



Samsung Renewable Energy Inc. and
Pattern Energy

Executive Summary Report
For
South Kent Wind Project



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May 2, 2012

Project Report

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**Samsung Renewable Energy Inc. and Pattern Energy
South Kent Wind Project****Executive Summary****Table of Contents**

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1. Introduction

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (the “Project”), consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads, construction and turn around areas, and buried and/or overhead collection/transmission lines. The collection/transmission line will include approximately 34 km of 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5 kV to 230 kV to connect to the Chatham Switching Station (SS). The Project Area is located within the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgeway to the west and east, respectively.

Construction of the Project will commence once the Renewable Energy Approval (“REA”) has been obtained. The construction period is estimated to be approximately fifteen to eighteen months in duration, with Project commissioning anticipated in the fourth quarter of 2013. It is anticipated that the Project will be operational for at least 20 years, after which it may be decommissioned if no arrangement for further use is determined.

The Proponent has commenced with the Renewable Energy Approval (REA) process as described in Ontario Regulation 359/09, as amended under O. Reg. 521/10 (January 2011)) under the *Environmental Protection Act* (herein referred to as O. Reg. 359/09). A brief overview of the REA process is provided in Section 2 below.

The Proponent has retained Hatch Ltd. (Hatch) and BowArk Energy Ltd. (BowArk) to assist the Proponent in meeting the REA requirements. The Project contact information is as follows:

Keith Knudsen Project Representative BowArk Energy Ltd. Suite 4301, 400 3rd Ave SW Calgary, Alberta T2P 4H2 Tel: 403-264-2259 Fax: 403-261-1708 kknudsen@bowark.com	Kimberley Arnold Environmental Lead – Energy Hatch Ltd. 4342 Queen Street, Suite 500 Niagara Falls, ON L2E 7J7 Tel: 905-374-0701, Ext. 5318 Fax: 905-374-1157 karnold@hatch.ca
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On February 21, 2012 and April 2012, Pattern Energy provided the Ontario Ministry of the Environment with proposed Project modifications. These include:

- 38 turbines have been moved within the parcel, and the collection lines and access roads have been moved accordingly (P003, P012, P022, P030, P031, P044, P053, P060, P062, P063, P064, P067, P069, P082, P093, P098, P101, P102, P104, P107, P115, P118, P120, P121, P125, P133, P139, P148, P149, P152, P154, P155, P162, P163, P166, P167, P171, P176)
- 6 turbines have been removed (P047, P048, P103, P105, P146 and P165) along with respective collection lines and access roads
- Sattern Substation has moved 62 m within the parcel.

The information in this Executive Summary incorporates the proposed Project modifications.

1.1 Project Location

The Project Area is located within the Municipality of Chatham-Kent in southwestern Ontario. (Figures 1.1, 1.2 and 1.3) Further information regarding the Project can be found on-line at: www.southkentwind.ca.

1.2 Project Proponent

1.2.1 Pattern Energy Group

Pattern Energy Group (Pattern) is one of North America's leading independent wind and transmission companies whose mission is to provide their customers with clean, renewable energy, achieved by developing, constructing, owning and operating projects that are built for lasting success.

Commitment to community is one of Pattern's core values. Pattern is dedicated to building strong relationships with our employees, landowners, communities, business partners, and customers and is also committed to the environment, making the effort and time to understand and minimize our projects' impact on local habitat and wildlife.

Pattern works with landowners to help them transform their land's renewable resource into a steady revenue stream. Pattern is a strong supporter of the local communities they work in, and strive to be a good corporate citizen and neighbour. Skilled contractors and vendors help to build Pattern's projects, frequently partnering with local development partners who bring expertise and knowledge of the area. At the end of this process are the customers who purchase the energy produced by the Projects. All are critical partners in our mission to provide consumers with clean, renewable energy.

Pattern has offices in San Francisco, Houston and Toronto. Pattern recently opened an office for the project in Blenheim to ensure frequent and sustained interaction with the community.

1.2.2 Samsung Renewable Energy Inc.

Samsung is comprised of many companies, one of which is Samsung C&T. It is Samsung C&T's two (2) business divisions – Trading & Investment Group and Engineering and Construction Group with its partners – that will be building and operating the wind and solar power projects here in Ontario. Samsung has logged many milestones over the years in preparation for such an opportunity. Among them is launching Korea's first solar energy project.

In a changing world, Samsung's mission remains constant: To create superior products and services, thereby contributing to a better global society. This vision has helped Samsung C&T emerge as a leading player in the new and alternative energy sector, offering solutions to customers worldwide through a network of over 100 offices in 44 countries.

1.3 Project Benefits

1.3.1 Green Energy Act & Feed-in-Tariff (FIT) Program

The Ontario Government passed the "Green Energy and Green Economy Act" into law on May 14, 2009. The Green Energy and Green Economy Act is expected to boost investment in renewable energy projects and increase conservation, creating green jobs and economic growth.

The Ontario Government lists the following objectives for the Ontario Green Energy and Green Economy Act:

- Spark growth in clean and renewable sources of energy such as solar, wind, hydro, biomass and biogas in Ontario.
- Create the potential for savings and better managed household energy expenditures through a series of conservation measures.
- Create 50 000 jobs for Ontarians in its first 3 years.

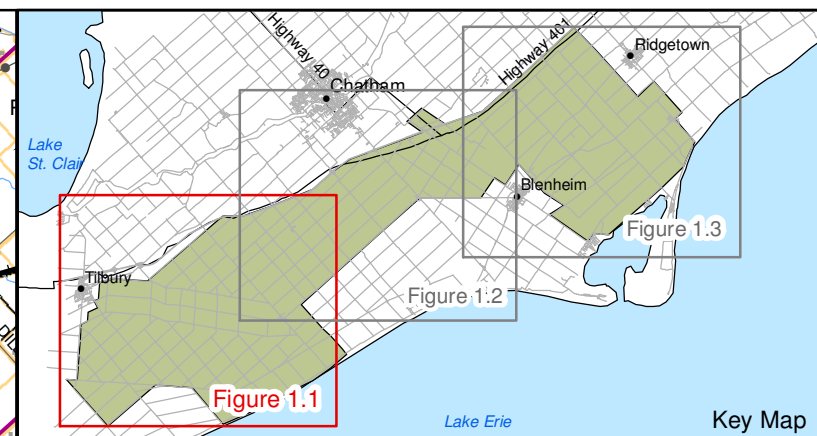
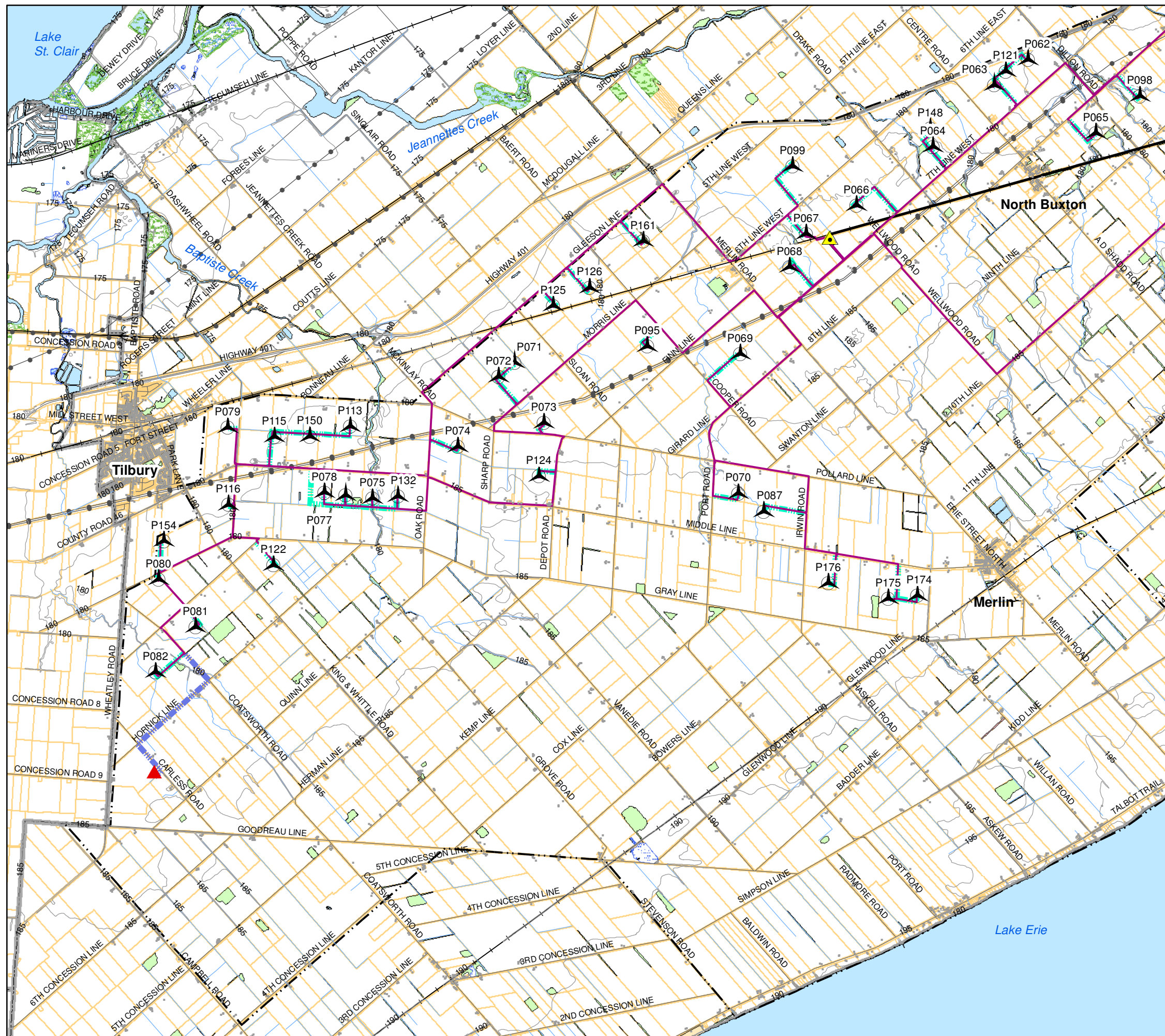
1.3.2 Advantages of Wind Energy

Wind power has a multitude of advantages compared to fossil fuel powered energy plants. Most simplistically, the fuel is free, inexhaustible and clean. As many fossil fuels are expected to increase in price, having wind energy on the grid at a set price will give greater stability to future energy prices. Another key benefit is the lack of polluting air emissions. With wind energy there are no air emissions; this ensures that the surrounding local community will not have to live with poor air quality or noxious odours. In addition, the wind turbines are comprised of safe, common materials that will not affect the lands on which they are located, allowing for continuing land use and easy remediation upon decommissioning, unlike the vast majority of power plants.

1.4 Project Description

The Project Area is located within the Municipality of Chatham-Kent in southwestern Ontario (see Figures 1.1 to 1.3)

The Project is proposed to be up to 270 MW in size, consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads, construction and turn around areas, and buried and/or overhead collection/transmission lines. The collection/transmission line will include approximately 34 km of 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5kV to 230 kV to connect to the Chatham Switching Station (SS).



Legend

- Building
- Roads
- Rail
- Hydro Line
- Topographic Contour (5m Interval)
- Intermittent Watercourse
- Watercourse
- Parcel
- Project Area
- Waterbody
- Unevaluated Wetland
- Significant Wetland
- Wooded Area
- Project Components**
- Proposed Turbine
- MET Tower
- Substation
- 230 kV Distribution Line
- Access Road
- Cabling
- Fibre Optic Cable

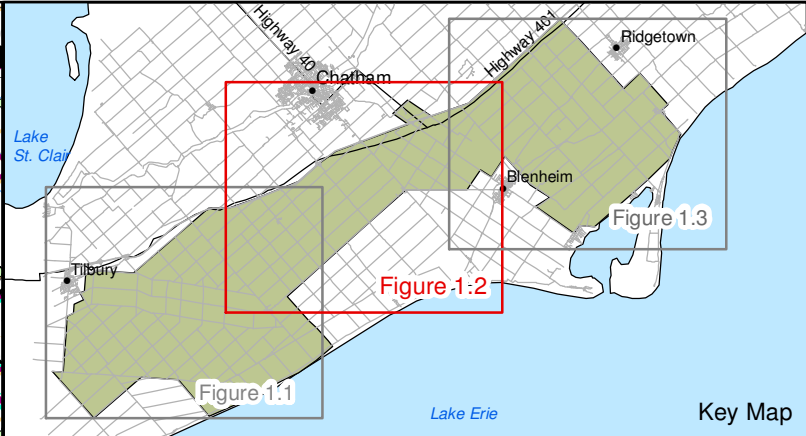
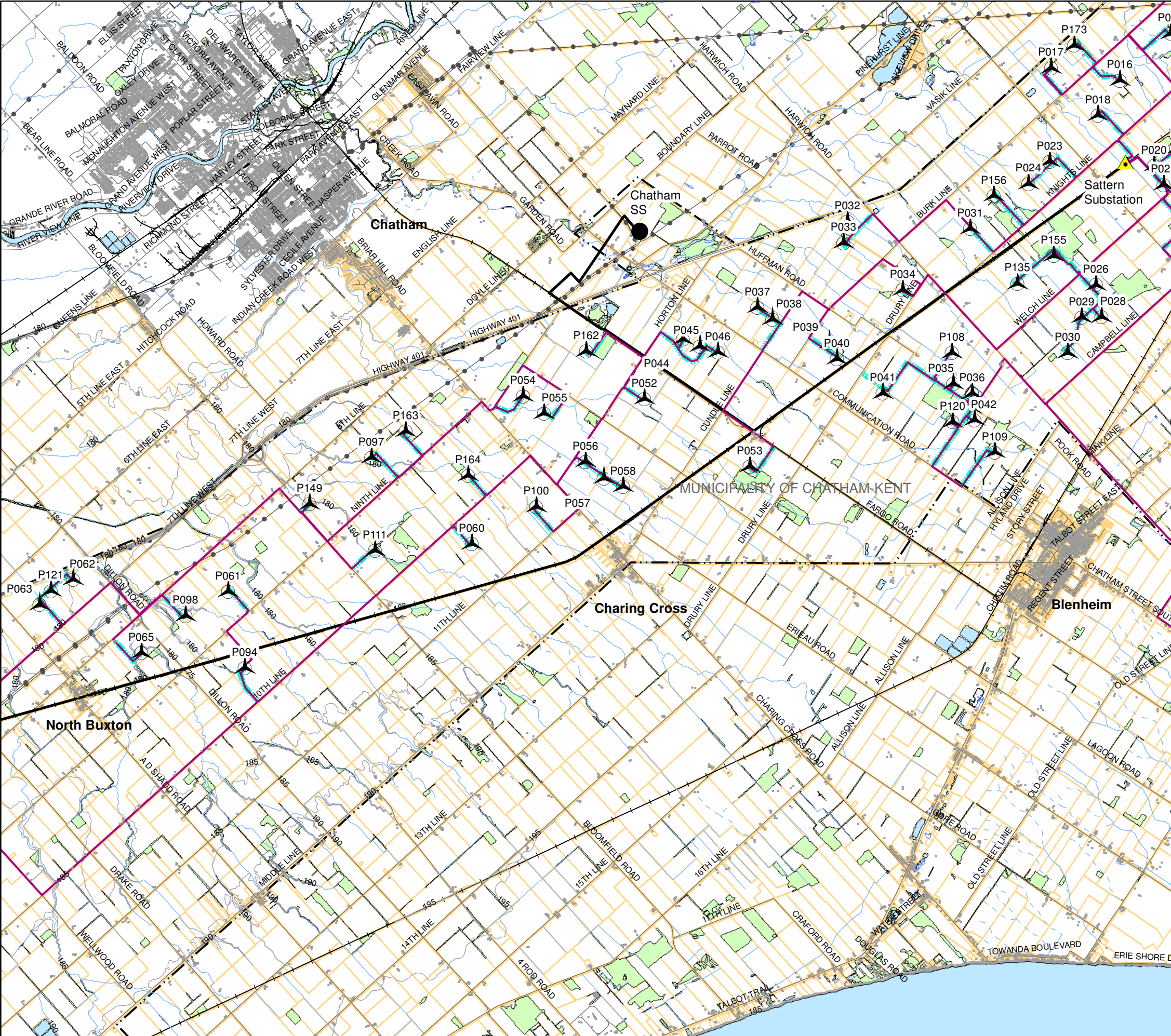
0 0.5 1 2 Km
1:75,000



Notes:
1. Base and environmental data downloaded from LIO with permission.
2. Spatial referencing UTM NAD83.
3. Parcel data obtained from Teranet, Feb. 2011.

Figure 1.1
Pattern Wind Energy Development Inc.
South Kent Wind Project
Project Location (Part A)

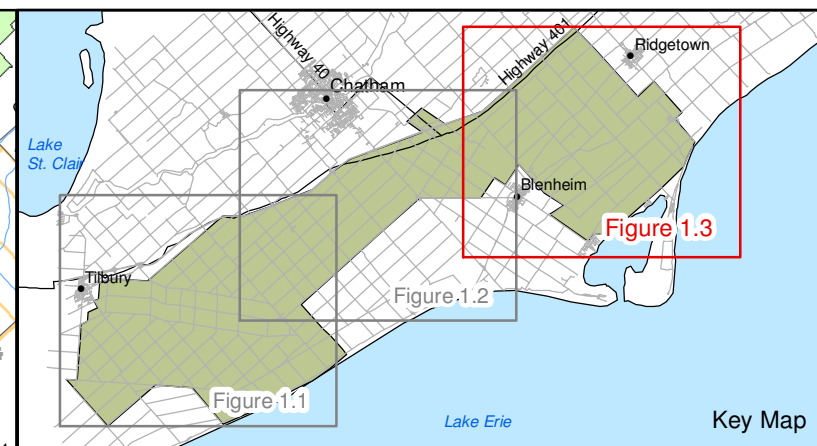
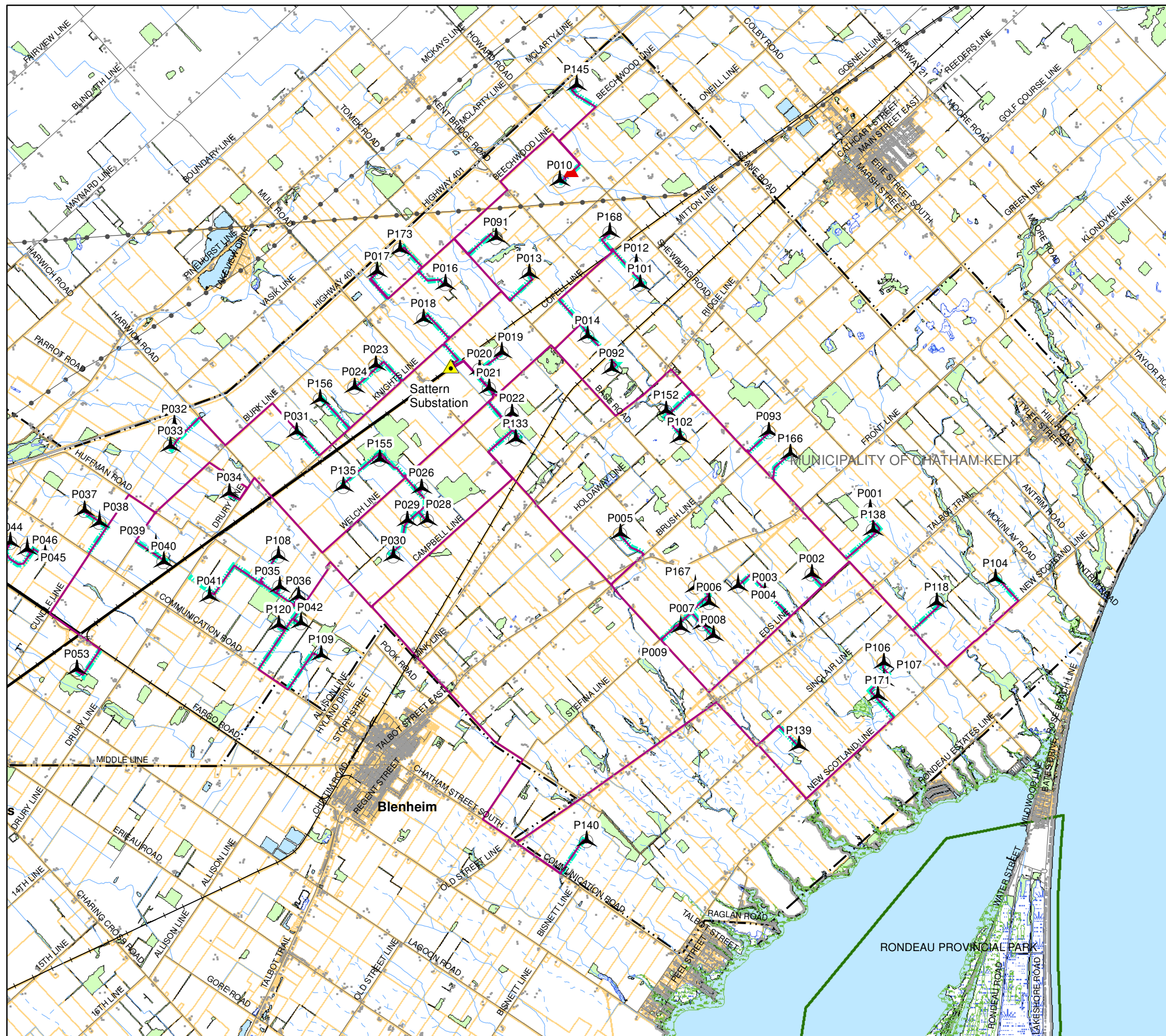




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1:75,000



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3. Parcel data obtained from Teranet, Feb. 2011.

2. REA Process

O. Reg. 359/09 identifies the REA requirements for renewable energy projects in Ontario. The Project is considered to be a Class 4 facility and therefore requires a REA.

The O. Reg. 359/09 requires the preparation of reports to be reviewed by the agencies, public, Aboriginal communities and municipality. These documents include:

- Project Description Report
- Construction Plan Report
- Design and Operations Report
- Decommissioning Plan Report
- Noise Assessment Report
- Natural Heritage Records Review, Site Investigations, Evaluation of Significance and Environmental Impact Study Reports
- Water Body Records Review, Site Investigation and Environmental Impact Study Reports
- Stage 1 and 2 Archaeological Assessment Reports
- Wind Turbine Specifications Report.

As per Sections 16 and 17 of the O. Reg. 359/09, these draft documents are to be made available to the Aboriginal communities greater than 60 days from the final Public Meeting and to the public at least 60 days from the final Public Meeting. In addition, a summary of each document is to be prepared and sent to the Aboriginal communities.

In addition, a Letter of Confirmation is to be obtained from the Ontario Ministry of Natural Resources based on their review of the Natural Heritage Reports and is to be provided to the same groups aforementioned, at the same time as the draft documents (contained in Appendix P). Similarly, a Letter of Comment is to be obtained from the Ontario Ministry of Tourism, Culture and Sport based on their review of the Stage 1 and 2 Archaeological Assessment Report and provided to the same groups and at the same time as the draft documents (contained in Appendix Q).

Also, as per section 19 and 20 of O. Reg. 359/09, a determination is to be made as to whether or not a protect property or heritage resource is located on or abutting the Project location and whether an assessment is required. The information related to the determination is contained in Appendix R.

Therefore, this package has been prepared to meet these requirements and the reports as listed above are contained within.

O. Reg. 359/09 also details the required activities and reports to be completed and submitted in order to obtain the REA. The activities include Aboriginal, public, municipal and agency consultation in order to provide information on the Project to these groups and obtain feedback. The Consultation Report has been submitted to the Ontario Ministry of the Environment (MOE) as part of the REA application.

2.1 Guide to Reviewing Project Reports

O. Reg. 359/09 requires that the REA Reports (with the exception of the Consultation Report) be made available for Aboriginal and public review at least 60 days in advance of the final public meeting for the Project. For assistance in review, a brief description of the purpose of each of the REA Reports is provided in Table 2.1. This table also provides a logical progression in which reports should be read to form a complete understanding of the Project and its potential environmental implications.

Table 2.1 Report Name and Purpose

Report No.	Report Name	Purpose
1	Project Description Report	Summarizes Project location, construction and operational activities, potential environmental effects and mitigation, and social and environmental benefits.
2	Construction Plan Report	Provides details on the construction activities, timelines, materials, temporary uses of land and waste materials generated and environmental effects, mitigation and monitoring during construction
3	Design and Operations Report	Provides the site layout plan, Project components, operations and maintenance activities, communications and emergency response plan, environmental effects monitoring plan and property line setback assessment information.
4	Decommissioning Plan Report	Provides the activities to be undertaken during decommissioning and restoring the Project site
5A	Natural Heritage Records Review Report	Provides information from existing documentation on natural heritage features including woodlots, valleylands, wetlands, Areas of Natural and Scientific Interest and wildlife habitat
5B	Natural Heritage Site Investigations Report	Documents the results of the site investigations to identify and confirm natural heritage features within 120 m of the Project
5C	Natural Heritage Evaluation of Significance Report	Evaluates the significance of any natural heritage features located within 120 m of the Project
5D	Natural Heritage Environmental Impact Study	Identifies potential adverse environmental effects on significant natural heritage features, proposes mitigation measures to prevent or minimize adverse effects and provides monitoring program
6A	Water Body Records Review Report	Provides information from existing documentation on waterbodies including lakes, permanent and intermittent streams and groundwater seepage areas
6B	Water Body Site Investigation Report	Documents the results of the site investigations to identify and confirm water body features within 120 m of the Project.
6C	Water Body Environmental Impact Study	Identifies potential adverse environmental effects on waterbodies, proposes mitigation measures to prevent or minimize adverse effects and provides monitoring program
7A	Stage 1 Archaeological Assessment Report	Documents the results of the Stage 1 assessment which is a desktop study identifying any archaeological potential

Report No.	Report Name	Purpose
7B	Stage 2 Archaeological Assessment Report	Documents the results of the Stage 2 assessment which is a site investigation confirming the archaeological potential.
7C	Additional Stage 2 Property Assessment (Archaeology) Report	Documents the result of the additional Stage 2 assessment which is a site investigation confirming the archaeological potential.
8	Noise Study Report	Documents the results of noise modeling to identify noise emissions levels at nearby sensitive receptors and mitigation requirements to meet MOE noise emissions guidelines
9	Wind Turbine Specification Report	Provides information on the turbine specifications.
10	Heritage Assessment Report	Documents the heritage resources in the area of the Project and the potential effects.

2.2 Report Summaries

O. Reg. 359/09 [Section 17(1)(3)] requires that a summary of the REA reports be provided to the Aboriginal communities. Table 2.2 provides the location of the summaries in the Appendices.

Table 2.2 Appendices of Project Report Summaries

Appendix No.	Project Report Summary
Appendix A	Project Description Report Summary
Appendix B	Construction Plan Report Summary
Appendix C	Design and Operations Report Summary
Appendix D	Decommissioning Plan Report Summary
Appendix E	Natural Heritage Records Review Summary
Appendix F	Natural Heritage Site Investigation Summary
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Appendix O	Wind Turbine Specifications Report Summary
Appendix P	MNR Letter of Confirmation
Appendix Q	MTC Letter of Confirmation

Appendix No.	Project Report Summary
Appendix R	Protected Properties and Heritage Resources Report
Appendix S	Additional Stage 2 Property Assessment (Archaeology) Report Summary
Appendix T	Heritage Assessment Report Summary

3. Comments and Next Steps

If you have any questions or comments regarding the information contained in the REA Reports and the proposed Project modifications, please contact Ms. Arnold either by phone, email, fax or letter. A Consultation Report has been prepared identifying all comments received and how each comment has been addressed, and where necessary, how the reports have been changed as a result. A copy of the Consultation Report can be found on the Project website: www.southkentwind.ca.

The REA Application package has been submitted to the MOE for review and MOE has deemed the Application completed. The MOE has posted a notice on the Environmental Registry to notify the public on the Project modifications. Within the six month service guarantee period, starting February 7, 2012, MOE will render its decision. If MOE approves the Project, MOE's decision will be posted on the Environmental Registry for a 15-day comment period. Provided no appeal requests are received, the Project will commence, subject to obtaining any other permits and approvals that may be required for the Project.

Appendix A

Project Description Report Summary

Project Report - Summary

April 25, 2012

**Samsung Renewable Energy Inc. and Pattern Energy
South Kent Wind Project****Summary
Project Description Report****1. Introduction**

The Project Description Report (PDR) has been prepared in accordance with Ontario Regulation 359/09 09 (as amended under O. Reg. 521/10 (January 2011) herein referred to as "O. Reg. 359/09") under the *Environmental Protection Act* and with Technical Bulletin One – Guidance for Preparing the Project Description Report (MOE 2010).

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the "Proponent") are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (the "Project"), consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads, construction and turn around areas, and buried and/or overhead collection/transmission lines. The collection/transmission line will include approximately 34 km of 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5 kV to 230 kV to connect to the Chatham Switching Station (SS). The Project Area is located within the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively. Further information regarding the Project can be found on-line at: www.southkentwind.ca.

Section 13, Table 1 of the REA Regulation requires proponents of Class 4 wind projects to prepare a Project Description Report. The Project Description Report was prepared in accordance with the Ministry of the Environment's *Technical Bulletin Four: Guidance for Preparing Project Description Report*

2. Project Details

The following information satisfies the requirements of Table 1 to O. Reg. 359/09 and Technical Bulletin One – Guidance for Preparing the Project Description Report (MOE 2010). Further details on the design of the Project are provided in the Construction Plan Report, Design and Operations Report and the Decommissioning Plan Report.

The proposed Project is a renewable energy generation facility which will use wind turbine generators to generate electricity from wind. Approximately 127 Siemens SWT – 2.3-101 (2.221 MW, 2.126 MW and 1.903 MW) turbines. These turbines have a blade length of 49 m for a

rotor diameter of 101 m. The tower of the wind turbine is composed of three (3) sections and totals 99.5 m in height, with a maximum height of 150 m including the blade. Each turbine will be mounted on a concrete foundation with a transformer, located outside of the tower, at its base. Electricity generated by the wind turbine generators will be stepped-up (via transformer at the base of the turbine) to a 34.5 kV collector systems prior to being connected to the 230 kV transmission system (via two (2) substations). All necessary permits will be obtained.

It is anticipated that the construction will commence in Spring 2012 and will take 15 to 18 months to complete, depending on time of year and various other factors. The Project will be located on privately owned land where the current land use for most of the Project location is agricultural. Project activities during construction will include site preparation, access road construction (including installation of ditches and culverts, where necessary), installation of support structures, construction of collector system and two (2) substations, erection of transmission line.

The Project will operate year round and generate electricity if wind conditions are suitable. The amount of power generated will depend on daily weather conditions. The Project will be operated remotely and therefore no employees will be on-site with the exception of maintenance and inspections. Routine maintenance is generally scheduled twice per year per turbine with more significant tasks planned 5, 10, and 15 years into the Projects operation.

A 20- to 25-yr lifespan is typically anticipated for the Project after which the Project will be decommissioned or refurbished depending on market conditions and/or technological changes. Decommissioning will involve the removal of Project components, other materials, and the road network from the site with the fields being returned to their original condition, prior to the Project, at the discretion of the landowner.

Permits, licenses and authorizations, in addition to the REA, may be required for the Project to proceed and the responsible government agency will be consulted to ascertain the need for the permits well in advance of the initiation of construction.

3. Potential Negative Environmental Effects

Negative environmental effects may occur as a result of construction, operation and decommissioning of the Project. Environmental features and the potential environmental effect of the Project on the environmental features are summarized in Table 2.1 in the PDR. The residual effects column provides the anticipated effects after mitigation measures have been incorporated. Environmental features and the potential effects on the environment were determined through a review of the Environmental Screening Reports previously completed for portions of the Project with additional field investigations and analysis conducted for in Fall 2010 and Spring/Summer 2011 to fulfil the requirements of the O. Reg. 359/09. The environmental features discussed in relation to the potential affects of the Project on these features include physiography/topography, soils, surface water, groundwater, aquatic habitats and biota, Areas of Natural and Scientific Interest (ANSI), wetlands, vegetation, woodlands, valleylands, terrestrial wildlife/wildlife habitat (including Species at Risk), air quality, land use, radio-communication, radar and seismoacoustic systems, archaeological and cultural heritage resources, sound levels, visual landscape, community safety, and waste management and disposal sites

4. Aboriginal Consultation

Aboriginal consultation was initiated with the following communities based on a Ministry of Environment letter entitled Director's Aboriginal Communities List – South Kent Wind Project dated 23 September 2010. The Aboriginal communities include:

- Bkejwanong Territory (Walpole Island First Nation)
- Aamjiwnaang First Nation
- Chippewas of the Thames First Nation
- Chippewas of Kettle and Stony Point
- Caldwell First Nation
- Oneida Nation of the Thames
- Delaware Nation (Moravian of the Thames)
- Munsee-Delaware First Nation
- Six Nations of the Grand River (Part) 40
- Six Nations of the Grand River (Haudenosaunee Confederacy)
- Wahta Mohawks
- Mohawks of the Bay of Quinte
- Mohawks of Akwesasne (Part) 59.

To date a Project Notice, Notices of Public Information Centres and Project Reports have been provided to these Aboriginal communities. All Aboriginal communities have been contacted and discussions with several of the Aboriginal communities to identify potential opportunities to participate in the Project are ongoing. Notifications have also been provided to the Aboriginal communities in advance of the initiation of the Stage 3 and Stage 4 archaeological field studies to assess their interest for involvement. All notices and reports will be provided to the communities as per O. Reg. 359/09.

5. Project Location Map

Three (3) unbound, legible and reproducible Project location maps (Figures 1.1, 1.2 and 1.3 in the report) are provided with the PDR.

Appendix B

Construction Plan Report Summary

Project Report – Summary

April 25, 2012

**Samsung Renewable Energy Inc. and Pattern Energy
South Kent Wind Project****Summary****Construction Plan Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) (as amended under O. Reg. 521/10 (January 2011)) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Construction Plan Report for the South Kent Wind Farm (Hatch Ltd., 2010).

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (the “Project”), consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads, construction and turn around areas, and buried and/or overhead collection/transmission lines. The collection/transmission line will include approximately 34 km of 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5 kV to 230 kV to connect to the Chatham Switching Station (SS). The Project Area is located within the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgeway to the west and east, respectively. Further information regarding the Project can be found on-line at: www.southkentwind.ca.

Section 13, Table 1 of the REA Regulation requires proponents of Class 4 wind projects to prepare a Construction Plan Report. The Construction Plan Report was prepared in accordance with the Ministry of the Environment’s *Technical Bulletin Three: Guidance for Preparing the Construction Plan Report*.

