Otter Creek Wind Farm LP

Draft Project Description Report

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Acronyms and Abbreviations

ANSI ..... Area of Natural and Scientific Interest
CMOH ..... Chief Medical Officer of Health
EEMP ..... Environmental Effects Monitoring Plan
EIS ..... Environmental Impact Study
GHGs ..... Greenhouse gases
HONI ..... Hydro One Networks Inc.
IESO ..... Independent Electricity System Operator
km ..... Kilometres
kV ..... Kilovolts
LIO ..... Land Information Ontario
LRP ..... Large Renewable Procurement
m ..... Metres
m^2 ..... Metres squared
m/s ..... Metres per second
MBCA ..... *Migratory Birds Convention Act*
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
MW ..... Megawatts
NHA ..... Natural Heritage Assessment
Otter Creek ..... Otter Creek Wind Farm LP
O. Reg. ..... Ontario Regulation
OEB ..... Ontario Energy Board
PDR ..... Draft Project Description Report
Project ..... Otter Creek Wind Farm
REA ..... Renewable Energy Approval
RES Canada ..... Renewable Energy Systems Canada
RoW ..... Rights-of-Way
SARA ..... *Species at Risk Act*
SCRCA ..... St. Clair Region Conservation Authority
SFL ..... Sustainable Forest Licence
SWH ..... Significant Wildlife Habitat

1. Introduction

1.1 Project Overview

In May, 2009, the Government of Ontario passed the Green Energy and Green Economy Act and Ontario Regulation (O. Reg.) 359/09, as amended. The Otter Creek Wind Farm (the Project) has been proposed in response to the Government of Ontario's plan to integrate more renewable energy into the province's power grid. In March, 2016, the Project was selected by the Independent Electricity System Operator (IESO) as part of the Large Renewable Procurement (LRP) I program. The LRP I was a competitive process for procuring large renewable energy projects and will result in the construction of up to 300 megawatts ("MW") of installed capacity from wind energy, 140 MW from solar energy, 75 MW from waterpower and 50 MW from bioenergy.

Under O. Reg. 359/09, as amended, the Project will require a Renewable Energy Approval (REA). The REA integrates previous requirements under the *Environmental Assessment Act* with provincial rules and standards under the *Environmental Protection Act*. This Draft Project Description Report (PDR) has been prepared in accordance with Item 10 of Table 1 in O. Reg. 359/09, as amended.

1.1.1 Name of Applicant

The Project is being proposed by Otter Creek Wind Farm Limited Partnership (Otter Creek), a partnership of Renewable Energy Systems Canada (RES Canada) and Boralex Inc. In close proximity to the project is Walpole First Nation who is a participant of this project. The Project is also grateful to have received support from the Municipality of Chatham-Kent which has been granted an option to participate in the Project.

1.1.2 Summary of Project Description Report Requirements

The requirements for the Draft PDR defined under O. Reg. 359/09, as amended, are outlined in **Table 1-1.** Information about the requirements of the reports identified in **Table 1-1** is also provided throughout this report.

Table 1-1: Adherence to Project Description Report Requirements under O. Reg. 359/09, as Amended

Requirement	Completed	Corresponding Section
Description of any energy sources to be used to generate electricity at the renewable energy generation facility.	Yes	Section 1.4
Description of the facilities, equipment or technology that will be used to convert the renewable energy source or any other energy source to electricity.	Yes	Section 2
The class of the renewable energy generation facility.	Yes	Section 1.4
Description of the activities that will be engaged in as part of the renewable energy project.	Yes	Section 3
The nameplate capacity of the renewable energy generation facility.	Yes	Section 1.4
The ownership of the land on which the Project Location is to be situated.	Yes	Section 1.3
Description of any negative environmental effects that may result from engaging in the Project.	Yes	Section 4
A good quality map depicting the Project and land within 300 m of the project is required in the Draft PDR submitted to Ministry of Environment and Climate Change (MOECC) to obtain an Aboriginal Consultation List.	Yes	Figure 1 of this Report.

1.2 Project Location

Otter Creek is proposing to develop a wind energy project located north of the community of Wallaceburg in the Municipality of Chatham-Kent, Ontario. The Project will be located on private lands and along public Rights-of-Way (RoW). The location of the Project was determined based on interest expressed by local landowners, municipal support for the Project, the availability of wind resources, and the availability of existing infrastructure to facilitate a connection to the electrical grid.

The Project Boundary is generally bounded by Whitebread Line and Kent Line to the north, Payne Road / Baseline Road to the west, Stewart Line and McCreary Line to the south and Mandaumin Road / County Road 44 to the east. **Figure 1** on page 24 shows a map of the Project Boundary. The following co-ordinates define corners of the external boundaries of the Project Boundary:

Longitude	Latitude
-82.469	42.631
-82.470	42.607
-82.245	42.627
-82.246	42.602

The Project Boundary covers approximately 11,376 acres[1] of land that is predominantly designated for agricultural use according to the Municipality of Chatham-Kent's Official Plan (2016) and Zoning By-law (2015). The Project Boundary also consists of fragmented areas of forest and riparian habitat associated with the Sydenham River, which bisects the Project flowing in a north-south direction, as well as other small creeks and/or farm drains.

According to O. Reg. 359/09, as amended, the Project Location is "*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 infrastructure will likely be located, including the air space occupied by turbine blades and construction activities will occur (i.e., disturbance areas described below). As a note, the Project Location will be confirmed as the planning process evolves. For the purposes of the Draft PDR, the Project Boundary refers to the boundary of the area being considered for the Project Location.

1.3 Land Ownership

The majority of the Project will be located on privately owned land with some components (e.g., electrical collector lines and entrances to access roads) being placed along public RoW. Otter Creek has entered into lease agreements with private land owners within the Project Boundary as part of the Project. Legal descriptions of the land parcels to be used for the Project will be confirmed as the planning process evolves and will be included in the final version of the PDR.

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

The Project will use wind to generate energy through the use of commercial wind turbine technology. The Project's nameplate capacity is up to 50 MW and the wind farm will consist of up to approximately 19 turbines, the locations of which are currently being assessed as part of the REA process. As a note, the proposed wind turbine technology

1. *Metric units are used throughout REA documentation when describing the size of Project infrastructure, except in instances describing areas of land. When describing land size, acres (imperial) will be used rather than hectares (metric) because it is the measuring unit most commonly used by the local community. It is assumed that 1 hectare of land is equal to 2.47 acres of land.*

for the Project is currently under review. The total number of turbines is dependent on the type(s) of turbines that will be used, the individual MW generation capacity of each turbine, and potential changes to the overall nameplate capacity. With a nameplate capacity of up to 50 MW, the Project is categorized as a Class 4 wind facility and will be in compliance with the requirements outlined for such facilities.

A summary of key Project information is presented in the table below.

