Appendix M

Municipal Consultation Form and Notices

Ontario

Ministry of the Environment

Renewable Energy Approval
Consultation Form: municipalities, local authorities
ss. 18(2) Ontario Regulation 359/09
Ce formulaire est disponible en français

PART A: TO BE COMPLETED BY THE APPLICANT BEFORE SUBMITTING TO MUNICIPALITY OR LOCAL AUTHORITY

Section 1 – Project Description

1.1 – Renewable Energy Project					
Project Name (Project identifier to be used as a reference in correspondence): **Brooke Alvinston Wind Farm**					
Project Location: **Township of Brooke-Alvinston, Lambton County, Ontario.**					
Same as Applicant Physical Address? ☒Yes ☐No (If no, please provide site address information below					
Civic Address – Street information (includes street number, name, type and direction				Unit Identifier (i.e. apartment number)	
Survey Address (Not required if Street information is provided)					
Lot and Conc.: Used to indicate location within a subdivided township and consists of a lot number and a concession number.			Part and Reference: Used to indicate location within unorganized territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan.		
Lot **pt lot 13 S ½ lot 13 pt lot 14 pt lot 15 pt W ¾ of N ¾ of lot 15**	Conc. **Con 14 S Con 14 S Con 14 N**		Part	Reference Plan	
Location Information *(includes any additional information to clarify physical location)(e.g. municipality, ward/ township)* **Brooke-Alvinston Township**					
Geo Reference : **Southeast Corner of Study Area**					
Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing
NAD83	**17T**	**Sub meter**	**Arc GIS 9.3**	**427148.49**	**4751965.29**

Project Phasing *(outline construction, operation and decommissioning activities)*

Key Project Activities

Project Phase	Activities
Construction	**Turbine Sites**
	Preparation of laydown areas
	Delineation of temporary work areas
	Access road construction
	Completion of necessary site grading
	Installation of tower foundations
	Installation of crane pads
	Tower/turbine erection
	Installation of step-up transformer and required wiring
	Installation of collector lines, usually parallel to access roads
	Reclamation of temporary work areas
	Site landscaping (final grading, topsoil replacement, etc.)
	Substation Site
	Preparation of laydown area
	Installation of substation and connection with grid
	Reclamation of temporary work areas
	Site landscaping (final grading, topsoil replacement, etc.)
	Additional Activities
	Installation of collector lines
Operation	**Turbine Sites**
	Preventative maintenance
	Routine maintenance (access road s– including snow clearing)
	Unplanned maintenance
	Meter calibrations
	Grounds keeping
	Substation Site
	Preventative maintenance for substation
	Unplanned maintenance for substation
	Remote wind farm condition monitoring
	Additional Activities
	Electrical line maintenance and inspection
Decommissioning	**Turbine Sites**
	Removal of turbine infrastructure
	Removal of step-up transformers
	Site grading (dependent upon new proposed use)
	Possible removal of access roads dependent upon agreement with property owner
	Possible excavation and removal of collector lines depending upon agreement with property owner
	Additional Activities
	Disconnection of substation from provincial grid
	Removal of substation

1.2 - Environmental Context

Describe any negative environmental effects that may result from engaging in the project *(consider construction, operation and decommissioning activities.)*

Construction:

Construction of the project has the potential to impact the following environmental features:

HERITAGE AND ARCHAEOLOGICAL RESOURCES

A Stage I Archaeological Assessment was undertaken by Archaeological Research Associates for the Project Location. The Stage I Assessment found that it is reasonable to expect that archaeological sites may be found in most, if not all, of the areas which may be utilised for the Project. Given the potential for the discovery of as-yet unrecovered artefacts, should they exist in the excavation areas, there is some potential for these resources to be lost or damaged over the course of Project construction activities. As with most areas in southern Ontario there is also a limited potential to discover unmarked burial areas. However, a Stage II Archaeological Assessment will be conducted prior to construction and may locate archaeological resources before they are lost or damaged.

Based on archival research, consultation with relevant groups and individuals and a visual survey of the Study Area no protected properties are expected to be impacted by the current Project. No cultural heritage landscapes were identified in or adjacent to the Study Area.

NATURAL HERITAGE RESOURCES

An assessment of how the Project may cause potential effects was conducted and some of the identified potential effects ranged from but were not limited to construction activities such as vegetation clearing; installation of turbines, access roads and laydown areas; and accidental spills.

The following provides a summary of the key findings within the **Draft Construction Plan Report**, **Draft Design and Operations Report**, related to natural features within the Study Area.

