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ROMNEY
wind energy centre

ROMNEY WIND ENERGY CENTRE

Decommissioning Plan Report

Romney Energy Centre Limited Partnership

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Project name:	Romney Wind Energy Centre	DNV GL - Energy
Report title:	Decommissioning Plan Report	Advisory Americas
Customer:	Romney Energy Centre Limited Partnership	4100 Rue Molson, Suite 100,
	53 Jarvis St	Montreal, QC, H1Y 3N1 CANADA
	Suite 300	Tel: 514 272-2175
	Toronto, ON, M5C 2H2	Enterprise No.: 860480037
Contact person:	Mark Gallagher	
Date of issue:	12 January 2018	
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Prepared by:	Verified by:	Approved by:
Nancy O'Neill Project Manager, Environmental and Permitting Services	Gabriel Constantin Team Leader, Environmental and Permitting Services	Michael Roberge, Head of Section, Environmental and Permitting Services

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Issue	Date	Reason for Issue	Prepared by	Verified by	Approved by
A	22 February 2017	Draft report	N. O'Neill	G. Constantin	M. Roberge
B	27 July 2017	Updated for final REA submission	N. O'Neill	G. Constantin	M. Roberge
C	12 January 2018	Update Project Location Map to Remove SODAR.	N. O'Neill	G. Constantin	M. Roberge

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Abbreviation	Meaning
APRD	Approval and Permitting Requirements Document
DNV GL	GL Garrad Hassan Canada Inc.
DPR	Decommissioning Plan Report
EDF EN	Électricité de France Énergies Nouvelles
EPA	Ontario *Environmental Protection Act*
ESA	*Endangered Species Act*
ERP	Emergency Response Plan
HONI	Hydro One Networks Inc.
H&S	Health and Safety
IBA	Important Bird Areas
IESO	Independent Electricity System Operator
LRP	Large Renewable Procurement
MNRF	Ontario Ministry of Natural Resources and Forestry
MOECC	Ontario Ministry of the Environment and Climate Change
MTCS	Ontario Ministry of Tourism, Culture and Sport
MTO	Ministry of Transportation of Ontario
MW	Megawatt
NHA	Natural Heritage Assessment
NIA	Noise Impact Assessment
O&M	Operations and Maintenance
O. Reg	Ontario Regulation
PCC	Point of Common Coupling
POI	Point of Interconnect
PPE	Personal Protective Equipment
REA	Renewable Energy Approval
SARA	*Species at Risk Act*
SESMP	Stormwater, Erosion and Sediment Management Plant
SWH	Significant Wildlife Habitat
TC	Transport Canada
ZOI	Zone of Influence

1 PREAMBLE

Romney Energy Centre Limited Partnership (the "Proponent") is proposing to develop the Romney Wind Energy Centre (the "Project") which is subject to *Ontario Regulation* (*O. Reg.*) 359/09 (Renewable Energy Approvals (REA) [1] under Part V.0.1 of the Ontario *Environmental Protection Act* (EPA)), as amended. The Proponent was awarded a contract for this Project in March 2016 from the Independent Electricity System Operator (IESO) under the Large Renewable Procurement (LRP), and is seeking a Renewable Energy Approval (REA) from the Ontario Ministry of the Environment and Climate Change (MOECC). The Project will be owned and operated by Romney Energy Centre Limited Partnership, a partnership between Électricité de France Énergies Nouvelles Canada (EDF EN) and Aamjiwnaang First Nation. The Municipality of Chatham-Kent has also been provided with an option to participate in the Project.

This Decommissioning Plan Report (DPR) has been prepared in accordance with Table 1 of *O. Reg 359/09* and the Technical Guide to Renewable Energy Approvals, Chapter 7: Guidance for preparing the Decommissioning Plan Report [2]. Table 1-1 presents the corresponding section for each Decommissioning Plan Report requirement.

Table 1-1: Decommissioning Plan Report Requirements and Corresponding Sections

Requirement	Section
Procedures for dismantling or demolishing the facility.	4.3, 10.1
Activities related to the restoration of any land and water negatively affected by the facility.	4.4, 10.1
Procedures for managing excess materials and waste.	4.5, 10.1

2 GENERAL INFORMATION

2.1 Project Name and Project Proponent

The name of the project is Romney Wind Energy Centre (hereafter referred to as "the Project") and Romney Energy Centre Limited Partnership is the Project Proponent, a partnership between EDF EN Canada and Aamjiwnaang First Nation.

2.2 Location of Project

The Romney Wind Energy Centre is located in southwestern Ontario, within the Town of Lakeshore and the Municipality of Chatham Kent, Ontario. More specifically, the Project is located south of Highway 401, extending along Richardson Side Road and Wheatley Road near the community of Wheatley, Ontario. It has a total Project study area of approximately 5,093 ha.

Project components will be mostly installed on privately-owned agricultural lots within this area. It is anticipated that the electrical collector lines including junction boxes will be partially located within public road allowances. The Project will connect to the existing 230 kV transmission line located within the Town of Lakeshore and close to Richardson Side Road. There is a short section of transmission line (less than 1 km) proposed for the Project to be built by either the Proponent or Hydro One Networks Inc. (Hydro One) from the Point of Common Coupling (PCC) to the Point of Interconnect (POI).

The proposed Project study area is located on private and public lands; the geographic coordinates of the extreme points of the Project study area are provided in Table 2-1. Figure 2-1 presents the location of the general Project study area.

Table 2-1: Geographic Coordinates of Project Study Area

Site Location	Easting	Northing
North	378764	4678793
East	386458	4665518
West	376264	4669394
South	379094	4662491

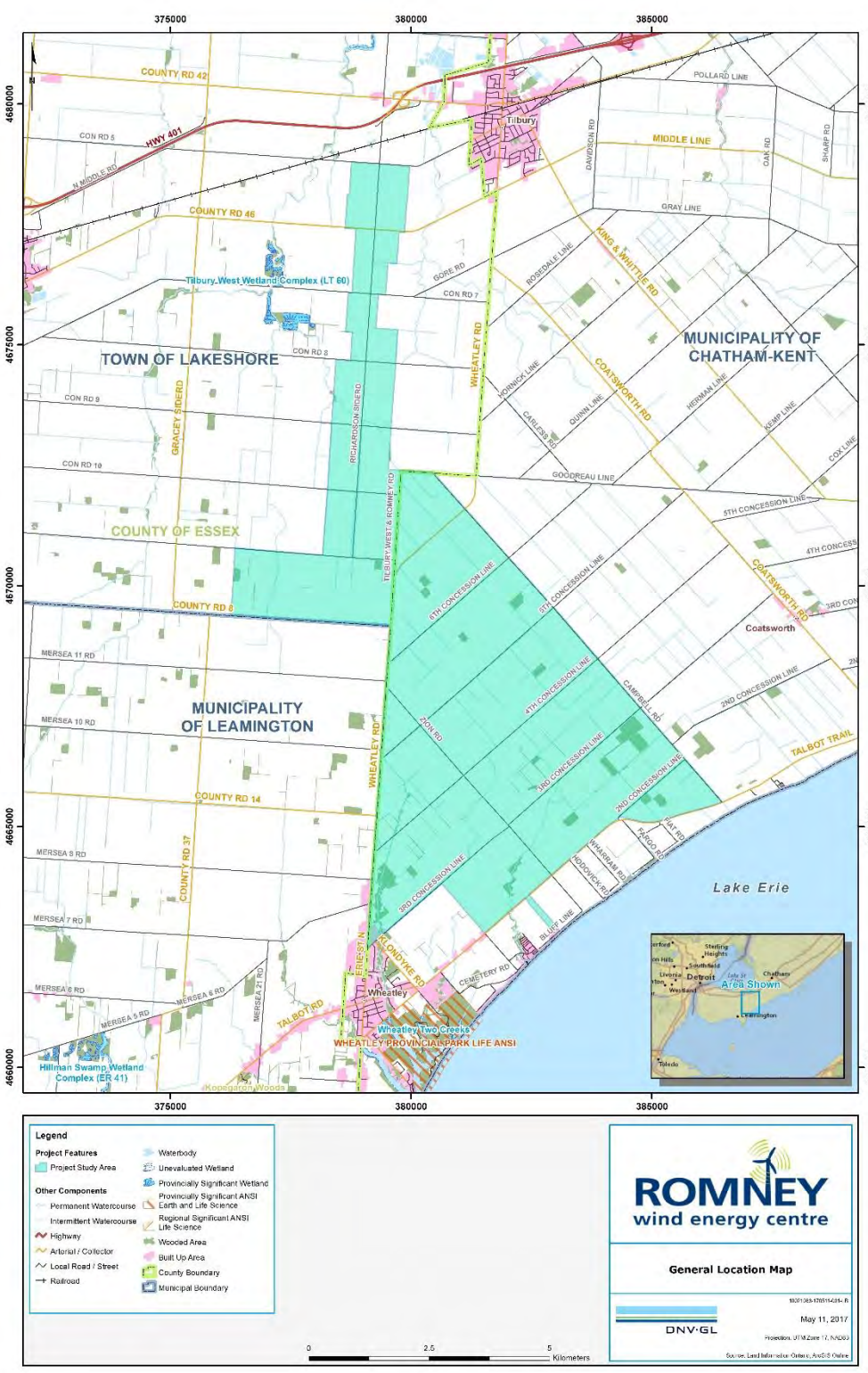


Figure 2-1: General Project Study Area

The location of the study area was defined in the planning process for the proposed wind energy facility and was based on the availability of wind resources, approximate area required for the proposed Project, and availability of existing infrastructure for connection to the electrical grid. Most of the agricultural fields are planted annually with common crops (e.g. corn, soybeans and winter wheat) or are used as pasture lands. All turbines are to be installed in agricultural field areas.

The Project is located within the broader Project study area, is defined in *O. Reg. 359/09* 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.

Disturbance Areas have been identified surrounding various Project components; such areas correspond to the "Project Location" boundaries in the Site Plan Maps in Appendix A. These areas denote zones where temporary disturbance during the construction and decommissioning phases may occur. Following construction activities, the land will be returned to a condition suitable to the landowner and local authorities.

2.3 Description of the Energy Source, Nameplate Capacity, and Class of Facility

The wind turbine generators of the Project will convert wind energy into electricity to feed into the Ontario IESO transmission system. This Project, with a total nameplate capacity of up to 60 megawatts (MW), is considered to be a Class 4 wind facility. A total of 18 wind turbine locations are being permitted for the Project. The proponent is currently evaluating different wind turbine technologies for the Project.

2.4 Contact Information

2.4.1 Project Proponent

The Project proponent is Romney Energy Centre Limited Partnership. The primary contact for this Project is:

Mark Gallagher
Senior Developer
Romney Energy Centre Limited Partnership
C/o EDF EN Canada Inc.
53 Jarvis Street, Suite 300
Toronto (ON), M5C 2H2, Canada
(514)805-3243
mark.gallagher@edf-en.ca

Project email: RomneyWind@edf-en.ca
Project website: http://www.edf-en.ca/projects/project_display/romney-wind-energy-centre

2.4.2 Project Consultant

GL Garrad Hassan Canada Inc. (hereafter referred to as "DNV GL"), a member of the DNV GL Group and part of the DNV GL brand, has been retained to lead the REA for the Project. The Environmental and Permitting Services team of DNV GL has completed mandates throughout Canada, the United States and in many other parts of the world. These mandates include permitting management, permit applications, environmental impact assessments, and various environmental studies for more than 15,000 MW of wind and solar-PV projects.

DNV GL's environmental team is composed of over 20 environmental professionals, including environmental impact specialists, planners, GIS technicians and engineers. DNV GL has no equity stake in any Project. This rule of operation is central to its philosophy, distinguishing it from many other players and underscoring its independence. DNV GL's contact information is as follows:

Nancy O'Neill
Project Manager, Environmental and Permitting Services
DNV GL – Energy Advisory
4100 Molson Street, Suite 100,
Montreal (QC), H1Y 3N1, Canada
905-630-1712
nancy.oneill@dnvgl.com
www.dnvgl.com

3 PROBABLE FUTURE USE OF THE FACILITY

The Project is anticipated to have an operational lifespan of 20 or more years. At the end of the Project lifespan, the Project components are expected to be decommissioned as described in Section 4.0. If Project economics and needs remain viable at that time, the facility could be "repowered" with new technology and continue operating for an extended period. This process may include the replacement and/or upgrading of Project components; however, it is not possible to provide specific details at this time as technological improvements over the next 20+ years are currently unknown. Prior to incorporating substantial changes, the Proponent will engage the public, as appropriate and required, based on regulations and requirements in effect at the time of decommissioning.

Although the future land use of the Project location is difficult to predict, it is most probable that after decommissioning the Project location will be returned to its former agricultural land use. Thus, this DPR has conservatively assumed that the future site uses will be agricultural.

It should be noted that there is potential for the planned post-decommissioning land use to change prior to actual decommissioning. In such instances, the information in this report will be updated, as required, in advance of decommissioning to represent the applicable conditions and regulatory requirements in effect at that time.

4 DECOMMISSIONING

The anticipated life of the Project is estimated to be a minimum of 20 years. The following sections describe how the Project will be dismantled either during construction or following the operations phase of the Project.

4.1 Decommissioning During Construction

Although it is unlikely that the Project would be decommissioned prior to the operations phase, should this occur, restoration of lands to pre-construction conditions will follow the same decommissioning procedure as would be implemented at the end of the Project life and as described in the sections below.