Table 1-2: Summary of Key Project Information[2]

General	*Project Name:*	Otter Creek Wind Farm
	Project Ownership and Operation:	Otter Creek Wind Farm LP
	Project Lifespan (commercial operation):	20 Years
	Project Nameplate Capacity:	Up to 50 MW
Project Area *(as shown in **Figure 1-1**)*	*Location of Project:*	Privately-owned land and public road allowances in the Municipality of Chatham-Kent
	Total Project Study Area:	11,376 acres
Wind Turbine Generators	*Make and Model:*	To be confirmed.
	Approximate Number of Turbines Permitted:	Up to approximately 19 turbines
	Approximate Number of Turbines Constructed:	Up to approximately 19 turbines
	Nominal Turbine Power:	Up to 4.0 MW
	Number of Blades:	3
	Blade Length:	Up to 70 metres (m)
	Hub Height:	Up to 140 m
	Rotor Diameter:	Up to 145 m
	Cut-in Wind Speed:	Approximately 2.5 to 4 metres per second (m/s)
	Cut-out Wind Speed:	Approximately 25 m/s
	Rated Wind Speed:	2.5 to 25 m/s
	Swept Area:	Up to approximately 15,000 metres squared (m^2)
	Foundation Dimensions:	30 m diameter
Connection Line (Transmission)	*Connection Line in Public Right-of-way or Private Lands:*	Located on private land.

1.5 Contact Information

As noted above, Otter Creek Wind Farm LP is a joint venture limited partnership owned by affiliates of RES Canada and Boralex Inc. The contacts for the Project are as follows:

Applicant:

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2. *Dimensions are near approximations.*

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1.6 Other Approvals and Authorizations Required

1.6.1 Provincial Permits and Authorizations

Based on the requirements of the *Green Energy and Green Economy Act*, the Project may require provincial authorizations. **Table 1-3** provides a list of the potential provincial authorizations that may be required.

Table 1-3: Ontario Authorizations and Permits

Permit / Authorization	Administering Agency	Rationale
Renewable Energy Approval Application - Ontario Regulation 359/09	MOECC	Renewable energy project approval
Archaeological Clearance*	Ministry of Tourism, Culture and Sport	Archaeological and heritage resources
Public Lands Act* work permit	Ministry of Natural Resources and Forestry	Project may cross watercourses that are considered public lands
Natural Heritage Assessment*	Ministry of Natural Resources and Forestry	Natural heritage resources
Notice of Activity for Newly Listed Species and Wind Facilities Operations	Ministry of Natural Resources and Forestry	Species at risk and their habitats that may be affected by construction or operation of the wind project
Fill, Construction & Alteration of Waterways Development, Interference with Wetlands and Alterations to Shorelines and Watercourses – Ontario Regulation 169/06	Conservation Authorities (St. Clair Region Conservation Authority)	Work within floodplains, water crossings, river or stream valleys, hazardous lands and within or adjacent to wetlands
Encroachment Permit	Ministry of Transportation	Crossing of provincial highways
Land use Permit	Ministry of Transportation	Project works undertaken within 180 m of a Ministry of Transportation controlled intersection
Commercial Access Permit	Ministry of Transportation (MTO)	Ingress / egress from provincial highway
Change of Access & Heavy / Oversize Load Transportation Permit	MTO	Compliance with provincial highway traffic and road safety regulations
Special Vehicle Configuration Permit	MTO	Use of non-standard vehicles to transport large components
Notice of Project	Ministry of Labour	Notification to the Ministry of Labour before construction
Leave-to-Construct	Ontario Energy Board (OEB)	Development of a high-voltage transmission facility
Generator's Licence	OEB	Generator Operation Permit
Transmitter Licence	OEB	Transmission of electrical power to interconnect with provincial grid
Customer Impact Assessment	Hydro One Networks Inc. (HONI)	Evaluation of potential effects to existing electrical

Table 1-3: Ontario Authorizations and Permits

Permit / Authorization	Administering Agency	Rationale
		customers
Connection and Cost Recovery Agreement	HONI	Definition of responsibilities for connection facilities for Hydro One and Otter Creek with regard to the Project
System Impact Assessment	Independent Electricity System Operator (IESO)	Potential effects of integrating the Project within provincial transmission system
Approval of Connection	IESO	Electrical interconnect with IESO regulated network
Connection Assessment	IESO	Integration of Project with IESO-controlled transmission system
Certificate of Inspection	Electrical Safety Authority	Ensure work complies with the Ontario Electrical Safety Code

*Note: * Permits covered under REA process.*

1.6.2 Municipal Permits and Authorizations

In addition to the provincial requirements listed in the table above, the Project will require a number of municipal permits and approvals. Although the list is not exhaustive, **Table 1-4** lists a number of the permits and approvals that may be required from the Municipality of Chatham-Kent prior to construction.

Table 1-4: Municipal Authorizations and Permits

Permit / Authorization	Rationale
Entrance Permit	Ingress / egress from municipal roads
Drainage Permit	Required for crossings of municipal drains
Building Permit	Compliance with Ontario Building Code
Road Occupancy Permit	Required for work in municipal road allowances
Consent / Severance Application	Required if easements over private lands are required
Road Cut Permit	May be required for access roads off of county roads or works to county roads
Supporting Information / Plans for General Engineering to Support the Project	Supporting information / plans that may be required by the Municipality of Chatham-Kent

1.6.3 Federal Permits and Authorizations

The Project will require a number of permits and approvals from the federal government prior to construction. The following table lists federal authorizations and permits that may be required for the Project. These authorizations and permits will be determined through the REA process and will be obtained, if required. An environmental assessment under the *Canadian Environmental Assessment Act* is not anticipated to be required as wind projects are not on the list of designated projects under the Act (Government of Canada, 2013).

Table 1-5: Federal Authorizations and Permits

Permit Authorization	Administering Agency	Rationale
Aeronautical Obstruction Clearance	Transport Canada - Aviation Division	Required for turbine marking and lighting
Land use Clearance	NAV Canada	Required for aeronautical safety mapping and designation
Navigational Clearance	Transport Canada - Marine Division	Required if crossing a navigable watercourse
Fisheries Act	Fisheries and Oceans Canada	Required if the Project causes serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or that support such a fishery

In addition, future natural heritage field work will confirm the need for the Project to obtain an authorization or permit associated with the *Species at Risk Act* (*SARA*) and *Migratory Birds Convention Act* (*MBCA*).

2. Project Components and Ancillary Facilities

A description and listing of Project components and temporary Project components are outlined below in **Table 2-1** and **Table 2-2**, respectively.