Species at Risk, Wildlife and Wildlife Habitat

The following provides a summary of the potential effects related to species at risk, wildlife and wildlife habitat.

Terrestrial Habitat

The predominant effect from construction will result from disturbance of habitat through changes in existing activity levels or land-use. Due to the currently agricultural nature of the Study Area and that no project activities are anticipated in natural areas no loss of species diversity is anticipated from the construction of the Project.

Birds

Installation of Project components in open agricultural land and adjacent to hedgerows will result in limited bird habitat removal.

Bats

No direct effects to bats are anticipated as a result of construction of the Project.

Species at Risk

No species at risk were identified within the project area.

Fish and Fish Habitat

No waterbodies as defined in O.Reg. 359/09 were identified that would support fish or fish habitat.

Wetlands and Other Significant Natural Features

No wetlands or other significant natural areas are found in or within 120 m of the Project Location. One small isolated woodlot that experiences some disturbance from active logging is located within 120m of the Project Location – the woodlot has been deemed not significant from a natural heritage perspective.

Groundwater and Water Bodies

Potential effects to surface and ground water features were assessed for all stages of Project development. It is possible that some dewatering activities may be required when installing the tower foundations, access roads, and/or underground collector lines, however in quantities well below 50,000 L/day. With the implementation of good construction practices, it is anticipated any potential effects from an accidental spill would be short term in nature and have little to no effect on surface and/or groundwater quality and adjacent private water wells.

The Project is not anticipated to require significant alteration to surface water runoff, or to involve the storage of surface water or the crossing of watercourses. No Project features are within 120 m of the average annual high water mark of a lake, within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity, or within 120 m of a seepage area.

AIR, ODOUR, DUST

Potential effects related to air, odour, and dust will be a result of construction/decommissioning activities such as dust emissions from gravel road travel by construction vehicles. The application of the recommended protection and mitigation measures during construction / decommissioning (contained within the **Draft Construction Plan Report**) should limit fugitive dust and odour emissions to the work areas and limit combustion emissions.

ENVIRONMENTAL NOISE

During the construction/decommissioning period (approximately five (5) months), noise will be generated by the operation of heavy equipment at each of the work areas and associated vehicular traffic on-site. The audible noise at receptors beyond the construction areas is expected to be a minor, short-term disruption consistent with noise generated by any industrial construction project.

LAND USE AND RESOURCES

During construction some short term disruption to agricultural activities and agricultural infrastructure may occur in the form of disruption of typical cultivation and harvesting orientations and some damage artificial agricultural drainage.

PROVINCIAL AND LOCAL INFRASTRUCTURE

The increase in construction-related traffic will likely result in a short-term, localized disturbance to traffic patterns, and may create potential traffic safety hazards, and/or produce abnormal wear and tear on local roads. The Construction Contractor will implement a *Traffic Management Plan* to identify and deal with specific traffic planning issues. The program may include the use of signage, road closures, speed restrictions, truck lighting, load

restrictions, and equipment inspections.

Wastes such as equipment packaging, wrappings and scraps generated during construction will require reuse, recycling, and/or disposal at an appropriate off-site facility within the County. During construction and operation, the Construction Contractor and Operations Firm will implement a site-specific waste collection and disposal system to properly address waste material disposal. Disposal of wastes will be the responsibility of the contracted third party and they will ensure disposal in accordance with appropriate legislation, standards and policies.

PUBLIC HEALTH AND SAFETY

During construction/decommissioning, potential effects to public health and safety are largely in the form of increased construction related traffic and unauthorized access of the public to the work sites.

Operation

NATURAL HERITAGE RESOURCES

Terrestrial Wildlife Habitat

Direct effects of Project operation to wildlife habitat are not expected from the project. The project is sited within agricultural fields, which provide limited wildlife habitat. One woodland is located within 120m of the project location. The project does not contain any significant wildlife habitat. The site layout does not involve direct habitat loss to the woodlot and minimizes disturbance. No anticipated loss of function to this feature is associated with the Project.

There are potential indirect disturbance effects of operation of wind turbines to wildlife. Some large mammals may avoid wind facilities if there is high level of human activity relative to baseline conditions (Arnett et al., 2007). Noise from operational turbines could mask the calls of breeding frogs. However, given the limited amount of natural habitat found in the Study Area and the active use of land for agricultural activities, it is likely that resident wildlife will adapt to the presence of operational turbines.

Birds

The effects of wind turbine operation on birds can be either direct, through collision, or indirect, through loss, alteration, or fragmentation of habitat and through disturbance. The risk of direct collision varies between species and is most likely a function of abundance and behavioural characteristics (National Academy of Sciences, 2007).