The Proponent would be responsible for environmental protection. In the event that the site has been cleared and/or excavated in preparation for installation of Project infrastructure, appropriate environmental protection measures would be implemented to prevent topsoil erosion. The extent of environmental protection measures required would be dependent on the progress made at the time of Project abandonment, and would be determined through site inspections by qualified specialists. Examples of potential environmental measures to be implemented include: erosion and sediment control fencing, filling excavated areas, replacement of topsoil, and/or revegetation.

Dismantling would follow the steps outlined in Section 4.3 and any exposed soils would be re-vegetated in consultation with the landowner and the local Ministry of Natural Resources and Forestry (MNRF).

4.2 Decommissioning After Ceasing Operations

It is anticipated that the Project would have an operational lifespan of 20 or more years. The Project life could be further extended with proper maintenance; component replacement and repowering (see Section 3.0). For this section of the DPR, it is assumed that the Project will be decommissioned after the 20-year power purchase agreement with IESO, and prior to any substantial repowering efforts however modern wind turbines are very reliable and the major components are designed to operate for approximately 25 years.

The steps outlined in Section 4.3 would be taken to dismantle the various Project components.

4.3 Procedures for Dismantling

If the facility is to be decommissioned and the turbines are to be removed at the end of their service life or during construction, the procedures will be similar to the construction phase, but in reverse sequence.

The procedures will include:

- At the end of the Project's life, it will first be de-energized and isolated from all external electrical lines.
- The creation of temporary staging areas. In order to provide sufficient area for the laydown of the disassembled wind turbine components and loading onto trucks, a circulation area of 80 m radius must be cleared, leveled and made accessible. After completion of the decommissioning, temporary staging areas and any associated temporary decommissioning facilities or components used throughout the decommissioning phase (e.g. temporary construction trailer) will be removed.
- The creation of crane pads. The crane pads will typically be 40 m by 40 m in size and will be located within the temporary staging area around each wind turbine. The topsoil at the crane pad will be removed and approximately 600 mm of compacted crushed gravel will be added. Once the turbine disassembly is completed, the gravel area around each turbine will be removed and the area will be restored to prior use using stockpiled topsoil.
- The use of cranes to remove the blades, hub, nacelle and tower segments.
- The use of trucks and heavy-load hauling trucks for the removal of turbines, towers and associated equipment.
- Removal of turbine components will also include the removal of 1 m of the underground foundation below the original grade (prior to construction). Excavated foundation areas will be backfilled with clean fill and stockpiled topsoil to match the original elevations. These areas will also be graded, contoured, and restored to a land use similar to what was present prior to foundation installation in order to allow for prior activities to resume.
- Underground electrical collector lines are expected to remain in place at the end of the Project life; however, at their connection points in the substation or in junction boxes, where the underground electrical collector lines come to the surface, the electrical collection lines will be de-energized and cut to a depth of approximately 1 m below original grade.
- Overhead electrical lines are expected to be removed at the end of the Project's life; however, the poles on which the collector lines will be installed that are not shared with Hydro One will be cut to a depth of approximately 1 m below original grade or may be completely removed from the ground, where feasible.

- Any electrical collector lines located at directionally drilled watercourse crossing 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 Authorities (LTVCA), where possible, and outside of significant natural features and/or wildlife habitats.
- The substation and the Operations and Maintenance (O&M) building will be dismantled and removed in accordance with the standards of the day. Any concrete foundations associated with these facilities will be removed to at least 1 m below original grade. The area will be graded, contoured, and restored to land use similar to what was present prior to foundation installation in order to allow for prior activities to resume. All materials will be recycled, where possible, or disposed offsite at an approved and appropriate facility.
- The Proponent is responsible for decommissioning of the electrical connector line from the substation up to the PCC, after which point the infrastructure is owned by Hydro One.
- Removal of access roads will dependent on the requirements and agreements in place with the individual landowner. Impacted lands will be restored to land use in place prior to access road construction, at the discretion of landowners.
- Meteorological tower(s) will be removed unless otherwise requested by the Municipality of Chatham-Kent or local aviation groups (and agreed to by the Proponent and the property owner) for it to remain in place. Any concrete foundation would be removed to at least 1 m below original grade or to the depth originally installed if less than 1 m below original grade. The area will be graded, contoured, and restored to land use similar to what was present prior to foundation installation in order to allow for prior activities to resume.

4.4 Restoration of Land

Once the dismantling procedures have been completed and the turbines and other ancillary facilities have been removed, the restoration of land will occur.

Abandonment of the wind turbines will not result in any impacts to surface or groundwater quality. After the abandonment process has been completed, the land will be returned to previous conditions in consultation with the landowner, local municipality and local MNRF office.

This will be accomplished by removing the foundations (or part of the foundation) to a depth of approximately 1 m below grade, the granular material from roadways and the culverts. The natural environment will be restored by re-vegetation. If there is insufficient material onsite, topsoil and/or subsoil will be imported from a source acceptable to the landowner, local municipality or local MNRF office.

Although strict spill prevention procedures will be in place, there is a low potential for small spills of solvents or fuels to occur during decommissioning. The soil conditions of the turbine areas will be surveyed per current standards to determine if any impacts have occurred. Should soil impacts be noted, the impacted soils will be delineated, excavated and removed, per applicable standards, from the site for disposal at an approved and appropriate facility.

4.5 Waste Generated

Waste and debris generated during the decommissioning activities will be collected and disposed of at an approved facility. All reasonable efforts will be made to minimize waste generated throughout decommissioning. Materials used throughout decommissioning will be recycled, as practicable.

Industry best practices for spill prevention will be employed. In the unlikely event of a minor spill, it will be cleaned up immediately and any impacted soils will be removed from the site and disposed of an appropriate facility in accordance with the applicable regulations.

At the conclusion of decommissioning, vehicles and construction equipment will be removed from the site.

4.6 Stormwater, Erosion and Sediment Management

While the decommissioning activities are anticipated to have minimal impact on the natural ground cover, a conceptual Stormwater, Erosion and Sediment Management Plan (SESMP) has been developed with the aim of reducing contaminants in stormwater runoff associated with the Project and minimizing the erosion and sedimentation of natural habitat(s). This plan is included in Appendix C of this report. Additionally, a map displaying the existing water distribution system and geological formation of Project study area is included in Appendix B of this report.

5 EMERGENCY RESPONSE AND COMMUNICATIONS PLAN

The Project Emergency Response Plan (ERP) is described in Section 7 of the Design and Operations Report [3] as part of the complete REA application package. The ERP will be implemented throughout all phases of the Project. The purpose of the ERP is to establish and maintain emergency procedures for the Project in order to effectively respond to accidents and other emergency situations, as well as minimize losses. For the decommissioning phase of the Project, the general contractor and/or the Proponent will include a plan for the proper handling of material spills and associated procedures to be undertaken during a spill event. Specific containment and clean-up materials and their storage locations, as well as general spill response procedures for personnel training will be outlined in the plan. As appropriate, information and actions relating to fire preparedness, evacuation procedures and medical emergencies will be detailed. Consultation will occur with local emergency services personnel to determine the extent of emergency response resources and response actions of those involved. Contact information will be provided for emergency service providers. The plan will also include address information for Project infrastructure locations, a description of the chain of communications and how information would be disseminated between the Proponent and/or the general contractor, as well as other relevant responders.

6 HEALTH AND SAFETY PLAN

The general contractor will implement and communicate a Health and Safety (H&S) Plan during the decommissioning phase of the Project that considers both public and occupational health issues. The plan will include standard health and safety measures to protect both the public and workers from equipment and

construction areas such as the posting of warning signs, the use of Personal Protective Equipment (PPE), accident reporting and safe operating procedures for equipment used throughout decommissioning.

7 TRAFFIC MANAGEMENT PLAN

A Traffic Management Plan (TMP) for the Project will be developed in coordination with local municipalities and the Ministry of Transportation of Ontario (MTO). The overall purpose of the TMP is to ensure that access to the Project study area will be maintained throughout all phases of the Project in a manner that ensures the safety of public users. The TMP will therefore provide the strategies, procedures and mitigation measures necessary to ensure continuous and safe access to the Project study area.

8 PUBLIC, MUNICIPAL AND ABORIGINAL COMMUNITY NOTIFICATION

Decommissioning activities may require notification to stakeholders, given the potential for these activities to temporarily increase traffic, noise and general disturbance. In the event of Project decommissioning, the Proponent will update the list of Project stakeholders to ensure that all new stakeholders are considered and notified of the decommissioning activities. In accordance with the requirements of REA, the stakeholder list update and notification would occur approximately six months prior to the start of the decommissioning activities. Local and provincial agencies will also be notified, as required, to discuss the potential approvals and requirements required to conduct the decommissioning activities.

9 OTHER APPROVALS

It is expected that decommissioning activities will require certain permits, similar to those required for construction, given the use of heavy machinery, trucks and oversize loads and the potential for impacts to the surrounding environment. Authorisations by the following agencies or entities may be required:

- Town of Lakeshore;
- Municipality of Chatham Kent;
- Ministry of Transportation;
- Ministry of Labour;
- Fisheries and Oceans Canada;
- MNRF; and
- MOECC (Record of Site Condition).

All required authorizations and approvals will be obtained prior to the start of any activity and will be based on the current regulations in place at the time of decommissioning.

10 ENVIRONMENTAL EFFECTS MONITORING PLAN

This section presents a summary of potential effects, mitigation measures and residual effects associated with project-environment interactions during the construction and decommissioning phases of the Project. Further information on the construction phase can be found in the Construction Plan Report.

More detailed discussions relating to natural heritage impacts, archaeological and heritage impacts land use impacts and water body impacts are found in the Natural Heritage Assessment (NHA) reports, Archaeological Assessment Reports, Heritage Report and Water Body Report, as part of the complete REA Application package.

As requested under REA, potential effects from the construction, installation and operation, and decommissioning of the wind farm are required to be assessed while considering applicable mitigation and compensation measures.

The Project *residual effect*s (i.e. after considering mitigation/compensation measures) will be determined and their significance will be based on the level of concern and likelihood of each effect.

Depending on the outcome of the effects assessment, follow-up and/or monitoring programs could be proposed in order to further investigate the potential effects, or verify the significance of the effect following commissioning.

10.1 Construction & Decommissioning

Table 10-1: Potential Negative Effects and Mitigation Measures – Construction & Decommissioning

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
Cultural Heritage (Protected Properties, Archaeological and Heritage Resources)				
Disturbance or displacement of archaeological resources by any ground disturbance activity.	Avoid disturbance/loss of archaeological sites.	Conduct Archaeological Assessment and apply recommended avoidance measures and other measures from licensed archaeologist or MTCS to project design. Details of the Archaeological Assessment can be found in the reports on this subject as part of the complete REA application package.	The Archaeological Assessment was undertaken as per MTCS guidelines and it is anticipated that the Project will received confirmation from the MTCS. The likelihood and magnitude of any residual effect is considered insignificant	Monitoring: Immediate notification of the Archaeologist and the MTCS in the event archaeological resources are found. Contingency: The magnitude of any residual effect is considered insignificant. Therefore, no contingency is required provided given the implementation of the recommended mitigation measures and best management practices are applied.
Construction vibrations to sensitive cultural heritage buildings	Minimize direct impacts from vibrations.	Apply avoidance and minimization measures recommended in the Cultural Heritage Assessment. Details of the Cultural Heritage Assessment can be found in the reports on this subject as part of the complete REA application package.	The Cultural Heritage Assessment was undertaken as per MTCS guidelines and it is anticipated that the Project will received confirmation from the MTCS. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: No monitoring required. Contingency: If the avoidance and minimization measures cannot be implemented, a more detailed vibration analysis will be undertaken by a qualified engineer.
Natural Heritage				

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
Direct vegetation removal – Significant woodlands, wetlands and generalized Significant Wildlife Habitat (SWH).	Minimize direct impacts on significant vegetation communities.	Clearly delineate work area using erosion fencing or other suitable barriers to correspond to the disturbance area limits to avoid accidental damage or removal of retained species. 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 significant woodlands, SWHs, or Generalized SWHs. This could include instances where the significant features are at a 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. Place the erosion fencing, or other barrier, as far away as possible from the feature or SWH, and no closer than the dripline where applicable. Locate all directional drill entry and exit pits a sufficient distance from the edge of significant natural features, SWHs, and Generalized SWHs, to maintain a vertical depth of at least 1.5 m at all times below the natural feature to protect the critical root zone where applicable. Details of the NHA can be found in the reports on this subject as part of the complete REA	The NHA was undertaken per MNRF guidelines and this Project is anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Undertake regular monitoring of the dripline where applicable to ensure the work area is clearly delineated and dripline boundaries are respected when construction is anticipated to occur within 10-30 m of significant woodlands, SWHs, or Generalized SWHs. This monitoring should occur at a minimum frequency of once per month. Contingency: Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques. Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species, depending on the extent of damage incurred.
Disturbance of local wildlife- Eastern Wood-Pewee, Colonially-Nesting Breeding Bird Habitat and Generalized SWHs.	Avoid direct impacts on breeding birds and their habitats. Minimize impacts on species that are relatively inactive at night and not	Avoid construction and decommissioning activities during the breeding bird period (May 1st – July 31st), wherever possible, to minimize potential disturbance to breeding birds. Schedule construction and decommissioning activities to occur	The NHA was undertaken as per MNRF guidelines and this Project is anticipated to receive approval from the MNRF.	Monitoring: If construction or decommissioning activities must occur during the breeding bird period (May 1st – July 31st), a biologist will conduct nest searches in areas where natural vegetation will be removed. If an

