Bird Species of Conservation Concern:  EWP-002 (SCC-M) EWP-003 (SCC-G) Eastern Wood-Pewee Habitat  WTH-001 (SCC-C) Wood Thrush Habitat	0-30m	<ul style="list-style-type: none"><li>Accidental damage to habitat, including tree limbs (the Project Location is sited outside of SWH – vegetation removal is not anticipated)</li></ul>	Ten-minute point count surveys will be conducted within each of the candidate habitats for bird species of conservation concern in June and early July, 2016. Each point count station will be surveyed 3 times during early, mid and late season (spring and early summer) no less than 10 days apart.	<ul style="list-style-type: none"><li>Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to bird species of conservation concern habitat.</li><li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include instances where the natural feature is at higher elevation than the occurring construction activity.</li><li>No use of herbicides (Project related activities only) within significant habitats during the construction, operation, and decommissioning phases.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Minimize impacts to bird species of conservation concern habitat.</li><li>Minimize impacts to woodland/wetland integrity and diversity.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Conduct post-construction behaviour surveys of this habitat for 3 years following pre-construction survey methods to assess the potential Project disturbance on this habitat. Full details of this monitoring will be provided within the Bird and Bat EEMP.</li></ul> <p>Contingency Plan:</p> <ul style="list-style-type: none"><li>Prune damaged trees through implementation of proper arboricultural techniques.</li><li>Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species depending on the extent of damage incurred.</li></ul>
		<ul style="list-style-type: none"><li>Noise disturbance/avoidance behaviour during construction</li></ul>	The number of point counts required within each habitat depends on the size and habitat diversity at each site. Following the Birds and Bird Habitat Guidelines for Wind Power Projects (OMNR 2011b), point counts will be spaced at least 250m apart, ideally with the centre point at least 100m from the habitat edge. If more than one point count will be conducted within the habitats, a standardized transect will also be conducted between point count sites.	<ul style="list-style-type: none"><li>Schedule construction and regular (non-critical) maintenance activities located within 30m of significant bird species of conservation concern habitat to occur outside of the peak breeding bird season (May 1st – July 31st), whenever possible.</li><li>If construction or regular maintenance must occur during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>), have a biologist confirm birds will not be impacted by construction or maintenance activities.</li><li>On site speed limits will be clearly posted, applied, and followed by construction staff throughout the construction, operation, and decommissioning phases.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Minimize noise disturbance/avoidance behavior of bird species of conservation concern.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Conduct post-construction behaviour surveys of the habitat for 3 years following pre-construction survey methods to assess the potential Project disturbance on this habitat. Full details of this monitoring will be provided within the Bird and Bat EEMP.</li></ul> <p>Contingency Plan:</p> <ul style="list-style-type: none"><li>An annual report, which documents the results of disturbance monitoring, will be prepared following each year that disturbance monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.</li></ul>
		<ul style="list-style-type: none"><li>Direct mortality through collisions with operational turbines</li></ul>	<p>Surveys will be conducted between dawn (one half hour before sunrise) and 3 hours after sunrise. These surveys will occur during a time period when males are expected to be actively singing and defending territories.</p> <p>Days with high wind speeds and rain will be avoided. During each visit, the highest observed breeding evidence will be recorded for each species.</p> <p>The monitoring site locations within the habitat will be determined based on conditions of the site. The location of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	<ul style="list-style-type: none"><li>Develop a Bird and Bat EEMP in accordance with the Birds and Bird Habitat Guidelines (OMNR 2011b).</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Minimize the mortality of bird species of conservation concern from collisions with operational turbines.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Conduct post-construction mortality monitoring at this facility for at least 3 years following MNRF guidelines (OMNR 2011b). Full details of this monitoring will be provided within the Bird and Bat EEMP.</li></ul> <p>Contingency Plan:</p> <ul style="list-style-type: none"><li>An annual report, which documents the results of mortality monitoring, will be prepared following each year that mortality monitoring occurs. The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect this habitat.</li></ul>
		<ul style="list-style-type: none"><li>Sedimentation and erosion</li></ul>		<ul style="list-style-type: none"><li>Implement a sediment and erosion control plan.</li><li>Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area as identified within the sediment and erosion control plan.</li><li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend</li></ul>	<p>Performance Objective</p> <ul style="list-style-type: none"><li>Maintain vegetated buffers, including riparian zones.</li><li>Minimize impacts to bird species of conservation concern habitats.</li><li>Avoid contamination of bird species of conservation concern habitat.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Undertake regular construction monitoring and routine inspections to ensure proper</li></ul>

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				<p>work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</p> <ul style="list-style-type: none"><li>Re-vegetate areas adjacent to the bird species of conservation concern habitat as soon as possible after construction activities are complete.</li></ul>	<p>installation of erosion control and that proper fugitive dust control measures are in place.</p> <ul style="list-style-type: none"><li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li><li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li><li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li></ul>
		<ul style="list-style-type: none"><li>Fugitive dust emission</li></ul>		<ul style="list-style-type: none"><li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li><li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site-specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li><li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li><li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li></ul>	<p>Contingency Measure:</p> <ul style="list-style-type: none"><li>Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.</li><li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.</li><li>If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li><li>If fugitive dust control measures fail and degradation of the habitat(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li><li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li><li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li></ul>
		<ul style="list-style-type: none"><li>Spills (i.e. oil, gasoline, grease, etc.) during the construction, operation, and decommissioning phases</li></ul>		<ul style="list-style-type: none"><li>Develop a spill response plan and train staff on appropriate procedures.</li><li>Keep emergency spill kits on site.</li><li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li><li>Dispose of waste material by authorized and approved off-site vendors.</li><li>Store hazardous materials in designated areas.</li><li>Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant habitats.</li></ul>	
<p>Plant Species of Conservation Concern:</p> <p>MSE-005 (SCC-N) MSE-006 (SCC-L) MSE-007 (SCC-K) MSE-008 (SCC-G) Muskingum Sedge Habitat</p> <p>SRM-002 (SCC-K) Swamp Rose-mallow Habitat</p> <p>BGU-003 (SCC-K) Black Gum Habitat</p> <p>NFO-005 (SCC-L) NFO-006 (SCC-N) NFO-008 (SCC-K) Northern Fogfruit Habitat</p> <p>LTA-005 (SCC-N) LTA-006 (SCC-L) LTA-007 (SCC-K) LTA-008 (SCC-G)</p>	0-30m	<ul style="list-style-type: none"><li>Accidental damage to habitat, including tree limbs (the Project Location is sited outside of SWH – vegetation removal is not anticipated)</li></ul>	<p>One standardized area search will be conducted for each habitat. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted at a time of year when the species can be identified (refer to Table 10 for specific survey timing). The locations of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	<ul style="list-style-type: none"><li>Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to species to be retained and habitat.</li><li>Where construction is within 10m of a significant plant species of conservation concern habitat, erect erosion fencing, or other barrier, to correspond to the disturbance area limits.</li><li>Place the erosion fencing, or other barrier, as far away as possible from the significant plant species of conservation concern habitat, and no closer to the significant habitat than the dripline.</li><li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include instances where the natural feature is at higher elevation than the occurring construction activity.</li><li>No use of herbicides (Project related activities only) within significant habitats during the construction, operation, and decommissioning phases.</li></ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"><li>Minimize direct impacts to plant species of conservation concern.</li><li>Protect plant species of conservation concern habitat.</li><li>Minimize impacts on current species composition.</li><li>Reduce the potential spread of non-native or invasive species.</li></ul> <p>Monitoring:</p> <ul style="list-style-type: none"><li>Undertake regular monitoring of the dripline within 10m of construction activities for the duration of the construction and decommissioning phases of this Project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant tree species of conservation concern habitat.</li><li>Undertake regular monitoring of the dripline to ensure the work area is clearly delineated and dripline boundaries are respected when construction is anticipated to occur within 10-30m of significant tree species of conservation concern habitat, at a minimum frequency of once per month.</li><li>Conduct post-construction monitoring in years 1, 3, and 5 of operation at a time of year when the species can be identified (refer to Table 10 for specific survey timing). Following pre-construction survey methods, one standardized area search will be conducted throughout each significant habitat. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Specific locations of plant species of conservation identified during pre-construction surveys will also be monitored post-construction. The results of the surveys will be compared to the results of the pre-construction surveys to assess any potential changes in species populations or distribution.</li></ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"><li>Prune damaged trees through implementation of proper arboricultural techniques.</li></ul>

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Lizard's Tail Habitat  WSE-001 (SCC-G) WSE-006 (SCC-K) WSE-007 (SCC-L) WSE-008 (SCC-N) Wild Senna Habitat  CUP-002 (SCC-K) CUP-003 (SCC-N) Cup-Plant Habitat  WIS-005 (SCC-K) WIS-006 (SCC-L) WIS-007 (SCC-N) WIS-008 (SCC-G) Wing-stem Habitat  GIW-003 (SCC-N) GIW-005 (SCC-L) GIW-006 (SCC-K) Giant Ironweed Habitat					<ul style="list-style-type: none"> <li>Replace any plant species of conservation concern which are damaged or destroyed at a 1:1 ratio with plantings in the habitat. The success of any planted specimens will be monitored for 2 years after planting.</li> <li>If degradation of the habitat(s) occurs as a result of construction, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>An annual report, which documents the results of the post-construction monitoring, will be prepared following each year that post-construction monitoring occurs (i.e. following years 1, 3, and 5 of operation). The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect these habitats.</li> </ul>
		<ul style="list-style-type: none"> <li>Sedimentation and erosion</li> </ul>		<ul style="list-style-type: none"> <li>Implement a sediment and erosion control plan.</li> <li>Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area as identified within the sediment and erosion control plan.</li> <li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li> <li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li> <li>Re-vegetate areas adjacent to the plant species of conservation concern habitat as soon as possible after construction activities are complete.</li> </ul>	Performance Objective <ul style="list-style-type: none"> <li>Minimize impacts to plant species of conservation concern.</li> <li>Protect plant species of conservation concern habitat.</li> <li>Maintain vegetated buffers, including riparian zones.</li> <li>Avoid contamination of plant species of conservation concern habitat.</li> </ul>
		<ul style="list-style-type: none"> <li>Fugitive dust emission</li> </ul>		<ul style="list-style-type: none"> <li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li> <li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li> <li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> <li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> </ul>	Monitoring: <ul style="list-style-type: none"> <li>Conduct post-construction monitoring in years 1, 3, and 5 of operation at a time of year when the species can be identified (refer to Table 10 for specific survey timing). Following pre-construction survey methods, one standardized area search will be conducted throughout each significant habitat. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Specific locations of plant species of conservation identified during pre-construction surveys will also be monitored post-construction. The results of the surveys will be compared to the results of the pre-construction surveys to assess any potential changes in species populations or distribution.</li> <li>Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control and that proper fugitive dust control measures are in place.</li> <li>Monitor sediment and erosion control measures, such as erosion fencing, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.</li> <li>Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete.</li> <li>Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.</li> </ul>
		<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, etc.) during the construction, operation, and decommissioning phases</li> </ul>		<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> <li>Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant habitats.</li> </ul>	Contingency Measure: <ul style="list-style-type: none"> <li>Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.</li> <li>If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.</li> </ul>
		<ul style="list-style-type: none"> <li>Increased vegetation species competition through introduction of invasive vegetation species</li> </ul>		<ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing, or other barrier, to minimize seed transfer into suitable habitat.</li> <li>Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li> <li>Regularly clean vehicles and equipment.</li> <li>Vehicle use will occur primarily on access roads and in agricultural habitats, where invasive and non-native vegetation species are less likely to be concentrated.</li> </ul>	<ul style="list-style-type: none"> <li>If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>If fugitive dust control measures fail and degradation of the habitat(s) occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing</li> </ul>

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Proposed Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
					<p>mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</p> <ul style="list-style-type: none"> <li>If any potential changes in species populations or distribution are noted during post-construction surveys as a result of construction, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of changes to species populations or distribution.</li> <li>An annual report, which documents the results of the post-construction monitoring, will be prepared following each year that post-construction monitoring occurs (i.e. following years 1, 3, and 5 of operation). The report will be submitted to MNRF and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project to further protect these habitats.</li> </ul>
		<ul style="list-style-type: none"> <li>Changes in soil moisture and compaction</li> </ul>		<ul style="list-style-type: none"> <li>Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li> <li>Minimize paved surfaces and design roads to promote infiltration.</li> <li>Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or other barrier.</li> <li>Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and topsoil removal.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impact to soil moisture regime and vegetation species composition.</li> </ul> <p>• No monitoring or contingency plan required.</p>
ORV-001  Other Rare Vegetation Communities Habitat	>30-120m	<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, etc.) during the construction, operation, and decommissioning phases</li> </ul>	This habitat is being treated as significant, as potential negative effects can be mitigated through site specific construction mitigation measures.	<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impacts to rare vegetation communities.</li> <li>Protect rare vegetation communities habitat.</li> <li>Avoid contamination of rare vegetation communities habitat.</li> <li>Maintain vegetated buffers, including riparian zones.</li> </ul> <p>Monitoring:</p> <ul style="list-style-type: none"> <li>None required.</li> </ul>
		<ul style="list-style-type: none"> <li>Increased vegetation species competition through introduction of invasive vegetation species</li> </ul>		<ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing, or other barrier, to minimize seed transfer into suitable habitat. The environmental monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby significant rare vegetation communities. This could include instances where the significant rare vegetation communities are at a higher elevation than the occurring construction activity.</li> <li>Regularly clean vehicles and equipment.</li> <li>Vehicle use will occur primarily on access roads and in agricultural habitats, where invasive and non-native vegetation species are less likely to be concentrated.</li> </ul>	<p>Contingency Measure:</p> <ul style="list-style-type: none"> <li>Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.</li> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>
AWO-002  Amphibian Breeding Habitat (Woodland)	>30-120m	<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease, etc.) during the construction, operation, and decommissioning phases</li> </ul>	This habitat is being treated as significant, as potential negative effects can be mitigated through site specific construction mitigation measures.	<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impacts to woodland/wetland integrity and diversity.</li> </ul> <p>Monitoring:</p> <ul style="list-style-type: none"> <li>None required.</li> </ul> <p>Contingency Measure:</p> <ul style="list-style-type: none"> <li>Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.</li> <li>In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.</li> <li>If degradation of the natural feature occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.</li> </ul>
Plant Species of Conservation	>30-120m	<ul style="list-style-type: none"> <li>Spills (i.e. oil, gasoline, grease,</li> </ul>	These habitats are being treated as significant, as potential negative	<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Keep emergency spill kits on site.</li> </ul>	<p>Performance Objective:</p> <ul style="list-style-type: none"> <li>Minimize impacts to plant species of conservation concern.</li> </ul>



### 5.3.3 Generalized Impacts to Wildlife Habitat

In addition to the wildlife habitats identified above, NRSI biologists have identified a number of wildlife habitat types that may be present within the North Kent Wind 1 Project Area, but are located within 120m of, and not overlapping, Project components that are not expected to have an operational impact on these habitats. In accordance with the NHA Guide for Renewable Energy Projects (OMNR 2012), potential impacts to these habitats are typically associated with the temporary disturbance of construction activity and can be grouped together as generalized impacts and proposed mitigation measures.

NRSI biologists have reviewed the full suite of wildlife habitats that require generalized consideration, and have compiled a comprehensive list of proposed mitigation measures that will be implemented during the construction and decommissioning phases of the North Kent Wind 1 Project in Table 9.

Table 9. Summary of Potential Effects and Mitigation Measures for Generalized Wildlife Habitat during the Construction and Decommissioning Phases of the North Kent Wind 1 Project

Project Component	Project Activity	Potential Negative Effects	Proposed Mitigation Measures	Objectives
Buildings (collector substation, microwave tower, meteorological towers, POI, and O&M building)	Clearing, grubbing, grading, and topsoil removal.	<ul style="list-style-type: none"><li>• Sedimentation and erosion.</li><li>• Fugitive dust emission.</li><li>• Changes in soil moisture and compaction.</li></ul>	<ul style="list-style-type: none"><li>• Develop and implement a sediment and erosion control plan.</li><li>• Utilize erosion control measures, such as erosion blankets, silt fencing, straw bales, etc., for construction activities within 30m of a wetland, woodland, or water body.</li><li>• Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>• Maintain erosion control measures for the duration of construction or decommissioning activities as identified within the sediment and erosion control plan.</li><li>• Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li><li>• The environmental monitor will be an independent contractor with experience providing environmental recommendations on a large-scale construction site.</li><li>• On site speed limits will be clearly posted, applied, and followed by construction staff.</li><li>• Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li><li>• Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li><li>• Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li><li>• Store any stockpiled material more than 30m from a wetland, woodland, or water body.</li><li>• Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li></ul>	<ul style="list-style-type: none"><li>• Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.</li><li>• Maintain vegetated buffers, particularly within riparian zones.</li><li>• Minimize the impacts of sedimentation and fugitive dust on nearby natural features.</li></ul>
	Noise/human activity.	<ul style="list-style-type: none"><li>• Disturbance and/or mortality to local wildlife.</li></ul>	<ul style="list-style-type: none"><li>• Schedule all construction and decommissioning activities within 30m of generalized wildlife habitats outside of the core breeding period for migratory birds (May 1st – July 31st), wherever possible, to limit disturbance to migratory birds, or their nests.</li><li>• If construction and decommissioning activities within 30m of generalized wildlife habitats will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</li><li>• Schedule construction and decommissioning activities within 30m of woodlands or wetlands to occur during daylight hours, wherever possible.</li><li>• If construction and decommissioning activities within 30m of woodlands or wetlands must occur outside of daylight hours, any spotlights will be directed downward and/or away from the woodland or wetland to limit potential light disturbance to breeding birds.</li><li>• On site speed limits will be clearly posted, applied, and followed by construction staff.</li></ul>	<ul style="list-style-type: none"><li>• Minimize impacts to migratory birds and their nests.</li><li>• Limit potential wildlife road mortalities.</li></ul>
	Accidental damage to vegetation.	<ul style="list-style-type: none"><li>• Damage or removal of vegetation adjacent to the Project Location.</li></ul>	<ul style="list-style-type: none"><li>• Where construction activity occurs within 30m of a naturally vegetated feature (i.e. woodland, wetland, etc.), clearly delineate the construction area with protective fencing, such as silt fencing or other barrier, to avoid accidental damage to species to be retained.</li><li>• Depending on site-specific conditions, the environmental monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include instances where the natural features are at a higher elevation than the occurring construction activity when appropriate.</li><li>• Document all trees (&gt;10cm dbh) to be removed and retained within the disturbance area limit, prior to construction.</li><li>• Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques.</li></ul>	<ul style="list-style-type: none"><li>• Minimize impacts to natural vegetation.</li></ul>
	Spills or accidental fluid release (i.e. oil, gasoline, grease, etc.).	<ul style="list-style-type: none"><li>• Soil or water contamination.</li></ul>	<ul style="list-style-type: none"><li>• Develop a spill response plan and train staff on appropriate procedures.</li><li>• Keep emergency spill kits on site.</li><li>• Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li><li>• Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from natural features or water bodies.</li><li>• Dispose of waste material by authorized and approved off-site vendors.</li><li>• Store hazardous materials in designated areas.</li></ul>	<ul style="list-style-type: none"><li>• Minimize impacts to natural features and wildlife habitats.</li><li>• Avoid contamination of natural features or water bodies.</li></ul>
Turbines	Clearing, grubbing, grading, and topsoil removal.	<ul style="list-style-type: none"><li>• Sedimentation and erosion.</li><li>• Fugitive dust emission.</li><li>• Changes in soil moisture and compaction.</li></ul>	<ul style="list-style-type: none"><li>• Develop and implement a sediment and erosion control plan.</li><li>• Utilize erosion control measures, such as erosion blankets, silt fencing, straw bales, etc., for construction activities within 30m of a wetland, woodland, or water body.</li><li>• Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>• Maintain erosion control measures for the duration of construction or decommissioning activities as identified within the sediment and erosion control plan.</li><li>• Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li><li>• On site speed limits will be clearly posted, applied, and followed by construction staff.</li><li>• Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li><li>• Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li><li>• Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li><li>• Store any stockpiled material more than 30m from a wetland, woodland, or water body.</li><li>• Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li></ul>	<ul style="list-style-type: none"><li>• Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.</li><li>• Maintain vegetated buffers, particularly within riparian zones.</li><li>• Minimize the impacts of sedimentation on nearby natural features.</li></ul>
	Noise/human activity.	<ul style="list-style-type: none"><li>• Disturbance and/or</li></ul>	<ul style="list-style-type: none"><li>• Schedule all construction and decommissioning activities within 30m of generalized wildlife habitats outside of the core breeding period for migratory birds (May 1st –</li></ul>	<ul style="list-style-type: none"><li>• Minimize impacts to migratory</li></ul>

Project Component	Project Activity	Potential Negative Effects	Proposed Mitigation Measures	Objectives
		mortality to local wildlife.	<p>July 31st), wherever possible, to limit disturbance to migratory birds, or their nests.</p> <ul style="list-style-type: none"> <li>• If construction and decommissioning activities within 30m of generalized wildlife habitats will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</li> <li>• Schedule construction and decommissioning activities within 30m of woodlands or wetlands to occur during daylight hours, wherever possible.</li> <li>• If construction and decommissioning activities within 30m of woodlands or wetlands must occur outside of daylight hours, any spotlights will be directed downward and/or away from the woodland or wetland to limit potential light disturbance to breeding birds.</li> <li>• On site speed limits will be clearly posted, applied, and followed by construction staff.</li> </ul>	<p>birds and their nests.</p> <ul style="list-style-type: none"> <li>• Limit potential wildlife road mortalities.</li> </ul>
	Accidental damage to vegetation.	<ul style="list-style-type: none"> <li>• Damage or removal of vegetation adjacent to the Project Location.</li> </ul>	<ul style="list-style-type: none"> <li>• Where construction activity occurs within 30m of a naturally vegetated feature (i.e. woodland, wetland, etc.), clearly delineate the construction area with protective fencing, such as silt fencing or other barrier, to avoid accidental damage to species to be retained.</li> <li>• Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby significant features. This could include instances where the significant features are at a higher elevation than the occurring construction activity</li> <li>• Document all trees (&gt;10cm dbh) to be removed and retained within the disturbance area limit, prior to construction.</li> <li>• Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques.</li> <li>• Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize impacts to natural vegetation.</li> </ul>
	Chemical spills or accidental fluid release (i.e. oil, gasoline, grease, etc.).	<ul style="list-style-type: none"> <li>• Soil or water contamination.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop a spill response plan and train staff on appropriate procedures.</li> <li>• Keep emergency spill kits on site.</li> <li>• Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>• Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from natural features or water bodies.</li> <li>• Dispose of waste material by authorized and approved off-site vendors.</li> <li>• Store hazardous materials in designated areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize impacts to natural features and wildlife habitats.</li> <li>• Avoid contamination of natural features or water bodies.</li> </ul>
	Dewatering activities (if necessary)	<ul style="list-style-type: none"> <li>• Reduced stream flow rate.</li> <li>• Increased water temperature.</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor rate of water pumping and timing to meet requirement of less than 50,000L per day, and contact the MOECC if a situation arises where this cannot be met.</li> <li>• Control quantity and quality of water discharge using best management practices, and avoid direct discharge into wetlands or watercourses.</li> <li>• Restrict taking of groundwater and surface water during extreme low flow time periods.</li> </ul>	<ul style="list-style-type: none"> <li>• Maintain ground and surface water conditions with those near pre-construction conditions.</li> </ul>
	Installation of impervious surfaces.	<ul style="list-style-type: none"> <li>• Increase surface run-off.</li> <li>• Changes in surface water drainage.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li> <li>• Minimize paved surfaces and design roads to promote infiltration.</li> <li>• Maintain vegetative buffers around water bodies.</li> <li>• Control quantity and quality of stormwater discharge using best management practices.</li> <li>• Minimize grading activities to maintain existing drainage patterns as much as possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Limit disturbances to surface water drainage patterns.</li> </ul>
Permanent Access Roads	Clearing, grubbing, grading, and topsoil removal.	<ul style="list-style-type: none"> <li>• Sedimentation and erosion.</li> <li>• Fugitive dust emission.</li> <li>• Changes in soil moisture and compaction.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop and implement a sediment and erosion control plan.</li> <li>• Utilize erosion control measures, such as erosion blankets, silt fencing, straw bales, etc., for construction activities within 30m of a wetland, woodland, or water body.</li> <li>• Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li> <li>• Maintain erosion control measures for the duration of construction or decommissioning activities as identified within the sediment and erosion control plan.</li> <li>• Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li> <li>• On site speed limits will be clearly posted, applied, and followed by construction staff.</li> <li>• Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li> <li>• Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> <li>• Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> <li>• Store any stockpiled material more than 30m from a wetland, woodland, or water body.</li> <li>• Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.</li> <li>• Maintain vegetated buffers, particularly within riparian zones.</li> <li>• Minimize the impacts of sedimentation on nearby natural features.</li> </ul>
	Noise/human activity.	<ul style="list-style-type: none"> <li>• Disturbance and/or mortality to local wildlife.</li> </ul>	<ul style="list-style-type: none"> <li>• Schedule all construction and decommissioning activities within 30m of generalized wildlife habitats outside of the core breeding period for migratory birds (May 1st – July 31st), wherever possible, to limit disturbance to migratory birds, or their nests.</li> <li>• If construction and decommissioning activities within 30m of generalized wildlife habitats will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</li> <li>• Schedule construction and decommissioning activities within 30m of woodlands or wetlands to occur during daylight hours, wherever possible.</li> <li>• If construction and decommissioning activities within 30m of woodlands or wetlands must occur outside of daylight hours, any spotlights will be directed downward and/or away from the woodland or wetland to limit potential light disturbance to breeding birds.</li> <li>• On site speed limits will be clearly posted, applied, and followed by construction staff.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize impacts to migratory birds and their nests.</li> <li>• Limit potential wildlife road mortalities.</li> </ul>

Project Component	Project Activity	Potential Negative Effects	Proposed Mitigation Measures	Objectives
	Accidental damage to vegetation.	<ul style="list-style-type: none"><li>• Damage or removal of vegetation adjacent to the Project Location.</li></ul>	<ul style="list-style-type: none"><li>• Where construction activity occurs within 30m of a naturally vegetated feature (i.e. woodland, wetland, etc.), clearly delineate the construction area with protective fencing, such as silt fencing or other barrier, to avoid accidental damage to species to be retained.</li><li>• Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby significant features. This could include instances where the significant features are at a higher elevation than the occurring construction activity</li><li>• Document all trees (&gt;10cm dbh) to be removed and retained within the disturbance area limit, prior to construction.</li><li>• Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques.</li><li>• Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li></ul>	<ul style="list-style-type: none"><li>• Minimize impacts to natural vegetation.</li></ul>
	Chemical spills or accidental fluid release (i.e. oil, gasoline, grease, etc.).	<ul style="list-style-type: none"><li>• Soil or water contamination.</li></ul>	<ul style="list-style-type: none"><li>• Develop a spill response plan and train staff on appropriate procedures.</li><li>• Keep emergency spill kits on site.</li><li>• Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li><li>• Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from natural features or water bodies.</li><li>• Dispose of waste material by authorized and approved off-site vendors.</li><li>• Store hazardous materials in designated areas.</li></ul>	<ul style="list-style-type: none"><li>• Minimize impacts to natural features and wildlife habitats.</li><li>• Avoid contamination of natural features or water bodies.</li></ul>
	Installation of impervious surfaces.	<ul style="list-style-type: none"><li>• Changes in soil moisture and compaction.</li></ul>	<ul style="list-style-type: none"><li>• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li><li>• Minimize paved surfaces and design roads to promote infiltration.</li><li>• Maintain vegetative buffers around water bodies.</li><li>• Control quantity and quality of stormwater discharge using best management practices.</li><li>• Minimize grading activities to maintain existing drainage patterns as much as possible.</li></ul>	<ul style="list-style-type: none"><li>• Limit disturbances to surface water drainage patterns.</li></ul>
Collector Lines (Underground or Overhead)	Clearing, grubbing, grading, and topsoil removal.	<ul style="list-style-type: none"><li>• Sedimentation and erosion.</li><li>• Fugitive dust emission.</li><li>• Changes in soil moisture and compaction.</li><li>• Removal of vegetation within the existing municipal road right-of-way.</li></ul>	<ul style="list-style-type: none"><li>• Develop and implement a sediment and erosion control plan.</li><li>• Utilize erosion control measures, such as erosion blankets, silt fencing, straw bales, etc., to delineate construction activities within 30m of a wetland, woodland, or water body.</li><li>• Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate.</li><li>• Maintain erosion control measures for the duration of construction or decommissioning activities as identified within the sediment and erosion control plan.</li><li>• Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li><li>• On site speed limits will be clearly posted, applied, and followed by construction staff.</li><li>• Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li><li>• Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li><li>• Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li><li>• Store any stockpiled material more than 30m from a wetland, woodland, or water body.</li><li>• Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li><li>• For roadside collector routes, keep vegetation removal (if any) to a minimum and limited to the road right-of-way.</li><li>• Locate all entry and exit pits (directional drilling) a sufficient distance from the edge of natural features (i.e. woodlands, wetlands) to maintain a vertical depth of at least 1.5m at all times below the natural features to protect the critical root zone.</li><li>• Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal.</li><li>• Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.</li></ul>	<ul style="list-style-type: none"><li>• Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.</li><li>• Maintain vegetated buffers, particularly within riparian zones.</li><li>• Minimize the impacts of sedimentation on nearby natural features.</li></ul>
	Noise/human activity.	<ul style="list-style-type: none"><li>• Disturbance and/or mortality to local wildlife.</li></ul>	<ul style="list-style-type: none"><li>• Schedule all construction and decommissioning activities within 30m of generalized wildlife habitats outside of the core breeding period for migratory birds (May 1st – July 31st), wherever possible, to limit disturbance to migratory birds, or their nests.</li><li>• If construction and decommissioning activities within 30m of generalized wildlife habitats will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</li><li>• Schedule construction and decommissioning activities within 30m of woodlands or wetlands to occur during daylight hours, wherever possible.</li><li>• If construction and decommissioning activities within 30m of woodlands or wetlands must occur outside of daylight hours, any spotlights will be directed downward and/or away from the woodland or wetland to limit potential light disturbance to breeding birds.</li><li>• On site speed limits will be clearly posted, applied, and followed by construction staff.</li></ul>	<ul style="list-style-type: none"><li>• Minimize impacts to migratory birds and their nests.</li><li>• Limit potential wildlife road mortalities.</li></ul>

Project Component	Project Activity	Potential Negative Effects	Proposed Mitigation Measures	Objectives
	Accidental damage to vegetation.	<ul style="list-style-type: none"> <li>Damage or removal of vegetation adjacent to the Project Location.</li> </ul>	<ul style="list-style-type: none"> <li>Where construction activity occurs within 30m of a naturally vegetated feature (i.e. woodland, wetland, etc.), clearly delineate the construction area with protective fencing, such as silt fencing or other barrier, to avoid accidental damage to species to be retained.</li> <li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby significant features. This could include instances where the significant features are at a higher elevation than the occurring construction activity</li> <li>Document all trees (&gt;10cm dbh) to be removed and retained within the disturbance area limit, prior to construction.</li> <li>Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques.</li> <li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to natural vegetation.</li> </ul>
	Chemical spills or accidental fluid release (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.)	<ul style="list-style-type: none"> <li>Soil or water contamination.</li> </ul>	<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> <li>Develop a ‘frac-out’ contingency plan and train staff on appropriate procedures during the construction phase.</li> <li>Keep emergency spill kits on site.</li> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> <li>Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from natural features or water bodies.</li> <li>Dispose of waste material by authorized and approved off-site vendors.</li> <li>Store hazardous materials in designated areas.</li> <li>Ensure directional drill depth is at an appropriate level below natural features (i.e. woodlands, wetlands, etc.) or water bodies to prevent ‘frac-out’.</li> <li>Locate all entry and exit pits (directional drilling) a sufficient distance from the edge of natural features (i.e. woodlands, wetlands) to maintain a vertical depth of at least 1.5m at all times below the natural features to protect the critical root zone.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to natural features and wildlife habitats.</li> <li>Avoid contamination of natural features or water bodies.</li> </ul>
Construction Staging Area	Clearing, grubbing, grading, and topsoil removal.	<ul style="list-style-type: none"> <li>Sedimentation and erosion.</li> <li>Fugitive dust emission.</li> <li>Changes in soil moisture and compaction.</li> </ul>	<ul style="list-style-type: none"> <li>Develop and implement a sediment and erosion control plan.</li> <li>Utilize erosion control measures, such as erosion blankets, silt fencing, straw bales, etc., for construction activities within 30m of a wetland, woodland, or water body.</li> <li>Maintain erosion control measures for the duration of construction or decommissioning activities as identified within the sediment and erosion control plan.</li> <li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li> <li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li> <li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression.</li> <li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> <li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> <li>Store any stockpiled material more than 30m from a wetland, woodland, or water body.</li> <li>Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.</li> <li>Maintain vegetated buffers, particularly within riparian zones.</li> <li>Minimize the impacts of sedimentation on nearby natural features.</li> </ul>
	Noise/human activity.	<ul style="list-style-type: none"> <li>Disturbance and/or mortality to local wildlife.</li> </ul>	<ul style="list-style-type: none"> <li>Schedule all construction and decommissioning activities within 30m of generalized wildlife habitats outside of the core breeding period for migratory birds (May 1st – July 31st), wherever possible, to limit disturbance to migratory birds, or their nests.</li> <li>If construction and decommissioning activities within 30m of generalized wildlife habitats will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</li> <li>Schedule construction and decommissioning activities within 30m of woodlands or wetlands to occur during daylight hours, wherever possible.</li> <li>If construction and decommissioning activities within 30m of woodlands or wetlands must occur outside of daylight hours, any spotlights will be directed downward and/or away from the woodland or wetland to limit potential light disturbance to breeding birds.</li> <li>On site speed limits will be clearly posted, applied, and followed by construction staff.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to migratory birds and their nests.</li> <li>Limit potential wildlife road mortalities.</li> </ul>
	Accidental damage to vegetation.	<ul style="list-style-type: none"> <li>Damage or removal of vegetation adjacent to the Project Location.</li> </ul>	<ul style="list-style-type: none"> <li>Where construction activity occurs within 30m of a naturally vegetated feature (i.e. woodland, wetland, etc.), clearly delineate the construction area with protective fencing, such as silt fencing or other barrier, to avoid accidental damage to species to be retained.</li> <li>Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby significant features. This could include instances where the significant features are at a higher elevation than the occurring construction activity</li> <li>Document all trees (&gt;10cm dbh) to be removed and retained within the disturbance area limit, prior to construction.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to natural vegetation.</li> </ul>

Project Component	Project Activity	Potential Negative Effects	Proposed Mitigation Measures	Objectives
			<ul style="list-style-type: none"><li>• Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques.</li><li>• Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li></ul>	
	Chemical spills or accidental fluid release (i.e. oil, gasoline, grease, etc.).	<ul style="list-style-type: none"><li>• Soil or water contamination.</li></ul>	<ul style="list-style-type: none"><li>• Develop a spill response plan and train staff on appropriate procedures.</li><li>• Keep emergency spill kits on site.</li><li>• Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li><li>• Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from natural features or water bodies.</li><li>• Dispose of waste material by authorized and approved off-site vendors.</li><li>• Store hazardous materials in designated areas.</li></ul>	<ul style="list-style-type: none"><li>• Minimize impacts to natural features and wildlife habitats.</li><li>• Avoid contamination of natural features or water bodies.</li></ul>
	Installation of impervious surfaces.	<ul style="list-style-type: none"><li>• Changes in soil moisture and compaction.</li></ul>	<ul style="list-style-type: none"><li>• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li><li>• Maintain vegetative buffers around water bodies.</li><li>• Control quantity and quality of stormwater discharge using best management practices.</li><li>• Minimize grading activities to maintain existing drainage patterns as much as possible.</li></ul>	<ul style="list-style-type: none"><li>• Limit disturbances to surface water drainage patterns.</li></ul>

## 6.0 Summary of Commitments

For each natural feature or wildlife habitat that has been determined to be significant, including treated as significant, NRSI biologists have identified potential negative impacts, proposed mitigation measures, and contingency plans associated with the construction, operation, and decommissioning phases of this Project.

To assist in the summary of the potential impacts and mitigation measures associated with the North Kent Wind 1 Project, NRSI has summarized the full extent of pre-construction monitoring commitments, proposed mitigation measures, and post-construction monitoring commitments in the following sections.

### 6.1 Pre-Construction Monitoring Commitments

In accordance with the NHA process, NRSI biologists have identified several natural features that have been treated as significant for the purposes of this report. These features have been treated as significant until additional pre-construction surveys can be completed to confirm (or deny) the significance based on provincially accepted evaluation criteria as outlined in the SWH Criteria Schedules for Ecoregion 7E (MNRF 2015). The pre-construction surveys that will be conducted as part of the commitments made in this EIS are summarized in Table 10.