No significant wildlife habitat features for birds were identified within the Project location. The Project is sited within agricultural land, which generally supports a low diversity of breeding birds. Stantec studies conducted for several proposed wind facilities indicate that the majority of birds observed in cropland habitats are active on the ground or below the height of blade sweep (Stantec, 2005; Stantec, 2006; and Stantec, 2007).

Siting of turbines outside natural habitat features (i.e., woodlands), and the implementation of setbacks to natural habitat features will minimize direct and indirect impacts to birds. Impacts of the Project to birds within the Study Area are expected to be low and not significant at the population level.

Bats

Based upon data collected during the site investigation and the information presented in background sources, it is unlikely that bats are present in large numbers within the study area. The project location does not contain known bat hibernacula or maternity roosts. The project is located in farmland, which typically results in the lowest bat mortality rates (MNR, 2010). It is not located near forested ridge tops or lakeshores of major waterbodies, factors which have been found to result in higher mortality rates. Turbines have been sited away from buildings and woodlots, which may be used as roosting areas. Therefore, the Project is not expected to have significant negative effects on bat habitat or populations.

Species at Risk

No species at risk were identified from the Project location.

GROUNDWATER AND WATER BODIES

Some materials, such as fuel, lubricating oils and other fluids associated with turbine construction and maintenance have the potential for discharge to the on-site environment through accidental spills.

AIR, ODOUR, DUST

There will be no effects of odour or dust during the operation of the Project. Air quality will be minimally impacted by the used of standard equipment and vehicles during operation and maintenance activities.

ENVIRONMENTAL NOISE

An environmental noise report will be conducted to confirm that all turbines proposed as part of the Project are located at a distance of at least 650 m from the nearest noise receptor. Based upon the Project design, and adherence to the setbacks stipulated in the regulation noise produced by the Project will be within the acceptable limits established by the MOE at all noise receptors.

LAND USE AND RESOURCES

Wind turbines also have the potential to interfere with radio or TV signals as a result of a turbine being in the “line-of-sight” between a receiver and the signal source. Potential impacts to telecommunication networks were also assessed within the **Draft Design and Operations Report**. It was confirmed that the Project will not have any effects on the public safety mobile communications systems. The Department of National Defence (DND) has no objections with the Project with regards to DND’s radiocommunication systems. The DND Air Traffic Control and Defence Radars unit also confirmed that they have no objections or concerns with the Project.

During operation, the Construction Contractor and Operations Firm will implement a site-specific waste collection and disposal system to properly address waste material disposal. Disposal of wastes will be the responsibility of the contracted third party and they will ensure disposal in accordance with appropriate legislation, standards and policies.

PUBLIC HEALTH AND SAFETY

Health and safety concerns, as determined through searching peer-reviewed literature and general internet searches

(i.e., not peer-reviewed sources) are primarily associated with operation of the turbines and include:

- Audible environmental noise;
- Low frequency noise (LFN);
- Infrasound;
- Shadow flicker;
- EMF;
- Stray voltage;
- Turbine blade and structural failure;
- Ice fall and shed; and,
- Other potential health effects.

Decommissioning

The main impacts that will occur as a result of decommissioning the Project include disturbance to the existing agricultural activities and infrastructure as a result of the activities needed to remove the turbines, foundations, transformers, gathering lines and access roads. Additional impacts could be from the increased traffic required to remove the components and a temporary increase in dust and noise.

Propose early avoidance/prevention/mitigation concepts and measures

The following mitigation measures will be implemented to ameliorate the impacts of the project on environmental and socio-economic features:

Construction:

Construction of the project has the potential to impact the following environmental features:

HERITAGE AND ARCHAEOLOGICAL RESOURCES

Mitigation measures on archaeological resources will be identified in the **Stage II Archaeological Assessment Report**. Should other archaeological or historical materials or features be found, all work within the vicinity of the find will be suspended and a Ministry of Culture archaeologist contacted. In the event that human remains are encountered or suspected of being encountered before or during construction all work will stop immediately. Notification will be made to the Ontario Provincial Police or local police who will conduct a site investigation and contact the district coroner. The Ministry of Culture and the Registrar of Cemeteries, Cemeteries Regulation Unit, Ministry of Small Business and Consumer Services will also be notified.

NATURAL HERITAGE RESOURCES

An assessment of how the Project may cause potential effects was conducted and some of the identified potential effects ranged from but were not limited to construction activities such as vegetation clearing; installation of turbines, access roads and laydown areas and accidental spills.