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
	accustomed to nighttime disturbances.	during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever possible. Details of the NHA can be found in the reports on this subject as part of the complete REA application package.	The likelihood and magnitude of this residual effect is considered non-significant.	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. Contingency: If construction or decommissioning activities must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to breeding birds. The magnitude of the residual effect is considered non-significant therefore no monitoring or contingency is required provided the recommended mitigation/compensation measures and best management practices are applied.
Disturbance of local wildlife- Landbird Migratory Stopover Area.	Avoid direct impacts to migratory landbirds.	Schedule construction and decommissioning activities during the spring and fall landbird migratory stopover period (March 1st – May 31st and August 1st – October 31st) to occur during daylight hours to avoid disruptions to migratory behavior, wherever possible.	The NHA was undertaken as per MNRF guidelines and this Project is anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Environmental supervision during construction as part of a routine inspection program will be implemented to ensure adherence to the prescribed mitigation measures. Contingency: If construction and decommissioning activities must occur outside of daylight hours, spotlights will be directed downwards and/or away from the woodland to minimize potential impacts to migratory landbirds.
Disturbance of local wildlife- Bald Eagle	Avoid direct impacts to	Project layout has been developed so that the Project Location occurs at least	The NHA was undertaken as per	Monitoring:

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
Habitat.	Bald Eagle Habitat.	400 m from the bald eagle nest location, and outside of both the primary and secondary habitat zones. No overhead lines or turbines will be located within the tertiary zone (as determined by site-specific surveys). Project infrastructure will be placed within the Project Location and preferentially located furthest from the eagle nest, wherever possible. No construction and decommissioning activities permitted within the tertiary zone (as determined by site-specific surveys) between March 1st – May 15th. Construction and decommissioning activities that are consistent with, or similar to, agricultural and municipal activities that are already occurring within the tertiary zone will be permitted from May 16th – February 28th within the tertiary zone, including: • Vehicle traffic, • Delivery of equipment, including turbines, • Site clearing and grading, • Access road construction, • Culvert installation, • Underground line installation, and • Turbine foundation installation. Construction activities that will not be permitted within the tertiary zone between February 1st – August 15th include: • Turbine erection	MNRF guidelines and this Project is anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	During construction and decommissioning, monitoring of the eagle nest will follow the methods implemented during the evaluation of significance phase of the Project and will occur for the duration that construction and decommissioning activities occur within the tertiary zone (as determined by site-specific surveys). This will occur during the period of February 15th - August 15th, exclusive of March 1st - May 15th, when no construction will be permitted within the tertiary zone of the active nest. Contingency: If disturbance or avoidance behavior is observed during monitoring, the MNRF will be notified of appropriate contingency measures that will be implemented.
Disturbance of local wildlife- Bat Maternity Colony.	Avoid direct impacts to roosting bats.	Avoid construction and decommissioning activities during the critical roosting period (June 1st – June 30th).	The NHA was undertaken as per MNRF guidelines and this Project is anticipated to	Monitoring: Environmental supervision during construction as part of a routine inspection program will be

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
			receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	implemented to ensure adherence to the prescribed mitigation measures. Contingency: The magnitude of the residual effect is considered non-significant therefore no contingency is required provided the recommended mitigation measures and best management practices are applied.
Minimization of Erosion and Sedimentation – Significant woodlands/wetlands, significant plant habitats, and Generalized SWHs.	Avoid contamination of Significant woodlands/wetlands, significant plant habitats, and Generalized SWHs.	The general contractor will develop and implement an Erosion and Sediment Control (ESC) plan that will be based off of the conceptual SESMP. Install, monitor, and maintain ESC measures (i.e. erosion fencing) around the Project Location for the duration of the construction or decommissioning activities, as identified within the ESC plan. Erect erosion fencing, or other barrier, to correspond to the construction disturbance area limits. Place the erosion fencing, or other barrier, as far away as possible from the identified feature (s) and no closer than the dripline where applicable. 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. Store any stockpiled material more than 30 m from significant natural features, SWHs, and Generalized SWHs throughout the construction and decommissioning phases. Schedule grading to avoid times of high runoff volumes, wherever possible, and suspend work if an excessive sediment	The NHA was undertaken as per MNRF guidelines and this Project is anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Undertake regular monitoring and routine inspections to ensure proper installation of erosion control measures are in place. Monitor sediment and erosion control measures, such as erosion fencing, and check dams daily in areas where work is taking place and prior to and after any storm events. Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. Contingency: If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the general contractor and the Proponent and recommend remedial actions. 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

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
		discharge occurs, as determined by an environmental monitor, until mitigation measures have been established. Re-vegetate areas adjacent to the feature(s) as soon as possible after construction activities are complete. Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal. Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction. Details of the NHA can be found in the reports on this subject as part of the complete REA application package.		extent of degradation incurred.
Reduced flood attenuation – Significant wetlands and vegetation communities.	Avoid impact on flood attenuation of significant wetlands and vegetation communities.	Clearly delineate work area using erosion fencing, or other barrier, to minimize potential impacts to hydrological connectivity from loss of riparian vegetation. 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. Where the temporary construction area is proposed to be within 5 m 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 5 m from the wetland edge. Plant a native vegetation in the 5 m buffer between the infrastructure and wetland edge as soon as reasonably possible after construction. Re-vegetate cleared areas as soon as	The NHA was undertaken as per MNRF guidelines and this Project is anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Undertake regular monitoring of the identified feature(s) to ensure the work area is clearly delineated 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 activities are occurring within 10 m of a feature. Undertake regular monitoring of the feature to ensure the work area is clearly delineated and respected when construction is anticipated to occur within 10-30 m of the features, 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.

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
		reasonably possible after construction activities are complete. Details of the NHA can be found in the reports on this subject as part of the complete REA application package.		Contingency: The magnitude of the residual effect is considered non-significant therefore no contingency is required provided the recommended mitigation measures and best management practices are applied.
Minimization of Fugitive and Dust Emissions – Significant natural features, SWHs and generalized SWHs.	Avoid fugitive dust within significant natural features, SWHs, and Generalized SWHs.	On-site speed limits will be clearly posted, applied, and followed by construction staff. Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor and general contractor. 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. Re-vegetate cleared areas as soon as reasonably possible after construction activities are complete.	The NHA was undertaken as per MNRF guidelines and this Project is anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Monitor dust control measures at a minimum frequency of weekly in areas where work is taking place. Monitor dust control measures at a minimum frequency of monthly in areas where active construction is not occurring until the construction phase is complete. Contingency: If fugitive dust is noted, the environmental monitor will notify the general contractor and recommend remedial actions, if necessary. 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.
Effects of groundwater discharge- Significant wetlands and Generalized SWHs.	Avoid direct impacts on significant wetlands and Generalized SWHs.	Monitor rate of water pumping and timing to meet requirement of less than 50,000 L per day per turbine location, and contact the local MOECC if a total of more than 400,000 L per day situation arises. Restrict taking of groundwater and surface water during extreme low flow		Monitoring: Undertake regular monitoring of significant wetlands and Generalized SWHs to ensure the work area is clearly delineated within 10 m of construction activities for the duration of the construction and decommissioning phases of the Project. This monitoring will be

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
		time periods. Control quantity and quality of stormwater discharge using best management practices, and avoid direct discharge into wetlands, SWHs, and Generalized SWHs		conducted at a minimum frequency of once per week when construction is anticipated within 10 m of a significant wetland or Generalized SWH. Undertake regular monitoring of significant wetlands and Generalized SWHs to ensure the work area is clearly delineated and respected when construction is anticipated to occur within 10-30 m of the features, 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. Contingency: If impacts to significant wetlands and Generalized SWHs occur as a result of groundwater discharge, the MNRF will be notified of appropriate contingency measures that will be implemented.
Infiltration- Significant wetlands and Generalized SWHs.	Avoid impacts to 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. Minimize paved surfaces and design roads to promote infiltration.	The NHA was undertaken as per MNRF guidelines and this Project is anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Environmental supervision during construction as part of a routine inspection program will be implemented to ensure adherence to the prescribed mitigation measures. Contingency: The magnitude of the residual effect is considered non-significant therefore no contingency is required provided the recommended mitigation measures and best management practices are applied.

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
Spills (i.e. oil, gasoline, grease, etc.) - Significant natural features, SWHs, and Generalized SWHs.	Avoid contamination of significant natural features.	The general contractor will develop a spill response plan and train staff on appropriate procedures. The general contractor will develop a 'frac-out' contingency plan and train staff on appropriate procedures during the construction phase. Keep emergency spill kits on site. Keep contact information for the MOECC Spills Action Centre in a designated area on-site. Dispose of waste material by authorized and approved off-site vendors. Store hazardous materials in designated areas. Locate all vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30 m from applicable feature(s). Details of the NHA can be found in the reports on this subject as part of the complete REA application package.	The NHA was undertaken as per MNRF guidelines and this Project is anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Regular environmental monitoring will occur at least once every two weeks during the construction and decommissioning phase to ensure vehicle refueling and storage of chemicals is occurring more than 30 m from the applicable features. An environmental monitor will be present when active directional drilling is occurring within 30 m of significant natural features, SWHs, and Generalized SWHs. Contingency: If 'frac-out' occurs, immediately implement 'frac-out' contingency plan. 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. If a spill occurs within a significant natural feature, SWH, or Generalized SWH, the environmental monitor will be notified and a follow-up site inspection will be conducted to document extent of degradation of the features, if any. If degradation of significant natural features, SWHs, or Generalized SWHs occurs as a result of the spill, appropriate contingency measures will be implemented. Contingency measures may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
Changes in soil moisture and compaction - significant natural features, SWHs, and Generalized SWHs.	Minimize impact to soil moisture regime and vegetation species composition.	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. Minimize paved surfaces and design roads to promote infiltration. Details of the NHA can be found in the reports on this subject as part of the complete REA application package.	The NHA was undertaken as per MNRF guidelines and this Project is anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Environmental supervision during construction as part of a routine inspection program will be implemented to ensure adherence to the prescribed mitigation measures. Contingency: The magnitude of the residual effect is considered non-significant therefore no contingency is required provided the recommended mitigation measures and best management practices are applied.
Impacts to Water Quality - Significant wetlands.	Avoid impacts to water quality (i.e. associated with increased turbidity).	Clearly delineate work area using erosion fencing, or other barrier, to minimize potential impacts to water quality which may result from loss of riparian vegetation. On site speed limits, will be clearly posted, applied, and followed by construction staff. Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, and will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the general contractor may also warrant an increased frequency of dust suppression. Re-vegetate areas adjacent to significant wetlands as soon as possible after construction activities are complete. 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,	The NHA was undertaken as per MNRF guidelines and this Project is anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Undertake regular monitoring of significant wetlands to ensure the work area is clearly delineated within 10 m 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 10 m of a significant wetland. Undertake regular monitoring of significant wetlands to ensure the work area is clearly delineated and respected when construction is anticipated to occur within 10-30 m 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.

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
		topography, land cover, and the extent of surrounding natural wind breaks. No use of herbicides (Project related activities only) within significant wetlands. Details of the NHA can be found in the reports on this subject as part of the complete REA application.		Contingency: If reduced water quality (i.e. increased turbidity) as a result of construction activities is observed, the MNRF will be notified of appropriate contingency measures that will be implemented.
Invasive Seed Transfer-Rare vegetation communities and plant species of conservation concern habitat.	To maintain vegetated buffers, including riparian zones. To avoid impacts of rare vegetation communities and plant species of conservation concern habitat.	Clearly delineate work area using erosion fencing, or other barrier, to minimize seed transfer into suitable habitat. Construction vehicles and equipment should be cleaned prior to entering within 30m of the listed SWH and anytime when the equipment is leaving the site to enter another project site. Details of the NHA can be found in the reports on this subject as part of the complete REA application.	The NHA was undertaken as per MNRF guidelines and this Project is anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Environmental supervision during construction as part of a routine inspection program will be implemented to ensure adherence to the prescribed mitigation measures. Contingency: The magnitude of the residual effect is considered non-significant therefore no contingency is required provided the recommended mitigation measures and best management practices are applied.
Soil compaction-Significant natural features, SHWs, and Generalized SWHs.	Avoid soil compaction.	Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and topsoil removal. Clearly delineate the dripline and root zone of all trees within 10 m of construction activities with erosion fencing or other barrier.	The NHA was undertaken as per MNRF guidelines and this Project is anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Environmental supervision during construction as part of a routine inspection program will be implemented to ensure adherence to the prescribed mitigation measures. Contingency: The magnitude of the residual effect is considered non-significant therefore no contingency is required provided the recommended mitigation measures and best management practices are applied.
Direct mortalities from traffic on access road.	Avoid direct mortalities due to traffic on access roads.	On-site speed limits will be clearly posted, applied, and followed by construction staff throughout the construction and decommissioning	The NHA was undertaken as per MNRF guidelines and this Project is	The magnitude of the residual effect is considered non-significant therefore no monitoring or contingency is required provided the