2. Construction

The construction of the facility will be conducted in four phases:

- Phase 1 – Site Preparation
- Phase 2 – Construction and Installation of Plant
- Phase 3 – Testing and Commissioning
- Phase 4 – Site Restoration

Construction of the Project is scheduled to start in Spring 2012 (after the REA is obtained) and have a duration of approximately fifteen to eighteen months.

2.1 Phase 1 – Site Preparation

Site preparation refers to all necessary activities prior to the construction of foundations, substation, and installation and erection of the wind turbines. It includes surveying/staking, geotechnical investigations, site clearing and grading, installation of access roads, crane pads and laydown areas, and temporary facilities.

2.2 Phase 2 – Construction and Installation of the Project

Construction and installation of the Project will involve:

- Installation of foundations for electrical equipment, substation, oil containment basins and wind turbines
- Trenches for cable and instrument control
- Final Grading
- Transport of equipment
- Wind turbine installation
- Substations and electrical system installation.

2.3 Phase 3 – Testing and Commissioning

Testing and commissioning will be performed on the installation prior to start up and connection to the Hydro One transmission systems. Wind turbines, collection systems, and substations will be checked for system continuity, reliability, and performance standards. If problems or issues are identified, modifications will be made prior to start up.

2.4 Phase 4 – Site Restoration

Site restoration will be applicable for the entire Project location. The main objective will be to re-instate the area to the original pre-construction condition, such as the ecosystem, vegetation, and drainage. All construction material, equipment, temporary facilities, and waste will be removed from the site. Topsoil will be backfilled where required, including landscaping to achieve proper drainage. Re-vegetation will include planting of native plants and hydro-seeding where required.

3. Environmental Effects and Proposed Mitigation

Environmental effects and proposed mitigation measures are summarized Table 3.1.

Table 3.1 Summary of Environmental Effects and Proposed Mitigation Measures

Environmental Feature	Anticipated Impact	Proposed Mitigation
Soils	Negative effects on soil quality, loss of soils due to erosion and soil compaction.	Erosion and sediment control (ESC) plan to be implemented containing measures to control and prevent erosion, and the loosening of soil if required.
Groundwater	<p>Pumping of groundwater could lower groundwater table and impact local wells.</p> <p>Spills could occur impacting groundwater quality.</p>	<p>Limited impacts due to the duration of pumping (e.g. only during excavations if they reach the groundwater table). Pumped water will be filtered. No groundwater is expected to be used during construction activities.</p> <p>Numerous spill prevention and mitigation measures are provided to minimize potential for a spill and impacts from the spill should one occur.</p>
Surface Water Quality	Impacted by erosion/sedimentation of excavated or exposed soils, erosion cause by increase runoff from impervious or less pervious areas, or deposition of fugitive dust.	ESC plan, spill prevention and response plan, dust suppression, engineered control instructions will mitigate all impacts.
Aquatic Habitat and Biota	<p>Limited impacts, as a 30 m setback is applied to all watercourses and no instream work will occur unless a water crossing is required.</p> <p>Spills could occur impacting surface water quality and biota.</p>	<p>No instream work will occur as a result of the 30 m setback with the use of bailey bridges as water crossings which span the watercourse. Where culverts are required, best management practices in accordance with the agencies will be completed to minimize environmental impacts.</p> <p>Numerous spill prevention and mitigation measures are provided to minimize potential for a spill and impacts from the spill should one occur.</p>
Vegetation	<p>Minor removal of vegetation and trees from hedgerows and woodlots. Dust deposition and spills could also impact vegetation.</p> <p>Spills could occur impacting vegetation.</p>	<p>In order to minimize potential losses from surrounding vegetation communities, areas where clearing is required will be demarcated and workers will be instructed not to work outside these areas.</p> <p>Numerous spill prevention and mitigation measures are provided to minimize potential for a spill and impacts from the spill should one occur.</p>

Environmental Feature	Anticipated Impact	Proposed Mitigation
Wildlife	Impacts to wildlife occur as a result of loss of habitat, disturbances from construction activities, or incidental mortality as a result of collisions with construction vehicles.	In order to minimize the potential for habitat loss, work areas will be demarcated in order to ensure that the contractor does not work beyond these bounds. Vegetation ground cover will be selected in consideration of promotion of wildlife features. In order to minimize potential for disturbance or incidental take of wildlife, construction activities that will impact wildlife will be timed outside of the breeding bird period (typically Mar through July), wherever possible. Nest surveys will be conducted by a trained biologist if avoidance during this time is not possible.
Air Quality and Noise	<p>Dust may become airborne from vehicular traffic, heavy machinery use, and soil moving activities. Dust in the air can cause impacts on human health as a result of irritation to eyes, lungs, etc, impacts on surface water quality if the dust is deposited into waterbodies, impacts on vegetation if heavy dust loads build up.</p> <p>Construction and installation activities have the potential to result in increased noise levels on and within the vicinity of the Project location.</p> <p>Air quality may also be impacted due to equipment emissions.</p>	<p>Mitigation measures will include, as required, use of dust suppression (i.e. water) on exposed areas including access roads, stockpiles and work/laydown areas as necessary, hard surfacing (addition of coarse rock) on access roads or other high-traffic work areas, phased construction where possible, limit the amount of time soils are exposed, avoid earth-moving works during excessively windy weather. Temporary stockpiles will be worked on from the downwind side, stockpiles will be stabilized to prevent and reduce erosion and fugitive dust generation, dust curtain on dump trucks, workers to utilize appropriate personal protective equipment (e.g., masks, safety goggles) as necessary.</p> <p>To avoid unnecessary equipment emissions, all equipment will be well maintained, idling will be discouraged and required regulatory emission standards on equipment will be upheld.</p>
Traffic	Increased traffic volumes and equipment delivery to the Project location and temporary disruption along routes utilized by construction vehicles may result in occasional delays to local community traffic flow.	Mitigation measures to include: designated transportation routes; police or security escort for the accompaniment of major equipment deliveries if necessary; flagmen will be utilized if necessary; construction vehicles will be driven in a proper manner with respect for all traffic laws; signage providing any detour directions will be prominently displayed if required, vehicle imprints or erosion gullies (ruts) will be repaired.
Municipal Roadways	Use of municipal roadways by construction vehicles may result in some minor damage to roadways.	Mitigation measures include: designated and appropriate transportation routes; ; construction vehicles will be driven in a proper manner with respect for all traffic laws; roadways will be photographed prior to construction and damage to municipal roadways, above and beyond normal wear and tear, will be repaired as necessary.

Environmental Feature	Anticipated Impact	Proposed Mitigation
Public Safety	Construction of the proposed development poses potential public safety issues , given the proximity of the public to the Project location.	Mitigation measures to include: public access to the constriction area will be controlled through the use of fences, gates, and security procedures; signage will be posted to notify the public of construction in the area; workers will be required to adhere to prescribed safety procedures; proper procedures for construction traffic will be developed, where required.
Waste Management	Construction activities will likely result in generation of recyclable material, as well as construction and sanitary waste.	Mitigation measures to include: construction waste will be properly stored on site prior to disposal off site at local registered disposal site; sanitary waste is to be contained and hauled off site by a designated hauler; hazardous wastes will be properly stored in secure containers inside impervious berms of other containment areas until disposed of offsite at a registered facility; reuse and recycling will be practiced wherever possible.
Land Use	Lands within the Project location will be removed from agricultural production upon Project construction	Land use could be returned to the original land use upon completion of the Project.
Protected Properties	No protected properties, as defined in Section 19(1) of O. Reg 359/09, exist in the vicinity of the Project location.	N/A
Built Heritage and Cultural Heritage Landscapes	Heritage Assessment Report indicates that visual effects either from or to built heritage and cultural heritage landscapes may occur.	Mitigation measures with respect to specific heritage resources are documented within the Heritage Assessment. These include among others, identifying preferred locations for pole and cabling placement, tree planting where required, and heritage recordings/documentation of significant features.
Archaeological Resources	Stage 1 and 2 Archaeological Assessments were conducted for the Project location. Numerous sites were found and Stage 3 / 4 assessments are planned to avoid physical disturbance to any of these sites.	Archaeological sites identified will either be avoided or Stage 3 (and Stage 4, if applicable) will be completed prior to construction. Therefore, resulting in no impacts to archaeological resources.
Spills	Spills of hydrocarbon materials from vehicles/equipment operating on site, such as fuel or hydraulic oils, or spills of concrete materials from concrete trucks, could occur during the construction process	Best management practices shall be implemented, including but not limited to: all refueling and equipment maintenance activities will occur at specific locations away from waterbodies; equipment will be monitored to ensure it is free of leaks; spill containment and clean-up supplies are to be maintained on site at all times; spills will be cleaned up immediately and reported accordingly.

Appendix C

Design and Operations Report Summary

Project Report - Summary

April 25, 2012

**Samsung Renewable Energy Inc. and Pattern Energy
South Kent Wind Project****Summary
Design and Operations Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) (as amended under O. Reg. 521/10 (January 2011)) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Design and Operation Plan Report for the South Kent Wind Project.

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (the “Project”), consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads, construction and turn around areas, and buried and/or overhead collection/transmission lines. The collection/transmission line will include approximately 34 km of 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5 kV to 230 kV to connect to the Chatham Switching Station (SS). The Project Area is located within the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively. Further information regarding the Project can be found on-line at: www.southkentwind.ca.

Section 13, Table 1 of the REA Regulation requires proponents of Class 4 wind projects to prepare a Design and Operations Report. The Design and Operations Report was prepared in accordance with the Ministry of the Environment’s *Technical Bulletin Two: Guidance for Preparing the Design and Operations Report*.

2. Facility Components

Facility components consist of proposed access roads, crane pads and erection areas, turbines, collector system on individual land parcels and existing road ROWs, transformer/substations, a operating and maintenance building and transmission lines. The Project is designed to generate 270 MW using 60 Hz wind turbine generators supplied by Siemens. Generators are connected to the AC collector system through an AC/DC/AC converter. Voltage output of the power converter is at 690 V AC which is then stepped up to 34.5 kV through a unit step up transformer located in the base of each turbine. The collection system will then collect the power from each turbine to one of two

substations where it will then be stepped up to 230 kV. It will then be connected to the Hydro One system at the Chatham SS.

The Project will not use surface water or groundwater supplies, discharge anything into the air (i.e., flares, vents, stacks), or collect, transmit, treat, or dispose of sewage. Water will be required for the O&M Building which will either come from municipal services or tanks. Sewage will be managed either through tanks and pump trucks or septic system.

3. Facility Operation Plan

The Project will generally be controlled and monitored remotely via computer, with a team of local wind turbine technicians performing routine maintenance and operational functions. In addition, the Project will maintain a minimum of one full-time project manager to coordinate ongoing maintenance, operations and emergency response. Activities that may occur during the operational phase of the project include:

- periodic travel (weekly – monthly) of personnel via passenger truck to and from individual wind turbine sites
- additional maintenance travel of heavy trucks or mobile cranes as required to maintain or repair equipment and for grading and snow removal
- field monitoring for impacts to bird and bat populations in the first 3 years of operation
- field monitoring related to performance measurement.

In order to operate the wind turbines safely and efficiently, wind speed, wind direction, temperature, barometric pressure, voltage, current, power, and other data will be collected and recorded in real time and stored in a database accessible by trained operators for operational monitoring purposes. Climatic events such as high wind events, extreme icing conditions (potentially causing ice throw), and cold weather will result in turbine shutdowns as per the turbine specifications until such time as the conditions leading to shutdown return to an acceptable state for continued operation. Additional shutdowns will occur in the event of electrical components operating outside of acceptable ranges of operation or for routine maintenance. Any waste generated during the operations will be removed from the site and managed according to provincial and municipal requirements

4. Environmental Effects Monitoring Plan

The Project Environmental Effects Monitoring Plan will be implemented through all phases of the Project. The purpose of the plan is to ensure that performance objectives and mitigation measures are working as designed to mitigate negative environmental impacts. As well, it provides additional mitigation measures, if primary measures are not sufficient. A summary of the potential negative environmental effects due to operational activities and proposed mitigation measures is provided in Table 5.1. Table 5.2 also provides the monitoring plan for those environmental effects that were not included in the Project Description Report, Construction Plan Report, Noise Assessment Report, Stage 1&2 Archaeological Assessment, Natural Heritage Environmental Impact Study, and Waterbodies Environmental Impact Study, as per the definition of “environmental effects”. These include potential effects to the social and economic environments.

5. Emergency Response Communications Plan

The Project Emergency Response Plan will be implemented through all phases of the Project. The purpose of the plan is to establish and maintain emergency procedures required for effectively responding to accidents and other emergency situations. The plan provides the emergency response and communications procedures to be used in response to three potential emergency scenarios (fire, personal injury and spills).

A sign will be erected during all phases of the Project which will include a Project phone number (toll free) and website should the public have any questions, inquiries or complaints. All questions, inquiries and complaints will be logged electronically and should notifications be required for either the public or government agencies, they will be notified through newspaper, direct/general mail out, email, mail or telephone conversation.

6. Property Line Setback Assessment

A Property Line Setback Assessment is required to determine the potential effects to adjacent parcels that are located within the distance of the hub height and blade length from the centre of the turbine. For the Project, an assessment of the effects to the businesses, infrastructure, properties and land use of the adjacent parcels between 59 m and 99.5 m from the centre of the turbine was completed. The results indicated that there are 44 turbines that have adjacent properties located within 59 m and 99.5 m of the centre of the turbine. In addition, it was determined that there would be no impact to the businesses, infrastructure, properties or land use from the potential impacts of ice throw, turbine collapse or blade loss. Preventative measures were also proposed to minimize the potential for ice throw, turbine collapse or blade loss.

Appendix D

Decommissioning Plan Report Summary

Samsung Renewable Energy Inc. and Pattern Energy South Kent Wind Project

Summary

Decommissioning Plan Report

1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Decommissioning Plan Report for the South Kent Wind Project.

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (the “Project”), consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads, construction and turn around areas, and buried and/or overhead collection/transmission lines. The collection/transmission line will include approximately 34 km of 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5 kV to 230 kV to connect to the Chatham Switching Station (SS). The Project Area is located within the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively. Further information regarding the Project can be found on-line at: www.southkentwind.ca.

Section 13, Table 1 of the REA Regulation requires proponents of Class 4 wind projects to prepare a Decommissioning Plan Report. The Decommissioning Plan Report was prepared in accordance with the Ministry of the Environment’s *Technical Bulletin Four: Guidance for Preparing the Decommissioning Plan Report*.

It is anticipated that the Project will have a useful lifetime of at least 20 years, which can be extended further with proper maintenance, component replacement and repowering. It is assumed that the Project will be decommissioned after the 20-yr power purchase agreement with the Ontario Power Authority concludes.

2. Decommissioning After Ceasing Operations

Decommissioning involves the following actions:

- Removal of the wind turbines and all electrical appurtenances for salvage;
- Removal of foundations and any access roads not wanted for future farming purposes to a depth suitable for ploughing (approximately 1.0 metres);
- Replacement of topsoil to a depth of surrounding undisturbed lands and plant with suitable ground cover dependant on time of year and in consultation with property owner;

- Ensuring that there are no environmental impacts related to decommissioning activities.

Decommissioning activities are expected to take approximately 6 months to complete.

2.1 Equipment Dismantling and Removal

The decommissioning procedures for equipment dismantling and removal are described in Table 2.1.

Table 2.1 Decommissioning Procedures

Physical Works/Activities	Description of Activity
Blade, Generator and Tower Disassembly	The blade, generator and towers will be disassembled using a crane and removed from the site using a flatbed truck. Blades will be recycled if possible and if not they will be disposed of at a licensed waste facility.
Removal of electrical appurtenances	Electrical equipment will be removed from the site on flatbed trucks for salvage based on value as a recyclable resource.
Removal of Access Roads	All permanent access roads will be maintained for farming purposes if so desired by the owners of the land. All unwanted access roads will be restored as per method used for decommissioning concrete foundations described below. Any aggregate removed from on-site will be disposed of at a recycling facility or, if unavailable or impractical, at a licensed landfill in the Province of Ontario.
Removal of Concrete Foundation	The foundations will be broken up by heavy machinery and removed by dump truck. Clean topsoil will be imported on-site and will be left for cultivation or seeded for erosion control, depending on the preference of the landowner and timing during the calendar year.
Removal of Distribution Lines	The distribution lines and any underground conduit will be terminated and removed from the ground. Conduit will be disposed of at a licensed landfill in the Province of Ontario, and distributions lines will be sold as scrap metal to a local recycler.
Removal of Transformers	Oil in the transformer will be removed and disposed of by an approved hauler to an approved waste management facility. The empty transformer will be removed and transported off-site by truck. The transformer will be recycled if possible and if not it will be disposed of in a licensed waste facility.

2.2 Site Restoration

All waste and excess materials will be disposed of in accordance with municipal, provincial and federal regulations. All excess materials and waste will be transported off-site by flatbed trailer or dump truck by a licensed hauler.

2.3 Management of Excess Materials and Waste

Following decommissioning of the Project, if any lands or water features are negatively affected by the Project, the Proponent is committed to restoring the site as close to its pre-construction state as feasible.

2.4 Emergency Response and Communications Plan

The Project Emergency Response Plan will be implemented through all phases of the Project. Potential emergency scenarios which could occur during the decommissioning phase include fire, personal injury and spills incidents. The purpose of the plan is to establish and maintain emergency procedures required for effectively responding to accidents and other emergency situations, and for minimizing associated losses. The Plan provides the emergency response and communications procedures to be used in response to three potential emergency scenarios (fire, personal injury and spills).

A sign will be erected which will include a toll free phone number for public questions, inquiries or complaints to be raised with the owner and all such communications will be logged. Should the general public require notification, this will be through newspaper and direct/general mailout, if required. All decommissioning communications with the public and government agencies will be documented and kept on file.

2.5 Other Approvals

Based on uncertainty regarding the regulatory timeframe under which the Project will be decommissioned, the only known approvals required for decommissioning the Project at this time could include demolition permits from the Municipality of Chatham-Kent, and a permit (Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses) by the Lower Thames Valley Conservation Authority should a watercourse crossing be removed.

3. Decommissioning During Construction (Abandonment)

In the event that construction and associated work is not completed and the Project is to be abandoned, all equipment, foundations and imported material (including roads) will be removed from site in accordance with applicable municipal, provincial and federal requirements. The decommissioning activities and requirements as outlined above in Section 2 (for decommissioning after ceasing operations) will apply to all potential states of construction if decommissioning is required at some stage during construction. The emergency response and communications plan and information related to other approvals as outlined in Section 2 will also apply to decommissioning during construction.

Appendix E

Natural Heritage Records Review Summary

Project Report - Summary

May 2, 2012

**Samsung Renewable Energy Inc. and Pattern Energy
South Kent Wind Project****Summary****Natural Heritage Records Review Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Records Review Report for the South Kent Wind Project.

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (hereinafter referred to as the “Project”) consisting of a total of 124 operational wind turbines, as well as supporting infrastructure, including access roads, cables, and overhead collector lines. A 34 km 230 kV transmission line and two (2) substations are required to step-up the voltage from 34.5 kV to 230 kV to enable connection to the Chatham Transformer Station. The Project area is located in the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively.

Section 25 of the REA Regulation requires proponents of Class 4 wind projects to undertake a Natural Heritage Records Review to ascertain whether the Project is in a natural feature, within 50 m of an area of natural and scientific interest (earth science), or within 120 m of a natural feature that is not an area of natural or scientific interest (earth science) (O. Reg. 359/09, s. 25, Table). The records review was conducted through a search of records maintained by the Ontario Ministry of Natural Resources (OMNR), the Lower Thames Valley Conservation Authority (LTVCA), and the Regional Municipality of Chatham-Kent (Municipality); published or on-line resources (Ontario Breeding Bird Atlas (OBBA), Ontario Herpetofaunal Atlas, etc.); and existing studies for other proposed wind projects within or in close proximity to the South Kent Wind Project area.

2. Results

Key natural features and points of interest identified during the records review include the following:

- No ANSIs are located within 120 m of the Project area.
- One (1) Provincially Significant Wetland, the Rondeau Bay North Shore PSW complex, has been identified within 120 m of the proposed Project location. It is located in the southeast corner of the Project area.
- Two (2) unevaluated wetlands have been identified within 120 m of the proposed Project location. One wetland is located in the vicinity of the potential transmission line corridor, just

south of Boundary Line near the Chatham Switching Station. The other wetland is located in the northeast portion of the Project area, near the intersection of Gagner Line and Lagoon Road.

- Basemapping obtained from the Land Information Ontario (LIO) database has identified the presence of a wintering deer area within approximately 500 m of the access road/cabling associated with turbine no. P104.
- Two (2) rare vegetation communities, a tallgrass woodland and tallgrass prairie, have been identified within the reference squares overlapping the Project area. Both of these vegetation communities have a provincial S-Rank of S1, indicating that they are critically imperilled within Ontario.
- A full review of the municipal mapping for all four (4) Townships overlapping the Project area has identified that up to 34 regionally significant woodlands are present within 120 m of the project location. Woodlands identified in basemapping from the LIO indicate that there are 53 woodlands in the Project area which meet the size criterion for a regionally significant woodland.
- A total of 102 species of conservation concern have been identified within the Project area; however, only 67 of these were sighted since 1980, including ten (10) birds, three (3) reptiles, and forty-six (46) plant species. The species are identified and further discussed in Section 8.0 of this report.
- Ten (10) bird species of special concern, such as bald eagle, hooded warbler, and red-headed woodpecker, were identified within reference squares that overlap with the Project area. The species are identified and discussed in greater detail in Section 8.1 of this report.
- An additional eleven (11) bird species, consisting mainly of waterbird or waterfowl species, were identified in Biodiversity Explorer. It was determined that habitat for nine (9) of the eleven (11) species is not present within the Project location or within 120 m of the Project location.
- The tricoloured bat (*Perimyotis subflavus*) is the only mammal identified as a species of special conservation concern.
- The Project area is located adjacent to one (1) important bird area (IBA), the Greater Rondeau IBA (ON007). The Project location is located adjacent to the northern limit of this IBA boundary, at the Town of New Scotland, ON; however, no Project components overlap with it.
- A total of forty-six (46) plant species of conservation concern have been identified within the Project area. However, most of these are typical of natural habitats and are unlikely to occur within active agricultural fields. A full list of species of conservation concern identified by the Biodiversity Explorer is provided in Appendix I of this report.
- The Ontario Herpetofaunal Summary Atlas identified four (4) species of conservation concern whose ranges potentially overlap with the Project area.
- A total of eight (8) additional faunal species of conservation concern for which recent records (1980 – 2010) are provided, including two (2) land snails, five (5) dragonflies and/or damselflies, and one (1) butterfly, were identified as potentially occurring within the Project area. The faunal species list is provided in Appendix I of this report.

3. Conclusions

The records review has concluded that the South Kent Wind Project development activities are located within 120 m of a natural feature and will require a site investigation to confirm the features identified during this records review. The site investigation will i) identify if any corrections to the information presented herein are required, ii) determine whether any additional natural features exist on or adjacent to the Project location, iii) confirm the boundaries of the natural features within 120 m of the Project location, and iv) determine the distance from the Project to the natural feature boundary.

Table 8 (below), from Section 10.0 of the Records Review Report, presents the results of the natural heritage records review as it applies to the criteria identified in the REA Regulation.

Table 1. Summary of Records Review of the South Kent Wind Farm Project Area

Criteria	Result
1. Within 120 m of a Provincial Park or Conservation Reserve	No Project components are within 120 m of a provincial park or conservation reserve.
2. In a Natural Feature	<p>The Project crosses several linear features, some of which have connectivity to a woodland. It is unlikely that these linear features (with connectivity to woodlands) provide the same species associations and habitat of nearby woodlands. However, these linear features have the potential to still provide significant wildlife habitat, for species of conservation concern and/or as animal movement corridors.</p> <p>The proposed Project location is located within 120m of the globally significant Rondeau Bay IBA. This area contains wildlife habitat features including staging and breeding habitat for several waterfowl and waterbird species. The habitats within the IBA also provide breeding habitat for several species of conservation concern. The proposed cabling along New Scotland Line is located adjacent to this IBA.</p> <p>In addition, the Project area overlaps with several areas that have been identified as candidate wildlife habitat through a review of existing studies, including shorebird staging areas and raptor wintering areas.</p> <p>As such, the Project is located within linear natural features, an IBA, and candidate bird SWH areas. All of these potentially significant habitats should be evaluated in more detail during the site investigation and evaluation of significance phases of this Project.</p>
3. Within 50 m of a ANSI-ES	No Project components are within 50 m of an Earth Science ANSI.
4. Within 120 m of a Natural Feature	
a) ANSI-ES	Not Applicable (see Item 2 above)

Criteria	Result
b) ANSI-LS	No Project components are within 120 m of a life science ANSI.
c) Coastal Wetland	The Project location is not proposed within 120 m of coastal wetlands.
d) Northern Wetland	The Project Area does not occur in areas of northern wetlands.
e) Southern Wetland	One (1) Provincially Significant Wetland, the Rondeau Bay North Shore PSW complex, and two (2) unevaluated southern wetlands have been identified within 120 m of the proposed Project location.
f) Valleyland	No valleylands have been identified within 120 m of the Project location.
g) Wildlife Habitat	<p>A deer wintering area has been identified within approximately 500 m of the access road/cabling associated with turbine no. P104. This feature extends east of the Project Area.</p> <p>Several linear features, including treed fencerows and naturalized drains, have been identified within 120 m of the Project location. These features have the potential to act as SWH, specifically providing animal movement corridors and/or habitat for species of conservation concern.</p> <p>A review of available wildlife studies that have been conducted throughout the Project Area have identified several potential areas of wildlife habitat, including shorebird staging areas, raptor wintering habitats, species of conservation concern, and other habitats that may be deemed wildlife habitat.</p> <p>The approximate boundaries of the Rondeau Bay IBA are found within 120 m of the Project location (as outlined above). This area contains several types of wildlife habitat features, primarily for birds and species of conservation concern. The boundaries of this IBA extend beyond the natural habitats of Rondeau Bay into agricultural fields. As such, site investigations will be important to relate the present habitat to identified waterfowl use in order to determine the extent of significant habitat.</p> <p>All of these wildlife habitats should be examined during the site investigation phase and/or the evaluation of significance phase of this Project to identify other habitat features and identify the significance of each natural feature.</p>

Criteria	Result
h) Woodland	<p>Several woodlands have been identified during the records review process, including the following locations where woodlands are found within 120 m of the Project location.</p> <p>Basemapping obtained from LIO indicates that a total of 53 woodlands, ranging in size from 2ha to 54ha are located within 120 m of the Project location.</p> <p>Municipal files indicate that 34 significant woodlands (as deemed in the Chatham-Kent Official Plan) are found within 120 m of the Project location. Most, if not all, of these 34 woodlands represent the same features as identified by available LIO basemapping.</p>

Appendix F

Natural Heritage Site Investigation Summary

Project Report - Summary

May 2, 2012

**Samsung Renewable Energy Inc. and Pattern Energy
South Kent Wind Project****Summary****Natural Heritage Site Investigation Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Site Investigation Report for the South Kent Wind Project.

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (hereinafter referred to as the “Project”) consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads, cables, and overhead collector lines. A 34 km 230 kV transmission line and two (2) substations are required to step the voltage from 34.5 kV to 230 kV to enable connection to the Chatham Transformer Station. The Project area is located in the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively.

Section 26 of the REA Regulation requires proponents of Class 4 wind projects to undertake a natural heritage site investigation for the purpose of determining

- (a) whether the results of the analysis summarized in the (Natural Heritage Records Review) report prepared under subsection 25 (3) are correct or require correction, and identifying any required corrections,
- (b) whether any additional natural features exist, other than those that were identified in the (Natural Heritage Records Review) report prepared under Subsection 30 (2),
- (c) the boundaries, located within 120 m of the Project location, of any natural feature that was identified in the records review or the site investigation, and
- (d) the distance from the Project location to the boundaries determined under clause (c).

A site investigation was conducted to review all natural features identified in the records review in more detail, for the purposes of evaluating the significance of each feature. Comprehensive site-specific field investigations focused on vegetation community mapping to support and build on extensive wildlife studies that have already been completed within the South Kent Wind Project area.

2. Results

The South Kent Wind Project area is primarily characterized by agricultural lands used for the production of row crops (e.g. soybean, corn, grains). Other land uses, including hayfields and agricultural pasture, are also present within the Project area. The areas that are not used for agricultural production are comprised of natural features, such as woodlands and hedgerows, which make up the vegetation communities found throughout the Project area.

The hedgerow communities identified throughout the Project area are found along the property lines and are used to separate one field from another. A number of these hedgerows are to be crossed by various access roads and cabling connecting the turbines to the distribution lines.

A total of fifty-seven (57) woodland communities (**See Appendix I for summary**) were identified throughout the Project area, representing a wide range of community types and ranging in size from < 1 ha to 59 ha. A number of these woodlands are considered significant by the Municipality. A comprehensive summary of the results of the woodland investigations is presented in Appendix I of the Site Investigation Report.

The Significant Wildlife Habitat Technical Guide (SWHTG) (OMNR 2000) identifies four main types of wildlife habitat that can be classified as significant:

- habitat for seasonal concentrations of animals,
- rare vegetation communities and specialized wildlife habitat,
- habitat for species of conservation concern, and
- animal movement corridors.

Candidate habitat for seasonal concentrations of animals was considered during the site investigations with the identification of candidate waterfowl stopover and staging area, reptile hibernacula, and bat maternity roosts which will be carried forward to the Evaluation of Significance (EOS).

The rare vegetation communities found on or within 120 m of the Project location included savannah and tallgrass prairie habitat. No rare forest types were identified within the Project area. The savannah and prairie communities have been carried forward to the EOS.

Candidate specialized habitat for wildlife was considered during the site investigations, with amphibian breeding habitat carried forward to the EOS.

Candidate habitat for species of conservation concern was considered during the site investigation, including three (3) open country bird breeding habitats and seven (7) area sensitive breeding bird habitats which were carried forward to the EOS.

Candidate habitat for S1 to S3 ranked species for three (3) species of bats (northern long-eared bat, tricolored bat, and eastern small-footed bat) was considered during the site investigation and will be carried forward to the EOS.

Candidate animal movement corridors were identified throughout the project area as all linear features, including fencerows, drainage corridors, and vegetation associated with the railway corridor. Each of these linear features has been examined in more detail to assess the species

composition, form, and function to assess the potential for each natural feature to provide significant wildlife habitat. As such, all fencerows and drainage corridors within 120 m of the Project location will be carried forward to the EOS.

3. Conclusions

There are several features present within the vicinity of the Project location that will require an Evaluation of Significance in order to determine whether Environmental Impact Studies (EIS) are required.

The site investigations confirmed the boundaries and habitat composition of fifty-seven (57) candidate significant woodland features. NRSI biologists have also used previous studies in conjunction with site-specific investigations to identify several areas of candidate significant wildlife habitat within the project area, including areas of seasonal wildlife use, movement corridors, and rare vegetation communities.

Tables 6 a) and b) in Section 8.0 of this report present a summary of the site investigation results, including the presence of candidate significant natural features, the distance of these features to the nearest project component, and a determination of the requirement for an evaluation of significance of each feature.

A number of Project components are located within 120 m of a natural feature (i.e. wildlife habitat or woodlands), and therefore, in accordance with Section 27 of the REA Regulation, an Evaluation of Significance is required to determine the significance of these natural features.

Appendix G

Natural Heritage Evaluation of Significance Summary

Project Report - Summary

May 2, 2012

**Samsung Renewable Energy Inc. and Pattern Energy
South Kent Wind Project****Summary****Natural Heritage Evaluation of Significance Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Evaluation of Significance Report for the South Kent Wind Project.

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (hereinafter referred to as the “Project”) consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads, cables, and overhead collector lines. A 34 km 230 kV transmission line and two (2) substations are required to step the voltage from 34.5 kV to 230 kV to enable connection to the Chatham Transformer Station. The Project area is located in the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively.

Section 24 of the REA Regulation requires proponents of Class 4 wind projects to undertake an Evaluation of Significance for each natural heritage feature identified in the records review and site investigation reports within 120 m of the Project. These reports identified the need to complete an Evaluation of Significance for woodlands and other natural features which may provide wildlife habitat, including fencerows, drains and creeks, fallow fields, meadows, thickets, habitat features such as rock or debris piles, and habitat for wildlife otherwise identified in the records review or site investigation. A site investigation of all candidate significant natural features identified in the records review process was conducted in more detail to evaluate the significance of each feature.

Comprehensive site-specific field investigations focused on vegetation community mapping to support and build on extensive wildlife studies that have already been completed within the South Kent Wind Project area.

2. Results

The site investigation identified candidate significant features including fifty-seven (57) woodland areas and the four (4) types of wildlife habitats as classified in the Significant Wildlife Habitat Technical Guide (SWHTG) (OMNR 2000).

The results of the EOS, according to the candidate significant features provided above, are further discussed in the following paragraphs.

Woodlands

The characteristics of each wooded habitat have been compared to the evaluation criteria outlined in the Natural Heritage Reference Manual (OMNR 2010b), including woodland size, ecological functions, and uncommon characteristics. Table 9 of Section 6.2 of this report provides the evaluation of each of the fifty-seven (57) candidate significant woodlands. Based on this evaluation, forty-nine (49) woodlands are significant.