Table 2-1: Description of Project Components

Component	Description
Wind Turbine Generators	• The Project will include commercial wind turbines with a nominal power up to 50 MW. The wind turbine nacelle includes the electric generator, wind direction and speed sensors and auxiliary equipment. The wind turbine nacelle may also include a gearbox. These components are located at the top of a supporting tower and are connected to three blades and a hub.
Wind Turbine Foundation	• Each turbine tower is anticipated to have a concrete foundation. The land base of each turbine foundation will be dependent on subsurface conditions determined during geotechnical investigations. Following geotechnical investigations it may be determined that pile type foundations may be suitable for certain locations; otherwise a spread-footing type foundation will be constructed.
Collector Transformers	• A collector transformer will either be located immediately adjacent to each wind turbine or inside the turbine tower. This transformer 'steps-up' the electricity generated by the wind turbine to a common electrical collector line voltage, possibly 34.5 Kilovolts (kV).
Wind Turbine Access Roads	• During construction and operation of the proposed Project, roads are required in order to access wind turbine locations. Access roads will be constructed and developed to accommodate cranes and transportation equipment used to deliver wind turbine components. Following the construction phase, roads may be reduced in size, which would allow access to turbines and associated infrastructure for maintenance and repairs.
Collector Lines	• Collector lines carry the electricity from the collector transformers to the Project electrical substation (described below). The collector lines will likely be 34.5 kV standard utility generator lines buried and located on private property and within the public RoW until it reaches the electrical Substation, located north of Langstaff Line and west of Kimball Road. Within the public road allowance the electrical collector lines will remain underground in most cases and underground electrical collector lines will most likely be installed within the access road disturbance area in order to minimize the area of disturbed land. Underground electrical collector lines will be buried at a minimum depth of approximately 1.2 m. Farming practices will not be affected by the underground cabling due to the depth of the cables and location of the cable being adjacent to access roads. • If aboveground electrical collector lines are required, they will be constructed on either wood, steel or concrete hydro pole structures. • Where two or more underground collector lines must be connected together, a junction box will be installed either below or aboveground. Junction boxes may contain equipment related to splices, junctions, cable splices and disconnect switches.
Electrical Substation	• An electrical substation is required to bring together all of the underground and aboveground electrical collector lines. The collected power will be transformed from the electrical collector line voltage (34.5 kV) to a transmission voltage (115 kV). • The Electrical substation will be constructed on a raised pad or a prepared base of engineered fill. The substation will comply with the noise requirements specified in O. Reg. 359/09, as amended. • Electrical substation equipment may include an isolation switch(es), circuit breaker(s), step-up power transformer(s), distribution switch-gear(s), instrument transformers, capacitor banks, communication equipment which will likely include a communication tower, Supervisory Control and Data Acquisition equipment, protection and control equipment, grounding transformers, grounding grid, revenue metering (conforming to IESO market rules), substation grounding and a control building. Substation grounding will follow the Ontario Electrical Safety Code. A secondary containment system may be installed at the site to prevent soil contamination in the event of a leak if petroleum products are used within the equipment installed.
Microwave Tower	• A microwave tower used for communication purposes may be constructed within the substation construction disturbance area and/or the interconnection station location. If required, the microwave tower may be up to 100 m tall. Soil conditions and space requirements will determine whether the tower will be steel-lattice or guyed.

Table 2-1: Description of Project Components

Component	Description
Meteorological Towers	• One or more permanent meteorological tower may be constructed and would consist of either a monopole or lattice structure. The meteorological tower may be constructed on a concrete foundation or it may be guyed. • Permanent meteorological towers are an operational requirement of the IESO for all electricity market participants (this includes all generators of electricity) and allow the IESO to operate the system in a reliable and safe manner.
Interconnection Station (Connection to Electrical Grid)	• The point of interconnection will require modifications to the existing transmission line and may include circuit breakers, isolation switches, transmission switchgear, instrumentation, grounding, metering equipment and other equipment typical of such systems. • The interconnection plan for any wind project is subject to study, design and engineering by the IESO which manages the province's electricity grid, Hydro One which owns the transmission lines, the local hydro distribution company and the OEB, which regulates the industry through the Transmission System Code and the Distribution System Code.
Operations and Maintenance Building	• An operations and maintenance building may be constructed. This building may accommodate offices, maintenance work areas, control facilities and a parking area and will likely be located within the Project Boundary. • An access road to the operations and maintenance building from a municipal or privately owned road will be used to access the operations and maintenance building during the operation of the Project. • Construction offices and temporary storage of Project equipment may also occur in pre-existing areas used for commercial, industrial or other purposes.
Crane Pads	• Crane pads will be constructed in tandem with wind turbine access roads. Crane pads will be located directly adjacent to wind turbine locations and within the associated construction disturbance area. The crane pad area will consist of a mixture of, native materials and engineered fill, as appropriate. • Crane pad areas may be removed or reduced in size. As required for maintenance and decommissioning activities, crane pads, if removed, may be reconstructed in the future.

To facilitate the construction of the proposed Project, a number of temporary construction components are required. These temporary components, described further in **Table 2-2** below, include crane pads, turbine laydown areas and a construction staging area.

Table 2-2: Description of Temporary Project Components

Component	Description
Wind Turbine Laydown Areas	• Laydown areas adjacent to wind turbine locations will be incorporated into the disturbance area for each turbine. Laydown areas will allow for temporary turbine component storage during construction. Temporary wind turbine laydown areas will be restored following construction activities so that agricultural activities can continue.
Construction Staging Area	• A temporary construction staging area is likely to be located within the Project Boundary. The construction staging area will consist of compacted surface material suitable for vehicular traffic. The depth of the material required will vary and will be dependent upon conditions encountered during the time of construction. The construction staging area will primarily serve the following aspects of the Project construction: ▪ Construction equipment storage and maintenance; ▪ Laydown areas for Project components; ▪ Location of Project construction offices; ▪ Parking areas for Project staff; ▪ Portable generators; ▪ Waste disposal containers; ▪ Self-contained temporary toilet facilities; and ▪ Water and rinsing facilities. • Following construction, the temporary construction staging area may be restored to pre-existing conditions, if the land owner requests, so that previous land use can continue. Construction offices and temporary storage of Project equipment may also occur in pre-existing areas used for commercial, industrial or other purposes.

3. Project Activities

The following sections outline the anticipated activities for the pre-construction, construction, operation and decommissioning phases of the Project. Further information relating to Project activities will be provided in the Construction Plan Report, the Design and Operations Report and the Decommissioning Plan Report and will be submitted as part of the Project's REA Application.

3.1 Project Schedule

The schedule in **Table 3-1** outlines the anticipated timelines for the Project:

Table 3-1: Project Milestones

Project Milestone	Anticipated Date
Host Public Meeting #1	Summer, 2016
Complete Environmental Studies and Reporting	Summer/Fall, 2016
Host Public Meeting #2	Fall/Winter, 2016
Submit REA Application	Winter, 2016/2017
Obtain Pre-Construction Permits	Spring/Summer, 2017
Start Construction	Spring, 2018
Commence Operations and Maintenance	Fall, 2018
Decommission Project	2038

3.2 Pre-Construction

During the pre-construction phase of the Project, the primary activities include the optioning of lands, preliminary engineering, geotechnical assessment and site surveys of the final turbine locations, procurement of turbine and substation equipment, and permitting and detailed design. Otter Creek will continue to communicate and engage landowners in the development of the site plans for the Project.