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
		phases Details of the NHA can be found in the reports on this subject as part of the complete REA application.	anticipated to receive approval from the MNRF. The likelihood and magnitude of this residual effect is considered non-significant.	recommended mitigation measures and best management practices are applied.
Impacts to Species at Risk.	Avoid any impacts to Species at Risk.	The Project may require a permit under the ESA, upon completion of an Approval and Permitting Requirements Document (APRD). This report will be submitted to the local district MNRF to be reviewed under the authority of the *Ministry of Natural Resources Act*, and will not be submitted as part of this completed REA application.	None	Compliance with the requirements of the ESA, as applicable.
Water Bodies				
Dewatering resulting in 1) Changes to surface water levels, or 2) Increased water temperature	Minimize impacts on stream flow water temperature. Minimize alteration of water level.	If water takings are required: Control rate and timing of water pumping so as not to result in erosion and sedimentation to receiving water bodies (see erosion and sedimentation, and water quality impairment). Pump from deep wells to infiltration galleries adjacent to water bodies or wetlands at a rate that reduces the potential for erosion (see erosion and sedimentation). Restrict taking of water during periods of extreme low flow and to avoid in-water work timing windows (generally March 15th to July 15th) as determined in consultation with the local MNRF Adequately treat any discharge water prior to discharge as to meet MOECC policy 2 standards (i.e. filer bags). Prior to groundwater dewatering, evaluate anticipated discharge rates and	The Water Body Assessment was undertaken as per MOECC guidelines and this Project is expected to receive confirmation from the MOECC. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Water level monitoring within water bodies will be conducted prior to the onset of construction at a frequency adequate to characterize baseline levels. During active dewatering, monitor water levels of water bodies within the ZOI for groundwater dewatering to determine if dewatering activities are resulting in alteration of water levels within the water body. Staff gauge readings are to be taken daily and water levels will be monitored by continuous level loggers (logged in 1 hour increments and downloaded weekly). Monitoring will be conducted post-construction until water levels return to baseline conditions. Environmental supervision during

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
		estimated ZOI in relation to the associated water bodies to ensure the volumes will not impact water body hydrologic function. Where a water body is located within a groundwater dewatering ZOI, develop appropriate strategies for dewatering in consultation with regulatory agencies during the detailed design phase of the project. Monitor water levels of water bodies within the ZOI to determine if dewatering activities are resulting in alteration of water levels within the water body. Details of the Water Body Assessment can be found in the reports on this subject as part of the complete REA application.		construction as part of a routine inspection program will be implemented to ensure adherence to the prescribed mitigation measures. Contingency: The magnitude of the residual effect is considered non-significant therefore no contingency is required provided the recommended mitigation measures and best management practices are applied.
Erosion and sedimentation.	Minimize impacts of erosion and sedimentation on water bodies.	Minimize potential for soil compaction (see Soil Compaction). Controlled vehicle and machinery access routes, keep away from water bodies where possible. Schedule clearing, grubbing and grading activities to avoid times of high runoff volumes e.g. snow melt or heavy rain events), wherever possible. Suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established. Implement Flood Response Plan if on-site flooding occurs. Implement Erosion and Sediment Control Plan (ESC). Avoid construction during high volume rain events (>20 mm in 24 hours) and significant snow melts/thaws where possible and resume once soils have	The Water Body Assessment was undertaken as per MOECC guidelines and this Project is expected to receive confirmation from the MOECC. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: ESC measures, such as silt fence, check dams, and dust control measures, will be checked weekly during active construction periods, daily during extended rain or snowmelt periods, and prior to, during and after forecasted rain events (>20 mm in 24 hours) or significant snowmelt events. An environmental monitor will be present, as required, when active directional drilling is occurring. Environmental supervision during construction as part of a routine inspection program will be implemented to ensure adherence to the prescribed mitigation measures. Contingency: The magnitude of the residual effect is considered non-significant

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
		stabilized to avoid risk of erosion, soil compaction or the potential for sediment release into nearby watercourses. Stabilize banks and cleared areas as soon as possible after construction disturbance (i.e. plantings, rock etc.) If insufficient time is available in the growing season to establish vegetative cover, an overwintering treatment such as erosion control blankets, fiber matting etc. could be applied to contain the site over the winter period. Maintain vegetation buffers around water bodies, where possible. Remove construction debris from the site and stabilize it (i.e. tarps) a minimum of 30 m away from water bodies to prevent it from entering the nearby water bodies. Refuse and other material should be appropriately' disposed of off-site. Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading, and top soil removal. Operate construction equipment (i.e. cranes, back hoes, etc.) in a manner that minimizes disturbance to the banks of water bodies and stays outside of the water bodies and bank area. Store any stockpiled material more than 30 m from water bodies. Work in dry conditions (i.e. low flow period) or isolate in-water work area using good engineering practices and dewatering techniques. Install silt fencing in-water downstream of dewatering activities. Dewatering discharge rates should be evaluated as to not result in erosion and sedimentation to receiving water body.		therefore no contingency is required provided the recommended mitigation measures and best management practices are applied.

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
		Dewatering discharge should be dissipated (i.e. sand bags, hay bales, etc.) and may require to be split to more than one location. Implement the Stormwater Management Plan. Implement fugitive dust suppression techniques when necessary to suppress dust, as determined by the general contractor and/or the environmental monitor. Details of the Water Body Assessment can be found in the reports on this subject as part of the complete REA application.		
Water Quality Impairment.	Minimize any negative impacts to water quality.	The general contractor will develop a spill response plan and train staff on appropriate procedures. The general contractor will develop a 'frac-out' contingency plan and train staff on appropriate procedures during the construction phase. Locate all entry and exit pits for directional drilling at a sufficient distance to meet minimum depths as established by geotechnical studies to prevent 'frac-out'. Locate drilling entry/exit shafts at least 3m from riparian vegetation or top of bank, whichever is greater, or at a distance otherwise agreed upon with regulatory agencies. Keep emergency spill kits on site. Keep contact information for the MOECC Spills Action Centre in a designated area on-site. Dispose of waste material by authorized and approved off-site vendors. Store hazardous materials in designated	The Water Body Assessment was undertaken as per MOECC guidelines and this Project is expected to receive confirmation from the MOECC. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Water quality monitoring will be conducted prior to discharging from dewatering to obtain baseline conditions, and then once per week during discharge at the end point of dewatering or as described by agencies to ensure water quality meets provincial standards. During construction, frequent measurements of in-situ parameters and turbidity, as well as any other general water quality parameters as required by agencies, should be obtained. Environmental supervision during construction as part of a routine inspection program will be implemented to ensure adherence to the prescribed mitigation measures. Contingency: The magnitude of the residual effect is considered non-significant therefore no contingency is required provided the recommended

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
		areas. Locate all vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30 m from applicable feature(s). Any discharges to a water body must meet MOECC Policy 2 standards (at or better water quality that than of the receiving water body). Adequately treat any discharge water prior to discharge as to meet MOECC Policy 2 standards (at or better water quality than that of the receiving water body) (i.e. filer bags). Implement fugitive dust suppression techniques to avoid impacting water quality when necessary to suppress dust, as determined by the general contractor and/or the environmental monitor. Details of the Water Body Assessment can be found in the reports on this subject as part of the complete REA application.		mitigation measures and best management practices are applied.
In-water work.	Minimize sedimentation and disturbance to water body structure and function.	Perform in-water work (if required) in the dry (i.e. low flow period) where possible. If this is not possible, short-term isolated dewatering will be required. Prior to dewatering, isolate the work area with the installation of a temporary water containment structure (i.e., cofferdams). The structure should form an impermeable enclosure, which also prevents escape of debris and sediment to the exterior water body. Construct a by-pass channel to maintain flow through the watercourse and prevent water from back flooding and ultimately overtopping the water containment structure. Install silt fencing in-water downstream	The Water Body Assessment was undertaken as per MOECC guidelines and this Project is expected to receive confirmation from the MOECC. The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Monitor by-pass channels, if applicable, daily to ensure it is functioning appropriately and water is flowing through as designed. Monitoring will be conducted once prior to the onset of construction to document existing conditions. During in-water work, as well as work within 30 m of a water body, monitoring will be conducted daily to identify any changes in aquatic habitat from baseline conditions. When work is occurring >30-120 m from a water body, monitoring will be conducted weekly to identify any

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
		of water containment structures. When using a water containment structure, a qualified fisheries biologist will remove any fish prior to dewatering work area and after any flooding or inundation of the work area. Machinery should be operated in a manner that minimizes disturbance to the banks and bed of the watercourse. Stabilize banks as soon as possible after construction disturbance (i.e. plantings, rock etc.). Any in-water work must also adhere to in-water work restriction windows, as determined through consultation with the local MNRF. Details of the Water Body Assessment can be found in the reports on this subject as part of the complete REA application.		changes in aquatic habitat from baseline conditions. Environmental supervision during construction as part of a routine inspection program will be implemented to ensure adherence to the prescribed mitigation measures. Contingency: The magnitude of the residual effect is considered non-significant therefore no contingency is required provided the recommended mitigation measures and best management practices are applied.
Soil Compaction.	Maintain soil infiltration capacity.	Restrict construction equipment to designated controlled vehicle access routes to minimize the potential for soil compaction. Staging areas should be located away from water bodies (i.e. 30 m). Avoid construction during high volume rain events (20 mm in 24 hours) and significant snow melts/thaws where possible and resume once soils have stabilized to avoid risk of erosion, soil compaction or the potential for sediment release into nearby watercourses Details of the Water Body Assessment can be found in the reports on this subject as part of the complete REA application.	The Water Body Assessment was undertaken as per MOECC guidelines and this Project is expected to receive confirmation from the MOECC. The likelihood and magnitude of this residual effect is considered non-significant.	Environmental supervision during construction as part of a routine inspection program will be implemented to ensure adherence to the prescribed mitigation measures. Contingency: The magnitude of the residual effect is considered non-significant therefore no contingency is required provided the recommended mitigation measures and best management practices are applied.
Emissions to Air, including Odour and Dust				
Reduction in air quality	Minimise deterioration of	Ensure proper operation and	The likelihood and	Monitoring:

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
due to CAC emissions and dust.	air quality.	maintenance of vehicles and machinery to limit noise, CAC emissions and leaks. Use water or water-based dust suppressant to control dust on unpaved roads. Implement speed limits on unpaved roads. Minimize vehicular traffic on exposed soils and stabilize high traffic areas with clean gravel surface layer or other suitable cover material. Minimize mud tracking by construction vehicles along access routes and areas outside of the immediate work site, and ensuring timely cleanup of any tracked mud, dirt and debris. Cover or otherwise contain loose construction materials that have potential to release airborne particulates during transport, installation or removal. Restore temporary construction road areas as soon as possible to minimize the duration of soil exposure.	magnitude of this residual effect is considered non-significant.	Track all complaints and conduct follow-up monitoring (see Complaints Resolution Process in Emergency Response and Communications Plans within Section 7 of the Design and Operations Report) Contingency: The magnitude of the residual effect is considered non-significant therefore no contingency is required provided the recommended mitigation/compensation measures and best management practices are applied.
Noise				
Increase in noise levels in Project study area.	Minimise noise increases for inhabited areas.	Ensure proper operation and maintenance of vehicles and machinery to limit noise, CAC emissions and leaks. Implement speed limits on unpaved roads. Construction equipment will be kept in good condition and will not exceed the noise emissions as specified in MOECC publication NPC-115 and any applicable municipal by-laws	The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Track all complaints and conduct follow-up monitoring (see Complaints Resolution Process in Emergency Response and Communications Plans within Section 7 of the Design and Operations Report of the DOR) Contingency: Faulty equipment resulting in increased noise levels are to be repaired in a timely fashion.
Local and Provincial Interests, Land, Use and Infrastructure				

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
Increased congestion due to increase in truck traffic and short-term lane closures on local roads during delivery of Project components.	Minimise disturbance to local community and achieve zero human safety incident.	Notify the community in advance of construction delivery schedules and installing signage to notify road users of construction activity. If required by municipal authorities develop a traffic management plan for the construction phase and submit to the Municipalities prior to construction and communicate truck routes.	The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Track all complaints and conduct follow-up monitoring (see Complaints Resolution Process in Emergency Response and Communications Plans within Section 7 of the Design and Operations Report) Contingency: The magnitude of the residual effect is considered non-significant therefore no contingency is required provided the recommended mitigation/compensation measures and best management practices are applied.
Damage to local infrastructure.	Minimise damage to local infrastructure.	Adhere to the best practices regarding the operation of construction equipment and delivery of construction materials. If required by municipal authorities, undertake roads condition survey prior to construction and post-construction.	The likelihood and magnitude of this residual effect is considered non-significant.	Monitoring: Track all complaints and conduct follow-up monitoring (see Complaints Resolution Process in Emergency Response and Communications Plans within Section 7 of the Design and Operations Report) Contingency: If required by local authorities, return damaged infrastructure to original condition (or better) where appropriate.
Areas Protected under Provincial Plans and Policies				
N/A				
Public Health and Safety				
Effects on public health and safety during construction have been described above under Emissions to air, including	-	-	-	-

Potential Effect	Performance Objective	Mitigation/Compensation Measures	Residual Effect	Monitoring / Contingency
Odour and Dust, Noise and Local and Provincial Interests Land Use and Infrastructure.				
Other Resources				
Potential impacts to petroleum wells or facilities (APRD)	No negative effects on petroleum resources or the renewable energy project	As part of the APRD and as per the MNR "Template for Renewable Energy Projects: Setbacks from Petroleum Operations" a search was conducted using the OGSR database to identify any petroleum wells or facilities within 75 m of project infrastructure. The search concluded that there are three active petroleum wells or facilities existing within 75 m of the Project location. Notice of the findings will be reported to the local District MNR office.	The likelihood and magnitude of this residual effect is considered non-significant.	The magnitude of the residual effect is considered non-significant therefore no monitoring or contingency is required provided the recommended mitigation measures and best management practices are applied.