The following provides a summary of the recommended mitigation measures for natural features within the Study Area.

Terrestrial Habitat

Due to the currently agricultural nature of the Study Area and that no project activities are anticipated in natural areas

no loss of species diversity is anticipated from the construction of the Project. Habitat removal will not reduce the amount of available habitat to below thresholds necessary to sustain current populations.

Birds

Installation of Project components in open agricultural land will result in limited bird habitat removal. To the extent practical, brush clearing (if required) will be completed prior to or after the breeding season for migratory birds (May 1 to July 23). Should clearing be required during the breeding bird season, prior to construction, surveys will be undertaken within 48 hours of clearing to identify the presence/absence of nesting birds or breeding habitat. If a nest is located, a designated buffer will be marked off within which no construction activity will be allowed while the nest is active.

Bats

No direct effects to bats are anticipated as a result of construction of the Project. Potential indirect negative effects could result from an increase in human activity or the removal of habitat element, such as roost trees or wetland vegetation.

Species at Risk

No species at risk were identified within the project area.

Fish and Fish Habitat

No water bodies as defined in O.Reg. 359/09 were identified that would support fish or fish habitat. As hazard lands occur within the Project Location, as identified by the St. Clair Region Conservation Authority (SCRCA), consultation will occur with SCRCA to obtain necessary permits.

Wetlands and Other Significant Natural Features

As appropriate and prior to construction the limits of vegetation clearing will be staked in the field. The Construction Contractor will ensure that no construction disturbance occurs beyond the staked limits and that edges of sensitive areas adjacent to the work areas are not disturbed. No rare species of vegetation are to be removed as part of the Project.

GROUNDWATER AND WATER BODIES

Should pumping be required to dewater excavated areas, appropriate energy dissipation techniques should be utilized to reduce the potential for erosion and sourcing. Discharge piping should be free of leaks and should be properly anchored to prevent bouncing and snaking during surging. The rate of discharge should be monitored to ensure no erosion or flooding occurs. If energy dissipation measures are found to be inadequate, the rate of dewatering should be reduced or ceased until satisfactory mitigation measures are in place.

If a spill occurs, the MOE Spills Action Centre will be contacted immediately. The Construction Contractor will also develop an *Emergency Response Plan* (discussed in **Section 4.0**) which will outline the proper procedures in the event of a spill. Any spills that have the potential to create an impact to the environment shall be reported to the MOE as required by provincial spills legislation.

AIR, ODOUR, DUST

The application of the recommended protection and mitigation measures during construction / decommissioning (contained within the **Draft Construction Plan Report**) should limit fugitive dust and odour emissions to the work areas and limit combustion emissions.

To reduce emissions from equipment and vehicles, several mitigation measures should be employed. Multi-passenger vehicles should be utilized to the extent practical. Company and construction personnel should avoid idling of vehicles when not necessary for construction activities. Equipment and vehicles should be turned off when not in use unless required for construction activities and/or effective operation of the equipment or vehicle. Equipment and vehicles should be maintained in good working order with functioning mufflers and emission control systems as available. All vehicles should be fitted with catalytic converters as required. All construction equipment and vehicles should meet the emissions requirements of the MOE and/or MTO. As appropriate, records of vehicle maintenance should be retained and made available for periodic review by the Construction Contractor.

To protect adjacent receptors from potential off-site dust concerns, the Construction Contractor should implement good site practices during construction which may include: maintaining equipment in good running condition and in compliance with regulatory requirements; protecting stockpiles of friable material with a barrier or windscreen and in the event of dry conditions and excessive dust; dust suppression (e.g. water and/or calcium chloride) of source areas; and/or covering loads of friable materials during transport.

ENVIRONMENTAL NOISE

It is generally accepted that construction activities will result in short term environmental noise effects. To minimize inconvenience brought on by noise during the construction phase of the Project, all engines associated with construction equipment should be equipped with mufflers and/or silencers in accordance with MOE and/or MTO guidelines and regulations. Noise levels arising from equipment should also be compliant with sound levels established by the MOE.

To the greatest extent possible, construction activities that could create excessive noise should be restricted to daylight hours and adhere to any local noise by-laws. If construction activities that cause excessive noise must be carried out outside of these time frames, adjacent residents should be notified in advance and by-law conformity will occur, as required. Sources of continuous noise, such as portable generator sets, should be shielded as appropriate or located so as to minimize disturbance to off-site receptors.

LAND USE AND RESOURCES

During construction some short term disruption to agricultural activities and agricultural infrastructure may occur in the form of disruption of typical cultivation and harvesting orientations and some damage artificial agricultural drainage.