The REA process is the primary approval requirement in the pre-construction phase of the Project. For the permits and authorizations listed in **Section 1.6**, Otter Creek will work directly with the respective federal, provincial and municipal authorities to ensure all applicable requirements are met. Otter Creek will also continue to work closely with Project engineers, environmental and cultural specialists, as well as local landowners and First Nations communities throughout the development of the Project.

3.3 Construction

Construction of the Project is anticipated to begin in spring, 2018 and is likely to be completed by the fall/winter of 2018. During site preparation and construction of the proposed Project, the following key activities will be undertaken:

- Preparation of temporary work areas, including clearing and grubbing of vegetation;
- Upgrading of existing access roads and the construction of new access roads;
- Site grading as necessary;
- Preparation and establishment of construction staging areas;

- Preparation of the electrical substation laydown area;
- Delivery of construction vehicles and equipment;
- Installation of crane pads and turbine laydown areas;
- Excavation and installation of wind turbine foundations;
- Erection of wind turbines;
- Installation of collector transformers;
- Installation of electrical collector lines on private lands and/or in municipal road allowances;
- Construction of electrical substation, point of interconnection and connection line to connect to the Project to the electrical grid;
- Installation of microwave tower, if required, and meteorological towers, if required;
- Construction of operations and maintenance building (if deemed necessary); and
- Reclamation of construction laydown and staging areas.

3.4 Operations and Maintenance

Operation of the Project is expected to begin in 2018. The operational lifespan of the Project is approximately 20 years. The operation of the proposed Project is anticipated to require up to four (4) trained technical and administrative staff, including turbine maintenance technicians and a site supervisor. During the operation of the proposed Project, on-site activities will be limited primarily to scheduled maintenance of the Project components.

During operations and maintenance of the proposed Project, the following key activities will be undertaken:

- Preventative and unplanned maintenance of Project components;
- Otter Creek staff transport;
- Meter calibrations;
- Remote operation of the wind turbines;
- Maintenance of electrical collector lines; and
- Grounds maintenance in the vicinity of Project components.

3.5 Decommissioning

Key decommissioning activities associated with the proposed Project include:

- Disassembly and removal of wind turbine infrastructure (hubs, nacelles, blades and towers);
- Removal of collector transformers;
- Reclamation of agricultural land (at the discretion of landowners);
- Removal of all electrical collector aboveground infrastructure (at the discretion of landowners). Where the underground collector lines come to the surface, the collector lines will be cut and excavated to a depth of approximately 1.2 m, below grade;
- Disconnection of the electrical substation and removal of the connection line;
- Disassembly and removal of the electrical substation, microwave and meteorological towers, if required, and transmission and grid connection infrastructure (foundations will be removed to a depth of approximately 1 m); and
- Disassembly and removal of the operations and maintenance building infrastructure (at the discretion of landowners and if required).

3.6 Waste Generation

The amount of waste generated by the installation, operation and decommissioning of the Project is expected to be minimal, and will include nominal amounts of hazardous residues. Waste materials generated during the site preparation and construction phase are anticipated to include excess fill, soil, brush, scrap wood, metal, steel, plastic, packaging, grease, oil and domestic waste. Project operations and maintenance will result in waste materials such as oil, grease, batteries, air filters and domestic waste. Any waste generated will be disposed of according to standards of the day with the emphasis on recycling materials, whenever possible.

The major components of the wind turbines (tower, nacelle and blades) are modular items that allow for ease of construction and disassembly of the wind turbines during replacement or decommissioning. Dismantled wind turbines have a high salvage value due to the steel and copper components. These components are easily recyclable and there is a ready market for scrap metals. Transformers are typically designed for a 50 year lifespan so these items could be refurbished and sold for re-use.

3.7 Toxic / Hazardous Materials

Typically, there are few materials that could be classified as toxic or hazardous that is used in constructing and operating a wind project. Toxic or hazardous materials to be used on-site during the site preparation and construction phase and the operations phase include oils, fuel and lubricants that will be used in construction equipment and for maintenance of the turbine facilities. Only minor amounts of these materials will be generated and the small quantities will be disposed of through conventional waste oil and hazardous waste disposal streams.

3.8 Air Emissions

During each phase of the Project, activities requiring the use of motorized vehicles (e.g., transportation of maintenance personnel to turbine sites) will have infrequent and short-term emissions of low levels of greenhouse gases (GHGs) and other compounds. These emissions will be negligible compared to normal operation of motorized vehicles and equipment in the Project Boundary.

Project noise emissions will adhere to the requirements of O. Reg. 359/09, as amended. Project activities are not anticipated to generate significant odour emissions as a result of the construction and operation of the Project.

3.9 Sewage

During site preparation and construction, portable toilets will be used and a licensed contractor responsible for waste removal will be engaged. The operations and maintenance building, if built for the Project, may include washroom facilities that will be constructed and serviced in accordance with required regulations.

Potable water will be supplied by a well(s) or through the municipal water system and a septic bed may be constructed for the disposal of sewage. Otter Creek will be responsible to ensure proper maintenance of the septic system. The operations and maintenance building, septic system and water supply would be constructed and operated in accordance with all applicable (e.g., municipal and provincial) standards.

3.10 Stormwater

All site grading that has the potential to impact stormwater runoff will be done in accordance with applicable regulations and guidelines. Proper site grading will be employed during site preparation, construction and decommissioning of the Project. These measures will reduce the potential for runoff in the Project Boundary and will be further detailed in Project reports, as required.

3.11 Water-taking Activities

During the construction phase of the Project, water may be required to support turbine infrastructure construction (i.e., dust suppression and directional drilling fluids). Groundwater takings during the operations phase of the Project may be required to provide a non-potable water source for regular personnel requirements of full-time employees and general operational maintenance at the operations and maintenance building.

4. Description of Potential Environmental Effects

The following section provides a summary of the potential environmental effects that may result from the construction, operation and decommissioning of the Project. The following assessment of potential environmental effects is preliminary and has been completed in accordance with the requirements of O. Reg. 359/09, as amended, and the *Technical Guide to Renewable Energy Approvals* (MOECC, 2013). The description of environmental effects addresses the following environmental considerations:

- Cultural Heritage (Protected Properties, Archaeological and Heritage Resources);
- Natural Heritage;
- Impacts on Surface Water and Groundwater;
- Emissions to Air, including Odour and Dust;
- Noise;
- Local Interests, Land Use and Infrastructure;
- Other Resources;
- Public Health and Safety; and
- Areas Protected under Provincial Plans and Policies.

Each subsection provides a summary of existing conditions followed by a preliminary assessment of potential environmental effects, including mitigation measures, as a result of construction, operations and decommissioning of the Project.

The assessment of potential environmental effects will become more defined as the Project evolves. The Final PDR will include further information about the anticipated environmental effects of the Project as well as mitigation measures to avoid or reduce the significance of these project impacts on the environment.