**Table 10. Summary of Pre-Construction Monitoring Commitments for the North Kent Wind 1 Project**

Wildlife Habitat Type	Generalized Methods*	Location/ Feature(s)
Bat Maternity Colony	<p>Two candidate bat maternity colony habitats were identified through the site investigation. The presence of suitable cavity trees within one candidate bat maternity colony habitat (BMA-001) could not be verified during the site investigation phase of the Project as site access was denied. As such, no further surveys will be conducted at BMA-001, and the habitat will be treated as significant; however, in the event that site access is granted prior to June 2016, a site investigation will be conducted to verify the presence of <math>\geq 10</math> wildlife trees per hectare, measured at <math>\geq 25</math>cm dbh. If candidate significant habitat is determined to be absent, the habitat will be confirmed not significant. If candidate significant habitat is determined to be present, proposed evaluation methods are identified below.</p> <p>If candidate significant habitat is determined to be present within BMA-001, a total of 12 suitable cavity trees will be selected since</p>	BMA-001 BMA-002

Wildlife Habitat Type	Generalized Methods*	Location/ Feature(s)
	<p>it is 11.91ha in size. Up to 10 suitable cavity trees (less if 10 suitable trees aren't present) will be selected within BMA-002 since it is less than 10ha in size. Monitoring sites within the 2 candidate bat maternity colony habitats will be selected using the criteria outlined in the Bats and Bat Habitats guidelines (OMNR 2011a).</p> <p>Following the Bats and Bat Habitats guidelines (OMNR 2011a), exit surveys will be conducted during the month of June. Observers will choose a viewing station with a clear aspect of cavity opening or crevice, which will be monitored from 30 minutes before dusk until 60 minutes after dusk for evidence of bats exiting. An acoustic bat detector paired with a digital recorder will be used in conjunction with visual surveys to determine species. Each candidate tree will only be monitored once. Night-vision or infrared video equipment may be substituted for observers. Once an evening's monitoring is completed (60 minutes after sunset), the cameras will be collected by the staff members conducting visual surveys in the same candidate significant habitat and the visual recordings for each video recorder will be reviewed for evidence of significant bat roosting activity.</p> <p>The locations of the candidate significant habitat can be seen on Maps 4-1 to 4-9.</p>	
<p>Colonially-Nesting Breeding Bird Habitat (Trees/Shrubs)</p>	<p>The presence of nest bowls within the candidate colonially-nesting bird breeding habitat could not be identified during the site investigation phase of the Project as site access was denied within a portion of WOD-002. As such, no further surveys will be conducted, and the habitat will be treated as significant; however in the event that site access is granted prior to April 2016, a site investigation will be conducted to verify the presence of nest bowls within the candidate habitat. If candidate significant habitat is determined to be present, proposed evaluation methods are identified below. If candidate significant habitat is determined to be absent, the habitat will be confirmed not significant.</p> <p>Surveys will consist of a 15 minute point count during the breeding season from a suitable vantage point located in close proximity to where nest bowls are located, and will occur once in each of April, June, and August.</p> <p>The objective of this survey is to determine if active heron nests are present within the candidate colonially-nesting bird breeding habitat.</p> <p>All individuals will be recorded along with information on species, behaviour, movement and time observed.</p> <p>The locations of monitoring sites within the candidate significant habitat will be determined based on conditions of the site. .</p> <p>The location of the candidate significant habitat can be seen on Maps 4-1 to 4-9.</p>	<p>CBT-001</p>
<p>Old Growth Forest</p>	<p>The presence of an old growth forest within one woodland could not be confirmed during the site investigation phase of the</p>	<p>OGF-001</p>

Wildlife Habitat Type	Generalized Methods*	Location/ Feature(s)
	<p>Project, as site access was denied. As such, no further surveys will be conducted and the habitat will be treated as significant; however, in the event that site access status changes prior to July 2016, a site investigation will be conducted to confirm the age estimate of tree species being &gt;140 year old within the forest ecosite. If candidate significant habitat is determined to be present (i.e. dominant tree species estimated to be greater than 140 years old), the habitat will be confirmed significant. If candidate significant habitat is determined to be absent, the habitat will be confirmed not significant.</p> <p>The location of the candidate significant habitat can be seen on Maps 5-1 to 5-9.</p>	
Waterfowl Nesting Area	<p>The presence of a waterfowl nesting area within one woodland could not be verified during the site investigation phase of the Project as site access was denied. As such, no further surveys will be conducted and the habitat will be treated as significant; however, in the event that site access changes prior to April 2016, a site investigation will be conducted to verify the presence of suitable permanent open water, in addition to shrubland/grassland or suitable cavity trees for nesting in upland areas &gt;40cm dbh. If candidate significant habitat is deemed to be absent, the habitat will be confirmed not significant. If candidate significant habitat is determined to be present, area searches will be conducted within the candidate waterfowl nesting area. This method will involve walking the perimeter of the wetland and counting all observable waterfowl using the wetlands.</p> <p>Surveys will be conducted on 3 separate visits, once in each of April, May, and June 2016, to capture both early and late nesting species.</p> <p>Surveys will be carried out during the early morning (sunrise to 4 hours after sunrise). All individuals will be recorded along with information on species, behaviour, movement and time observed. Optimal weather conditions for these surveys are clear, sunny days with little to no precipitation. Surveys will be postponed and re-scheduled if poor weather conditions are encountered, specifically if high winds or heavy precipitation is noted.</p> <p>The location of the candidate significant habitat can be seen on Maps 5-1 to 5-9.</p>	WFN-001
Amphibian Breeding Habitat (Woodland)	<p>Three evening amphibian call surveys will be conducted at the one candidate habitat, once in each of April, May and June 2016. Each survey will last 3 minutes, following the accepted Marsh Monitoring Program protocol, and will begin no earlier than one half hour after sunset and end before midnight. Semi-circular point counts will be conducted at each habitat to monitor calling amphibians. Several point counts may be required at a single habitat in order to adequately survey the area. Point counts will be located at least 500m apart to prevent counting duplicate amphibian calls. These surveys will be conducted within habitats where site access has been granted. Where site access has not been granted, point counts may be conducted along the roadside or adjacent property.</p>	AWO-001

Wildlife Habitat Type	Generalized Methods*	Location/ Feature(s)
	<p>During each survey, biologists will record species and calling abundance codes, along with other appropriate information (date, time, weather, etc.). A UTM will be taken for each call location to ensure consistency between survey visits.</p> <p>Where site access has been granted, 2 amphibian egg mass searches will also be conducted within each habitat during daylight hours. The exact timing of the surveys will be dependent on 2016 spring conditions and when amphibians are expected to be breeding within the general vicinity of the Project Area, but are expected to occur once in April and again in either May or June. A minimum search effort of 30 minutes will be used on each visit, in each habitat. These area searches will include walking within the wetland or vernal pool along the perimeter, looking for egg masses. Due to the composition and attributes of the candidate amphibian breeding habitats, special equipment will not be required to identify egg masses; however, visual surveys conducted in breeding ponds with high water levels will require the use of chest waders. This approach is expected to effectively identify egg masses, while minimizing any disturbance effects caused by sampling.</p> <p>If candidate significant habitat (vernal pools) is determined to be not present during the first site visit, no specific studies will be conducted and the habitat will be confirmed not significant.</p> <p>The locations of the candidate significant habitat can be seen on Maps 5-1 to 5-9.</p>	
Marsh Bird Breeding Habitat	<p>Surveys will consist of 15 minute point counts within the candidate significant habitat during the breeding season, occurring twice between mid-May and early July 2016, no less than 10 days apart, following the accepted Marsh Monitoring Program protocol (Bird Studies Canada 2009). Each survey will be conducted in the morning (beginning 30 minutes before sunrise and ending no later than 1000hrs) or evening (occurring no earlier than 4 hours before sunset and ending before dark), when marsh birds are actively nesting in wetland habitats.</p> <p>Each survey will be conducted under near optimal weather conditions, on clear, warm (at least 16°C) evenings, with no precipitation and little or no wind.</p> <p>Point counts will be conducted within the habitat where site access has been granted, or from the property adjacent to the habitat, where site access has not been granted. Each point count will last for 15 minutes, and will be sub-divided into three 5 minute components: a 5 minute passive (silent) observation period, a 5 minute call playback period, and a second 5 minute passive observation period.</p> <p>If candidate significant habitat (shallow water with emergent aquatic vegetation) is determined to be not present on the first site visit, no specific studies will be conducted and the habitat will be confirmed not significant.</p> <p>The locations of monitoring sites within the candidate significant</p>	MBB-001

Wildlife Habitat Type	Generalized Methods*	Location/ Feature(s)
	<p>habitat will be determined based on conditions of the site.</p> <p>The location of the candidate significant habitat can be seen on Maps 6-1 to 6-9.</p>	
Eastern Wood-Pewee <i>(Contopus virens)</i>	<p>Ten-minute point count surveys will be conducted within each of the 3 habitats for eastern wood-pewee in June and early July 2016. Each point count station will be surveyed 3 times during early, mid and late season (spring and early summer) no less than 10 days apart.</p> <p>The number of point counts required depends on the size and habitat diversity at each site. Following the Birds and Bird Habitat Guidelines for Wind Power Projects (OMNR 2011b), point counts will be spaced at least 250m apart, ideally with the centre point at least 100m from the habitat edge. Where more than one point count will be conducted within each candidate habitat, a standardized transect will also be conducted between point count sites.</p> <p>Surveys will be conducted between dawn (one half hour before sunrise) and 3 hours after sunrise. These surveys will occur during a time period when males are expected to be actively singing and defending territories.</p> <p>Days with high wind speeds and rain will be avoided. During each visit, the highest observed breeding evidence will be recorded for each species.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	EWP-001 (SCC-A) EWP-002 (SCC-M) EWP-003 (SCC-G)
Wood Thrush <i>(Hylocichla mustelina)</i>	<p>Ten-minute point count surveys will be conducted within the habitat for wood thrush in June and early July 2016. Each point count station will be surveyed 3 times during early, mid and late season (spring and early summer) no less than 10 days apart.</p> <p>The number of point counts required depends on the size and habitat diversity at the site. Following the Birds and Bird Habitat Guidelines for Wind Power Projects (OMNR 2011b), point counts will be spaced at least 250m apart, ideally with the centre point at least 100m from the habitat edge. Where more than one point count will be conducted within the candidate habitat, a standardized transect will also be conducted between point count sites.</p> <p>Surveys will be conducted between dawn (one half hour before sunrise) and 3 hours after sunrise. These surveys will occur during a time period when males are expected to be actively singing and defending territories.</p> <p>Days with high wind speeds and rain will be avoided. During each visit, the highest observed breeding evidence will be recorded for each species.</p> <p>The location of the candidate significant habitat can be seen on Maps 6-1 to 6-9.</p>	WTH-001 (SCC-C)
Prairie Milkweed <i>(Asclepias)</i>	<p>One standardized area search will be conducted within the candidate significant prairie milkweed habitat within the Project</p>	PMI-001 (SCC-P)

Wildlife Habitat Type	Generalized Methods*	Location/ Feature(s)
<i>sullivantii</i> )	<p>Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of June to July.</p> <p>The location of the candidate significant habitat can be seen on Maps 6-1 to 6-9.</p>	
Pawpaw ( <i>Asimina triloba</i> )	<p>One standardized area search will be conducted within the one candidate significant pawpaw habitat within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering or leaf-on period of April to September.</p> <p>The location of the candidate significant habitat can be seen on Maps 6-1 to 6-9.</p>	PAW-001 (SCC-B)
Muskingum Sedge ( <i>Carex muskingumensis</i> )	<p>One standardized area search will be conducted within each of the 5 candidate significant Muskingum sedge habitats within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably after the plant has flowered in June or July.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	MSE-001 (SCC-A) MSE-005 (SCC-N) MSE-006 (SCC-L) MSE-007 (SCC-K) MSE-008 (SCC-G)
Rigid Sedge ( <i>Carex tetanica</i> )	<p>One standardized area search will be conducted within the candidate significant rigid sedge habitat within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the fruiting period of June to July.</p> <p>The location of the candidate significant habitat can be seen on Maps 6-1 to 6-9.</p>	RSE-001 (SCC-P)
Blue Ash ( <i>Fraxinus quadrangulata</i> )	<p>One standardized area search will be conducted within the one candidate significant blue ash habitat within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys can be made year-round based on the presence of distinctively shaped branches and twigs.</p> <p>The location of the candidate significant habitat can be seen on Maps 6-1 to 6-9.</p>	BAS-001 (SCC-B)
Swamp Rose-mallow ( <i>Hibiscus moscheutos</i> )	<p>One standardized area search will be conducted within each of the 2 candidate significant swamp rose-mallow habitats within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys can be made year-round (in absence of heavy snow cover) based on the robust, distinctive, and persistent nature of the plant and dead stems.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	SRM-001 (SCC-E) SRM-002 (SCC-K)

Wildlife Habitat Type	Generalized Methods*	Location/ Feature(s)
Black Gum ( <i>Nyssa sylvatica</i> )	<p>One standardized area search will be conducted within each of the 2 candidate significant black gum habitats within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the leaf-on period of April to September.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	BGU-001 (SCC-A) BGU-003 (SCC-K)
Northern Fogfruit ( <i>Phyla lanceolata</i> )	<p>One standardized area search will be conducted within each of the 5 candidate significant northern fogfruit habitats within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of July to August.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	NFO-001 (SCC-A) NFO-005 (SCC-L) NFO-006 (SCC-N) NFO-007 (SCC-P) NFO-008 (SCC-K)
Shumard Oak ( <i>Quercus shumardii</i> )	<p>One standardized area search will be conducted within the one candidate significant Shumard oak habitat within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the period of October to December when leaves and fully-developed acorns are available. The absence of the species can also be confirmed year-round if no other similar oak species are present in a given habitat.</p> <p>The location of the candidate significant habitat can be seen on Maps 6-1 to 6-9.</p>	SHU-002 (SCC-D)
Climbing Prairie Rose ( <i>Rosa setigera</i> )	<p>One standardized area search will be conducted within the candidate significant climbing prairie rose habitat within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the leaf-on period of late June to September.</p> <p>The location of the candidate significant habitat can be seen on Maps 6-1 to 6-9.</p>	CPR-001 (SCC-P)
Lizard's Tail ( <i>Saururus cernuus</i> )	<p>One standardized area search will be conducted within each of the 5 candidate significant lizard's tail habitats within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of June to August.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	LTA-001 (SCC-A) LTA-005 (SCC-N) LTA-006 (SCC-L) LTA-007 (SCC-K) LTA-008 (SCC-G)
Wild Senna ( <i>Senna hebecarpa</i> )	<p>One standardized area search will be conducted within each of the 6 candidate significant wild senna habitats within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be</p>	WSE-001 (SCC-G) WSE-003 (SCC-D) WSE-006 (SCC-K) WSE-007 (SCC-L)

Wildlife Habitat Type	Generalized Methods*	Location/ Feature(s)
	<p>conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of July to August.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	WSE-008 (SCC-N) WSE-009 (SCC-P)
Cup-plant ( <i>Silphium perfoliatum</i> )	<p>One standardized area search will be conducted within each of the 4 candidate significant cup-plant habitats within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of July to August.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	CUP-001 (SCC-D) CUP-002 (SCC-K) CUP-003 (SCC-N) CUP-004 (SCC-P)
Riddell's Goldenrod ( <i>Solidago riddellii</i> )	<p>One standardized area search will be conducted within the candidate significant Riddell's goldenrod habitat within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of August to September.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	RGL-001 (SCC-P)
Southern Slender Ladies' Tresses ( <i>Spiranthes lacera</i> var. <i>gracilis</i> )	<p>One standardized area search will be conducted within the candidate significant southern slender ladies' tresses habitat within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of August to September.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	SLT-001 (SCC-P)
Wing-stem ( <i>Verbesina alternifolia</i> )	<p>One standardized area search will be conducted within each of the 5 candidate significant wing-stem habitats within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of August to September.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	WIS-001 (SCC-A) WIS-005 (SCC-K) WIS-006 (SCC-L) WIS-007 (SCC-N) WIS-008 (SCC-G)
Giant Ironweed ( <i>Vernonia gigantea</i> )	<p>One standardized area search will be conducted within each of the 5 candidate significant giant ironweed habitats within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of July to October.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 6-1 to 6-9.</p>	GIW-003 (SCC-N) GIW-004 (SCC-A) GIW-005 (SCC-L) GIW-006 (SCC-K) GIW-008 (SCC-P)

Wildlife Habitat Type	Generalized Methods*	Location/ Feature(s)
Virginia Culver's-root ( <i>Veronicastrum virginicum</i> )	<p>One standardized area search will be conducted within the 1 candidate significant Virginia culver's-root habitat within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of June to September.</p> <p>The location of the candidate significant habitat can be seen on Maps 6-1 to 6-9.</p>	VCR-001 (SCC-P)
Cream Violet ( <i>Viola striata</i> )	<p>One standardized area search will be conducted within the 1 candidate significant cream violet habitat within the Project Area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of April to May.</p> <p>The location of the candidate significant habitat can be seen on Maps 6-1 to 6-9.</p>	CVI-001 (SCC-B)

*The survey methods described have assumed that site access will be granted. In the event that specific site access is not available for all, or part, of a specific feature, a potential alternative survey method will be conducted or the habitat will be treated as significant.*

## 6.2 Construction - Proposed Mitigation Measures

The various reporting sections above identify several mitigation measures that are recommended to limit potential impacts to significant natural features or wildlife habitats for the development of the North Kent Wind 1 Project. To assist in fully identifying all proposed mitigation measures that are recommended for this development, a summary table of construction related proposed mitigation measures has been provided in Table 11, including the mitigation objective and specific location where each proposed mitigation measure should be applied. The purpose of the table below is to consolidate the construction mitigation measures that are applicable to the natural heritage features and wildlife habitats that have been identified through the NHA process. These proposed mitigation measures, along with other proposed mitigation measures not associated with natural heritage, have been included in the *Construction Plan Report* (AECOM 2015a).

**Table 11. Summary of Construction Phase Proposed Mitigation Measures Recommended for the North Kent Wind 1 Project**

Proposed Mitigation Measure	Objective(s)	Location(s)
<ul style="list-style-type: none"> <li>Clearly delineate work area using erosion fencing or other barrier to avoid accidental damage to natural features, habitats, species, or wetland vegetation and to avoid impacting hydrological connectivity. Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. The environmental monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to natural features. This could include instances where the natural feature is at higher elevation than the occurring construction activity.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize direct impacts on natural features, habitats, species, or wetland vegetation and hydrological connectivity.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Where construction is within 10m of a significant woodland, wetland, old growth forest, or plant species of conservation concern habitat, erect erosion fencing to correspond to the disturbance area limits.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.</li> </ul>	<p>Within 10m of or overlapping any significant woodland, wetland, old growth forest, or plant species of conservation concern habitat:</p> <p><b>WOD-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, WET-001, 002, 005, 006, OGF-001*, PMI-001*, PAW-001*, MSE-001*, 005*, 006*, 007*, 008*, RSE-001*, BAS-001*, SRM-001*, 002*, BGU-001*, 003*, NFO-001*, 005*, 006*, 007*, 008*, SHU-002*, CPR-001*, LTA-001*, 005*, 006*, 007*, 008*, WSE-001*, 003*, 006*, 007*, 008*, 009*, CUP-001*, 002*, 003*, 004*, RGL-001*, SLT-001*, WIS-001*, 005*, 006*, 007*, 008*, GIW-003*, 004*, 005*, 006*, 008*, VCR-001*, CVI-001*</b></p>
<ul style="list-style-type: none"> <li>Place the erosion fencing, or other barrier, as far away as possible from the significant woodland, wetland, old growth forest, or plant species of conservation concern habitat and no closer to the significant feature than the dripline. Depending on site-specific conditions, the environmental monitor may consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to significant woodlands. This could include instances where the significant woodland is at higher elevation than the occurring construction activity.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.</li> </ul>	<p>Within 30m of or overlapping any significant woodland, wetland, old growth forest, or plant species of conservation concern habitat:</p> <p><b>WOD-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, WET-001, 002, 005, 006, OGF-001*, PMI-001*, PAW-001*, MSE-001*, 005*, 006*, 007*, 008*, RSE-001*, BAS-001*, SRM-001*, 002*, BGU-001*, 003*, NFO-001*, 005*, 006*, 007*, 008*, SHU-002*, CPR-001*, LTA-001*, 005*, 006*, 007*, 008*, WSE-001*, 003*, 006*, 007*, 008*, 009*, CUP-001*, 002*, 003*, 004*, RGL-001*, SLT-001*, WIS-001*, 005*, 006*, 007*, 008*, GIW-003*, 004*, 005*, 006*, 008*, VCR-001*, CVI-001*</b></p>

Proposed Mitigation Measure	Objective(s)	Location(s)
<ul style="list-style-type: none"> <li>No use of herbicides (Project related activities only) within significant natural features or wildlife habitats during the construction phase.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid impacts to natural vegetation species, significant features, and wildlife habitats.</li> </ul>	<p>Within 30m of any of the following:  <b>WOD</b>-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, <b>WET</b>-001, 002, <b>BMA</b>-001*, 002*, <b>OGF</b>-001*, <b>AWO</b>-001*, <b>MBB</b>-001*, <b>EWP</b>-001*, 002*, 003*, <b>WTH</b>-001*, <b>PMI</b>-001*, <b>PAW</b>-001*, <b>MSE</b>-001*, 005*, 006*, 007*, 008*, <b>RSE</b>-001*, <b>BAS</b>-001*, <b>SRM</b>-001*, 002*, <b>BGU</b>-001*, 003*, <b>NFO</b>-001*, 005*, 006*, 007*, 008*, <b>SHU</b>-002*, <b>CPR</b>-001*, <b>LTA</b>-001*, 005*, 006*, 007*, 008*, <b>WSE</b>-001*, 003*, 006*, 007*, 008*, 009*, <b>CUP</b>-001*, 002*, 003*, 004*, <b>RGL</b>-001*, <b>SLT</b>-001*, <b>WIS</b>-001*, 005*, 006*, 007*, 008*, <b>GIW</b>-001*, 002*, 003*, 004*, 005*, 006*, 008*, <b>VCR</b>-001*, <b>CVI</b>-001*</p>
<ul style="list-style-type: none"> <li>Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques.</li> </ul>	<ul style="list-style-type: none"> <li>Protect tree species from permanent damage</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Implement a sedimentation and erosion control plan.</li> </ul>	<ul style="list-style-type: none"> <li>Protect significant natural features and wildlife habitats, where appropriate</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Schedule all construction and decommissioning activities within 30m of generalized wildlife habitats outside of the core breeding period for migratory birds (May 1st – July 31st), wherever possible, to limit disturbance to migratory birds, or their nests.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to migratory birds and their nests.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>If construction and decommissioning activities within 30m of generalized wildlife habitats will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to migratory birds and their nests.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Schedule construction activities within 30m of significant natural features to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever possible.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances.</li> </ul>	<p>Within 30m of any of the following:  <b>WOD</b>-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, <b>WET</b>-001, 002, 005, 006, <b>AWO</b>-001*</p>
<ul style="list-style-type: none"> <li>If construction activities within 30m of significant natural features must occur</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts on species that are</li> </ul>	Within 30m of or overlapping significant woodlands, wetlands, or

Proposed Mitigation Measure	Objective(s)	Location(s)
outside of daylight hours, spotlights will be directed downward and/or away from the natural feature to limit potential light disturbance.	relatively inactive at night and not accustomed to nighttime disturbances.	amphibian habitat: <b>WOD</b> -001, 002, 003, 007, 008, 009, 011, 012, 016, 017, <b>WET</b> -001, 002, 005, 006, <b>AWO</b> -001*
<ul style="list-style-type: none"> <li>On site speed limits will be clearly posted, applied, and followed by construction staff throughout the construction phase.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid direct impacts on breeding birds and their habitats.</li> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	<p>Within 30m of or overlapping any significant natural feature:</p> <p><b>WOD</b>-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, <b>WET</b>-001, 002, 005, 006, <b>BMA</b>-001*, 002*, <b>CBT</b>-001*, <b>OGF</b>-001*, <b>WFN</b>-001*, <b>AWO</b>-001*, <b>MBB</b>-001*, <b>EWP</b>-001*, 002*, 003*, <b>WTH</b>-001*, <b>PMI</b>-001*, <b>PAW</b>-001*, <b>MSE</b>-001*, 005*, 006*, 007*, 008*, <b>RSE</b>-001*, <b>BAS</b>-001*, <b>SRM</b>-001*, 002*, <b>BGU</b>-001*, 003*, <b>NFO</b>-001*, 005*, 006*, 007*, 008*, <b>SHU</b>-002*, <b>CPR</b>-001*, <b>LTA</b>-001*, 005*, 006*, 007*, 008*, <b>WSE</b>-001*, 003*, 006*, 007*, 008*, 009*, <b>CUP</b>-001*, 002*, 003*, 004*, <b>RGL</b>-001*, <b>SLT</b>-001*, <b>WIS</b>-001*, 005*, 006*, 007*, 008*, <b>GIW</b>-003*, 004*, 005*, 006*, 008*, <b>VCR</b>-001*, <b>CVI</b>-001*</p>
<ul style="list-style-type: none"> <li>Utilize erosion blankets, silt fencing, straw bales, etc. for construction activities within 30m of significant woodlands or wetlands.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	<p>Within 30m of or overlapping any significant woodland or wetland:</p> <p><b>WOD</b>-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, <b>WET</b>-001, 002, 005, 006</p>
<ul style="list-style-type: none"> <li>Install, monitor, and maintain erosion and sediment control measures (i.e. erosion fencing) around the construction area for the duration of the construction or decommissioning activities, as identified within the sediment and erosion control plan.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	<p>Within 30m of or overlapping any significant woodland or wetland:</p> <p><b>WOD</b>-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, <b>WET</b>-001, 002, 005, 006</p>
<ul style="list-style-type: none"> <li>Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant woodlands, wetlands and associated wildlife habitats.</li> </ul>	<p>Within 30m of or overlapping any significant natural feature:</p> <p><b>WOD</b>-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, <b>WET</b>-001, 002, 005, 006, <b>BMA</b>-001*, 002*, <b>CBT</b>-001*, <b>OGF</b>-001*, <b>WFN</b>-001*, <b>AWO</b>-001*, <b>MBB</b>-001*, <b>EWP</b>-001*, 002*, 003*, <b>WTH</b>-001*, <b>PMI</b>-001*, <b>PAW</b>-001*, <b>MSE</b>-001*, 005*, 006*, 007*, 008*, <b>RSE</b>-001*, <b>BAS</b>-001*, <b>SRM</b>-001*, 002*, <b>BGU</b>-001*, 003*, <b>NFO</b>-001*, 005*, 006*, 007*, 008*, <b>SHU</b>-002*, <b>CPR</b>-001*, <b>LTA</b>-001*, 005*, 006*, 007*, 008*, <b>WSE</b>-001*, 003*, 006*, 007*, 008*, 009*, <b>CUP</b>-001*, 002*, 003*, 004*, <b>RGL</b>-001*, <b>SLT</b>-001*, <b>WIS</b>-001*, 005*, 006*, 007*, 008*, <b>GIW</b>-003*, 004*, 005*, 006*, 008*, <b>VCR</b>-001*, <b>CVI</b>-001*</p>

Proposed Mitigation Measure	Objective(s)	Location(s)
<ul style="list-style-type: none"> <li>Locate all directional drill entry and exit pits a sufficient distance from the edge of the significant natural features and wildlife habitat to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	<p>Overlapping any significant woodland, wetland, or treed habitat:  <b>WOD-001, 002, 003, 007, 012, 017, WET-001, 002, BMA-001*, CBT-001*, WFN-001*, AWO-001*, MBB-001*, EWP-001*, PAW-001*, MSE-001*, BAS-001*, SRM-001*, BGU-001*, NFO-001*, SHU-002*, WSE-003*, CUP-001*, WIS-001*, GIW-004*, CVI-001*</b></p>
<ul style="list-style-type: none"> <li>Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	<p>Overlapping any significant woodland, wetland or wildlife habitat:  <b>WOD-001, 002, 003, 007, 012, 017, WET-001, 002, BMA-001*, AWO-001*, MBB-001*, EWP-001*, PMI-001*, PAW-001*, MSE-001*, RSE-001*, BAS-001*, SRM-001*, BGU-001*, NFO-001*, 007*, SHU-002*, CPR-001*, LTA-001*, WSE-003*, 009*, CUP-001*, 004*, RGL-001*, SLT-001*, WIS-001*, GIW-004*, 008*, VCR-001*, CVI-001*</b></p>
<ul style="list-style-type: none"> <li>Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	<p>Overlapping any significant woodland, wetland or wildlife habitat:  <b>WOD-001, 002, 003, 007, 012, 017, WET-001, 002, BMA-001*, AWO-001*, MBB-001*, EWP-001*, PMI-001*, PAW-001*, MSE-001*, RSE-001*, BAS-001*, SRM-001*, BGU-001*, NFO-001*, 007*, SHU-002*, CPR-001*, LTA-001*, WSE-003*, 009*, CUP-001*, 004*, RGL-001*, SLT-001*, WIS-001*, GIW-004*, 008*, VCR-001*, CVI-001*</b></p>
<ul style="list-style-type: none"> <li>An environmental monitor will be present when active directional drilling is occurring.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	<p>Overlapping any significant woodland, wetland or wildlife habitat:  <b>WOD-001, 002, 003, 007, 012, 017, WET-001, 002, BMA-001*, AWO-001*, MBB-001*, EWP-001*, PMI-001*, PAW-001*, MSE-001*, RSE-001*, BAS-001*, SRM-001*, BGU-001*, NFO-001*, 007*, SHU-002*, CPR-001*, LTA-001*, WSE-003*, 009*, CUP-001*, 004*, RGL-001*, SLT-001*, WIS-001*, GIW-004*, 008*, VCR-001*, CVI-001*</b></p>
<ul style="list-style-type: none"> <li>Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	<p>Within 30m of or overlapping any significant natural feature:  <b>WOD-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, WET-001, 002, 005, 006, BMA-001*, 002*, CBT-001*, OGF-001*, WFN-001*, AWO-001*, MBB-001*, EWP-001*, 002*, 003*, WTH-001*, PMI-001*, PAW-001*, MSE-001*, 005*, 006*, 007*,</b></p>

Proposed Mitigation Measure	Objective(s)	Location(s)
of dust suppression.		008*, <b>RSE-001*</b> , <b>BAS-001*</b> , <b>SRM-001*</b> , 002*, <b>BGU-001*</b> , 003*, <b>NFO-001*</b> , 005*, 006*, 007*, 008*, <b>SHU-002*</b> , <b>CPR-001*</b> , <b>LTA-001*</b> , 005*, 006*, 007*, 008*, <b>WSE-001*</b> , 003*, 006*, 007*, 008*, 009*, <b>CUP-001*</b> , 002*, 003*, 004*, <b>RGL-001*</b> , <b>SLT-001*</b> , <b>WIS-001*</b> , 005*, 006*, 007*, 008*, <b>GIW-003*</b> , 004*, 005*, 006*, 008*, <b>VCR-001*</b> , <b>CVI-001*</b>
<ul style="list-style-type: none"> <li>Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	<p>Within 30m of or overlapping any significant natural feature:</p> <p><b>WOD-001</b>, 002, 003, 007, 008, 009, 011, 012, 016, 017, <b>WET-001</b>, 002, 005, 006, <b>BMA-001*</b>, 002*, <b>CBT-001*</b>, <b>OGF-001*</b>, <b>WFN-001*</b>, <b>AWO-001*</b>, <b>MBB-001*</b>, <b>EWP-001*</b>, 002*, 003*, <b>WTH-001*</b>, <b>PMI-001*</b>, <b>PAW-001*</b>, <b>MSE-001*</b>, 005*, 006*, 007*, 008*, <b>RSE-001*</b>, <b>BAS-001*</b>, <b>SRM-001*</b>, 002*, <b>BGU-001*</b>, 003*, <b>NFO-001*</b>, 005*, 006*, 007*, 008*, <b>SHU-002*</b>, <b>CPR-001*</b>, <b>LTA-001*</b>, 005*, 006*, 007*, 008*, <b>WSE-001*</b>, 003*, 006*, 007*, 008*, 009*, <b>CUP-001*</b>, 002*, 003*, 004*, <b>RGL-001*</b>, <b>SLT-001*</b>, <b>WIS-001*</b>, 005*, 006*, 007*, 008*, <b>GIW-003*</b>, 004*, 005*, 006*, 008*, <b>VCR-001*</b>, <b>CVI-001*</b></p>
<ul style="list-style-type: none"> <li>Install wind fences, where determined to be necessary by the on site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Develop a 'frac-out' contingency plan and train staff on appropriate procedures during the construction phase.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	<p>Overlapping any significant woodland, wetland or wildlife habitat:</p> <p><b>WOD-001</b>, 002, 003, 007, 012, 017, <b>WET-001</b>, 002, <b>BMA-001*</b>, <b>MBB-001*</b>, <b>EWP-001*</b>, <b>PMI-001*</b>, <b>PAW-001*</b>, <b>MSE-001*</b>, <b>RSE-001*</b>, <b>BAS-001*</b>, <b>SRM-001*</b>, <b>BGU-001*</b>, <b>NFO-001*</b>, 007*, <b>SHU-002*</b>, <b>CPR-001*</b>, <b>LTA-001*</b>, <b>WSE-003*</b>, 009*, <b>CUP-001*</b>, 004*, <b>RGL-001*</b>, <b>SLT-001*</b>, <b>WIS-001*</b>, <b>GIW-004*</b>, 008*, <b>VCR-001*</b>, <b>CVI-001*</b></p>
<ul style="list-style-type: none"> <li>Store any stockpiled material more than 30m from a woodland, wetland, or water body during the construction phase.</li> </ul>	<ul style="list-style-type: none"> <li>Limit the potential for increased sedimentation within</li> </ul>	Entire Project

Proposed Mitigation Measure	Objective(s)	Location(s)
	30m of natural features.	
<ul style="list-style-type: none"> <li>Keep emergency spill kits on site.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant woodlands, wetlands and associated wildlife habitats.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant woodlands, wetlands and associated wildlife habitats.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Dispose of waste material by authorized and approved off-site vendors.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant woodlands, wetlands and associated wildlife habitats.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Store hazardous materials in designated areas.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant woodlands, wetlands and associated wildlife habitats.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impact to soil moisture regime and vegetation species composition.</li> </ul>	<p>Within 30m of or overlapping any of the following:</p> <p><b>WOD</b>-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, <b>WET</b>-001, 002, 005, 006, <b>CBT</b>-001*, <b>WFN</b>-001*, <b>OGF</b>-001*, <b>AWO</b>-001*, <b>MBB</b>-001*, <b>PMI</b>-001*, <b>PAW</b>-001*, <b>MSE</b>-001*, 005*, 006*, 007*, 008*, <b>RSE</b>-001*, <b>BAS</b>-001*, <b>SRM</b>-001*, 002*, <b>BGU</b>-001*, 003*, <b>NFO</b>-001*, <b>NFO</b>-005*, 006*, 007*, 008*, <b>SHU</b>-002*, <b>CPR</b>-001*, <b>LTA</b>-001*, 005*, 006*, 007*, 008*, <b>WSE</b>-001*, 003*, 006*, 007*, 008*, 009*, <b>CUP</b>-001*, 002*, 003*, 004*, <b>RGL</b>-001*, <b>SLT</b>-001*, <b>WIS</b>-001*, 005*, 006*, 007*, 008*, <b>GIW</b>-003*, 004*, 005*, 006*, 008*, <b>VCR</b>-001*, <b>CVI</b>-001*</p>
<ul style="list-style-type: none"> <li>Minimize paved surfaces and design roads to promote infiltration.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impact to soil moisture regime and vegetation species composition.</li> </ul>	<p>Within 30m of or overlapping any of the following:</p> <p><b>WOD</b>-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, <b>WET</b>-001, 002, 005, 006, <b>CBT</b>-001*, <b>WFN</b>-001*, <b>OGF</b>-001*, <b>AWO</b>-001*, <b>MBB</b>-001*, <b>PMI</b>-001*, <b>PAW</b>-001*, <b>MSE</b>-001*, 005*, 006*, 007*, 008*, <b>RSE</b>-001*, <b>BAS</b>-001*, <b>SRM</b>-001*, 002*, <b>BGU</b>-001*, 003*, <b>NFO</b>-001*, <b>NFO</b>-005*, 006*, 007*, 008*, <b>SHU</b>-002*, <b>CPR</b>-001*, <b>LTA</b>-001*, 005*, 006*, 007*, 008*, <b>WSE</b>-001*, 003*, 006*, 007*,</p>

Proposed Mitigation Measure	Objective(s)	Location(s)
		008*, 009*, <b>CUP-001*</b> , 002*, 003*, 004*, <b>RGL-001*</b> , <b>SLT-001*</b> , <b>WIS-001*</b> , 005*, 006*, 007*, 008*, <b>GIW-003*</b> , 004*, 005*, 006*, 008*, <b>VCR-001*</b> , <b>CVI-001*</b>
<ul style="list-style-type: none"> <li>Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impact to soil moisture regime and vegetation species composition.</li> </ul>	<p>Within 30m of or overlapping any of the following:</p> <p><b>WOD-001</b>, 002, 003, 007, 008, 009, 011, 012, 016, 017, <b>WET-001</b>, 002, 005, 006, <b>CBT-001*</b>, <b>WFN-001*</b>, <b>AWO-001*</b>, <b>MBB-001*</b>, <b>PMI-001*</b>, <b>PAW-001*</b>, <b>MSE-001*</b>, 005*, 006*, 007*, 008*, <b>RSE-001*</b>, <b>BAS-001*</b>, <b>SRM-001*</b>, 002*, <b>BGU-001*</b>, 003*, <b>NFO-001*</b>, <b>NFO-005*</b>, 006*, 007*, 008*, <b>SHU-002*</b>, <b>CPR-001*</b>, <b>LTA-001*</b>, 005*, 006*, 007*, 008*, <b>WSE-001*</b>, 003*, 006*, 007*, 008*, 009*, <b>CUP-001*</b>, 002*, 003*, 004*, <b>RGL-001*</b>, <b>SLT-001*</b>, <b>WIS-001*</b>, 005*, 006*, 007*, 008*, <b>GIW-003*</b>, 004*, 005*, 006*, 008*, <b>VCR-001*</b>, <b>CVI-001*</b></p>
<ul style="list-style-type: none"> <li>Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or other barrier.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impact to soil moisture regime and vegetation species composition.</li> </ul>	<p>Within 10m of or overlapping any of the following:</p> <p><b>WOD-001</b>, 002, 003, 007, 008, 009, 011, 012, 017, <b>WET-001</b>, 002, 005, 006, <b>CBT-001*</b>, <b>WFN-001*</b>, <b>AWO-001*</b>, <b>MBB-001*</b>, <b>PAW-001*</b>, <b>MSE-001*</b>, 005*, 006*, 007*, 008*, <b>BAS-001*</b>, <b>SRM-001*</b>, 002*, <b>BGU-001*</b>, 003*, <b>NFO-001*</b>, 005*, 006*, 008*, <b>SHU-002*</b>, <b>LTA-001*</b>, 005*, 006*, 007*, 008*, <b>WSE-001*</b>, 003*, 006*, 007*, 008*, <b>CUP-001*</b>, 002*, 003*, <b>WIS-001*</b>, 005*, 006*, 007*, 008*, <b>GIW-003*</b>, 004*, 005*, 006*, <b>CVI-001*</b></p>
<ul style="list-style-type: none"> <li>Where the temporary construction area is proposed to be within 5m of, but not overlapping by a method other than directional drilling, a wetland (excluding along existing municipal roads), design any permanent infrastructure (i.e., access roads) to be 5m from the wetland edge and plant native vegetation in the 5m buffer between the infrastructure and wetland edge as soon as reasonably possible after construction.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.</li> <li>Minimize impacts to hydrological connectivity.</li> <li>Minimize impacts to water quality.</li> </ul>	<p>Within 30m of or overlapping any significant wetland:</p> <p><b>WET-001</b>, 002, 005, 006</p>
<p><u>For groundwater taking (if necessary):</u></p> <ul style="list-style-type: none"> <li>Monitor rate of water pumping and timing to meet requirement of less than 50,000L per day, and contact the MOECC if a situation arises where this cannot be met.</li> <li>Restrict taking of groundwater and surface water during extreme low flow</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to hydrological connectivity.</li> </ul>	<p>Within 30m of or overlapping any significant wetland:</p> <p><b>WET-001</b>, 002, 005, 006</p>

Proposed Mitigation Measure	Objective(s)	Location(s)
time periods. • Control quantity and quality of pumped water using best management practices, and avoid direct discharge into wetlands or watercourses.		
• Locate all construction-related maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from natural features.	• Minimize the risk of contamination of chemical spill around significant natural features.	Entire Project
• Document all trees (>10cm dbh) to be removed and retained, prior to construction.	• Avoid accidental damage to, or removal of, retained species.	All trees within the disturbance area limit
• Schedule construction activities to occur outside of the critical roosting period (June).	• Protection of bat maternity colony habitat.	Within 30m of any significant bat maternity colony habitat: <b>BMA-001*</b> , 002*
• Develop a Bird and Bat EEMP in accordance with MNR's Bats and Bat Habitats (OMNR 2011a) guidance and Birds and Bird Habitats (OMNR 2011b) guidance.	• Minimize mortality of bird and bat species.	Entire Project
• Avoid scheduling construction activities during the peak colonially-nesting bird breeding season (April-August), wherever possible.	• Protection of colonially-nesting breeding bird habitat (tree/shrub).	Within 30m of any significant colonially-nesting breeding bird habitat: <b>CBT-001</b>
• If construction must occur during peak colonially-nesting bird breeding season, a biologist will be present to confirm nesting birds will not be impacted by construction activities.	• Protection of colonially-nesting breeding bird habitat (tree/shrub).	Within 30m of any significant colonially-nesting breeding bird habitat: <b>CBT-001</b>
• Avoid scheduling construction activities during the peak waterfowl nesting season (April-June), wherever possible.	• Minimize disturbance to waterfowl species.	Within 30m of any significant waterfowl nesting area: <b>WFN-001</b>
• If construction must occur during peak breeding season, a biologist will be present to confirm birds will not be impacted by construction activities.	• Minimize disturbance to waterfowl species.	Within 30m of any significant waterfowl nesting area: <b>WFN-001</b>
• Schedule construction activities to occur outside of the peak marsh bird breeding season (mid-May to early July), wherever possible.	• Minimize impacts to marsh bird breeding habitat and minimize marsh bird mortality.	Within 30m of any significant marsh bird breeding habitat: <b>MBB-001</b>
• If construction must occur during this peak breeding season (mid-May to early July), have a biologist confirm birds will not be impacted by construction activities.	• Minimize impacts to marsh bird breeding habitat and minimize marsh bird mortality.	Within 30m of any significant marsh bird breeding habitat: <b>MBB-001</b>
• Schedule construction activities located within 30m of significant bird species of conservation concern habitat to occur outside of the peak breeding bird season (May 1 <sup>st</sup> – July 31 <sup>st</sup> ), whenever possible.	• Minimize noise disturbance/avoidance behavior of bird species of conservation concern.	Within 30m of any significant habitat of bird species of conservation concern: <b>EWP-001*</b> , 002*, 003*, <b>WTH-001*</b>
• If construction must occur during the breeding bird period (May 1 <sup>st</sup> – July 31 <sup>st</sup> ), have a biologist confirm birds will not be impacted by construction activities.	• Minimize noise disturbance/avoidance behavior of bird species of	Within 30m of any significant habitat of bird species of conservation concern: <b>EWP-001*</b> , 002*, 003*, <b>WTH-001*</b>

Proposed Mitigation Measure	Objective(s)	Location(s)
	conservation concern.	
<ul style="list-style-type: none"> <li>Avoid direct impacts to specific breeding habitat (i.e. vernal pools or other aquatic habitat), or immediately surrounding woodland habitat.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to amphibian breeding habitat and minimize amphibian mortality.</li> </ul>	<p>Within 30m of or overlapping significant amphibian woodland breeding habitat: <b>AWO-001*</b></p>
<ul style="list-style-type: none"> <li>Schedule construction activities to occur outside of the peak frog breeding season (April 15<sup>th</sup>-June 15<sup>th</sup>).</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to amphibian breeding habitat and minimize amphibian mortality.</li> </ul>	<p>Within 30m of or overlapping significant amphibian woodland breeding habitat: <b>AWO-001*</b></p>
<ul style="list-style-type: none"> <li>If construction activities must occur during the peak frog breeding season, install temporary drift fencing (erosion fencing) to help control amphibian movements around construction activity.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to amphibian breeding habitat and minimize amphibian mortality.</li> </ul>	<p>Within 30m of or overlapping significant amphibian woodland breeding habitat: <b>AWO-001*</b></p>
<ul style="list-style-type: none"> <li>Regularly clean vehicles and equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid contamination of plant species of conservation concern habitat.</li> </ul>	<p>Within 120m of any significant rare vegetation habitat: <b>ORV-001*, PMI-001*, PAW-001*, 002*, MSE-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, RFP-001*, 002*, RSE-001*, BAS-001*, 002*, SRM-001*, 002*, BGU-001*, 002*, 003*, NFO-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, SHU-001*, 002*, 003*, GPC-001*, 002*, CPR-001*, LTA-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, WSE-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, 009*, CUP-001*, 002*, 003*, 004*, RGL-001*, SLT-001*, WIS-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, GIW-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, VCR-001*, CVI-001*</b></p>
<ul style="list-style-type: none"> <li>Vehicle use will occur primarily on access roads and in agricultural habitats, where invasive and non-native vegetation species are less likely to be concentrated.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid contamination of plant species of conservation concern habitat.</li> </ul>	<p>Within 120m of any significant rare vegetation habitat: <b>ORV-001*, PMI-001*, PAW-001*, 002*, MSE-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, RFP-001*, 002*, RSE-001*, BAS-001*, 002*, SRM-001*, 002*, BGU-001*, 002*, 003*, NFO-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, SHU-001*, 002*, 003*, GPC-001*, 002*, CPR-001*, LTA-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, WSE-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, 009*, CUP-001*, 002*, 003*, 004*, RGL-001*, SLT-001*, WIS-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, GIW-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, VCR-001*, CVI-001*</b></p>
<ul style="list-style-type: none"> <li>Keep vegetation removal (if any) to a minimum and limited to the road right-of-way.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize vegetation removal and impacts on natural features and wildlife</li> </ul>	<p>Roadside Collector Lines</p>

Proposed Mitigation Measure	Objective(s)	Location(s)
	habitats	

\* Only if these habitats are determined to be significant through pre-construction surveys described in Section 5.3.

### 6.3 Operation - Proposed Mitigation Measures

The various reporting sections above identify several proposed mitigation measures that are recommended to limit potential impacts to significant natural features or wildlife habitats for the operation of the North Kent Wind 1 Project. To assist in fully identifying all proposed mitigation measures that are recommended for this development, a summary table of operation related mitigation measures has been provided in Table 12, including the mitigation objective and specific location where each proposed mitigation measure should be applied. The purpose of the table below is to consolidate the operational mitigation measures that are applicable to the natural heritage features and wildlife habitats that have been identified through the NHA process. These proposed mitigation measures, along with other proposed mitigation measures not associated with natural heritage, have been included in the *Design and Operations Report* (AECOM 2015b).