<u>Soils</u>

Where agriculturally productive lands are impacted by heavy rainfall events and wet soil conditions, Zephyr should implement a wet soil shutdown practice; if conditions deteriorate to a situation where ruts under vehicles become deep enough to cause topsoil/subsoil mixing or create excessive compaction or make topsoil/subsoil separation too difficult, those activities would cease. Construction activities would continue when conditions improve and those soil qualities are protected.

Where topsoil stripping is undertaken, topsoil and subsoil should be stripped and stockpiled separately to avoid mixing. Topsoil stripping methods should ensure adequate separation of topsoil and subsoil stockpiles. Stone picking should occur before and after topsoil replacement, and during cleanup.

For areas to be restored after construction, such as crane pads, where subsoil has been compacted by heavy equipment or construction traffic appropriate compaction relief may be necessary. The option of sub-soiling with an agricultural subsoiler, followed by discing, chisel ploughing or cultivating, to smooth the surface, should be considered on a site-specific basis. In areas where extreme compaction persists, additional deep tillage or subsoiling may be required on a site-specific basis. Soil density and/or penetrometer measurements on and off the right-of-way may be used as a means of assessing the relative degree of soil compaction and to determine if additional compaction relief is required.

Where there is potential for erosion or where erosion has already developed, silt fence and straw bales (or appropriate substitutes) should be installed to reduce soil transport. The location of such protection measures will be determined by the Construction Contractor. Topsoil salvage and/or replacement should be avoided during heavy precipitation or extremely windy conditions. Silt control fencing should be installed and maintained throughout construction and restoration until lands are fully stabilized.

Artificial Drainage

Tile drains severed or crushed during construction activities should be recorded and flagged. If a main drain, header tile, or large diameter tile is severed, a temporary repair should be made to maintain field drainage and prevent flooding of the work area and adjacent lands. Severed tile drains that are not immediately repaired should be capped to prevent the entry of soil, debris, or rodents. After the repair of each severed tile, and prior to backfilling, the landowner should be invited to inspect and approve the repair. If flooding of adjacent agricultural land occurs as a result of a severed tile and subsequently soils are damaged or crops are lost, the impacted area should be rehabilitated as soon as possible.

Soybean Cyst Nematode

A pre-construction soil sampling program should be implemented to identify potential SCN infestation, upon approval of the landowner.

The pre-construction program would include soil analysis for each agricultural row crop field to determine the extent of SCN infestation. Any field identified to contain SCN would be recorded and the location provided to the Construction Contractor. Additionally, any imported topsoil would have a composite sample analyzed for SCN before it is placed on the right-of-way. If SCN fields are identified, appropriate mitigation measures would be developed. Examples of mitigation measures may include washing stations for equipment, and/or restricted access to fields.

PROVINCIAL AND LOCAL INFRASTRUCTURE

The Construction Contractor will implement a *Traffic Management Plan* to identify and deal with specific traffic planning issues. The program may include the use of signage, road closures, speed restrictions, truck lighting, load restrictions, and equipment inspections.

Wastes such as equipment packaging, wrappings and scraps generated during construction will require reuse, recycling, and/or disposal at an appropriate off-site facility within the County. During construction and operation, the Construction Contractor and Operations Firm will implement a site-specific waste collection and disposal system to properly address waste material disposal. Disposal of wastes will be the responsibility of the contracted third party

and they will ensure disposal in accordance with appropriate legislation, standards and policies.

PUBLIC HEALTH AND SAFETY

Implementing transportation planning and safety measures during construction will minimize the potential for traffic related safety concerns. No additional mitigation measures are proposed.

Land access to the construction site should be controlled through signage and restricted to authorized personnel only. The Construction Contractor should also employ good site safety practices during the construction phase.

The Construction Contractor will implement a Health and Safety Plan that will consider both public and occupational health and safety issues. This may include protecting the public from equipment and construction areas by posting warning signs, use of personal protective equipment, accident reporting, equipment operation, and confined space entry

Operation

NATURAL HERITAGE RESOURCES

The following mitigation measures should be implemented:

- In the event of an accidental spill, the MOE Spills Action Centre should be contacted and emergency spill procedures implemented immediately. Any fuel storage and activities with the potential for contamination should occur in properly protected and sealed areas. As appropriate, records of waste generation and disposal should be maintained. Where waste disposal monitoring is undertaken it should include a periodic review of all waste records. The purpose of the inspection is to ensure that wastes are properly recycled and/or disposed of, consistent with provincial standards and good industry practices. Where a third party's activities are identified as non-compliant or insufficient, the Construction Contractor should seek out an alternative recycling or disposal solution;

- Turbine lighting must conform to Transport Canada standards. Although there is no evidence that bird and bat mortality is influenced by turbine lighting (Arnett et al., 2007), lights with the shortest allowable flash durations and the longest allowable pause between flashes are preferred;

- Turbine setback as specified in O. Reg. 359/09 from blade tip to natural features to mitigate direct mortality and disturbance effects to wildlife; and,

- Post-construction mortality monitoring consisting of regular bat and bird mortality surveys should be conducted in accordance with current MNR guidance. The post-construction monitoring plan has been developed and is provided in the **Draft Design and Operations Report**.