Table 1. Woodland Evaluation of Significance Summary for the South Kent Wind Project

Woodland	Size (ha)	Woodland Size	Ecological Function	Uncommon Characteristics	Economic or Social Value	Overall Significance
P001-W1	15.8	Yes	Yes	No	No	Yes
P002-W1	1.4	No	Yes	No	No	Yes
P002-W2	1.0	No	Yes	No	No	Yes
P004-W1	7.8	Yes	Yes	No	No	Yes
P011-W1	2.1	Yes	Yes	No	No	Yes
P014-W2	13.7	Yes	Yes	No	No	Yes
P017-W1	0.9	No	No	No	No	No
P022-W1	13.6	Yes	Yes	No	No	Yes
P024-W1	8.1	Yes	No	No	No	Yes
P024-W2	55.4	Yes	Yes	No	No	Yes
P027-W1	16.4	Yes	Yes	No	No	Yes
P029-W1	2.74	Yes	No	No	No	Yes
P030-W2	2.22	Yes	No	No	No	Yes
P030-W3	0.43	No	No	No	No	No
P033-W1	1.4	No	Yes	No	No	Yes
P034-W1	4.0	Yes	Yes	No	No	Yes
P042-W1	13.7	Yes	Yes	No	No	Yes
P053-W3	11.1	Yes	No	No	No	Yes
P053-W4	4.95	Yes	Yes	No	No	Yes
P054-W1	13.22	Yes	No	No	No	Yes
P054-W2	1.69	No	Yes	No	No	Yes
P055-W1	5.1	Yes	No	No	No	Yes
P064-W1	0.2	No	No	No	No	No
P065-W1	2.0	Yes	No	No	No	Yes
P065-W2	3.3	Yes	Yes	No	No	Yes
P065-W3	2.5	Yes	Yes	No	No	Yes
P077-W1	2.5	Yes	No	No	No	Yes
P082-W1	2.1	Yes	No	No	No	Yes
P091-W1	1.1	No	No	No	No	No
P091-W2	8.7	Yes	Yes	No	No	Yes

Woodland	Size (ha)	Woodland Size	Ecological Function	Uncommon Characteristics	Economic or Social Value	Overall Significance
P091-W3	0.6	No	No	No	No	No
P092-W1	1.6	No	No	No	No	No
P092-W2	4.26	Yes	No	No	No	Yes
P102-W2	1.9	No	No	No	No	No
P108-W1	24.98	Yes	Yes	No	No	Yes
P111-W1	7.83	Yes	Yes	No	No	Yes
P114-W1	12.4	Yes	Yes	No	No	Yes
P117-W1	6.8	Yes	Yes	No	No	Yes
P118-W1	6.7	Yes	Yes	No	No	Yes
P139-W1	2.3	Yes	No	No	No	Yes
P139-W5	3.95	Yes	Yes	No	No	Yes
P139-W6	1.23	No	Yes	No	No	Yes
P139-W7	5.74	Yes	Yes	No	No	Yes
P139-W8	13.3	Yes	Yes	No	No	Yes
P139-W9	2.84	Yes	Yes	No	No	Yes
P156-W1	10.29	Yes	Yes	No	No	Yes
P162-W1	30.08	Yes	Yes	No	No	Yes
P162-W2	9.31	Yes	No	No	No	Yes
P166-W1	11.84	Yes	No	No	No	Yes
P166-W2	0.47	No	No	No	No	No
P173-W1	1.5	No	No	Yes	No	Yes
CLA-W2	4.1	Yes	Yes	No	No	Yes
RB-A	0.48 to 4.79	No/Yes	Yes	No	No	Yes
RB-B	0.26 to 4.66	No/Yes	Yes	Yes	No	Yes
RB-D	0.19 to 2.08	No/Yes	Yes	No	No	Yes
RB-E	0.1 to 1.79	No/Yes	Yes	No	No	Yes
RB-F	0.18 to 5.82	No/Yes	Yes	No	No	Yes

Wetlands

Six (6) wetland communities were identified within 120 m of proposed Project components including a portion of the Rondeau Bay North Shore PSW and five (5) new wetlands (P014-WE1, P014-WE2, P054-WE1, P108-WE1, and P111-WE1). NRSI biologists delineated the boundaries of these wetlands using the *Ontario Wetland Evaluation System (OWES)* criteria. The ecological functions and characteristics of the wetlands were assessed using the *Wetland Characteristics and Ecological Functions Assessment*, as described in Appendix C of the *Natural Heritage Assessment Guide* (OMNR 2010c). According to Appendix C, all of the wetlands that are assessed using this tool must be treated as provincially significant. The evaluation of these five (5) wetlands within 120 m of the project location is found in Table 10 of this report. As such, six (6) significant wetlands have been identified in total within the Project area.

Wildlife Habitat

The Significant Wildlife Habitat Technical Guide (OMNR 2000) identifies four main types of wildlife habitat that can be classified as significant:

- habitat for seasonal concentrations of animals,
- rare vegetation communities or specialized wildlife habitat,
- habitat for species of conservation concern, and
- wildlife movement corridors.

Seasonal Concentration Areas

Criteria for the evaluation of seasonal concentration areas are identified in Table Q-1 of Appendix Q of the Significant Wildlife Technical Habitat Guideline (OMNR 2000).

The waterfowl stopover and staging areas were determined to be not significant based on the evaluation of significance, as the majority of waterfowl observations occurred on Lake Erie and the wetland and open water habitat of Rondeau Bay.

The reptile hibernacula were determined to be not significant, as no snake individuals were observed that may be using a hibernation site within the vicinity of these locations. Although all of the habitats identified in the site investigation may provide habitat for snake hibernation, there is no indication that they meet the evaluation criteria for a significant wildlife habitat.

The evaluation of significance considered several acoustic bat monitoring studies conducted in support of the Front Line Wind Farm, Flat Creek Wind Farm, and Erieau-Blenheim Wind Farm within 6 km of Rondeau Bay and the immediately adjacent shorelines of Lake Erie that have shown consistently higher bat activity than those found further inland or in close proximity to the shoreline in locations away from Rondeau Bay. The evaluation of significance has determined that all woodland habitats with a minimum size of 0.5 ha within 6 km of Rondeau Bay (13 woodlands) be considered significant habitat for bat maternity colonies. However, according to Appendix D of the 2011 version of the Natural Heritage Assessment Guide, only bat maternity roost habitats that are overlapping with, or are within 120 m of a wind turbine, need to be considered within the Project area (OMNR 2011). The candidate bat maternity roost habitats that are within 120 m of other Project components have been considered under generalized wildlife habitat in the EIS. Only four (4) of the candidate bat maternity roost habitats are located within 120 m of proposed wind turbines, and these four (4) woodlands include: P001-W1, P108-W1, P118-W1, and RB-A2.

Rare Vegetation Communities or Specialized Wildlife Habitat

Criteria for the evaluation of rare vegetation communities or specialized habitat are identified in Table Q-2 of Appendix Q of the Significant Wildlife Technical Habitat Guideline (OMNR 2000).

The presence of tallgrass prairie (Dry Mixed Graminoid Tallgrass Prairie Type, MEGM1-4) identified along the rail bed in three (3) locations (RB-1, RB-3, and RB-4) is not considered significant as per the SWH Ecoregion Criteria Schedules Addendum, which states that remnant populations along railway right-of-ways are not to be considered significant (OMNR 2000).

The three (3) savannah communities (RB-B - Fresh-Moist Mixed Savannah Ecosite (SVMM3), and RB-E and RB-F - White Birch / Poplar Deciduous Savannah Types (SVD3-5)) identified along the rail bed are not considered significant rare vegetation communities since the communities are not considered tallgrass prairie savannahs.

Site-specific field investigations did not identify any significant numbers of frogs, toads, salamanders, or egg masses, as determined by the Significant Wildlife Habitat Technical Guide (OMNR 2000). Therefore, there is no indication that vernal pools are being used by amphibians as significant breeding habitat.

Habitat for Species of Conservation Concern

Criteria for evaluation of species of conservation concern are identified in Table Q-2 of Appendix Q of the Significant Wildlife Technical Habitat Guideline (OMNR 2000).

NRSI identified three (3) candidate SWH for open country bird breeding habitat. These include two (2) fallow fields and one (1) meadow (P053-W2).

One (1) fallow field is located north of the rail bed at the 7th Line, west of North Buxton and is shown on Figure 3-6. This field is Class 3 agricultural land; however it is only 2.6 ha in size. As such, NRSI recommends that this feature be considered not significant for open country bird breeding habitat as the criteria in the Ecoregion 7E Criteria Schedule states that grasslands 10 ha or larger in size would be considered significant.

There are two fields within the Project area which are greater than 10 ha in size and represent Class 3 agricultural land. One of these fields is a fallow agricultural field dominated by grasses and goldenrods. This field is located adjacent to Campbell Line on the north side (42.8 ha). The entire field consists of both Class 2 and Class 3 agricultural land, however, the entire field is consistent in composition, and as such represents a habitat unit which is likely important for open country birds. This field is overlapping with the access road associated with turbine nos. P029 and P030. It is also located 37 m from turbine no. P029. As breeding bird surveys were not completed in this field, it is assumed that this field is considered significant. As such, NRSI recommends that this field be considered significant for open country bird breeding habitat. An EIS is required for these project components which are proposed within 120 m of this significant open country bird breeding habitat.

The second field is a meadow community (P053-W2) identified south of the rail bed, west of Fargo and is 14.3 ha in size. This community is also shown on Figure 3-7. Although not specifically confirmed within these fields, one indicator species, vesper sparrow (*Pooecetes gramineus*), and one rare open country bird species, were both confirmed during breeding bird surveys within the Project area through background review. Other common grassland species, including eastern kingbird (*Tyrannus tyrannus*), eastern meadowlark (*Sturnella magna*), and American kestrel, were also confirmed within the Project area through previous studies. As a result, this habitat may be utilized by open country birds for breeding. However, according to Appendix D of the 2011 version of the Natural Heritage Assessment Guide, only open country bird breeding habitats that are overlapping with the Project location, or are within 120 m of a wind turbine, need to be considered (OMNR 2011). The candidate open country bird breeding habitats that are within 120 m of other Project components have been and have been addressed as generalized wildlife habitat in the EIS. P053-W2 is located immediately adjacent to a section of the proposed transmission corridor from Charing

Cross Road to Huffman Road, and so it has been assumed significant for open country breeding birds, and has been addressed as generalized wildlife habitat in the EIS.

Candidate habitat for S1 to S3 ranked species was assessed for three (3) species of bats (northern long-eared bat, tricolored bat, and eastern small-footed bat).

Three (3) species of bats (ranked S1-S3) were identified within portions of the Project area, including northern long-eared bat (*Myotis septentrionalis*), tricoloured bat (*Perimyotis subflavus*), and eastern small-footed bat (*Myotis leibii*). Woodlands with abundant amounts of large (> 25 cm dbh) snags that are within 5 km of an s-ranked bat species observation were considered significant habitat for these bat species, whereas human structures (e.g. old barns, houses) were not. Significant habitat for s-ranked bat species was identified within nine (9). The features that were considered significant habitat for s-ranked bats, due to their proximity to wind turbines and the abundant numbers of large snags.

Seven (7) candidate SWH for area sensitive bird breeding habitat were identified during site investigations. Two (2) of these locations (P042-W1 and P108-W1) have site-specific information already collected through previous studies as part of the EIS for proposed Harwich Wind Farm, although based on provincial criteria, no significant habitat for area sensitive breeding birds was identified within woodlands P042-W1 or P108-W1. The five (5) remaining woodlands were not evaluated sufficiently in order to determine the significance of these habitats. However, according to Appendix D of the 2011 version of the Natural Heritage Assessment Guide, only area-sensitive bird breeding habitats that are overlapping with a project component need to be considered (OMNR 2011). The candidate area-sensitive bird breeding habitats that are within 120 m of other Project components have been considered generalized wildlife habitat in the EIS. Only one (1) woodland, P022-W1, is overlapping with a Project component. As a result, it is possible that this one woodland is being utilized by area sensitive birds for breeding, and it has been treated as significant. The appropriate pre-construction habitat use monitoring that will be required for this habitat will be discussed in more detail within the EIS.

Animal Movement Corridors

A total of eight (8) animal movement corridors within 120 m of the Project development activities were considered to be significant based on a combination of width, length, habitat composition, expected wildlife species, and connectivity to Rondeau Bay habitats. The animal movement corridors include P002-D2, P069-D2, P104-D2, P105-D1, P114-D1, P139-D1, CLA-D2, and the railway ROW. No hedgerow features located within the Project area are considered significant animal movement corridors.

3. Conclusions

The results of the evaluation of significance confirmed that a total of forty-nine (49) significant woodland features and several areas of significant wildlife habitat within the Project area, including areas of seasonal wildlife use, specialized wildlife habitat, habitat for species of conservation concern, and animal movement corridors, are located on and within 120 m of the Project location and will require an Environmental Impact Study as per Section 38 of the REA Regulation. Tables 12a) and 12b) from Section 7.0 of this report summarize this information by Project component.

Appendix H

Natural Heritage Environmental Impact Study Summary

Project Report - Summary

May 2, 2012

Samsung Renewable Energy Inc. and Pattern Energy South Kent Wind Project

Summary

Natural Heritage Environmental Impact Study

1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg.) 359/09 under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Environmental Impact Study (EIS) for the South Kent Wind Project.

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (hereinafter referred to as the “Project”), consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads, construction and truck turnaround areas, and buried and/or overhead collection/transmission lines. The collection/transmission system will include approximately 34 km of 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5 kV to 230 kV to connect to Chatham Switching Station (SS).

The Project area is located in the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively.

Section 38 of the REA Regulation requires proponents of Class 4 wind projects to complete an Environmental Impact Study (EIS) for all significant natural heritage features determined to be within a specified setback in order to obtain a REA. The EIS is required in order to determine (i) any potential negative environmental effects on the natural features; (ii) identify mitigation measures; (iii) describe how the environmental effects monitoring plan in the Design and Operations Report addresses any negative environmental effects; and (iv) describe how the Construction Plan Report addresses any negative environmental effects.

2. Significant Natural Features

The significant natural features identified for this Project are further discussed in Section 4 of the EIS. A total of 98 significant natural features were identified on or within 120 m of the Project location. The 98 significant natural features include forty-nine (49) woodland features, six (6) wetlands, four (4) bat maternity roosts, one (1) area sensitive bird breeding areas, one (1) open country bird breeding habitat, nine (9) S1-S3 ranked bat species, and eight (8) animal movement corridors. In addition, Several other generalized candidate significant wildlife habitats including turtle nesting habitat, bat maternity roosts, open country bird breeding habitat, area-sensitive bird breeding areas, as well as

significant habitat for S1-S3 ranked bat species were also identified within 120 m of Project components.

Results include:

- A total of 43 of the 49 significant woodlands were identified as being indirectly impacted by the Project. These woodlands are identified in Section 4.1 of the EIS. Six (6) woodlands would have access roads and/or cabling installed within the woodland.
- 1 Provincially Significant Wetland (PSW) and 5 assumed PSW within 120 m of the Project location were identified. No direct encroachment will occur within the wetlands.
- Four (4) bat maternity roosts are present on and within 120 m of the Project location. No direct encroachment will occur within these significant natural features.
- One (1) open country bird breeding habitats was identified on and within 120 m of the Project location. Direct encroachment will occur within this feature.
- 1 area-sensitive breeding bird habitat was identified on and within 120 m of the Project location. Underground cabling would occur within this habitat.
- 9 significant woodland habitats for 3 bat species of concern (Eastern Small-footed Bat (*Myotis leibii*), Northern Long-eared Bat (*Myotis septentrionalis*), and Tricolour Bat (*Perimyotis subflavus*) are located within 120 m of wind turbines and associated infrastructure. Direct encroachment for cabling would be required within one of these features.
- Eight (8) animal movement corridors were identified on and within 120 m of the Project location. Seven (7) are associated with watercourses with the remaining animal movement corridor associated with the vegetated corridor along the railway line. The seven (7) animal movement corridors are interrupted at various locations by municipal and farm access roads. While components of the transmission line (and service road) will be within the animal movement corridor, the transmission poles and the service road will temporarily limit but not prevent the movement of wildlife through this area.
- Several other generalized candidate significant wildlife habitats including turtle nesting habitat, bat maternity roosts, open country bird breeding habitat, area-sensitive bird breeding areas, as well as significant habitat for S1-S3 ranked bat species were also identified within 120 m of Project components.

3. Results

The results of the EIS on the significant natural features are summarized in Table 3.1 below.

Table 4.11 in the EIS summarizes the proposed monitoring plan. The environmental effects monitoring addresses potential negative environmental effects that may result from engaging in the Project. The monitoring identifies performance objectives with respect to the negative environmental effects; mitigation measures to assist in achieving the performance objectives; and a program for monitoring negative environmental effects, including a contingency plan to be implemented if any mitigation measures fail.

4. Conclusions

The EIS is prepared to identify potential negative environmental effects that all phases of the Project may have on these significant natural features. Direct encroachment of significant features was avoided, where at all possible, with mitigation measures proposed in those areas, where avoidance was not possible, to prevent or minimize the magnitude, extent, duration and frequency of the potential effect. A monitoring program has been provided to ensure that mitigation measures are having the intended effect and that performance objectives are being met are.

Table 3.1 Summary of Potential Negative Environmental Effects and Proposed Mitigation

Significant Natural Feature	Proposed Activities and Potential Negative Environmental Effects	Mitigation Measures	Monitoring Measures
Woodlands - Indirect effects	Installation of Project components within 120 m. Fugitive dust emissions; Surface water runoff; Wildlife avoidance	Application of water/ limit vehicle movements to prevent fugitive dust emissions, as required; Nearby stockpiles to be covered; Erosion and Sediment Control (ESC) – use of silt fence, ditching/grading, straw bales, and rock check dams, etc, to be in place prior to the start of construction; Reduce vehicular noise and restrict personnel presence to the construction work area.	Visual monitoring of visible dust plumes and erosion and sedimentation control measures during construction.
Woodland – Direct effects	Installation of access road and underground cabling through significant woodlands. Removal of vegetation; Fugitive dust generation; Surface water runoff; Wildlife avoidance.	Access roads at right angles through woodlands; Identify trees to be removed prior to start of construction activities; Revegetate with native species; Application of water/ limit vehicle movements; Covering of soil stockpiles; Installation of silt fence, ditching/grading, straw bales, and rock check dams, etc, prior to the start of construction. Reduce vehicular noise and restrict personnel presence to the construction work area.	Visual monitoring of disturbed areas, visible dust plumes, and erosion and sedimentation control measures during construction.
Animal Movement Corridors	Installation of access road/ underground cabling and removal of select vegetation within 30 m buffer, turbines within 120 m and transmission ROW adjacent to vegetated corridor along railway line. Fugitive dust generation; surface water runoff, wildlife avoidance; erosion of watercourses and increased sedimentation.	Application of water/ limit vehicle movements; Covering of soil stockpiles; Installation of silt fence, ditching/grading, straw bales, and rock check dams, etc, prior to the start of construction; Reduce vehicular noise and restrict personnel presence to the construction work area;	Visual monitoring of disturbed areas, visible dust plumes, and erosion and sedimentation control measures during construction.

Significant Natural Feature	Proposed Activities and Potential Negative Environmental Effects	Mitigation Measures	Monitoring Measures
Bat Maternity Roosts	<p>Installation of access road, above and underground cabling and turbines within 120 m.</p> <p>Fugitive dust generation; surface water runoff; Bat avoidance and mortality during operations.</p>	<p>Pre-construction exit surveys will occur in June 2012 at the 4 bat maternity roosts within 120 m of a wind turbine that have been determined to be significant in accordance with Appendix D of the Natural Heritage Assessment Guide.</p> <p>Monitoring to be repeated over the first three (3) years of operations. Maintenance shutdown of turbines within migratory bat period, wherever possible.</p> <p>Application of water/ limit vehicle movements; Covering of soil stockpiles; Installation of silt fence, ditching/grading, straw bales, and rock check dams, etc, prior to the start of construction;</p>	<p>Monitoring surveys will following the Bat and Bat Habitats Guidance document (OMNR 2011) (i.e. exit surveys at candidate roost trees).</p> <p>Monitoring to be repeated over the first three (3) years of operations.</p> <p>Visual monitoring of visible dust plumes, and erosion and sedimentation control measures during construction.</p>
S1-S3 ranked Bat Habitat	<p>Removal of select vegetation (if required)</p> <p>Fugitive dust generation; surface water runoff; Bat avoidance and mortality during operations.</p>	<p>Pre-construction exit surveys will occur in June 2012 at the 10 bat S1-S3 ranked bat habitat are within 120 m of a wind turbine or have a Project component within the feature, and that have been determined to be significant in accordance with Appendix D of the Natural Heritage Assessment Guide.</p> <p>Monitoring to be repeated over the first three (3) years of operations. Maintenance shutdown of turbines within migratory bat period, wherever possible.</p> <p>Application of water/ limit vehicle movements; Covering of soil stockpiles; Installation of silt fence, ditching/grading, straw bales, and rock check dams, etc, prior to the start of construction.</p>	<p>Monitoring surveys will following the Bat and Bat Habitats Guidance document (OMNR 2011) (i.e. exit surveys at candidate roost trees).</p> <p>Monitoring to be repeated over the first three (3) years of operations.</p> <p>Visual monitoring of visible dust plumes, and erosion and sedimentation control measures during construction.</p>
Open Country	Installation of access road and underground	Revegetate with native species; Application of	Visual monitoring of areas to be disturbed

Significant Natural Feature	Proposed Activities and Potential Negative Environmental Effects	Mitigation Measures	Monitoring Measures
Breeding Bird Habitat	<p>cabling in the field north of Campbell Line.</p> <p>Removal of vegetation; fugitive dust generation; surface water runoff.</p>	<p>water/ limit vehicle movements; Covering of soil stockpiles; Installation of silt fence, ditching/grading, straw bales, and rock check dams, etc, prior to the start of construction.</p> <p>Nest searches prior to start of construction activities within breeding bird period. If nest found 100 m buffer around nest will be employed.</p>	<p>during construction.</p> <p>Visual monitoring of visible dust plumes and erosion and sedimentation control measures during construction.</p> <p>Monitoring of nests.</p>
Area-sensitive Breeding Bird Habitat	<p>Installation of cabling through woodland</p> <p>Removal of vegetation; Fugitive dust generation; Surface water runoff; Wildlife avoidance.</p>	<p>Access roads at right angles through woodlands; Identify trees to be removed prior to start of construction activities; Revegetate with native species; Application of water/ limit vehicle movements; Covering of soil stockpiles; Installation of silt fence, ditching/grading, straw bales, and rock check dams, etc, prior to the start of construction. Reduce vehicular noise and restrict personnel presence to the construction work area.</p> <p>Nest searches prior to start of construction activities within breeding bird period. If nest found 100 m buffer around nest will be employed.</p>	<p>Visual monitoring of disturbed areas, visible dust plumes, and erosion and sedimentation control measures during construction.</p> <p>Monitoring of nests.</p>

Appendix I

Water Body Records Review Summary

Project Report - Summary

May 2, 2012

**Samsung Renewable Energy Inc. and Pattern Energy
South Kent Wind Project****Summary****Water Body Records Review Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Water Body Records Review Report for the South Kent Wind Project.

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (hereinafter referred to as the “Project”), consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads and cabling. The collection/transmission system will include an approximately 34 km, 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5 kV to 230 kV to connect to Chatham Switching Station (SS). The Project area is located in the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively.

Section 30 of the REA Regulation requires proponents of Class 4 wind projects to undertake a Water Body Records Review to ascertain whether Project development activities are located within a water body; within 120 m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity; within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity; within 120 m of the average annual high water mark of a permanent or intermittent stream; or within 120 m of a seepage area. (O. Reg. 359/09, s. 30, Table). The records review was conducted through a search of records maintained by the Ministry of Natural Resources (MNR), the Lower Thames Valley Conservation Authority (LTVCA), and the Regional Municipality of Chatham-Kent (Municipality); published or on-line resources (DFO, Ontario Freshwater Fishes Life History Database (Eakins 2010), and Freshwater Fishes of Canada (Scott and Crossman 1998).); and existing studies for other proposed wind projects within or in close proximity of the South Kent Wind Project area.

2. Results

Key natural features and points of interest identified during the records review include the following:

- Drainage from the Project area occurs through a series of permanent and intermittent watercourses, including Trembley Creek, Baptiste Creek, Jeanette’s Creek, and McGregor Creek,

all of which drain from the centre of the Project area northward into the Thames River and/or Lake St. Clair. Several other watercourses located south of the drainage divide near the Town of Blenheim flow south into Rondeau Bay and ultimately Lake Erie.

- No indication of the presence of seepage areas within the Project area was identified.
- The majority of habitat within the South Kent Wind Project area is provided through permanent and intermittent agricultural drains and drainage ditches, as well as the various tributaries that flow into Lake St. Clair, Lake Erie, and Rondeau Bay. The location of these drains in relation to their outlets will ultimately determine their habitat quality.
- DFO drain classification mapping indicates that the watercourses located throughout the Project area are considered Class-C, Class-F, and Class-E, in addition to several unclassified watercourses. Smaller tributaries and many of the interconnected agricultural drains situated from the Town of Blenheim towards the western extent of the Project area include Class-C, generally characterized as warmwater, and providing habitat for baitfish only; and Class-F watercourses (DFO 1999). The majority of tributaries occurring south of the Blenheim moraine are generally considered to be Class-C, Class-F, or Unclassified. Class-E watercourses throughout this region include the McDougall Drain, McLean Drain, Ross Drain, and Morpeth Creek. These water bodies provide permanent, warmwater habitat for top predators (i.e., bass, pike, muskie, crappie).
- Section 4.4.2.2.6 of the Municipality's Official Plan (2010) indicated that no fish habitat was identified on any of the natural heritage mapping. Therefore, no information specific to fish habitat was obtained through the municipality.
- Records received and reviewed from the Chatham Area MNR indicate the presence of 40 different fish species identified as likely to occur within the Project area. Table 1 in Section 4.5 provides a list of these species and their S-Rank, SARO and COSEWIC status.
- The S-Rank and status information provided through existing species records and background sources provided by MNR indicate that one (1) species of conservation concern, the ghost shiner (*Notropis buchanani*), ranked as S2, has been confirmed in the vicinity of the South Kent Wind Project area.
- The records reviewed from the NHIC Biodiversity Explorer identified two (2) current (1980-2010) observations of species of conservation concern within the Project area, ghost shiner and warmouth (*Lepomis gulosus*).
- The occurrences of fish species of conservation concern and fish/mussel Species at Risk, as identified in Fisheries and Oceans Canada's (DFO) SAR Distribution Mapping, were documented in eight (8) and 13 drains respectively. These occurrences were, with a few exceptions, seen in Class-E drains for fish species, and Class-F drains for mussel species. A list of these watercourses may be found in Table 4 in Section 7.1 of this report.
- Existing studies that have been reviewed as part of this records review include the Merlin-Buxton Wind Farm Environmental Screening Report (ESR), Kent Centre Wind Farm ESR, Erieau-Blenheim Wind Farm ESR.

- Merlin-Buxton Wind Farm Environmental Screening Report (ESR) identified the existence of four (4) water bodies found within or in the vicinity of the South Kent Wind Project area. Eight (8) fish species were reportedly found in Baptiste Creek, with an additional 15, 18, and 23 fish species found in Government Drain #3, Jeanette's Creek, and Raleigh Plains Drain respectively.
- The Kent Centre Wind Farm ESR water body sampling was conducted at 19 locations over a number of years (1967, 1980, 1982, 1983, 1989, 1991, 2001, and 2004), during which time a total of 39 fish species were collected.
- The ESR for the Eriau-Blenheim Wind Farm (Helimax 2008) indicated that MNR fish collection records for ten (10) creeks and drains within the Project area indicated the presence of 35 fish species (no SAR) within the area. Background information from this report has identified six (6) aquatic SAR (four (4) fish and two (2) mussel species), including the chubsucker (*Erimyzon sucetta*) and snuffbox (*Epioblasma triquetra*) that have the potential to occur within the Project area. A complete list of these species is provided in Section 8.3 of this report.

3. Conclusions

Table 1 presented the results of the water body records review as it applies to the criteria identified in the REA Regulation.

Table 1. Summary of Water Body Records Review

Criteria	Yes/No	Result
i. In a water body	Yes	Based on available DFO mapping, a total of 297 project components were found to intersect with a water body. Based on mapping provided by the LTVCA, a total of 273 project components cross a water body.
ii. Within 120 m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity	No	No Project components are found within 120 m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity.
iii. Within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity	No	No Project components are found within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity.
iv. Within 120 m of the average annual high water mark of a permanent or intermittent stream		The South Kent Wind Project is located within 120 m of the average annual high water mark of 216 permanent and intermittent watercourses (refer to Appendix II).

Criteria	Yes/No	Result
	Yes	The majority of watercourses that fall within this 120 m boundary occur as linear agricultural drains which parallel roads and fields; and facilitate drainage for agricultural practices. The vast majority of these drains have been classified as Class-C and Class-F drains (DFO 2010). However there are several larger watercourses which actively drain water north of the Project Area into the Thames River, or south into Rondeau Bay and Lake Erie. Many of these larger drains have been classified as E-Class and C-Class.
iv. Within 120 m of a seepage area	No	No Project components are found within 120 m of any seepage areas.

The conduct of the Water Body records review has concluded that the Project development activities are located within 120 m of a water body including over 270 project components that were found to cross a water body. These will require site investigations to confirm the features identified during this records review. The site investigation will i) identify if any corrections to the information presented herein are required, ii) determine whether any additional water features exist on or adjacent to the Project location, iii) confirm the boundaries of the water feature within 120 m of the Project, and iv) determine the distance from the Project to the water boundary.

Appendix J

Water Body Site Investigation Summary

Project Report - Summary

May 2, 2012

**Samsung Renewable Energy Inc. and Pattern Energy
South Kent Wind Project****Summary****Water Body Site Investigation Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Water Body Site Investigation Report for the South Kent Wind Project.

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (hereinafter referred to as the “Project”), consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads and aboveground/underground cabling. The collection/transmission system will include an approximately 34 km, 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5 kV to 230 kV to connect to Chatham Switching Station (SS). The Project area is located in the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively.

Section 31 of the REA Regulation requires proponents of Class 4 wind projects to undertake Water Body Site Investigations in order to i) identify if any corrections to the information presented in the Records Review Report are required, ii) determine whether any additional water features exist on or adjacent to the Project location, iii) confirm the boundaries of the water feature within 120 m of the Project, iv) determine the distance from the Project to the water boundary, and v) provide a characterization of the habitat where project components are proposed within 120 m of a water body. To obtain this information site visits were completed. If any water bodies are located within the specified setbacks an Environmental Impact Study (EIS) is required.

These site-specific field investigations were focused on the characterization of aquatic features and habitat mapping and the results used to evaluate the potential significance of the water bodies within the project area in order to identify critical habitats which would require additional protection/mitigation measures.

2. Results

The water bodies and associated habitat characteristics (including aquatic vegetation, substrates, water depths, temperatures etc.) found within the Project area are typical of the southwestern Ontario landscape. An extensive system of drains have been established to facilitate land drainage for

agricultural practices. These drains represent a large proportion of the water bodies found throughout the Project area, typically located alongside roads and agricultural fields. Additional permanent and intermittent streams are found as naturally vegetated tributaries that flow either northward to the Thames River and ultimately into Lake St. Clair or southward into Rondeau Bay or Lake Erie. The main points of interest identified within the Site Investigation Report include the following:

- A total of 349 water body observations were included in the report including 152 observations from the investigations carried out in 2010 and 197 in 2011.
- Confirmation of the presence of 243 water body locations (permanent or intermittent streams) within 120 m of South Kent Wind Project development. Additionally, 267 total crossing locations where water bodies are crossed by project infrastructure were documented. Of these, 189 crossings are attributed to cabling, 3 are access roads only and 73 are a crossing location that includes both access roads and cabling at the same location.
- None of the documented water bodies are found within 30 m of a turbine base location. There are 54 water bodies sections within the turbine project area relating to 51 different turbines. A total of 14 water bodies were documented within 30 m of the turbine project location.
- No lakes, lake trout lakes were identified within the Project area, however a total of twelve (12) sites were found to have aquatic vegetation (i.e. watercress) indicative of groundwater seepage areas.
- Essential habitat for fish and other aquatic organisms is provided in many of these streams year round and therefore careful consideration must be given in order to protect the streams from immediate or prolonged degradation.

3. Conclusions

Tables 3 and 4 below provide a summary of the site investigation results for the water bodies identified within the South Kent Wind Project area.

Based on the results of the site investigation and the proposed Project components and boundaries a total of 243 permanent or intermittent streams exist within the South Kent Wind Project area and occur within the Project area 467 times including 265 individual crossings and 202 encroachment areas. No lakes, lake trout lakes were identified within the Project area during specific site investigations, however several water bodies were found to contain aquatic vegetation indicative of groundwater seepage areas. A number of watercourses will be located between 30 and 120 m of Project development activities and therefore an EIS will be required to assess the potential effects of the Project and the required mitigation measures to prevent or minimize adverse effects on these water bodies

Table 1: Water Body Sections within the South Kent Wind Project Area

Table Number	Number of Water Body Sections Within the Project Area			Number of Water Body Sections CROSSING a Project Component		
	Access Road	Cabling	Access Road and Cabling	Access Road	Cabling	Access Road and Cabling
3	0	10	2	0	1	4
5	9	24	8	3	19	11
7	4	31	3	0	26	8
9	5	13	4	0	39	7
11	0	4	0	0	1	0
12	6	28	1	0	46	17
14	5	21	7	0	32	17
16	1	13	1	0	23	9
18	1	1	0	0	2	0
Total	31	145	26	3	189	73

Table 2: Water Body Sections within 120m of a Turbine

Table Number	Turbine Labels	Number of Water Body Sections within 120m of a Turbine	Number of Water Body Sections within 30 m of a Turbine Base	Number of Water Bodies within 30 m of Project Location
4	P070, P087, P174	3	0	1
6	P116, P132, P081, P080, P115, P122, P071, P072, P075, P082	10	0	1
8	P068, P148	2	0	0
10	P164 (x2), P063, P097, P060, P100, P111, P149	8	0	2
13	P052, P058, P044, P056, P040 (x2), P041, P055, P033, P031, P108, P036, P046, P057, P109 (x2), P120	17	0	5
15	P152, P093, P017, P012, P028, P030, P135, P155	8	0	3
17	P004, P006, P009, P140, P171	5	0	2
19	P145	1	0	0
Total	51	54	0	14

Appendix K

Water Body Environmental Impact Study

Project Report - Summary

May 2, 2012

**Samsung Renewable Energy Inc. and Pattern Energy
South Kent Wind Project****Summary****Water Body Environmental Impact Study****1. Introduction**

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Water Body Environmental Impact Study Report for the South Kent Wind Project.

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (hereinafter referred to as the “Project”), consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads and aboveground/underground cabling. The collection/transmission line includes approximately 34 km of 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5 kV to 230 kV to connect to Chatham Switching Station (SS) (collectively referred to as the Project components). The Project area is located in the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively.

Sections 39 and 40 of the REA Regulation requires proponents of Class 4 wind projects to complete an Environmental Impact Study (EIS) as required for all water bodies determined to be within a specified setback in order to obtain a REA. The EIS is required in order to determine i) any potential negative environmental effects on the natural features ii) identify mitigation measures iii) describe how the environmental effects monitoring plan in the Design and Operations Report addresses any negative environmental effects and iv) describe how the Construction Plan Report addresses any negative environmental effects.

2. Results

This EIS has been prepared to address these requirements for the construction of Project components for all water body locations up to 120 m from the project location. A list of the water bodies and the respective distances to Project infrastructure (crossings) are provided in Table 4 of Section 8 of this report.