**Table 12. Summary of Operational Phase Proposed Mitigation Measures Recommended for the North Kent Wind 1 Project**

Proposed Mitigation Measure	Objective(s)	Location(s)
<ul style="list-style-type: none"> <li>No use of herbicides (Project related activities only) within significant natural features or wildlife habitats during the operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid impacts to natural vegetation species, significant features, and wildlife habitats.</li> </ul>	<p>Within 30m of any of the following:  <b>WOD-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, WET-001, 002, BMA-001*, 002*, OGF-001*, AWO-001*, MBB-001*, EWP-001*, 002*, 003*, WTH-001*, PMI-001*, PAW-001*, MSE-001*, 005*, 006*, 007*, 008*, RSE-001*, BAS-001*, SRM-001*, 002*, BGU-001*, 003*, NFO-001*, 005*, 006*, 007*, 008*, SHU-002*, CPR-001*, LTA-001*, 005*, 006*, 007*, 008*, WSE-001*, 003*, 006*, 007*, 008*, 009*, CUP-001*, 002*, 003*, 004*, RGL-001*, SLT-001*, WIS-001*, 005*, 006*, 007*, 008*, GIW-001*, 002*, 003*, 004*, 005*, 006*, 008*, VCR-001*, CVI-001*</b></p>
<ul style="list-style-type: none"> <li>On site speed limits will be clearly posted, applied, and followed by construction staff throughout the operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid direct impacts on breeding birds and their habitats.</li> <li>Minimize impacts to significant natural features and</li> </ul>	<p>Within 30m of or overlapping any significant wildlife habitat:  <b>BMA-001*, 002*, CBT-001*, OGF-001*, WFN-001*, AWO-001*, MBB-001*, EWP-001*, 002*, 003*, WTH-001*, PMI-001*, PAW-001*, MSE-001*, 005*, 006*, 007*,</b></p>

Proposed Mitigation Measure	Objective(s)	Location(s)
	associated wildlife habitats.	008*, <b>RSE</b> -001*, <b>BAS</b> -001*, <b>SRM</b> -001*, 002*, <b>BGU</b> -001*, 003*, <b>NFO</b> -001*, 005*, 006*, 007*, 008*, <b>SHU</b> -002*, <b>CPR</b> -001*, <b>LTA</b> -001*, 005*, 006*, 007*, 008*, <b>WSE</b> -001*, 003*, 006*, 007*, 008*, 009*, <b>CUP</b> -001*, 002*, 003*, 004*, <b>RGL</b> -001*, <b>SLT</b> -001*, <b>WIS</b> -001*, 005*, 006*, 007*, 008*, <b>GIW</b> -003*, 004*, 005*, 006*, 008*, <b>VCR</b> -001*, <b>CVI</b> -001*
<ul style="list-style-type: none"> <li>Develop a spill response plan and train staff on appropriate procedures.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant natural features and associated wildlife habitats.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Store any stockpiled material more than 30m from significant woodlands, wetlands, or water body during the operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>Limit the potential for increased sedimentation within 30m of natural features.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Keep emergency spill kits on site.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant woodlands, wetlands and associated wildlife habitats.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Keep contact information for the MOECC Spills Action Centre in a designated area on the site.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant woodlands, wetlands and associated wildlife habitats.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Dispose of waste material by authorized and approved off-site vendors.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant woodlands, wetlands and associated wildlife habitats.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Store hazardous materials in designated areas.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize impacts to significant woodlands, wetlands and associated wildlife habitats.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and equipment more than 30m from significant habitats.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize the risk of contamination of chemical spill around significant natural features.</li> </ul>	Entire Project
<ul style="list-style-type: none"> <li>Schedule regular (non-critical) maintenance activities to occur outside of the critical roosting period (June), unless specifically required in accordance with manufacturer specifications.</li> </ul>	<ul style="list-style-type: none"> <li>Protection of bat maternity colony habitat.</li> </ul>	Within 30m of any significant bat maternity colony habitat: <b>BMA</b> -001*, 002*
<ul style="list-style-type: none"> <li>Develop a Bird and Bat EEMP in accordance with MNRF's Bats and Bat Habitats (OMNR 2011a)</li> </ul>	<ul style="list-style-type: none"> <li>Minimize mortality of bird and bat species.</li> </ul>	Entire Project

Proposed Mitigation Measure	Objective(s)	Location(s)
guidance and Birds and Bird Habitats (OMNR 2011b) guidance.		
<ul style="list-style-type: none"> <li>• Avoid scheduling regular (non-critical) maintenance activities during the peak colonially-nesting bird breeding season (April-August), wherever possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Protection of colonially-nesting breeding bird habitat (tree/shrub).</li> </ul>	Within 30m of any significant colonially-nesting breeding bird habitat: <b>CBT-001*</b>
<ul style="list-style-type: none"> <li>• If regular maintenance must occur during peak colonially-nesting bird breeding season, a biologist will be present to confirm nesting birds will not be impacted by maintenance activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Protection of colonially-nesting breeding bird habitat (tree/shrub).</li> </ul>	Within 30m of any significant colonially-nesting breeding bird habitat: <b>CBT-001*</b>
<ul style="list-style-type: none"> <li>• Avoid scheduling regular (non-critical) maintenance activities during the peak waterfowl nesting season (April-June), wherever possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize disturbance to waterfowl species.</li> </ul>	Within 30m of any significant waterfowl nesting area: <b>WFN-001*</b>
<ul style="list-style-type: none"> <li>• If regular maintenance must occur during peak breeding season, a biologist will be present to confirm birds will not be impacted by maintenance activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize disturbance to waterfowl species.</li> </ul>	Within 30m of any significant waterfowl nesting area: <b>WFN-001*</b>
<ul style="list-style-type: none"> <li>• Schedule regular (non-critical) maintenance activities to occur outside of the peak marsh bird breeding season (mid-May to early July), wherever possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize impacts to marsh bird breeding habitat and minimize marsh bird mortality.</li> </ul>	Within 30m of any significant marsh bird breeding habitat: <b>MBB-001*</b>
<ul style="list-style-type: none"> <li>• If regular maintenance must occur during this peak breeding season (mid-May to early July), have a biologist confirm birds will not be impacted by maintenance activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize impacts to marsh bird breeding habitat and minimize marsh bird mortality.</li> </ul>	Within 30m of any significant marsh bird breeding habitat: <b>MBB-001*</b>
<ul style="list-style-type: none"> <li>• Schedule regular (non-critical) maintenance activities located within 30m of significant bird species of conservation concern habitat to occur outside of the peak breeding bird season (May 1<sup>st</sup> – July 31<sup>st</sup>), whenever possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize noise disturbance/avoidance behavior of bird species of conservation concern.</li> </ul>	Within 30m of any significant habitat of bird species of conservation concern: <b>EWP-001*, 002*, 003*, WTH-001*</b>
<ul style="list-style-type: none"> <li>• If regular maintenance must occur during the breeding bird period (May 1<sup>st</sup> – July 31<sup>st</sup>), have a biologist confirm birds will not be impacted by maintenance activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize noise disturbance/avoidance behavior of bird species of conservation concern.</li> </ul>	Within 30m of any significant habitat of bird species of conservation concern: <b>EWP-001*, 002*, 003*, WTH-001*</b>
<ul style="list-style-type: none"> <li>• Schedule regular maintenance activities within 30m of significant natural features to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances.</li> </ul>	Within 30m of any of the following: <b>WOD-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, WET-001, 002, 005, 006, AWO-001*</b>
<ul style="list-style-type: none"> <li>• If regular maintenance activities within 30m of significant natural</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize impacts on species that are</li> </ul>	Within 30m of or overlapping significant woodlands, wetlands, or amphibian habitat:

Proposed Mitigation Measure	Objective(s)	Location(s)
features must occur outside of daylight hours, spotlights will be directed downward and/or away from the natural feature to limit potential light disturbance.	relatively inactive at night and not accustomed to nighttime disturbances.	<b>WOD-001, 002, 003, 007, 008, 009, 011, 012, 016, 017, WET-001, 002, 005, 006, AWO-001*</b>
<ul style="list-style-type: none"> <li>Regularly clean vehicles and equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid contamination of plant species of conservation concern habitat.</li> </ul>	<p>Within 120m of any significant rare vegetation habitat:</p> <p><b>ORV-001*, PMI-001*, PAW-001*, 002*, MSE-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, RFP-001*, 002*, RSE-001*, BAS-001*, 002*, SRM-001*, 002*, BGU-001*, 002*, 003*, NFO-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, SHU-001*, 002*, 003*, GPC-001*, 002*, CPR-001*, LTA-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, WSE-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, 009*, CUP-001*, 002*, 003*, 004*, RGL-001*, SLT-001*, WIS-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, GIW-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, VCR-001*, CVI-001*</b></p>
<ul style="list-style-type: none"> <li>Vehicle use will occur primarily on access roads and in agricultural habitats, where invasive and non-native vegetation species are less likely to be concentrated.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid contamination of plant species of conservation concern habitat.</li> </ul>	<p>Within 120m of any significant rare vegetation habitat:</p> <p><b>ORV-001*, PMI-001*, PAW-001*, 002*, MSE-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, RFP-001*, 002*, RSE-001*, BAS-001*, 002*, SRM-001*, 002*, BGU-001*, 002*, 003*, NFO-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, SHU-001*, 002*, 003*, GPC-001*, 002*, CPR-001*, LTA-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, WSE-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, 009*, CUP-001*, 002*, 003*, 004*, RGL-001*, SLT-001*, WIS-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, GIW-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, VCR-001*, CVI-001*</b></p>

*\* Only if these habitats are determined to be significant through pre-construction surveys described in Section 5.3.*

#### 6.4 Post-Construction Monitoring Commitments

In accordance with appropriate provincial guidance and the commitments made as part of this report, a series of post-construction surveys are required at the North Kent Wind 1 Project. These post-construction monitoring commitments are outlined in Table 13 below.

**Table 13. Summary of Post-Construction Monitoring Commitments for the North Kent Wind 1 Project**

Survey Type	Location(s)	Generalized Methods*	Purpose
Mortality Monitoring	Entire Project	<p>Post-construction mortality monitoring will be conducted following both the <i>Birds and Bird Habitats</i> (OMNR 2011b) and <i>Bats and Bat Habitats</i> (OMNR 2011a) provincial guidelines for 3 years after the Project has become operational.</p> <p>A subset of 30% of the turbines will be selected in accordance with the <i>Birds and Bird Habitats</i> (OMNR 2011b) and <i>Bats and Bat Habitats</i> (OMNR 2011a) provincial guidelines, and will be searched approximately every 3-4 days (twice weekly) for bird and bat mortalities from May 1<sup>st</sup> to October 31<sup>st</sup>, and approximately every 7 days (weekly) throughout November for raptors.</p> <p>If bat maternity colony habitats BMA-001 or 002 are confirmed significant, the turbine(s) closest to the habitat(s) will be included with the subsample of turbines to be monitored.</p> <p>In addition to the above monitoring, if waterfowl nesting area habitat WFN-001 is determined to be significant, the one wind turbine located within 120m of this habitat (T28) will be searched at a minimum frequency of once monthly in April, May, and June. All turbines not part of the chosen sub-set will be searched once during each month from May to November, specifically targeting raptors.</p> <p>Searcher efficiency and carcass removal trials will be conducted in accordance with provincial guidelines.</p> <p>Bird and Bat mortality methods will be addressed in detail in the Bird and Bat EEMP, which will be prepared under separate cover and submitted to MNRF for approval.</p>	<p>To assess the direct impact of this facility on bird and bat populations.</p> <p>If mortality rates surpass provincially determined thresholds, mitigation measures will be discussed with the MNRF.</p>
Bat Maternity Colony Surveys	BMA-001* BMA-002*	Post-construction exit surveys will be repeated at any of these significant habitats within 120m of wind turbines for 3 years following the same methods utilized during pre-construction surveys.	To assess the potential disturbance impact of operational turbines on nearby significant bat maternity roosts.
Colonially-Nesting Breeding Bird Habitat (Trees/Shrubs) Surveys	CBT-001*	Post-construction colonially-nesting breeding bird monitoring will be repeated at the significant habitat located within 120m of a wind turbine for 3 years following the same methods utilized during pre-construction surveys	To assess the potential disturbance impact of operational turbines on colonially-nesting breeding bird habitat.
Amphibian Breeding Habitat (Woodland) Surveys	AWO-001*	Post-construction amphibian call surveys will be repeated at this habitat that is overlapping the Project Location (through directional drilling) for 1 year following the same methods utilized during pre-construction surveys. After	To assess the potential disturbance impact of access roads on significant amphibian breeding habitats

Survey Type	Location(s)	Generalized Methods*	Purpose
		presenting results to the MNRF, the need for additional surveys will be addressed.	(woodland).
Marsh Bird Breeding Habitat Surveys	MBB-001*	Post-construction marsh bird breeding monitoring will be repeated at the significant habitat located within 120m of a wind turbine for 3 years following the same methods utilized during pre-construction surveys.	To assess the potential disturbance impact of operational turbines on marsh bird breeding habitat.
Waterfowl Nesting Area Surveys	WFN-001*	Post-construction waterfowl nesting area surveys will be repeated at the significant habitat located within 120m of a wind turbine for 3 years following the same methods utilized during pre-construction surveys.	To assess the potential disturbance impact of operational turbines on waterfowl nesting habitat.
Bird Species of Conservation Concern Surveys: <ul style="list-style-type: none"> <li>• Eastern Wood-Pewee Habitat</li> <li>• Wood Thrush Habitat</li> </ul>	EWP-001* EWP-002* EWP-003* WTH-001*	Post-construction breeding bird monitoring for bird species of conservation concern will be repeated at all significant habitats within 120m of wind turbines for 3 years following the same methods utilized during pre-construction surveys.	To assess the potential disturbance impact of wind turbines on significant habitat for bird species of conservation concern.
Plant Species of Conservation Concern Surveys: <ul style="list-style-type: none"> <li>• Prairie milkweed Habitat</li> <li>• Pawpaw Habitat</li> <li>• Muskingum Sedge Habitat</li> <li>• Rigid Sedge Habitat</li> <li>• Round-Fruited Panic Grass Habitat</li> <li>• Blue Ash Habitat</li> <li>• Swamp Rose-mallow Habitat</li> <li>• Black Gum Habitat</li> <li>• Northern Fogfruit Habitat</li> <li>• Shumard Oak Habitat</li> <li>• Climbing Prairie Rose Habitat</li> <li>• Lizard's Tail Habitat</li> <li>• Wild Senna Habitat</li> <li>• Cup-plant</li> </ul>	PMI-001* PAW-001* MSE-001* MSE-005* MSE-006* MSE-007* MSE-008* RSE-001* BAS-001* SRM-001* SRM-002* BGU-001* BGU-003* NFO-001* NFO-005* NFO-006* NFO-007* NFO-008* SHU-002* CPR-001* LTA-001* LTA-005* LTA-006* LTA-007* LTA-008* WSE-001* WSE-003* WSE-006* WSE-007* WSE-008* WSE-009* CUP-001* CUP-002* CUP-003* CUP-004* RGL-001* SLT-001*	Post-construction monitoring for plant species of conservation concern will be repeated at all of the significant habitats in years 1, 3, and 5 of operation at a time of year when the species can be identified (refer to Table 10 for specific survey timing). Following pre-construction survey methods, one standardized area search will be conducted throughout each significant habitat. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Specific locations of plant species of conservation identified during pre-construction surveys will also be monitored post-construction.	To assess the potential disturbance impact of access roads on significant habitat for plant species of conservation concern.

Survey Type	Location(s)	Generalized Methods*	Purpose
Habitat	WIS-001*		
• Riddell's	WIS-005*		
Goldenrod	WIS-006*		
Habitat	WIS-007*		
• Southern	WIS-008*		
Slender	GIW-003*		
Ladies'	GIW-004*		
Tresses	GIW-005*		
Habitat	GIW-006*		
• Wing-stem	GIW-008*		
Habitat	VCR-001*		
• Giant	CVI-001*		
Ironweed			
Habitat			
• Virginia			
Culver's-root			
Habitat			
• Cream Violet			
Habitat			

\* Applicable to all survey types other than mortality monitoring: if site access is denied to conduct post-construction surveys, and an alternative survey method will not provide enough information to re-evaluate the significance of the wildlife habitat, post-construction monitoring will not be conducted as potential negative effects can be mitigated through site specific construction mitigation measures.

\* These surveys are only required if the habitat is determined to be significant through pre-construction surveys described in Section 5.3.

## 7.0 Environmental Impact Summary

The North Kent Wind 1 Project will result in the installation of up to 50 permitted wind turbines as well as the installation of supporting infrastructure, such as temporary lay-down areas, crane pads, access roads, and collection and transmission lines, as needed. Through a comprehensive review of background material in conjunction with site-specific investigations and evaluation of significance surveys, NRSI biologists have identified several significant, or treated as significant, natural features and wildlife habitats within the Project Area.

As part of this EIS, NRSI biologists have recommended a series of monitoring commitments and proposed mitigation measures to be implemented as part of the development of this Project. These recommendations have been developed in association with the specific natural features and wildlife habitats that have been identified within the Project Area. The monitoring commitments and proposed mitigation measures outlined in Section 5 and Section 6 will also be provided in the *Construction Plan Report* (AECOM 2015a) and *Design and Operations Report* (AECOM 2015b) to address potential negative environmental effects of the Project on natural features, as well as in the Bird and Bat EEMP with respect to birds and bats.

Assuming the implementation of the proposed mitigation measures, monitoring programs, and contingency plans (if necessary), there is unlikely to be any significant impacts to natural heritage features, including woodlands, wetlands, and SWH.

## 8.0 References

### *Publications*

AECOM. 2015a. North Kent Wind 1 Project: Construction Plan Report. August 2015.

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AECOM. 2015c. North Kent Wind 1 Project: Decommissioning Plan Report. August 2015.

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Natural Resource Solutions Inc. (NRSI). 2015. North Kent Wind 1 Project: Natural Heritage Evaluation of Significance Report. July 2015.

Ontario Ministry of Natural Resources (OMNR). 2012. Natural Heritage Assessment Guide for Renewable Energy Projects. November 2012.

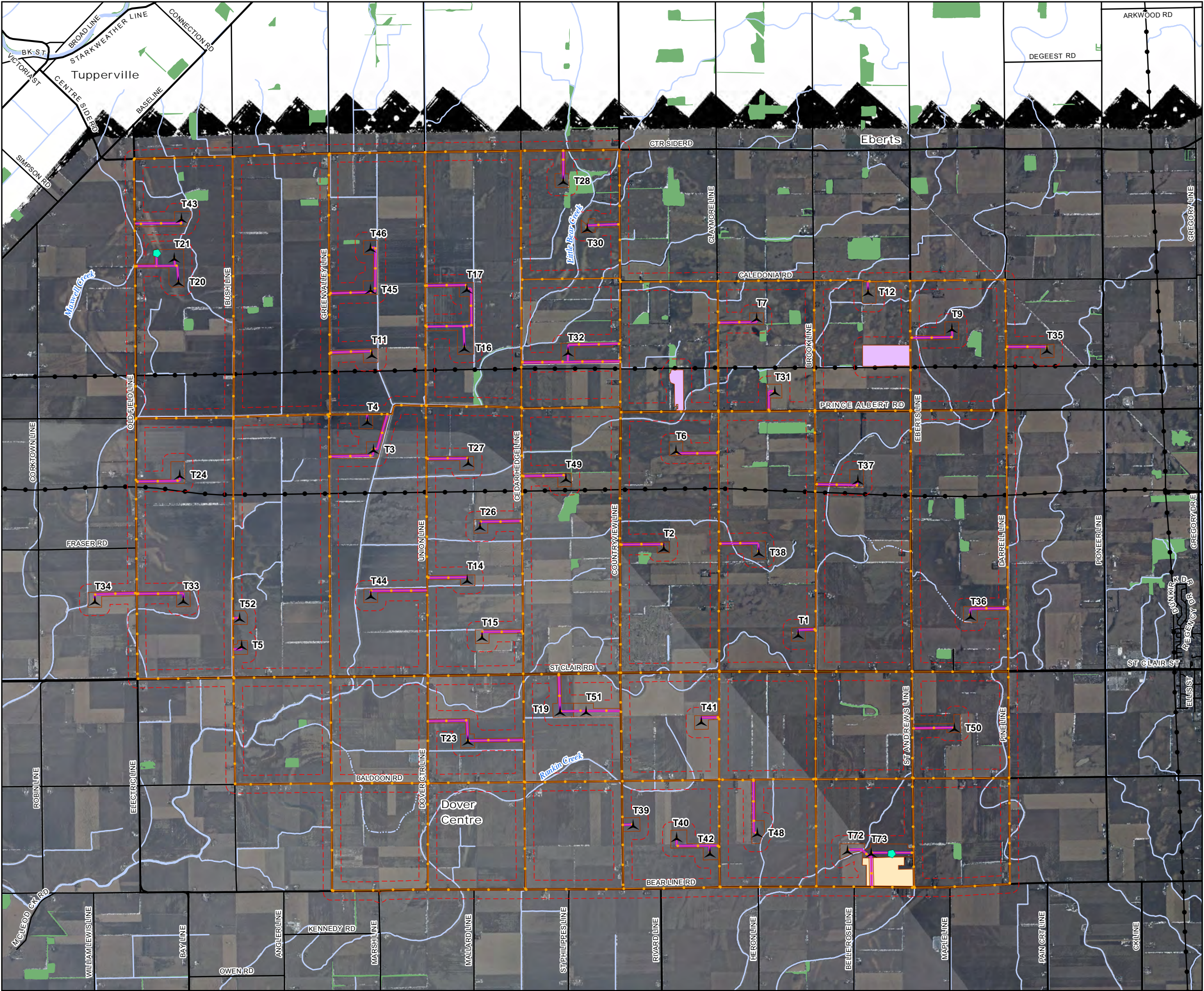
Ontario Ministry of Natural Resources (OMNR). 2011a. Bats and Bat Habitats: Guidelines for Wind Power Projects. July 2011.

Ontario Ministry of Natural Resources (OMNR). 2011b. Birds and Bird Habitats: Guidelines for Wind Power Projects. December 2011.

Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide. October 2000.

**Map 1**  
**Project Area and Natural Features**

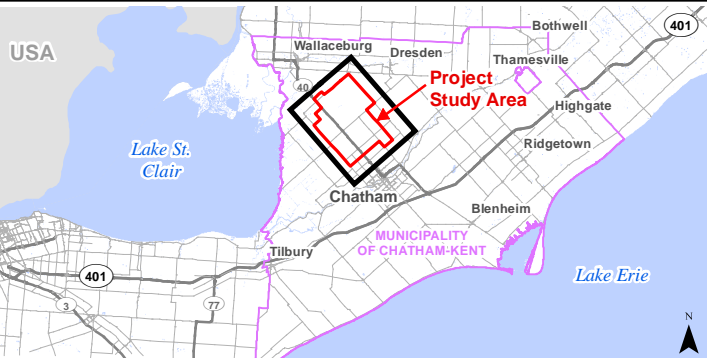
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Map 1

# North Kent Wind 1 Project

## Project Area and Natural Features

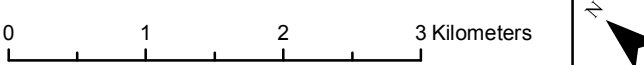


- Legend**
- Utility Line
  - Highway
  - Primary Road
  - Secondary Road
- Project Location**
- Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Meteorological Tower
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed POI/ Substation/ Laydown/ O&M Building
  - Proposed Laydown Area
- Natural Features**
- Permanent Watercourse
  - Intermittent Watercourse
  - Open Water
  - Woodland
  - Important Bird Area (IBA)



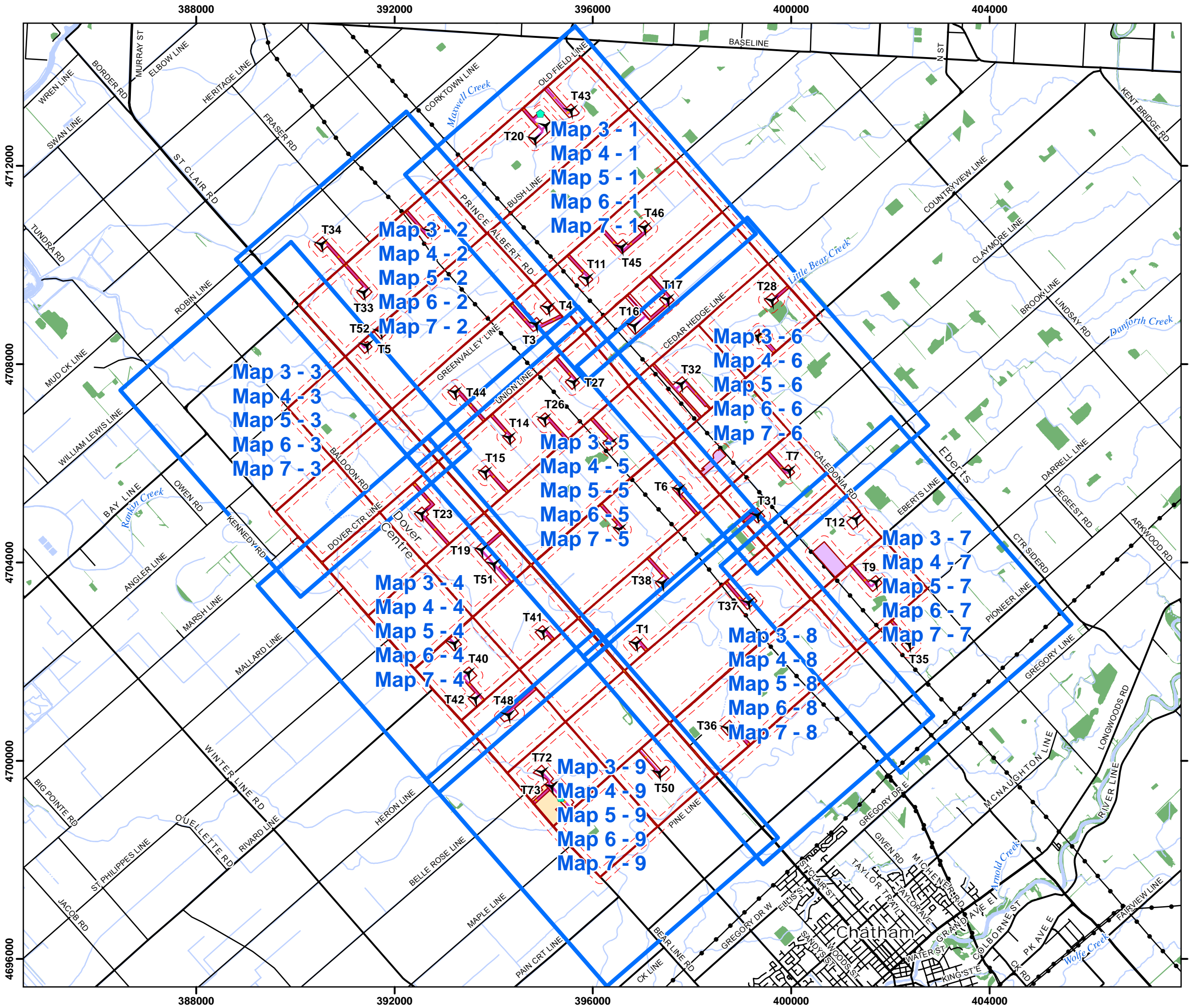
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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:55,000
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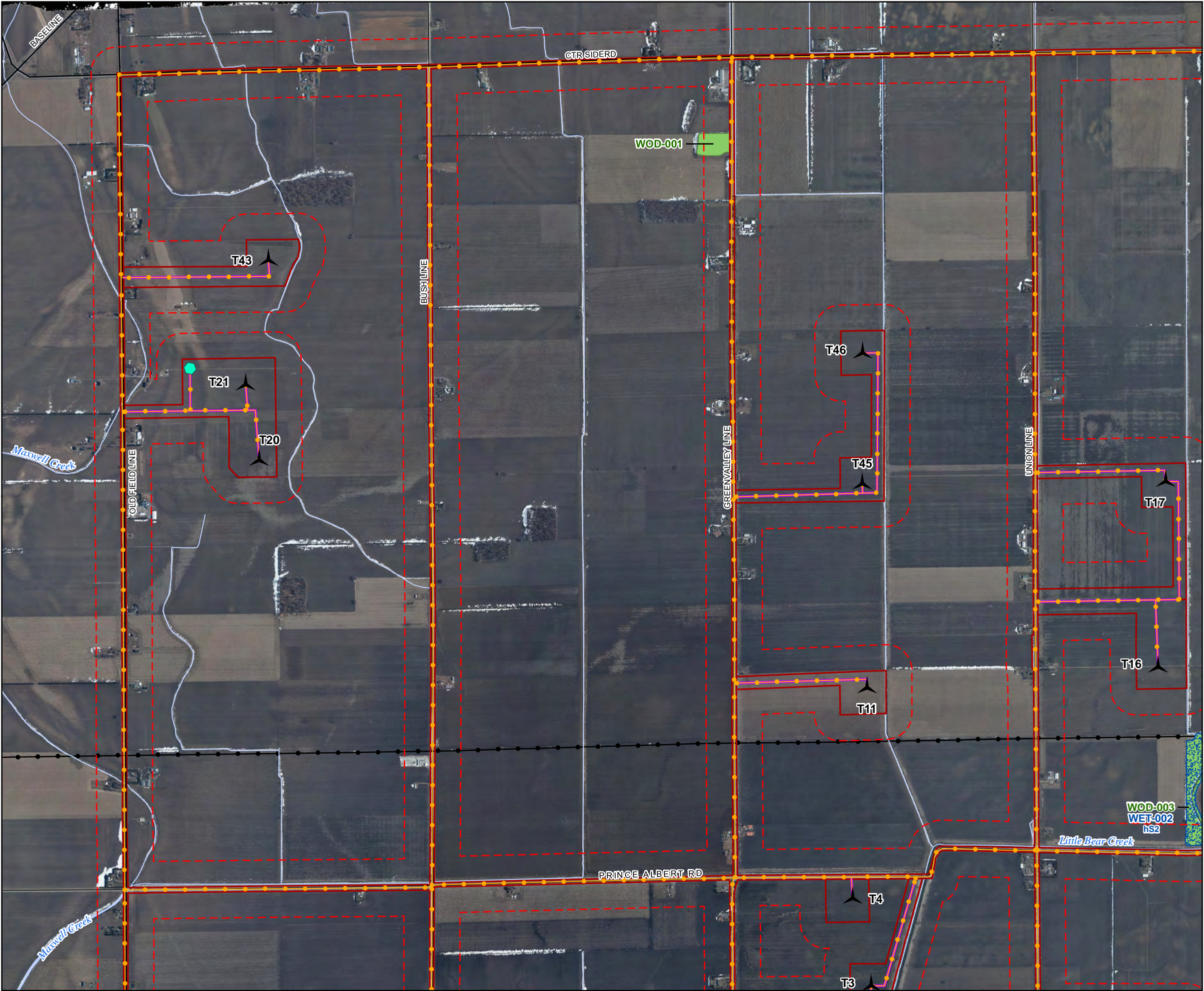
**Map 2**  
Key Map

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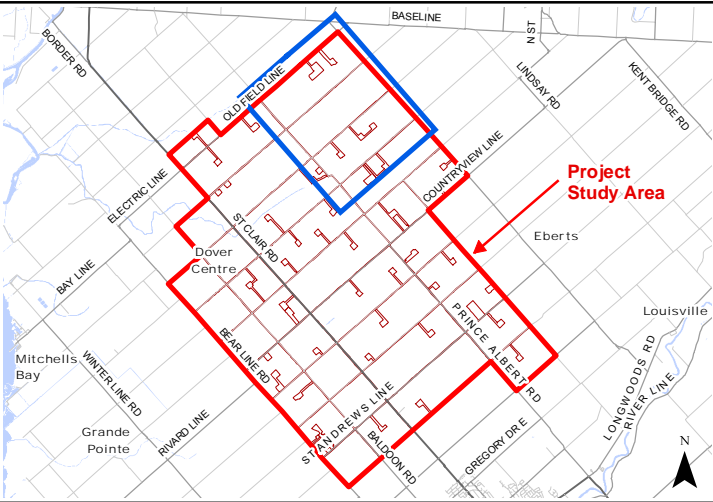
**Maps 3-1 to 3-9**  
Significant Woodlands and Wetlands

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# North Kent Wind 1 Project

## Significant Woodlands and Wetlands



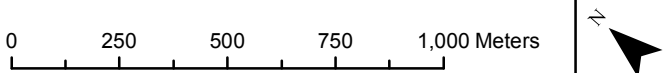
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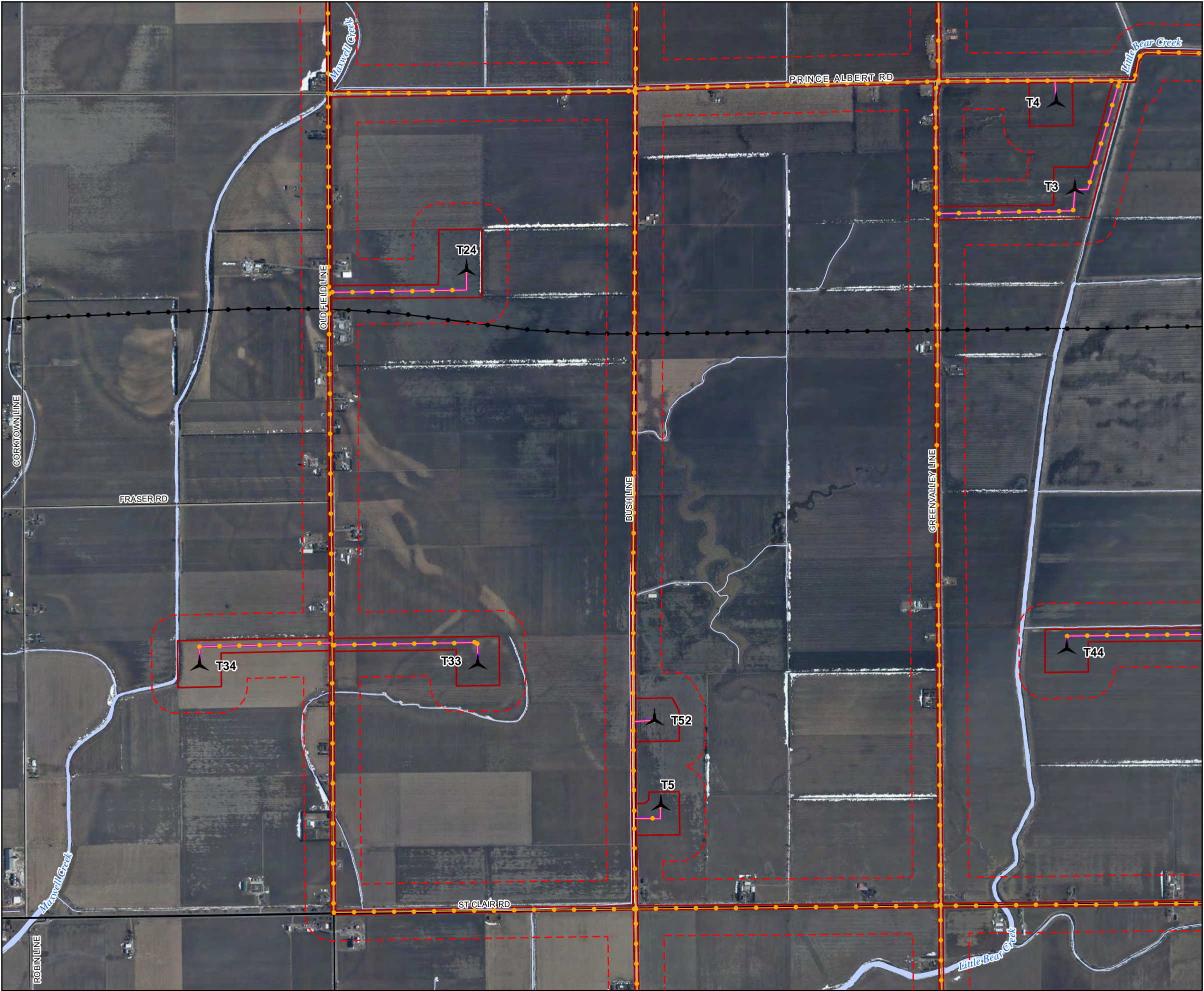
- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water
- Project Location**
- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Meteorological Tower
- Proposed Collection Line
- Proposed Access Road
- Significant Natural Features**
- Significant Woodland (WOD)
- Significant Wetland (WET)



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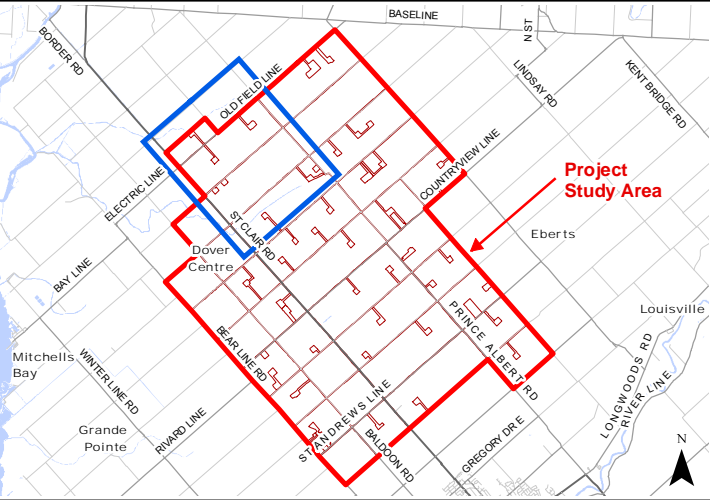
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# North Kent Wind 1 Project

## Significant Woodlands and Wetlands



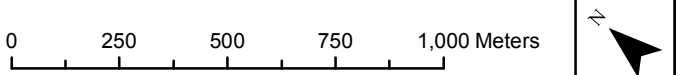
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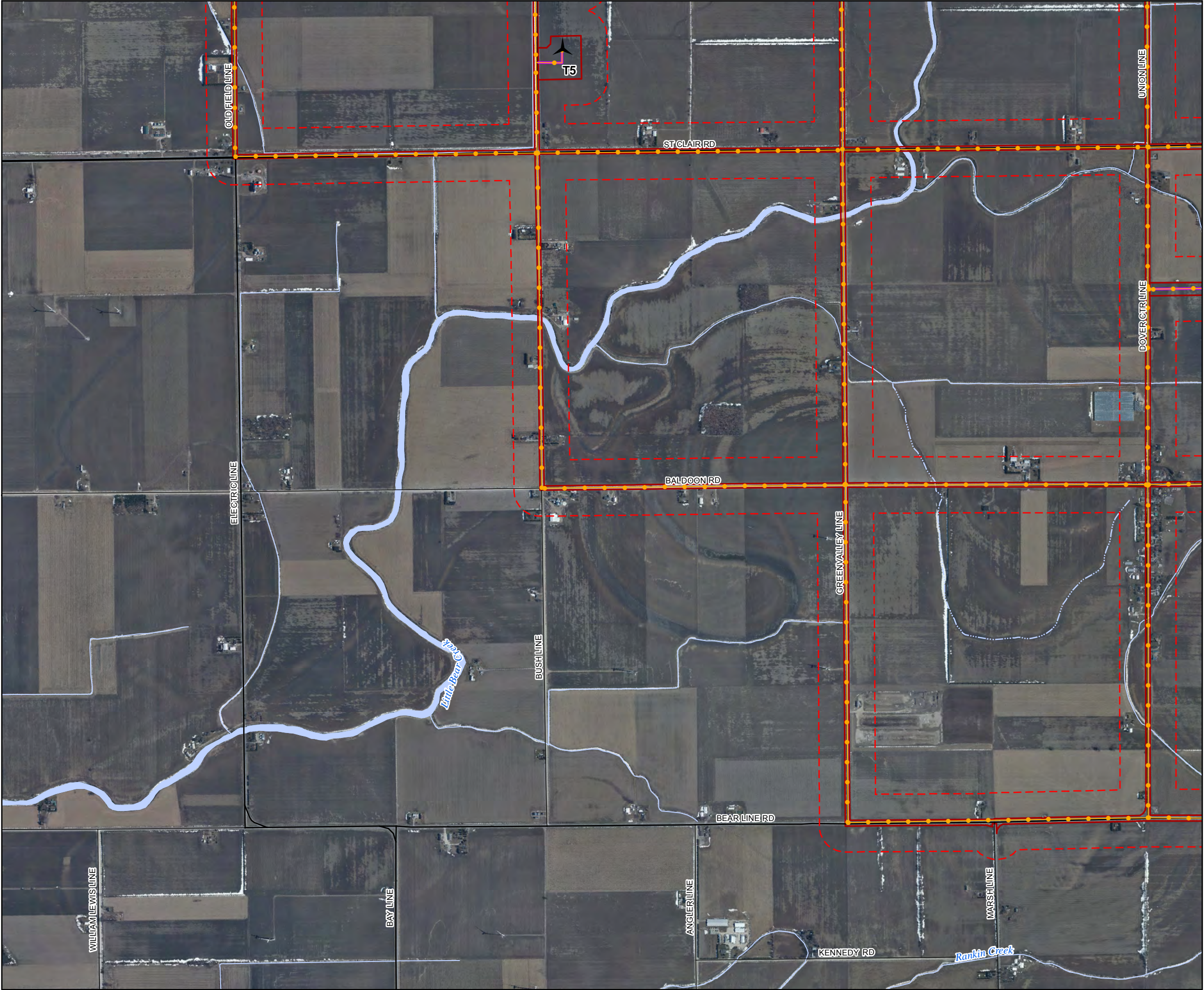
- Utility Line
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water
- Project Location**
- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road



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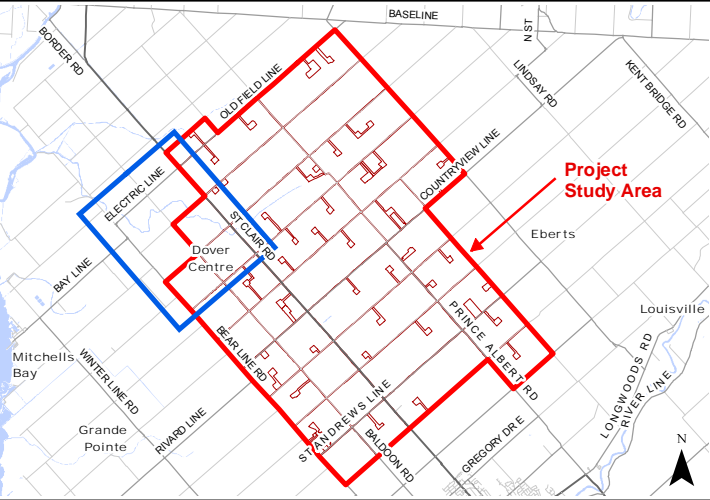
Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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# North Kent Wind 1 Project