11 REFERENCES

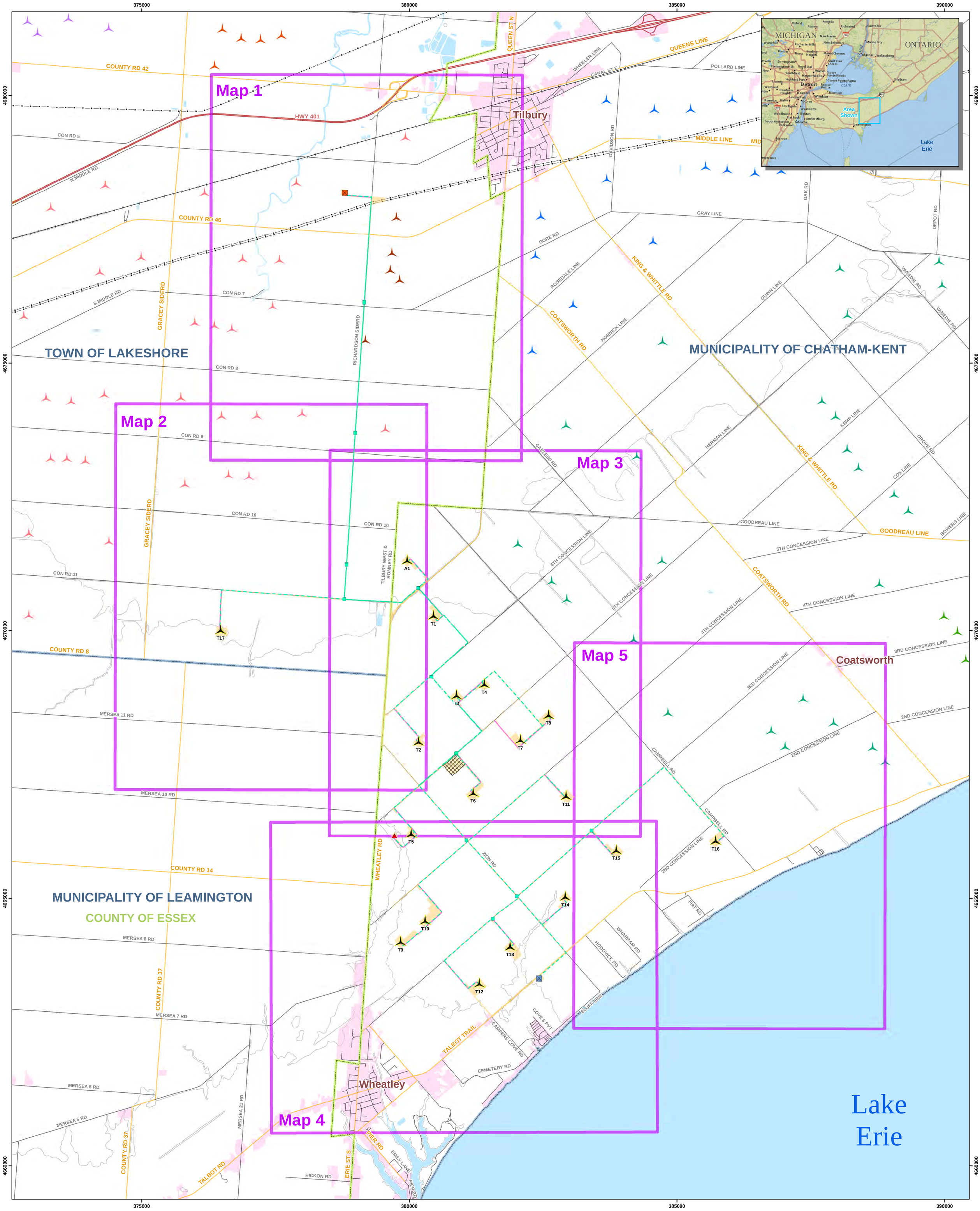
[1] Ontario Regulation 359/09, made under the Environmental Protection Act, Renewable Energy Approvals under Part 1.0 of the Act.

under Part 1.0 of the Act.

[2] Technical Guide to Renewable Energy Approvals, Ontario Ministry of the Environment, 2013.

[3] DNV GL, Design and Operations Report, Romney Wind Energy Centre, 27 July 2017

APPENDIX A – SITE PLAN MAPS



Legend

Project Features

- Wind Turbine (18)
- Substation
- O&M building
- Meteorological mast
- Junction Box
- Collection system
- Access road
- Laydown area
- Project location

Other Components

- Railroad
- Existing HONI Transmission Line
- Highway
- Arterial / Collector
- Local Road / Street
- Contour (Interval : 5 m)
- Permanent watercourse
- Intermittent watercourse
- Waterbody
- Built-up area
- County Boundary
- Municipal Boundary

Neighbouring wind farm

- Chatham-Kent Wind Farm
- Comber Wind Farm
- Gracey Wind Farm
- Pointe-aux-Roches Wind Farm
- Port Alma Wind Farm
- Richardson Wind Farm
- South Kent Wind

0 1 2 Kilometers

ROMNEY wind energy centre

SITE PLAN: MAP INDEX

10021083-180111-001-LB

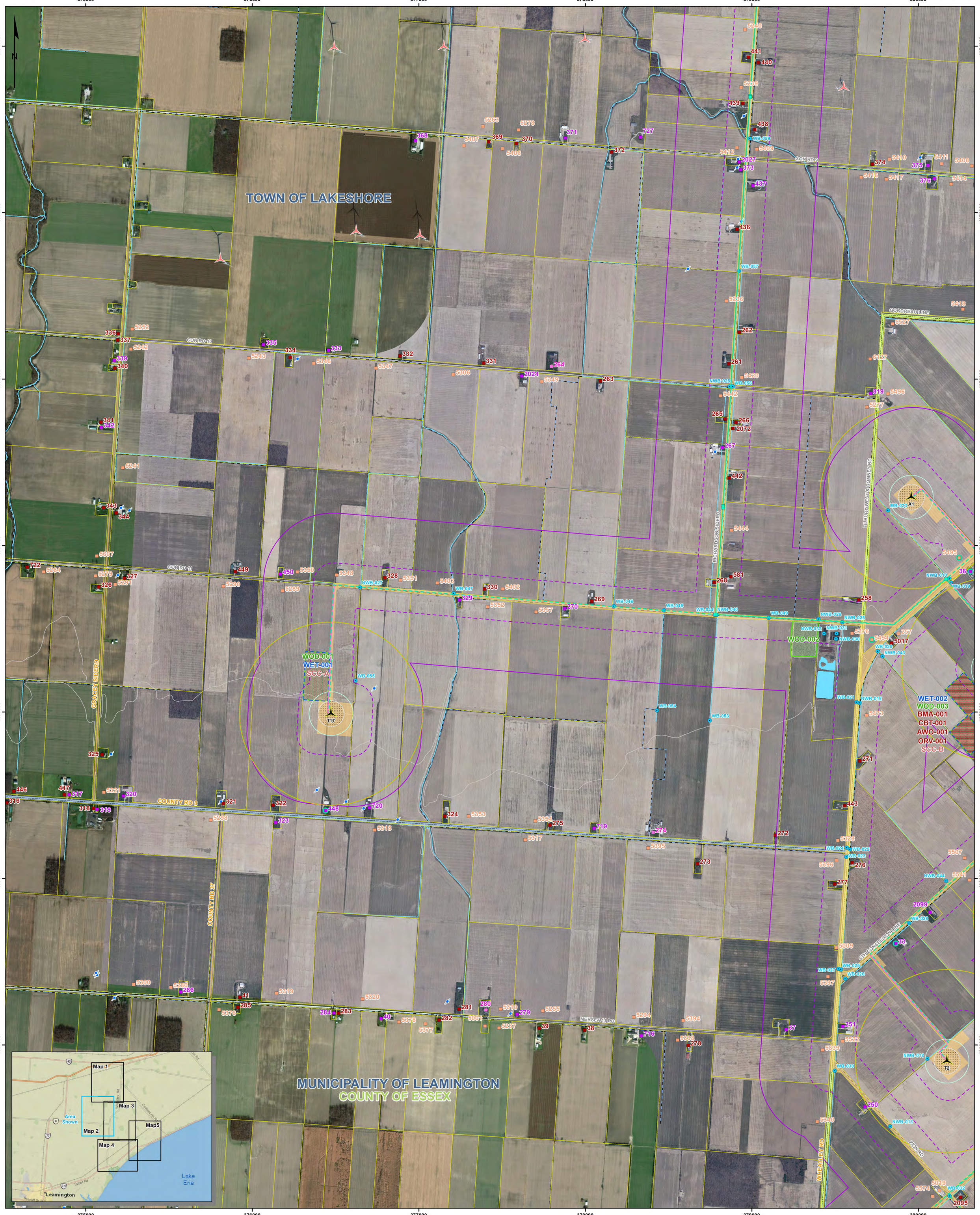
January 11, 2018

Layout version 68

DNV·GL

Projection: UTM Zone 17, NAD83

Source: Land Information Ontario, ArcGIS Online



Legend

Project Features

- Wind Turbine (18)
- Substation
- O&M building
- Meteorological mast
- Junction Box
- Collection system
- Access road
- Laydown area
- Project location
- Road and Railway Setback (78m)
- Property Boundary Setback (132m)
- Noise Receptor Setback (550m)
- Project location (120m)
- Project location (300m)

Significant Natural Heritage Features

- Wetland
- Woodland
- Significant Specialized Wildlife Habitats
- Significant Habitats for Species of Conservation Concern
- Generalized Significant Wildlife Habitat

Waterbody Assessment

- Waterbody Assessment Point

Other Components

- Water Well (WWIS)
- Railroad
- Existing HONI Transmission Line
- Highway
- Arterial / Collector
- Local Road / Street
- Contour (Interval : 5 m)
- Municipal Drain
- Permanent watercourse
- Intermittent watercourse
- Waterbody
- Built-up area
- Property Boundary
- County Boundary
- Municipal Boundary
- 3 Storey Receptor
- 2 Storey Receptor
- 1 Storey Receptor
- Vacant Lot Receptor
- POR on Participating Lot

Neighbouring wind farm

- Chatham-Kent Wind Farm
- Comber Wind Farm
- Gracey Wind Farm
- Pointe-aux-Roches Wind Farm
- Port Alma Wind Farm
- Richardson Wind Farm
- South Kent Wind

0 250 500 Meters

ROMNEY wind energy centre

SITE PLAN: MAP 2

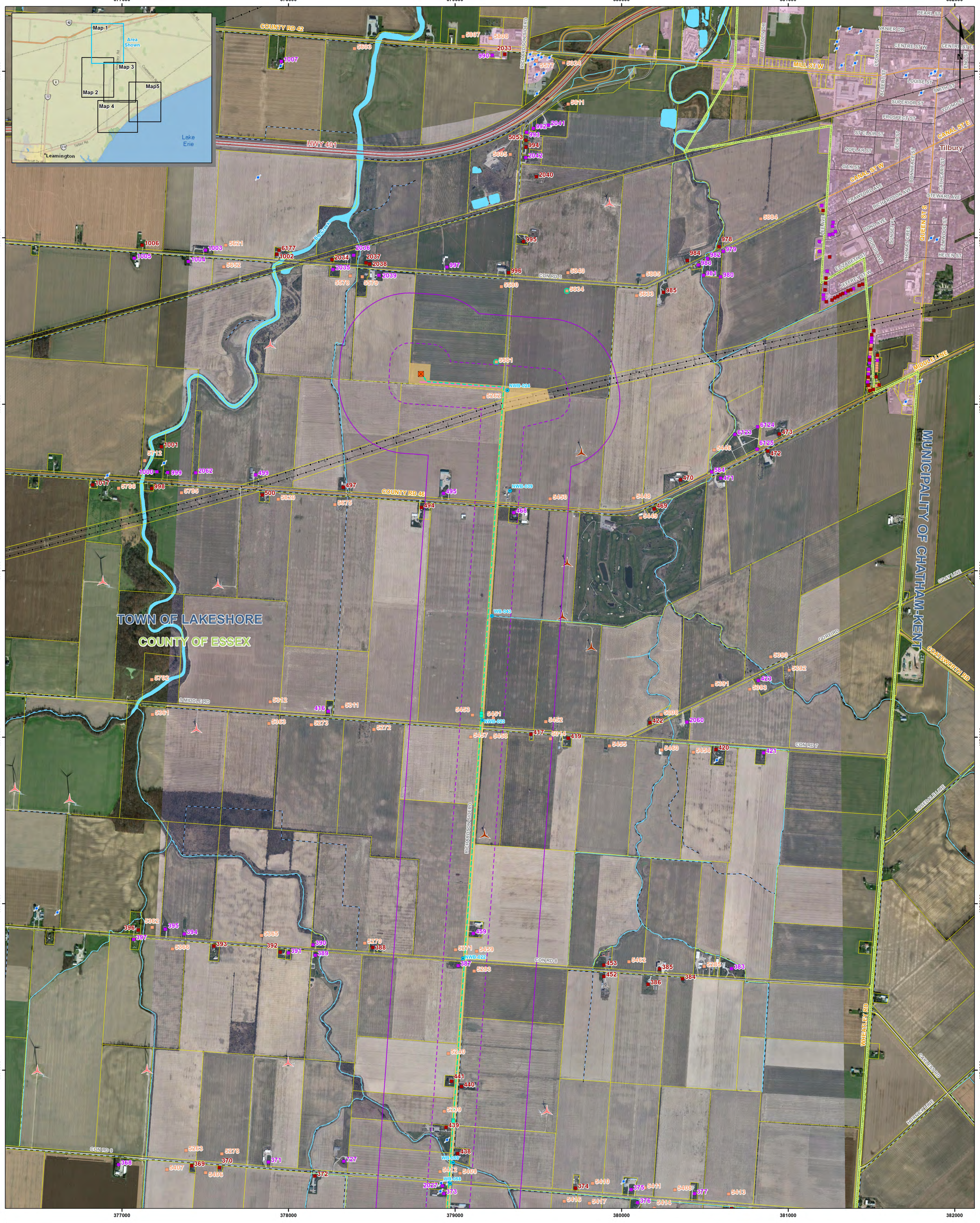
10021083-180111-001-LB

January 11, 2018

Layout version 68

Projection: UTM Zone 17, NAD83

Source: Land Information Ontario, ArcGIS Online, Municipality of Chatham Kent, Airborne Imaging (April 2016), Teranet, WWIS, NRSI, Callon Dietz