It has also been determined that 21 drains found within the Project area have historic SAR occurrences. Eight (8) of which have been noted for fish SAR, while the remaining 13 drains have historic presence of mussel SAR.

A total of 265 water bodies were identified to be crossed by proposed infrastructure. Of these, 191 crossings are attributed to cabling, 3 are access roads only, and 73 are a combination of both access

roads and cabling at the same location. The recommendations and mitigation strategies provided below have been examined in light of this information and will minimize any impacts to these sensitive water bodies.

The results of the EIS on these water bodies are summarized in Table 1.

Table 1 - Summary of Potential Negative Environmental Effects and Proposed Mitigation

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
Aquatic Biota and Habitat		
Pre-Construction	Potential for construction activities associated with watercourse crossings of water bodies to alter aquatic habitat and biota.	Where possible, existing crossings will be utilized to avoid work activities within or adjacent to any water bodies. Suitable crossing designs (including methodologies and structure types) for all Project infrastructure must be developed in accordance with the appropriate permitting requirements under the federal <i>Fisheries Act (1985)</i> and in consultation with LTVCA, and DFO.
Construction	Potential for construction activities associated with watercourse crossings of water bodies to alter aquatic habitat and biota.	Use of directional drilling methodologies for placement of underground cabling. Use of Bailey bridges to avoid or minimize impacts to the larger water bodies to be crossed.
Construction/ Operations/ Decommissioning	Indirect effects to aquatic biota and habitat due to changes in surface water quality, surface water runoff rate and groundwater.	Proposed mitigation for surface water quality, surface water runoff and groundwater, as below, will be implemented.
Construction/ Operations/ Decommissioning	Potential for culverts used in access road crossings to present barriers to movement of aquatic biota	Appropriate crossing structures should be properly installed with guidance from the responsible government agencies. Culvert lengths should be limited, and slope should be kept to a minimum.
Decommissioning	Material left within the water body has the potential to alter fish habitat and biota.	Ensure the removal of all material from water body following decommissioning.
Surface Water Runoff		
Construction	Surface water runoff pattern and rate may be altered due to the removal	Flow dissipation measures will be installed near the 30 m setback from the water bodies. Vegetated buffers of 10 m will be utilized where runoff enters agricultural lands or where ditches discharge in close proximity to

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
	of vegetation, change in land grading, ditching, and soil compaction.	watercourses. Ditches will be vegetated to assist with flow dissipation and rock check dams/straw bales will be implemented at appropriate intervals to decrease turbidity and assist with decreasing the rate of flow. Compacted areas will be scarified or loosened by disking or other suitable methods. Long term ground cover will be provided.
Operations	Surface water runoff pattern and rate may be altered due to the changes in vegetation, land grading, ditching, and impervious/less pervious soils.	Minor grading will occur and take into consideration current land grade to replicate present stormwater flow patterns. Long-term ground cover will be planted. Impervious and less pervious soils will allow runoff into ditches or localize points and discharge into vegetation to allow flow dissipation; therefore no appreciable impact to local drainage patterns.
Decommissioning	The alteration of surface water pattern and rate may cause an increase in surface water runoff to the receiving water bodies if land grading and ditching are left in place after decommissioning.	<p>All infrastructure will be removed, where required by the landowner, including access roads, under and above ground cabling, drainage ditches, and the land re-graded to pre-construction conditions.</p> <p>Permission under the federal <i>Fisheries Act</i> must be obtained from LTVCA, DFO, and MNR to remove structures.</p> <p>All timing windows for in-water work are to be respected.</p>
Surface Water Quality		
Construction	Increase in soil erosion and sedimentation may cause an increase in turbidity in the receiving water bodies due to implementation of access road crossings, land grading, ditching, soil compaction, and vegetation removal.	<p>Implementation of an Environmental Management Plan (EMP) as guidance for the contractor to minimize environmental impacts including an Erosion and Sediment Control plan to be created and implemented. Examples of key components of the plan are: minimize size of cleared and disturbed areas, phase construction to minimize time of exposed soils, adequate supply of erosion and sediment control, divert runoff through vegetated areas, install flow velocity control measures in drainage ditches, revegetate and stabilize exposed soils, grade stockpiles to stable angle, stockpiles placed in suitable areas away from the receiving water body.</p> <p>The greater of a 10 m setback from the top-of-bank of any open drain or its naturally vegetated corridor is to be respected such that no construction activity occurs in this area (Municipality of Chatham-Kent 2010).</p> <p>Construction will be in accordance with the <i>Environmental Guidelines for Access Roads and Water Crossings</i> (MNR, 1990). Sediment and erosion controls will be installed per the guidance in the <i>Erosion &</i></p>

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
		<p><i>Sediment Control Guideline for Urban Construction</i> (GGHACA, 2006).</p> <p>Sediment and erosion controls to be in place prior, during and following construction until at least re-vegetated areas have had a chance to establish.</p> <p>Timing windows, specified by LTVCA, for in-water works are to be respected.</p> <p>Culverts shall be installed in dry conditions using DFO/MNR/LTVCA accepted methods only.</p> <p>Access roads will be aligned 90 degrees to watercourse.</p> <p>Use of heavy machinery in the stream bed will be avoided.</p> <p>Stabilize and revegetate exposed areas as soon as possible.</p> <p>Riprap should be placed on the upstream and downstream fill slope around the culvert inlet to prevent erosion of fill.</p> <p>Additional site grading shall be conducted to ensure surface runoff is directed away from the area of concern and the natural drainage of the area is maintained.</p> <p>All stockpiles (topsoil and subsoil) will be located at least 30 m away from water bodies. All stockpiles will be graded to an appropriate slope and revegetated (or other measures), if to be left exposed for longer than 30 days, as soon as possible to prevent slope failure and erosion.</p> <p>Settling ponds to be used, where necessary, to remove sediment prior to discharge of water.</p>
Operations	An increase in soil erosion and sedimentation may cause increased turbidity in the receiving water bodies due to land grading and ditching, and changes in	Pre-construction stormwater flow patterns will be replicated through re-grading of land at the end of construction. Planting of long-term ground cover. Runoff will be directed into ditches or localized points and discharged into vegetation to allow flow dissipation; therefore no appreciable impact to local drainage patterns.

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
	vegetation.	
Decommissioning	Increased soil erosion and sedimentation may cause an increase in turbidity in the receiving water bodies due to land grading and ditching, and changes in vegetation.	All infrastructure will be removed, where not required by the landowner, including access roads and drainage ditches, to establish pre-construction conditions. It is assumed that the land will be utilized for row crops.
Construction/ Decommissioning	Heavy dust may impact surface water quality.	Use of dust suppressant, phased construction and decommissioning, stockpiles to be stabilized and/or covered, hard surfaces for access roads, and avoid earthworks during windy days.
Construction/ Operation/ Decommissioning	Contamination of surface water due to accidental spills.	<p>Maintenance areas and any hazardous materials (fuel storage) and/or waste storage should be located in a central Project area, off-site and in a secure (fenced/locked) and impermeable area capable of containing at least 110% of the storage capacity of the area.</p> <p>Refueling activities should occur only in designated (central) areas and should be located no less than 30 m from any water body.</p> <p>All hydraulic systems on equipment will be inspected prior to mobilization to all sites, daily prior to use, prior to remobilization to the next site.</p> <p>Equipment shall not be placed within the water body with all work conducted from land and sufficient setbacks to prevent failure of bank slopes.</p> <p>Contractor to have Emergency Response Plan (ERP) in place in accordance with EMP.</p> <p>All construction staff shall be properly trained on Spill Response and the use of Spill Kits.</p> <p>Adhere to Project operational control procedure for storage and handling of hazardous materials. All construction staff are to be trained on proper handling of hazardous materials.</p> <p>All Project and construction vehicles shall maintain a mobile spill kit in the vehicle at all times.</p>

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
Groundwater		
Construction	Altered surface water runoff or excavations may impact recharge or seepage areas.	The amount and duration of dewatering for excavations will be minimized to the extent possible.
Construction/ Operations/ Decommissioning	Groundwater contamination due to accidental spills.	See mitigation measures above for accidental spills contaminating surface water.

Table 7 in the EIS summarizes the proposed monitoring plan.

As discussed in the Design and Operations Report, environmental effects monitoring is proposed in respect of any negative environmental effects that may result from engaging in the Project. The monitoring plan in the Design and Operations Report identifies: performance objectives in respect of the negative environmental effects; mitigation measures to assist in achieving the performance objectives; and, a program for monitoring negative environmental effects for the duration of the time the Project is engaged in, including a contingency plan to be implemented if any mitigation measures fail.

In addition, the Construction Plan Report for the Project details the construction and installation activities (including location and timing), any negative environmental effects that result from construction activities within 300 m of the Project and mitigation measures for the identified negative environmental effects.

3. Conclusions

The EIS has been prepared to identify potential negative environmental effects that all phases of the Project may have on the watercourses. Mitigation measures have been proposed to prevent these effects from occurring or minimize the magnitude, extent, duration and frequency in the event that they do occur. The primary mitigation measure that will prevent adverse effects on the water bodies is adherence to the 30 m setback requirement. Certain construction activities may have short-term minor impacts, but these would be temporary in nature. Operational activities are not anticipated to impact the water bodies as the Project operated remotely and maintenance is only expected to occur infrequently throughout the year. Decommissioning activities will be similar to construction activities and as such they may cause short-term minor impacts yet once the Project site has been restored to its previous condition no long-term impacts are anticipated.

Overall, while the Project will result in some changes to the natural environment, no negative effects on the water bodies are anticipated to occur following implementation of the mitigation and monitoring measures proposed.

Appendix L

Stage 1 Archaeological Assessment Report Summary

Samsung Renewable Energy Inc. and Pattern Energy South Kent Wind Project

Summary

Stage 1 Archaeological Assessment (Background Study and Property Inspection)

1. Introduction

The Stage 1 archaeological assessment was conducted by Archaeological Services Inc. (ASI) in accordance with Section 22 of the Renewable Energy Approvals (REA) Regulation (O. Reg.) 359/09 under Part V.0.1 of the *Environmental Protection Act*. Samsung Renewable Energy Inc. and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, (hereinafter referred to as the “Project”) to be located within the Municipality of Chatham-Kent in southwestern Ontario.

The Project is proposed to be 270 MW in size using Siemens wind turbine technology as well as supporting infrastructure, including access roads, buried cables and overhead collector lines. The Project will also consist of a 34.1 km, 230 kV transmission line and two (2) substations which are required to step the voltage from 34.5kV to 230 kV to enable connection to the Chatham Switching Station (SS). The Project is located south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively.

Two (2) Stage 1 archaeological assessment reports were previously submitted for former wind projects (Kent Centre Wind Farm Project (ASI 2009: CIF P057-539-2009) and the Merlin-Quinn Wind Farm Project (Jacques Whitford 2008: CIF P002-131-2008)), which now form part of the South Kent Wind Project. The former projects were situated in Romney, East Tilbury, Raleigh, Harwich, and Howard Townships, all formerly of Kent County.

2. Stage 1 Background Study

A study area was defined as lands in the general vicinity of the proposed Project including large portions of Romney, East Tilbury, Raleigh, Harwich, and Howard Townships. The Stage 1 background study determined that 49 archaeological sites have been previously registered within one (1) km of the general Project area, three (3) of which are within 300 m of proposed Project infrastructure. A review of the geography and local nineteenth century land use of the study area suggests that there is potential for the identification of Aboriginal and historic archaeological sites.

3. Conclusions and Recommendations

A field review determined that most of the study area lands are agricultural and generally undisturbed, therefore the potential for undiscovered archaeological resources exist. A portion of the proposed collection/transmission lines, however, will be constructed in existing road right-of-way and within an existing rail bed. These areas have been determined to be previously disturbed by these activities such that there is therefore no potential for archaeological sites.

In general, the findings of the background research identified that the study area includes lands with potential for archaeological sites and is supported by the evaluation of archaeological site potential.

In light of these results, additional archaeological assessment is required under O. Reg. 359/09, s. 22. The recommendations are presented below:

1. No Stage 2 Archaeological Assessment (Property Assessment) is recommended for the former Michigan Central Railway rail bed comprised of aggregate fill. (Circuits and a service road are proposed atop the rail bed).
2. A property inspection of impacted road ROWs is recommended in advance of the Stage 2 Archaeological Assessment (Property Assessment) to identify and document visibly disturbed sections. No Stage 2 assessment of the disturbed locations is recommended. Stage 2 assessment should be conducted where undisturbed ROWs may be impacted. This work will be done in accordance with the *MTC Standards and Guidelines for Consultant Archaeologists*.
3. All remaining locations of proposed construction impact (e.g. turbine sites, access roads, circuits, and turn-arounds) must be subjected to a Stage 2 Archaeological Assessment (Property Assessment) in accordance with the *MTC Standards and Guidelines for Consultant Archaeologists*.
4. Should design changes (subsequent to the turbine layout dated November 3, 2010; access road layout dated November 17, 2010; and electrical circuit layout dated December 3, 2010) or temporary workspace requirements result in the inclusion of lands that were not previously assessed where there is potential for sites, these lands should be subjected to a Stage 2 Archaeological Assessment (Property Assessment) to determine if cultural remains are present.

Appendix M

Stage 2 Archaeological Assessment Report Summary

Stage 2 Property Assessment

South Kent Wind Project Romney, East Tilbury, Raleigh, Harwich and Howard Townships, Former Kent County, Municipality of Chatham-Kent, Ontario

Final Report

EXECUTIVE SUMMARY

Archaeological Services Inc. (ASI) was contracted by Hatch Ltd., Niagara Falls, on behalf of Samsung Renewable Energy Inc. and Pattern Energy (the Proponent), to conduct a Stage 2 Property Assessment of the South Kent Wind Project (the “Project”), a 270 MW wind energy project which will be located within the Municipality of Chatham-Kent, in southwestern Ontario. The Project is located south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively.

The archaeological assessment for the Project is being conducted under Ontario Regulation 359/09, the Renewable Energy Approvals (REA) under Part V.O.1 of the *Environmental Protection Act*. Between April 16 and July 5, 2011, ASI conducted a Stage 2 property assessment of Project lands consisting of 137 infrastructure survey areas—134 plough areas for the turbines, substation and meteorological tower sites, and 3 areas for circuit layout—using pedestrian and test pit survey methods. A total of 85 archaeological sites were identified.

Of these archaeological sites, forty-two (42) were determined to be sufficiently assessed and documented at Stage 2, and forty-three (43) met the criteria for requiring a Stage 3 site specific assessment.

Partial clearance is recommended to allow construction to proceed in the infrastructure survey areas no longer of archaeological concern while the required Stage 3 site specific assessment work is carried out.

If the Project impacts lands immediately adjacent to the existing rail bed within the Canadian Pacific Railway (former Michigan Central Railway) rail corridor, a Stage 2 property assessment should be conducted on lands determined to have archaeological potential.

If changes to Project layout WTG 10 Rev5b or temporary workspace requirements result in the inclusion of previously unsurveyed lands, these lands should be subjected to a Stage 2 property assessment.

ASI requests that the MTC concur with the above Recommendations.



5.0 RECOMMENDATIONS

1) If the Project impacts lands immediately adjacent to the existing rail bed within the Canadian Pacific Railway (former Michigan Central Railway) rail corridor, a Stage 2 property should be conducted on lands determined to have archaeological potential; and

2) If changes to Project layout WTG 10 Rev5b or temporary workspace requirements result in the inclusion of previously unsurveyed lands, these lands should be subjected to a Stage 2 property assessment.

In addition to the above, based on the results of the Stage 2 property assessment of the South Kent Wind Project (the Project) area, Archaeological Services Inc. (ASI) makes the following recommendations:

- 3) The Stage 2 property assessment did not find any archaeological sites within 101 infrastructure survey areas (ISA), including turbine plough areas (TPA), substation plough areas (SPA), meteorological tower plough area (MPA), and circuit layout survey areas (CLSA) and, therefore, it is recommended that no further archaeological assessment of these areas is required. These areas are: TPA-001, TPA-002, TPA-003, TPA-004, TPA-005, TPA-007, TPA-008, TPA-009, TPA-012, TPA-013, TPA-014, TPA-016, TPA-018, TPA-022, TPA-023, TPA-024, TPA-028, TPA-030, TPA-032, TPA-033, TPA-034, TPA-035, TPA-036, TPA-037, TPA-038, TPA-039, TPA-040, TPA-041, TPA-042, TPA-044, TPA-045, TPA-046, TPA-047, TPA-048, TPA-052, TPA-053, TPA-054, TPA-055, TPA-056, TPA-057, TPA-058, TPA-061, TPA-062, TPA-064, TPA-066, TPA-067, TPA-068, TPA-069, TPA-070, TPA-072, TPA-174, TPA-077, TPA-078, TPA-080, TPA-082, TPA-087, TPA-091, TPA-092, TPA-094, TPA-095, TPA-098, TPA-099, TPA-100, TPA-101, TPA-102, TPA-108, TPA-109, TPA-111, TPA-113, TPA-115, TPA-116, TPA-120, TPA-121, TPA-122, TPA-125, TPA-126, TPA-132, TPA-135, TPA-138, TPA-145, TPA-148, TPA-149, TPA-152, TPA-155, TPA-156, TPA-161, TPA-162, TPA-163, TPA-164, TPA-165, TPA-167, TPA-168, TPA-174, TPA-175, TPA-176, SPA-1, SPA-2, MPA-1, MPA-2, CLSA-2 and CLSA-3;
- 4) Of the 85 archaeological sites documented during the Stage 2 property assessment, forty-two (42) sites are not recommended for further archaeological assessment as their cultural heritage value or interest (CHVI) has been sufficiently assessed and documented at Stage 2. These are:

ISA	Archaeological Sites
TPA-006	AcHl-60 (SKWP-P53), SKWP-P36
TPA-010	AcHl-61 (SKWP-P55), SKWP-P56
TPA-017	AcHl-57 (SKWP-P1), SKWP-P2, SKWP-P3
TPA-019	AcHl-71 (SKWP-P64)
TPA-020	AcHl-69 (SKWP-P63), AcHl-72 (SKWP-P65)
TPA-029	AcHl-74 (SKWP-P66)
TPA-031	AcHm-54 (SKWP-P32), SKWP-P33
TPA-065	AbHn-29 (SKWP-P22), AbHn-30 (SKWP-P23), SKWP-P25
TPA-071	SKWP-P16
TPA-073	AbHo-3 (SKWP-P10)



ISA	Archaeological Sites
TPA-075	SKWP-P71
TPA-079	AbHo-4 (SKWP-P26)
TPA-081	AbHo-2 (SKWP-P9)
TPA-093	SKWP-P67, SKWP-68
TPA-097	AcHm-60 (SKWP-P34)
TPA-103	SKWP-P48
TPA-104	SKWP-P60
TPA-106	SKWP-P54
TPA-107	AcHI-41 (SKWP-19), SKWP-P20
TPA-139	AcHI-56 (SKWP-P46), SKWP-P43, SKWP-P45
TPA-146	SKWP-P73, SKWP-P75, SKWP-P77
TPA-150	AbHo-6 (SKWP-P72)
TPA-154	SKWP-P69
TPA-166	SKWP-P38
TPA-171	SKWP-P52
TPA-173	SKWP-P5, SKWP-P7, SKWP-P8

- 5) In addition to the ISAs listed in Recommendation #3 above, thirteen (13) ISAs contain archaeological sites for which no further archaeological assessment is required (per Recommendation 4 above), and, therefore, it is recommended that no further archaeological assessment of these ISAs is required. They are: TPA-006, TPA-019, TPA-020, TPA-031, TPA-071, TPA-073, TPA-075, TPA-079, TPA-081, TPA-093, TPA-097, TPA-150, and TPA-154;
- 6) It is recommended that the remaining 43 archaeological sites documented during the Stage 2 property assessment be subject to Stage 3 site specific assessment if they are to be located within the Project limits as they all meet the criteria for requiring a Stage 3 site-specific assessment based on the MTC's 2011 Standards and Guidelines (S & G), *Section 2.2 Analysis: Determining the requirements for Stage 3 assessment*. The type of site as per *S & G Section 2.2* and the detailed Stage 3 requirements for each site as per *S & G Section 3* and *S & G Section 7.8.4*, Standard 1c are as follows:
- a) Stage 3 is recommended for the following 21 archaeological sites or portions thereof located within the Project lands based on *S & G Section 2.2*, Standard 1.a.i.(1):

ISA	Archaeological Sites
TPA-010	AcHI-50 (SKWP-P37)
TPA-017	AcHI-33 (SKWP-P4)
TPA-103	AcHI-58 (SKWP-P50)
	AcHI-59 (SKWP-P51)
	AcHI-64 (SKWP-P49)
TPA-104	AcHI-66 (SKWP-P61)
	AcHI-67 (SKWP-P62)
	AcHI-44 (SKWP-P27)
TPA-106	AcHI-48 (SKWP-P31)
	AcHI-45 (SKWP-P28)
	AcHI-46 (SKWP-P29)
	AcHI-47 (SKWP-P30)



ISA	Archaeological Sites
TPA-107	AcHI-42 (SKWP-P21)
TPA-118	AcHI-65 (SKWP-P58)
TPA-133	AcHI-76 (SKWP-P70)
TPA-139	AcHI-55 (SKWP-P44)
TPA-140	AcHI-62 (SKWP-P57)
TPA-171	AcHI-35 (SKWP-P11)
	AcHI-36 (SKWP-P12)
	AcHI-37 (SKWP-P13)
	AcHI-39 (SKWP-P17)

The Stage 3 assessment must be carried out according to the criteria for small pre-contact Aboriginal sites *where it is **not yet** evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation per *S & G Section 3.1*, Standard 1.a-b, if necessary;
 - controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
 - test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling;
- b) The Stage 2 property assessment identified one (1) pre-contact Aboriginal archaeological site—AcHI-68 (SKWP-P59) associated with TPA-118—dating to the Early Archaic period that meets the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2*, Standard 1.a.i.(1). At present, the entire site including the 20 m buffer is outside the Project limits (see ASI 2011c: Figure 22). If the project limits change to include the site area or its buffer, it is recommended that this area must be subject to a Stage 3 Site-specific assessment. The Stage 3 assessment must be carried out according to the criteria for a small, pre-contact Aboriginal site *where it is **not yet** evident* that the level of CHVI will result in a recommendation to proceed to Stage 4.
- historical documentation per *S & G Section 3.1*, Standard 1.a-b, if necessary;
 - controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
 - test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling. Due to the early time period of the site, a 20% sample of the excavated units must be screened through 3 mm mesh to facilitate the recovery of small, potentially diagnostic artifacts;
- c) The Stage 2 property assessment identified one (1) isolated, pre-contact Aboriginal archaeological findspot—AcHI-34 (SKWP-P6) within TPA-173—dating to the Early Archaic period that meets the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2*, Standard 1.b.iii, and, therefore, it is recommended that a Stage 3 site-specific



assessment be conducted for this site or portions thereof located within the Project lands. The Stage 3 assessment must be conducted according to the criteria for a small pre-contact Aboriginal site *where it is **not yet** evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment includes:

- historical documentation per *S & G Section 3.1*, Standard 1.a-b, if necessary;
 - controlled surface pick-up of the findspot area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted. If no additional surface finds are discovered, another CSP will be conducted after additional weathering has occurred. If no artifacts are recovered, a minimum five one-metre units centred over the original findspot will be excavated. Due to the early time period of the site, a 20% sample of the excavated units (i.e., one unit) must be screened through 3 mm mesh to facilitate the recovery of small, potentially diagnostic artifacts; and
 - test unit (1 m square unit) excavation at 5 m intervals across the site will *only* be required if a scatter of additional artifacts are discovered during the controlled surface pickup, plus an additional 20% of focused sampling. Due to the early time period of the site, a 20% sample of the excavated units must be screened through 3 mm mesh to facilitate the recovery of small, potentially diagnostic artifacts;
- d) The Stage 2 property assessment identified six (6) post-contact Euro-Canadian archaeological sites that meet the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2*, Standard 1.c, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for these sites or portions thereof located within the Project lands. These sites are:

ISA	Archaeological Sites
TPA-021	AcHI-73 (SKWP-H11)
TPA-026	AcHI-75 (SKWP-H12)
TPA-029	AcHI-70 (SKWP-H10)
TPA-065	AbHn-31 (SKWP-H5)
TPA-124	AbHo-5 (SKWP-H13)
CLSA-2	AcHI-61 (SKWP-H9)

The Stage 3 assessment must be conducted according to the criteria for small post-contact Euro-Canadian sites *where it is **not yet** evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation (i.e., land use history of property) per *S & G Section 3.1*, Standard 1.b-g, as appropriate;
- controlled surface pick-up of the site area (except for AcHI-61 that was discovered during test pit survey): surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
- test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling;



- e) The Stage 2 property assessment identified 11 pre-contact Aboriginal archaeological sites that meet the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2, Standards 1.a.i.(1) or (3)*, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for these sites or portions thereof located within the Project lands. These sites are:

ISA	Archaeological Sites
TPA-060	AcHm-58 (SKWP-P14)
TPA-103	AcHI-57 (SKWP-P47)
TPA-105	AcHI-49 (SKWP-P35)
	AcHI-51 (SKWP-P39)
	AcHI-52 (SKWP-P40)
	AcHI-53 (SKWP-P41)
TPA-107	AcHI-40 (SKWP-P18)
	AcHI-43 (SKWP-P24)
TPA-139	AcHI-54 (SKWP-P42)
TPA-146	AcHI-77 (SKWP-P74)
	AcHI-78 (SKWP-P76)

The Stage 3 assessment must be conducted according to the criteria for small pre-contact Aboriginal sites *where it is **clearly** evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation per *S & G Section 3.1, Standard 1.a-b*, if necessary;
 - controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
 - test unit (1 m square unit) excavation at 10 m intervals across the site plus an additional 40% of focused sampling;
- f) The Stage 2 property assessment identified two (2) post-contact Euro-Canadian archaeological sites that meet the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2, Standard 1.c*, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for the these sites or portions thereof located within the Project lands. These sites are:

ISA	Archaeological Sites
TPA-063	AbHn-32 (SKWP-H7)
TPA-166	AcHI-63 (SKWP-H6)

The Stage 3 assessment must be conducted according to the criteria for small post-contact Euro-Canadian sites *where it is **clearly** evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:



- historical documentation (i.e., land use history of property) per *S & G Section 3.1, Standard 1.b-g*, as appropriate;
 - controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
 - test unit (1 m square unit) excavation at 10 m intervals across the site plus an additional 40% of focused sampling;
- g) The Stage 2 property assessment identified one (1) pre-contact Aboriginal archaeological site—AcHI-38 (SKWP-P15) within TPA-171—that meets the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2, Standards 1.a.i.(1)*, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for this site or portions thereof located within the Project lands..

The Stage 3 assessment must be conducted according to the criteria for a large, relatively dense plough disturbed site with multiple scatters containing more than one diagnostic artifact *where it is **clearly** evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation per *S & G Section 3.1, Standard 1.a-b*, if necessary;
 - controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
 - test unit excavation:
 - place multiple grids over areas of artifact concentration and excavate across those grids at 5 m intervals;
 - place and excavate additional test units, amounting to 20% of the initial grid total, between areas of concentration to document areas of lower concentration; and
 - place and excavate additional units, amounting to 10% of the initial grid total, on the periphery of the surface scatter to determine the site extent and sample the site periphery;
- 7) Partial clearance is recommended to allow construction to proceed in areas of the Project lands where there are no further concerns for impacts to archaeological sites or parts of the project as identified in Recommendations 3, 4 and 5 above. To support this, it is recommended that MTC provide a letter confirming that there are no further concerns with regard to alterations to archaeological sites for those sites and areas as detailed in Recommendation 3, 4 and 5 above. The required conditions have been met as per *Section 7.8.5, Standards 1.a-d*, as indicated by the following:
- the Stage 2 fieldwork has been completed for the Project lands and Stage 3 is still required for archaeological sites or portions thereof located within Project lands as detailed in Recommendations 6 a, c-g, above;



- the partial clearance recommendation forms part of the final report on the Stage 2 work;
- the estimated timeline for completing the remaining Stage 3 archaeological assessment work is the fall of 2011 and/or the spring of 2012;
- the development mapping showing the location and extent of the archaeological sites requiring Stage 3 site-specific assessment along with their 20 m protective buffer and their 50 m monitoring buffer zone are provided (see ASI 2011 c, c.f., P347-001-2011: Supplementary Documentation, Figures 2-5, 10-12, 20-28, 31-32);
- the following detailed avoidance strategy has been committed to by the Proponent and will remain in place until the required Stage 3 site-specific assessments for the 42 archaeological sites have been completed (estimated to be by the end of summer 2012) as noted in Recommendation 6 a, c-g above:
 - 1) written instructions will be provided to all construction personal working within the Project lands to avoid the location of these archaeological sites and their protective 20 m buffers. No soil disturbances other than traditional farming practices can occur within these areas; and
 - 2) prior to construction proceeding within the 50 m monitoring buffer zone surrounding these archaeological sites, snow fencing will be erected around the sites and their 20 m protective buffers within the project lands. All construction within the monitoring zone will then be monitored by a licensed archaeologist who will be empowered to stop construction if there is a concern for impact to an archaeological site.



Appendix N

Noise Assessment Report Summary

Project Report - Summary

May 2, 2012

Samsung Renewable Energy Inc. and Pattern Energy South Kent Wind Project

Summary

Noise Assessment Report

1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Noise Assessment Report for the South Kent Wind Project.

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (the “Project”), consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads, construction and turn around areas, and buried and/or overhead collection/transmission lines. The collection/transmission line will include approximately 34 km of 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5 kV to 230 kV to connect to the Chatham Switching Station. The Project Area is located within the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively. Further information regarding the Project can be found on-line at: www.southkentwind.ca.

Section 13, Table 1 of the REA Regulation requires proponents of Class 4 wind projects to prepare a Noise Assessment Report. The Noise Assessment Report was prepared in accordance with the publication entitled “Noise Guidelines for Wind Farms” by the Ministry of the Environment (2008), and includes a general description of the facility, noise sources and points of reception (POR), assessment of compliance, and all supporting information relevant to the Project.

A total of 124 Siemens wind turbine generators (WTG) are evaluated for noise compliance in an area of approximately 50 by 15 km, along with two substations (230-kV). The nominal capacities of the wind turbines will be 2.221-MW (72 turbines), 2.126 MW (51 turbines) and 1.903-MW (1 turbine)

2. Approach to the Study

- The main sources of noise from the Project will be the 124 WTG and two substation transformers.
- Each substation, named Railbed and Sattern, contains one 230-kV transformer.

- WTG selected for the Project include 72 Siemens SWT-101 Maximum Power Rating 2221-kW (hereafter known as SWT-2.221-101) turbines each emitting a total of 105-dBA, 51 SWT-2.126-101 (2.126-MW unit) turbines each emitting a total of 104-dBA and one SWT-1.902-101 (1.902-MW unit) emitting 102 dBA.
- Acoustical data provided by Siemens was adjusted to the site specific conditions. According to C61400-11, wind turbine generators do not present any tonality issues, thus no tonality penalty was added to the sound power spectrum.
- Each of the Project's WTG has a 34.5-kV unit transformer located outside of the tower right beside the turbine base. However, these transformers are not considered to be significant noise sources, as stated by the MOE Guidelines for Wind Farms, and thus were not considered in the study.
- 330 WTG along with 7 substation transformers from the ten adjacent wind farms (eight existing and two proposed) found in the vicinity of the Project were taken into account in the noise model.
- The POR used in this study were taken from the Ontario Base Map for the Chatham-Kent area, Google Earth Imagery, detailed aerial photography of the Project area (supplied by Epiware), and field inspection. The total number of receptors located within 1500-m from any of the Project WTG and within 1000 m from any of the Project substations is 2,138.
- The sound pressure levels at the POR were predicted using procedures from ISO 9613-2, a widely used standard for evaluation of noise impact in environmental assessments, implemented in CADNA-A. The CADNA-A results for selected points of reception were manually verified using a MathCAD spreadsheet.

3. Conclusion

Based on the results obtained in this study, it is concluded that the sound pressure levels at the points of reception located within 1500-m from any of the Project wind turbine generators and within 1000-m from any of the Project substations will be compliant with the MOE requirements for Class 3 areas not exceeding 40.0-dBA.

Appendix O

Wind Turbine Specifications Report Summary

Project Report - Summary

April 25, 2012

**Samsung Renewable Energy Inc. and Pattern Energy
South Kent Wind Project****Summary****Wind Turbine Specification Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Wind Turbine Specification Report for the South Kent Wind Project.

Samsung Renewable Energy Inc. and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, (hereinafter referred to as the “Project”). The Project is proposed to be 270 MW in size with approximately 124 operational wind turbines, (using Siemens wind turbine technology), as well as supporting infrastructure, including access roads, construction and turn around areas, and buried and/or overhead collection/transmission lines. The Project will also consist of a 34 km 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5 kV to 230 kV to enable connection to the Chatham Switching Station (SS). The Project will be located within the Municipality of Chatham-Kent in southwestern Ontario.

Section 13, Table 1 of the REA Regulation requires proponents of Class 4 wind projects to prepare a Wind Turbine Specification Report.

2. Specifications

The Project will consist of Siemens SWT-2.3-101 wind turbines with the specifications in Table 2.1 below.

Table 2.1 Technical Specifications

Make and Model	Siemens SWT-2.3-101
Name Plate Capacity	2.3 MW
Total Tower Height	150.5 m
Hub Height above grade	100 m
Blade Length/Rotor Sweep Area	49 m/8000 m ²
Rotational Speeds:	6 -16 rpm

The wind turbine model SWT-2.3-101 that will be used on the Project will be derated from 2.3 MW to 2.221 MW, 2.126 MW and 1.903 MW and respective sound power levels are reduced accordingly as described in the Noise Assessment Report.

Appendix P

MNR Letter of Confirmation

**Ministry of
Natural Resources**
615 John Street North
Aylmer ON N5H 2S8
Tel: 519-773-9241
Fax: 519-773-9014

**Ministère des
Richesses naturelles**
615, rue John Nord
Aylmer ON N5H 2S8
Tél: 519-773-9241
Télé: 519-773-9014



May 1, 2012

**Kim Sachtleben
Development and Market Analysis Manager
Pattern Energy
100 Simcoe Street, Ste. 105
Toronto, ON M5H 3G2**

Dear Ms. Sachtleben,

RE: Natural Heritage Assessment Confirmation for South Kent Wind Project

In accordance with the Ministry of the Environment's (MOE's) Renewable Energy Approvals (REA) Regulation (O.Reg.359/09), the Ministry of Natural Resources (MNR) has reviewed the natural heritage assessment (NHA) and environmental impact study (EIS) for the South Kent Wind Project in the Municipality of Chatham-Kent submitted by Samsung Renewable Energy Inc. and Pattern Energy on April 27, April 30 and May 1, 2012.