## Significant Woodlands and Wetlands



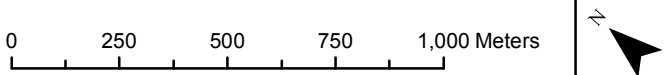
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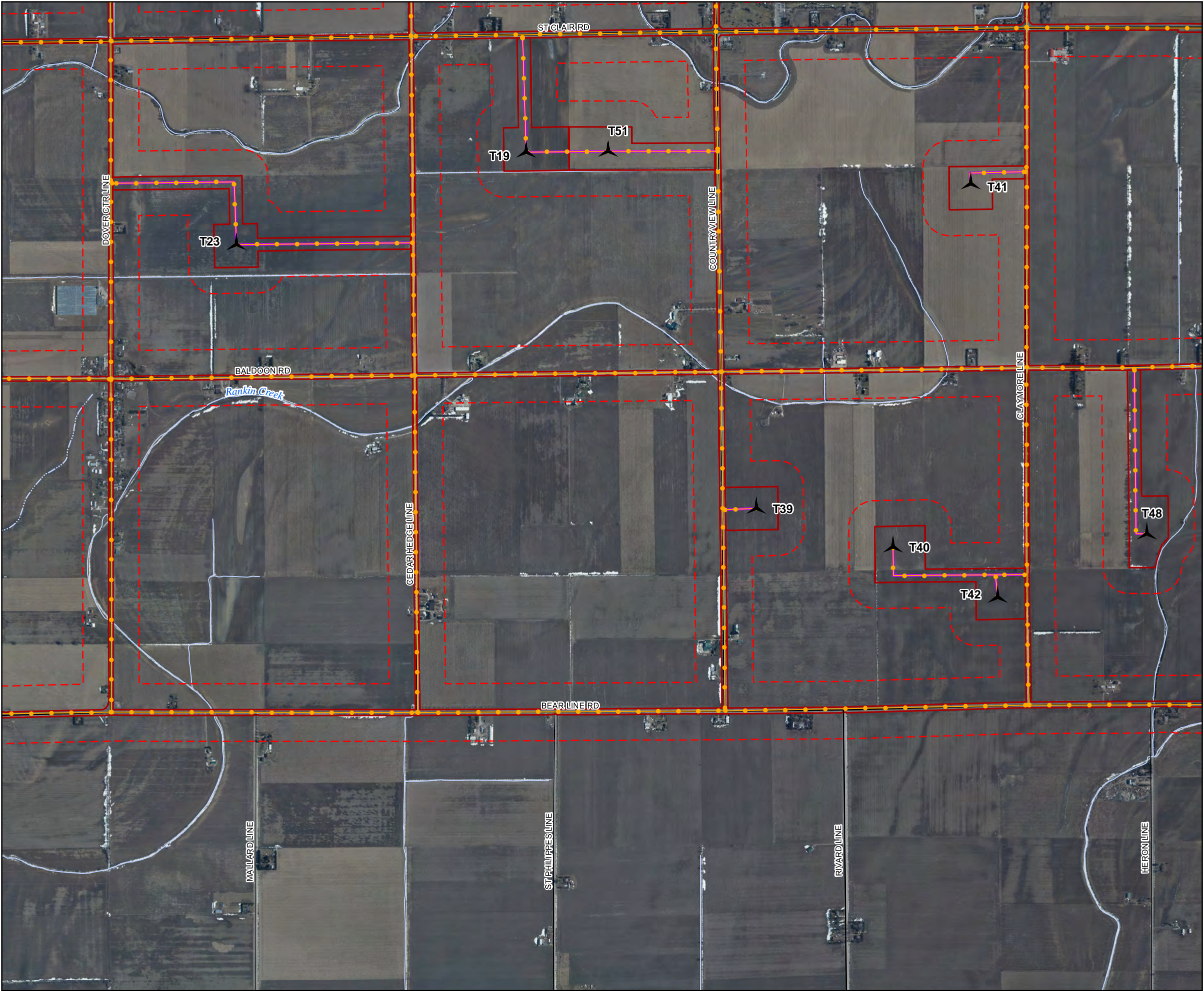
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Project Location**
- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road



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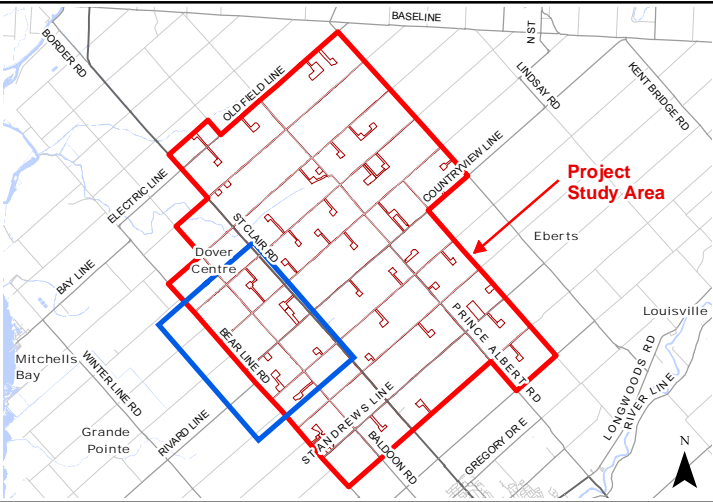
Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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# North Kent Wind 1 Project

## Significant Woodlands and Wetlands



**Legend**

- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse

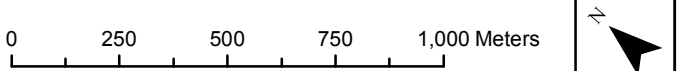
**Project Location**

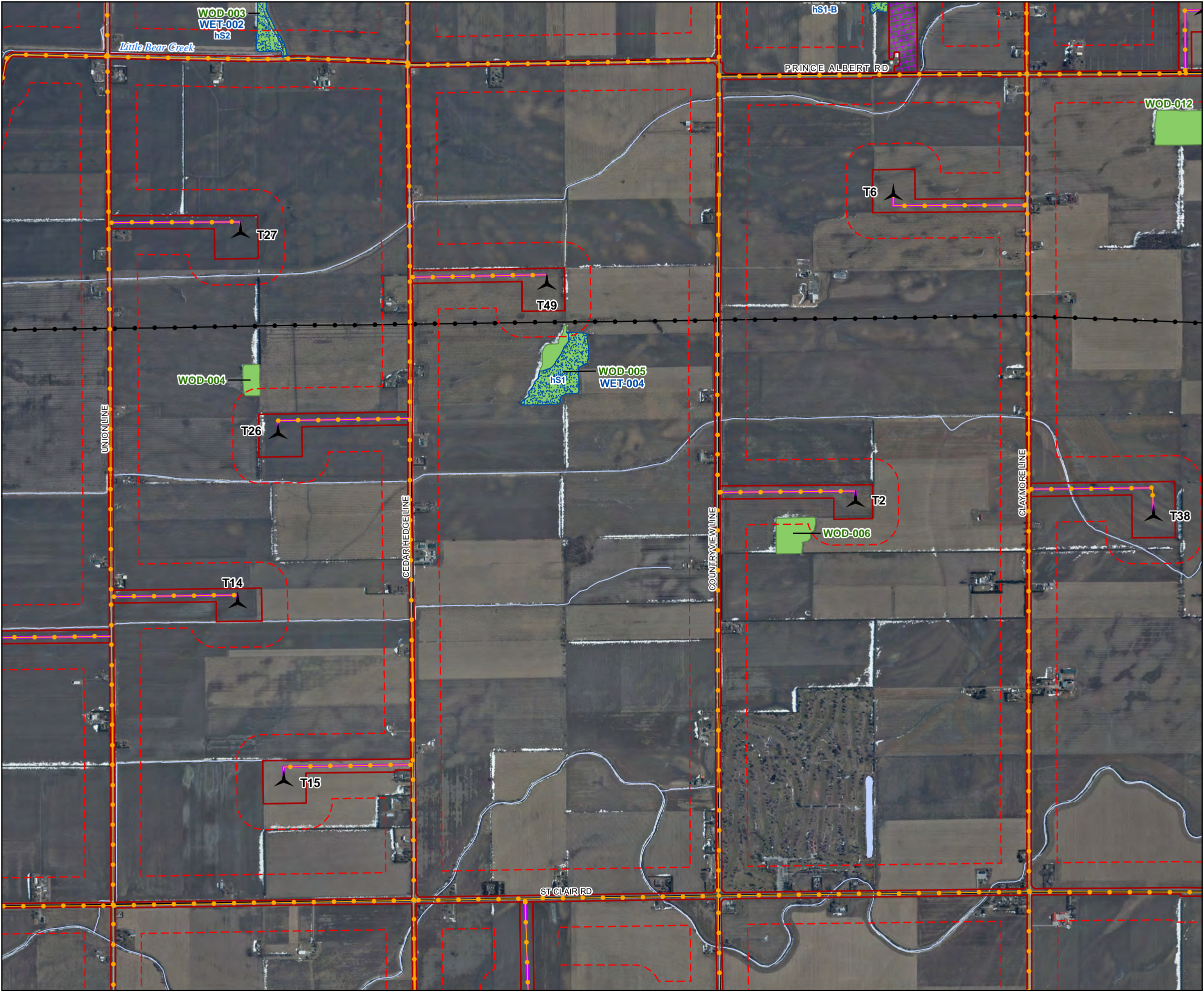
- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road



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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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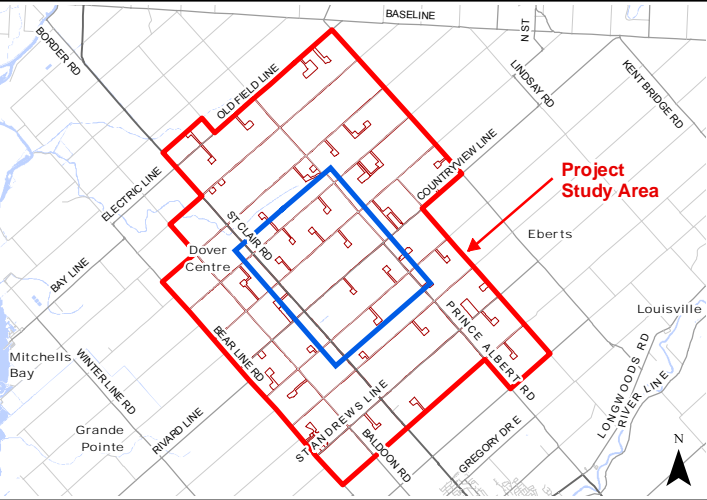




Map 3 - 5

# North Kent Wind 1 Project

## Significant Woodlands and Wetlands

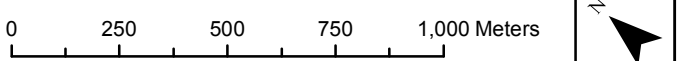


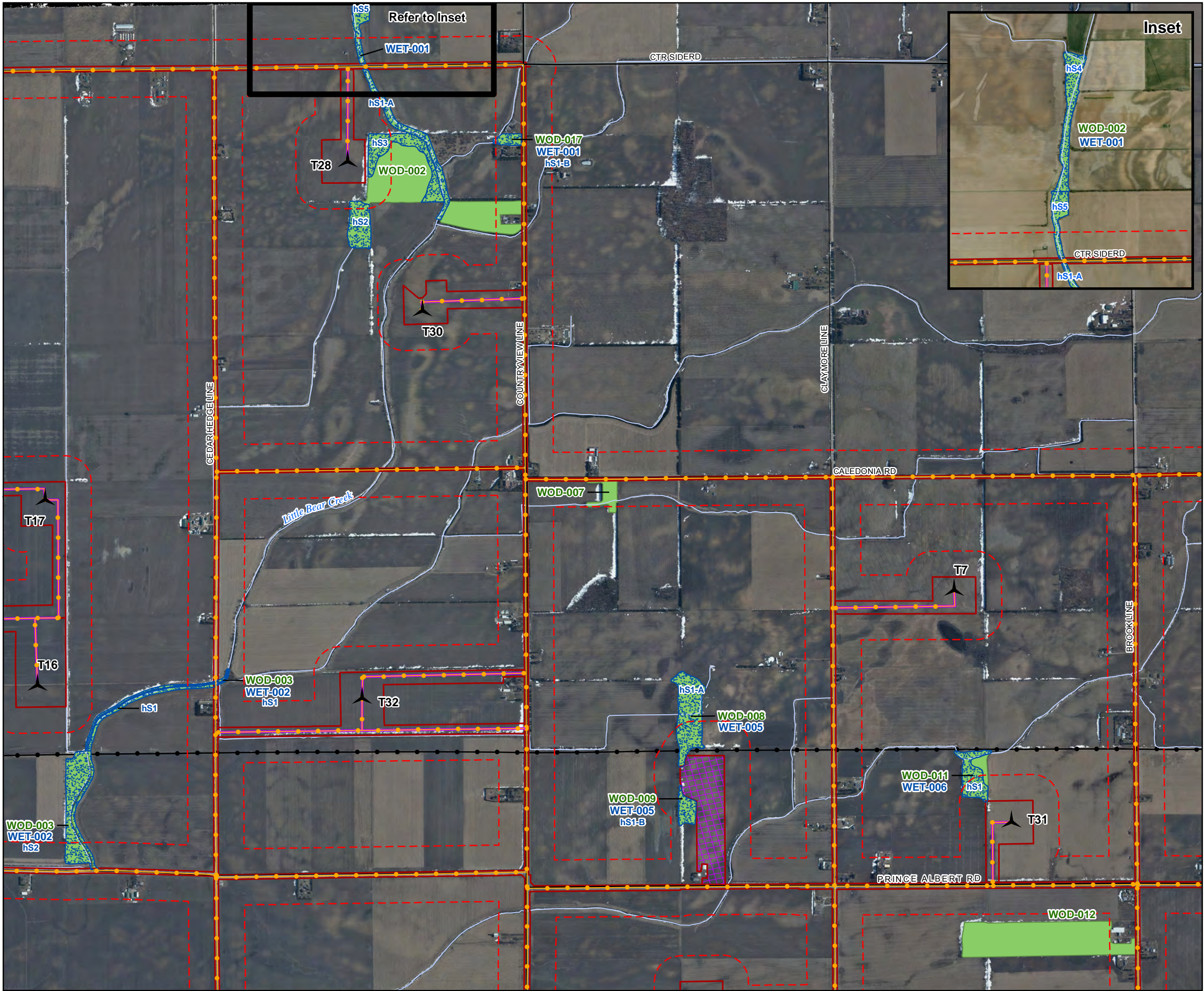
- Legend**
- Utility Line
  - Highway
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Open Water
- Project Location**
- Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed POI/ Substation/ Laydown/ O&M Building
- Significant Natural Features**
- Significant Woodland (WOD)
  - Significant Wetland (WET)



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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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Map 3 - 6

# North Kent Wind 1 Project

## Significant Woodlands and Wetlands

### Legend

- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse

### Project Location

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road
- Proposed POI/ Substation/ Laydown/ O&M Building

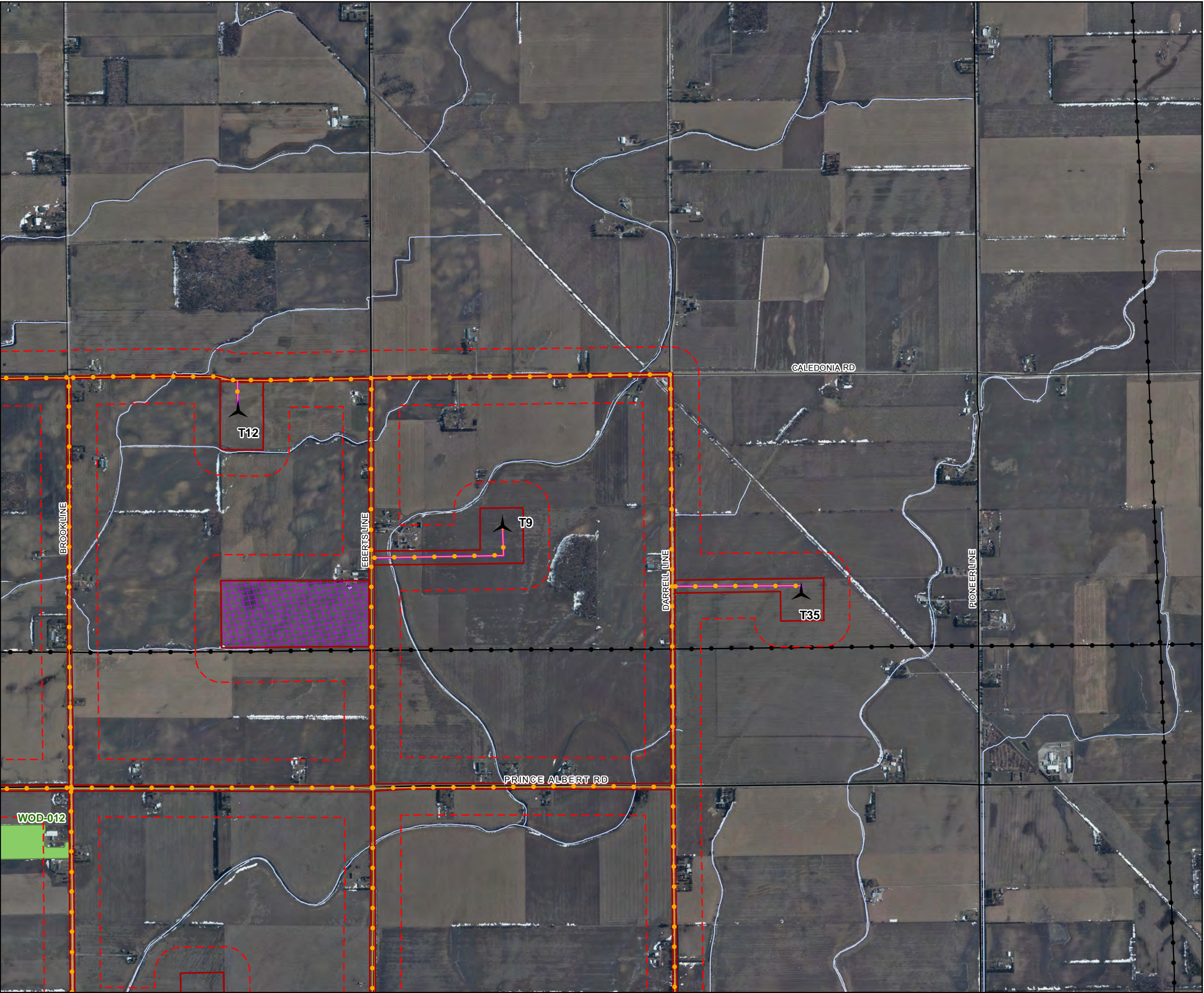
### Significant Natural Features

- Significant Woodland (WOD)
- Significant Wetland (WET)

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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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0 250 500 750 1,000 Meters

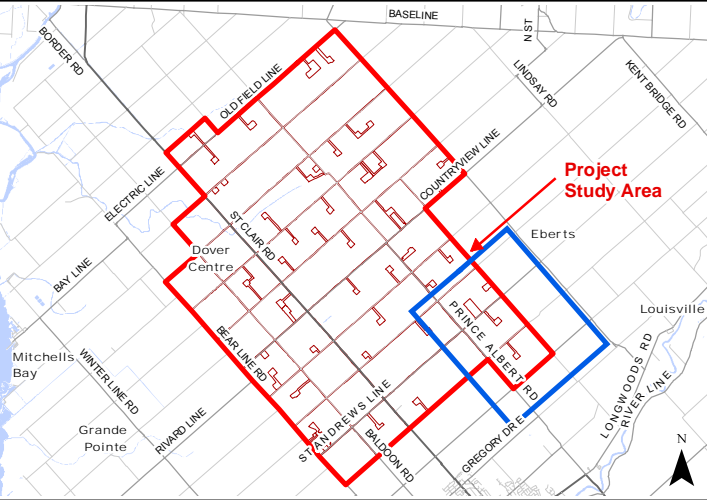


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Map 3 - 7

# North Kent Wind 1 Project

## Significant Woodlands and Wetlands

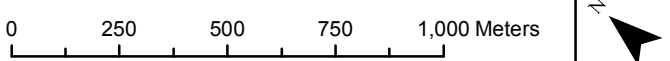


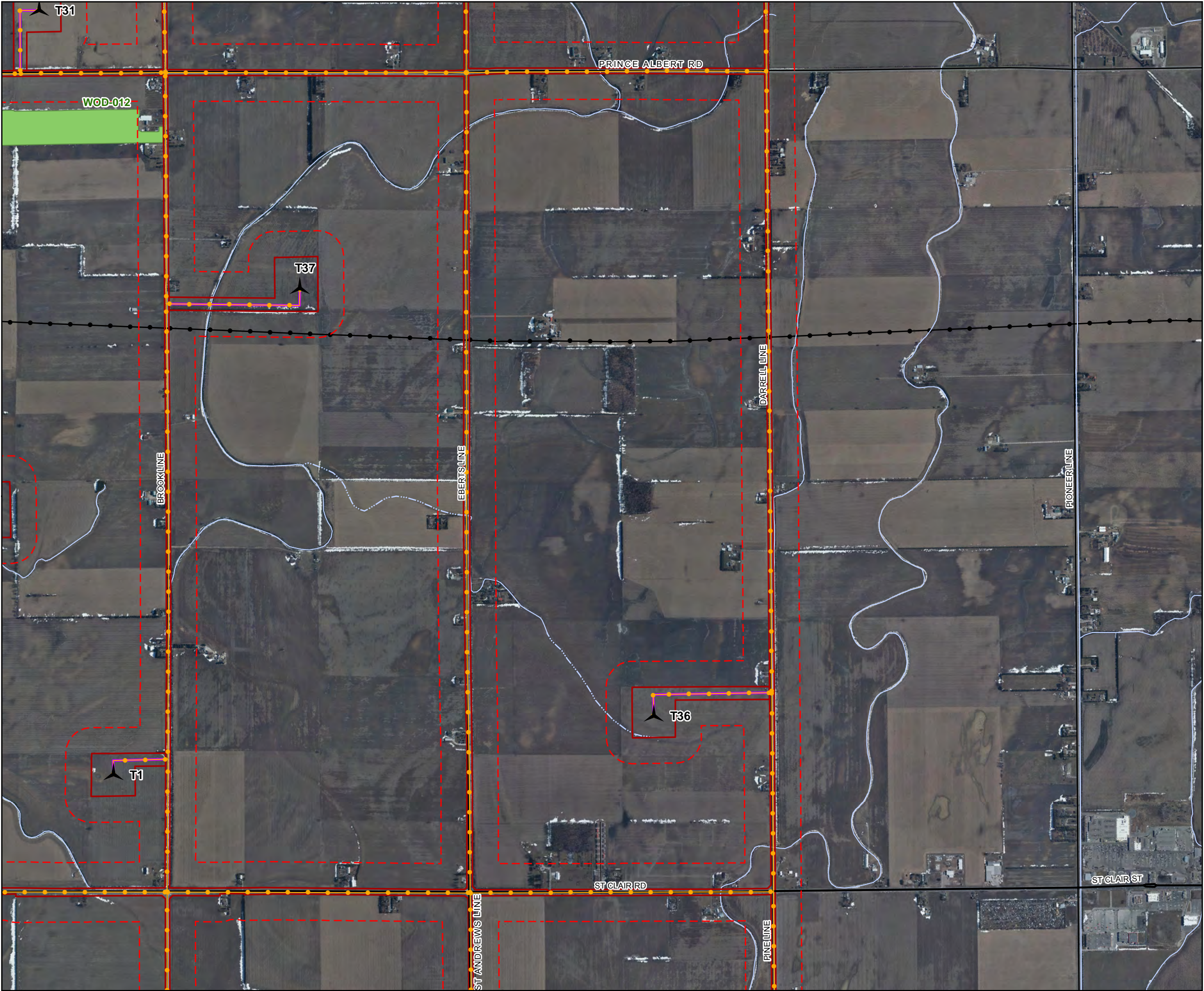
- Legend**
- Utility Line
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
- Project Location**
- Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed POI/ Substation/ Laydown/ O&M Building
- Significant Natural Features**
- Significant Woodland (WOD)



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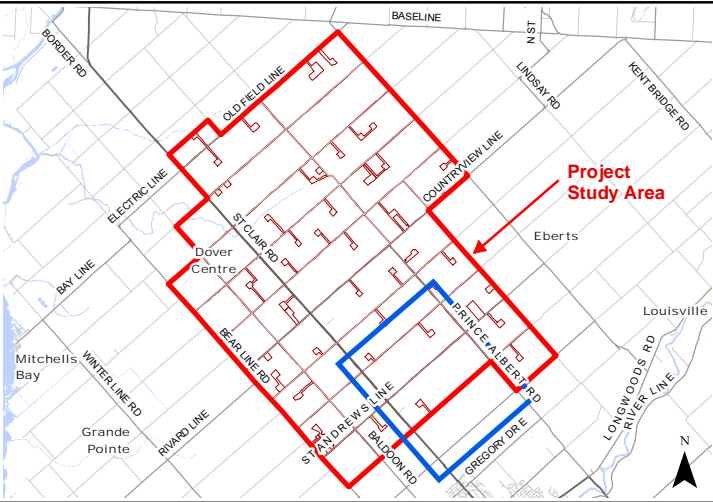
Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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# North Kent Wind 1 Project

## Significant Woodlands and Wetlands



**Legend**

- Utility Line
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse

**Project Location**

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road

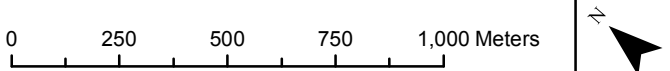
**Significant Natural Features**

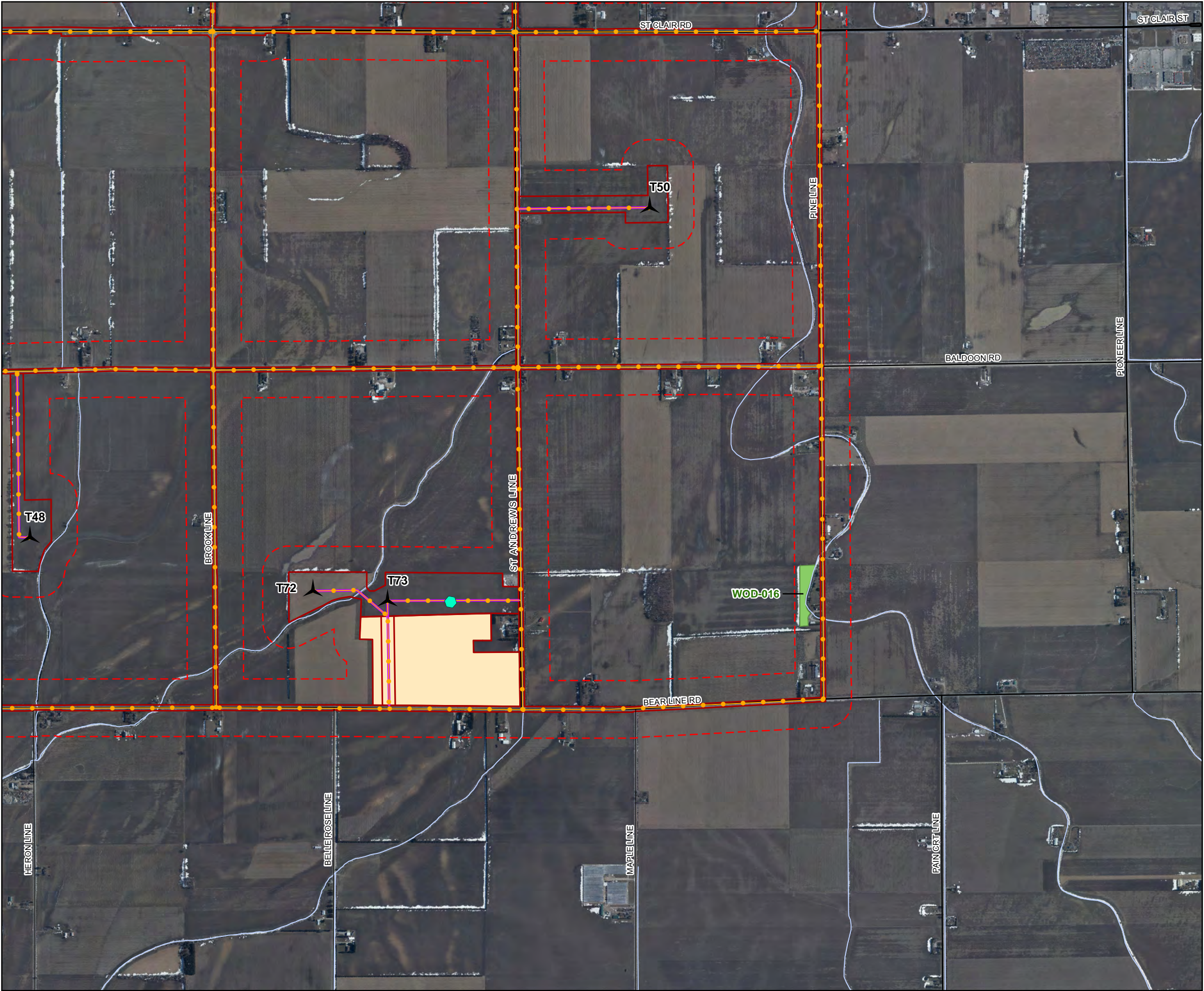
- Significant Woodland (WOD)



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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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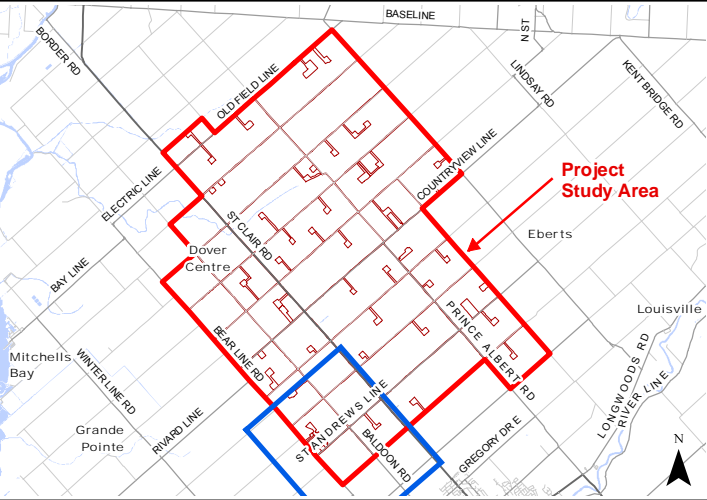




Map 3 - 9

# North Kent Wind 1 Project

## Significant Woodlands and Wetlands



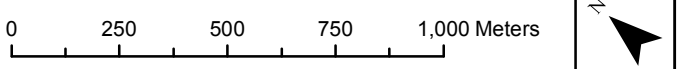
Legend

- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Project Location**
  - Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Meteorological Tower
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed Laydown Area
- Significant Natural Features**
  - Significant Woodland (WOD)



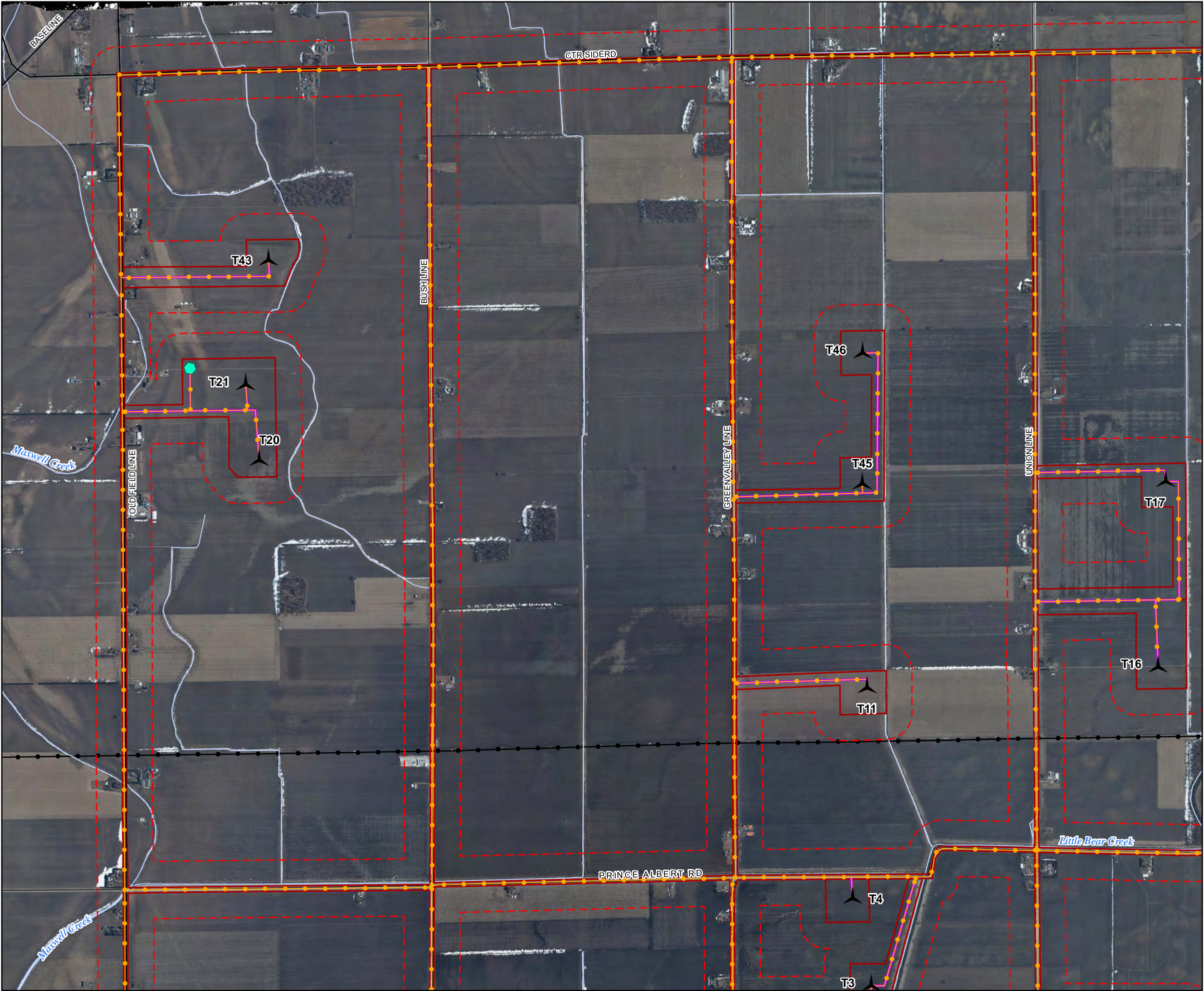
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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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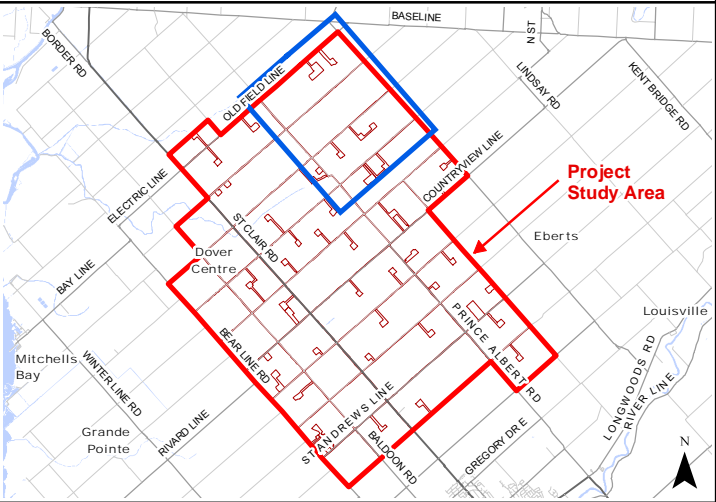
**Maps 4-1 to 4-9**  
Significant Seasonal Concentration Areas

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# North Kent Wind 1 Project

## Significant Seasonal Concentration Areas



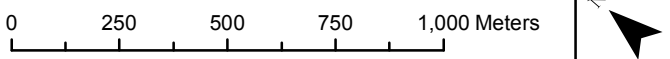
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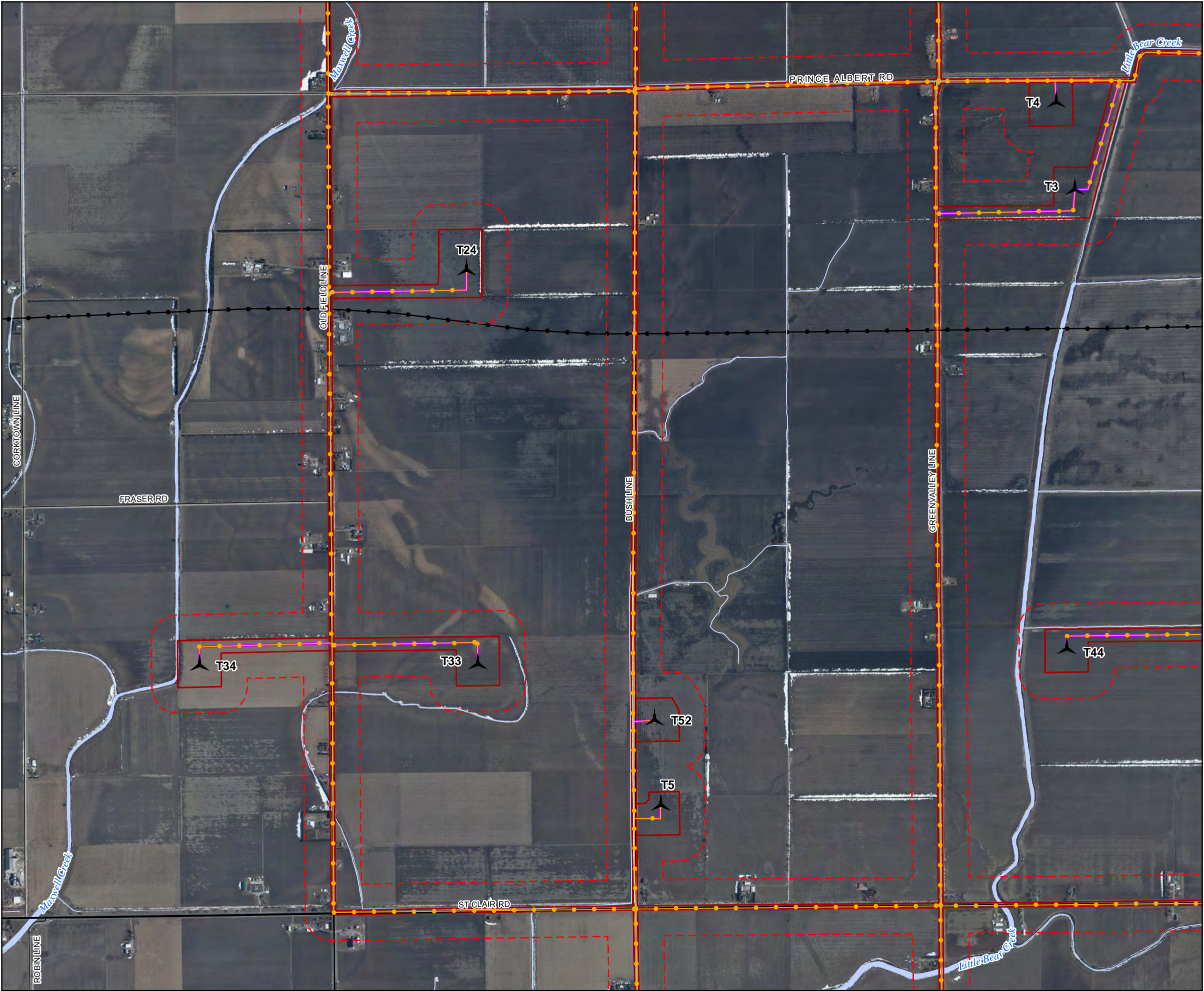
- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water
- Project Location**
- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Meteorological Tower
- Proposed Collection Line
- Proposed Access Road



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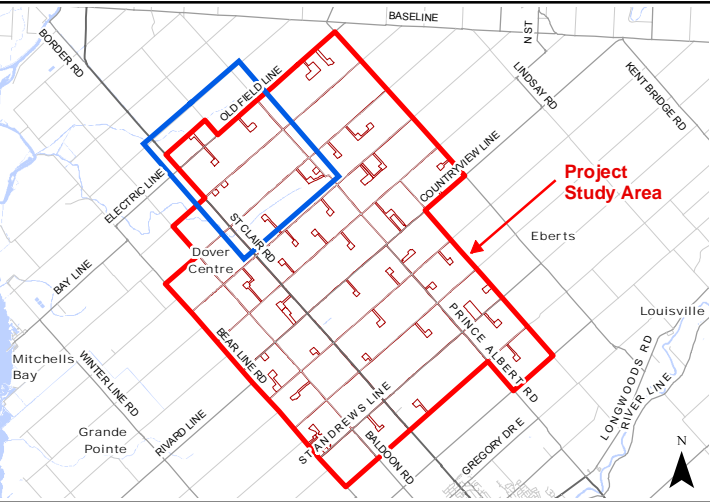
Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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# North Kent Wind 1 Project