4.1 Cultural Heritage (Protected Properties, Archaeological and Heritage Resources)

4.1.1 Existing Conditions

Archaeological assessments are being conducted to evaluate the potential for presence of archaeological resources in the Project Boundary. All archaeological work will be carried out in accordance with the Ontario Ministry of Tourism, Culture and Sport's (MTCS) *Standards and Guidelines for Consultant Archaeologists* (2011). The Stage 1 Archaeological Assessment will consist of an initial desktop review and is anticipated to be completed in the spring of 2016. The objective of the Stage 1 Archaeological Assessment is to gather information about the Project Boundary's geography, history, current land conditions and any previous archaeological research within the vicinity. This assessment will provide a description of all features of archaeological potential noted for the Project Boundary as well as a detailed evaluation of the archaeological potential.

The Stage 2 Archaeological Assessment will be conducted during the summer of 2016. This work consists of archaeologists completing "pedestrian surveys" on areas being considered for the Project Location within the Project Boundary. Pedestrian surveys involve an archaeological team walking ploughed fields at intervals to document any artifacts encountered.

It is anticipated that the Stage 1 and Stage 2 Archaeological Assessments will be submitted to the MTCS in the summer of 2016 for review and acceptance into the Ontario Public Register of Archaeological Reports. The Stage 1 and Stage 2 Archaeological Assessment will also be summarized in the Construction Plan Report and Final PDR.

A Heritage Assessment will also be conducted. The results of the assessment will be documented in a Heritage Assessment Report that will be submitted to the MTCS for review and acceptance. The Heritage Assessment Report will be summarized in the Construction Plan Report and Final PDR. To ensure that any questions or issues raised by the MTCS are addressed in a timely manner, periodic follow-up communications will be initiated by Otter Creek.

4.1.2 Potential Effects

Table 4-1 identifies potential effects on cultural heritage that might occur during the construction, operations and decommissioning phases of the Project. Once the final layout is confirmed and the archaeological and cultural heritage assessments are complete, a summary of site specific effects will be incorporated, along with any associated mitigation measures, into the Final PDR.

Table 4-1: Potential Effects to Cultural Heritage (Protected Properties, Archaeological and Heritage Resources

Cultural Heritage (Protected Properties, Archaeological and Heritage Resources)	
Potential Effects	**Potential Mitigation Measures**
Construction • Construction activities may affect archaeological resources if a Stage 1 Archaeological Assessment indicates that archaeological potential is present within the Project Boundary. • Built heritage resources and cultural heritage landscapes may be affected visually by construction activity. Built heritage resources may also be disturbed or displaced during construction; the effects from construction are anticipated to be short-term and localized. *Operation* • Built heritage resources and cultural heritage landscapes may be affected visually by the operation of the Project. *Decommissioning* • Built heritage resources and cultural heritage landscapes may be affected visually by decommissioning activity; the effects as a result of decommissioning are anticipated to be short-term and localized.	*Construction* • Conduct a Stage 2 Archaeological Assessment, if recommended following the completion of the Stage 1 Archaeological Assessment, to identify any archaeological resources that should be avoided prior to construction and, where required, implement any mitigation measures outlined in the report. • Conduct a Heritage Assessment to identify the effects of the Project on built heritage resources and cultural heritage landscapes and, where required, implement any mitigation measures outlined in the report. *Operation* • Implement any mitigation measures for the operations phase outlined in the Archaeological Assessments as well as the Heritage Assessment Report. *Decommissioning* • Implement any mitigation measures for the decommissioning phase outlined in the Archaeological Assessments as well as the Heritage Assessment Report.

4.2 Natural Heritage

4.2.1 Existing Conditions

The Natural Heritage Assessment (NHA) records review and site investigations will occur throughout the spring and summer of 2016. The following section outlines some of the existing conditions in the Project Boundary. Once complete, the results of the NHA will be included in the Final PDR.

All reporting will be completed in accordance with applicable natural heritage guidelines. This is anticipated to include *Natural Heritage Assessment Guide for Renewable Energy Projects, 2nd Edition* (Ontario Ministry of Natural Resources and Forestry (MNRF), 2012a), *Birds and Bird Habitats: Guidelines for Wind Power Projects* (MNRF, 2011a), and *Bats and Bat Habitats: Guidelines for Wind Power Projects* (MNRF, 2011b).

The NHA Report will identify the requirements that will be fulfilled as per O. Reg. 359/09, as amended. An Environmental Effects Monitoring Plan (EEMP) will be completed that describes the post-construction monitoring plan for bird and bat mortality and related mitigation and contingency measures if needed, as well as post-construction monitoring requirements for potential operational effects to identified significant habitat, in compliance with the MNRF requirements.

4.2.1.1 Wetlands / Area of Natural and Scientific Interest (ANSIs) and Vegetation Communities

Preliminary research has found that the Project Boundary is dominated by annual row crops and limited natural habitats such as woodlands and meadows. There are several woodlands within the boundaries of the Project Boundary. Available base mapping and data from the Natural Heritage Information Centre indicate that there are no known wetlands or ANSI within the Project Boundary (MNRF, 2015c). Natural areas, including woodlands, may have the potential to provide several types of Significant Wildlife Habitat (SWH), or may contain previously unidentified wetlands. AECOM will confirm if natural features within the Project Boundary contain wetlands or provide SWH during field investigations. Once the NHA is complete, the results will be incorporated into the Final PDR.

4.2.1.2 Birds

It is anticipated that terrestrial habitat assessments will be initiated in the summer of 2016. These assessments may require the need for Spring Bird Migration Surveys, Breeding Bird Surveys, Fall Bird Migration Surveys and Winter Bird Surveys. If required, these surveys will assess the temporal and spatial use of habitats within the Project Boundary by birds and will provide an evaluation of any potential effects that the Project may have on these habitats.

4.2.1.3 Bats

It is anticipated that bat surveys will be initiated in the summer of 2016 by first identifying natural features that are considered candidate significant bat habitat. If candidate significant bat habitat is found, visual and acoustic surveys for bats will be completed at these locations. From these findings, an effects assessment for any significant features within 120 m of the Project Location will be completed. Any additional turbine setbacks from bat habitats are then determined.

Bat surveys will be completed for the Project as per the MNRF's *Bats and Bat Habitats: Guidelines for Wind Power Projects* (MNRF, 2011a) and in conjunction with any requirements of the REA NHA.

4.2.2 Potential Effects

Table 4-2 identifies potential effects on natural heritage resources that could occur during the construction, operations and decommissioning phases of the Project. Once the final layout is confirmed, site specific effects will be assessed as part of the completion of the NHA and a summary will be incorporated, along with any associated mitigation measures, into the Final PDR.