The siting of the Project within agricultural lands with a minimum distance of 120 m between the turbines and natural features is considered sufficient to reduce or preclude many effects to local wildlife resulting in no significant negative effects anticipated from operation of the Project.

GROUNDWATER AND WATER BODIES

To assist in meeting the performance objective including minimizing the likelihood of accidental spills and the

potential for surface water contamination, materials used in the operation and maintenance of the Project will be stored in appropriate containers within a secure storage area off site (to be determined by the Operations Firm). An *Emergency Response Plan* will be developed by the Firm and/or Zephyr Farms to plan for the proper handling of material spills and associated procedures to be undertaken in the event of a spill. Any spills that have the potential to create an impact to the environment shall be reported to the MOE as required by provincial spills legislation. Since effects to surface water features and waterbodies are anticipated to be limited to construction/decommissioning activities, no other protection or mitigation plans are required for the operation phase of the Project.

AIR, ODOUR, DUST

There will be no potential effects to air quality, odour, or dust during the operation of the Project.

ENVIRONMENTAL NOISE

The Project will be required to operate according to the terms and conditions of the Renewable Energy Approval (REA). In the event the Project does not operate according to the terms and conditions of the REA, the problematic turbine(s) may be shut down until the problem is resolved.

LAND USE AND RESOURCES

During the operation phase of the Project, road usage will be similar to any other business and no additional road modifications are anticipated to facilitate the Project's operational activities. As recreational land uses will return to pre-existing conditions (with the exception for the leased lands including access roads), no mitigation measures are required.

Although no effects are anticipated to telecommunications, in the unlikely event that signal disruption is experienced, mitigation measures are available to alleviate the impact. This may include replacing the receiving antenna with one that has a better discrimination to the unwanted signals, relocating either the transmitter or receiver, or switching to an alternate means of receiving the information (fibre optic or other means). Zephyr Farms will review potential incidents of telecommunications interference on a case by case basis.

During operation, the Construction Contractor and Operations Firm will implement a site-specific waste collection and disposal system to properly address waste material disposal. Disposal of wastes will be the responsibility of the contracted third party and they will ensure disposal in accordance with appropriate legislation, standards and policies.

PUBLIC HEALTH AND SAFETY

With the implementation of appropriate operations protocols and routine maintenance there is minimal increased or new risk to public health and safety from the operation of the Project. Though the possibility of injury from ice falling or shed from the turbine tower or blades or from the collapse of the entire structure exists, the likelihood of this happening with the built in safety features to the structures and ongoing maintenance of the equipment is very low. In addition, under the new O.Reg 359/09, minimum setback requirements (in which this Project meets) were introduced specifically to ensure the protection of people and the environment from wind farm projects. An extensive review of potential effects to public health and safety as a result of environmental noise, low frequency noise, infrasound, shadow flicker, electric and magnetic fields, and stray voltage is provided within the **Draft Design and Operations Report**. With the implementation of appropriate operations protocols there is minimal increased or new risk to public

health and safety from the operation of the Project.

Decommissioning

NATURAL HERITAGE RESOURCES

The following provides a summary of the recommended mitigation measures for natural features within the Study Area.

Terrestrial Habitat

Due to the currently agricultural nature of the Study Area (and that this land use will continue for the foreseeable future) and that no project activities are anticipated in natural areas no loss of species diversity is anticipated from the construction of the Project. Habitat removal will not reduce the amount of available habitat to below thresholds necessary to sustain current populations.

Birds

No direct effects to birds are anticipated as a result of decommissioning of the Project.

Bats

No direct effects to bats are anticipated as a result of decommissioning of the Project.

Species at Risk

No species at risk were identified within the project area.

Fish and Fish Habitat

No water bodies as defined in O.Reg. 359/09 were identified that would support fish or fish habitat.