## Significant Seasonal Concentration Areas



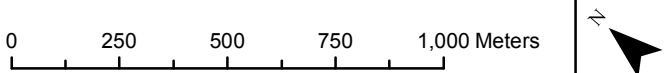
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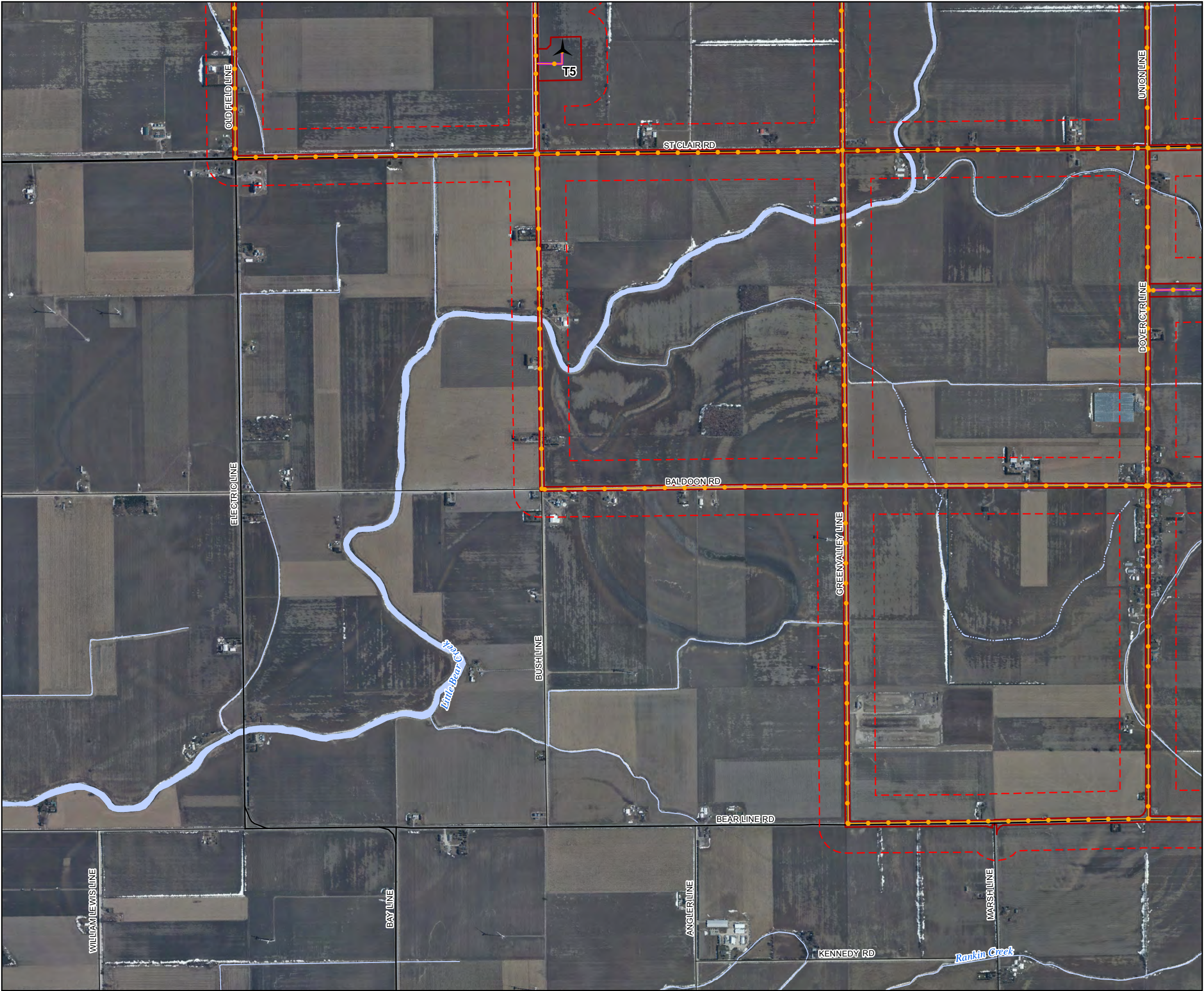
- Utility Line
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water
- Project Location**
- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road



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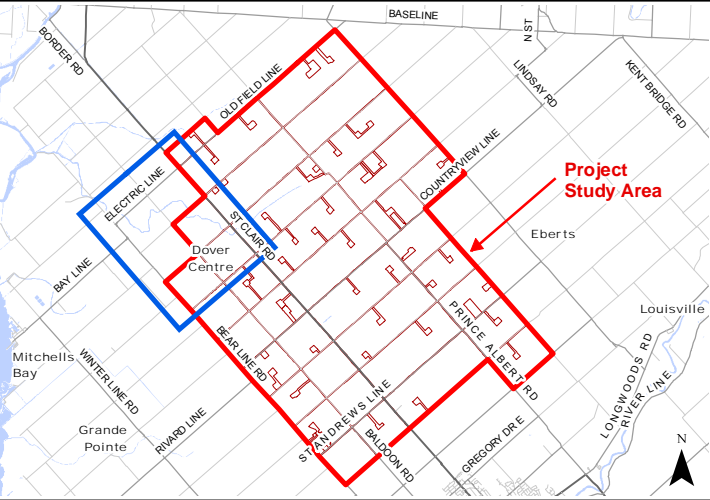
Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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# North Kent Wind 1 Project

## Significant Seasonal Concentration Areas



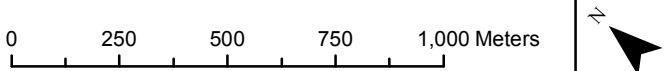
**Legend**

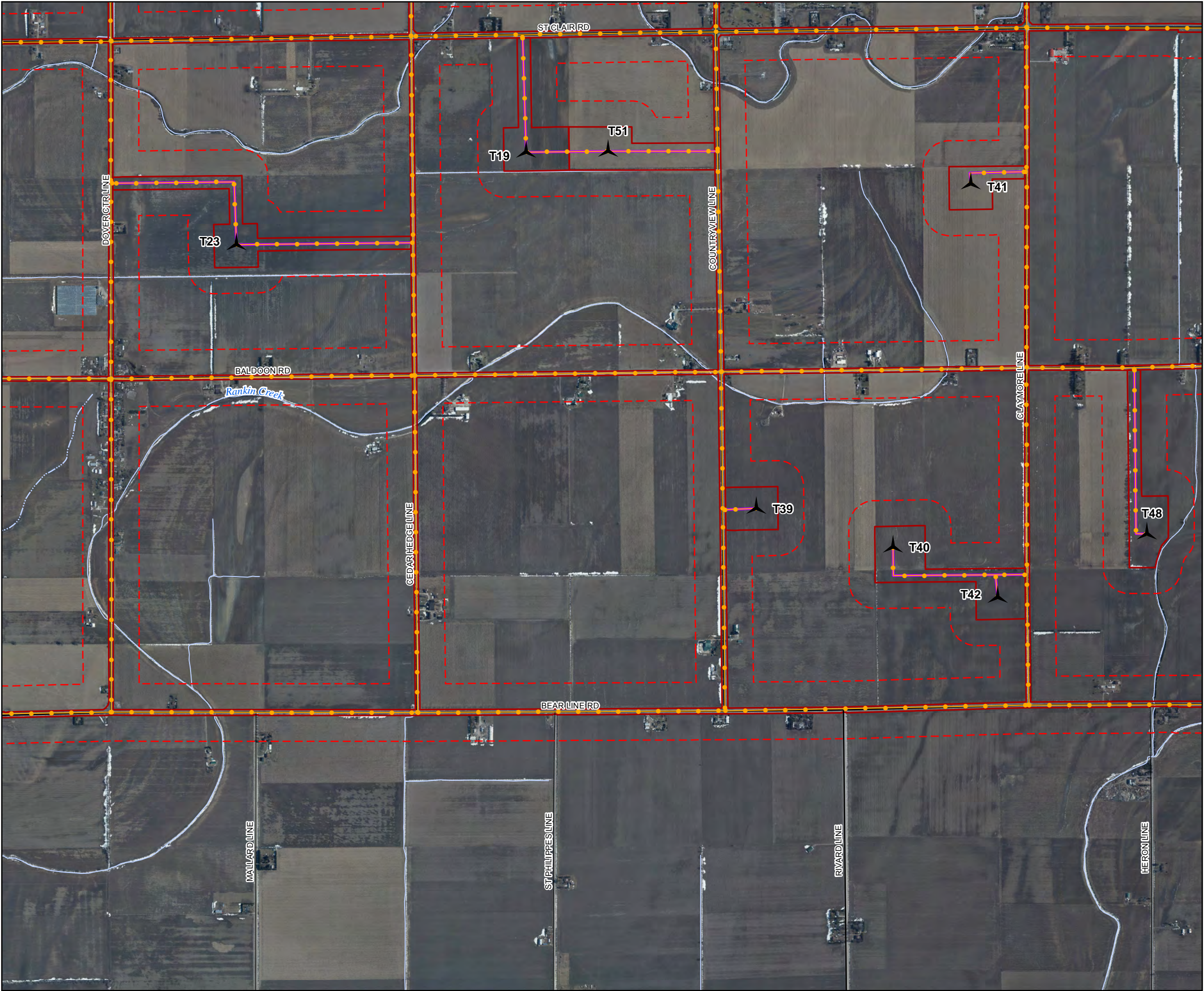
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Project Location**
- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road



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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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Map 4 - 4

North Kent Wind 1 Project

Significant  
Seasonal Concentration Areas

**Legend**

- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse

**Project Location**

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road

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Project: 1612  
Date: July 21, 2015

NAD83 - UTM Zone 17  
Size: 11x17"  
1:17,500

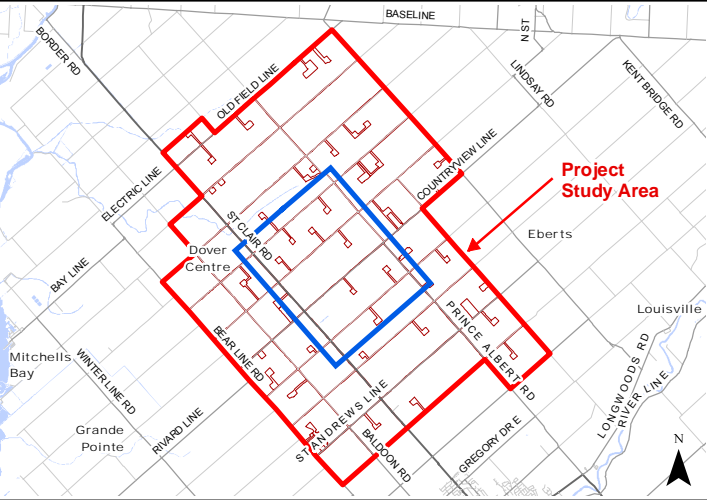
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Map 4 - 5

# North Kent Wind 1 Project

## Significant Seasonal Concentration Areas

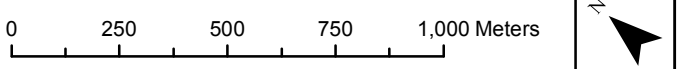


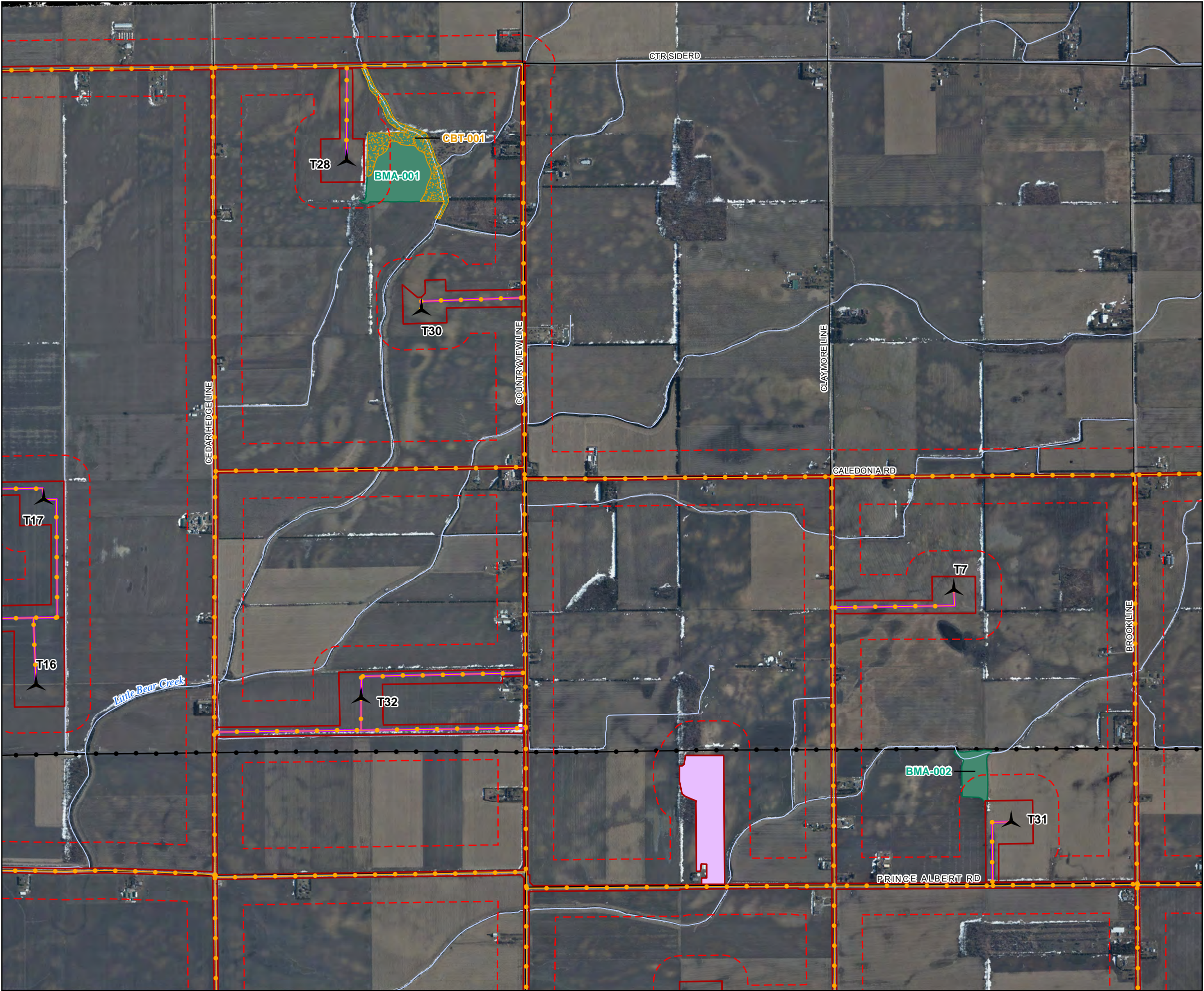
- Legend**
- Utility Line
  - Highway
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Open Water
- Project Location**
- Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed POI/ Substation/ Laydown/ O&M Building



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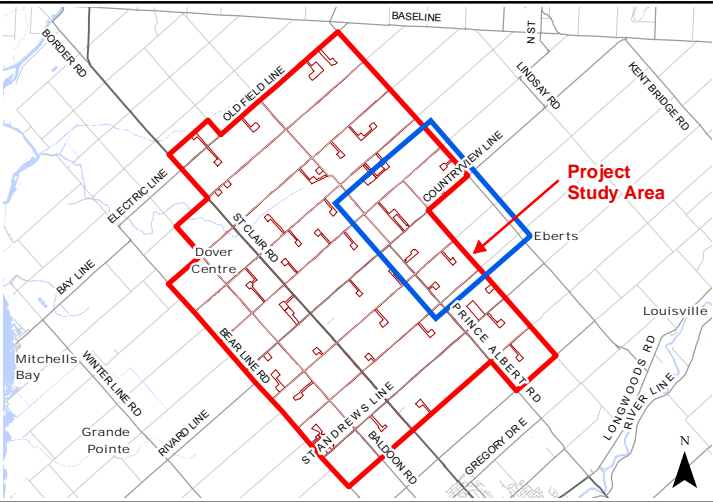
Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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# North Kent Wind 1 Project Significant Seasonal Concentration Areas



- Legend**
- Utility Line
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
- Project Location**
- Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed POI/ Substation/ Laydown/ O&M Building
  - Bat Maternity Colony (BMA)
  - Colonially – Nesting Bird Breeding Habitat (Tree/Shrubs) (CBT)



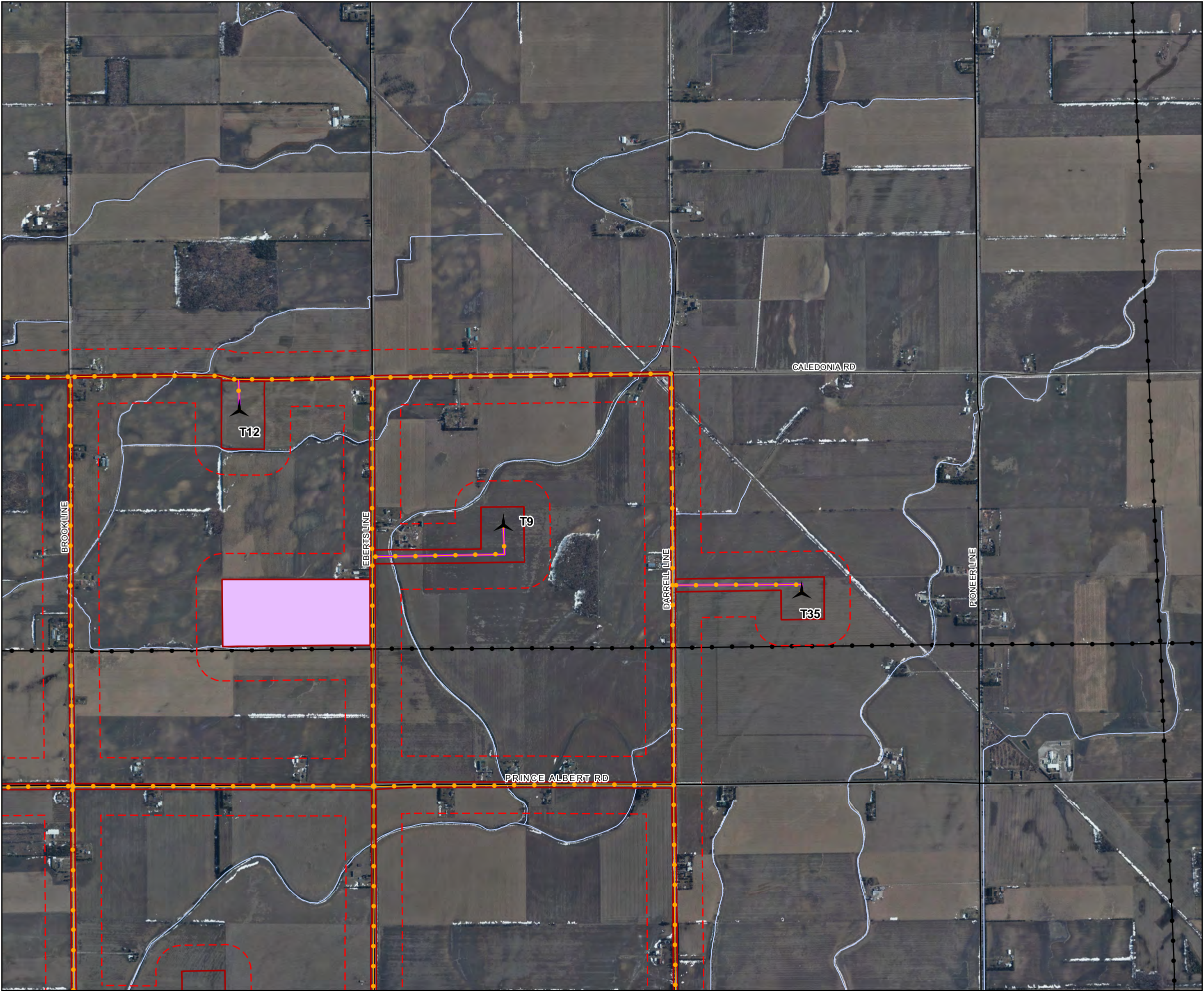
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Project: 1612  
Date: July 21, 2015

NAD83 - UTM Zone 17  
Size: 11x17"  
1:17,500

0 250 500 750 1,000 Meters





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Map 4 - 7

North Kent Wind 1 Project

Significant  
Seasonal Concentration Areas

Legend

Utility Line

Primary Road

Secondary Road

Permanent Watercourse

Project Location

Project Area (120m Buffer)

Construction Disturbance Area

Proposed Turbine

Proposed Collection Line

Proposed Access Road

Proposed POI/ Substation/ Laydown/ O&M Building

NATURAL RESOURCE SOLUTIONS INC.

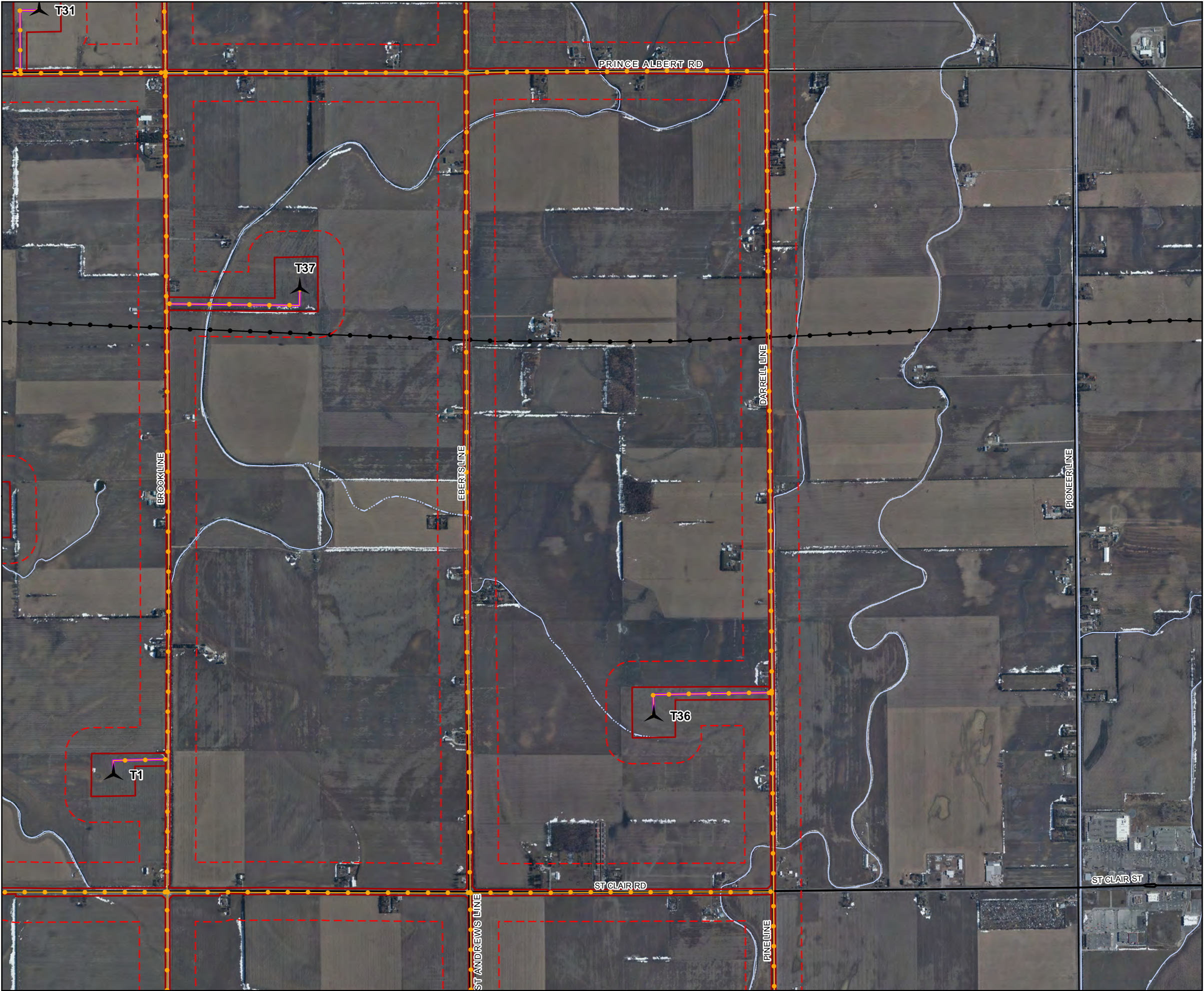
Aquatic, Terrestrial and Wetland Biologists

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Project: 1612  
Date: July 21, 2015

NAD83 - UTM Zone 17  
Size: 11x17"  
1:17,500

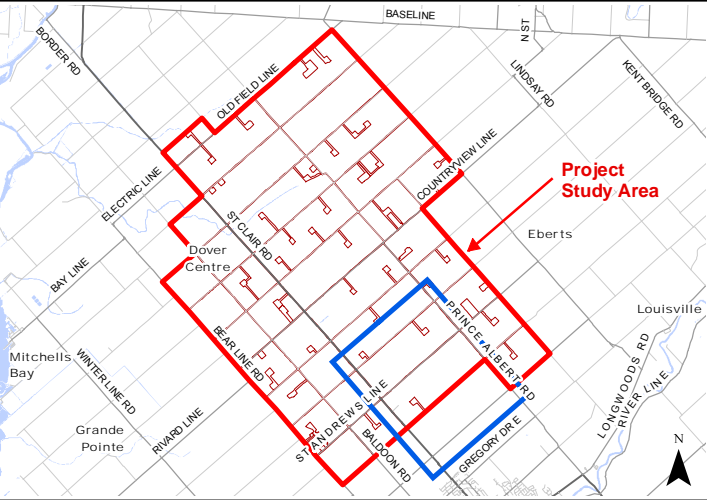
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Map 4 - 8

# North Kent Wind 1 Project

## Significant Seasonal Concentration Areas



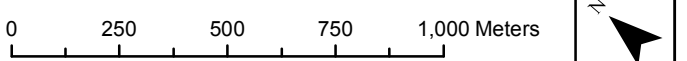
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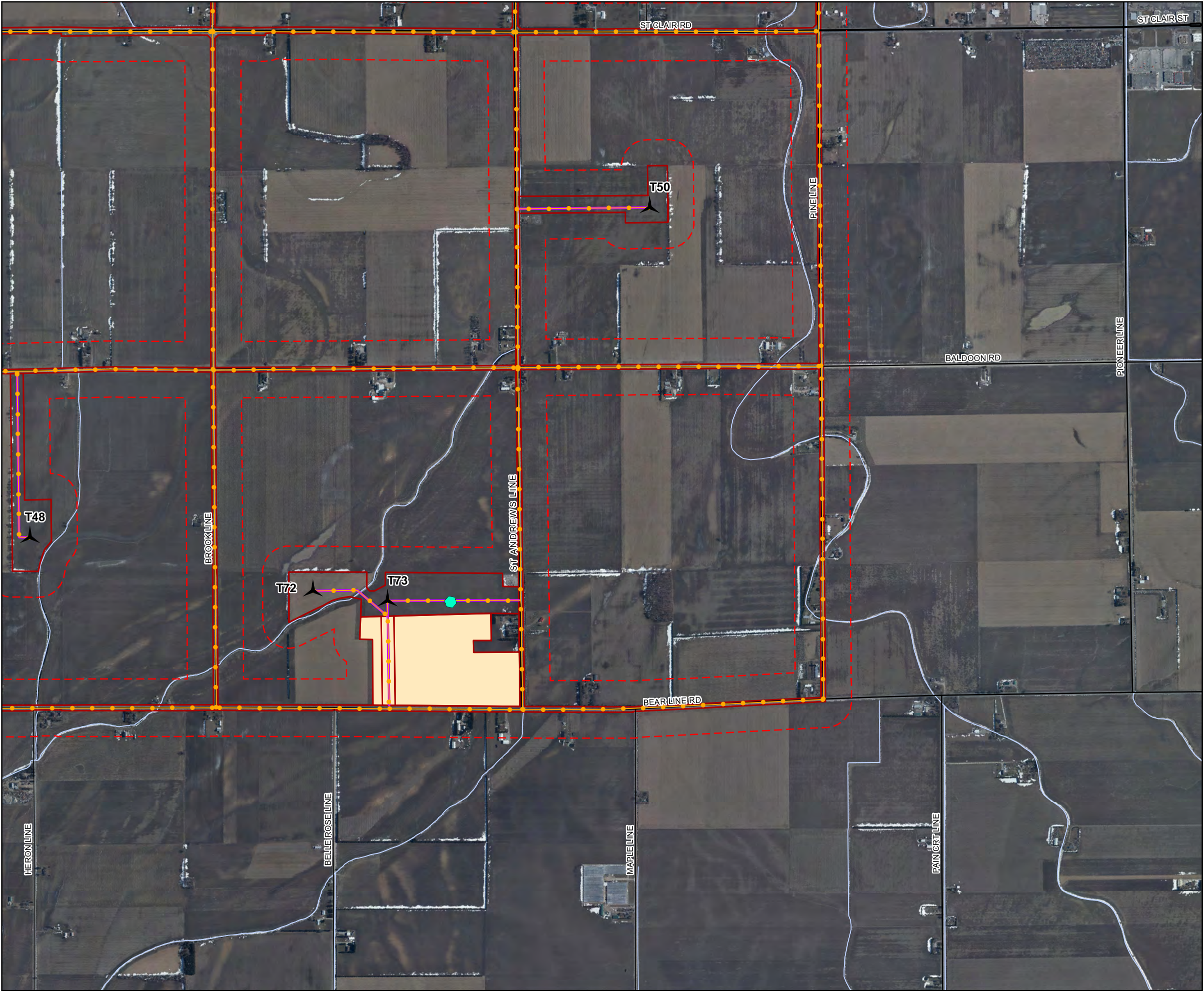
- Utility Line
  - Highway
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Intermittent Watercourse
- Project Location**
- Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road



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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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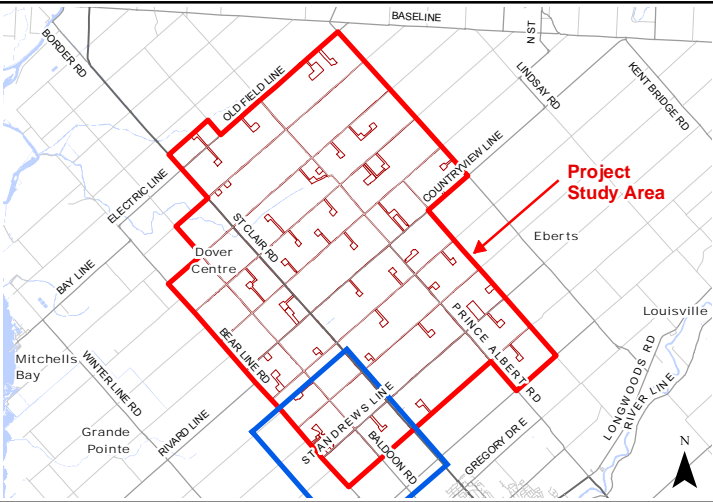




Map 4 - 9

# North Kent Wind 1 Project

## Significant Seasonal Concentration Areas



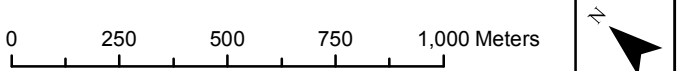
Legend

- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Project Location**
  - Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Meteorological Tower
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed Laydown Area



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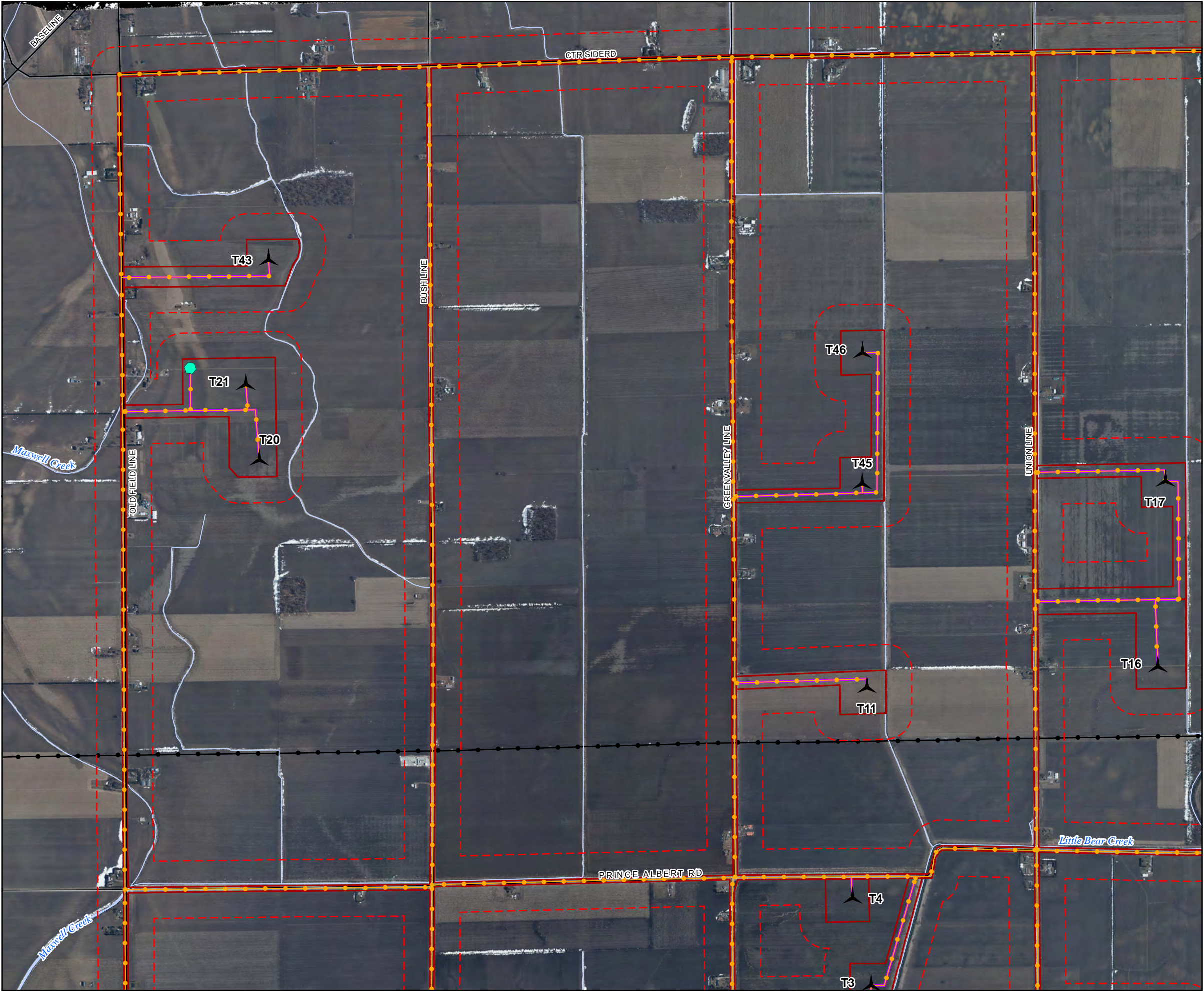
Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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**Maps 5-1 to 5-9**

**Significant Rare Vegetation Communities and Specialized Wildlife Habitats**

---



Map 5 - 1

North Kent Wind 1 Project

Significant Rare Vegetation  
Communities & Specialized  
Wildlife Habitats

**Legend**

- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water

**Project Location**

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Meteorological Tower
- Proposed Collection Line
- Proposed Access Road

**NATURAL RESOURCE SOLUTIONS INC.**  
Aquatic, Terrestrial and Wetland Biologists

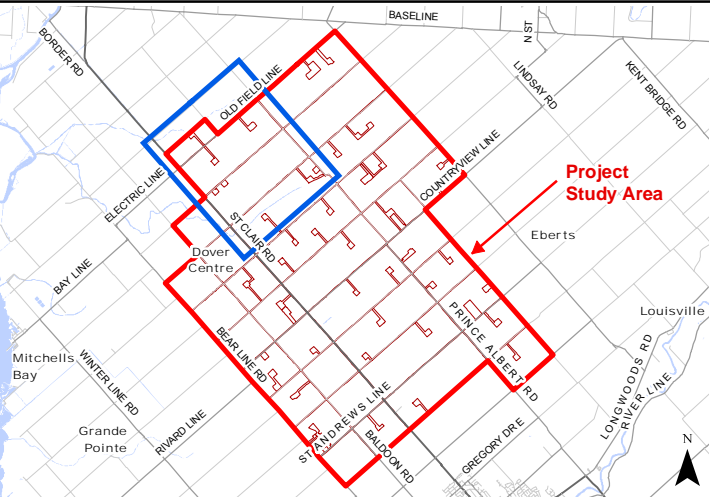
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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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02505007501,000 Meters

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North Kent Wind 1 Project  
Significant Rare Vegetation  
Communities & Specialized  
Wildlife Habitats



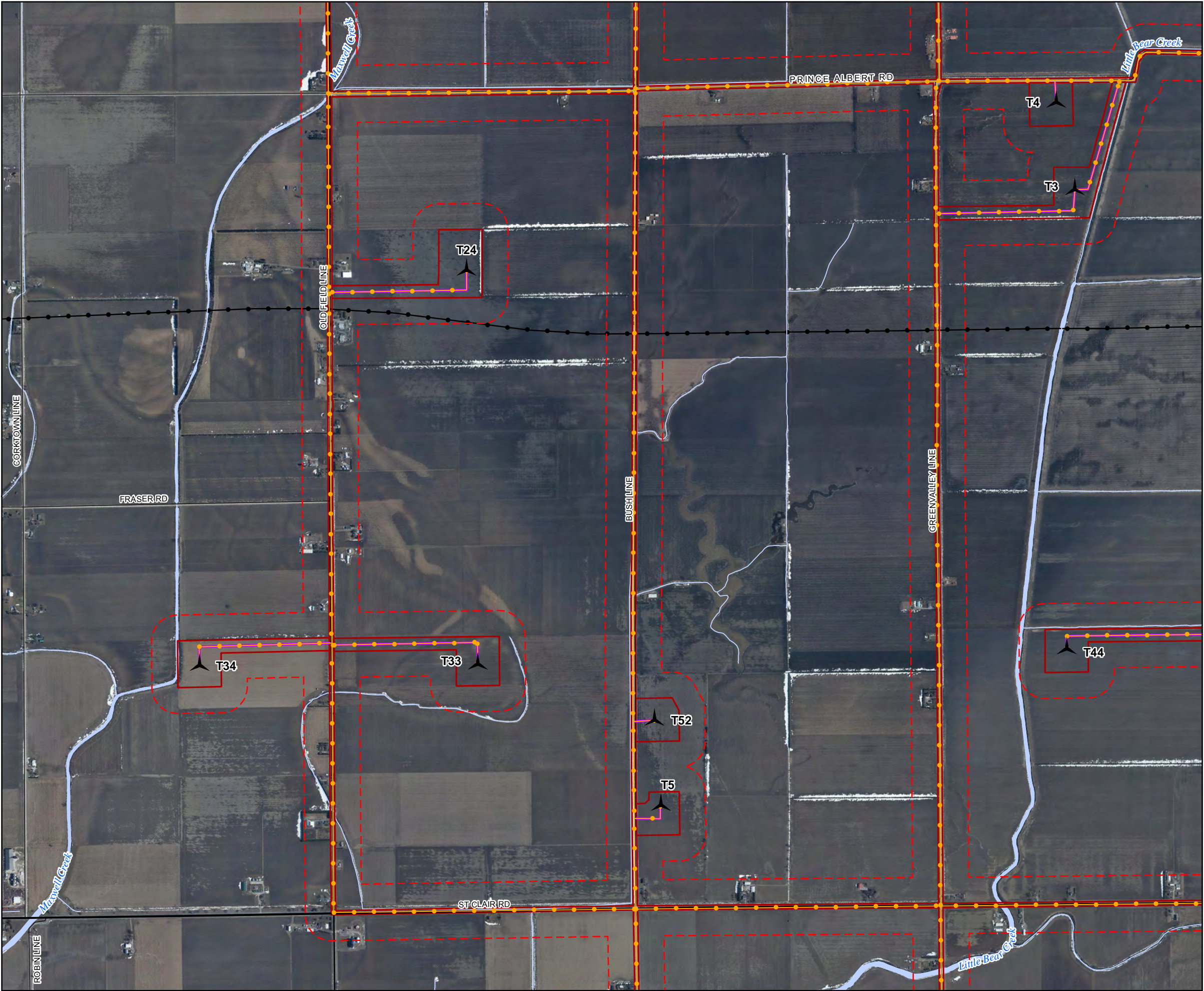
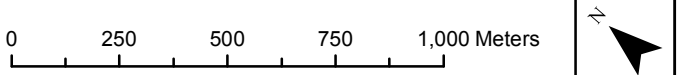
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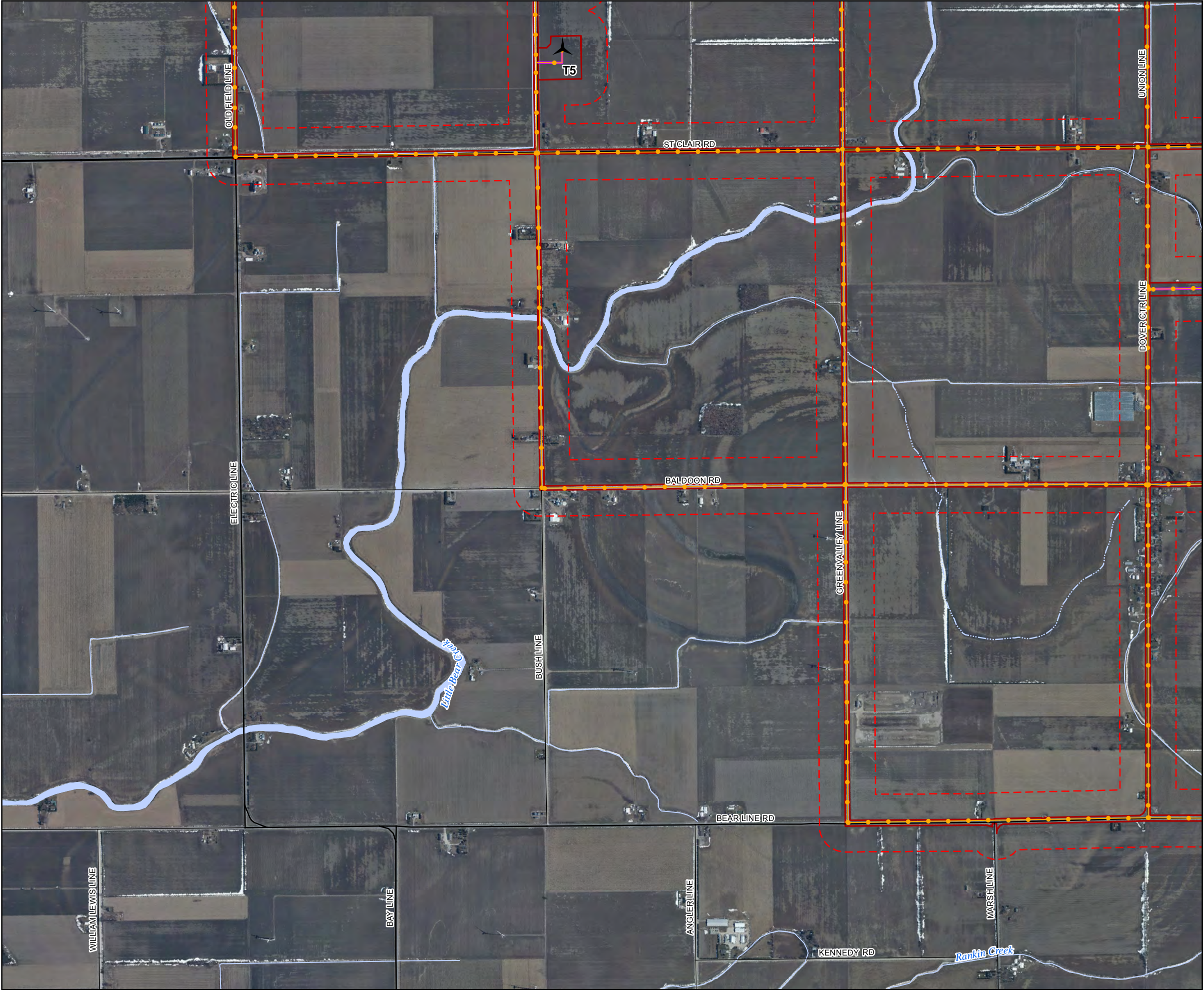
- Utility Line
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water
- Project Location**
  - Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road