In accordance with Section 28(2) and 38(2)(b) of the REA regulation, MNR provides the following confirmations following review of the NHA:

1. The MNR confirms that the determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation criteria or procedures established or accepted by MNR.
2. The MNR confirms that the site investigation and records review were conducted using applicable evaluation criteria or procedures established or accepted by MNR, if no natural features were identified.
3. The MNR confirms that the evaluation of the significance or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures established or accepted by MNR (if required).
4. The MNR confirms that the project location is not in a provincial park or conservation reserve.
5. The MNR confirms that the EIS report has been prepared in accordance with

In addition to the NHA, Environmental Effects Monitoring Plans that address post-construction monitoring and mitigation for birds and bats must be prepared and implemented. It is recommended that post-construction monitoring plans be prepared in accordance with MNR Guidelines and be reviewed by MNR in advance of submitting a REA application to MOE in order to minimize potential delays in determining if the application is complete.

This confirmation letter is valid for the project as proposed in the NHA and EIS, including those sections describing the Environmental Effects Monitoring Plan and Construction Plan Report. Should any changes be made to the proposed project that would alter the NHA, MNR may need to undertake additional review of the NHA.

In accordance with Appendix D of MNR's NHA Guide, a commitment has been made to complete pre-construction assessments of habitat use for the following candidate significant wildlife habitats:

- Open Country Breeding Bird Habitat (Feature P019 Open Field – Campbell Line)
- Area-Sensitive Breeding Bird Habitat (Feature P029-W1)
- Significant S1-S3 Ranked Bat Habitat (P022-W1, P042-W1, P065-W2, P091-W1, P092-W1, P102-W2, P108-W1/P108-WE1, P111-WE1, and P173-W1)
- Bat Maternity Roost Habitat (P001-W1, P108-W1/P108-WE1, P118-W1, and RB-A2)

MNR has reviewed and confirmed the assessment methods and the range of mitigative options. Pending completion of the assessments and determination of significance, the appropriate mitigation is expected to be implemented, as committed to in the EIS report.

Where specific commitments have been made by the applicant in the NHA with respect to project design, construction, rehabilitation, operation, mitigation, or monitoring, MNR expects that these commitments will be considered in MOE's Renewable Energy Approval decision and, if approved, be implemented by the applicant.

In accordance with S.12 (1) of the REA Regulation, this letter must be included as part of your application submitted to the MOE for a Renewable Energy Approval.

Please be aware that your project may be subject to additional legislative approvals as outlined in the Ministry of Natural Resources' *Approvals and Permitting Requirements Document*. These approvals are required prior to the construction of your renewable energy facility.

If you wish to discuss any part of this confirmation or additional comments provided, please contact Heather Riddell, Acting Planning Ecologist, at 519-773-4723 or heather.riddell@ontario.ca.

Sincerely,



Mitch Wilson
District Manager
Aylmer District MNR

cc. Amy Cameron, Renewable Energy Program Coordinator, Southern Region, MNR
Narren Santos, Environmental Assessment and Approvals Branch, MOE
Erin Cotnam, A/Southern Regional Renewable Energy Coordinator, MNR
KC Kim, General Manager, Samsung Renewable Energy Inc.
Keith Knudsen, Manager, Development Engineering, Bowark Energy Ltd.
Sean Male, Terrestrial Ecologist, EA and Management, Hatch
Tara Lessard, Terrestrial and Wetland Biologist, Natural Resources Solutions Inc.

Ministry of
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Ministère des
Richesses naturelles
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Télééc: 519-773-9014



September 2, 2011

Attn: Kim Sachtleben
Development and Market Analysis Manager
Pattern Energy
100 Simcoe Street, Ste. 105
Toronto, ON M5H 3G2

RE: NHA and EIS Confirmation for South Kent Wind Project

Dear Ms. Sachtleben,

In accordance with the Ministry of the Environment's (MOE's) Renewable Energy Approvals (REA) Regulation (O.Reg.359/09), the Ministry of Natural Resources (MNR) has reviewed the natural heritage assessment and environmental impact study for South Kent Wind Project in the Municipality of Chatham-Kent submitted by Samsung Renewable Energy Inc. and Pattern Energy on September 2, 2011.

In accordance with Section 28(2) and 38(2)(b) of the REA regulation, MNR provides the following confirmations following review of the natural heritage assessment (NHA):

1. The MNR confirms that the determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation criteria or procedures established or accepted by MNR.
2. The MNR confirms that the site investigation and records review were conducted using applicable evaluation criteria or procedures established or accepted by MNR, if no natural features were identified.
3. The MNR confirms that the evaluation of the significance or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures established or accepted by MNR (if required).
4. The MNR confirms that the project location is not in a provincial park or conservation reserve.
5. The MNR confirms that the environmental impact assessment report has been prepared in accordance with procedures established by the MNR.

In addition to the NHA, Environmental Effects Monitoring Plans that address post-construction monitoring and mitigation for birds and bats must be prepared and implemented. It is recommended that post-construction monitoring plans be prepared in accordance with MNR Guidelines and be reviewed by MNR in advance of submitting a REA application to MOE in order to minimize potential delays in determining if the application is complete.

This confirmation letter is valid for the project as proposed in the NHA and environmental impact study, including those sections describing the Environmental Effects Monitoring Plan

and Construction Plan Report. Should any changes be made to the proposed project that would alter the NHA, MNR may need to undertake additional review of the NHA.

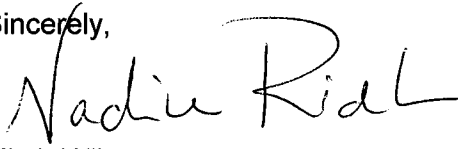
Where specific commitments have been made by the applicant in the NHA with respect to project design, construction, rehabilitation, operation, mitigation, or monitoring, MNR expects that these commitments will be considered in MOE's Renewable Energy Approval decision and, if approved, be implemented by the applicant.

In accordance with S.12 (1) of the Renewable Energy Approvals Regulation, this letter must be included as part of your application submitted to the MOE for a Renewable Energy Approval.

Please be aware that your project may be subject to additional legislative approvals as outlined in the Ministry of Natural Resources' *Approvals and Permitting Requirements Document*. These approvals are required prior to the construction of your renewable energy facility.

If you wish to discuss any part of this confirmation, please contact Heather Riddell, Acting Renewable Energy Planning Ecologist at 519-773-4723 or heather.riddell@ontario.ca.

Sincerely,


for Mitch Wilson
District Manager
Aylmer District MNR

cc. Jim Beal, Renewable Energy Provincial Field Program Coordinator, Regional Operations Division, MNR
Narren Santos, Environmental Assessment and Approvals Branch, MOE
Andrea Fleischhauer, Acting Southern Region Renewable Energy Coordinator, MNR
KC Kim, General Manager, Samsung Renewable Energy Inc.
Kim Arnold, Environmental Lead – Energy, Hatch
Tara Lessard, Terrestrial and Wetland Biologist, Natural Resources Solutions Inc.

Appendix Q

MTC Letter of Confirmation

**Ministry of Tourism,
Culture and Sport**

Culture Programs Unit
Programs & Services Br.
900 Highbury Avenue
London, ON N5Y 1A4
Tel: 519-675-6898
Fax: 519-675-7777
e-mail: shari.prowse@ontario.ca

**Ministère du Tourisme,
de la Culture et du Sport**

Unité des programmes culturels
Direction des programmes et des services
900, av. Highbury
London, ON N5Y 1A4
Tél: 519-675-6898
Télec: 519-675-7777
e-mail: shari.prowse@ontario.ca



May 1, 2012

Ms. Kim Arnold
Hatch Ltd.
4342 Queen Street
Niagara Falls ON L2E 7J7

RE: South Kent Wind Project, Romney, East Tilbury, Raleigh, Harwich and Howard Townships, Former Kent County, Municipality of Chatham-Kent, Ontario, MTC File HD00583, PIF #s P264-119-2010, P264-120-2010, P027-112-2010 and P347-001-2011 P347-102-2011

Dear Proponent:

This letter constitutes the Ministry of Tourism and Culture's written comments as required by s. 22(3)(a) of O. Reg. 359/09 under the *Environmental Protection Act* regarding archaeological assessments undertaken for the above project.

Based on the information contained in the reports you have submitted for this project, the Ministry believes the archaeological assessment complies with the *Ontario Heritage Act's* licensing requirements, including the licence terms and conditions and the Ministry's 1993 Archaeological Assessment Technical Guidelines or the 2011 Standards and Guidelines for Consultant Archaeologists (whichever apply). Please note that the Ministry makes no representation or warranty as to the completeness, accuracy or quality of the reports.*

The reports recommend the following:

Stage 1 - PIF # P264-120-2010, Revised, February 2011, Received February 16, 2011

1. No Stage 2 Archaeological Assessment (Property Assessment) is recommended for the former Michigan Central Railway rail bed proposed to be impacted by this project since the underlying ground has been disturbed and lacks archaeological potential. However, there is potential for railway related sites within and adjacent to the rail bed to the east of the Fargo Road crossing (east of the existing rail line), and a Stage 2 Archaeological Assessment should be carried out in that vicinity (sic);

2. A property inspection of impacted road ROWs is recommended in advance of the Stage 2 Archaeological Assessment (Property Assessment) to identify and document visibly disturbed sections. No Stage 2 archaeological assessment of the disturbed locations is recommended. Stage 2 assessment should be conducted where undisturbed ROWs will be impacted. This work will be done in accordance with the *MTC Standards and Guidelines for Consultant Archaeologists*;
3. All remaining locations of proposed construction impact (e.g. turbine sites, access roads, circuits, and turn-arounds) must be subjected to Stage 2 Archaeological Assessment (Property Assessment) in accordance with the *MTC Standards and Guidelines for Consultant Archaeologists*; and
4. Should design changes (subsequent to the turbine layout dated November 3, 2010; access road layout dated November 17, 2010; and electrical circuit layout dated December 3, 2010) or temporary workspace requirements result in the inclusion of previously unassessed lands where there is potential for sites, these lands should be subjected to Stage 2 Archaeological Assessment (Property Assessment) to determine if cultural remains are present.

Stage 2 - PIF# P264-119-2010, P264-120-2010 and PIF# P027-112-2010 February 16, 2011, Received February 17, 2011

1. Sites H1 and H2 represent late nineteenth to early twentieth-century dump sites that are situated within the turbine plough area for turbine P052. They are not considered to have archaeological significance and therefore do not have cultural heritage value. Both sites should be considered clear of further archaeological concern;
2. Sites of H3 and H4 represent late nineteenth to early twentieth-century dump sites that are situated within the turbine plough area for turbine P038. They are not considered to have archaeological significance and therefore do not have cultural heritage value. Both sites should be considered clear of further archaeological concern;
3. Site P1 is an isolated, undiagnostic Aboriginal findspot situated within the turbine plough area for turbine P057 but over 50 m from its project layout. Unless the project layout shifts to within 20 m of the Site P1 location, no additional archaeological assessment is recommended, and the site should be considered clear of further archaeological concern;
4. No further archaeological assessment is recommended for the three turbines plough areas for turbines P014, P038 and P047, and they can be considered clear of further archaeological concern;
5. A Stage 2 property assessment is recommended for all remaining areas within the turbine plough area for P018, P037, P039, P040, P052, P056, P057 that were not assessed in 2010;

6. A Stage 2 property assessment is recommended on the 91 remaining turbine plough areas, as well as the ROWs for all electrical circuits and substation locations where project layout is not yet available but archaeological site potential has been determined.

Project layout within active agricultural lands will require site preparation and adequate weathering in advance of Stage 2 pedestrian survey if surface visibility is not 80% or better, per the MTC's standards and guidelines; and

7. Should design changes or temporary workspace requirements result in the inclusion of previously unassessed lands, these lands should be subjected to Stage 2 property assessment.
8. A Stage 2 property assessment is recommended on all remaining areas within the turbine plough area for turbine P073 that were not assessed in 2010; and
9. Stage 2 property assessment is recommended on the 14 remaining turbine plough areas within the Boralex project area (former land control) for turbines P062, P064, P065, P067, P068, P069, P070, P071, P072, P094, P100, P113, P124, and P126, as well as the ROWs for all electrical circuits where project layout is not yet available but archaeological site potential has been determined.

Project layout within active agricultural lands will require site preparation and adequate weathering in advance of Stage 2 pedestrian survey if surface visibility is not 80% or better, per the MTC's standards and guidelines.

Stage 2 PIF # P347-001-2011, Revised 2, August 17, 2011, Received August 17, 2011

- 1) If the Project impacts lands immediately adjacent to the existing rail bed within the Canadian Pacific Railway (former Michigan Central Railway) rail corridor, a Stage 2 property should be conducted on lands determined to have archaeological potential; and
- 2) If changes to Project layout WTG 10 Rev5b or temporary workspace requirements result in the inclusion of previously unsurveyed lands, these lands should be subjected to a Stage 2 property assessment.

In addition to the above, based on the results of the Stage 2 property assessment of the South Kent Wind Project (the Project) area, Archaeological Services Inc. (ASI) makes the following recommendations:

- 3) The Stage 2 property assessment did not find any archaeological sites within 101 infrastructure survey areas (ISA), including turbine plough areas (TPA), substation plough areas (SPA), meteorological tower plough area (MPA), and circuit layout survey areas (CLSA) and, therefore, it is recommended that no further archaeological assessment of these areas is required. These areas are:
TPA-001, TPA-002, TPA-003, TPA-004, TPA-005, TPA-007, TPA-008, TPA-009, TPA-012, TPA-013, TPA-014, TPA-016, TPA-018, TPA-022, TPA-023, TPA-024, TPA-028, TPA-030, TPA-032, TPA-033, TPA-034, TPA-035, TPA-036, TPA-037, TPA-038, TPA-039, TPA-040, TPA-041, TPA-042, TPA-044, TPA-045, TPA-046, TPA-047, TPA-048, TPA-052, TPA-053, TPA-054, TPA-055, TPA-056, TPA-057, TPA-058, TPA-061, TPA-062, TPA-064, TPA-066, TPA-067, TPA-068, TPA-069, TPA-070, TPA-072, TPA-174, TPA-077, TPA-078, TPA-080, TPA-082, TPA-087, TPA-091, TPA-092, TPA-094, TPA-095, TPA-098, TPA-099, TPA-100, TPA-101, TPA-102, TPA-108, TPA-109, TPA-111, TPA-113, TPA-115, TPA-116, TPA-120, TPA-121, TPA-122, TPA-125, TPA-126,

TPA-132, TPA-135, TPA-138, TPA-145, TPA-148, TPA-149, TPA-152, TPA-155, TPA-156, TPA-161, TPA-162, TPA-163, TPA-164, TPA-165, TPA-167, TPA-168, TPA-174, TPA-175, TPA-176, SPA-1, SPA-2, MPA-1, MPA-2, CLSA-2 and CLSA-3;

4) Of the 85 archaeological sites documented during the Stage 2 property assessment, forty-two (42) sites are not recommended for further archaeological assessment as their cultural heritage value or interest (CHVI) has been sufficiently assessed and documented at Stage 2. These are:

AcHI-71 (SKWP-P64)
TPA-020 AcHI-69 (SKWP-P63), AcHI-72 (SKWP-P65)
TPA-029 AcHI-74 (SKWP-P66)
TPA-031 AcHm-54[59] (SKWP-P32), SKWP-P33
TPA-065 AbHn-29 (SKWP-P22), AbHn-30 (SKWP-P23), SKWP-P25
TPA-071 SKWP-P16
TPA-073 AbHo-3 (SKWP-P10)
TPA-075 SKWP-P71
TPA-079 AbHo-4 (SKWP-P26)
TPA-081 AbHo-2 (SKWP-P9)
TPA-093 SKWP-P67, SKWP-P68
TPA-097 AcHm-60 (SKWP-P34)
TPA-103 SKWP-P48
TPA-104 SKWP-P60
TPA-106 SKWP-P54
TPA-107 AcHI-41 (SKWP-P19), SKWP-P20
TPA-139 AcHI-56 (SKWP-P46), SKWP-P43, SKWP-P45
TPA-146 SKWP-P73, SKWP-P75, SKWP-P77
TPA-150 AbHo-6 (SKWP-P72)
TPA-154 SKWP-P69
TPA-166 SKWP-P38
TPA-171 SKWP-P52
TPA-173 SKWP-P5, SKWP-P7, SKWP-P8

5) In addition to the ISAs listed in Recommendation #3 above, thirteen (13) ISAs contain archaeological sites for which no further archaeological assessment is required (per Recommendation 4 above), and, therefore, it is recommended that no further archaeological assessment of these ISAs is required. They are: TPA-006, TPA-019, TPA-020, TPA-031, TPA-071, TPA-073, TPA-075, TPA-079, TPA-081, TPA-093, TPA-097, TPA-150, and TPA-154;

6) It is recommended that the remaining 43 archaeological sites documented during the Stage 2 property assessment be subject to Stage 3 site specific assessment if they are to be located within the Project limits as they all meet the criteria for requiring a Stage 3 site-specific assessment based on the MTC's 2011 Standards and Guidelines (S & G), *Section 2.2 Analysis: Determining the requirements for Stage 3 assessment*. The type of site as per S & G Section 2.2 and the detailed Stage 3 requirements for each site as per S & G Section 3 and S & G Section 7.8.4, Standard 1c are as follows:

a) Stage 3 is recommended for the following 21 archaeological sites or portions thereof located within the Project lands based on S & G Section 2.2, Standard 1.a.i.(1):

ISA Archaeological Sites
TPA-010 AcHI-50 (SKWP-P37)
TPA-017 AcHI-33 (SKWP-P4)
TPA-103 AcHI-58 (SKWP-P50) AcHI-59 (SKWP-P51) AcHI-64 (SKWP-P49)
TPA-104 AcHI-66 (SKWP-P61) AcHI-67 (SKWP-P62)
TPA-106 AcHI-44 (SKWP-P27) AcHI-48 (SKWP-P31) AcHI-45 (SKWP-P28) AcHI-46 (SKWP-P29) AcHI-47 (SKWP-P30)
TPA-107 AcHI-42 (SKWP-P21)
TPA-118 AcHI-65 (SKWP-P58)
TPA-133 AcHI-76 (SKWP-P70)
TPA-139 AcHI-55 (SKWP-P44)
TPA-140 AcHI-62 (SKWP-P57)
TPA-171 AcHI-35 (SKWP-P11) AcHI-36 (SKWP-P12) AcHI-37 (SKWP-P13) AcHI-39 (SKWP-P17)

The Stage 3 assessment must be carried out according to the criteria for small pre-contact Aboriginal sites *where it is **not yet evident*** that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- ☐ historical documentation per *S & G Section 3.1*, Standard 1.a-b, if necessary;
- ☐ controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
- ☐ test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling;

b) The Stage 2 property assessment identified one (1) pre-contact Aboriginal archaeological site—AcHI-68 (SKWP-P59) associated with TPA-118—dating to the Early Archaic period that meets the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2*, Standard 1.a.i.(1). At present, the entire site including the 20 m buffer is outside the Project limits (see ASI 2011c: Figure 22). If the project limits change to include the site area or its buffer, it is recommended that this area must be subject to a Stage 3 Site-specific assessment. The Stage 3 assessment must be carried out according to the criteria for a small, pre-contact Aboriginal site *where it is **not yet evident*** that the level of CHVI will result in a recommendation to proceed to Stage 4.

- ☐ historical documentation per *S & G Section 3.1*, Standard 1.a-b, if necessary;
- ☐ controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
- ☐ test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling. Due to the early time period of the site, a 20% sample of the excavated units must be screened through 3 mm mesh to facilitate the recovery of small, potentially diagnostic artifacts;

c) The Stage 2 property assessment identified one (1) isolated, pre-contact Aboriginal archaeological findspot—AcHI-34 (SKWP-P6) within TPA-173—dating to the Early Archaic period that meets the

criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2*, Standard 1.b.iii, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for this site or portions thereof located within the Project lands. The Stage 3 assessment must be conducted according to the criteria for a small pre-contact Aboriginal site *where it is **not yet** evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment includes:

☐ historical documentation per *S & G Section 3.1*, Standard 1.a-b, if necessary;

☐ controlled surface pick-up of the findspot area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted. If no additional surface finds are discovered, another CSP will be conducted after additional weathering has occurred. If no artifacts are recovered, a minimum five one-metre units centred over the original findspot will be excavated. Due to the early time period of the site, a 20% sample of the excavated units (i.e., one unit) must be screened through 3 mm mesh to facilitate the recovery of small, potentially diagnostic artifacts; and

☐ test unit (1 m square unit) excavation at 5 m intervals across the site will *only* be required if a scatter of additional artifacts are discovered during the controlled surface pickup, plus an additional 20% of focused sampling. Due to the early time period of the site, a 20% sample of the excavated units must be screened through 3 mm mesh to facilitate the recovery of small, potentially diagnostic artifacts;

d) The Stage 2 property assessment identified six (6) post-contact Euro-Canadian archaeological sites that meet the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2*, Standard 1.c, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for these sites or portions thereof located within the Project lands. These sites are:

ISA Archaeological Sites
TPA-021 AcHI-73 (SKWP-H11)
TPA-026 AcHI-75 (SKWP-H12)
TPA-029 AcHI-70 (SKWP-H10)
TPA-065 AbHn-31 (SKWP-H5)
TPA-124 AbHo-5 (SKWP-H13)
CLSA-2 AcHI-61 (SKWP-H9)

The Stage 3 assessment must be conducted according to the criteria for small post-contact Euro-Canadian sites *where it is **not yet** evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

☐ historical documentation (i.e., land use history of property) per *S & G Section 3.1*, Standard 1.b-g, as appropriate;

☐ controlled surface pick-up of the site area (except for AcHI-61 that was discovered during test pit survey): surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and

☐ test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling;

e) The Stage 2 property assessment identified 11 pre-contact Aboriginal archaeological sites that meet the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2, Standards 1.a.i.(1) or (3)*, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for these sites or portions thereof located within the Project lands.

These sites are:

ISA Archaeological Sites
TPA-060 AcHm-58 (SKWP-P14)
TPA-103 AcHI-57 (SKWP-P47)
TPA-105 AcHI-52 (SKWP-P40) AcHI-49 (SKWP-P35) AcHI-51 (SKWP-P39) AcHI-53 (SKWP-P41)
TPA-107 AcHI-40 (SKWP-P18) AcHI-43 (SKWP-P24)
TPA-139 AcHI-54 (SKWP-P42)
TPA-146 AcHI-77 (SKWP-P74) AcHI-78 (SKWP-P76)

The Stage 3 assessment must be conducted according to the criteria for small pre-contact Aboriginal sites *where it is clearly evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

☐ historical documentation per *S & G Section 3.1, Standard 1.a-b*, if necessary;

☐ controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and

☐ test unit (1 m square unit) excavation at 10 m intervals across the site plus an additional 40% of focused sampling;

f) The Stage 2 property assessment identified two (2) post-contact Euro-Canadian archaeological sites that meet the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2, Standard 1.c*, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for the these sites or portions thereof located within the Project lands. These sites are:

ISA Archaeological Sites
TPA-063 AbHn-32 (SKWP-H7)
TPA-166 AcHI-63 (SKWP-H6)

The Stage 3 assessment must be conducted according to the criteria for small post-contact Euro-Canadian sites *where it is clearly evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

☐ historical documentation (i.e., land use history of property) per *S & G Section 3.1, Standard 1.b-g*, as appropriate;

☐ controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and

☐ test unit (1 m square unit) excavation at 10 m intervals across the site plus an additional 40% of focused sampling;

g) The Stage 2 property assessment identified one (1) pre-contact Aboriginal archaeological site—AcHI-38 (SKWP-P15) within TPA-171— that meets the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2*, Standards 1.a.i.(1), and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for this site or portions thereof located within the Project lands.

The Stage 3 assessment must be conducted according to the criteria for a large, relatively dense plough disturbed site with multiple scatters containing more than one diagnostic artifact *where it is clearly evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

☐ historical documentation per *S & G Section 3.1*, Standard 1.a-b, if necessary;

☐ controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and

☐ test unit excavation:--place multiple grids over areas of artifact concentration and excavate across those grids at 5 m intervals;

--place and excavate additional test units, amounting to 20% of the initial grid total, between areas of concentration to document areas of lower concentration; and

--place and excavate additional units, amounting to 10% of the initial grid total, on the periphery of the surface scatter to determine the site extent and sample the site periphery;

7) Partial clearance is recommended to allow construction to proceed in areas of the Project lands where there are no further concerns for impacts to archaeological sites or parts of the project as identified in Recommendations 3, 4 and 5 above. To support this, it is recommended that MTC provide a letter confirming that there are no further concerns with regard to alterations to archaeological sites for those sites and areas as detailed in Recommendation 3, 4 and 5 above. The required conditions have been met as per *Section 7.8.5*, Standards 1.a-d, as indicated by the following:

☐ the Stage 2 fieldwork has been completed for the Project lands and Stage 3 is still required for archaeological sites or portions thereof located within Project lands as detailed in Recommendations 6 a, c-g, above;

☐ the partial clearance recommendation forms part of the final report on the Stage 2 work;

☐ the estimated timeline for completing the remaining Stage 3 archaeological assessment work is the fall of 2011 and/or the spring of 2012;

☐ the development mapping showing the location and extent of the archaeological sites requiring Stage 3 site-specific assessment along with their 20 m protective buffer and their 50 m monitoring buffer zone are provided (see ASI 2011 c, c.f., P347-001-2011: Supplementary Documentation, Figures 2-5, 10-12, 20-28, 31-32);

□ the following detailed avoidance strategy has been committed to by the Proponent and will remain in place until the required Stage 3 site-specific assessments for the 42 archaeological sites have been completed (estimated to be by the end of summer 2012) as noted in Recommendation 6 a, c-g above:

1) written instructions will be provided to all construction personal working within the Project lands to avoid the location of these archaeological sites and their protective 20 m buffers. No soil disturbances other than traditional farming practices can occur within these areas; and

2) prior to construction proceeding within the 50 m monitoring buffer zone surrounding these archaeological sites, snow fencing will be erected around the sites and their 20 m protective buffers within the project lands. All construction within the monitoring zone will then be monitored by a licensed archaeologist who will be empowered to stop construction if there is a concern for impact to an archaeological site.

Stage 2 PIF # P347-102-2011, March 9, 2012, Revised Report April 25, 2012, Received in MTCS Toronto Office on April 27, 2012, Satisfaction Letter Issued May 1, 2012

1) If changes to Layout L19 R1 or temporary workspace requirements result in the inclusion of previously unsurveyed Project lands, they should be subjected to a Stage 2 property assessment.

In addition to the above, based on the results of the Stage 2 property assessment of the South Kent Wind Project (the Project) area, Archaeological Services Inc. (ASI) makes the following recommendations:

2) The Stage 2 property assessment did not find any archaeological sites within 17 infrastructure survey areas (ISA), including turbine plough areas (TPA), substation plough areas (SPA), and connection layout survey areas (CLSA) and, therefore, it is recommended that no further archaeological assessment of these areas is required. These areas are: TPA-028, TPA-030, TPA-031, TPA-162, TPA-166, CLSA-6, CLSA-7, CLSA-8, CLSA-9, CLSA-10, CLSA-11, CLSA-12, CLSA-13, CLSA-14, CLSA-15, CLSA-16; and SPA-1.

3) In addition to the ISAs listed in Recommendation #2 above, only TPA-029 contains an archaeological site for which no further archaeological assessment is required, and, therefore, it is recommended that no further archaeological assessment of this ISA is required;

4) In addition to the ISAs listed in Recommendations #2 and 3 above, the Stage 2 property assessment did not find any archaeological sites within 4 ISAs; however, these are associated with archaeological sites that were previously identified during the 2011 Stage 2 assessment (ASI 2011a). While no further archaeological assessment of these 4 ISAs are required, it is recommended that if any archaeological sites associated with these survey areas are still within the Project and previously determined to require further Stage 3 assessment, they should be further assessed. These areas (and the applicable archaeological sites) include:

ISA	Archaeological Sites within Project	Mapped Location*
TPA-107	AcHI-40, -42 and -43	Figure 22
TPA-133	None [AcHI-76 no longer within the Project]	Figure 24

TPA-139	AcHI-54 [AcHI-55 no longer within the Project]	Figure 25
TPA-171	None [AcHI-35, -36, -37, 38 and -39 are no longer within the Project]	Figure 22
*see Supplementary Documentation which accompanies this report (ASI 2012)		

- 5) Of the 19 archaeological sites documented during the Stage 2 property assessment, eight (8) sites are not recommended for further archaeological assessment as their cultural heritage value or interest (CHVI) has been sufficiently assessed and documented at Stage 2. These are:

ISA	Archaeological Sites
TPA-002	SKWP-P81
TPA-029	SKWP-P80
TPA-103	SKWP-P84, SWKP-P87, SKWP-P89
TPA-105	SKWP-P78
CLSA-4	SKWP-P92
CLSA-5	AcHm-65 (SKWP-P90)

- 6) Of the 19 archaeological sites documented during the Stage 2 property assessment, Site AcHI-84 (SKWP-P88) and its 20 m construction buffer is not located within the Project (ASI 2012—Supplementary Documentation: Figure 19) and is therefore not recommended for further archaeological assessment;
- 7) It is recommended that the remaining ten (10) archaeological sites documented during the Stage 2 property assessment be subject to Stage 3 site specific assessment if they are to be located within the project limits as they all meet the criteria for requiring a Stage 3 site-specific assessment based on *S & G, Section 2.2 Analysis: Determining the requirements for Stage 3 assessment*. The type of site as per *S & G Section 2.2* and the detailed Stage 3 requirements for each site as per *S & G Section 3* and *S & G Section 7.8.4, Standard 1c* are as follows:
- a) Stage 3 is recommended for the following five (5) archaeological sites or portions thereof located within the Project lands based on *S & G Section 2.2, Standard 1.a.i.(1) or (3)*:

ISA	Archaeological Sites
TPA-103	AcHI-81 (SKWP-P83)
	AcHI-82 (SKWP-P85)
	AcHI-83 (SKWP-P86)
TPA-118	AcHI-80 (SKWP-P79)
CLSA-5	AcHm-66 (SKWP-P91)

The Stage 3 assessment must be carried out according to the criteria for small pre-contact Aboriginal sites *where it is **not yet** evident* that the level of CHVI will result in

a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation per *S & G Section 3.1, Standard 1.a-b*, if necessary;
 - controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
 - test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling;
- b) The Stage 2 property assessment identified four (4) post-contact Euro-Canadian archaeological sites that meet the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2, Standard 1.c*, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for these sites or portions thereof located within the Project lands. These sites are:

ISA	Archaeological Sites
TPA-002	AcHl-85 (SKWP-H14)
TPA-036	AcHm-62 (SKWP-H15)
CLSA-4	AcHm-63 (SKWP-H16)
CLSA-5	AcHm-64 (SKWP-H17)

The Stage 3 assessment must be conducted according to the criteria for small post-contact Euro-Canadian sites *where it is not yet evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation (i.e., land use history of property) per *S & G Section 3.1, Standard 1.b-g*, as appropriate;
 - controlled surface pick-up of the site area (except for AcHl-61 that was discovered during test pit survey): surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
 - test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling;
- c) The Stage 2 property assessment identified one pre-contact Aboriginal archaeological site—AcHl-79 (SKWP-P82) within TPA-103—that meets the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2, Standards 1.a.i.(3)*, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for this site or portions thereof located within the Project lands.

The Stage 3 assessment must be conducted according to the criteria for a large, relatively dense plough disturbed site with multiple scatters containing more than one diagnostic

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August 25, 2011

Ms. Kathryn Wherry
Hatch Energy Ltd.
4342 Queen Street
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RE: South Kent Wind Project, Romney, East Tilbury, Raleigh, Harwich and Howard Townships, Former Kent County, Municipality of Chatham-Kent, Ontario, MTC File HD00583, PIF #s P264-119-2010, P264-120-2010, P027-112-2010 and P347-001-2011

Dear Proponent:

This letter constitutes the Ministry of Tourism and Culture's written comments as required by s. 22(3)(a) of O. Reg. 359/09 under the *Environmental Protection Act* regarding archaeological assessments undertaken for the above project.

Based on the information contained in the reports you have submitted for this project, the Ministry believes the archaeological assessment complies with the *Ontario Heritage Act's* licensing requirements, including the licence terms and conditions and the Ministry's 1993 Archaeological Assessment Technical Guidelines or the 2011 Standards and Guidelines for Consultant Archaeologists (whichever apply). Please note that the Ministry makes no representation or warranty as to the completeness, accuracy or quality of the reports.*

The reports recommend the following:

Stage 1 - PIF # P264-120-2010, Revised, February 2011, Received February 16, 2011

1. No Stage 2 Archaeological Assessment (Property Assessment) is recommended for the former Michigan Central Railway rail bed proposed to be impacted by this project since the underlying ground has been disturbed and lacks archaeological potential. However, there is potential for railway related sites within and adjacent to the rail bed to the east of the Fargo Road crossing (east of the existing rail line), and a Stage 2 Archaeological Assessment should be carried out in that vicinity (sic);

2. A property inspection of impacted road ROWs is recommended in advance of the Stage 2 Archaeological Assessment (Property Assessment) to identify and document visibly disturbed sections. No Stage 2 archaeological assessment of the disturbed locations is recommended. Stage 2 assessment should be conducted where undisturbed ROWs will be impacted. This work will be done in accordance with the *MTC Standards and Guidelines for Consultant Archaeologists*;
3. All remaining locations of proposed construction impact (e.g. turbine sites, access roads, circuits, and turn-arounds) must be subjected to Stage 2 Archaeological Assessment (Property Assessment) in accordance with the *MTC Standards and Guidelines for Consultant Archaeologists*; and
4. Should design changes (subsequent to the turbine layout dated November 3, 2010; access road layout dated November 17, 2010; and electrical circuit layout dated December 3, 2010) or temporary workspace requirements result in the inclusion of previously unassessed lands where there is potential for sites, these lands should be subjected to Stage 2 Archaeological Assessment (Property Assessment) to determine if cultural remains are present.