Wetlands and Other Significant Natural Features

As appropriate and prior to decommissioning the limits of vegetation clearing will be staked in the field. The Construction Contractor will ensure that no construction disturbance occurs beyond the staked limits and that edges of sensitive areas adjacent to the work areas are not disturbed. No rare species of vegetation are to be removed as part of the Project.

GROUNDWATER AND WATER BODIES

The Project is not anticipated to require significant alteration to surface water runoff, or to involve the storage of surface water or the crossing of watercourses. No Project features are within 120 m of the average annual high water mark of a lake, within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity, or within 120 m of a seepage area.

AIR, ODOUR, DUST

The application of the recommended protection and mitigation measures during construction / decommissioning (contained within the **Draft Construction Plan Report**) should limit fugitive dust and odour emissions to the work areas and limit combustion emissions.

To reduce emissions from equipment and vehicles, several mitigation measures should be employed. Multi-passenger vehicles should be utilized to the extent practical. Company and construction personnel should avoid idling of vehicles when not necessary for construction activities. Equipment and vehicles should be turned off when not in use unless required for construction activities and/or effective operation of the equipment or vehicle. Equipment and vehicles should be maintained in good working order with functioning mufflers and emission control systems as available. All vehicles should be fitted with catalytic converters as required. All construction equipment and vehicles should meet the emissions requirements of the MOE and/or MTO. As appropriate, records of vehicle maintenance should be retained and made available for periodic review by the Construction Contractor.

To protect adjacent receptors from potential off-site dust concerns, the Construction Contractor should implement good site practices during construction which may include: maintaining equipment in good running condition and in compliance with regulatory requirements; protecting stockpiles of friable material with a barrier or windscreen and in the event of dry conditions and excessive dust; dust suppression (e.g. water and/or calcium chloride) of source areas; and/or covering loads of friable materials during transport.

ENVIRONMENTAL NOISE

During the construction/decommissioning period (approximately five (5) months), noise will be generated by the operation of heavy equipment at each of the work areas and associated vehicular traffic on-site. The audible noise at receptors beyond the construction areas is expected to be a minor, short-term disruption consistent with noise generated by any industrial construction project.

It is generally accepted that construction activities will result in short term environmental noise effects. To minimize inconvenience brought on by noise during the construction phase of the Project, all engines associated with construction equipment should be equipped with mufflers and/or silencers in accordance with MOE and/or MTO guidelines and regulations. Noise levels arising from equipment should also be compliant with sound levels established by the MOE.

To the greatest extent possible, construction activities that could create excessive noise should be restricted to daylight hours and adhere to any local noise by-laws. If construction activities that cause excessive noise must be carried out outside of these time frames, adjacent residents should be notified in advance and by-law conformity will occur, as required. Sources of continuous noise, such as portable generator sets, should be shielded as appropriate or located so as to minimize disturbance to off-site receptors.

LAND USE AND RESOURCES

During decommissioning some short term disruption to agricultural activities and agricultural infrastructure may occur in the form of disruption of typical cultivation and harvesting orientations and some damage artificial agricultural drainage.

<u>Soils</u>

Where agriculturally productive lands are impacted by heavy rainfall events and wet soil conditions, Zephyr should implement a wet soil shutdown practice; if conditions deteriorate to a situation where ruts under vehicles become deep enough to cause topsoil/subsoil mixing or create excessive compaction or make topsoil/subsoil separation too difficult, those activities would cease. Construction activities would continue when conditions improve and those soil qualities are protected.

Where topsoil is replaced over removed access road stone picking should occur after topsoil replacement, and during cleanup.

For areas to be restored after removal of project components where subsoil has been compacted by heavy equipment or construction traffic appropriate compaction relief may be necessary. The option of sub-soiling with an agricultural subsoiler, followed by discing, chisel ploughing or cultivating, to smooth the surface, should be considered on a site-specific basis. In areas where extreme compaction persists, additional deep tillage or subsoiling may be required on a site-specific basis. Soil density and/or penetrometer measurements on and off the right-of-way may be used as a means of assessing the relative degree of soil compaction and to determine if additional compaction relief is required.

Where there is potential for erosion or where erosion has already developed, silt fence and straw bales (or appropriate substitutes) should be installed to reduce soil transport until such time as the area has be revegetated. The location of such protection measures will be determined by the decommissioning Contractor. Topsoil replacement should be avoided during heavy precipitation or extremely windy conditions. Silt control fencing should be installed and maintained throughout restoration until lands are fully stabilized.