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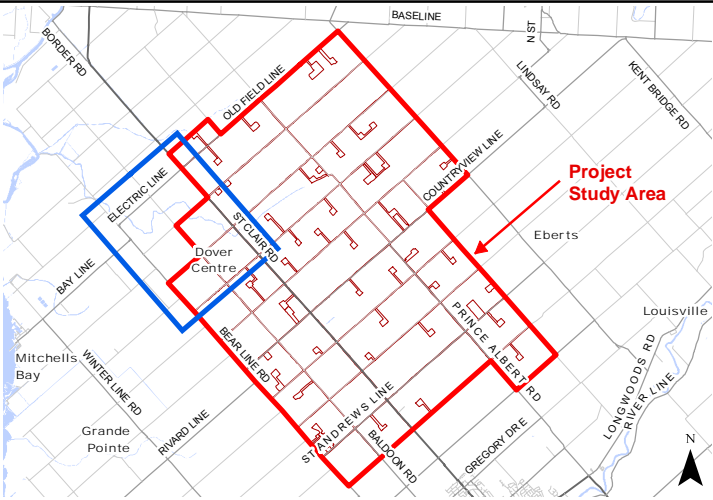
Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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North Kent Wind 1 Project

Significant Rare Vegetation  
Communities & Specialized  
Wildlife Habitats



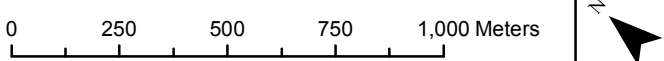
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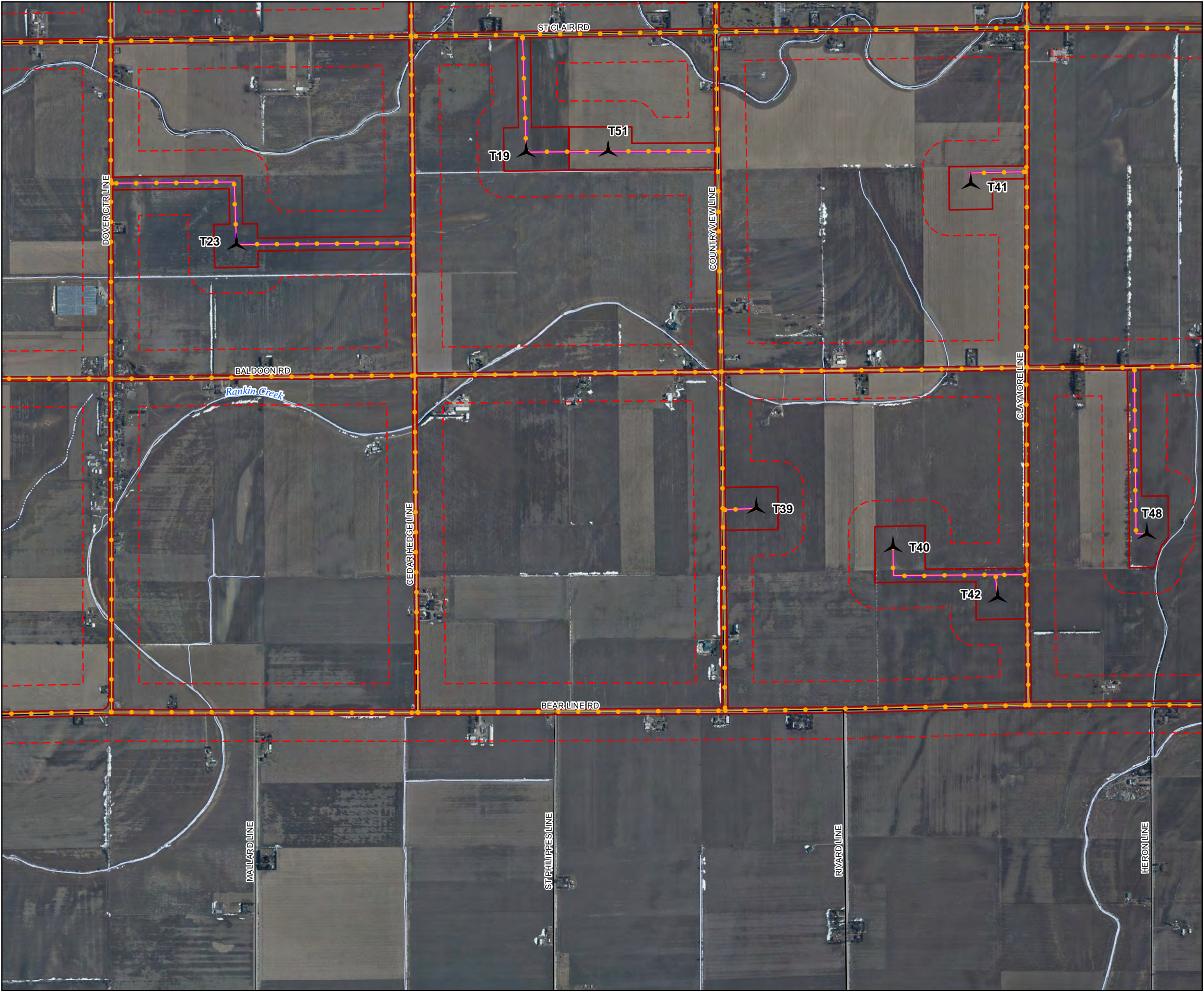
- Highway
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Intermittent Watercourse
  - Open Water
- Project Location**
- Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road



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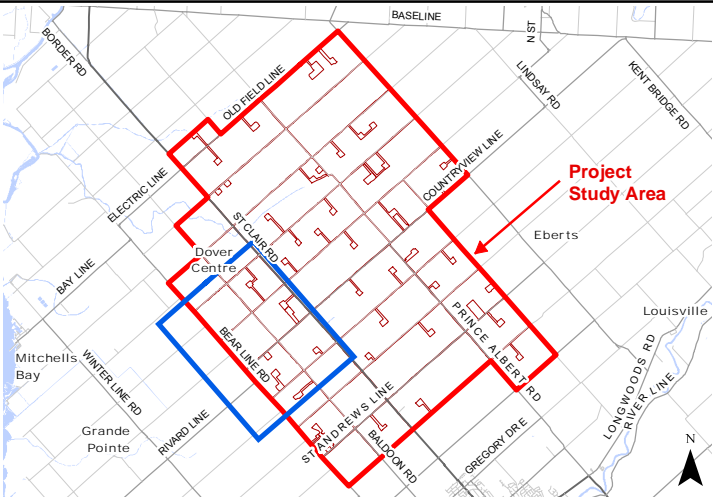
Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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# North Kent Wind 1 Project

## Significant Rare Vegetation Communities & Specialized Wildlife Habitats



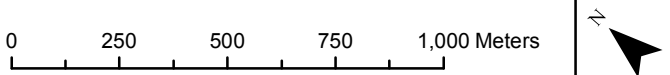
**Legend**

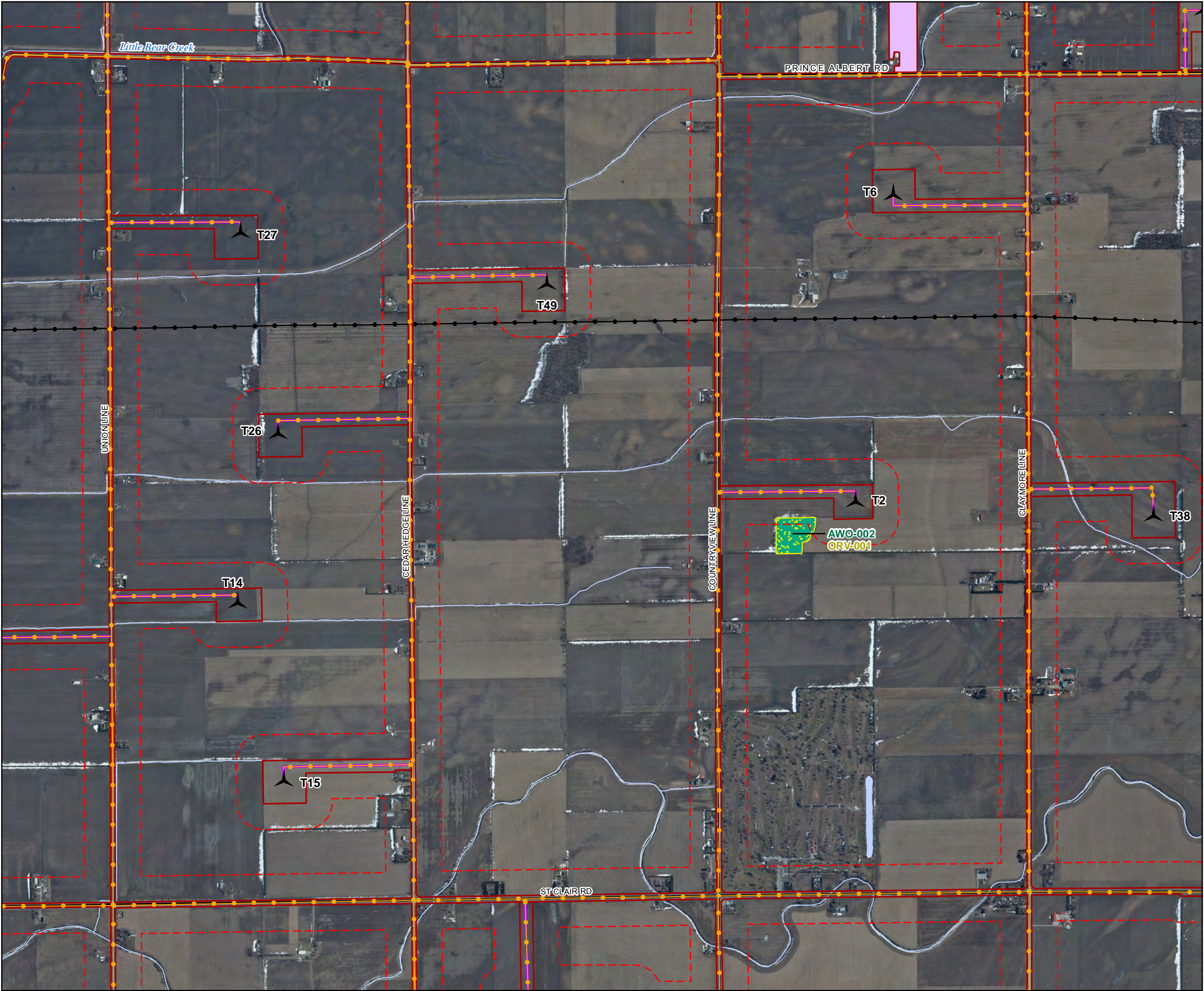
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Project Location**
- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road



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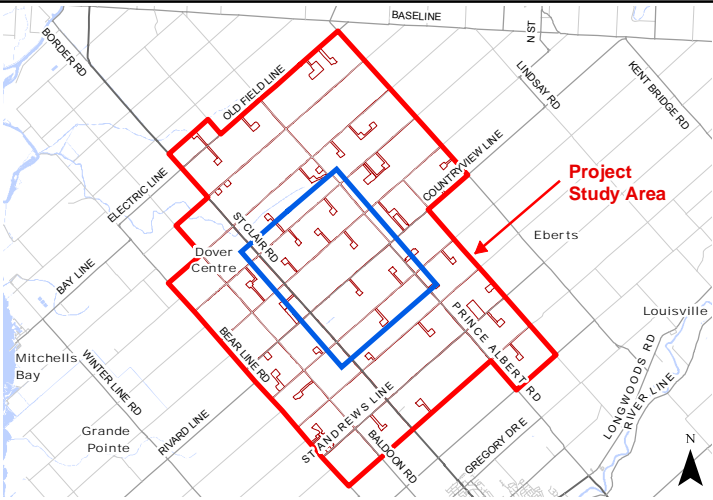
Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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# North Kent Wind 1 Project

## Significant Rare Vegetation Communities & Specialized Wildlife Habitats



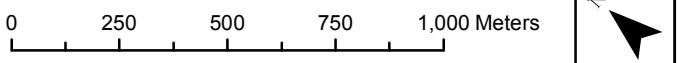
### Legend

- Utility Line
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water
- Project Location
  - Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed POI/ Substation/ Laydown/ O&M Building
- Significant Rare Vegetation Communities
  - Other Rare Vegetation Communities (ORV)
- Significant Specialized Wildlife Habitats
  - Amphibian Breeding Habitat (Woodland)(AWO)



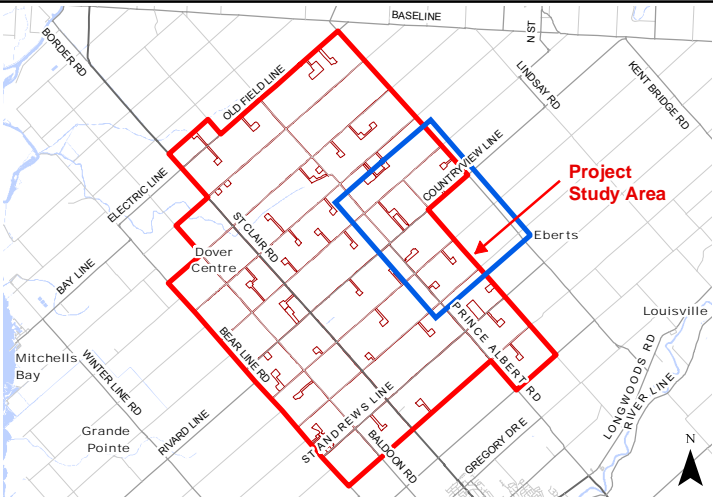
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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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North Kent Wind 1 Project

Significant Rare Vegetation  
Communities & Specialized  
Wildlife Habitats



Legend

- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse
- Project Location**
  - Project Area (120m Buffer)
  - Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road
- Proposed POI/ Substation/ Laydown/ O&M Building

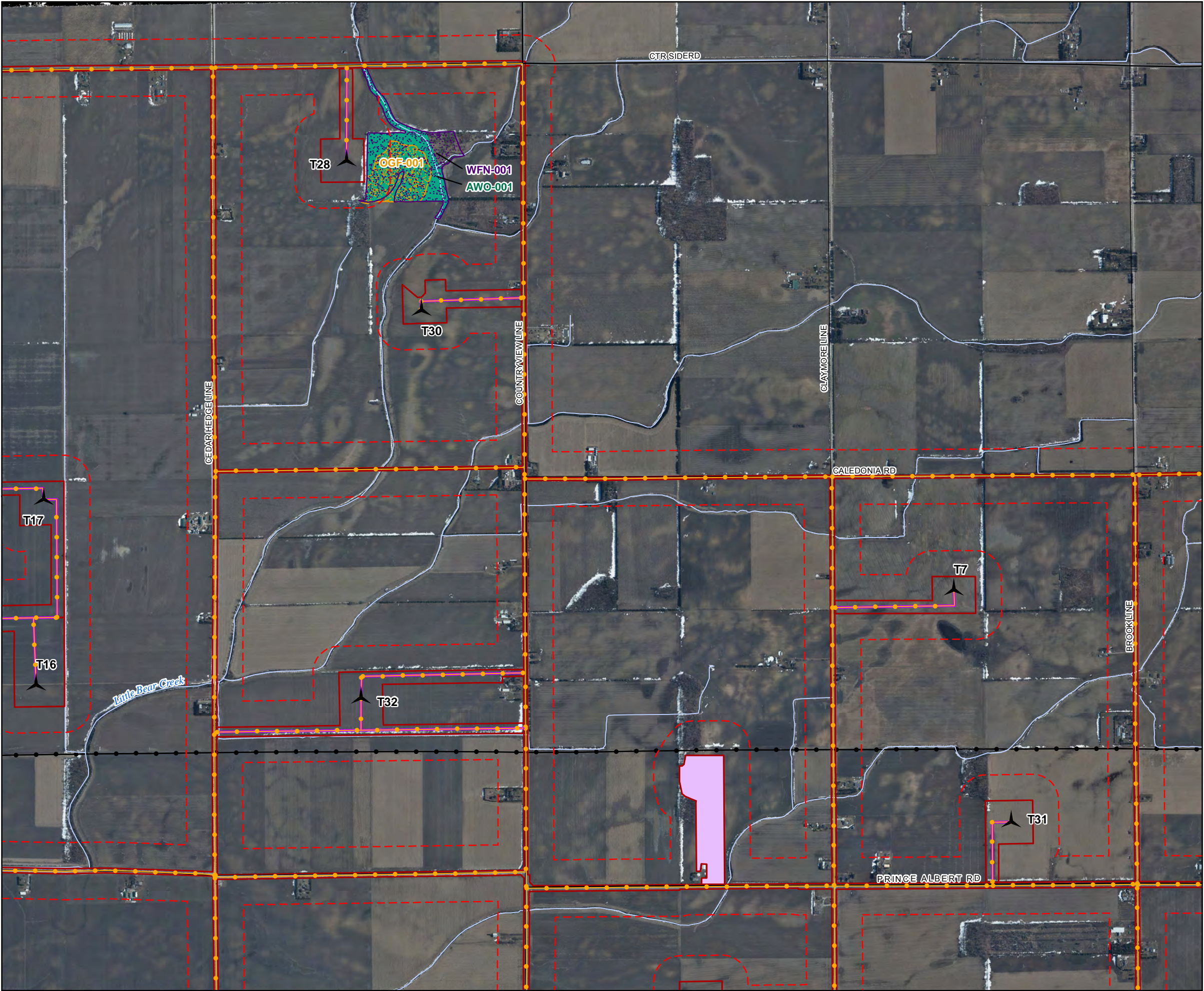
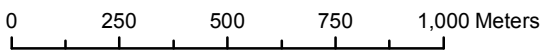
- Significant Rare Vegetation Communities**
  - Old Growth Forest (OGF)
- Significant Specialized Wildlife Habitats**
  - Amphibian Breeding Habitat (Woodland)(AWO)
  - Waterfowl Nesting Area (WFN)

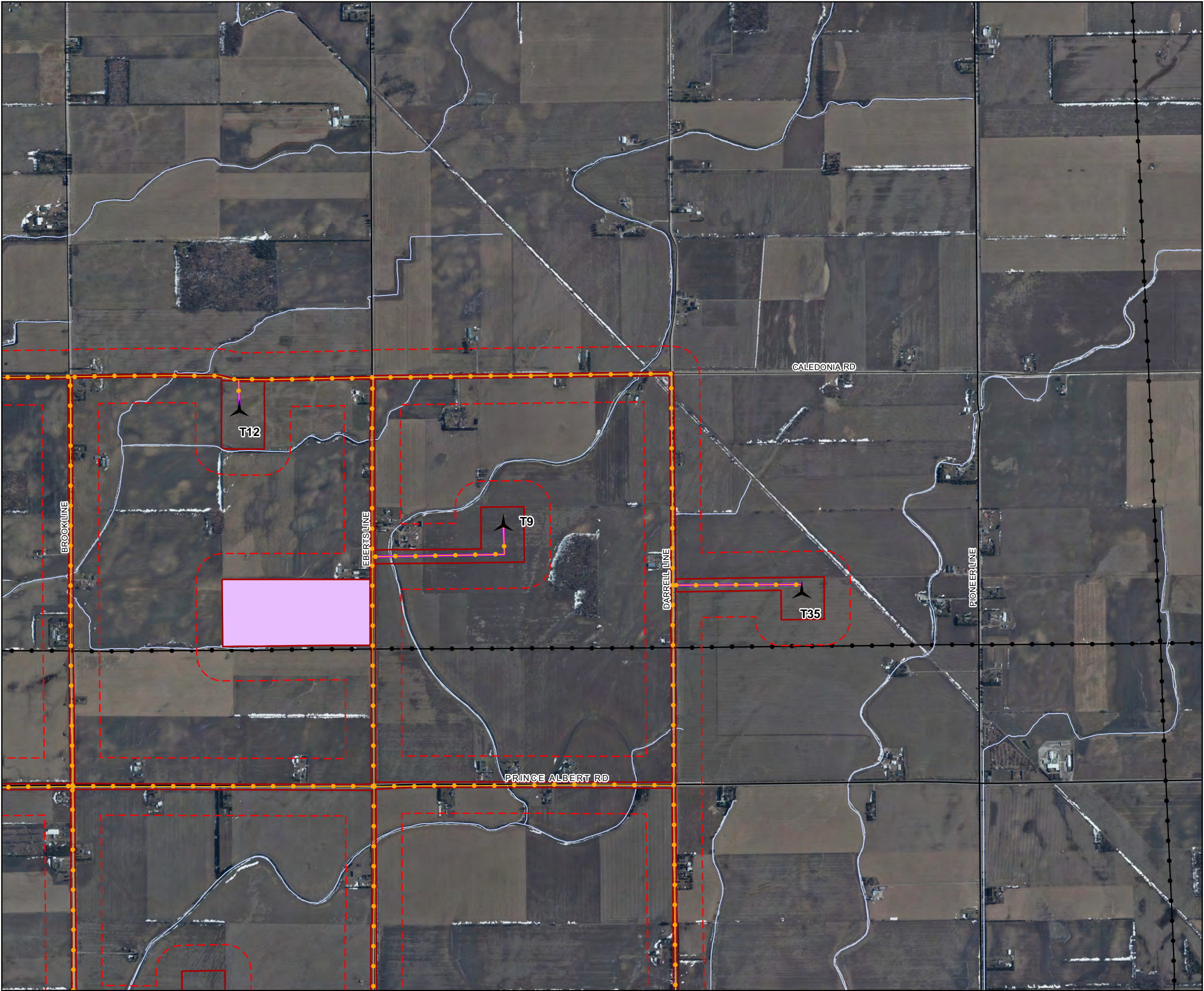


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Project: 1612  
Date: July 21, 2015

NAD83 - UTM Zone 17  
Size: 11x17"  
1:17,500

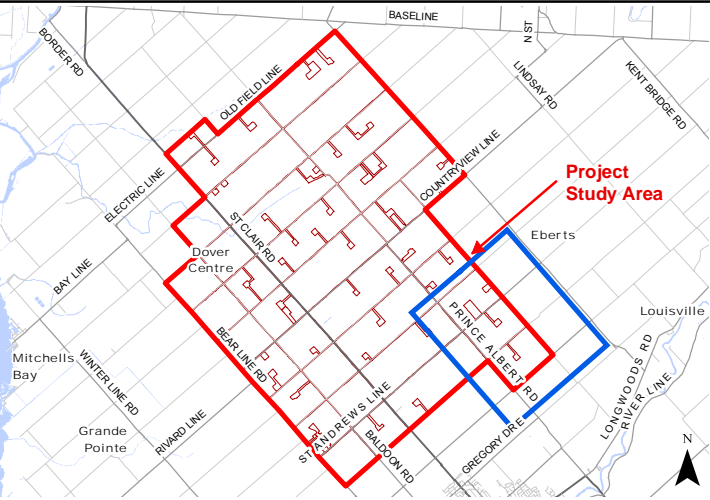




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# North Kent Wind 1 Project

## Significant Rare Vegetation Communities & Specialized Wildlife Habitats



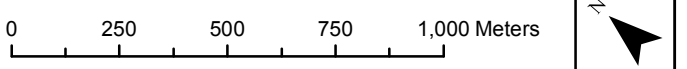
### Legend

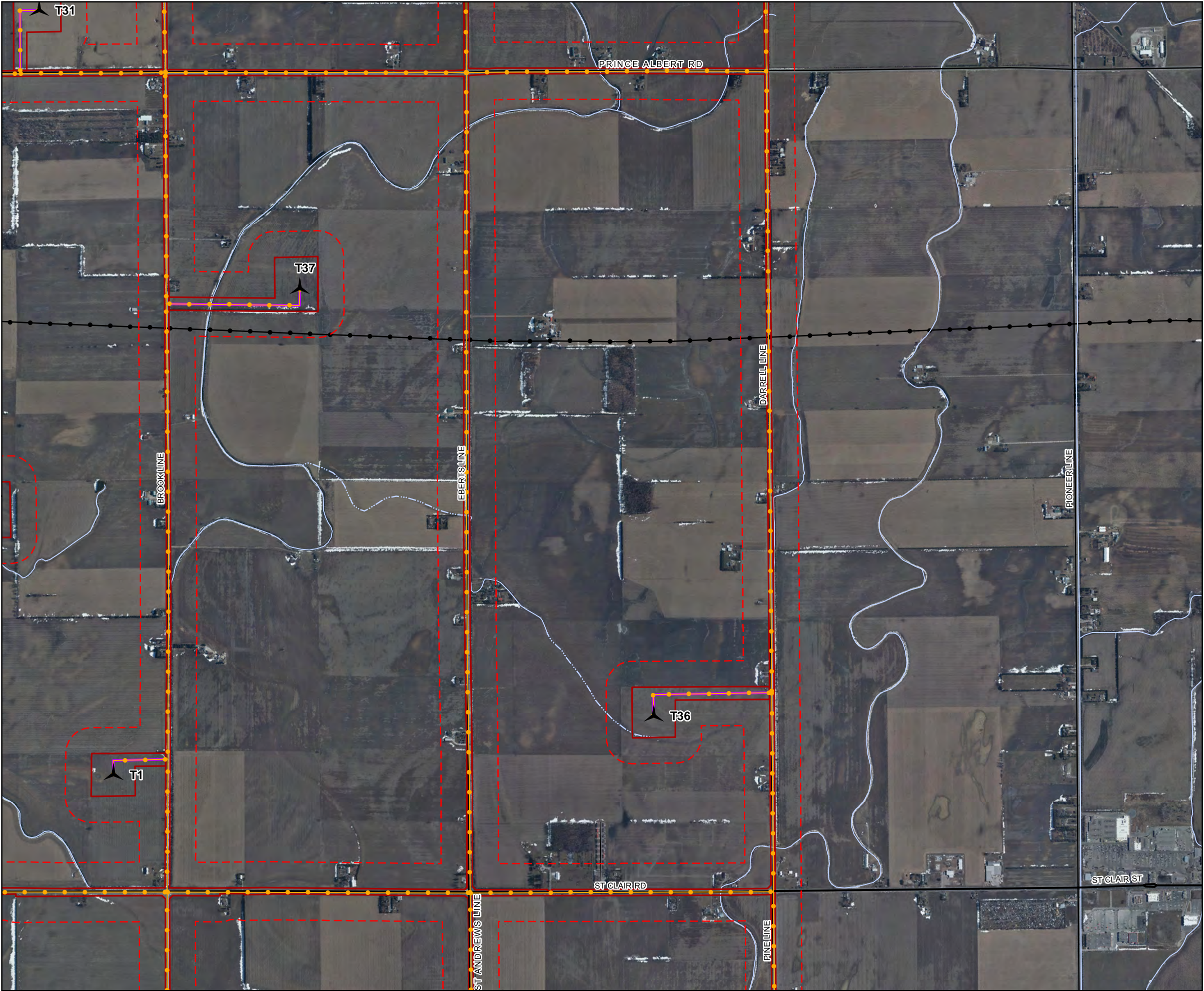
- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse
- Project Location**
- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road
- Proposed POI/ Substation/ Laydown/ O&M Building



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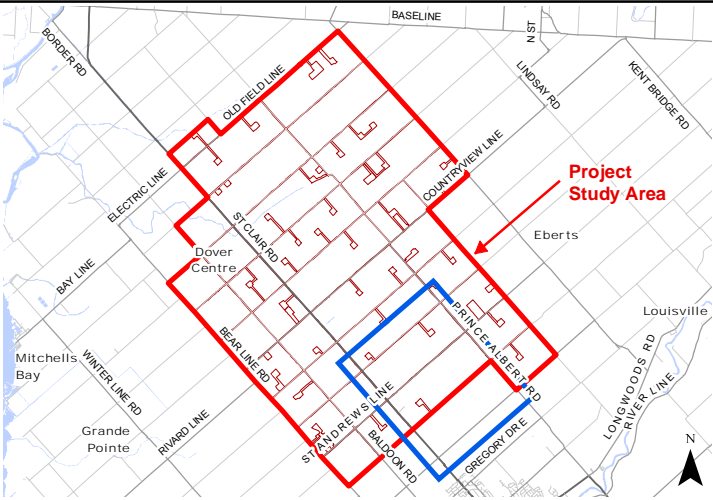
Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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# North Kent Wind 1 Project

## Significant Rare Vegetation Communities & Specialized Wildlife Habitats



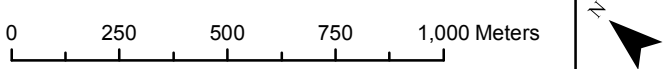
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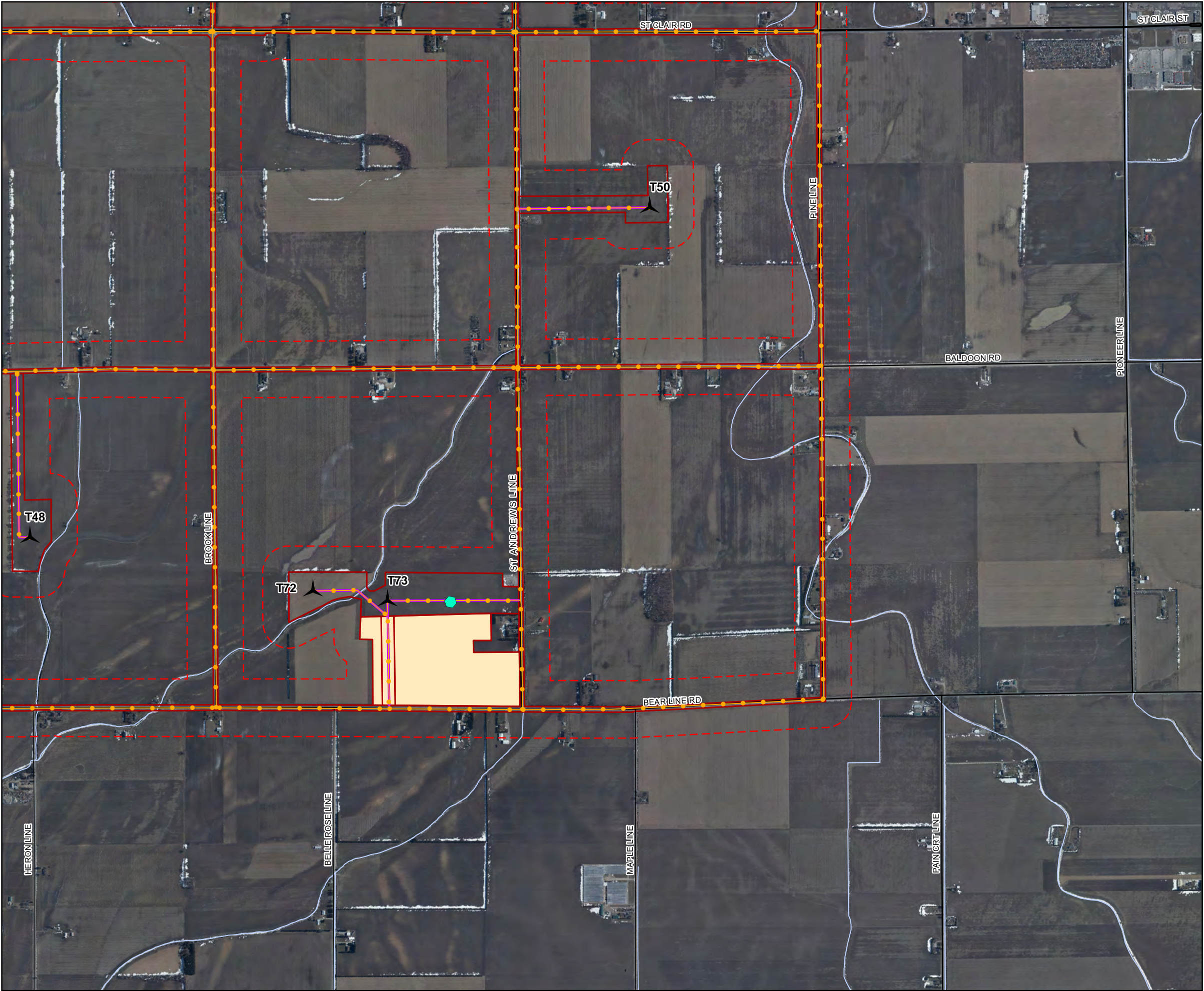
- Utility Line
  - Highway
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Intermittent Watercourse
- Project Location**
- Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road



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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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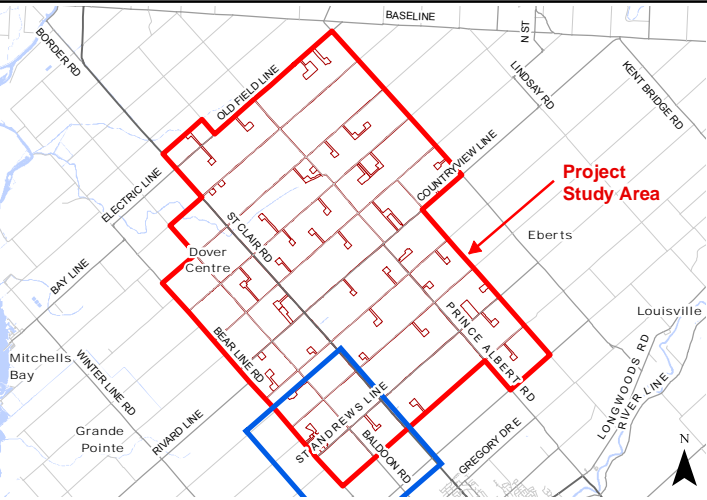




Map 5 - 9

# North Kent Wind 1 Project

## Significant Rare Vegetation Communities & Specialized Wildlife Habitats



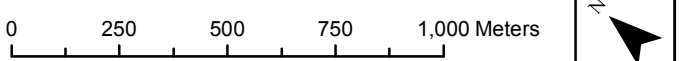
### Legend

- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Project Location**
  - Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Meteorological Tower
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed Laydown



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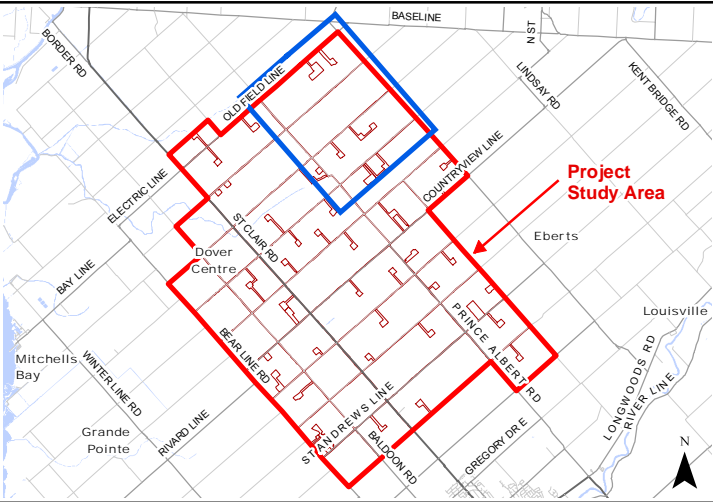
Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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**Maps 6-1 to 6-9**  
Significant Habitats for Species of Conservation Concern

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North Kent Wind 1 Project  
Significant Habitats for Species  
of Conservation Concern



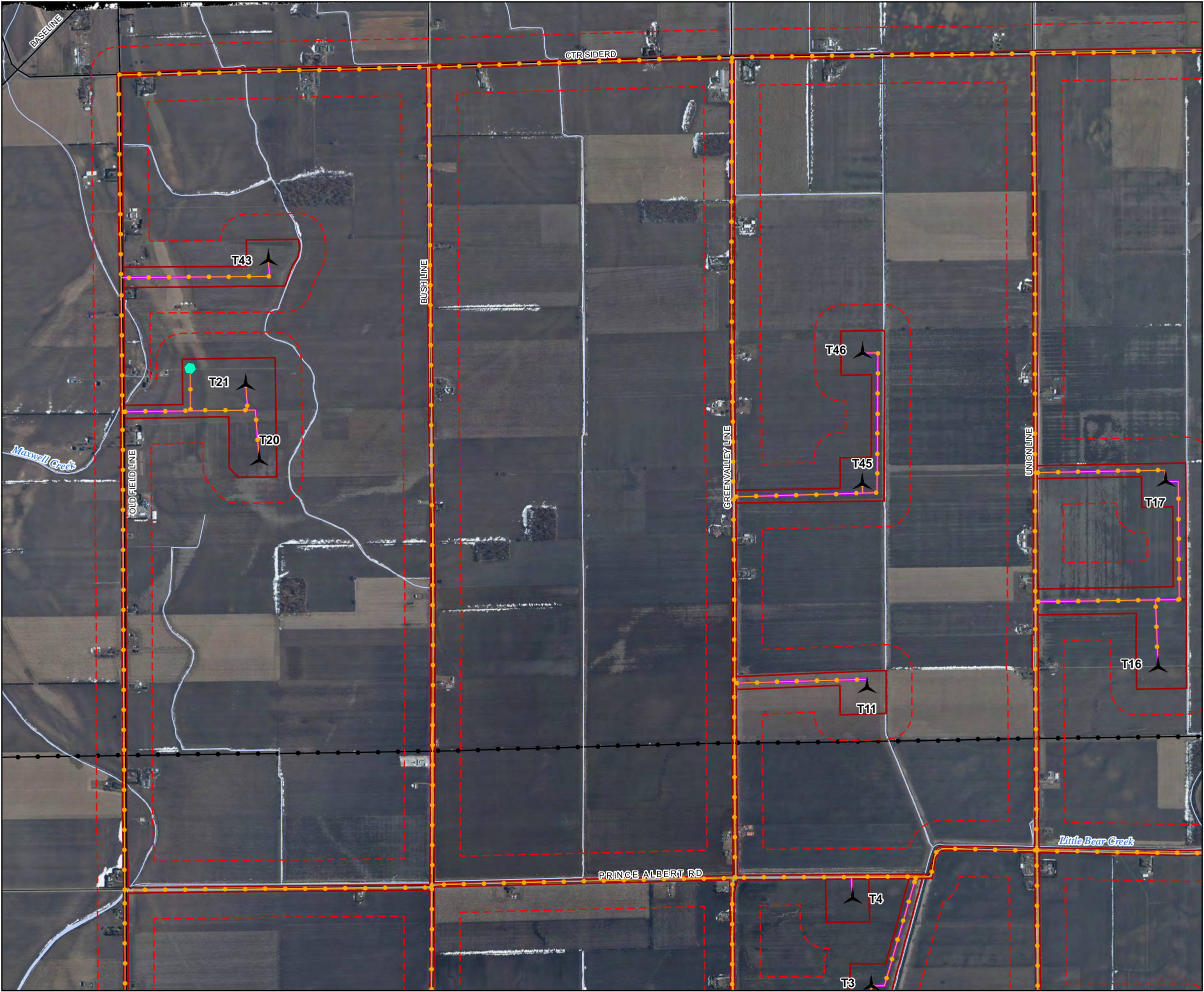
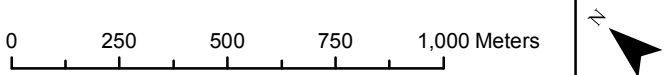
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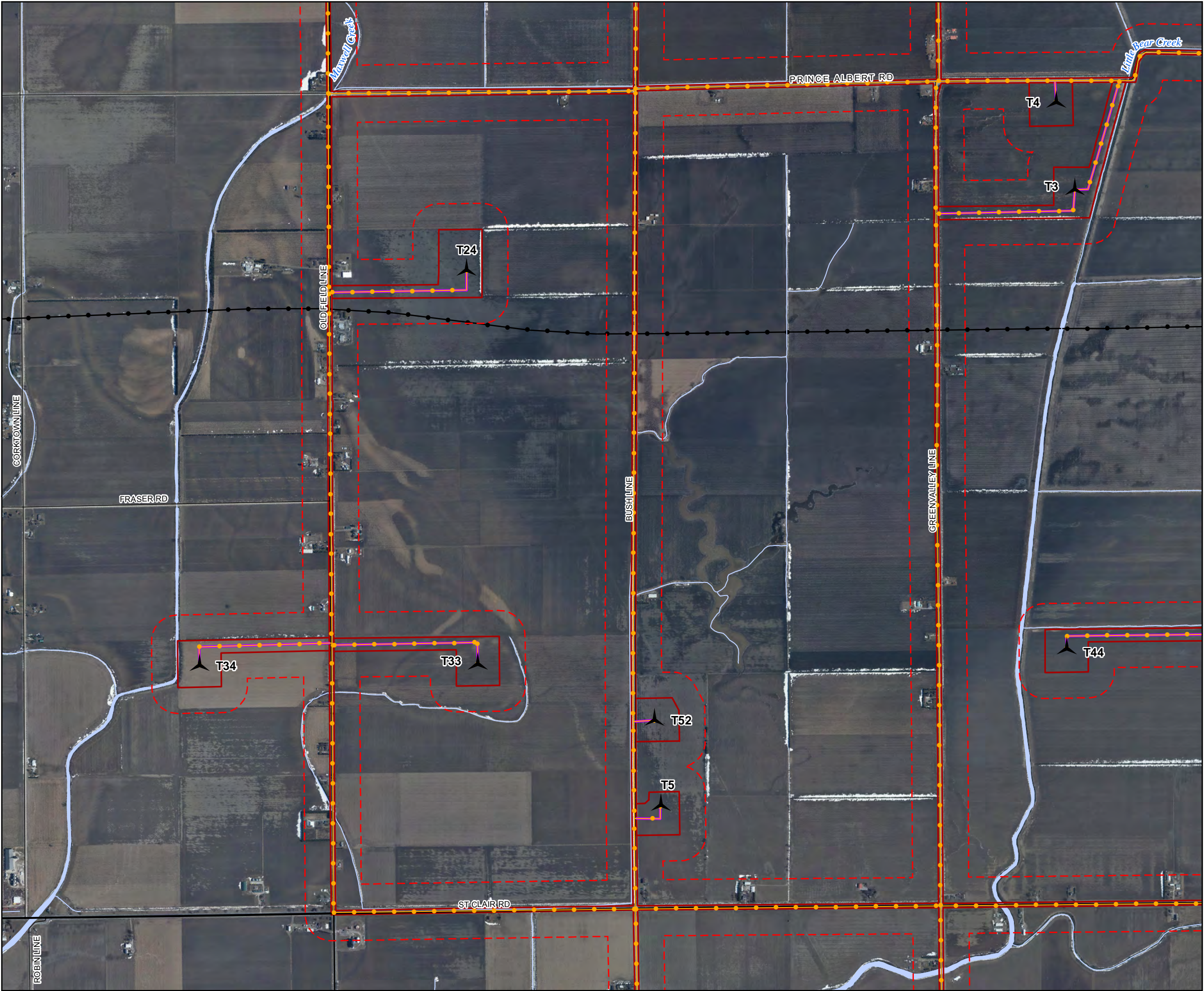
- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water
- Project Location**
  - Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Meteorological Tower
  - Proposed Collection Line
  - Proposed Access Road