Stage 2 - PIF# P264-119-2010, P264-120-2010 and PIF# P027-112-2010 February 16, 2011, Received February 17, 2011

1. Sites H1 and H2 represent late nineteenth to early twentieth-century dump sites that are situated within the turbine plough area for turbine P052. They are not considered to have archaeological significance and therefore do not have cultural heritage value. Both sites should be considered clear of further archaeological concern;
2. Sites of H3 and H4 represent late nineteenth to early twentieth-century dump sites that are situated within the turbine plough area for turbine P038. They are not considered to have archaeological significance and therefore do not have cultural heritage value. Both sites should be considered clear of further archaeological concern;
3. Site P1 is an isolated, undiagnostic Aboriginal findspot situated within the turbine plough area for turbine P057 but over 50 m from its project layout. Unless the project layout shifts to within 20 m of the Site P1 location, no additional archaeological assessment is recommended, and the site should be considered clear of further archaeological concern;
4. No further archaeological assessment is recommended for the three turbines plough areas for turbines P014, P038 and P047, and they can be considered clear of further archaeological concern;
5. A Stage 2 property assessment is recommended for all remaining areas within the turbine plough area for P018, P037, P039, P040, P052, P056, P057 that were not assessed in 2010;
6. A Stage 2 property assessment is recommended on the 91 remaining turbine plough areas, as well as the ROWs for all electrical circuits and substation locations where project layout is not yet available but archaeological site potential has been determined.

Project layout within active agricultural lands will require site preparation and adequate weathering in advance of Stage 2 pedestrian survey if surface visibility is not 80% or better, per the MTC's standards and guidelines; and

7. Should design changes or temporary workspace requirements result in the inclusion of previously unassessed lands, these lands should be subjected to Stage 2 property assessment.
8. A Stage 2 property assessment is recommended on all remaining areas within the turbine plough area for turbine P073 that were not assessed in 2010; and
9. Stage 2 property assessment is recommended on the 14 remaining turbine plough areas within the Boralex project area (former land control) for turbines P062, P064, P065, P067, P068, P069, P070, P071, P072, P094, P100, P113, P124, and P126, as well as the ROWs for all electrical circuits where project layout is not yet available but archaeological site potential has been determined.

Project layout within active agricultural lands will require site preparation and adequate weathering in advance of Stage 2 pedestrian survey if surface visibility is not 80% or better, per the MTC's standards and guidelines.

Stage 2 PIF # P347-001-2011, Revised 2, August 17, 2011, Received August 17, 2011

1. If the Project impacts lands immediately adjacent to the existing rail bed within the Canadian Pacific Railway (former Michigan Central Railway) rail corridor, a Stage 2 property [assessment] should be conducted on lands determined to have archaeological potential; and
2. If changes to Project layout WTG 10 Rev5b or temporary workspace requirements result in the inclusion of previously unsurveyed lands, these lands should be subjected to a Stage 2 property assessment.

In addition to the above, based on the results of the Stage 2 property assessment of the South Kent Wind Project (the Project) area, Archaeological Services Inc. (ASI) makes the following recommendations:

3. The Stage 2 property assessment did not find any archaeological sites within 101 infrastructure survey areas (ISA), including turbine plough areas (TPA), substation plough areas (SPA), meteorological tower plough area (MPA), and circuit layout survey areas (CLSA) and, therefore, it is recommended that no further archaeological assessment of these areas is required. These areas are: TPA-001, TPA-002, TPA-003, TPA-004, TPA-005, TPA-007, TPA-008, TPA-009, TPA-012, TPA-013, TPA-014, TPA-016, TPA-018, TPA-022, TPA-023, TPA-024, TPA-028, TPA-030, TPA-032, TPA-033, TPA-034, TPA-035, TPA-036, TPA-037, TPA-038, TPA-039, TPA-040, TPA-041, TPA-042, TPA-044, TPA-045, TPA-046, TPA-047, TPA-048, TPA-052, TPA-053, TPA-054, TPA-055, TPA-056, TPA-057, TPA-058, TPA-061, TPA-062, TPA-064, TPA-066, TPA-067, TPA-068, TPA-069, TPA-070, TPA-072, TPA-174, TPA-077, TPA-078, TPA-080, TPA-082, TPA-087, TPA-091, TPA-092, TPA-094, TPA-095, TPA-098, TPA-099, TPA-100, TPA-101, TPA-102, TPA-108, TPA-109, TPA-111, TPA-113, TPA-115, TPA-116, TPA-120, TPA-121, TPA-122, TPA-125, TPA-126, TPA-132, TPA-135, TPA-138, TPA-145, TPA-148, TPA-149, TPA-152, TPA-155, TPA-156, TPA-161,

4. Of the 85 archaeological sites documented during the Stage 2 property assessment, forty-two (42) sites are not recommended for further archaeological assessment as their cultural heritage value or interest (CHVI) has been sufficiently assessed and documented at Stage 2. These are:

ISA	Archaeological Sites
TPA-006	AcHI-60 (SKWP-P53), SKWP-P36
TPA-010	AcHI-61 (SKWP-P55), SKWP-P56
TPA-017	AcHI-57 (SKWP-P1), SKWP-P2, SKWP-P3
TPA-019	AcHI-71 (SKWP-P64)
TPA-020	AcHI-69 (SKWP-P63), AcHI-72 (SKWP-P65)
TPA-029	AcHI-74 (SKWP-P66)
TPA-031	AcHm-54[59] (SKWP-P32), SKWP-P33
TPA-065	AbHn-29 (SKWP-P22), AbHn-30 (SKWP-P23), SKWP-P25
TPA-071	SKWP-P16
TPA-073	AbHo-3 (SKWP-P10)
TPA-075	SKWP-P71
TPA-079	AbHo-4 (SKWP-P26)
TPA-081	AbHo-2 (SKWP-P9)
TPA-093	SKWP-P67, SKWP-P68
TPA-097	AcHm-60 (SKWP-P34)
TPA-103	SKWP-P48
TPA-104	SKWP-P60
TPA-106	SKWP-P54
TPA-107	AcHI-41 (SKWP-P19), SKWP-P20
TPA-139	AcHI-56 (SKWP-P46), SKWP-P43, SKWP-P45
TPA-146	SKWP-P73, SKWP-P75, SKWP-P77
TPA-150	AbHo-6 (SKWP-P72)
TPA-154	SKWP-P69
TPA-166	SKWP-P38
TPA-171	SKWP-P52
TPA-173	SKWP-P5, SKWP-P7, SKWP-P8

5. In addition to the ISAs listed in Recommendation #3 above, thirteen (13) ISAs contain archaeological sites for which no further archaeological assessment is required (per Recommendation 4 above), and, therefore, it is recommended that no further archaeological assessment of these ISAs is required. They are: TPA-006, TPA-019, TPA-020, TPA-031, TPA-071, TPA-073, TPA-075, TPA-079, TPA-081, TPA-093, TPA-097, TPA-150, and TPA-154;
6. It is recommended that the remaining 43 archaeological sites documented during the Stage 2 property assessment be subject to Stage 3 site specific assessment if they are to be located within the Project limits as they all meet the criteria for requiring a Stage 3 site-specific assessment based on the MTC's 2011 Standards and Guidelines (S & G), *Section 2.2 Analysis: Determining the requirements for Stage 3 assessment*. The type of site as per S & G

a) Stage 3 is recommended for the following 21 archaeological sites or portions thereof located within the Project lands based on *S & G Section 2.2, Standard 1.a.i.(1)*:

ISA	Archaeological Sites
TPA-010	AcHI-50 (SKWP-P37)
TPA-017	AcHI-33 (SKWP-P4)
TPA-103	AcHI-58 (SKWP-P50) AcHI-59 (SKWP-P51) AcHI-64 (SKWP-P49)
TPA-104	AcHI-66 (SKWP-P61) AcHI-67 (SKWP-P62)
TPA-106	AcHI-44 (SKWP-P27) AcHI-48 (SKWP-P31) AcHI-45 (SKWP-P28) AcHI-46 (SKWP-P29) AcHI-47 (SKWP-P30)
TPA-107	AcHI-42 (SKWP-P21)
TPA-118	AcHI-65 (SKWP-P58)
TPA-133	AcHI-76 (SKWP-P70)
TPA-139	AcHI-55 (SKWP-P44)
TPA-140	AcHI-62 (SKWP-P57)
TPA-171	AcHI-35 (SKWP-P11) AcHI-36 (SKWP-P12) AcHI-37 (SKWP-P13) AcHI-39 (SKWP-P17)

The Stage 3 assessment must be carried out according to the criteria for small pre-contact Aboriginal sites *where it is **not yet evident*** that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation per *S & G Section 3.1, Standard 1.a-b*, if necessary;
- controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
- test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling;

b) The Stage 2 property assessment identified one (1) pre-contact Aboriginal archaeological site—AcHI-68 (SKWP-P59) associated with TPA-118—dating to the Early Archaic period that meets the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2, Standard 1.a.i.(1)*. At present, the entire site including the 20 m buffer is outside the Project limits (see ASI 2011c: Figure 22). If the project limits change to include the site area or its buffer, it is recommended that this area must be subject to a Stage 3 Site-specific assessment. The Stage 3 assessment must be carried out according to the criteria for a small, pre-contact Aboriginal site *where it is **not yet evident*** that the level of CHVI will result in a recommendation to proceed to Stage 4.

- historical documentation per *S & G Section 3.1, Standard 1.a-b*, if necessary;
- controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
- test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling. Due to the early time period of the site, a 20% sample of the

c) The Stage 2 property assessment identified one (1) isolated, pre-contact Aboriginal archaeological findspot—AcHI-34 (SKWP-P6) within TPA-173—dating to the Early Archaic period that meets the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2*, Standard 1.b.iii, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for this site or portions thereof located within the Project lands. The Stage 3 assessment must be conducted according to the criteria for a small pre-contact Aboriginal site *where it is not yet evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment includes:

- historical documentation per *S & G Section 3.1*, Standard 1.a-b, if necessary;
- controlled surface pick-up of the findspot area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted. If no additional surface finds are discovered, another CSP will be conducted after additional weathering has occurred. If no artifacts are recovered, a minimum five one-metre units centred over the original findspot will be excavated. Due to the early time period of the site, a 20% sample of the excavated units (i.e., one unit) must be screened through 3 mm mesh to facilitate the recovery of small, potentially diagnostic artifacts; and test unit (1 m square unit) excavation at 5 m intervals across the site will *only* be required if a scatter of additional artifacts are discovered during the controlled surface pickup, plus an additional 20% of focused sampling. Due to the early time period of the site, a 20% sample of the excavated units must be screened through 3 mm mesh to facilitate the recovery of small, potentially diagnostic artifacts;

d) The Stage 2 property assessment identified six (6) post-contact Euro-Canadian archaeological sites that meet the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2*, Standard 1.c, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for these sites or portions thereof located within the Project lands. These sites are:

ISA	Archaeological Sites
TPA-021	AcHI-73 (SKWP-H11)
TPA-026	AcHI-75 (SKWP-H12)
TPA-029	AcHI-70 (SKWP-H10)
TPA-065	AbHn-31 (SKWP-H5)
TPA-124	AbHo-5 (SKWP-H13)
CLSA-2	AcHI-61 (SKWP-H9)

The Stage 3 assessment must be conducted according to the criteria for small post-contact Euro-Canadian sites *where it is not yet evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation (i.e., land use history of property) per *S & G Section 3.1*, Standard 1.b-g, as appropriate;

- controlled surface pick-up of the site area (except for AcHI-61 that was discovered during test pit survey): surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
- test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling;

e) The Stage 2 property assessment identified 11 pre-contact Aboriginal archaeological sites that meet the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2, Standards 1.a.i.(1) or (3)*, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for these sites or portions thereof located within the Project lands. These sites are:

ISA	Archaeological Sites
TPA-060	AcHm-58 (SKWP-P14)
TPA-103	AcHI-57 (SKWP-P47)
TPA-105	AcHI-52 (SKWP-P40) AcHI-49 (SKWP-P35) AcHI-51 (SKWP-P39) AcHI-53 (SKWP-P41)
TPA-107	AcHI-40 (SKWP-P18) AcHI-43 (SKWP-P24)
TPA-139	AcHI-54 (SKWP-P42)
TPA-146	AcHI-77 (SKWP-P74) AcHI-78 (SKWP-P76)

The Stage 3 assessment must be conducted according to the criteria for small pre-contact Aboriginal sites *where it is clearly evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation per *S & G Section 3.1, Standard 1.a-b*, if necessary;
- controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
- test unit (1 m square unit) excavation at 10 m intervals across the site plus an additional 40% of focused sampling;

f) The Stage 2 property assessment identified two (2) post-contact Euro-Canadian archaeological sites that meet the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2, Standard 1.c*, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for these sites or portions thereof located within the Project lands. These sites are:

ISA	Archaeological Sites
TPA-063	AbHn-32 (SKWP-H7)
TPA-166	AcHI-63 (SKWP-H6)

The Stage 3 assessment must be conducted according to the criteria for small post-contact Euro-Canadian sites *where it is clearly evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation (i.e., land use history of property) per *S & G Section 3.1, Standard 1.b-g*, as appropriate;

- controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
- test unit (1 m square unit) excavation at 10 m intervals across the site plus an additional 40% of focused sampling;

g) The Stage 2 property assessment identified one (1) pre-contact Aboriginal archaeological site—AcHI-38 (SKWP-P15) within TPA-171—that meets the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2*, Standards 1.a.i.(1), and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for this site or portions thereof located within the Project lands..

The Stage 3 assessment must be conducted according to the criteria for a large, relatively dense plough disturbed site with multiple scatters containing more than one diagnostic artifact *where it is clearly evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation per *S & G Section 3.1*, Standard 1.a-b, if necessary;
- controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
- test unit excavation:
 - place multiple grids over areas of artifact concentration and excavate across those grids at 5 m intervals;
 - place and excavate additional test units, amounting to 20% of the initial grid total, between areas of concentration to document areas of lower concentration; and
 - place and excavate additional units, amounting to 10% of the initial grid total, on the periphery of the surface scatter to determine the site extent and sample the site periphery;

7. Partial clearance is recommended to allow construction to proceed in areas of the Project lands where there are no further concerns for impacts to archaeological sites or parts of the project as identified in Recommendations 3, 4 and 5 above. To support this, it is recommended that MTC provide a letter confirming that there are no further concerns with regard to alterations to archaeological sites for those sites and areas as detailed in Recommendation 3, 4 and 5 above. The required conditions have been met as per *Section 7.8.5*, Standards 1.a-d, as indicated by the following:

- the Stage 2 fieldwork has been completed for the Project lands and Stage 3 is still required for archaeological sites or portions thereof located within Project lands as detailed in Recommendations 6 a, c-g, above;
- the partial clearance recommendation forms part of the final report on the Stage 2 work;
- the estimated timeline for completing the remaining Stage 3 archaeological assessment work is the fall of 2011 and/or the spring of 2012;
- the development mapping showing the location and extent of the archaeological sites requiring Stage 3 site-specific assessment along with their 20 m protective buffer and their 50 m monitoring buffer zone are provided (see ASI 2011 c, c.f., P347-001-2011: Supplementary Documentation, Figures 2-5, 10-12, 20-28, 31-32);

- the following detailed avoidance strategy has been committed to by the Proponent and will remain in place until the required Stage 3 site-specific assessments for the 42 archaeological sites have been completed (estimated to be by the end of summer 2012) as noted in Recommendation 6 a, c-g above:

1) written instructions will be provided to all construction personnel working within the Project lands to avoid the location of these archaeological sites and their protective 20 m buffers. No soil disturbances other than traditional farming practices can occur within these areas; and

2) prior to construction proceeding within the 50 m monitoring buffer zone surrounding these archaeological sites, snow fencing will be erected around the sites and their 20 m protective buffers within the project lands. All construction within the monitoring zone will then be monitored by a licensed archaeologist who will be empowered to stop construction if there is a concern for impact to an archaeological site.

The Ministry is satisfied with these recommendations.

This letter does not waive any requirements which you may have under the *Ontario Heritage Act*. A separate letter addressing archaeological licensing obligations under the Act will be sent to the archaeologist who completed the assessment and will be copied to you.

This letter does not constitute approval of the renewable energy project. Approvals of the project may be required under other statutes and regulations. It is your responsibility to obtain any necessary approvals or licences.

Please feel free to contact me if you have questions or require additional information.

Sincerely,



Shari Prowse
Archaeology Review Officer

cc. Ms. Katie Bryant, Archaeological Services Inc.
Mr. Rob Pihl, Archaeological Services Inc.
Dr. Andrew Riddle, Archaeological Services Inc.
Dr. Scarlett Janusas, Scarlett Janusas Archaeological and Heritage Consulting and Education

*In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Appendix R

Protected Properties and Heritage Information



Samsung Renewable Energy Inc. and
Pattern Energy

Protected Properties Summary Report

For

South Kent Wind Project

H335936-0000-07-124-0009_App R

Rev. 1

April 11, 2012

Project Report

April 11, 2012

**Samsung Renewable Energy Inc. and Pattern Energy
South Kent Wind Project****Protected Properties Summary Report****Table of Contents**

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1. Introduction

1.1 Project Description

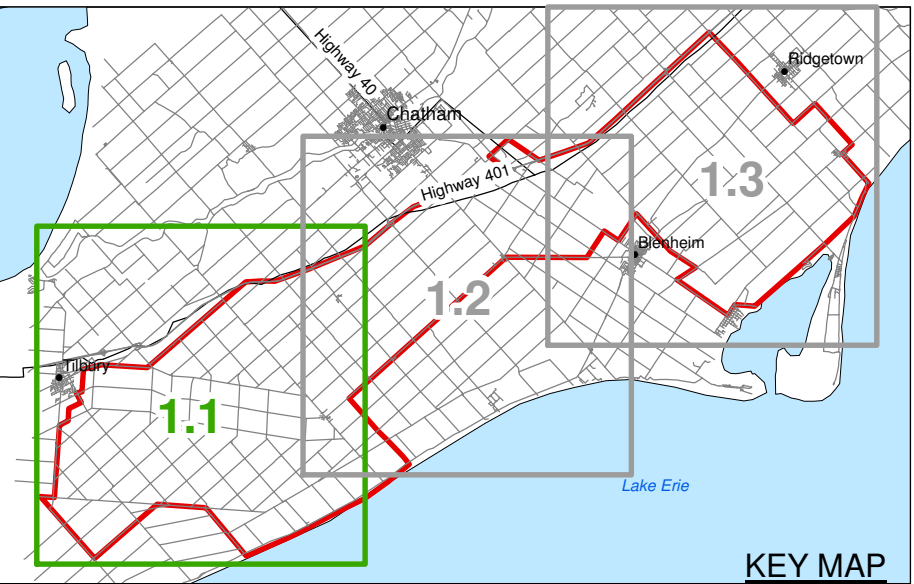
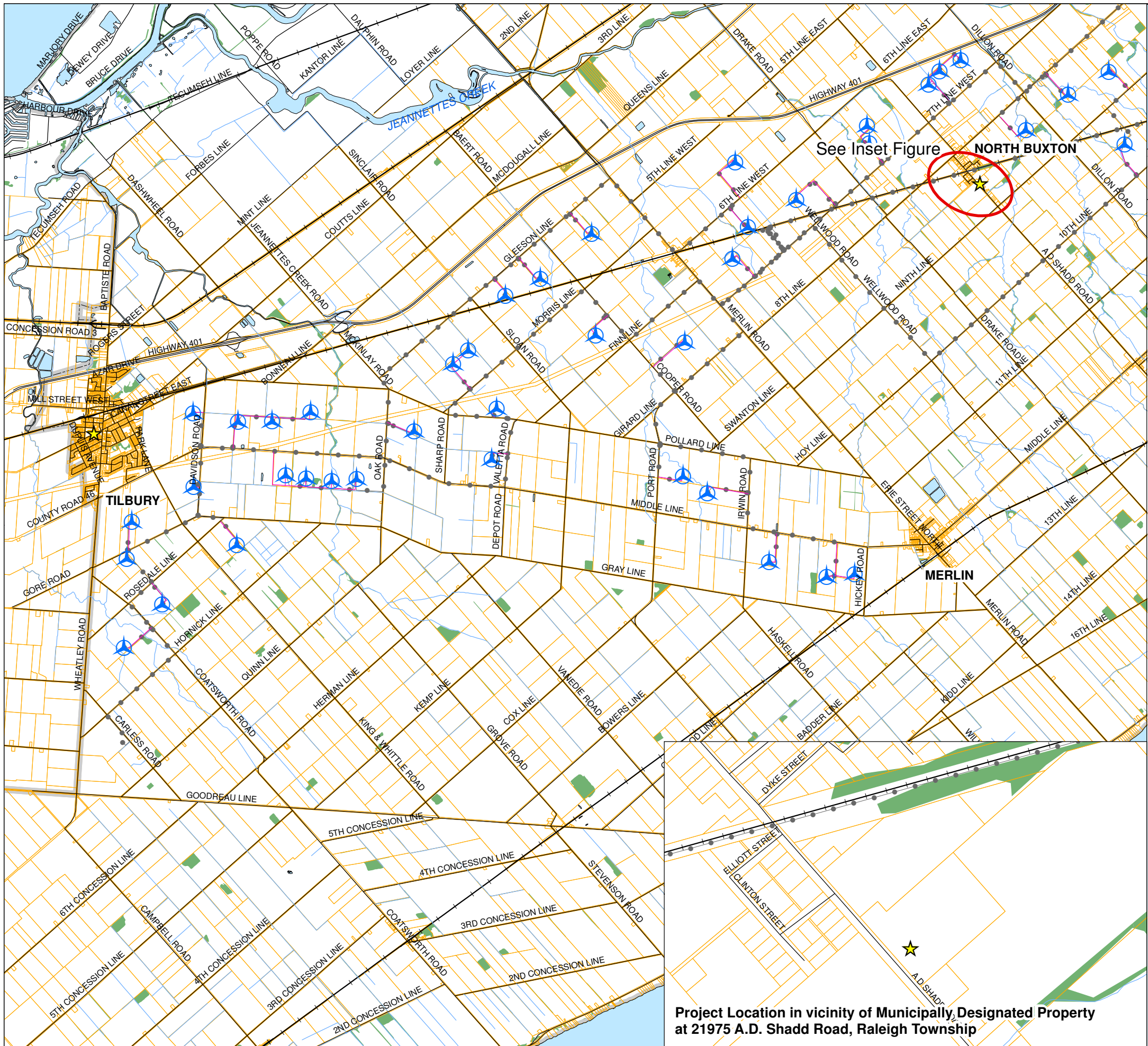
Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (the “Project”), consisting of approximately 124 operational wind turbines, as well as supporting infrastructure, including access roads, construction and turn around areas, and buried and/or overhead collection/transmission lines. The collection/transmission line will include approximately 34 km of 230 kV transmission line and two (2) substations to enable step-up of the voltage from 34.5 kV to 230 kV to connect to the Chatham Switching Station (SS). The Project Area is located within the Municipality of Chatham-Kent in southwestern Ontario, south of Highway 401 between the towns of Tilbury and Ridgeway to the west and east, respectively. Further information regarding the Project can be found on-line at: www.southkentwind.ca. The Project location is shown in Figures 1.1 through 1.3.

1.2 REA Legislative Requirements

Ontario Regulation (O. Reg.) 359/09 – *Renewable Energy Approvals Under Part V.0.1 of the Act*, (herein referred to as the REA Regulation) made under the *Environmental Protection Act* identifies the Renewable Energy Approval (REA) requirements for projects in Ontario. As per Section 4 of the REA Regulation, wind facilities with a name plate capacity greater than 50 kW with a maximum sound power level of greater than 102 dBA are classified as Class 4 wind facilities and do require an REA.

Section 19 of the REA Regulation requires proponents of Class 4 wind facilities to determine whether the Project location is on a property (“protected property”) described in Column 1 of the Table to Section 19. In June 2011, the Ministry of Tourism, Culture and Sport (MTCS) released *An Information Bulletin for Applicants Addressing the Cultural Heritage Component of Projects Subject to Ontario Regulation 359/09 Renewable Energy Approvals*. The applicable identification processes described in Parts 1 and 4 of this Bulletin have been completed to satisfy the requirements of the MTCS with respect to the consideration of Protected Properties under the REA Regulation.

As per MTCS’s Information Bulletin, “Project Location” is defined as per Ontario Regulation 359/09, “as part of land and all or part of any building or structure in, on or over which the REA applicant engages or proposed to engage in the project and any air space in which a person is engaging in or proposes to engage in the project”. All phases of the project (i.e., construction, operation and decommissioning) must be considered.



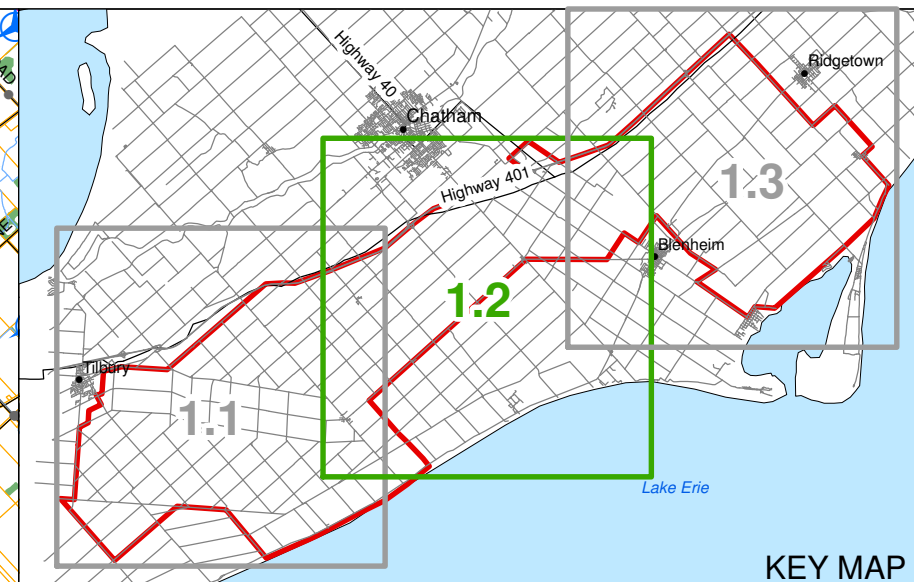
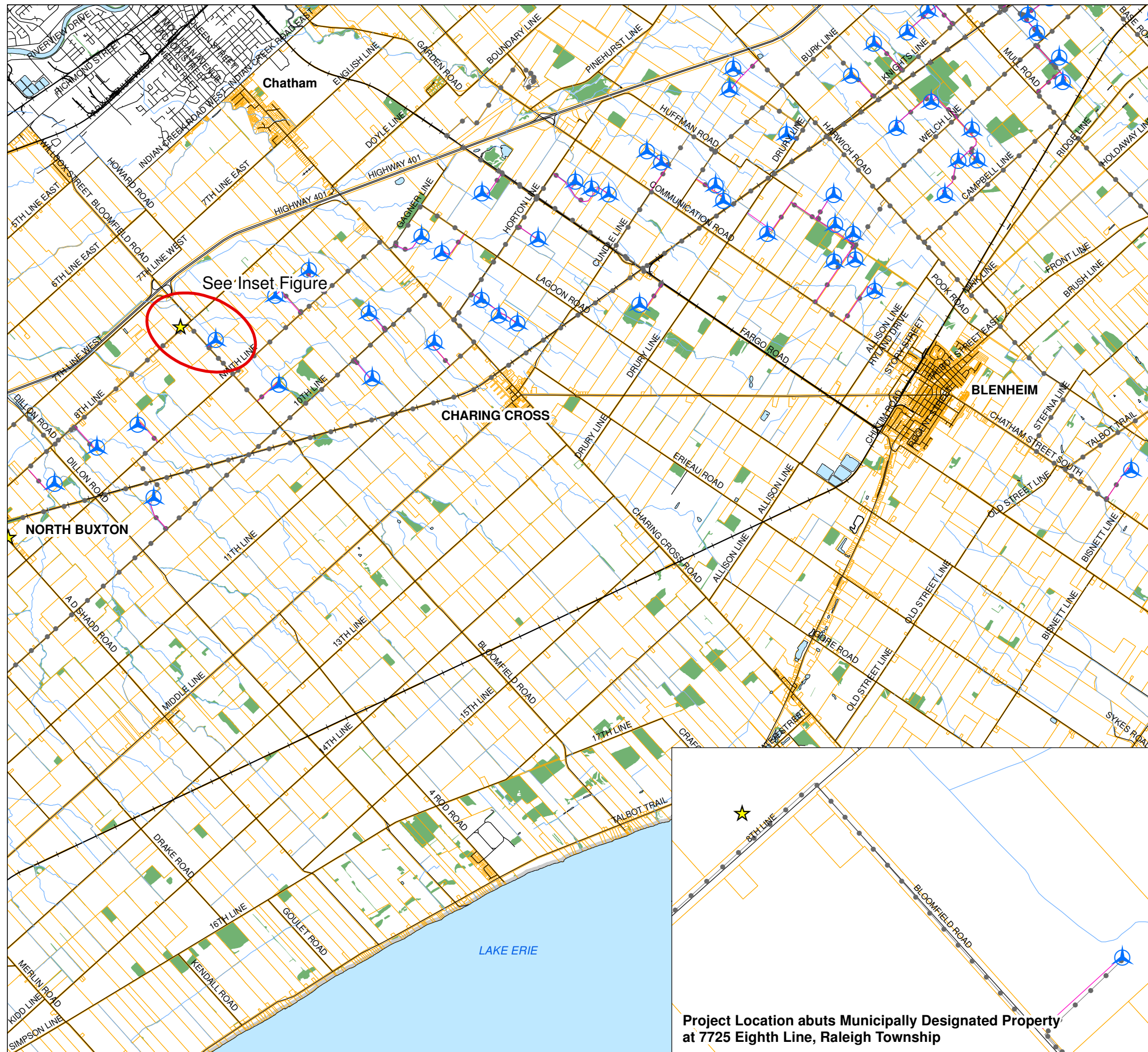
LEGEND

- ★ Municipally Designated Property
- +— Railway
- Road
- Watercourse
- ▭ Municipal Boundary
- Waterbody
- Wooded Area
- Proposed Project Infrastructure**
- ⚙ Turbine
- Access Road
- Collector Cable

Notes:
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Figure 1.1
Samsung Renewable Energy Inc.
And Pattern Energy
South Kent Wind Project
**Municipally Designated Properties
within the Vicinity of the Project Location**



LEGEND

- Municipally Designated Property
- Railway
- Road
- Watercourse
- Municipal Boundary
- Waterbody
- Wooded Area
- Proposed Project Infrastructure**
 - Turbine
 - Access Road
 - Collector Cable

Notes:
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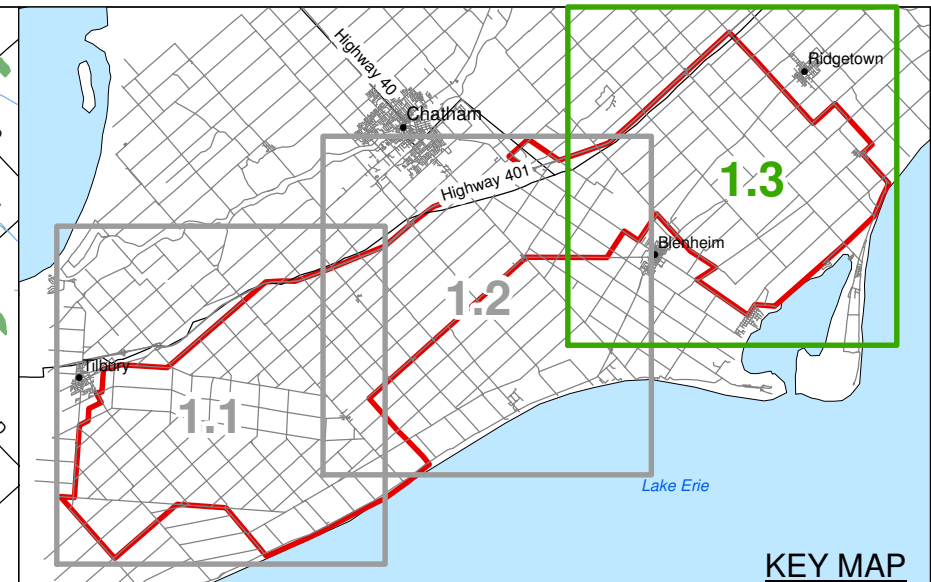
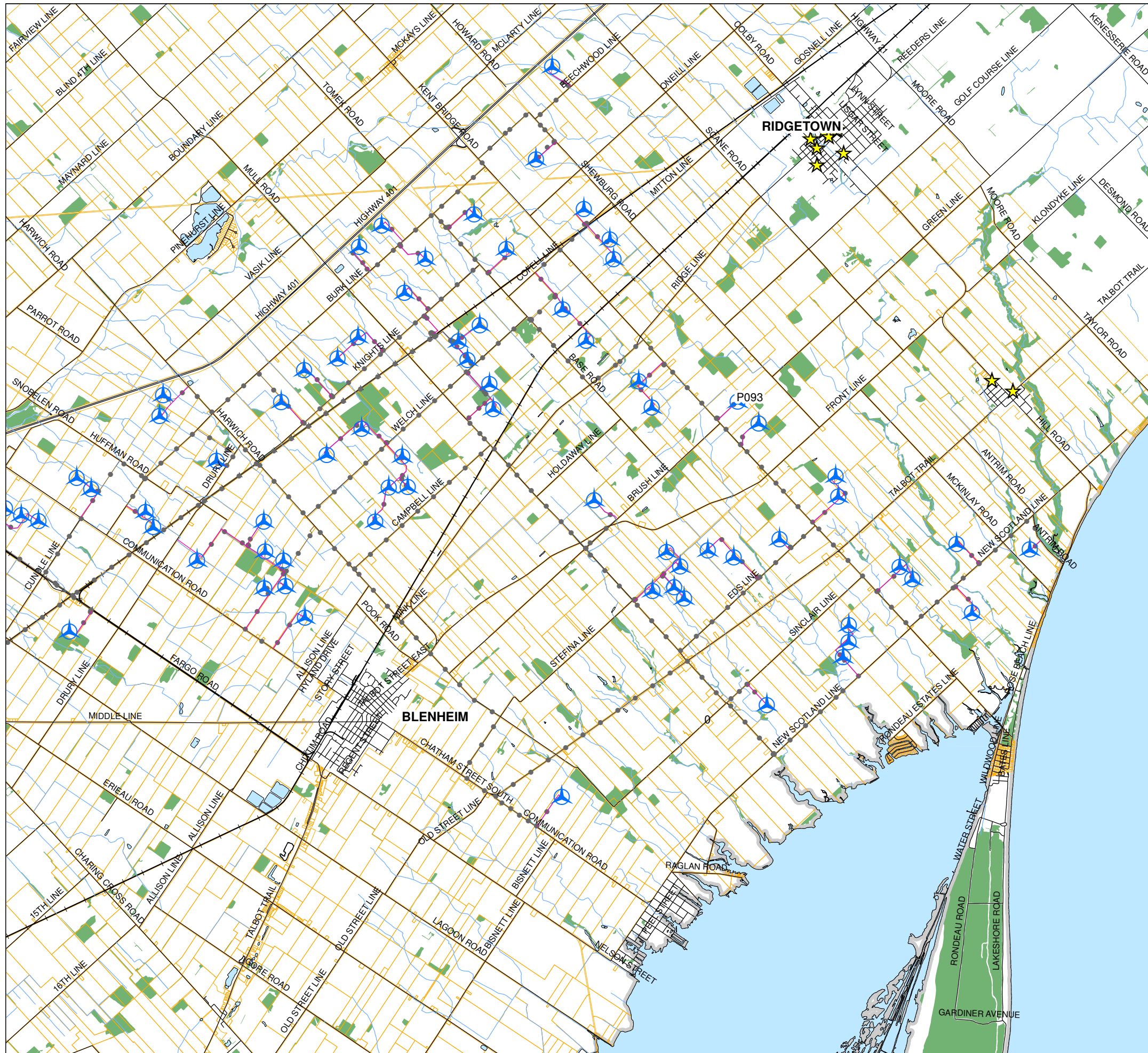
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Figure 1.2
 Samsung Renewable Energy Inc.
 And Pattern Energy
 South Kent Wind Project

**Municipally Designated Properties
 within the Vicinity of the Project Location**

**Project Location abuts Municipally Designated Property
 at 7725 Eighth Line, Raleigh Township**



LEGEND

- Municipally Designated Property
- Railway
- Road
- Watercourse
- Municipal Boundary
- Parcel
- Waterbody
- Wooded Area
- Proposed Project Infrastructure**
 - Turbine
 - Access Road
 - Collector Cable

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Figure 1.3
 Samsung Renewable Energy Inc.
 And Pattern Energy
 South Kent Wind Project
**Municipally Designated Properties
 within the Vicinity of the Project Location**

2. Protected Properties Identification

Resources used to determine whether the Project location was on or abutting Protected Properties described in Column 1 of the Table to Section 19 included internet searches of various Provincial and Municipal websites in addition to Municipal consultation as directed within Appendices B and E of the MTCS's *Information Bulletin (June 2011)*. Copies of consultation results with appropriate authorities are presented in Appendices to this report where noted. Tables 2.1 and 2.2 have been prepared to address Section 19 of the REA Regulation.