Table 4-2: Potential Effects on Natural Heritage Resources

Natural Heritage Resources	
Potential Effects	**Potential Mitigation Measures**
Construction, Operations, and Decommissioning • Potential loss of habitat from clearing activities (clearing and grubbing) associated with construction laydown area, turbine foundations, access road construction, electrical distribution and crane walking paths. • Potential for increased erosion and sedimentation due to altered natural heritage features. • Potential increased risk of bird and bat mortality from presence of construction equipment and turbines located in flight paths.	*Construction, Operations and Decommissioning* • Complete site investigations to identify measures to mitigate the potential loss of birds and bats during construction, operations and decommissioning. • Prepare an Environmental Impact Study (EIS) Report in accordance with procedures established by MNRF to assess the effects of construction, operations and decommissioning on natural heritage resources if Project components are sited within the following setback distances from natural heritage features: ▪ Within 120 m of a provincially significant wetland; ▪ Within 120 m of a significant woodland, SWH, provincially significant life science ANSI; and, ▪ Within 50 m of a provincially significant earth science ANSI. • Minimize clearing requirements and overall area of disturbance by minimizing layout footprint. • Complete field studies to identify measures to mitigate effects to wildlife and its habitat during construction, operations and decommissioning. • Adjust construction timing on a site-specific basis according to recommended timing windows for terrestrial and aquatic species.

4.3 Surface Water and Groundwater

4.3.1 Existing Conditions

4.3.1.1 Surface Water

According to Section 1.1 of the O. Reg. 359/09, as amended, a water body is defined as:

> *"A lake, a permanent stream, an intermittent stream and a seepage area but does not include:*
> *a) grassed waterways;*
> *b) temporary channels for surface drainage, such as furrows or shallow channels that can be tilled and driven through;*
> *c) rock chutes and spillways;*
> *d) roadside ditches that do not contain a permanent or intermittent stream;*
> *e) temporary ponded areas that are normally farmed;*
> *f) dugout ponds; and*
> *g) artificial bodies of water intended for storage, treatment or recirculation of runoff from animal yards, manure storage facilities and sites and outdoor confinement areas."*

A preliminary review of available open GIS data from Land Information Ontario (LIO) (MNRF, 2010) and Municipality of Chatham-Kent's website (Zoning By-law Mapping, 2012) indicates the presence of agricultural drains, permanent streams, and the Sydenham River within the Project Boundary. These water resources may provide suitable habitat for fish and mussel species. A site investigation will be conducted to confirm the presence/absence and extent of water bodies in the vicinity of the proposed Project Location. This investigation will review general site conditions as well as representative watercourses including permanent water features.

All water body features will be appropriately documented, and assessed in the Water Assessment Report in accordance with O. Reg. 359/09, as amended, and the *Technical Guide to Renewable Energy Approvals* (MOECC, 2013).

4.3.1.2 Groundwater

Dewatering for the installation of wind turbine foundations has the potential to temporarily alter the quantity or the flow of groundwater to a natural feature (watercourses, wetlands, other features with seasonal inundation) or to local water wells. Pumping of groundwater from the foundation excavation and subsequent release to a watercourse also has the potential to introduce sediment to the watercourse and change watercourse hydrology and water temperature.

To ensure there are no effects resulting from construction or the long-term operation of Project on groundwater quality, quantity or movement, a hydrogeological assessment will be conducted in order to:

- Estimate the amount of water taking required during the construction phase; and
- Assess whether the long term presence of the wind turbine foundations and any associated buried services would alter or change shallow groundwater flow patterns to the detriment of local wells, or ecological features (wetlands or streams).

A desktop study will examine MOECC well records, geological mapping and the distribution of private wells. The analysis of estimated water taking and effects on local wells and/or ecological features will be included in the Construction Plan Report.

4.3.2 Potential Effects

Table 4-3 identifies potential effects on surface water and groundwater resources that could occur during the construction, operations and decommissioning phases of the Project. Once the final layout is confirmed, site specific effects will be assessed as part of the Water Assessment Report and hydrological assessment and a summary will be incorporated, along with any associated mitigation measures, into the Final PDR.

Table 4-3: Potential Impacts on Surface Water and Groundwater

Impacts on Surface Water and Groundwater	
Potential Effects	**Potential Mitigation Measures**
<u>*Construction and Decommissioning*</u> • Potential sedimentation, water quality impairment and/or water temperature changes from pumping of groundwater from the foundation excavation and subsequent release to a watercourse. • Dewatering for the installation of wind turbine foundations has the potential to temporarily alter the quantity or the flow of groundwater to a natural feature. • Potential sedimentation, water quality impairment and/or water temperature changes from site runoff, in-water works (open cut or trenchless watercourse crossing), road construction, culvert / bridge modification or construction and dewatering discharge to surface water bodies. • Potential impairment of fish habitat from site runoff following clearing of vegetation, in-water works, road construction, culvert / bridge modification or construction and dewatering discharge to surface water bodies. • Potential flooding and/or alteration of drainage from culvert / bridge modification or construction and in-water works. • Potential for hazardous material spills to water bodies from construction-related activities. <u>*Operations*</u> • Potential for hazardous material spills to water bodies from maintenance-related activities.	<u>*Construction, Operations and Decommissioning*</u> • Follow relevant policies, regulations and best management practices to minimize the direct and indirect adverse effects on surface water and groundwater. • Conduct a Water Bodies Assessment to identify the effects of the Project on surface water and implement mitigation measures outlined in the report. • Conduct a hydrogeological assessment to identify the effects of the Project on groundwater and implement mitigation measures outlined in the report.

4.4 Emissions to Air, including Odour and Dust

4.4.1 Existing Conditions

The Project Boundary is dominated by agricultural production activities and typical farm practices, which include the use of oversized machinery that are driven in fields as well as on rural, typically gravel, roadways. Periodic odours in rural areas from activities like the spreading of manure as well as increased dust particulate are considered to be normal nuisances associated with typical agricultural practices (Ontario Ministry of Agriculture, Food, and Rural Affairs, 2005).

4.4.2 Potential Effects

Table 4-4 identifies potential effects associated with emissions to air, including odour and dust that could occur during the construction, operations and decommissioning phases of the Project. Once the final layout is confirmed, site specific effects will be assessed and incorporated, along with any associated mitigation measures, into the Construction Plan Report, the Design and Operations Report and the Decommissioning Plan Report. A summary of the effects and mitigation measures from those reports will be provided in the final PDR.

Table 4-4: Emissions to Air, including Odour and Dust

Emissions to Air, including Odour and Dust	
Potential Effects	**Potential Mitigation Measures**
Construction, Operations, and Decommissioning	*Construction, Operations and Decommissioning*
• Potential for increased emissions of air contaminants, including but not limited to GHGs, as well as increased levels of dust and odour, associated with the use of equipment for the construction, operations and decommissioning of the Project.	• Follow Best Management Practices to minimize effects on the local community. Some potential mitigation measures may include: ▪ Implement a speed limit, which will lead to reduced disturbance of dust on paved and unpaved surfaces. ▪ Apply dust suppressants to unpaved areas (i.e., unpaved roads, storage piles), which may include the use of water. ▪ Stage land clearing and heavy construction activities to reduce the simultaneous operation of large dust generating equipment. ▪ Create a complaint response program, whereby complaints received from the public are recorded and investigated.