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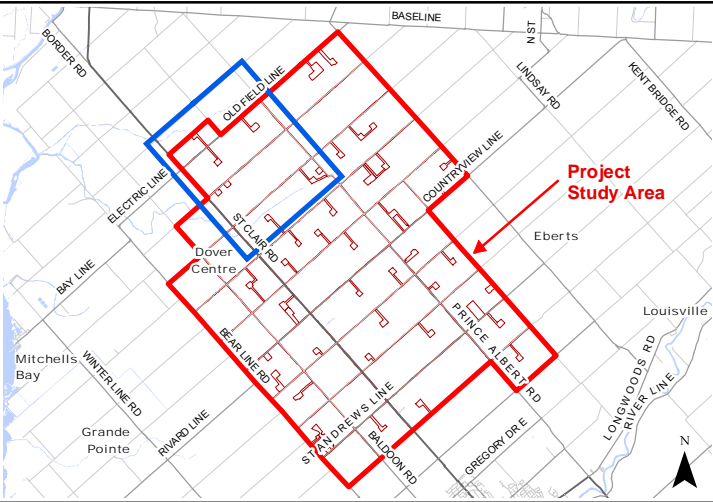
Project: 1612 July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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# North Kent Wind 1 Project

## Significant Habitats for Species of Conservation Concern



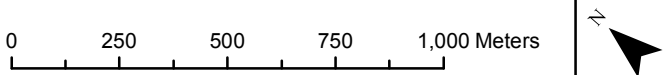
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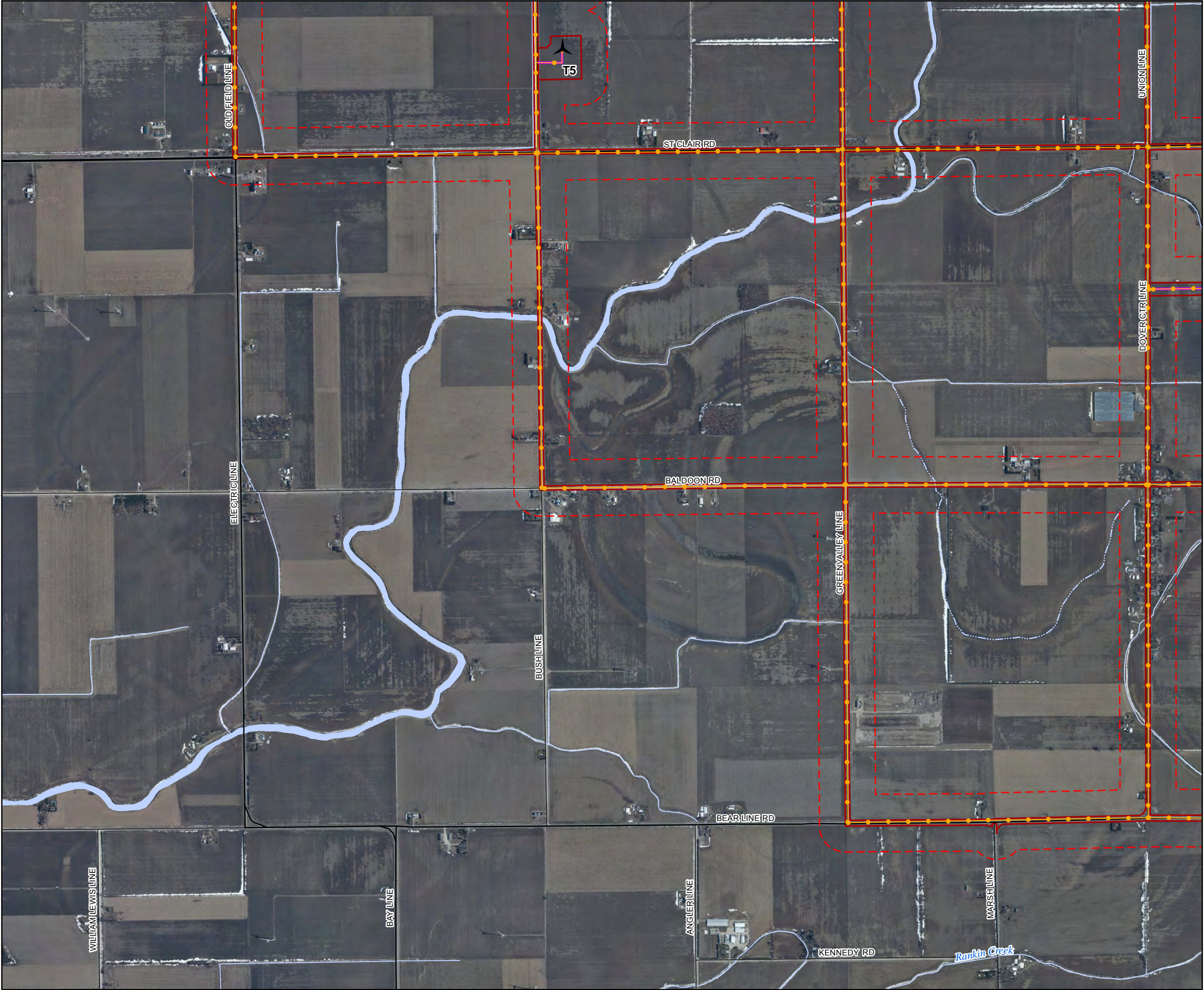
- Utility Line
  - Highway
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Open Water
- Project Location**
- Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road



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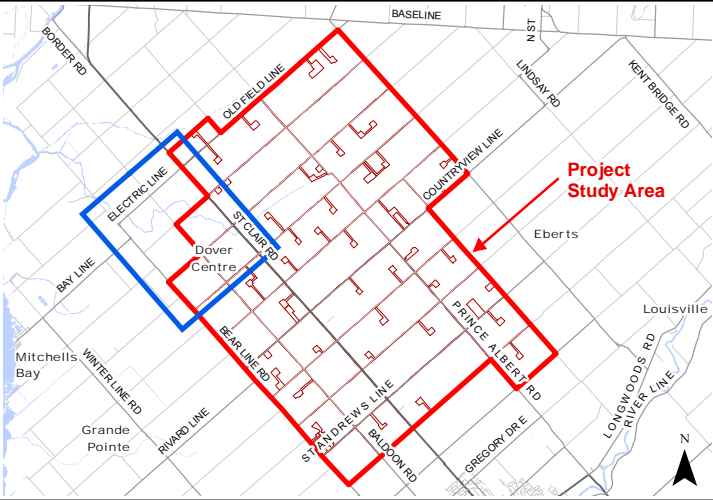
Project: 1612 July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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# North Kent Wind 1 Project

## Significant Habitats for Species of Conservation Concern



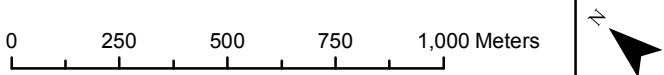
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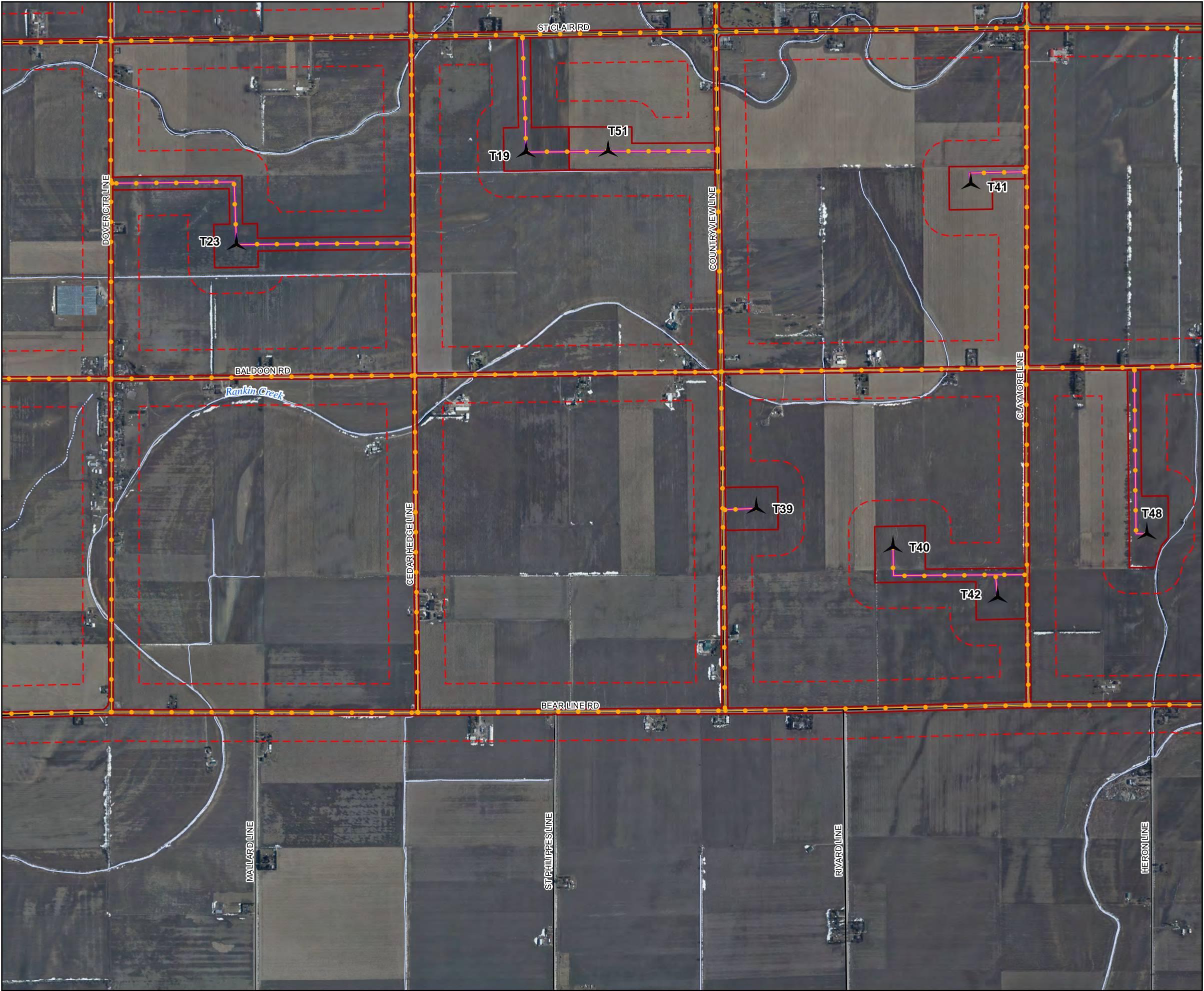
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Project Location**
- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road



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Project: 1612 July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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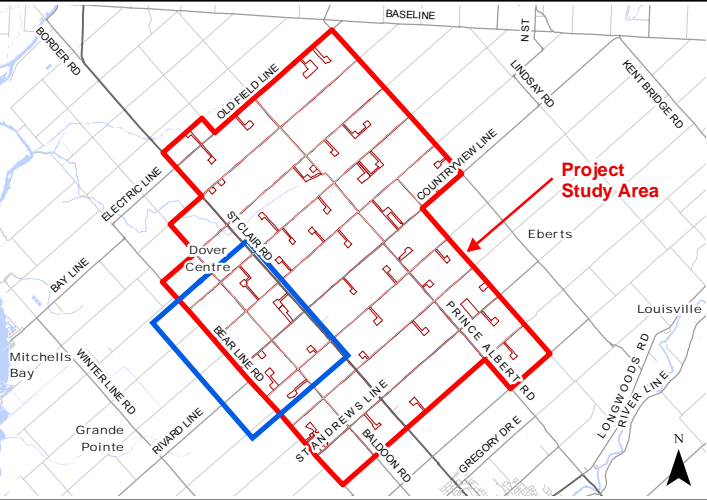




Map 6 - 4

# North Kent Wind 1 Project

## Significant Habitats for Species of Conservation Concern



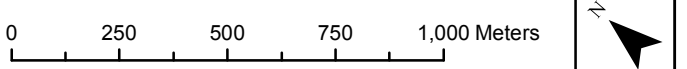
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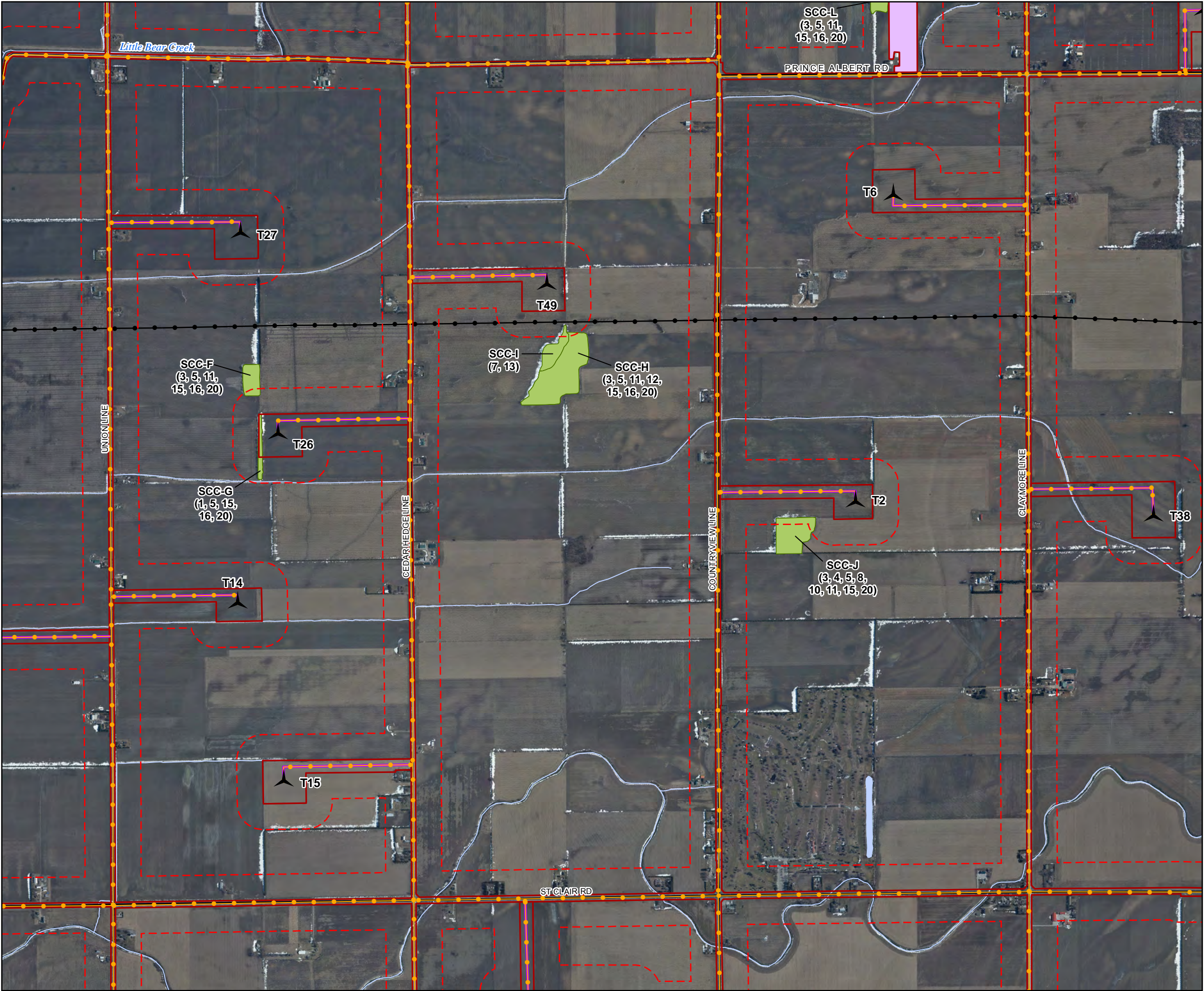
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Project Location**
  - Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road



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Project: 1612 July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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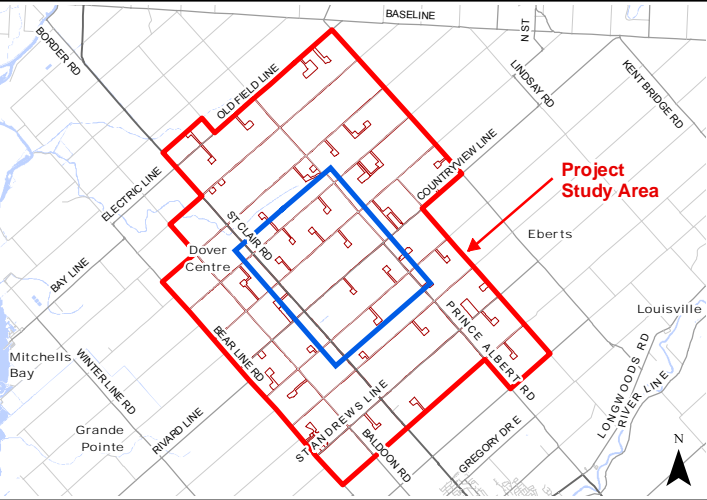




Map 6 - 5

# North Kent Wind 1 Project

## Significant Habitats for Species of Conservation Concern



- Legend**

  - Utility Line
  - Highway
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Open Water
  - Project Location**
  - Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed POI/Substation/Laydown/O&M Building
- Significant Habitats for Species of Conservation Concern**

Species of Conservation Concern Habitat (SCC)

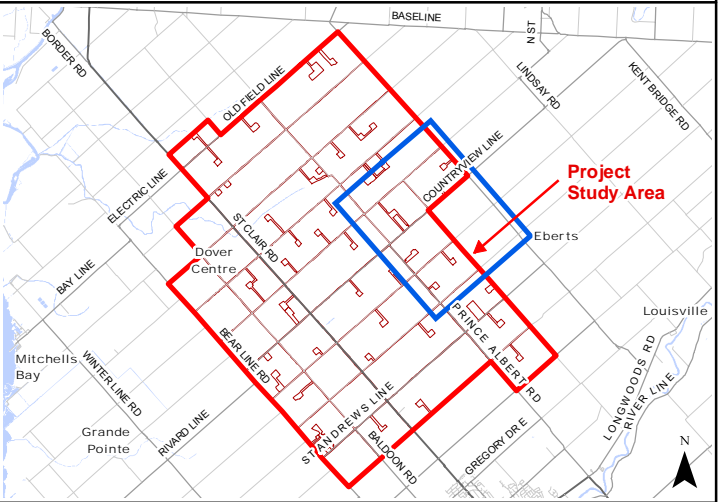
  - 1 - Eastern Wood-Pewee
  - 3 - Giant Ironweed
  - 4 - Pawpaw
  - 5 - Muskingum Sedge
  - 7 - Round-Fruited Panic Grass
  - 8 - Blue Ash
  - 10 - Black Gum
  - 11 - Northern Fogfruit
  - 12 - Shumard Oak
  - 13 - Gray-headed Prairie Coneflower
  - 15 - Lizard's Tail
  - 16 - Wild Senna
  - 20 - Wing-stem



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Project: 1612 July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
0 250 500 750 1,000 Meters	

North Kent Wind 1 Project  
Significant Habitats for Species  
of Conservation Concern



Legend

- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse
- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road
- Proposed POI/Substation/Laydown/O&M Building

Significant Habitats for Species of Conservation Concern

Marsh Bird Breeding Habitat (MBB)

Species of Conservation Concern Habitat (SCC)

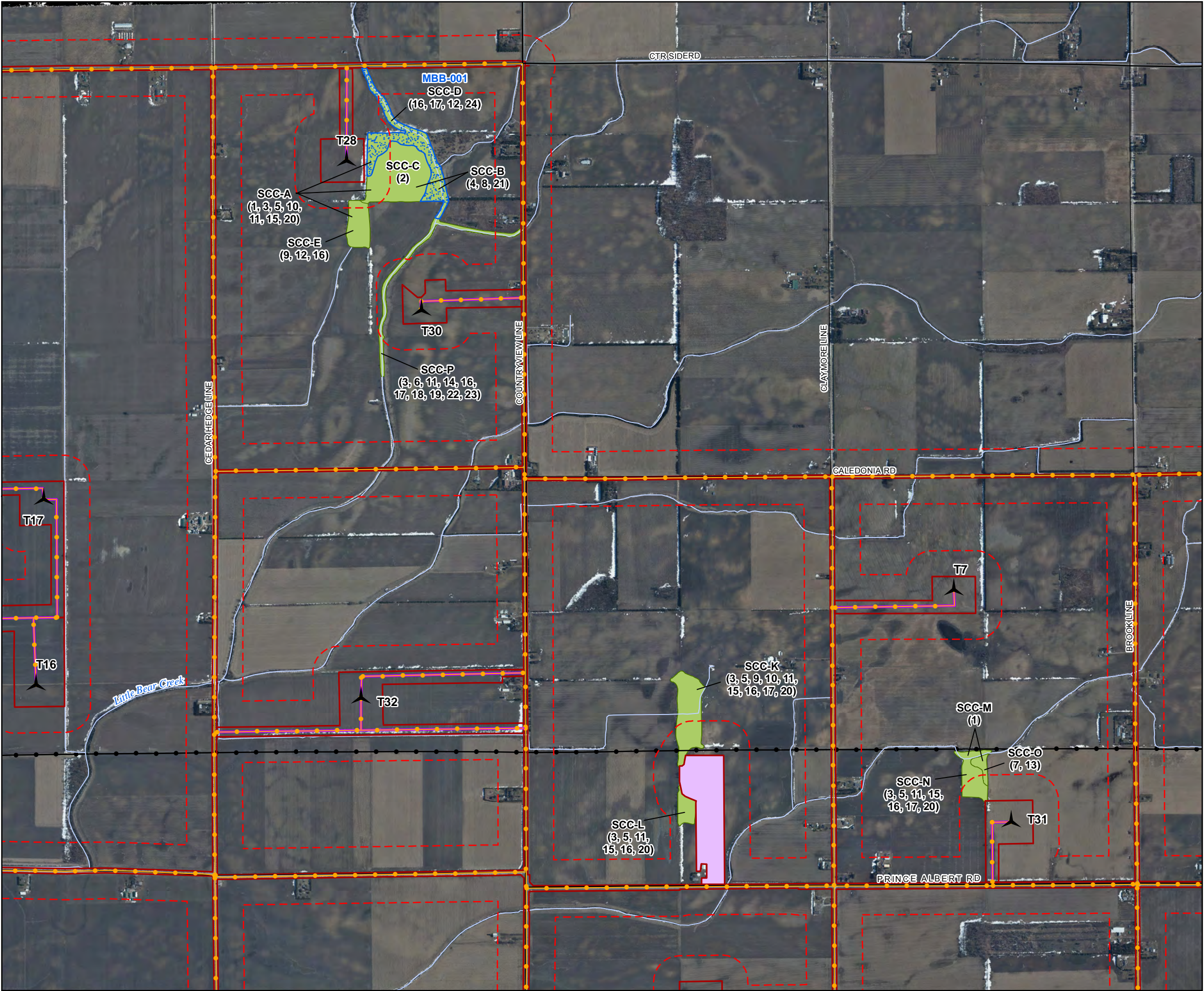
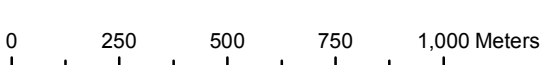
- 1 - Eastern Wood-Pewee
- 2 - Wood Thrush
- 3 - Giant Ironweed
- 4 - Pawpaw
- 5 - Muskingum Sedge
- 6 - Rigid Sedge
- 7 - Round-Fruited Panic Grass
- 8 - Blue Ash
- 9 - Swamp Rose-mallow
- 10 - Black Gum
- 11 - Northern Fogfruit
- 12 - Shumard Oak
- 13 - Gray-headed Prairie Coneflower
- 14 - Climbing Prairie Rose
- 15 - Lizard's Tail
- 16 - Wild Senna
- 17 - Cup-Plant
- 18 - Riddell's Goldenrod
- 19 - Southern Slender Ladies' Tresses
- 20 - Wing-stem
- 21 - Cream Violet
- 22 - Virginia Culver's-root
- 23 - Prairie Milkweed

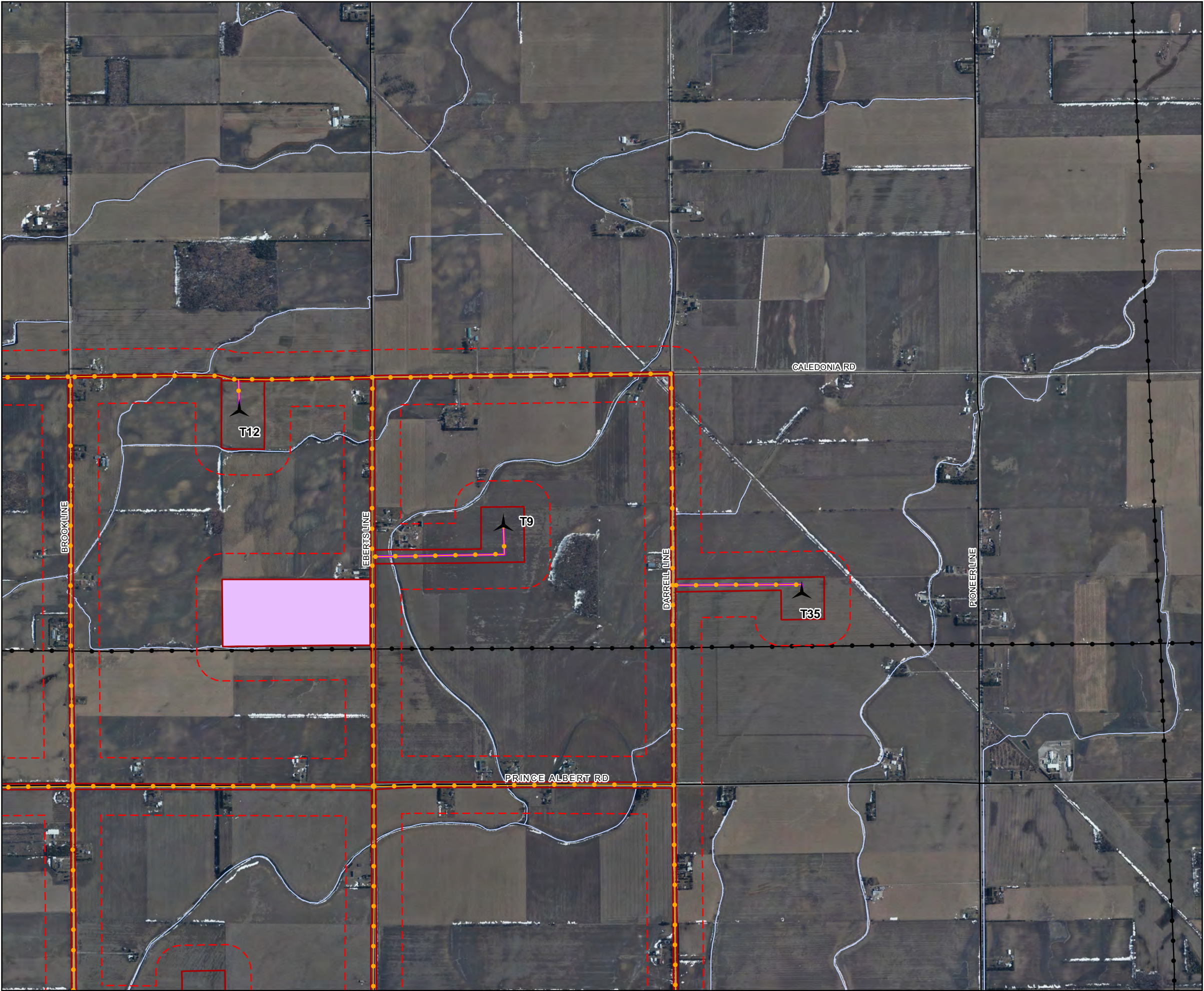


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Project: 1612  
July 21, 2015

NAD83 - UTM Zone 17  
Size: 11x17"  
1:17,500

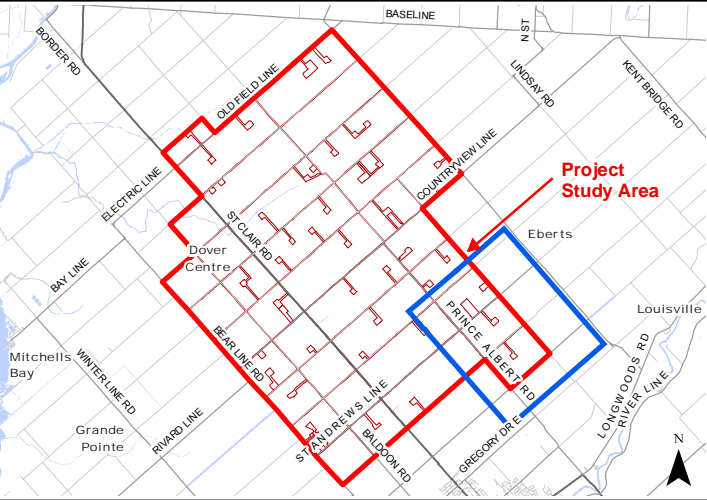




Map 6 - 7

# North Kent Wind 1 Project

## Significant Habitats for Species of Conservation Concern



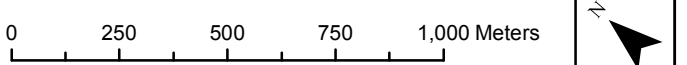
### Legend

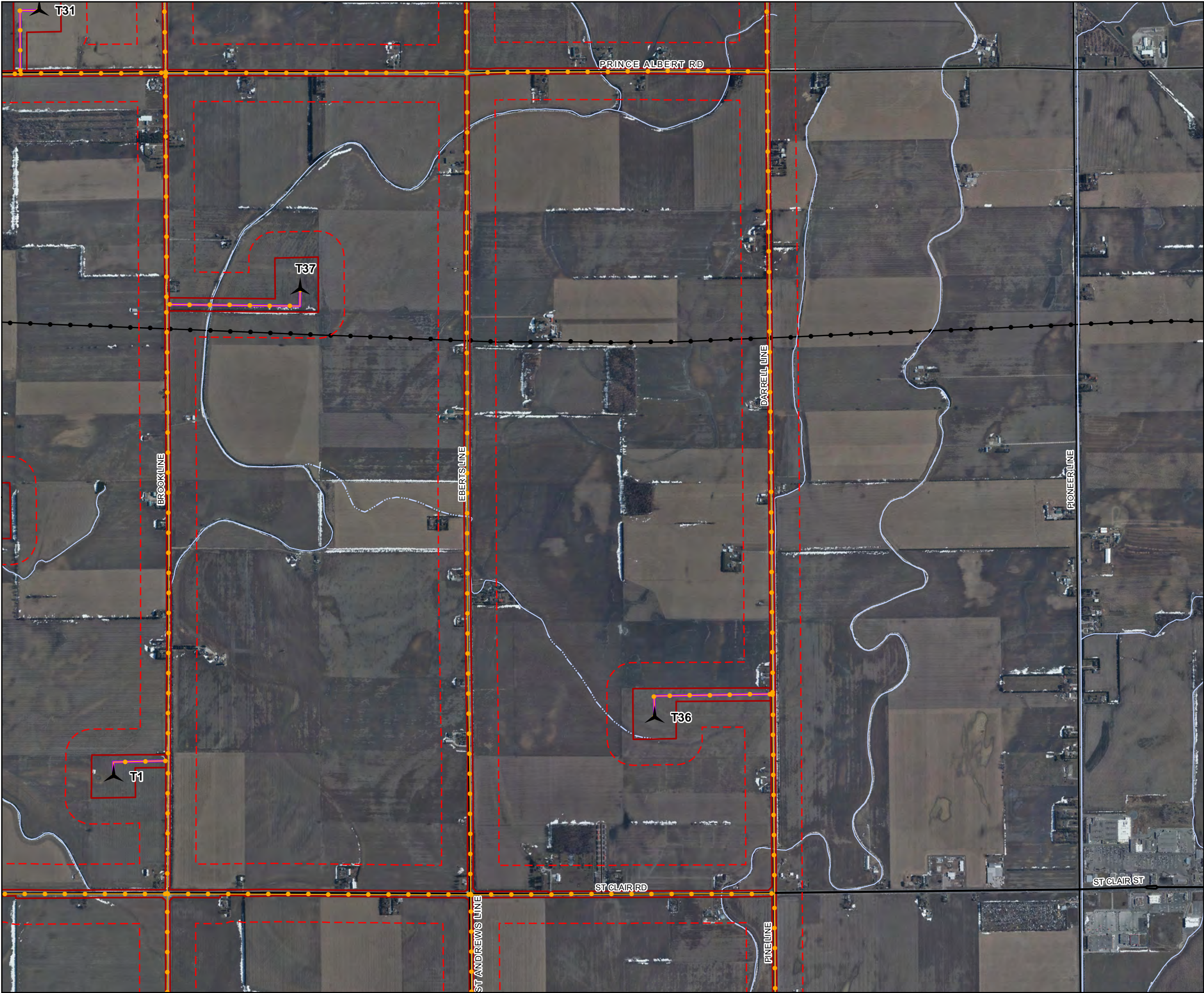
- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse
- Project Location**
  - Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed POI/Substation/Laydown/O&M Building



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Project: 1612 July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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Map 6 - 8

North Kent Wind 1 Project

Significant Habitats for Species of Conservation Concern

Project Study Area

**Legend**

- Utility Line
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse

**Project Location**

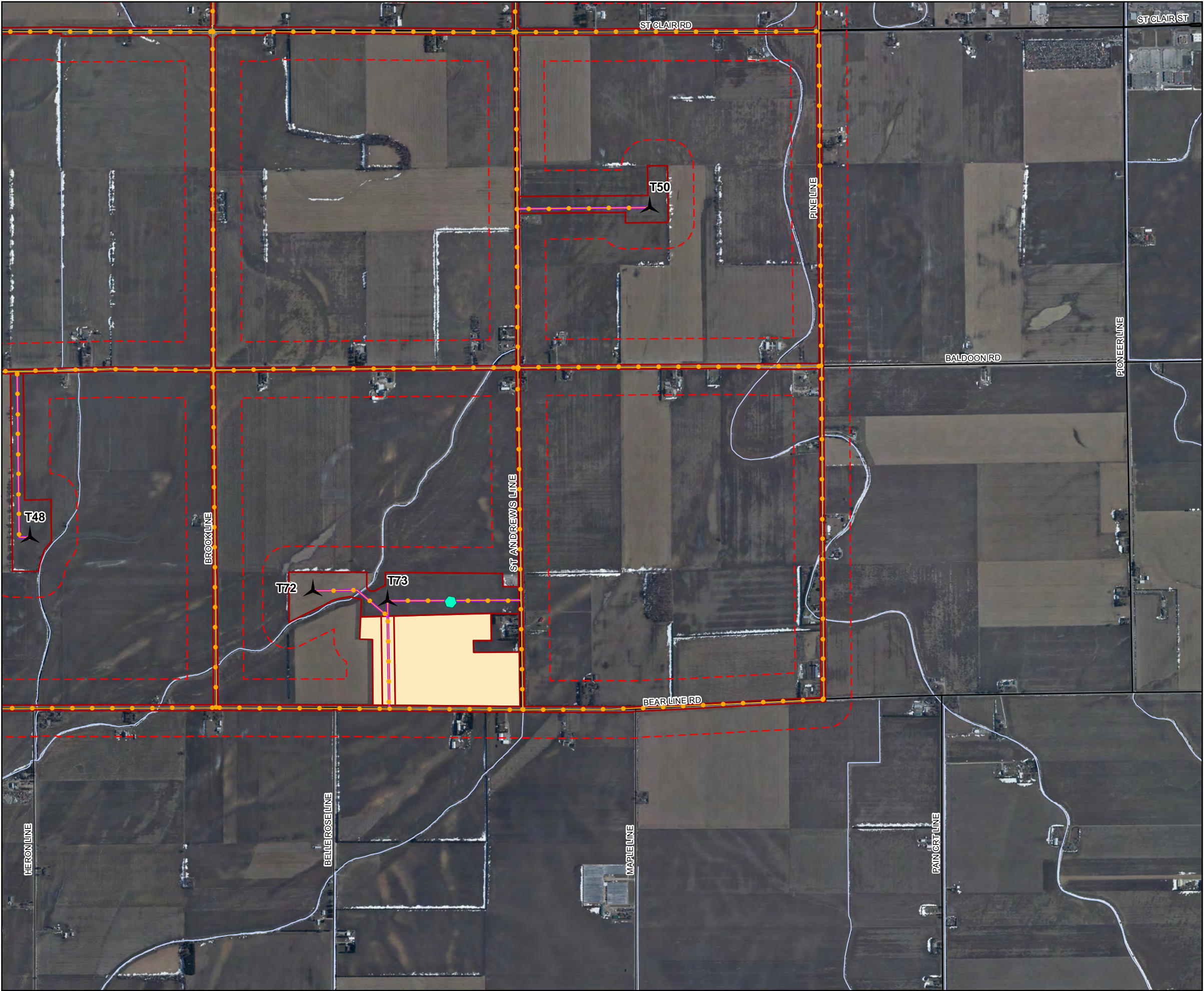
- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed Collection Line
- Proposed Access Road

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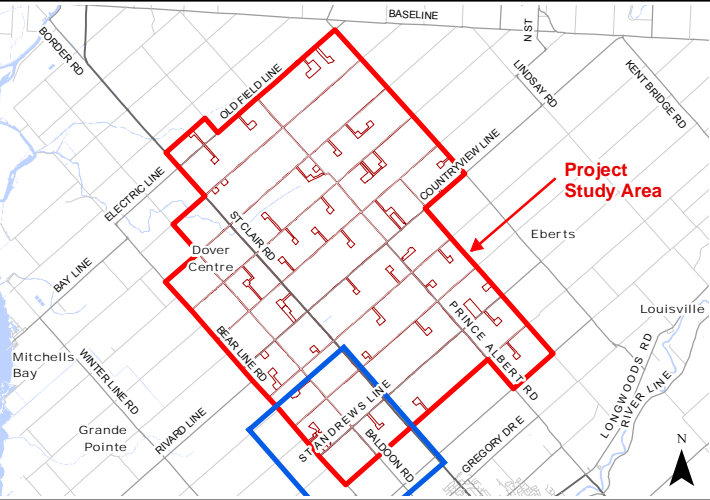
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Project: 1612 July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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02505007501,000 Meters



North Kent Wind 1 Project  
Significant Habitats for Species  
of Conservation Concern



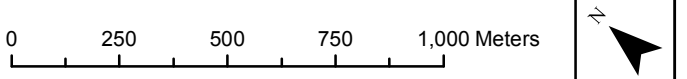
Legend

- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Project Location**
  - Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Meteorological Tower
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed Laydown



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Project: 1612 July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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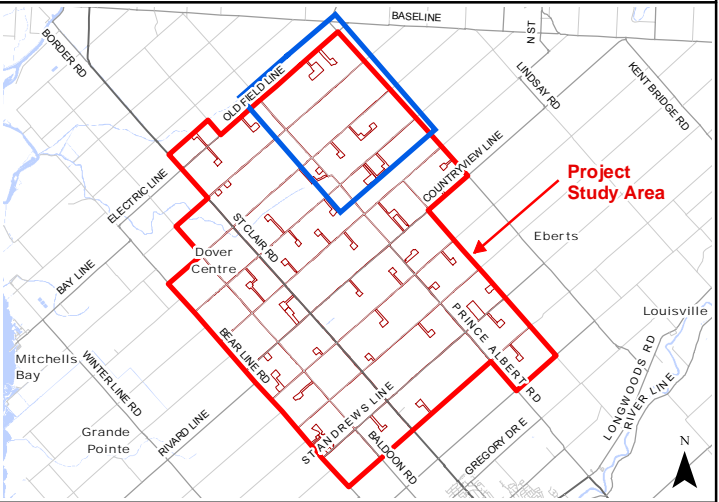