Table 2.1 Identifying Protected Properties at the Project Location

Project Name: South Kent Wind Project

Project Location: The Project is located throughout an area bounded by Highway 401 to the north, Lake Erie to the south, Tilbury to the west, and Ridgeway to the east. Longitude and Latitude Coordinates: See Project Location Figures 1.1 – 1.3.

REA Project Identifier: 3845-8QCLV9

Type and Classification of Project: Class 4 Wind Facility

Proponent Name: Samsung Renewable Energy and Pattern Energy

Proponent Contact Info: Kim Sachtleben, Development & Market Analysis Manager, 1600 Smith Street · Suite 4025 · Houston TX 77002

T 713 308 4200 · D 713 308 4272 · M 281 536 0269 kim.sachtleben@patternenergy.com

Consultant Name: Hatch Ltd.

Consultant Contact Info: Sean Male, Environmental Coordinator, 4342 Queen St., Suite 500, Niagara Falls, ON, L2E 7J7

T 905 374 5200 smale@hatch.ca

If you answer YES to any of the following questions you will require: either written authorization as set out in the Table in section 19 of O. Reg. 359/09, or written confirmation that written authorization is not required. Continue until all questions are answered for each property at the project location.			
Description of Property	YES	NO	Reference
Is the property subject to an Ontario Heritage Trust easement agreement?		✓	The Ontario Heritage Trust (OHT) maintains a listing of easement properties on their website (OHT, 2012). Upon review of the listing on April 2, 2012, no easement properties are located within the Municipality of Chatham-Kent. In addition, the OHT confirmed that they do not protect any property within the study area through a provincial conservation easement entered into pursuant to the <i>Ontario Heritage Act</i> . A copy of correspondence with the OHT is included in Appendix A.
Has a notice of intention to designate been issued by a municipality for the property?		✓	According to correspondence (See Appendix A) the OHT does not possess any record of a Section 41 designation (or notice of intention to designate) under the Ontario Heritage Act at the Project location. In addition, consultation with the Municipality of Chatham-Kent has confirmed that a notice of intention has not been issued for any properties at the Project location. A copy of correspondence with the Municipality is included as Appendix B.
Is the property municipally designated?		✓	The Municipal Heritage Committee of Chatham-Kent maintains a listing of all designated properties within the Municipality (Heritage Chatham-Kent, 2012). In addition, the OHT provided a list of the municipal addresses for the 59 properties within Chatham-Kent that are indicated on the <i>Ontario Heritage Act</i> Register to be designated under s. 29 of the <i>Ontario Heritage Act</i> (See Appendix A). Each property was geo-referenced, and accordingly, Hatch has determined that there are no municipally designated properties at the Project location (See Figures 1.1 – 1.3). Hatch's determination was confirmed through consultation with the Municipality of Chatham-Kent. Copies of correspondence are included in Appendix B.

If you answer YES to any of the following questions you will require: either written authorization as set out in the Table in section 19 of O. Reg. 359/09, or written confirmation that written authorization is not required. Continue until all questions are answered for each property at the project location.			
Is the property provincially designated?		✓	As per Appendix G of the 'Protected Properties, Archaeological and Heritage Resources An Information Bulletin for Applicants Addressing the Cultural Heritage Component of Projects Subject to <i>Ontario Regulation 359/09 Renewable Energy Approvals</i> ' (2011), no properties have been designated under Section 34.5 of the <i>Ontario Heritage Act</i> .
Has a notice of intention to designate been issued by the Ministry of Tourism and Culture for the property?		✓	As per Appendix G of the 'Protected Properties, Archaeological and Heritage Resources An Information Bulletin for Applicants Addressing the Cultural Heritage Component of Projects Subject to <i>Ontario Regulation 359/09 Renewable Energy Approvals</i> ' (2011), a notice of intention to designate has only been issued to one property, which occurs in the District of Manitoulin, and as such does not occur at the Project location.
Is the property subject to a municipal easement agreement?		✓	As confirmed through consultation with the Municipality of Chatham-Kent, the Project location is not subject to a municipal easement agreement (See Appendix B).
Is the property located within a designated Heritage Conservation District?		✓	The Municipality of Chatham-Kent does not have any properties located within a Heritage Conservation District according to the Ministry of Tourism, Culture and Sport (MTCS) website listing (MTCS, 2012). This information was confirmed through consultation with the Municipality of Chatham-Kent (See Appendix B).
Is the property designated as a historic site under Regulation 880?		✓	As per Appendix G of the <i>Protected Properties, Archaeological and Heritage Resources: An Information Bulletin for Applicants Addressing the Cultural Heritage Component of Projects Subject to Ontario Regulation 359/09 Renewable Energy Approvals</i> (2011), there are only three sites designated as a historic site under Regulation 880, and these three sites do not occur at the Project location.

Table 2.2 Identifying Protected Properties Abutting a Project Location

Project Name: South Kent Wind Project

Project Location: The Project is located throughout an area bounded by Highway 401 to the north, Lake Erie to the south, Tilbury to the west, and Ridgetown to the east. Longitude and Latitude Coordinates: See Project Location Figures 1.1 – 1.3.

REA Project Identifier: 3845-8QCLV9

Type and Classification of Project: Class 4 Wind Facility

Proponent Name: Samsung Renewable Energy and Pattern Energy

Proponent Contact Info: Kim Sachtleben, Development & Market Analysis Manager, 1600 Smith Street · Suite 4025 · Houston TX 77002

T 713 308 4200 · D 713 308 4272 · M 281 536 0269 kim.sachtleben@patternenergy.com

Consultant Name: Hatch Ltd.

Consultant Contact Info: Sean Male, Environmental Coordinator, 4342 Queen St., Suite 500, Niagara Falls, ON, L2E 7J7

T 905 374 5200 smale@hatch.ca

If you answer YES to any of the following questions a heritage assessment is required.			
Description of Property	YES	NO	Reference
Is there an abutting property that is subject to an Ontario Heritage Trust easement agreement?		✓	The OHT maintains a listing of easement properties on their website (OHT, 2012). Upon review of the listing on April 2, 2012, no easement properties are located within the Municipality of Chatham-Kent. In addition, the OHT confirmed that they do not protect any property within the study area through a provincial conservation easement entered into pursuant to the <i>Ontario Heritage Act</i> . A copy of correspondence with the OHT is included in Appendix A.
Is there an abutting property for which a notice of intention to designate been issued by a municipality?		✓	According to consultation (See Appendix A), the OHT does not possess any record of a Section 41 designation (or notice of intention to designate) under the Ontario Heritage Act abutting the Project location. In addition, consultation with the Municipality of Chatham-Kent has confirmed that a notice of intention has not been issued for any properties abutting the Project location. A copy of correspondence with the Municipality is included as Appendix B.
Is there an abutting property that has been municipally designated?	✓		The Municipal Heritage Committee of Chatham-Kent maintains a listing of all designated properties within the Municipality (Heritage Chatham-Kent, 2012). In addition, consultation with the Municipality of Chatham-Kent revealed that two (2) municipally designated properties are adjacent to the Project location (See Appendix B). These are 21975 A.D. Shadd Road and 7725 8 th Line, both in Raleigh Township. The OHT has also provided a list of the municipal addresses for 59 properties within Chatham-Kent that are indicated on the <i>Ontario Heritage Act</i> Register to be designated under s. 29 of the <i>Ontario Heritage Act</i> (See Appendix A). Each municipally designated property was geo-referenced in relation to the Project location (See Figures 1.1 – 1.3) and accordingly, Hatch has determined that the Project location abuts one (1) protected property at 7725 8 th Line in Raleigh Township (See inset map on Figure 1.2).

If you answer YES to any of the following questions a heritage assessment is required.			
Is there an abutting property that has been provincially designated?		✓	As per Appendix G of the 'Protected Properties, Archaeological and Heritage Resources An Information Bulletin for Applicants Addressing the Cultural Heritage Component of Projects Subject to <i>Ontario Regulation 359/09 Renewable Energy Approvals</i> ' (2011), no properties have been designated under Section 34.5 of the <i>Ontario Heritage Act</i> .
Is there an abutting property for which a notice of intention to designate has been issued by the Ministry of Tourism and Culture?		✓	As per Appendix G of the 'Protected Properties, Archaeological and Heritage Resources An Information Bulletin for Applicants Addressing the Cultural Heritage Component of Projects Subject to <i>Ontario Regulation 359/09 Renewable Energy Approvals</i> ' (2011), a notice of intention to designate has only been issued to one property, which occurs in the District of Manitoulin, and as such does not abut the Project location.
Is there an abutting property that is subject to a municipal easement agreement?		✓	As confirmed through consultation with the Municipality of Chatham-Kent, no properties abutting the Project location are subject to a municipal easement agreement (See Appendix B).
Is there an abutting property that is part of a designated Heritage Conservation District?		✓	The Municipality of Chatham-Kent does not have any properties located within a Heritage Conservation District according to the Ministry of Tourism, Culture and Sport (MTCS) website listing (MTCS, 2012). This information was confirmed through consultation with the Municipality of Chatham-Kent (See Appendix B).
Is there an abutting property designated as a historic site under Regulation 880?		✓	As per Appendix G of the <i>Protected Properties, Archaeological and Heritage Resources: An Information Bulletin for Applicants Addressing the Cultural Heritage Component of Projects Subject to Ontario Regulation 359/09 Renewable Energy Approvals</i> (2011), there are only three sites designated as a historic site under Regulation 880, and these three sites do not abut the Project location.

3. Conclusion

Hatch contacted all of the appropriate people or bodies and based on the information presented in Tables 2.1 and 2.2, has determined that the Project is not located on the applicable type(s) of protected properties as described in Column 1 of the Table to section 19. Hatch did identify one (1) protected property abutting a parcel of land upon which the Project located, and accordingly, a Heritage Assessment, prepared by a heritage consultant has been completed and submitted to the MTCS.

4. References

Heritage Chatham-Kent. 2012. The Chatham-Kent Municipal Heritage Register Developed by Planning Services in Partnership with Heritage Chatham-Kent, Council approved on January 18, 2010. Available online at: [http://www.chatham-kent.ca/SiteCollectionDocuments/planning_development_services/Chatham-Kent%20Municipal%20Heritage%20Register,%20Pages%201-3%20\(Title%20Page,%20Index%20and%20Listed%20Properties%20Title%20Page\).pdf](http://www.chatham-kent.ca/SiteCollectionDocuments/planning_development_services/Chatham-Kent%20Municipal%20Heritage%20Register,%20Pages%201-3%20(Title%20Page,%20Index%20and%20Listed%20Properties%20Title%20Page).pdf) Accessed April 2, 2012.

Ministry of Tourism, Culture and Sport. 2012. List of Heritage Conservation Districts. Available online at: http://www.mtc.gov.on.ca/en/heritage/heritage_conserving_list.shtml. Accessed April 10, 2012.

Ministry of Tourism, Culture and Sport. 2011. Protected Properties, Archaeological and Heritage Resources, An Information Bulletin for Applicants Addressing the Cultural Heritage Components of Projects Subject to *Ontario Regulation 359/09 Renewable Energy Approvals*. June 2011.

Ontario Heritage Trust. 2012. Conservation Easements: Visit our Easement Properties. Available online at: <http://www.heritagetrust.on.ca/Conservation/Conservation-easements/Visit-our-easement-properties.aspx> Accessed April 2, 2012.

Appendix A

Correspondence with Ontario Heritage Trust

Vukovics, Kathleen

From: Jeremy Collins [Jeremy.Collins@heritagetrust.on.ca]
Sent: Thursday, April 05, 2012 4:46 PM
To: Vukovics, Kathleen
Cc: Sean Fraser; chris.schiller@ontario.ca
Subject: OHT reply to O.Reg. 359/09 inquiry - Renewable Energy Project - Proposed South Kent Wind Project, Chatham Kent
Attachments: South Kent Wind Project Fraser-Vukovics 2012-Apr-04.pdf; Excerpt of OHA Register re Chatham-Kent Designations under s.29.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms Vukovics:

On behalf of Sean Fraser, Manager, Acquisitions & Conservation Services, I am forwarding to you the attached response of the Ontario Heritage Trust to your email of April 2, 2012 concerning the proposed South Kent Wind Project in the Regional Municipality of Chatham-Kent. As discussed in our response, we have also attached excerpt of the OHA Register concerning properties designated under s.29 of the Ontario Heritage Act.

A copy of this email and the attached letter have been sent to Chris Schiller, Manager, Culture Services Unit, Ontario Ministry of Tourism, Culture and Sport.

Regards,

Jeremy Collins

Jeremy Collins

Acquisitions Coordinator,
Acquisitions and Conservation Services
Ontario Heritage Trust
10 Adelaide Street East, Suite 202
Toronto, Ontario, Canada M5C 1J3
Telephone: 416-325-5017
Fax: 416-325-5071
E-mail: Jeremy.Collins@heritagetrust.on.ca
www.heritagetrust.on.ca

The Ontario Heritage Trust - the Province's lead heritage agency - is dedicated to identifying, preserving, protecting and promoting Ontario's rich and varied heritage for the benefit of present and future generations.



An agency of the Government of Ontario

10 Adelaide Street East
Toronto, Ontario M5C 1J3

Telephone: 416-325-5000
Fax : 416-325-5071
www.heritagetrust.on.ca

VIA MAIL AND EMAIL

April 5th, 2012

Hatch Environmental Consultants
4342 Queen Street, Suite 500,
Niagara Falls, ON L2E 7J7

Attention: Kathleen Vukovics, Environmental Scientist

Dear Ms. Vukovics:

Re: Proposed South Kent Wind Project – Regional Municipality of Chatham-Kent

We are in receipt of your email dated April 2nd, 2012 and the attached Notice of Proposal to Engage in a Renewable Energy Project and map of the study area for this project.

As the Province's lead heritage agency, the Ontario Heritage Trust is mandated to preserve, protect and promote the conservation of the Province's rich natural and cultural heritage. In carrying out the above mandate, the Trust protects many significant cultural heritage and natural heritage sites across Ontario through ownership and conservation easements. The Trust also promotes appropriate measures to protect heritage resources which may be affected by large-scale undertakings.

Further to your request for information under s.19 of O. Reg. 359/09, we advise the following:

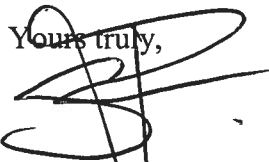
1. The Trust does not protect any property within or abutting the study area through a provincial conservation easement entered into pursuant to the *Ontario Heritage Act*.
2. To date, the Trust does not possess any record of a section 41 designation (or notice of intention to designate) under the *Ontario Heritage Act* affecting the property.
3. No properties in the study area are listed on the provincial heritage register.
4. The Trust's provincial plaque records are formatted by subject, theme and municipality -- a search of these records to determine the location of the plaque can be conducted on-line at the Trust's website: <http://www.heritagetrust.on.ca/Resources-and-Learning/Online-Plaque-Guide.aspx> Instructions for conducting a search are set out at that location.

In your email, you confirmed that the entire study area is located within the Regional Municipality of Chatham-Kent. Given the extensive nature of the study area, we are providing you with a list of the municipal addresses for the 59 properties within Chatham-Kent that are indicated on the OHA Register to be designated under s. 29 of the *Ontario Heritage Act*. Please be aware of the notes and disclaimer accompanying the list.

We ask that you review the attached list of addresses in conjunction with your study area maps for the proposed project and satisfy yourself concerning possible municipal heritage protection of any properties under sections 29 (individual property designation) within the study area boundaries. In addition, we strongly recommend that you confirm your inquiries regarding municipal heritage protection under 29 and 41 of the *Ontario Heritage Act* with the municipal clerk for the Regional Municipality of Chatham-Kent.

On a final note, we encourage you to contact the Ministry of Tourism, Culture and Sport, if you have not already done so, in order to determine if there are any other cultural heritage interests which may be affected by this project.

Should you have any questions, please contact me at 416 325-5019.

Yours truly,


Sean Fraser
Manager, Acquisitions and Conservation Services

Copy: Chris Schiller, Manager, Culture Services Unit, Ontario Ministry of Tourism, Culture and Sport

Ontario Heritage Trust – extract: Ontario Heritage Act (OHA) Register

List of Properties in the Municipality of Chatham-Kent designated under Part IV, Section 29 of the Ontario Heritage Act

Date: April 4, 2012.

Street Number	Street Name	Municipal Name_old	Property Name
514	Peter St.	Bothwell	St. Ignatius Church
320	Main St.	Bothwell	Bothwell Town Hall
N/A	N/A	Camden	Uncle Tom's Cabin, Josiah Henson House
44	William St. N	Chatham	The Chatham Armoury
59	William St. N	Chatham	Chatham-Kent Museum
55	Forest St.	Chatham	McKeough Public School
320	Queen St.	Chatham	Three (3) ornamental outdoor cast iron light standards installed at the Chatham Hydro Complex
495	King St. W	Chatham	495 King St. W
3	Stanley Ave.	Chatham	3 Stanley Ave.
75	William St.	Chatham	Kiwanis Theatre and Thames Art Gallery
81	Stanley Ave.	Chatham	Chatham-Kent Jail
81	Stanley Ave.	Chatham	Kent County Courthouse
55	Dover St.	Chatham	Senator Joseph Northwood Home
143	William St. S	Chatham	143 William St. S & The Bay Room
180	Wellington St. W	Chatham	St. Joseph's Church

Ontario Heritage Trust – extract: Ontario Heritage Act (OHA) Register

List of Properties in the Municipality of Chatham-Kent designated under Part IV, Section 29 of the Ontario Heritage Act

Date: April 4, 2012.

135	Maple Leaf Dr.	Chatham	Chatham Mausoleum
		Chatham	Certain street light standards (43 in total) in the City of Chatham
50	William St. N	Chatham	Tecumseh Park
125	Queen St.	Chatham	Adams Block
N/A	Townline Rd. & Bradley Line	Dover	The Myers Dash Wheel Property
187	Brown St.	Dresden	Dresden Public Library
485	St. George St.	Dresden	Dresden Municipal Building
480	Hughes St.	Dresden	The Burns House
303	St. George St.	Dresden	Dresden Creamery Building
11052	River Rd.	Harwich	Bethel United Church
13033	Talbot Trail	Howard	13033 Talbot Trail
13770	Talbot Trail	Howard	The Green Cameron Property
12591	Talbot Trail	Howard	The McCollum-Hawkins-Wade House
12591	Talbot Trail	Howard Township	McCollum-Hawkins-Wade House
12591	Talbot Trail	Howard Township	McCollum Hawkins-Wade House
12561	Ridge St.	Morpeth	Morpeth United Church
15231	Thompson Line	Orford Township	Duart Hall
21975	A.D. Shadd Rd.	Raleigh Township	Buxton National Historic Site and Museum Property
7725	8th Line	Raleigh Township	The Jordan House
7407	Riverview Line	Raleigh Township	Thomas McCrae House
53	Erie St. S	Ridgetown	Ridge House Museum
68	Main St. W	Ridgetown	Church of Christ Disciples
26	George St.	Ridgetown	St. Michael's Church
59	Main St. E	Ridgetown	Presbyterian Church
38	Erie St. S	Ridgetown	Erie St. United Church
104	Main St. E	Ridgetown	Lawton House

Ontario Heritage Trust – extract: Ontario Heritage Act (OHA) Register

List of Properties in the Municipality of Chatham-Kent designated under Part IV, Section 29 of the Ontario Heritage Act

Date: April 4, 2012.

19	West St.	Ridgetown	Rudy Brown Home
8	Erie St. N	Ridgetown	Stan and Barbara Ptaszynski House
57	Main St. E	Ridgetown	Howard Township Municipal Hall
42	Erie St.	Ridgetown	Former Erie St. United Church Manse
2	Main St. W.	Ridgetown	McKinlay Block
4	Main St. W.	Ridgetown	McKinlay Block
10	Main St. W.	Ridgetown	McKinlay Block
6	Main St. W.	Ridgetown	McKinlay Block
12	Main St. W.	Ridgetown	McKinlay Block
8	Main St. W.	Ridgetown	McKinlay Block
2-12	Main St. W.	Ridgetown	McKinley Block
		Thamesville	Thamesville Town Hall
9	Victoria St.	Thamesville	Tye Block
N/A	Queen St. N	Tilbury	Tilbury North-Side Conservation Area; Tilbury Dashwheel
20	Canal St. W	Tilbury	The Lanoue Home
1933	Main St.	Tilbury	St. Andrew's United Church
29785	Zone Rd. 7	Zone Township	Barnes Powerhouse
29785	Zone Rd. 7	Zone Township	Barnes Powerhouse

Notes / Disclaimer:

Section 27 of the Ontario Heritage Act (OHA) requires the clerk of a municipality to keep a local register of all property that has been designated.

Section 27 also states that municipalities may keep a register of property that has not been designated but that the Council believes to be of cultural heritage value or interest. These are often referred to as “listed” properties. Non-designated or “listed” properties are not reflected in the Ontario Heritage Act Register.

The Ontario Heritage Act Register is in development as a heritage information resource. The Ontario Heritage Trust does not warrant as to the accuracy or completeness of the information contained in the Ontario Heritage Act Register.

Persons enquiring about designated and non-designated heritage properties in a municipality are urged to undertake their own due diligence to determine the accuracy and completeness of information and are advised to consult with the relevant local municipality as part of this due diligence.

Appendix B

Correspondence with Municipality of Chatham-Kent

Vukovics, Kathleen

From: Ryan Jacques [RYANJ@chatham-kent.ca]
Sent: Thursday, April 05, 2012 1:58 PM
To: Vukovics, Kathleen
Cc: 335936
Subject: RE: South Kent Wind Project: Protected Properties in the Municipality of Chatham-Kent
Attachments: By-Law 267-2008.pdf; By-Law 48-2007.pdf; Buxton NHS.pdf; Jordan House.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Kathleen,

Further to our conversation, I can provide a response to the questions below:

1. Has a notice of intention to designate been issued for any of the properties at or abutting the project location by the municipality?
No.
2. Are any properties municipally designated?
Yes. 7725 Eighth Line and 21975 A.D. Shadd Road are designated under Part IV of the Ontario Heritage Act. These properties are adjacent to Underground Cabling and the Distribution Line respectively. Both designation by-laws and location maps are provided for your reference.
3. Are any properties subject to a municipal easement agreement?
No.
4. Is the project located within or abutting a designated conservation easement?
No.

Regards,
Ryan

Ryan Jacques
Planner | Municipality of Chatham-Kent
Planning Services | Community Development

315 King Street West, P.O. Box 640, CHATHAM, ON N7M 5K8
Telephone: 519-352-8401 x3049 | Fax: 519-436-3237
<mailto:ryan.jacques@chatham-kent.ca> | www.chatham-kent.ca

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From: Vukovics, Kathleen [mailto:KVukovics@hatch.ca]
Sent: April 2, 2012 12:08 PM
To: Ryan Jacques
Cc: 335936
Subject: FW: South Kent Wind Project: Protected Properties in the Municipality of Chatham-Kent

Hi Ryan,

I am currently updating the research I completed last July in regards to Protected Properties within or abutting the location of the proposed South Kent Wind Project. I have attached updated maps of the Project location. I am hoping that you can confirm the following information regarding protected properties located at or abutting the Project location:

1. Has a notice of intention to designate been issued for any of the properties at or abutting the project location by the municipality?
2. Are any properties municipally designated?
3. Are any properties subject to a municipal easement agreement?
4. Is the project located within or abutting a designated conservation easement?

Any assistance that you can provide at your earliest convenience would be so greatly appreciated. Please also give me a call if you would like to discuss, or if I may provide any additional information you may require in order to respond.

Thanks very much,

Kathleen

Kathleen Vukovics

Environmental Scientist / Environmental Assessment & Management
Tel: +1 905 374 0701 Ext. 5343
Niagara Falls

From: Vukovics, Kathleen
Sent: Wednesday, July 13, 2011 9:30 AM
To: 'Ryan Jacques'
Subject: RE: South Kent Wind Project: Protected Properties in the Municipality of Chatham-Kent

Thanks Ryan,

This is the property in question and the information is very helpful.

Kathleen

Kathleen Vukovics

Environmental Scientist / Environmental Assessment & Management
Tel: +1 905 374 0701 Ext. 5343
Niagara Falls

From: Ryan Jacques [<mailto:RYANJ@chatham-kent.ca>]
Sent: Wednesday, July 13, 2011 9:26 AM
To: Vukovics, Kathleen
Subject: RE: South Kent Wind Project: Protected Properties in the Municipality of Chatham-Kent

Hi Kathleen,

The property you are referring to is a privately owned parcel containing a woodlot. The intent of the owner is to conserve the natural features located there (woodlot).

The attached Planning report concerning these lands is available to you for background information. The report also contains a more detailed description of the lands.

Please confirm that I am providing information on the correct property and if this information answers your questions.

Regards,
Ryan

315 King Street West, P.O. Box 640, CHATHAM, ON N7M 5K8
Telephone: 519.352.8401 x3049 | Fax: 519-436-3237
<mailto:ryan.jacques@chatham-kent.ca> | www.chatham-kent.ca

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From: Vukovics, Kathleen [<mailto:KVukovics@hatch.ca>]
Sent: July 12, 2011 4:31 PM
To: Ryan Jacques
Subject: RE: South Kent Wind Project: Protected Properties in the Municipality of Chatham-Kent

Hello Ryan,

On a related matter, would it be possible for you to provide some information on a property in the vicinity of the project. It is located just northeast of Kent Bridge Rd and just southeast of New Scotland Line and designated OS1-1170 according to your zoning bylaw. Can you tell me whether this property is public or privately owned, and whether it is a park, or a planned/designated recreational or community space?

If you require additional clarification on the location,

Thanks very much, Kathleen

Kathleen Vukovics
Environmental Scientist / Environmental Assessment & Management
Tel: +1 905 374 0701 Ext. 5343
Niagara Falls

From: Vukovics, Kathleen
Sent: Tuesday, July 05, 2011 3:56 PM
To: 'Ryan Jacques'
Subject: RE: South Kent Wind Project: Protected Properties in the Municipality of Chatham-Kent

Thanks for the prompt response. It is greatly appreciated.

Kathleen

Kathleen Vukovics
Environmental Scientist / Environmental Assessment & Management
Tel: +1 905 374 0701 Ext. 5343
Niagara Falls

From: Ryan Jacques [<mailto:RYANJ@chatham-kent.ca>]
Sent: Tuesday, July 05, 2011 3:55 PM
To: Vukovics, Kathleen
Cc: 335936
Subject: RE: South Kent Wind Project: Protected Properties in the Municipality of Chatham-Kent

Hello Kathleen,

I can confirm that the Municipality has not issued a Notice of Intention to Designate for 11658 Talbot Trail.

Please contact me if you have further inquiries regarding listed or designated property in Chatham-Kent.

Thanks,
Ryan

Ryan Jacques, CPT, LEED Green Associate | Planning Technician | Municipality of Chatham-Kent
Planning Services | Community Development

315 King Street West, P.O. Box 640, CHATHAM, ON N7M 5K8
Telephone: 519-352-8401 x3049 | Fax: 519-436-3237
<mailto:ryan.jacques@chatham-kent.ca> | www.chatham-kent.ca

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From: Vukovics, Kathleen [<mailto:KVukovics@hatch.ca>]
Sent: July 5, 2011 3:49 PM
To: Ryan Jacques
Cc: 335936
Subject: South Kent Wind Project: Protected Properties in the Municipality of Chatham-Kent

Hi Ryan,

As you are aware, Samsung Renewable Energy Inc. and Pattern Energy are jointly proposing to develop the South Kent Wind Project, a 270-MW wind energy project, which will be located within the Municipality of Chatham-Kent in southwestern Ontario. As required, the Proponent is proceeding with the Renewable Energy Approval (REA) process as described in Ontario Regulation 359/09 under the *Environmental Protection Act*. The Proponent has retained Hatch Ltd. (Hatch) to assist in meeting the REA requirements. Further information regarding the Project can be found on-line at: www.southkentwind.ca

I am currently investigating Protected Properties in the vicinity of the Project and a recent review of your Municipality's website has revealed that **11658 Talbot Trail**, one of Heritage Chatham-Kent's listed properties is located in the vicinity of the Project. Can you please tell me whether the Municipality has issued a Notice of Intention to Designate for this property?

A response at your earliest convenience would be greatly appreciated, and thanks very much,

Kathleen

Kathleen Vukovics
Environmental Scientist / Environmental Assessment & Management



Tel: +1 905 374 0701 Ext. 5343
Fax: +1 905 374 1157
4342 Queen Street, Suite 500, Niagara Falls, Ontario Canada L2E 7J7

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BY-LAW NUMBER 267-2008

OF THE CORPORATION OF THE MUNICIPALITY OF CHATHAM-KENT

A By-law to designate the property known as **21975 A.D. Shadd Road, Community of Raleigh**, as being of historical and architectural value or interest.

PASSED the 27th day of October, 2008

WHEREAS the Ontario Heritage Act, R.S.O. 1990, Chapter 0.18 as amended, provides that the Council of the Municipality of Chatham-Kent may designate a property within the boundaries of the Municipality to be of cultural heritage value or interest;

AND WHEREAS Council of the Corporation of the Municipality of Chatham-Kent has appointed the Heritage Chatham-Kent Advisory Committee and the said committee has recommended that the Municipality designate the hereinafter described property pursuant to The Ontario Heritage Act;

AND WHEREAS Council of the Corporation of the Municipality of Chatham-Kent has given Notice of Intention to Designate the hereinafter described property to be of cultural heritage value and interest pursuant to The Ontario Heritage Act;

AND WHEREAS no Notice of Objection to the proposed designation has been received by the Corporation of the Municipality of Chatham-Kent;

AND WHEREAS the reasons for designation are set out in Schedule "A" annexed hereto;

NOW THEREFORE the Municipality of Chatham-Kent enacts as follows:

1. That the property municipally known as 21975 A.D. Shadd Road, Community of Raleigh, and more particularly described in the attached Schedule "B" be designated to be of cultural heritage value and interest pursuant to The Ontario Heritage Act.
2. The Clerk be authorized to register the by-law against the property described in Schedule "A" hereto in the proper Land Registry Office.
3. The Clerk be directed to cause a copy of this by-law to be served on the owner of the aforesaid property and on the Ontario Heritage Foundation and cause notice of the passing of this by-law to be published in a newspaper having general circulation in the municipality.

THIS By-law shall come into full force and effect upon the final passing thereof.

READ A FIRST, SECOND AND THIRD TIME this 27th day of October, 2008.

ORIGINAL SIGNED BY:

Mayor – Randy R. Hope

ORIGINAL SIGNED BY:

Clerk – Elinor Mifflin

SCHEDULE “A”

REASONS FOR DESIGNATION

BUXTON NATIONAL HISTORIC SITE AND MUSEUM PROPERTY **North Buxton**

Description of Property

The Buxton National Historical Site and Museum property municipally known as 21975 A.D. Shadd Road, on Part Lot 10, Concession 8, Community of Raleigh, is comprised of 7.98 acres. The property contains a restored 1861 timber frame house, wood sided school house, a restored log house, a c. 1967 museum interpretation building, numerous federal and provincial plaques, a reproduction freedom bell, and a park area with baseball diamonds, playground equipment, and a covered open sided pavilion.

Statement of Cultural Heritage Value or Interest

Historical/Associative (OHA Reg 9/06):

In 1849, Rev. William King brought fifteen US slaves to Canada in order for them to live as free people. Soon after this, he was able to acquire 9000 acres in Raleigh Township for the purpose of creating a settlement for refugees from slavery that would provide them the opportunity to create a new life as self sufficient land owners and business people.

What became known as the Elgin Settlement was and continues to be a successful and vibrant community and the entire 9000 acres was recognized as an area of national significance by Parks Canada in 2000. The three specific reasons for national significance are that the site is:

- A designed landscape created as a social experiment
- A continuing cultural landscape which retains an active social role in contemporary society closely associated with the traditional way of life and in which the evolutionary process is still in progress
- An associative landscape that has a sense of place highly evocative of its historic roots with strong associations for residents and visitors as a place of meaning and memories

One of the greatest accomplishments of the settlement that contribute to its long lasting success and its importance in a national and international context was the establishment of schools with fine teachers that quickly generated a reputation of excellence. The reputation was proven justified as graduates from the Elgin Settlement schools went on to become doctors, lawyers, and teachers. Many returned to the United States after the Civil War and became leading politicians and social leaders that helped shape the future of that country during the reconstruction.