Legend

Project Features

- Wind Turbine (18)
- Substation
- O&M building
- Meteorological mast
- Junction Box
- Collection system
- Access road
- Laydown area
- Project location
- Road and Railway Setback (78m)
- Property Boundary Setback (132m)
- Noise Receptor Setback (550m)
- Project location (120m)
- Project location (300m)

Significant Natural Heritage Features

- Wetland
- Woodland
- Significant Specialized Wildlife Habitats
- Significant Habitats for Species of Conservation Concern
- Generalized Significant Wildlife Habitat

Waterbody Assessment

- Waterbody Assessment Point

Other Components

- Water Well (WWIS)
- Railroad
- Existing HONI Transmission Line
- Highway
- Arterial / Collector
- Local Road / Street
- Contour (Interval : 5 m)
- Municipal Drain
- Permanent watercourse
- Intermittent watercourse
- Waterbody
- Built-up area
- Property Boundary
- County Boundary
- Municipal Boundary
- 3 Storey Receptor
- 2 Storey Receptor
- 1 Storey Receptor
- Vacant Lot Receptor
- POR on Participating Lot

Neighbouring wind farm

- Chatham-Kent Wind Farm
- Comber Wind Farm
- Gracey Wind Farm
- Pointe-aux-Roches Wind Farm
- Port Alma Wind Farm
- Richardson Wind Farm
- South Kent Wind

0 250 500 Meters

ROMNEY wind energy centre

SITE PLAN: MAP 1

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Legend

Project Features

- Wind Turbine (18)
- Substation
- O&M building
- Meteorological mast
- Junction Box
- Collection system
- Access road
- Laydown area
- Project location
- Road and Railway Setback (78m)
- Property Boundary Setback (132m)
- Noise Receptor Setback (550m)
- Project location (120m)
- Project location (300m)

Significant Natural Heritage Features

- Wetland
- Woodland
- Significant Specialized Wildlife Habitats
- Significant Habitats for Species of Conservation Concern
- Generalized Significant Wildlife Habitat

Waterbody Assessment

- Waterbody Assessment Point

Other Components

- Water Well (WWIS)
- Railroad
- Existing HONI Transmission Line
- Highway
- Arterial / Collector
- Local Road / Street
- Contour (Interval : 5 m)
- Municipal Drain
- Permanent watercourse
- Intermittent watercourse
- Waterbody
- Built-up area
- Property Boundary
- County Boundary
- Municipal Boundary
- 3 Storey Receptor
- 2 Storey Receptor
- 1 Storey Receptor
- Vacant Lot Receptor
- POR on Participating Lot

Neighbouring wind farm

- Chatham-Kent Wind Farm
- Comber Wind Farm
- Gracey Wind Farm
- Pointe-aux-Roches Wind Farm
- Port Alma Wind Farm
- Richardson Wind Farm
- South Kent Wind

0 250 500 Meters

ROMNEY wind energy centre

SITE PLAN: MAP 3

10021083-180111-001-LB

January 11, 2018

Layout version 68

Projection: UTM Zone 17, NAD83

Source: Land Information Ontario, ArcGIS Online, Municipality of Chatham Kent, Airborne Imaging (April 2016), Teranet, WWIS, NRSI, Callon Dietz

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Legend

Project Features

- Wind Turbine (18)
- Substation
- O&M building
- Meteorological mast
- Junction Box
- Collection system
- Access road
- Laydown area
- Project location
- Road and Railway Setback (78m)
- Property Boundary Setback (132m)
- Noise Receptor Setback (550m)
- Project location (120m)
- Project location (300m)

Significant Natural Heritage Features

- Wetland
- Woodland
- Significant Specialized Wildlife Habitats
- Significant Habitats for Species of Conservation Concern
- Generalized Significant Wildlife Habitat

Waterbody Assessment

- Waterbody Assessment Point

Other Components

- Water Well (WWIS)
- Railroad
- Existing HONI Transmission Line
- 3 Storey Receptor
- 2 Storey Receptor
- 1 Storey Receptor
- Vacant Lot Receptor
- POR on Participating Lot
- Highway
- Arterial / Collector
- Local Road / Street
- Contour (Interval : 5 m)
- Municipal Drain
- Permanent watercourse
- Intermittent watercourse
- Waterbody
- Built-up area
- Property Boundary
- County Boundary
- Municipal Boundary

Neighbouring wind farm

- Chatham-Kent Wind Farm
- Comber Wind Farm
- Gracey Wind Farm
- Pointe-aux-Roches Wind Farm
- Port Alma Wind Farm
- Richardson Wind Farm
- South Kent Wind

0 250 500 Meters

ROMNEY wind energy centre

SITE PLAN: MAP 4

10021083-180111-001-LB

January 11, 2018

Layout version 68

DNV·GL

Projection: UTM Zone 17, NAD83

Source: Land Information Ontario, ArcGIS Online, Municipality of Chatham Kent, Airborne Imaging (April 2016), Teranet, WWIS, NRSI, Callon Dietz

MUNICIPALITY OF CHATHAM-KENT

Lake Erie

384000 385000 386000 387000 388000

4669000 4668000 4667000 4666000 4665000 4664000 4663000

3RD CONCESSION LINE
COATSWORTH RD
Coatsworth
4TH CONCESSION LINE
2ND CONCESSION LINE
CAMPBELL RD
TALBOT TRAIL
CEDAR RD
ELLERBECK RD
FARGO RD
OCEAN BLVD
RATZ RD
WHARRAM RD
HODOVICK RD
ZION RD
CLARKE LINE
TILSON LINE
BLUFF LINE

WET-008
WOD-011
WET-009
WOD-014

T15 T16

Map 1 Map 2 Map 3 Map 4 Map5 Area Shown Lake Erie Leamington

Legend

Project Features

- Wind Turbine (18)
- Substation
- O&M building
- Meteorological mast
- Junction Box
- Collection system
- Access road
- Laydown area
- Project location
- Road and Railway Setback (78m)
- Property Boundary Setback (132m)
- Noise Receptor Setback (550m)
- Project location (120m)
- Project location (300m)

Significant Natural Heritage Features

- Wetland
- Woodland
- Significant Specialized Wildlife Habitats
- Significant Habitats for Species of Conservation Concern
- Generalized Significant Wildlife Habitat

Waterbody Assessment

- Waterbody Assessment Point

Other Components

- Water Well (WWIS)
- Railroad
- Existing HONI Transmission Line
- Highway
- Arterial / Collector
- Local Road / Street
- Contour (Interval : 5 m)
- Municipal Drain
- Permanent watercourse
- Intermittent watercourse
- Waterbody
- Built-up area
- Property Boundary
- County Boundary
- Municipal Boundary
- 3 Storey Receptor
- 2 Storey Receptor
- 1 Storey Receptor
- Vacant Lot Receptor
- POR on Participating Lot

Neighbouring wind farm

- Chatham-Kent Wind Farm
- Comber Wind Farm
- Gracey Wind Farm
- Pointe-aux-Roches Wind Farm
- Port Alma Wind Farm
- Richardson Wind Farm
- South Kent Wind

0 250 500 Meters

ROMNEY wind energy centre

SITE PLAN: MAP 5

10021083-180111-001-LB

January 11, 2018

Layout version 68

Projection: UTM Zone 17, NAD83

Source: Land Information Ontario, ArcGIS Online, Municipality of Chatham Kent, Airborne Imaging (April 2016), Teranet, WWIS, NRSI, Callon Dietz

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APPENDIX B – EXISTING WATER DISTRIBUTION SYSTEM AND GEOLOGICAL FORMATION OF PROJECT STUDY AREA

375000 380000 385000

4680000 4675000 4670000 4665000

N

401

Tilbury

CON RD 5

N MIDDLE RD

DAVIDSON RD

MIDDLE LINE

GRAY LINE

GORE RD

ROSEDALE LINE

KING & WHITTLE RD

QUINN LINE

HORNICK LINE

HERMAN LINE

CON RD 7

RICHARDSON SIDERD

DUNDEE FORMATION

CON RD 8

TOWN OF LAKESHORE

CON RD 9

GRACEY SIDERD

CARLESS RD

MUNICIPALITY OF CHATHAM-KENT

CON RD 10

GOODREAU LINE

KEMP LINE

COATSWORTH RD

6TH CONCESSION LINE

5TH CONCESSION LINE

4TH CONCESSION LINE

3RD CONCESSION LINE

HAMILTON GROUP

A1

T1

T17

COUNTY RD 8

Coatsworth

T3

T4

T8

T2

T7

MERSEA 11 RD

COUNTY OF ESSEX

CAMPBELL RD

MERSEA 10 RD

COUNTY RD 37

WHEATLEY RD

T6

T11

T5

ZION RD

T15

T16

2ND CONCESSION LINE

COUNTY RD 14

T14

T10

TALBOT TRAIL

MUNICIPALITY OF LEAMINGTON

MERSEA 8 RD

T9

T13

T12

BLUFF LINE

Lake Erie

MERSEA 7 RD

Wheatley

MERSEA 21 RD

TALBOT RD

375000 380000 385000

Legend

Project Features

- Romney Wind Turbine (18)
- Project Study Area

Other Components

- Dwelling
- Municipal Water Supply
- Water Supply to be Confirmed
- Project location (2 km)
- Permanent Watercourse
- Intermittent Watercourse
- Highway
- Arterial / Collector
- Local Road / Street
- Railroad
- Waterbody
- County Boundary
- Municipal Boundary
- Geologic Formation

0 2.5 5 Kilometers

ROMNEY wind energy centre

Water Distribution System

10021083-170301-001-LB

March 01, 2017

DNV·GL

Projection: UTM Zone 17, NAD83

Source: Land Information Ontario, ArcGIS Online, Municipality of Chatham-Kent, Ministry of Northern Development and Mines

APPENDIX C – CONCEPTUAL STORMWATER, EROSION AND SEDIMENT MANAGEMENT PLAN

DNV·GL

ROMNEY
wind energy centre

ROMNEY WIND ENERGY CENTRE

Conceptual Stormwater, Erosion and Sediment Management Plan

Romney Energy Centre Limited Partnership

Document No.: 10021083-CAMO-R-07
Date: 27 July 2017

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Project name:	Romney Wind Energy Centre	DNV GL - Energy
Report title:	Conceptual Stormwater, Erosion and Sediment Management Plan	Renewables Advisory 4100 Rue Molson, Suite 100,
Customer:	Romney Energy Centre Limited Partnership, 53 Jarvis St Suite 300 Toronto, ON, M5C 2H2	Montreal, QC, H1Y 3N1 CANADA
Contact person:	Mark Gallagher	
Date of issue:	27 July 2017	
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Prepared by:	Verified by:	Approved by:
Anna Danaitis GIS Analyst	Nancy O'Neill Project Manager	Gabriel Constantin Team Leader

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Issue	Date	Reason for Issue	Prepared by	Verified by	Approved by
A	25 February 2017	Initial issue for review	Anna Danaitis	Nancy O'Neill	Gabriel Constantin
B	27 July 2017	Updated for final REA submission	Anna Danaitis	Nancy O'Neill	Gabriel Constantin

Table of contents

List of tables

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List of abbreviations

Abbreviation	Meaning
ANSI	Life Science Area of Natural and Scientific Interest
CEAA	*Canadian Environmental Assessment Act*
DFO	Department of Fisheries and Ocean Canada
DNV GL	Garrad Hassan Canada, Inc.
EDF EN	Électricité de France Énergies Nouvelles
ESA	Endangered Species Act
EPA	Ontario *Environmental Protection Act*
Hydro One	Hydro One Network Inc.
IBAs	Important Bird Areas
MW	Megawatt
NIA	Noise Impact Assessment
O&M	Operations and Maintenance
O. Reg	Ontario Regulation
REA	Renewable Energy Approval
SARA	*Species at Risk Act*
WB	Waterbody
WTG	Wind Turbine Generator

1 INTRODUCTION

Romney Energy Centre Limited Partnership has requested Garrad Hassan Canada, Inc. (hereafter referred to as “DNV GL”), to provide environmental and permitting services including a conceptual Stormwater, Erosion and Sediment Management Plan (SESMP) for the Romney Wind Energy Centre (hereafter referred to as the “Project”) that is located within the Town of Lakeshore and the Municipality of Chatham Kent, Ontario. More specifically, the Project is located south of Highway 401 extending along Richardson Side Road and Wheatley Road near the community of Wheatley. The Project with a total nameplate capacity of up to 60 megawatts (MW) is considered to be a Class 4 wind facility. A total of 18 wind turbine locations are being permitted for the Project.