**Maps 7-1 to 7-9**  
Generalized Significant Wildlife Habitat

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# North Kent Wind 1 Project

## Generalized Significant Wildlife Habitat

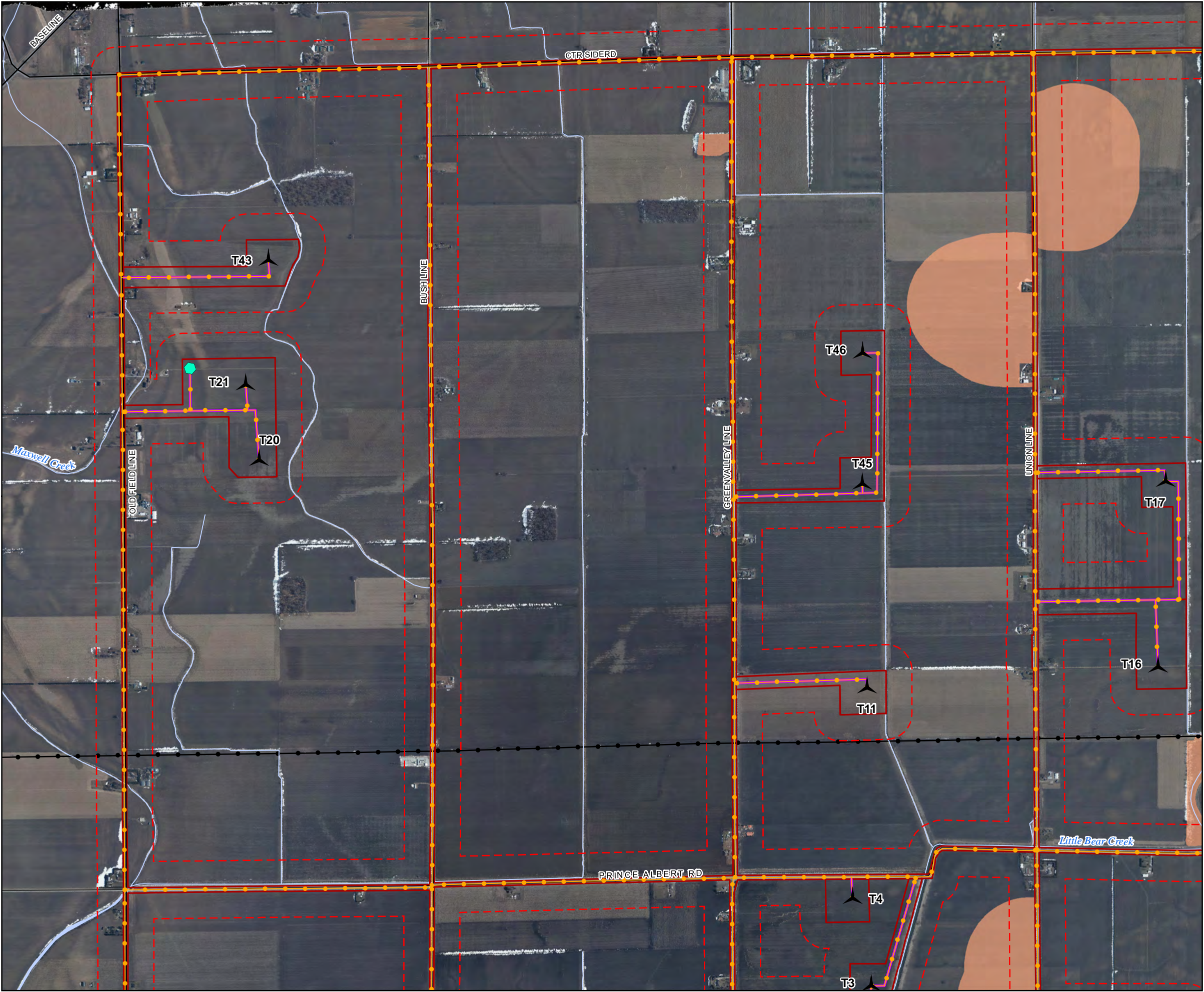
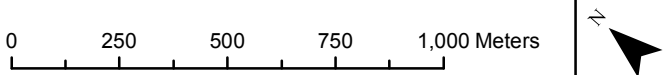


- Legend**
- Utility Line
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Open Water
- Project Location**
- Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Meteorological Tower
  - Proposed Collection Line
  - Proposed Access Road
  - Generalized Significant Wildlife Habitat



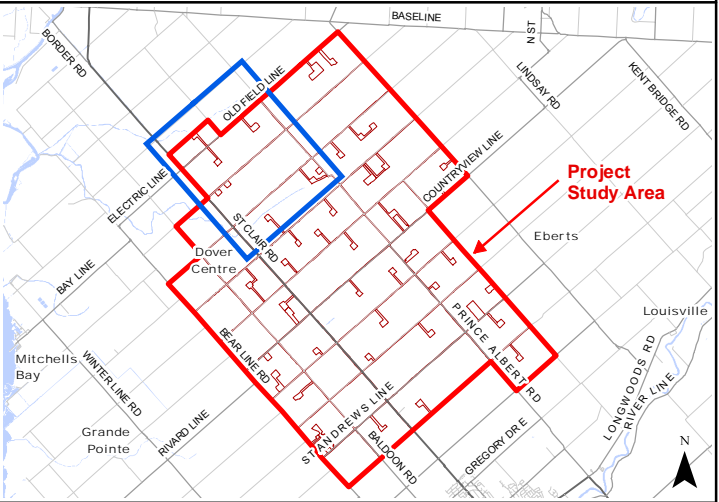
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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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# North Kent Wind 1 Project

## Generalized Significant Wildlife Habitat



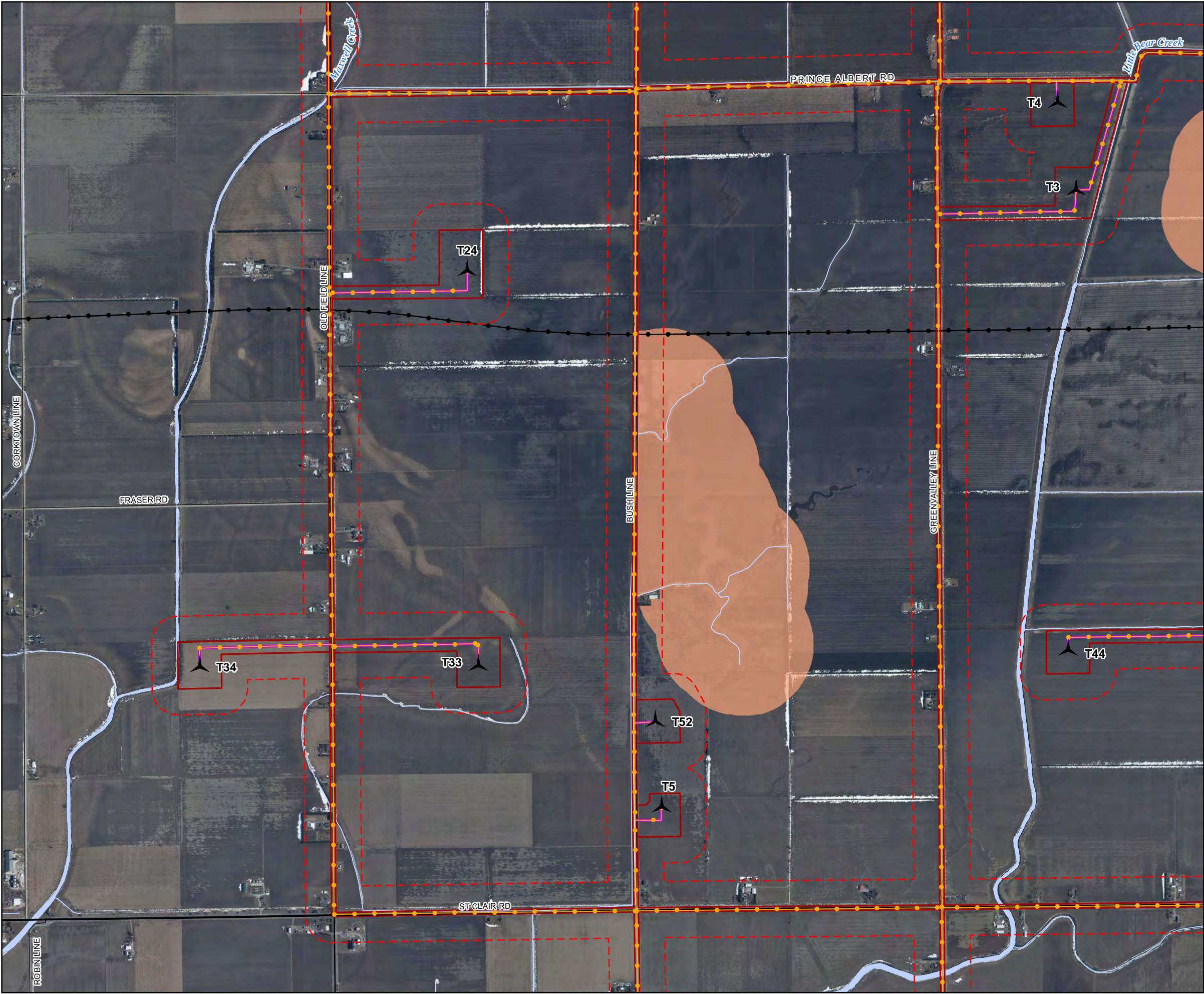
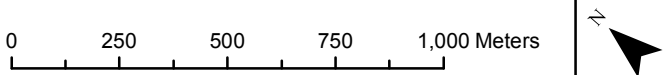
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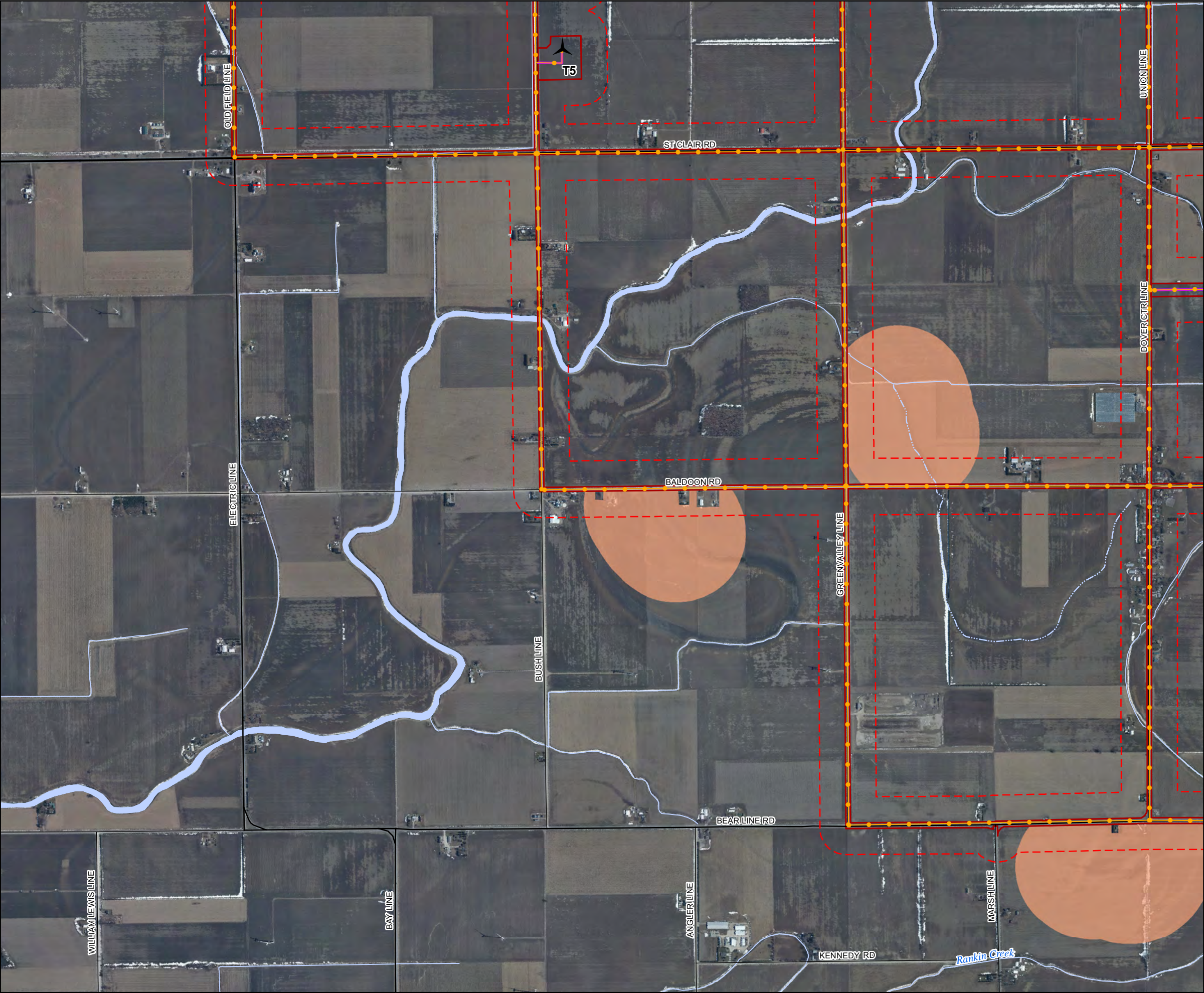
- Utility Line
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Open Water
- Project Location**
  - Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Generalized Significant Wildlife Habitat**



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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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Map 7 - 3

North Kent Wind 1 Project

Generalized Significant Wildlife Habitat

Legend

Highway

Primary Road

Secondary Road

Permanent Watercourse

Intermittent Watercourse

Open Water

Project Location

Project Area (120m Buffer)


Construction Disturbance Area

Proposed Turbine

Proposed Collection Line

Proposed Access Road

Generalized Significant Wildlife Habitat

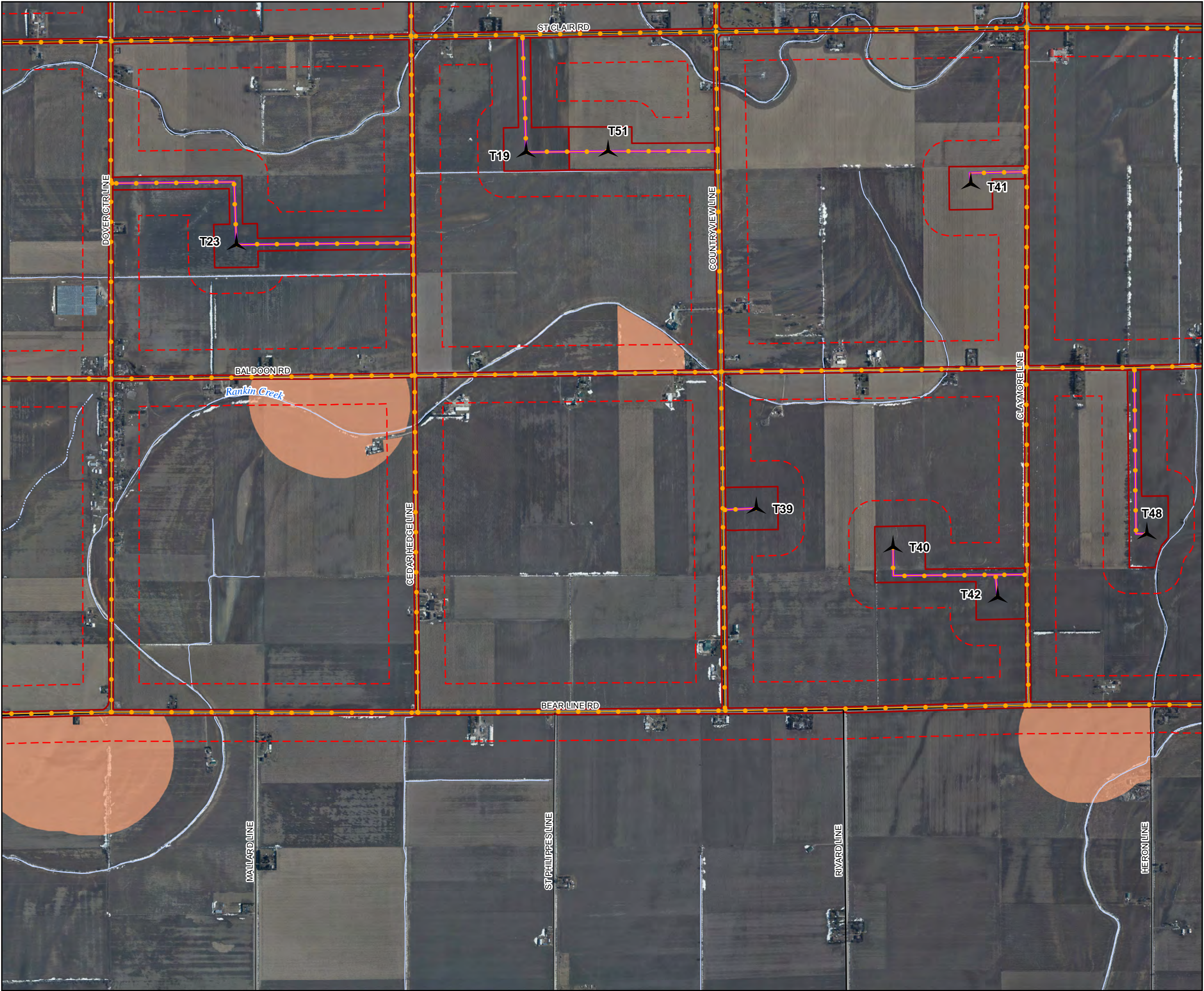
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Project: 1612  
Date: July 21, 2015

NAD83 - UTM Zone 17  
Size: 11x17"  
1:17,500

02505007501,000 Meters



Map 7 - 4

North Kent Wind 1 Project

Generalized Significant Wildlife Habitat

Legend

Highway

Primary Road

Secondary Road

Permanent Watercourse

Intermittent Watercourse

Project Location

Project Area (120m Buffer)

Construction Disturbance Area

Proposed Turbine

Proposed Collection Line

Proposed Access Road

Generalized Significant Wildlife Habitat

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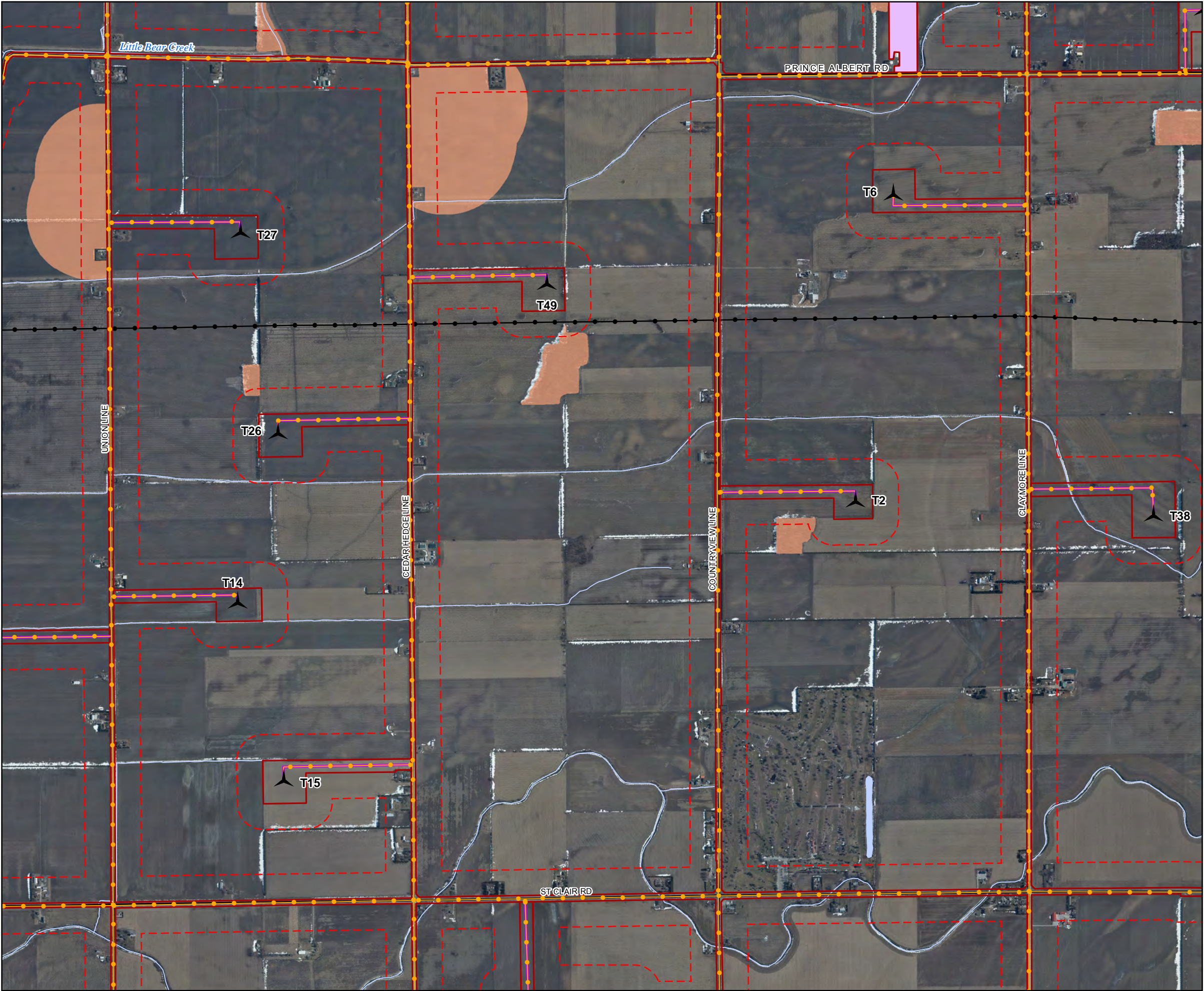
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Project: 1612  
Date: July 21, 2015

NAD83 - UTM Zone 17  
Size: 11x17"  
1:17,500

02505007501,000 Meters

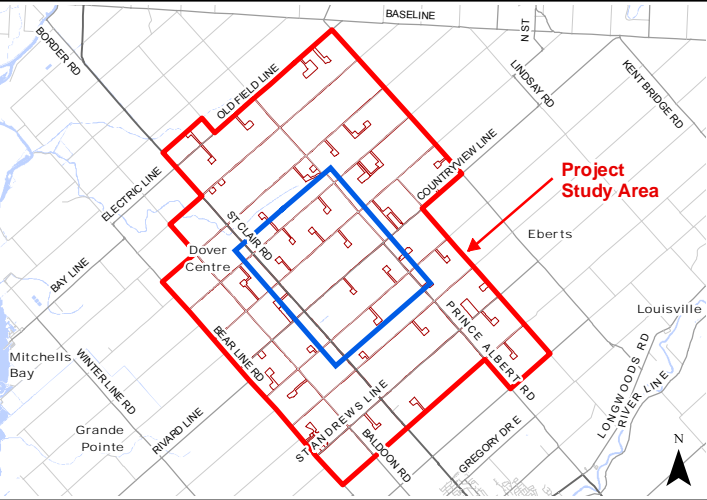
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Map 7 - 5

# North Kent Wind 1 Project

## Generalized Significant Wildlife Habitat

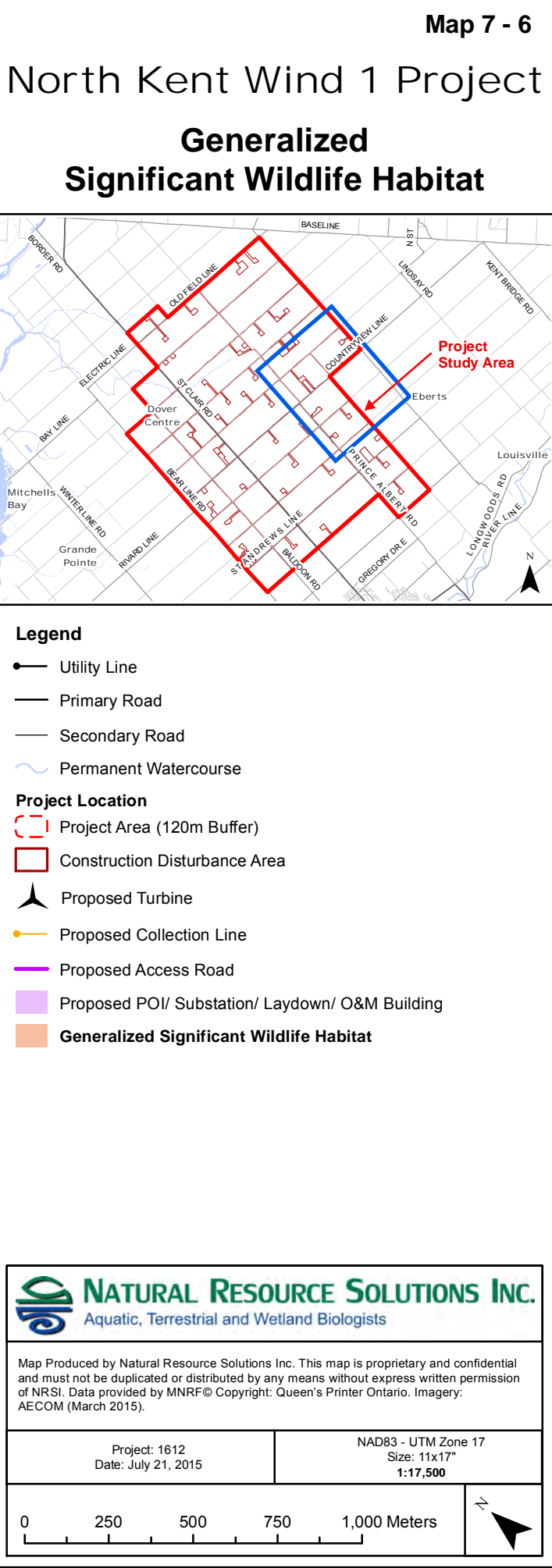
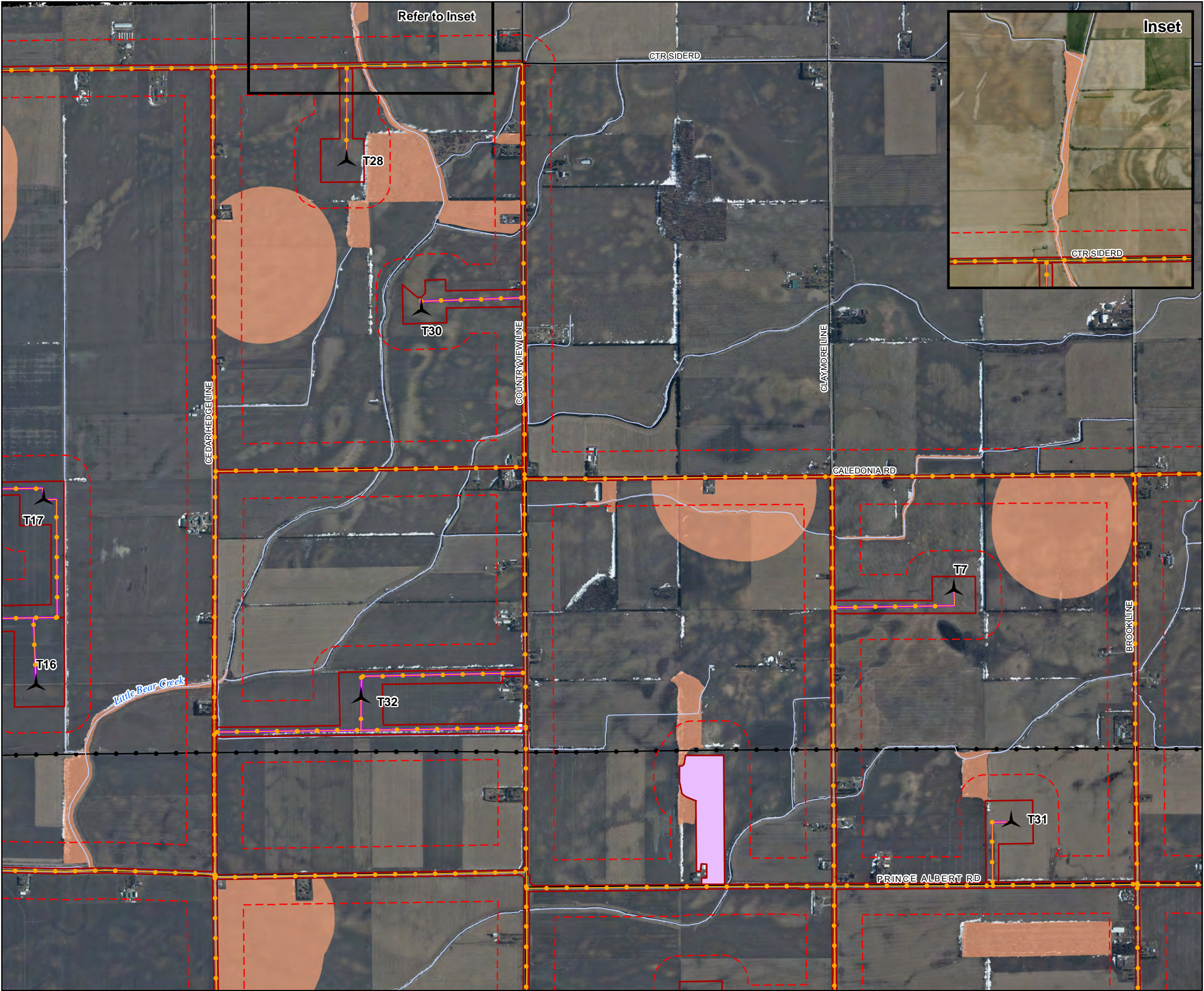


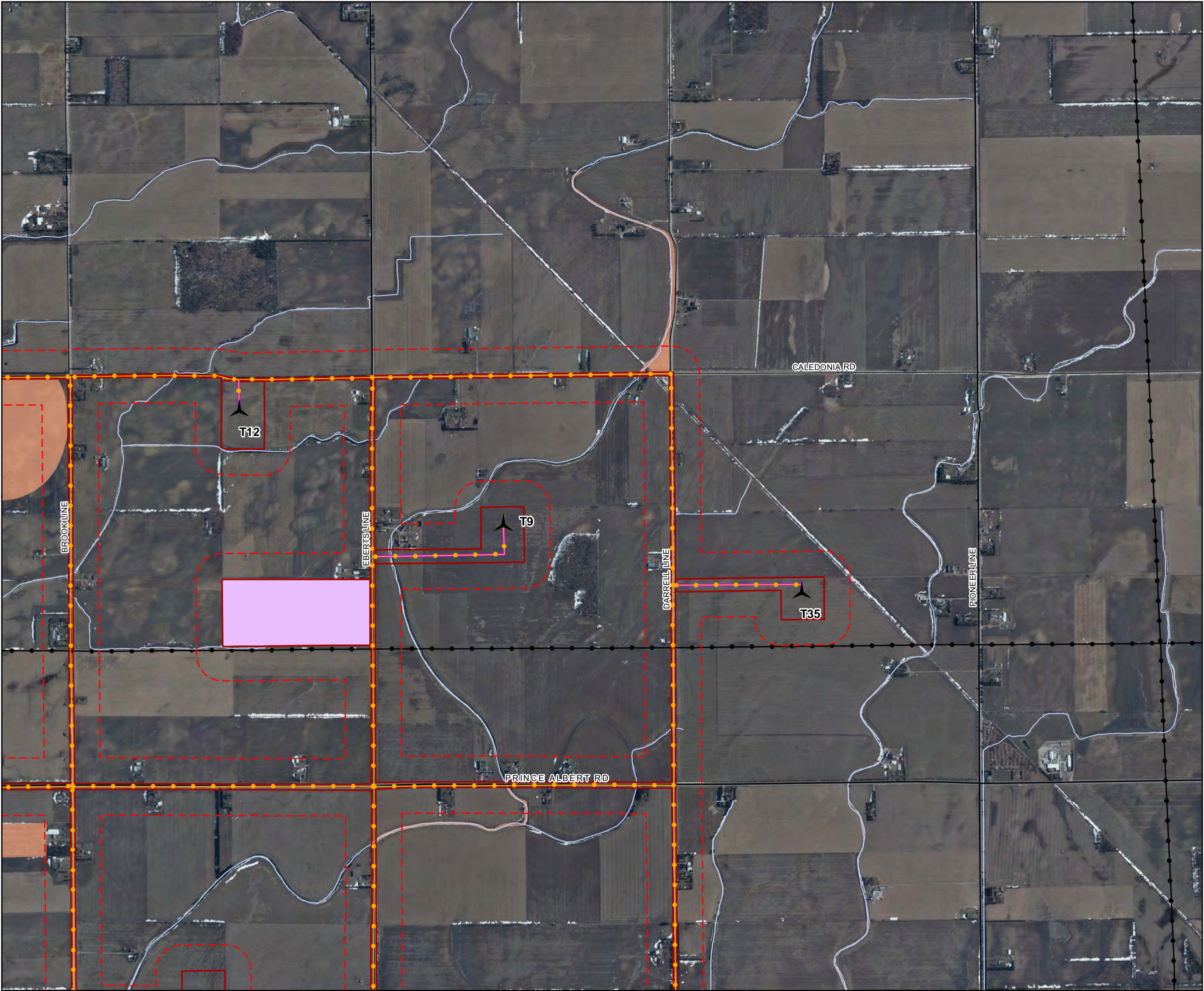
- Legend**
- Utility Line
  - Highway
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Open Water
- Project Location**
- Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Proposed POI/ Substation/ Laydown/ O&M Building
  - Generalized Significant Wildlife Habitat



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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
0 250 500 750 1,000 Meters	





Map 7 - 7

North Kent Wind 1 Project

Generalized  
Significant Wildlife Habitat

Legend

Utility Line

Primary Road

Secondary Road

Permanent Watercourse

Project Location

Project Area (120m Buffer)

Construction Disturbance Area


Proposed Turbine

Proposed Collection Line

Proposed Access Road

Proposed POI/ Substation/ Laydown/ O&M Building

Generalized Significant Wildlife Habitat

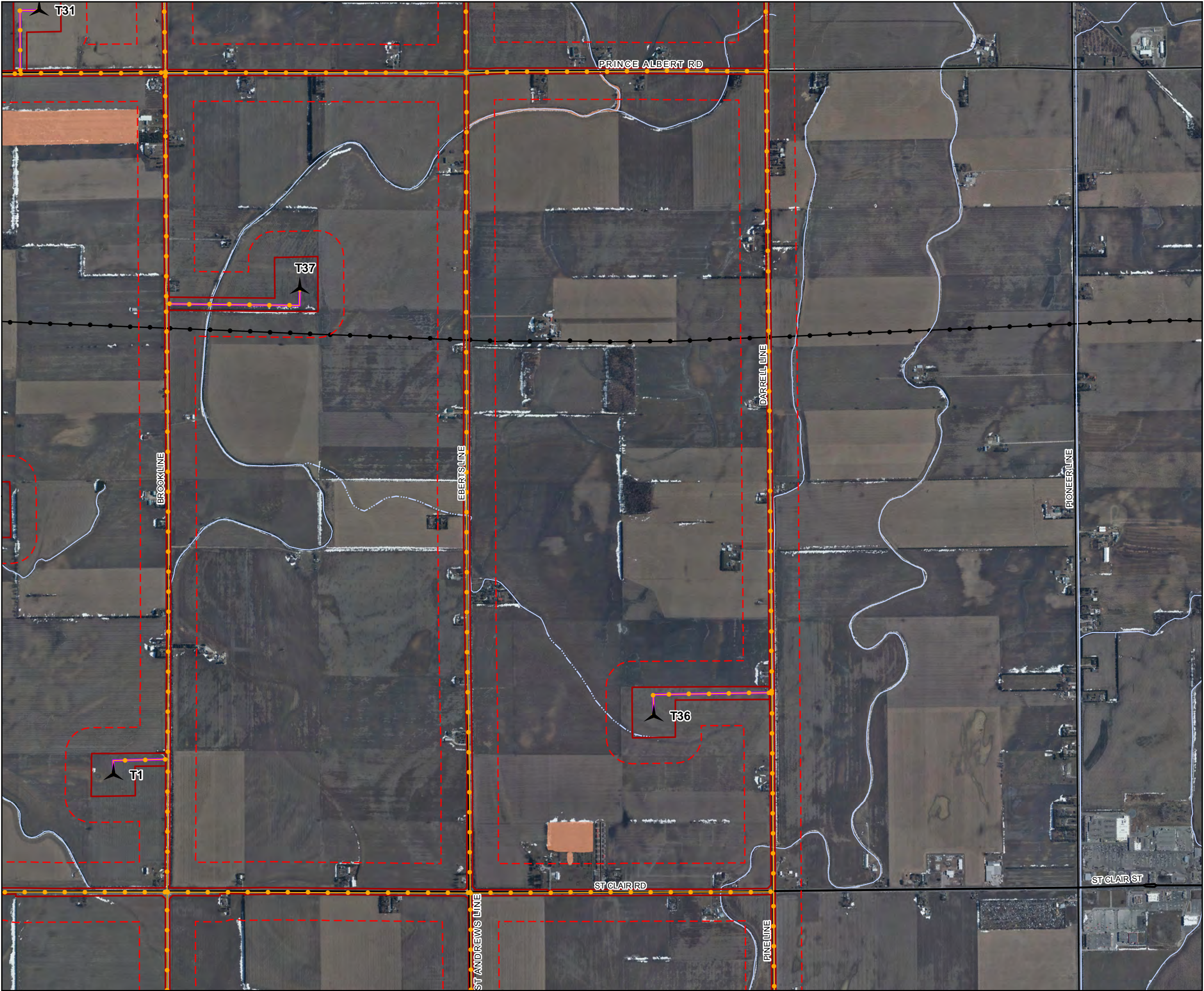
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Project: 1612  
Date: July 21, 2015

NAD83 - UTM Zone 17  
Size: 11x17"  
1:17,500

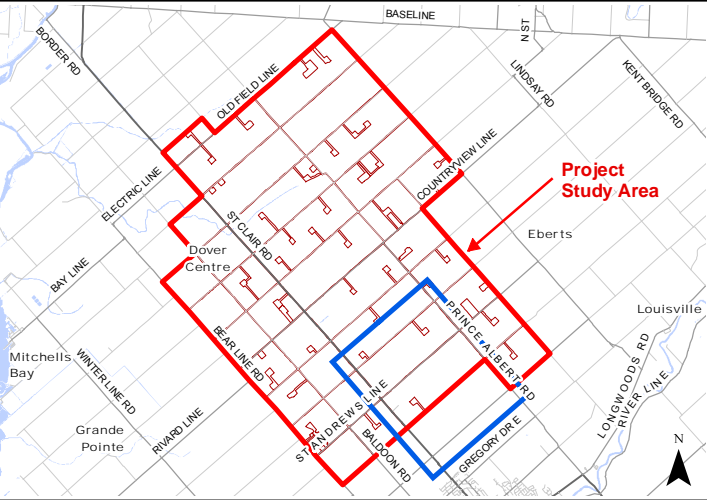
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Map 7 - 8

# North Kent Wind 1 Project

## Generalized Significant Wildlife Habitat

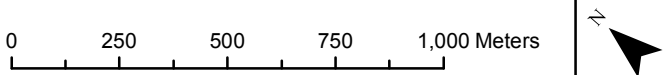


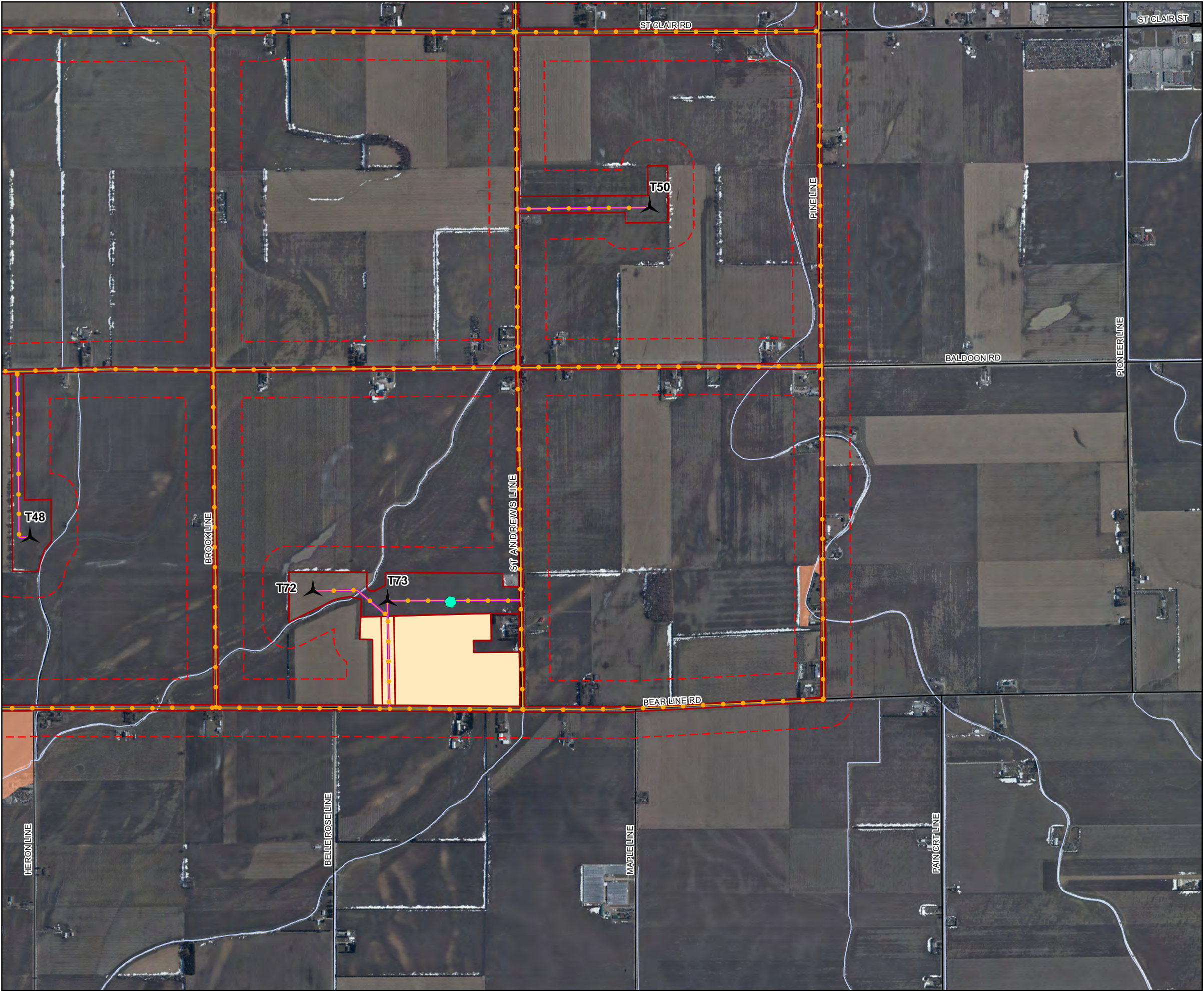
- Legend**
- Utility Line
  - Highway
  - Primary Road
  - Secondary Road
  - Permanent Watercourse
  - Intermittent Watercourse
- Project Location**
- Project Area (120m Buffer)
  - Construction Disturbance Area
  - Proposed Turbine
  - Proposed Collection Line
  - Proposed Access Road
  - Generalized Significant Wildlife Habitat



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Project: 1612 Date: July 21, 2015	NAD83 - UTM Zone 17 Size: 11x17" 1:17,500
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Map 7 - 9

North Kent Wind 1 Project

Generalized Significant Wildlife Habitat

Legend

Highway

Primary Road

Secondary Road

Permanent Watercourse

Project Location

Project Area (120m Buffer)

Construction Disturbance Area

Proposed Turbine

Proposed Meteorological Tower

Proposed Collection Line

Proposed Access Road

Proposed Laydown Area

Generalized Significant Wildlife Habitat

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Project: 1612  
Date: July 21, 2015

NAD83 - UTM Zone 17  
Size: 11x17"  
1:17,500

02505007501,000 Meters