4.5 Sound

4.5.1 Existing Conditions

As mentioned in the above section, land use within the Project Boundary is primarily agricultural and ongoing activities on the properties likely support commercial farm operations. These practices include the operation of large agricultural machinery at off hours as well as increased traffic in the region relating to the hauling and storage of crops. Periodic increased sound associated with regular farm operations is considered to be a normal nuisance associated with typical agricultural practices (Ontario Ministry of Agriculture, Food, and Rural Affairs, 2005).

4.5.2 Potential Effects

Table 4-5 identifies the typical sound effects that could occur during the construction, operations and decommissioning phases of the Project. Once the final layout is confirmed, site specific effects will be assessed and incorporated, along with any associated mitigation measures, into the Construction Plan Report, the Design

and Operations Report and the Decommissioning Plan Report. A summary of the effects and mitigation measures from those reports will be provided in the final PDR.

Table 4-5: Potential Sound Effects

Sound	
Potential Effects	**Potential Mitigation Measures**
Construction • Potential for increased sound levels due to the operation of heavy equipment and increased road traffic. *Operations* • Potential for increased sound levels due to the aerodynamic sound generated from wind turbine blades, and mechanical sound associated with each turbine and from the transformer located at the substation. *Decommissioning* • Potential effects from decommissioning activities will likely be similar to those experienced during the construction phase of the Project.	*Construction* • Keep all equipment associated with the construction of the Project in good repair and ensure it complies with the sound emissions as specified in MOECC publication NPC-115. *Operations* • Develop a Project layout that complies with the requirements outlined in O. Reg. 359/09, as amended, and the MOECC's *Noise Guidelines for Wind Farms* (2016). • Keep all equipment associated with the operations of the Project in good repair and ensure it complies with the sound emissions as specified in MOECC publication NPC-115. *Decommissioning* • Keep all equipment associated with the decommissioning of the Project in good repair and ensure it complies with the sound emissions as specified in MOECC publication NPC-115.

4.6 Local Interests, Land Use and Infrastructure

4.6.1 Existing Conditions

Land Use

The Project is located within the single tier Municipality of Chatham-Kent, Ontario. Chatham-Kent's Official Plan (2016) and Zoning By-law (2015) show that land uses in the Project Boundary are predominantly designated and zoned for agricultural use. Other land uses within the area include non-farm residential uses on separate lots created through severances for farm retirement lots and surplus farm dwelling lots that are scattered throughout the Project Boundary in limited numbers.

There is no record of site contamination within the Project Boundary which was confirmed through a review of the MOECC's Records of Site Condition (MOECC, 2016.).

Land use within the Project Boundary will be confirmed as the Project evolves and through consultation with the Municipality of Chatham-Kent.

Provincial and Local Infrastructure

As part of the REA process, Otter Creek will consult with the Municipality of Chatham-Kent and MTO to determine what effects the Project might have on local services and infrastructure. Such issues may include, but are not limited to, effects to underground water and wastewater infrastructure, roads and traffic, emergency management and response, and building code requirements.

Adjacent Properties

A Property Line Setback Assessment will be prepared, if necessary, in accordance with Section 53 of O. Reg. 359/09, as amended. This section of the regulation requires the identification of any impacts to businesses, infrastructure, properties or land use activities resulting from a turbine location being proposed at a distance equal to or less than the hub height of the turbine from an adjacent property line.

Local Airport

The Chatham-Kent Municipal Airport is located approximately 44 kilometres (km) away from the southern extent of the Project Boundary. Consultation with the Chatham-Kent Municipal Airport will occur during the planning of the Project.

Conservation Areas

The Project Boundary is situated within the boundaries of St. Clair Region Conservation Authority (SCRCA). No conservation areas are located within the Project Boundary. Consultation with the SCRCA will occur throughout the planning and development stages of the Project and all regulations will be followed as identified in **Section 1.6** of this report.

Aboriginal or Treaty Interests

To ensure the treaty interests of First Nations communities are considered, Otter Creek will submit this document to MOECC in order to receive the "Aboriginal Community Consultation List". Once this list is received, the identified First Nations communities will be consulted as outlined in O. Reg. 359/09, as amended.

4.6.2 Potential Effects

Table 4-6 identifies potential effects on local interests, land use and infrastructure that could occur during the construction, operations and decommissioning phases of the Project. Once the final layout is confirmed, site specific effects will be assessed and incorporated, along with any associated mitigation measures, into the Construction Plan Report, the Design and Operations Report and the Decommissioning Plan Report. A summary of the effects and mitigation measures from those reports will be provided in the final PDR.

Table 4-6: Potential Effects on Land Use and Resources

Land Use and Local Interests	
Potential Effects	**Potential Mitigation Measures**
Construction, Operations and Decommissioning • Relocation of or damage to provincial and local infrastructure as a result of the Project. • Potential impact to land that is of interest to First Nations communities. • Potential disturbance to adjacent properties during construction if located in proximity to infrastructure associated with the Project.	*Construction, Operations and Decommissioning* • Consult with municipal and provincial agencies to determine potential effects on their infrastructure as well as appropriate mitigation measures to follow. • Develop a traffic management plan to minimize any effects associated with an increase in traffic. • Notify local First Nations communities (as identified by the MOECC) about the Project and discuss their level of interest in the Project moving forward.

4.7 Other Resources

4.7.1 Existing Conditions

A search for landfills, aggregate resources, forest resources and petroleum resources was undertaken based upon data from the municipality, MOECC and MNRF.

4.7.1.1 Landfills

MOECC's Large Landfill and Small Landfill Sites records (MOECC, 2014a and MOECC, 2014b) were used to confirm that there are no active landfills within the Project Boundary – the closest active landfill being approximately 46 km away. Therefore, no effects on landfills are anticipated.

4.7.1.2 Aggregate Resources

No aggregate pits or quarries have been identified through review of the MNRF's Pits and Quarries Online database tool (MNRF, 2015a). Therefore, no effects on landfills are anticipated.

4.7.1.3 Forest Resources

Based on the MNRF's Sustainable Forest Licences (SFL) database (MNRF, 2015b), there are no SFLs within the Project Boundary. Therefore, no effects on forest resources are anticipated.

4.7.1.4 Petroleum Resources

There is one active and several non-active petroleum wells located throughout the Project Boundary. Pipelines within the municipality pass through the Project Boundary from two locations, including:

- One pipeline runs north-south through the centre of the Project Boundary along the Kimball Road, and;
- Two pipelines run north-south along Mandaumin Road (one on either side of the road).

An assessment of petroleum resources will be conducted to determine the effects of the Project on these resources.