The main objective of the conceptual SESMP is to present the prevention and mitigation measures that will be taken to avoid or minimize the Project impacts from potential stormwater runoff or soil erosion.

This technical note includes an overview of the Project components, existing conditions and the stormwater, erosion and sediment management and mitigation measures.

2 PROJECT COMPONENTS

The Project will include the following components:

- Wind turbine generators (WTG) – Up to 18 turbines will be constructed. The final wind turbine technology has not yet been selected but for reference purposes the Vestas V136-3.45 MW turbine is being considered.
- Permanent Meteorological Tower – Wind speed, wind direction, temperature and humidity will be measured by means of meteorological tower(s) of up to 132 m in height. The tower(s) will remain on site for the duration of the Project for wind turbine performance testing; exact location(s) will be determined prior to issuing the final REA reports. The tower(s) will be of lattice or monopole design.
- Access roads and crane pads – Access roads to each wind turbine will lead to a crane pad constructed adjacent to the access road and turbine location.
- Electrical collector lines, substation and interconnection – The electricity generated at each of the WTGs will be transported through 34.5 kV underground or overhead electrical collector lines to the Project's substation. Electrical collector lines will be sited adjacent to the turbine access roads, where feasible, and will follow public road allowances to reach the Project substation. Junction boxes will also be installed below or above ground where more than one circuit must be connected together and will be located on either privately-owned agricultural lots or within public road allowances. Measuring a total footprint of up to 2-3 ha, the electrical substation for the Project will be located on privately held lands through an "option to lease land" agreement. A secondary containment system will be included to prevent soil contamination in the event of a leak from the main transformer.
- Operations and Maintenance Building – It is anticipated that an Operations and Maintenance (O&M) building will be constructed in the general vicinity of the Project for the purposes of monitoring the day-to-day operations of the Project and supporting maintenance efforts. A small parking lot may be constructed to accommodate staff vehicles.
- Construction staging and laydown areas (including temporary staging areas) – A temporary construction staging area will be constructed on privately owned lands for the purposes of staging and storing equipment during the construction phase. In addition, a temporary area of approximately 80 m radius around each wind turbine will be established for the laydown and assembly of the wind turbine components. This temporary area will be returned to its prior use following the construction of the Project.

3 EXISTING CONDITIONS

The Romney Wind Energy Centre is located in southwestern Ontario, in the Town of Lakeshore and the Municipality of Chatham Kent, Ontario. More specifically, the Project is located south of Highway 401 extending along Richardson Side Road and Wheatley Road near the community of Wheatley. It has a total project study area of approximately 5,093 ha.

Project components will be mostly installed on privately-owned agricultural lots within this area. It is anticipated that the electrical collector lines including junction boxes will be partially located within public road allowances. The Project will connect to the existing 230 kV transmission line located within the Town of Lakeshore close to Richardson Side Road. There is a short section of transmission line (less than 1 km) proposed for the Project to be built by either the Proponent or Hydro One Networks Inc. (Hydro One) from the Point of Common Coupling (PCC) to the Point of Interconnect (POI).

The majority of habitat within the Project study area is composed of agricultural lots, deciduous, mixed, and coniferous woodlots, watercourses and occasional wetlands. The presence of several water features were confirmed within the Project study area. NRSI biologists have confirmed that a total of 32 permanent or intermittent water bodies have been confirmed to be located within the Project study area, 23 of which have been identified as overlapping the Project Location in one or more locations. The additional 9 confirmed permanent or intermittent water bodies come within 120 m of the Project Location at least once along their length, ranging in distance from >0.1-110m, without any direct overlap with Project components. A total of 49 Non-Water Body (WB) stations were assessed during the WB evaluation.

There are no known Provincially Significant Wetlands (PSWs), Provincially Significant Life Science Areas of Natural and Scientific Interest (ANSIs), Important Bird Areas (IBAs), Bird Sanctuaries or National Wildlife Refuges within the Project area, and no lakes, Lake Trout lakes or seepage areas were identified.

The Project is located partially within the Northern Lake Erie Secondary watershed and more specifically between the Cedar tertiary and Lower Thames tertiary watersheds as presented in Figure 3-1. The Project is characterized predominantly by poorly draining Brookston soil and Brookston clay. The bed rock geology consists of Limestone, dolostone, and shale. Since the majority of the Project study area is represented by agricultural land, the runoff coefficient value is approximately 0.55 [1]. According to the Ontario Soil Survey Complex, the average slope within the Project is Level (Between 0.3º – 1.3º).

Table 3-1: Waterbody Assessment Observations

Watercourse Name	Report ID	Water Body (Y/N)
Coatsworth-Robinson Drain	WB-001	Y
Albert E. Metcalf Drain	WB-002	Y
Albert E. Metcalf Drain	WB-003	Y
Yellow Creek	WB-004	Y
Yellow Creek	WB-005	Y
Yellow Creek	WB-006	Y
Derbyshire Drain	WB-007	Y
Stobbs Drain	WB-008	Y

Stobbs Drain	WB-009	Y
Stobbs Drain	WB-010	Y
Coatsworth-Robinson Drain	WB-011	Y
Nevills Drain	WB-012	Y
Yellow Creek	WB-013	Y
Wright Drain	WB-014	Y
Yellow Creek	WB-015	Y
East Two Creeks	WB-016	Y
Charles Simpson Drain	WB-017	Y
Drain to Jacobs Drain	WB-018	Y
Cottingham Drain A	WB-019	Y
Cottingham Drain A	WB-020	Y
Cottingham Drain A	WB-021	Y
Cottingham Drain A	WB-022	Y
Scott Drain	WB-023	Y
Scott Drain Beattie Bridge	WB-024	Y
Cottingham Drain A	WB-025	Y
Travis Drain	WB-026	Y
Travis Drain	WB-027	Y
Travis Drain	WB-028	Y
Travis Drain	WB-029	Y
Travis Drain	WB-030	Y
Gahan Drain	WB-031	Y
Gahan Drain	WB-032	Y
Cottingham Relief Drain	WB-033	Y
Jacobs Drain	WB-034	Y
Jacobs Drain	WB-035	Y
Gahan Drain	WB-036	Y
Holland Drain	WB-037	Y
Holland Drain	WB-038	Y
Charles Simpson Drain	WB-039	Y
Charles Simpson Drain	WB-040	Y
Lowe Drain	WB-041	Y
Jacobs Drain	WB-042	Y
Drain To Tilbury Creek	WB-043	Y
Hyatt Drain	WB-044	Y
Hyatt Drain	WB-045	Y
Unnamed Drain G	WB-046	Y
Big Creek	WB-047	Y
Unnamed Drain E	WB-048	Y
Hill Drain	WB-049	Y
Scott Drain	WB-050	Y
Unnamed Drain J	WB-051	Y

Unnamed Drain Z	WB-052	Y
18-19 Side Road Drain	WB-053	Y
Drain to Hyatt Drain	WB-054	Y
Unnamed Drain F	WB-055	Y
18-19 Side Road & Hill Drain	WB-056	Y
18-19 Side Road & Hill Drain	WB-057	Y
19 Side Road & Hill Drain	WB-058	Y
East Branch Of Big Creek Drain	WB-059	Y
Lowe Drain	WB-060	Y
Unnamed Drain O	WB-061	Y
Unnamed Drain P	WB-062	Y
Unnamed Drain Q	WB-063	Y
Travis Drain	WB-064	Y
East Two Creeks	WB-065	Y
East Two Creeks	WB-066	Y
East Two Creeks	WB-067	Y
Unnamed Drain U	WB-068	Y
Non-Water Bodies		
Auxiliary Robinson Drain	NWB-001	N
Albert E. Metcalf Drain	NWB-002	N
Nevills Drain	NWB-004	N
Ditches Along Talbot Trail	NWB-005	N
Auxiliary Robinson Drain	NWB-006	N
Drain to Two Creeks Drain	NWB-007	N
Unnamed Drain K	NWB-008	N
Drain to Two Creeks Drain	NWB-009	N
Unnamed Drain C	NWB-010	N
Cottingham Drain A	NWB-011	N
Cottingham Drain - B (this location is on west side of Wheatley Rd.)	NWB-012	N
Drummel Smith Drain	NWB-013	N
Drain to Cottingham Drain	NWB-014	N
Travis Drain Extension	NWB-015	N
Drummel Smith Drain Extension	NWB-016	N
Drummel Smith Drain Extension	NWB-018	N
Jacobs Drain Extension	NWB-019	N
Holland Drain Extension	NWB-020	N
Holland Drain Extension	NWB-021	N
Unnamed Drain C	NWB-022	N
Unnamed Drain B	NWB-023	N
Unnamed Drain A	NWB-024	N
Hill Drain	NWB-025	N
Dbw Drain	NWB-026	N

Unnamed Drain A	NWB-027	N
Brosseau Drain & Buchanan D&W Drain	NWB-028	N
Unnamed Drain H	NWB-025	N
DBW Drain	NWB-026	N
Unnamed Drain D	NWB-027	N
Brosseau Drain	NWB-028	N
Unnamed Drain L	NWB-029	N
Pond B	NWB-030	N
Pond C	NWB-031	N
Pond D	NWB-032	N
Unnamed Drain M	NWB-033	N
Auxiliary Robinson Drain	NWB-034	N
Stobbs Drain	NWB-035	N
Two Creeks Drain	NWB-036	N
Two Creeks Drain	NWB-037	N
Liddle Drain	NWB-038	N
Pond A	NWB-039	N
18-19 Side Road & Hill Drain	NWB-040	N
Wright Drain	NWB-041	N
Unnamed Drain N	NWB-042	N
Unnamed Drain R	NWB-043	N
Drain to Travis Drain	NWB-044	N
Pond E	NWB-045	N
Drain To Two Creeks Drain	NWB-046	N
Unnamed Drain S	NWB-047	N
Liddle Drain	NWB-048	N
Unnamed Drain T	NWB-049	N
Pond F	NWB-050	N
Pond G	NWB-051	N

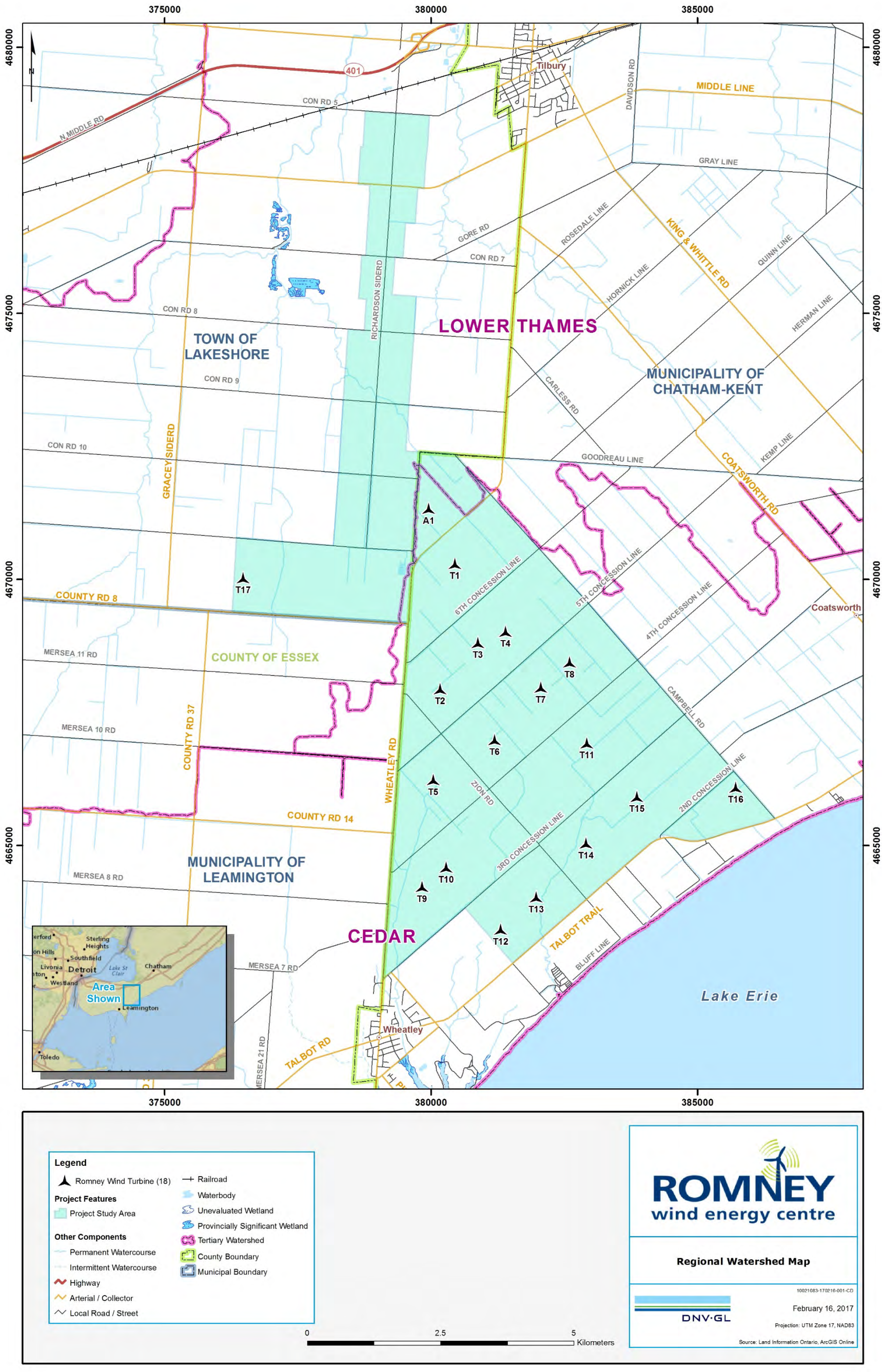

Figure 3-1 Regional Watershed Map

To evaluate the potential hydrologic impact associated with increased impervious coverage, the catchment areas for all draining features within 300 m from the Project location have been delineated and the total coverage areas have been calculated for each of the catchment areas. An example of a delineated catchment area is presented in Figure 3-2. The Project location would represent the maximum theoretical addition in impervious coverage within the catchment area, although in practice only a very small percentage of the Project location will have impervious coverage. The assumption that the whole Project location consists of 100% impervious coverage is very conservative. The summary of delineated catchment area and the conservative estimate of the percent increase of the impervious coverage is presented in Table 3-2.