The Buxton School House SS # 13, Raleigh, was built in 1861 and was the building where much of this fine education took place. It has direct historical associations to slavery, the underground railroad, the Civil War, reconstruction, and, of course, the many outstanding accomplishments that students from this school contributed to Canada and Chatham-Kent. It is the only known remaining school house in Canada with these associations.

Building from this strong historical base, the property as a whole has been, and continues to be, the focal point of community events, cultural chronicling/ preservation, sports, and pride. The site has long been a centre of community sports with a playground and baseball diamonds. It was selected as the site of the Raleigh Township Museum, a Centennial project of the mid-1960s that has evolved into the present museum complex. This includes the 1960s interpretive centre, the school house, the recently re-located Colbert-Henderson house, the only surviving log building in the settlement and one that conforms to Rev. King’s strict criteria for settler’s homes. An early barn moved to the site is another heritage attribute. The freedom bell and national and provincial plaques pertaining to the Elgin Settlement grace the property.

Perhaps most importantly is that this property has been the site of the internationally renowned annual homecoming event that has been held on Labour Day weekend since 1926 and epitomizes and illustrates, better than any explanation, the associative value of place that Parks Canada has identified as being of such fundamental significance.

Design/Physical (OHA Reg 9/06):

The property's physical significance is greater than the sum of its parts as each feature/component relates to each other to create a cultural "place." Hence, the design of this community "centre" should be interpreted first as a whole that includes the baseball diamonds, the Freedom Bell and historic plaques, and their placement on the property in addition and relation to the buildings.

Buildings:

Raleigh Township SS #13 School House: This building was the subject of a well researched professional restoration in 2000 – 2002 and reflects its appearance c. 1914. It is a one storey steep pitched front gable timber frame vernacular style building. The exterior is bevelled tongue and groove wood siding with a three bay façade, centre double wooden doors with an open columned and raised front portico and a five sided cupola with conforming conical roof. The north and south exposures are each composed of three equally spaced large windows while the rear (east) exposure has a small centred 'salt box' shaped wood shed extension.

Museum Building: A one storey frame building with a three bay centre section of round log wooden cladding with flanking wings that extend from the centre forming two obtuse angles.

Colbert-Henderson Log Home: This building has also been the subject of an extensive restoration. It is a side gabled log structure with gently sloped salt box-shaped roof line, three bay façade with hip-roofed veranda. The Northern exposure has a prominent exposed chimney.

Contextual:

The Buxton National Historic Site and Museum property, although it continues to evolve, has exceptional contextual significance located, as it is, next to the church and cemetery. This spatial relationship between the spiritual centre of the community (the church) and the social and educational components of the property is fundamental to the understanding and appreciation of the culture.

The school house, restored in 2000-2002 to its c. 1914 appearance, is along with the adjacent church, the tallest building in the community that dominates the approach from the south along A. D. Shadd Road and from the west along the 9th Concession.

Description of Heritage Attributes/Character Defining Elements

Key elements of the property include:

Raleigh SS #13 School House

Exterior:

- Brick single stack chimney with heavy built out cornice
- Steep pitched roof clad in cedar shingles
- Projecting eaves
- Plain soffit
- Plain frieze
- Five sided cupola including
 - wooden vents
 - decorative brackets
 - conforming conical cedar clad roof
 - decorative ball finial
- Window placement
- Window casement/exterior surround with low pitched moulded headers
- Plain wood lug window sills

- Double hung wooden four over four window sash
- Window boxes
- Double tongue and groove front doors
- Door casement/surround with low pitched moulded peaked header
- Decorative centre wooden medallion bearing the wording “SCHOOL SECTION No. 13 A D 1861”
- Front portico including
 - raised wooden landing and steps
 - four wooden Doric support columns
 - heavy entablature
 - extended and moulded soffit
 - decorative surmounting railing
- Wooden vent on upper eastern exposure

Interior:

- Room layout/floor plan
- Tongue and groove wood flooring throughout
- Terrazzo floor in entrance hall
- Tin ceiling, cove and wall covering throughout
- Wainscot and chair rail throughout
- Window casements/surrounds and interior sills throughout
- Five panel wooden doors including hardware throughout
- Interior door casement/surrounds
- Black boards including decorative surrounding trim

Colbert-Henderson log home

Exterior:

- End gable gently sloped ‘salt box’ shaped roof line
- Cedar shingle roof cladding
- Single stack brick inset chimney with built out cornice
- Large exposed brick chimney (northern exposure)
- Plain soffits
- Window placement
- Window casements and plain wood sills
- Wood six over six pane window sash
- Dovetailed square log walls
- Cedar lap sided second floor exterior cladding on gable ends
- Door casements
- Cedar hip-roof veranda

Raleigh Township SS #13 School House



Colbert-Henderson log home



SCHEDULE 'B'

Part Lot 10, Concession 8, Community of Raleigh, now in the Municipality of Chatham-Kent.

Instrument No. 200881
PIN No. 008720098

BY-LAW NUMBER 48-2007
OF THE CORPORATION OF THE MUNICIPALITY OF CHATHAM-KENT

A By-law to designate the property known as 7725 Eighth Line, RR 6, Geographic Township of Raleigh, as being of historical and architectural value or interest.

FINALLY PASSED the 5th day of March, 2007.

WHEREAS the Ontario Heritage Act, R.S.O. 1990, Chapter 0.18 as amended, provides that the Council of the Municipality of Chatham-Kent may designate a property within the boundaries of the Municipality to be of cultural heritage value or interest;

AND WHEREAS Council of the Corporation of the Municipality of Chatham-Kent has appointed the Heritage Chatham-Kent Committee and the said committee has recommended that the Municipality designate the hereinafter described property pursuant to The Ontario Heritage Act;

AND WHEREAS given Council of the Corporation of the Municipality of Chatham-Kent has given Notice of Intention to Designate the hereinafter described property to be of cultural heritage value and interest pursuant to the Ontario Heritage Act;

AND WHEREAS no Notice of Objection to the proposed designation has been received by the Corporation of the Municipality of Chatham-Kent;

AND WHEREAS the reasons for designation are set out in Schedule "B" annexed hereto;

NOW THEREFORE the Municipality of Chatham-Kent enacts as follows:

1. That the property more particularly described in the attached Schedule "A" be designated to be of cultural heritage value and interest pursuant to The Ontario Heritage Act.
2. The Clerk be authorized register the by-law against the property described in Schedule "A" hereto in the proper land registry office.
3. That the Clerk be directed to cause a copy of this by-law to be served on the owner of the aforesaid property and on the Ontario Heritage Foundation and cause notice of the passing of this by-law to be published in a newspaper having general circulation in the municipality.

THIS By-law shall come into full force and effect upon the final passing thereof.

READ A FIRST, SECOND AND THIRD TIME this 5th day of March, 2007.

Original Signed By

Mayor – Randy R. Hope

Original Signed By

Clerk – Elinor Mifflin

SCHEDULE 'A'

PT LT 18, Concession A (Raleigh) as in 287697. Save and except PT 9, Plan 24R987, PT 1, Plan 24R2364, PT 1, Plan 24R3370, PT 1, Plan 24R4139, Geographic Township of Raleigh, County of Kent and now in the Municipality of Chatham-Kent.

SCHEDULE 'B'

REASONS FOR DESIGNATION

The reasons for designation are:

Section 1: Purpose and general description

The purpose of the proposed designation, as listed in the Recommendation is to protect and preserve the structure known as the Jordan House, built in 1900, for its cultural value and architectural interest.

Part A: Historical Significance

The Jordan House is an important example of built heritage as it relates to 19th century agricultural history, settlement patterns of the early settlers in the evolution and social structure of the community, including local and regional development of an agricultural and cash economy and farm life.

Part B: Architectural Significance

A good example of a well built turn of the century farmstead, with excellent documentation to support the designation process, including the building contract, and clothbound house plans. The architect was T.J. Rutley, a Chatham architect. The general contractor was Jacob Sparks (Sr.) of Chatham. The narrative history, enclosed as a supportive document, details many other architectural features and social history associated with generation of the occupants of the building and farm.

Exterior Features:

- (a) Facades, trim, windows and their trims, doors and their trims, columns, and all other significant elements that make up the present form, style, grace, and design of the building in 1900.

Interior Features:

- (a) All design features that illustrate local design and construction of 1900 that has been maintained.
- (b) All woodwork which still has the original finish as applied in 1900.
- (c) Intact plastered walls
- (d) Restored pull-down library lamps hung in the dining and sitting rooms.
- (e) Chimney and flues.

Part C: Contextual Significance

- (a) Important historical records are associated with the building in relation to a good example of community life in what is now Chatham-Kent (supportive documents for social history, genealogy and oral tradition of the Jordan Family.
- (b) Important documents related to the history of the building – floor plans, blueprints, records of architectural changes through time, external and interior changes are provided in written context and notes.

Section II: Reasons For Designation

Exterior

- (a) The exterior of the structure in its entirety; including facades, trims, windows and their trims, doors and their trims, columns, and all other significant features to retain the present form, style, grace, and design of the building as it was intended in 1900.

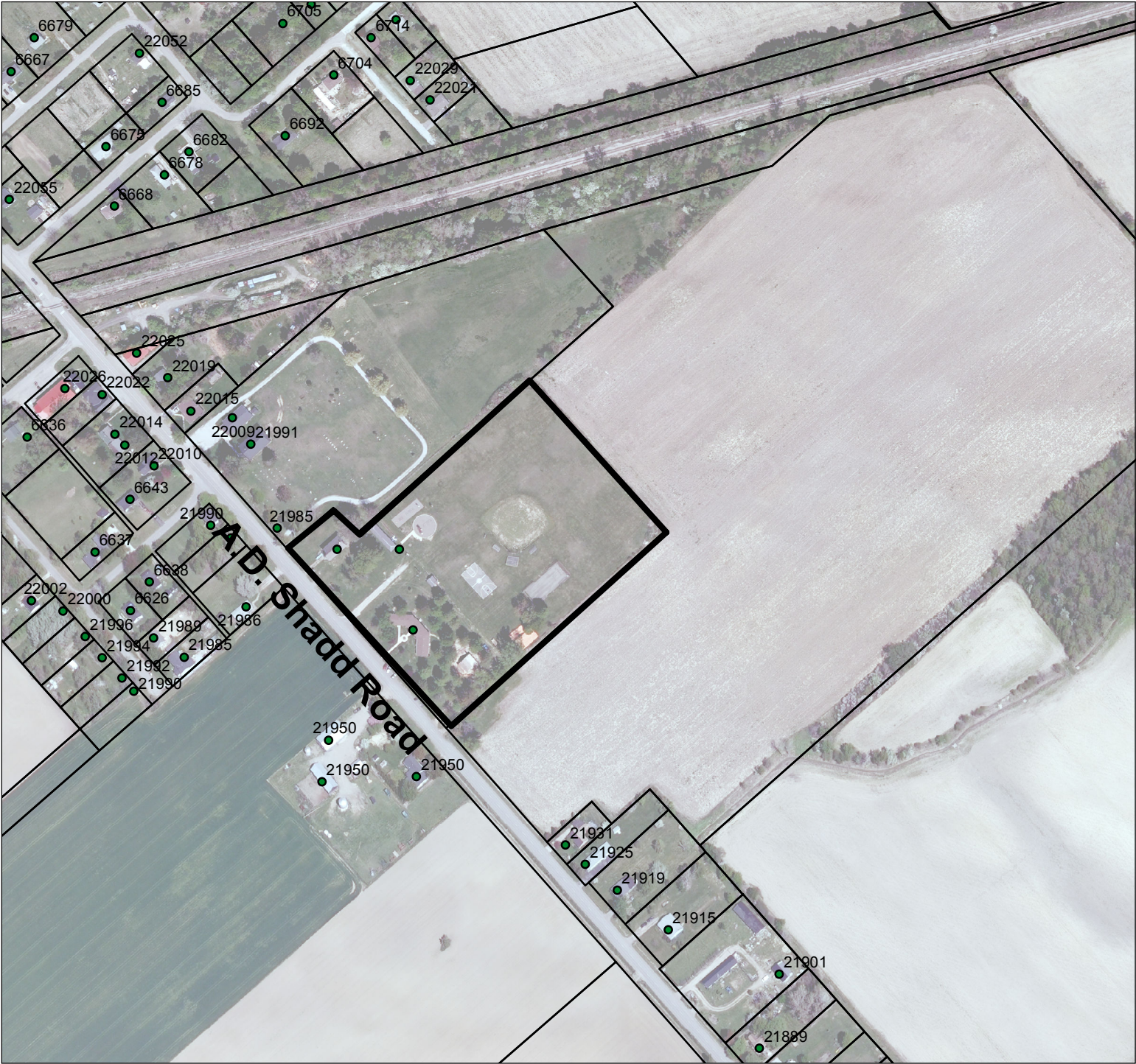
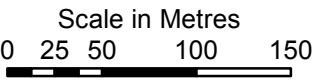
Interior

- (a) All design features reflecting the local design and construction of 1900, which has been maintained.
- (b) All woodwork which still has the original finish as applied in 1900; including the pine floors which have been restored.
- (c) Intact plastered walls.
- (d) Restored two original pull-down library lamps hung in the dining and sitting rooms
- (e) Chimney and flues.

Section III: Recommendations

1. That the elements listed in Section II: “Reasons For Designation” be designated for their architectural and historical significance.

21975 A.D. SHADD ROAD, COMMUNITY OF RALEIGH
LOCATION MAP

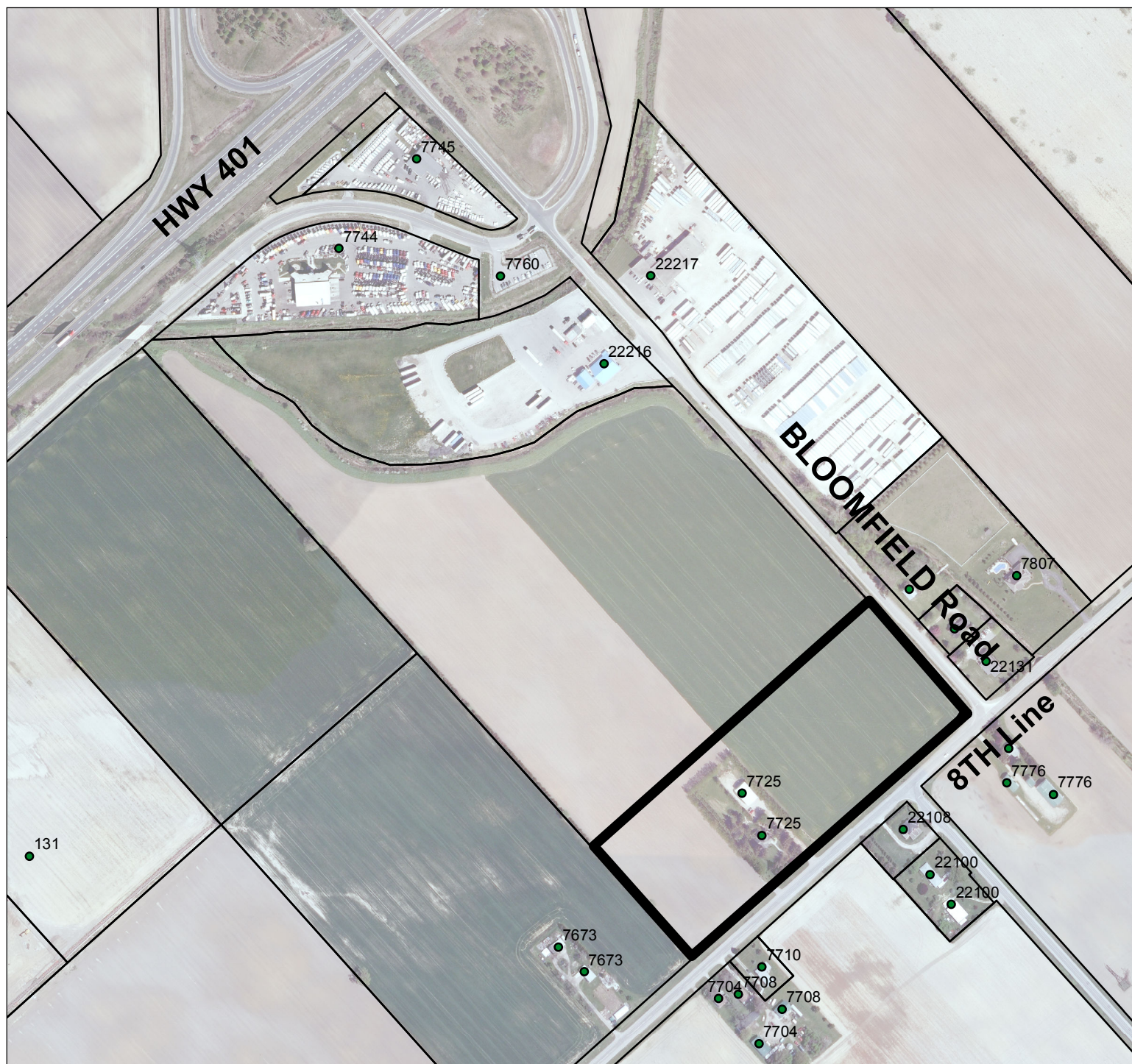


Legend

 Lands Designated by By-law 267-2008

Scale in Metres

0 25 50 100 150 200



Lands Designated by By-law 48-2007

Appendix S

Additional Stage 2 Property Assessment (Archaeology) Report Summary

Additional Stage 2 Property Assessment

South Kent Wind Project Romney, East Tilbury, Raleigh, Harwich and Howard Townships, Former Kent County, Municipality of Chatham-Kent, Ontario

EXECUTIVE SUMMARY

Archaeological Services Inc. (ASI) was contracted by Hatch Ltd., Niagara Falls, on behalf of Pattern Energy and Samsung Renewable Energy (the Proponent), to conduct a Stage 2 property assessment on additional lands for the South Kent Wind Project (the “Project”), a 270 MW wind energy project which will be located within the Municipality of Chatham-Kent, in southwestern Ontario. The Project is located south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively.

The archaeological assessment for the Project is being conducted under Ontario Regulation 359/09, the Renewable Energy Approvals (REA) under Part V.O.1 of the *Environmental Protection Act*.

In the original Stage 2 license report for the Project that ASI filed with the Ministry of Culture, Tourism and Sports (MTCS) in 2011 was a recommendation to conduct a Stage 3 site-specific assessment on 43 archaeological sites. However, during the fall and through to early December, the Proponent actively revised the layout to exclude as many of the sites (or portions thereof) from the Project as possible. This work resulted in Layout L19 R1 within which only 24 sites will now be subject to further Stage 3 assessment.

Between November 22, 2011 and March 1, 2012, ASI conducted a Stage 2 property assessment of new, previously unassessed Project lands within Layout L19 R1, and this included 28 infrastructure survey areas (ISA): 14 plough areas for the turbines and access roads, one substation site, and 13 areas for electrical connection layout, transmission lines and junction boxes. These ISAs were subjected to pedestrian and test pit survey methods. A total of 19 new archaeological sites were identified.

Of these new archaeological sites, eight were determined to be sufficiently assessed and documented at Stage 2, and eleven met the criteria for requiring a Stage 3 site specific assessment.

Partial clearance is recommended to allow construction to proceed in the infrastructure survey areas no longer of archaeological concern while the required Stage 3 site specific assessment work is carried out.

If changes to the Project layout or temporary workspace requirements result in the inclusion of previously unsurveyed lands, these lands should be subjected to a Stage 2 property assessment.

ASI requests that the MTCS concur with the above recommendations.



5.0 RECOMMENDATIONS

- 1) If changes to Layout L19 R1 or temporary workspace requirements result in the inclusion of previously unsurveyed Project lands, they should be subjected to a Stage 2 property assessment.

In addition to the above, based on the results of the Stage 2 property assessment of the South Kent Wind Project (the Project) area, Archaeological Services Inc. (ASI) makes the following recommendations:

- 2) The Stage 2 property assessment did not find any archaeological sites within 21 infrastructure survey areas (ISA), including turbine plough areas (TPA), substation plough areas (SPA), and connection layout survey areas (CLSA) and, therefore, it is recommended that no further archaeological assessment of these areas is required. These areas are: TPA-028, TPA-030, TPA-031, TPA-107, TPA-133, TPA-139, TPA-162, TPA-166, TPA-171, CLSA-6, CLSA-7, CLSA-8, CLSA-9, CLSA-10, CLSA-11, CLSA-12, CLSA-13, CLSA-14, CLSA-15, CLSA-16; and SPA-1.
- 3) Of the 19 archaeological sites documented during the Stage 2 property assessment, eight (8) sites are not recommended for further archaeological assessment as their cultural heritage value or interest (CHVI) has been sufficiently assessed and documented at Stage 2. These are:

ISA	Archaeological Sites
TPA-002	SKWP-P81
TPA-029	SKWP-P80
TPA-103	SKWP-P84, SWKP-P87, SKWP-P89
TPA-105	SKWP-P78
CLSA-4	SKWP-P92
CLSA-5	AcHm-65 (SKWP-P90)

- 4) In addition to the ISAs listed in Recommendation #2 above, only one ISA contains an archaeological site for which no further archaeological assessment is required (per Recommendation #3 above), and, therefore, it is recommended that no further archaeological assessment of this ISA is required: TPA-029;
- 5) It is recommended that the remaining eleven (11) archaeological sites documented during the Stage 2 property assessment be subject to Stage 3 site specific assessment if they are to be located within the project limits as they all meet the criteria for requiring a Stage 3 site-specific assessment based on *S & G, Section 2.2 Analysis: Determining the requirements for Stage 3 assessment*. The type of site as per *S & G Section 2.2* and the detailed Stage 3 requirements for each site as per *S & G Section 3* and *S & G Section 7.8.4, Standard 1c* are as follows:
 - a) Stage 3 is recommended for the following six (6) archaeological sites or portions thereof located within the Project lands based on *S & G Section 2.2, Standard 1.a.i.(1) or (3)*:



ISA	Archaeological Sites
TPA-103	AcHI-81 (SKWP-P83)
	AcHI-82 (SKWP-P85)
	AcHI-83 (SKWP-P86)
	AcHI-84 (SKWP-P88)
TPA-118	AcHI-81 (SKWP-P83)
CLSA-5	AcHI-82 (SKWP-P85)

The Stage 3 assessment must be carried out according to the criteria for small pre-contact Aboriginal sites *where it is **not yet** evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation per *S & G Section 3.1, Standard 1.a-b*, if necessary;
 - controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
 - test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling;
- b) The Stage 2 property assessment identified ten (10) post-contact Euro-Canadian archaeological sites that meet the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2, Standard 1.c*, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for these sites or portions thereof located within the Project lands. These sites are:

ISA	Archaeological Sites
TPA-002	AcHI-85 (SKWP-H14)
TPA-036	AcHm-62 (SKWP-H15)
CLSA-4	AcHm-63 (SKWP-H16)
CLSA-5	AcHm-64 (SKWP-H17)

The Stage 3 assessment must be conducted according to the criteria for small post-contact Euro-Canadian sites *where it is **not yet** evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation (i.e., land use history of property) per *S & G Section 3.1, Standard 1.b-g*, as appropriate;
- controlled surface pick-up of the site area (except for AcHI-61 that was discovered during test pit survey): surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
- test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling;



- c) The Stage 2 property assessment identified one pre-contact Aboriginal archaeological site—AcHI-79 (SKWP-P82) within TPA-103—that meets the criteria for requiring a Stage 3 site specific assessment based on *S & G Section 2.2, Standards 1.a.i.(3)*, and, therefore, it is recommended that a Stage 3 site-specific assessment be conducted for this site or portions thereof located within the Project lands.

The Stage 3 assessment must be conducted according to the criteria for a large, relatively dense plough disturbed site with multiple scatters containing more than one diagnostic artifact *where it is **clearly** evident* that the level of CHVI will result in a recommendation to proceed to Stage 4. The Stage 3 site-specific assessment for these sites includes:

- historical documentation per *S & G Section 3.1, Standard 1.a-b*, if necessary;
 - controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
 - test unit excavation:
 - place multiple grids over areas of artifact concentration and excavate across those grids at 5 m intervals;
 - place and excavate additional test units, amounting to 20% of the initial grid total, between areas of concentration to document areas of lower concentration; and
 - place and excavate additional units, amounting to 10% of the initial grid total, on the periphery of the surface scatter to determine the site extent and sample the site periphery.
- 6) Partial clearance is recommended to allow construction to proceed in areas of the Project lands where there are no further concerns for impacts to archaeological sites or parts of the project as identified in Recommendations 2, 3 and 4 above. To support this, it is recommended that MTCS provide a letter confirming that there are no further concerns with regard to alterations to archaeological sites for those sites and areas as detailed in Recommendation 2, 3 and 4 above. The required conditions have been met as per *Section 7.8.5, Standards 1.a-d*, as indicated by the following:
- the Stage 2 fieldwork has been completed for the Project lands and Stage 3 is still required for archaeological sites or portions thereof located within Project lands as detailed in Recommendations 5 a, c-g, above;
 - the partial clearance recommendation forms part of the final report on the additional Stage 2 work;
 - the estimated timeline for completing the remaining Stage 3 archaeological assessment work is the end of June 2012;
 - the development mapping showing the location and extent of the archaeological sites requiring Stage 3 site-specific assessment along with their 20 m protective buffer and their 50 m monitoring buffer zone are provided (see ASI 2012, c.f., P347-102-2011: Supplementary Documentation, Figures 1, 8, 19, 21, 31 and 33);



- the following detailed avoidance strategy has been committed to by the Proponent and will remain in place until the required Stage 3 site-specific assessments for the 11 archaeological sites have been completed (estimated to the end of June 2012) as noted in Recommendation 5 a-c above:
 - 1) written instructions will be provided to all construction personal working within the Project lands to avoid the location of these archaeological sites and their protective 20 m buffers. No soil disturbances other than traditional farming practices can occur within these areas; and
 - 2) prior to construction proceeding within the 50 m monitoring buffer zone surrounding these archaeological sites, snow fencing will be erected around the sites and their 20 m protective buffers within the project lands. All construction within the monitoring zone will then be monitored by a licensed archaeologist who will be empowered to stop construction if there is a concern for impact to an archaeological site.



Appendix T

Heritage Assessment Report Summary

May 2, 2012

Samsung Renewable Energy Inc. and Pattern Energy South Kent Wind Project

Summary Heritage Assessment

1. Introduction

A Heritage Assessment has been prepared for the South Kent Wind Project, as required by Ontario Regulation 359/09 Renewable Energy Approvals and subject to the *Information Bulletin for Applicants Addressing the Cultural Heritage Component of Projects Subject to Ontario Regulation 359/09* released by the Ministry of Tourism and Culture (MTC) in 2011. The following provides an Executive Summary of the completed report.

There are three interrelated purposes of the assessment: to determine existing built heritage resources and cultural landscape resources within the study area, to evaluate the impact of the proposed Project on these resources, and to determine mitigation measures. This report is based on an examination of historic context, a roadside property survey, and historic research. Impacts were evaluated based on the MTCS guidelines related to heritage impact assessments and conservation plans.

2. Heritage Resources

2.1 Built Heritage

A list of built heritage resources was compiled to include both those having already achieved recognition as significant heritage properties (protected properties) and those properties identified as important during the surveys of the area undertaken during the assessment. Approximately 125 built heritage structures have been identified within one kilometer of the proposed project infrastructure.

They include the Buxton Settlement, a National Historic Site lying partially within the study area. Buxton is also recognized by the Ontario Heritage Trust, which has mounted plaques in honor of the Buxton Settlement on the Museum and School house site in North Buxton and in honor of founder William King in South Buxton. The museum site, containing the school house, interpretation building, Colbert- Henderson log house, and a park, has been designated under the Ontario Heritage Act. Beyond Buxton, there is one other property within the study area that is designated under the OHA, and there are ten buildings within the study area which are listed in the Municipality of Chatham-Kent's Heritage Register. Approximately half of the identified built heritage sites may potentially be impacted by the Project,

Cemeteries contain elements of built heritage and also qualify as cultural landscape sites. Twenty cemeteries with historical components are located within the study area. Most of the cemeteries will not be seriously impacted by the Project, but mitigation has been recommended in relation to the Rosedale Cemetery.

2.2 Natural Features of Cultural Importance

The history of settlement within much of the study area is also a history of drainage practices, still a major issue throughout the region. The cultural landscape reflects efforts to wrest agricultural land from swamps and marshes, the gradual formation of farms and villages, and ongoing changes in the character of crops and cultivation methods. Views over the cleared countryside as seen from historic roads such as the Talbot Trail and Ridge Road indicate much about the underlying shape of the area as well as its cultural history. Direct impacts have been identified in connection with five cultural natural landscapes.

3. Conclusions and Recommendations

3.1 Protected Sites Negatively Impacted by the Project

The group of buildings in North Buxton that is designated under the Ontario Heritage Act is part of a cultural heritage landscape designated as the Buxton Settlement National Historic Site. Both the proposed turbine P065 and the 230 kV transmission line will impact these sites. The railway tracks are noted to be an important feature of the area, as are the scale of the settlement and the flatness of the landscape. Guidelines prepared by Parks Canada to promote the preservation of Settlement features discourage large-scale intrusions, such as transmission lines.

Accordingly, the following recommendations are made:

1. Between Dillon and Drake Roads, the 230 kV transmission line should be rerouted to the north in order to avoid intruding on the landscape of North Buxton and the northern segment of the Buxton Community National Historic Site. Alternate options, in the event that such a rerouting should not prove possible, are listed in order of preference: that the transmission line be rerouted to go north of North Buxton, though still within the Buxton Community National Historic Site; that the transmission line be buried as it passes between Dillon Road and Drake Road; that the present state of the track and its immediate surroundings be recorded and efforts made in any subsequent building activity to retain as much as possible of the existing buffer strip now lining the railway track.
2. As a preferred option, turbine P065 should be deleted from the Project plan, for reasons stated in Section 6.1.2.1; a less desirable option, because it would still place another turbine within the settlement area, would be to move the turbine north on the lot where it is presently located so that it will be less visible from the designated museum site in North Buxton. Should neither of these forms of mitigation prove achievable, a documentary filming should record the landscape east of North Buxton before a turbine is installed in the position now proposed.

3.2 Sites Negatively Impacted by the 230 kV Transmission Line

The 230 kV transmission line follows the former Canada Southern Railway, and thus passes through the old railway town of Mull. It also passes close to the important Georgian house at 8946 Cundle Line.

The following mitigation measures are proposed:

3. As the 230 kV transmission line passes through Mull, the potentially divisive character of the transmission line should be minimized by placing the posts be as far as possible from Mull Road, which forms the main street of the community.

4. With the owner's permission, a screen of trees should be placed northwest of the Georgian house at 8946 Cundle Line in order to minimize the impact of the 230 kV transmission line on the view shed from that building.

3.3 Sites Negatively Impacted by Proposed Turbines

The direct or indirect obstruction of significant views or vistas within, from, or of built and natural features is likely, given that there are one or more proposed Wind Turbine Generators within 1 km of most sites identified as cultural heritage resources. The report has considered these views of turbines significant and requiring some form of mitigation when at least two of the following conditions apply:

- a. a built heritage feature is of particular importance because of its architecture and/or context;
- b. a turbine affects the view shed of one looking at the building from a public thoroughfare, thus creating an historical context for the building; and/or
- c. a built heritage site is positioned in a context where it could potentially be considered as part of a larger Heritage Conservation District or Cultural Heritage Landscape because of natural, historical, and/or architectural features within that landscape.

The following recommendations present mitigation measures:

5. If necessary and with the owner's consent, the structures listed below should be screened from the nearby turbines with appropriate plantings of trees:
 - a. 8244 Ninth Line (turbines P163, P097)
 - b. 7821 Ninth Line (turbine P148)
 - c. 2684 Bloomfield Road (turbine P111)
 - d. 20378 Kent Bridge Road (turbine P092)
 - e. 19175 Communication Road (turbine P140)
 - f. 18935-18937 Communication Road (turbine P140)
 - g. 11856 Talbot Trail (turbine P118)
 - h. 21500 Charing Cross Road (turbine P100)
6. Turbine P139 should be moved further away from the houses and outbuildings at 11049 and 11014 New Scotland Line. If this is not possible, this report recommends that, with the consent of relevant property owners, trees screening these properties from the turbine be placed to the rear of the house at 11049 New Scotland Line and along the north side of the line to the west of this house and, if necessary, also to the east.
7. To be less prominent within the viewshed of historic homes along Burk Line, Base Road, and Kent Bridge Road, Turbine P091 should be moved south of the woodlot situated south of the position currently proposed for the turbine. Because most buildings already possess a degree of screening from the windmill site and because a photographic recording of the area would be of very limited value, no other mitigation strategy is recommended should such a move not prove feasible.
8. With the owner's consent, gaps in the tree plantings along the southeast and southwest sides of the Rosedale Cemetery, on the corner of Rosedale Line and Coatsworth Road, should be filled in to provide further screening from turbine P081.

3.4 Negative Impacts by Access Roads and Cable and Collector Lines

The following recommendations apply to both the construction and the placement of electrical facilities connected with the turbines:

9. All access roads and collector lines should be a minimum distance of 2.0 (?) meters beyond the drip-line of all hedgerows in the vicinities of turbines P071, P072, P 148, and P064, and along roadside plantings on 7th Line and Morris Line
10. All access roads and collector lines connecting turbines P075 and P077 through the intervening historic woodland must be a minimum distance of 2.0 meters beyond the dripline of climax forest tree species with DBH of 500 mm or greater. Should single heritage trees need to be removed, required planting of new trees of appropriate size and species within an open area of the woodland will be necessary to compensate for the net loss.
11. New ditch or water course crossings should be constructed with designs, materials, and construction techniques reflecting those of the formerly existing crossing or of crossings in the immediate area. The variety of materials and construction techniques used on culverts in the study area range from railway ties (treated wood) through rubblestone, hardened cement bags, cement blocks, reinforced cement, and corrugated metal.
12. Any changes to the ditches or water courses themselves should allow for banks that retain the degree of natural vegetation possessed by other swales or water courses in the immediate area.

3.5 More General Recommendations

13. Should any properties that have not been addressed in this study be added to the proposed design layout, a qualified heritage consultant should assess potential impacts on the added properties prior to any project construction.
14. This report must be approved by the Ministry of Tourism, Culture, and Sport.