4.8 Public Health and Safety

4.8.1 Potential Effects

4.8.1.1 Structural Hazards

Any tall structure has the potential to collapse. There is also a limited potential for wind turbine blade detachment during severe weather conditions. Although both of these scenarios are highly unlikely, these types of failure could pose a hazard to public safety in the vicinity of the Project Location. In the unlikely event of structural collapse or blade detachment, equipment will fall within a very small diameter due to the weight of the wind turbine components. Wind turbine siting for the proposed Project will meet (at a minimum) the setback distances from roads (blade length plus 10 m) and residences (550 m) as outlined in O. Reg. 359/09, as amended,. These setback distances were designed to minimize the risk of injury from any potential, although unlikely, structural difficulties associated with wind turbines (Chief Medical Officer of Health (CMOH), 2010).

4.8.1.2 Ice Throw

Ice throw and ice shed refer to situations where ice may form on wind turbines during certain weather conditions and may be thrown or break loose and fall to the ground (CMOH, 2010). Wind turbines for the proposed Project will be located on private property and meet (at a minimum) the setback distances from non-participating residences (550 m) and roads (blade length plus 10 m) outlined in O. Reg. 359/09, as amended. During the operation of the Project, sensors located on the turbines will be able to detect ice build-up and turbines will be shut down during unsafe operating conditions.

4.8.2 Potential Effects

Table 4-7 identifies potential effects on Public Health and Safety that could occur during the construction, operations and decommissioning phases of the Project. Once the final layout is confirmed, site specific effects will be assessed and incorporated, along with any associated mitigation measures, into the Construction Plan Report, the Design and Operations Report and the Decommissioning Plan Report. A summary of the effects and mitigation measures from those reports will be provided in the final PDR.

Table 4-7: Potential Effects on Public Health and Safety

Public Health and Safety	
Potential Effects	**Potential Mitigation Measures**
Construction, Operations and Decommissioning • Potential for wind turbine blade detachment as well as structure collapse during severe weather conditions. • Potential for formation of ice on turbine blades which may be thrown or break loose and fall to the ground.	*Construction, Operations and Decommissioning* • Adhere to setback distances from receptors (550 m) and roads (blade length plus 10 m) as defined in O. Reg. 359/09, as amended, in order to reduce risks associated with ice throw and structural failure. • Conduct a Property Line Setback Assessment to ensure turbines are located a sufficient distance from neighbouring businesses, infrastructure, or land use activities as defined in O. Reg. 359/09, as amended.

4.9 Areas Protected under Provincial Plans and Policies

The REA requires a determination as to whether the Project is being proposed in any of the following protected or plan areas:

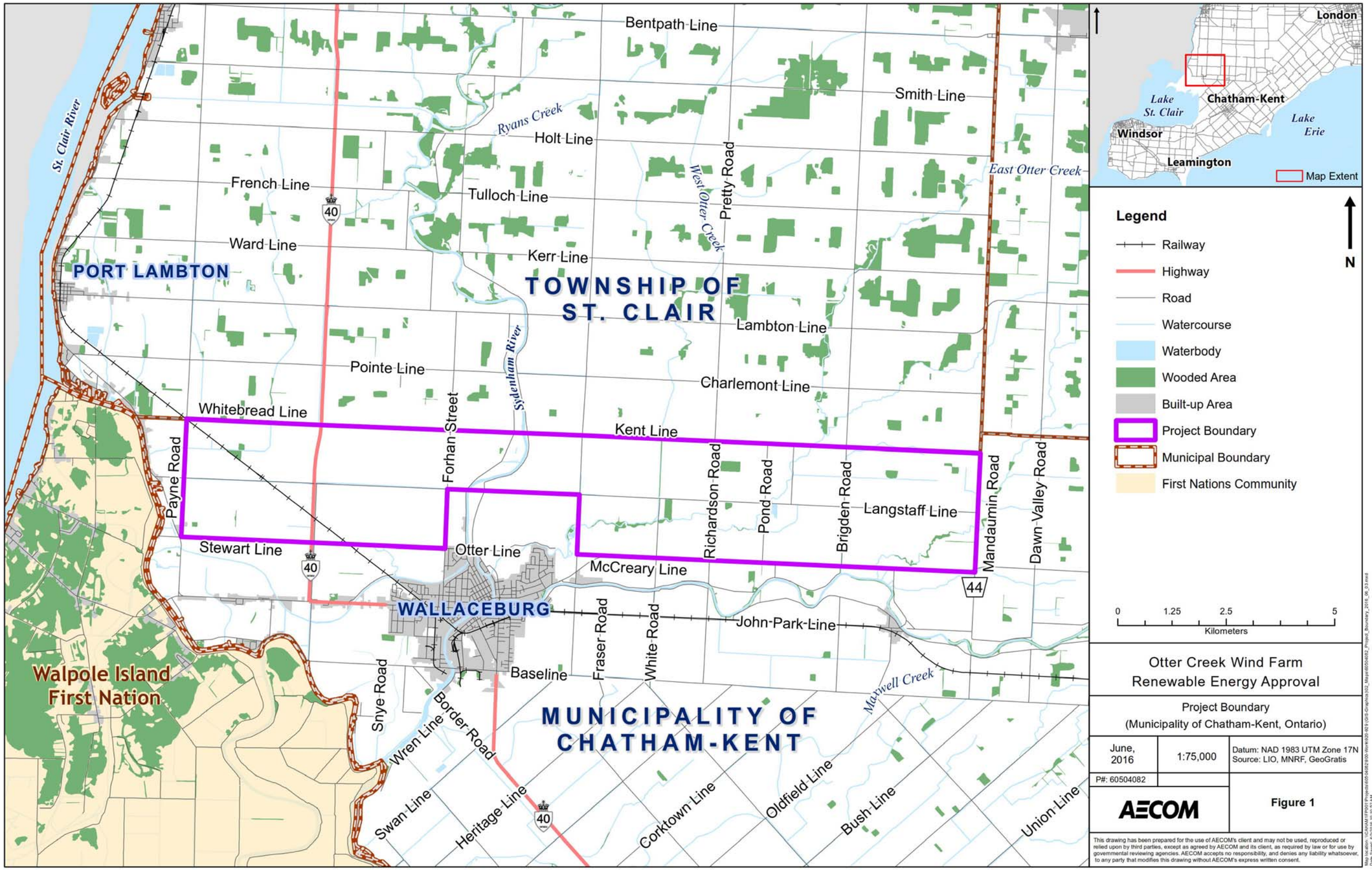
- Protected Countryside or Natural Heritage Systems in the Greenbelt Plan;
- Oak Ridges Moraine Conservation Plan Areas;
- Niagara Escarpment Plan Area; or
- Lake Simcoe Watershed Plan Area.

The Project is not proposed in an area within the jurisdiction of the plans noted above. As such, there will be no effects on these areas as a result of the Project.

5. Summary and Conclusions

The purpose of the draft PDR is to introduce the Project to the community and provide stakeholders with preliminary information regarding the Project. Field work and data collection will be undertaken to determine the potential effects of this Project during the construction, operations, and decommissioning phases. Mitigation measures to manage these potential effects will be identified and will include proposed monitoring and contingency plans which will be implemented to ensure effects are minimized.

Figure 1: Project Boundary



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