The existing draining pattern will be maintained to the extent possible by using limited grading, maintaining surrounding agricultural land use and with the installation of conveyance infrastructure such as culverts. Therefore, the change in impervious surface represents the primary factor associated with potential impacts to the hydrology within the Project study area. Percent increase in impervious areas per catchment resulting from the Project will be low by very conservative estimates. Thus, the potential hydrologic impact associated with the Project would be very limited.

Table 3-2: Existing Conditions Impervious Coverage

Catchment Area / Discharge Point	Catchment Area (ha)	Additional Impervious Coverage (ha)	Additional Impervious Coverage (%)
Catchment Area 1	594	5	0.8%
Catchment Area 2	1402	60	4.3%
Catchment Area 3	486	5	1.1%
Catchment Area 4	375	12	3.2%
Catchment Area 5	585	16	2.7%
Catchment Area 6	1278	31	2.4%
Catchment Area 7	279	9	3.1%

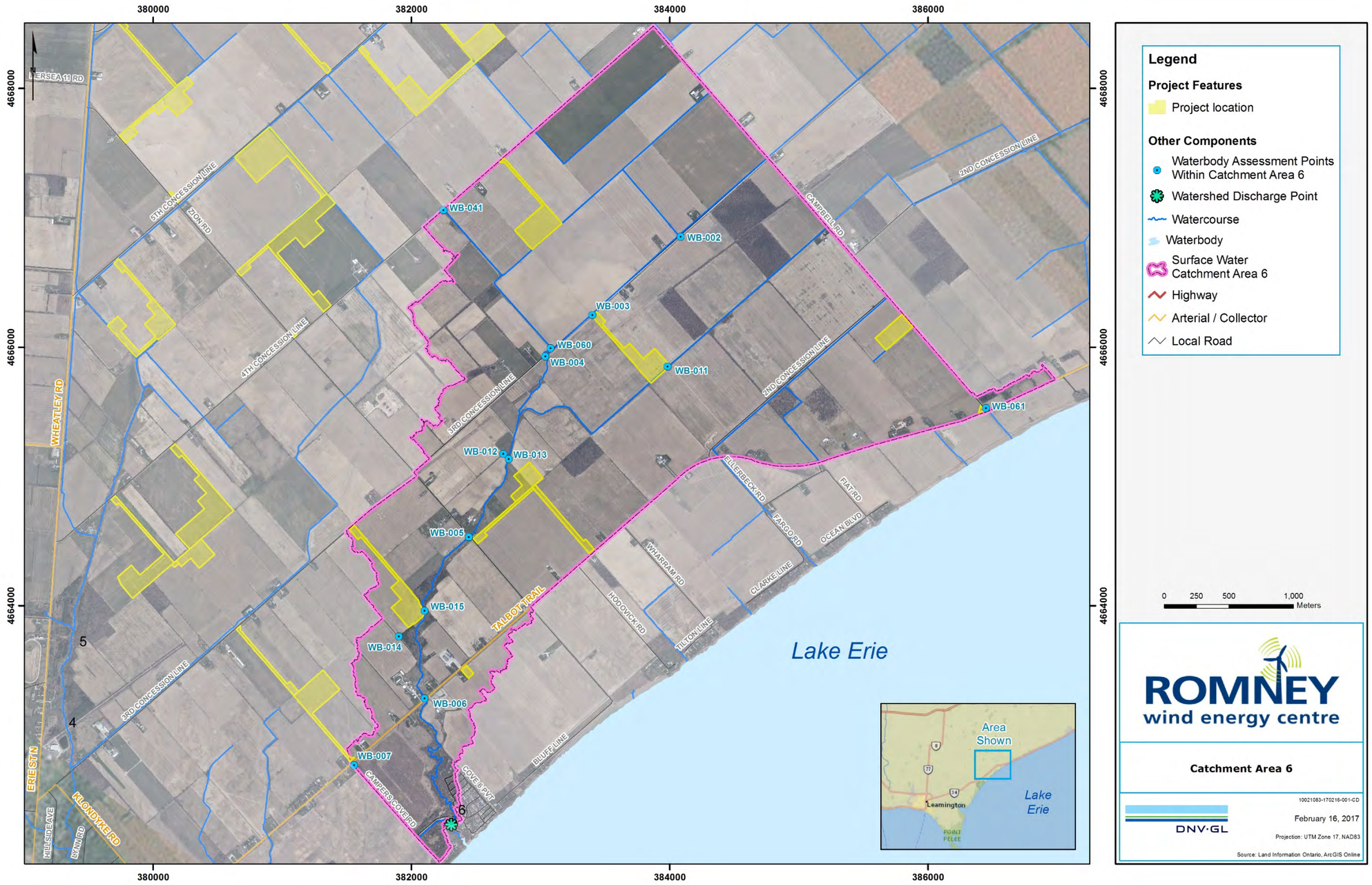

Figure 3-2 Example of Delineated Catchment Area

4 STORMWATER, EROSION AND SEDIMENT MANAGEMENT AND MITIGATION MEASURES

The installation and construction of required manmade infrastructures will inevitably disturb the natural ground cover and increase stormwater runoff and erosion. The SESMP aims to reduce contaminants in stormwater runoff generated from the Project and to minimize the erosion and sedimentation of the natural habitats throughout all phases of the Project. The following sub-sections present the stormwater, erosion and sedimentation mitigation measures that will be implemented during Project activities.

4.1 Erosion and Sediment Control

Erosion and sedimentation are natural processes that consist of soil surface detachment and transportation and deposition of soil particles. Erosion prevention is defined as any practice that protects the soil surface and prevents the soil particles from being detached by rainfall or wind, while sediment control is any practice that traps the soil particles after they have been detached and moved by wind or water. The Project construction and decommissioning activities, such as intensified traffic, topsoil stripping, grading activities involving cutting or filling, will modify the land features while impairing these natural processes. The goal of the erosion and sediment control measures is to prevent the transportation of sediment overland and deposition into surrounding natural areas, including watercourses, woodlands and wetlands.

The following stormwater, erosion and sediment control measures will be implemented to minimize the potential for erosion and off-site transfer of sediment of the Project:

Construction and Decommissioning Phase

- Where soil has lost its structure from grading or compacting, it must be managed to prevent its migration from the site. Land and water uses upstream and downstream must be protected from works generating sediment [3];
- Minimize grading activities to maintain existing drainage patterns where possible;
- Limit changes in land contours and maintain streams and timing and quantity of flow;
- Schedule clearing, grubbing and grading activities to avoid times of very high runoff volumes, wherever possible;
- Clearly delineate work area using erosion fencing, or similar barrier, to avoid accidental damage to retained wetland vegetation and to avoid impacting hydrological connectivity;
- Crossing structure should be properly sized and positioned appropriately (angle and embedded) as to minimize erosion issues and creation of potential fish barriers;
- Dewatering discharge rates should be evaluated as to not result in erosion and sedimentation to receiving water body;
- Dewatering discharge should be dissipated (i.e. sand bags, hay bales, etc.) and may require to be split to more than one location;

- Erect silt fence before grading activities on the downstream side of the area to be graded to protect the downstream lands from potential sediment transport that could be transported overland;
- Redirect stormwater runoff via swales and erosion control berms, where appropriate, to ensure that no untreated runoff is discharged from the site;
- Install temporary rock check dams in swales where appropriate or necessary to attenuate flows, reduce erosive velocities, and encourage sediment deposition;
- Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction areas within 30 m of a significant natural feature or wildlife habitat; and
- Drainage system may be incorporated under turbine foundations to allow for drainage of perched water.

Operations Phase

- Crossing structure for access road should be properly sized and positioned appropriately (angle and embedded) as to minimize erosion issues and creation of potential fish barriers;
- Drainage system may be incorporated under turbine foundations to allow for drainage of perched water;
- To manage stormwater runoff during operation, drainage channels will be constructed adjacent to access roads when required; and
- Precipitation runoff from wind turbine tower will be percolate through the gravelled area around each turbine foundation, ensuring infiltration into the ground.

4.2 Vegetation and Habitat Conservation

The protection of graded surfaces from erosion can be achieved through vegetation that limits erosion during stormwater event. Vegetation helps to minimize the impacts of stormwater because vegetation roots hold soil together, leaves and stems breaks up rainfall impact, groundcover slows down runoff and filters sediment out of water and plants evapotranspire moisture from soil [2]. Therefore, the removal of vegetation and other construction activities may degrade soil, leading to a higher potential for erosion. Vegetation may be removed to allow the construction and safe operation of the Project, but the following mitigation measures related to vegetation and natural habitats will be implemented:

- Removal of vegetation and other construction activities degrades soil, leading to a higher potential for erosion [3]; therefore, vegetation removal will be done only when necessary and where natural heritage assessments have been completed as part of the REA;
- Slash, logs, roots and stumps and other cleared/grubbed material may result in a fire hazard, disrupt other standing vegetation and/or watercourses, disrupt/block surface drainage and disturb ground surface potentially leading to increased erosion and sedimentation in watercourses. Therefore, the construction and decommissioning site will be cleaned up on a regular basis of all waste debris [3]; and
- Stabilize banks as soon as possible after construction disturbance (i.e. plantings, rock etc.). If insufficient time is available in the growing season to establish vegetative cover, an overwintering

treatment such as erosion control blankets and fiber matting could be applied to contain the site over the winter period.

4.3 Contaminant Prevention and Vehicle Maintenance

Small quantities of hazardous material are used in compliance with applicable laws in certain situations during the Project life-cycle and can be spread by stormwater events if proper mitigation measures are not enforced. Vehicles travelling on Project access roads during the construction, operation and decommissioning phases can generate limited fugitive dust emissions, especially in dry or windy conditions. While sustainable source of water should be utilized to maximize reuse of the resource, proper wet cleaning methods should be enforced so that no contaminants are present in dust suppression liquids and that stormwater episodes do not propagate hazardous material in the surrounding environment. Spill prevention measures for machinery and vehicles should also be implemented to prevent soil contamination and potential propagation of contaminant during stormwater events. The following contaminant prevention measures and vehicles maintenance policy will be implemented:

Construction and Decommissioning Phase

- All vehicles must be in good condition and must not have fuel and/or oil leaks;
- All maintenance activities, vehicle refueling or washing, and chemical storage will be located more than 30 m from any significant natural feature or significant wildlife habitat;
- To address any risk that the movement of sediment from the construction site poses to surrounding aquatic and terrestrial habitats, machinery and trucks will be cleaned regularly and refuelled away from any water body at designated locations (>30 m) [3];
- The general contractor will develop a site-specific spill response plan and train staff on appropriate procedures;
- Wash public roads to minimize the carriage of sediment off site;
- Minimize vehicular traffic on exposed soils and stabilize high traffic areas with clean gravel surface layer or other suitable cover material;
- For dust suppression of unpaved surface, only products that are safe for the environment and human health and safety will be used (water or water-based dust suppressant); and
- Implement speed limits on unpaved roads by clearly posting construction speed limits.

Operations Phase

- All vehicles must be in good condition and must not have fuel and/or oil leaks;
- All maintenance activities, vehicle refueling or washing, and chemical storage will be located more than 30 m from any significant natural feature or significant wildlife habitat;
- Develop a site-specific spill response plan and train staff on appropriate procedures; and
- Implement speed limits on unpaved roads by clearly post operation speed limits on Project access roads.

4.4 Monitoring

To ensure that the stormwater, erosion and sedimentation mitigation measures are adequate, a monitoring program will be implemented during the construction and decommissioning phases of the Project to inspect the erosion and sediment control measures in place after each significant rainfall and at least once a week when construction and decommissioning activities are underway. These inspections would include examination of silt fences, rock-check dams, swales and erosion control berms, as applicable. An Environmental Monitor will be hired to ensure that vegetation will be removed in designated areas only and that revegetation is successfully completed.

5 CONCLUSION

This conceptual SESMP provides an overview of the current site conditions and multiple mitigation measures to avoid or minimize the impacts of stormwater events on the natural environment by increasing erosion and sedimentation or by transportation of contaminant. Preventive control measures to limit erosion and sedimentation processes, removal of vegetation and modification of habitat as well as the maintenance of vehicle and proper dust suppression techniques will be implemented. A monitoring program will be executed during both construction and decommissioning to evaluate the effectiveness of the mitigation measures proposed within the SESMP and ensure that the best efforts are being made to minimize the impacts of stormwater events. Given the mitigation measures proposed, DNV GL considers that the proposed conceptual SESMP is adequate for the nature and size of the Project.

6 REFERENCES

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