Artificial Drainage

Tile drains severed or crushed during decommissioning activities should be recorded and flagged. If a main drain, header tile, or large diameter tile is severed, a temporary repair should be made to maintain field drainage and prevent flooding of the work area and adjacent lands. Severed tile drains that are not immediately repaired should be capped to prevent the entry of soil, debris, or rodents. After the repair of each severed tile, and prior to backfilling, the landowner should be invited to inspect and approve the repair. If flooding of adjacent agricultural land occurs as a result of a severed tile and subsequently soils are damaged or crops are lost, the impacted area should be rehabilitated as soon as possible.

Soybean Cyst Nematode

Any field identified to contain SCN during the construction of the project, if undertaken, should be identified and the location provided to the decommissioning Contractor. Additionally, any imported topsoil should have a composite sample analyzed for SCN before it is brought into the project location. If SCN fields are identified, appropriate mitigation measures should be developed. Examples of mitigation measures may include washing stations for equipment, and/or restricted access to fields.

PROVINCIAL AND LOCAL INFRASTRUCTURE

The decommissioning Contractor will implement a *Traffic Management Plan* to identify and deal with specific traffic planning issues. The program may include the use of signage, road closures, speed restrictions, truck lighting, load restrictions, and equipment inspections.

Wastes such as concrete, scrap metal, equipment packaging, wrappings and scraps generated during decommissioning will require reuse, recycling, and/or disposal at an appropriate off-site facility within the County. Disposal of wastes will be the responsibility of the contracted third party and they will ensure disposal in accordance with appropriate legislation, standards and policies.

PUBLIC HEALTH AND SAFETY

Implementing transportation planning and safety measures during construction will minimize the potential for traffic

related safety concerns. No additional mitigation measures are proposed.

Land access to the construction site during decommissioning should be controlled through signage and restricted to authorized personnel only. The decommissioning Contractor should also employ good site safety practices during the construction phase.

The decommissioning Contractor will implement a Health and Safety Plan that will consider both public and occupational health and safety issues. This may include protecting the public from equipment and construction areas by posting warning signs, use of personal protective equipment, accident reporting, equipment operation, and confined space entry

1.3 – Renewable Energy Generation Facility

Type of Facility / Operation *(select all that apply & complete all appropriate sections)*

☒Wind Facility (Land Based)
☐Wind Facility (Off Shore)
☐Biogas Facility (Anaerobic Digesters
☐Biomass Facility (Thermal Treatment)
☐Biofuel Facility
☐Solar Power Voltaic Facility
☐Other describe:
☐Class (if applicable):

Name Plate Capacity	*Expected Generations*	Service Area	Total Area of Site (hectares)
10MW	***N/A***	**South western Ontario**	**471 Ha**

Provide a description of the facilities equipment or technology that will be used to convert the renewable energy source or any other energy source to electricity.

The Project will utilize four Samsung Heavy Industries 2.5 MW, 60 Hz wind turbines, model 25xc, for a total of 10 MW (nameplate capacity). A summary of the basic specifications of the turbine model is provided below. The final turbine coordinates will be determined as part of the REA process.

Basic Wind Turbine Specifications	
Manufacturer	Samsung
Model	25xc
Name plate capacity (MW)	2.5 MW
Hub height above grade	80 m
Rotor diameter	99.8 m
Blade sweep area	7,823 m^2
Nominal revolutions	13.77 rpm
Frequency	60 Hz

1.4-Renewable Energy Generation Activities

Describe the activities that will be engaged in as part of the renewable energy project:

The following activities will occur as part of the renewable energy project:

- Access Road Construction;
- Foundation and Crane Pad Construction;

- Turbine Assembly;
- Electrical Line Construction;
- Step-Up Transformer Construction;
- Operations and Maintenance Building Construction;
- Substation Construction;
- Commissioning;
- Operation; and,
- Decommissioning at the end of the operable life of the project.

Section 2 – Supporting Documents

2.1- Requirement	Name of Draft Document distributed for consulting	Date available to Municipal or Local Authority Contact
DRAFT Project Description Report	**Ibid**	**September 29, 2010**
DRAFT Design and Operations Report	**Ibid**	**September 29, 2010**
DRAFT Construction Plan Report	**Ibid**	**September 29, 2010**
DRAFT Decommissioning Plan	**Ibid**	**September 29, 2010**
List of Other Documents		

Location where written draft reports can be obtained for public inspection *(physical location for viewing and the applicants project website if one is available)*:

To be determined prior to 60-day review period.

Section 3 – Applicant Address and Contact Information

3.1 Applicant Information (Owner of project/facility)				
Applicant Name *(legal name of individual or organization as evidenced by legal documents)* **Zephyr Farms Limited** 2700 Matheson Blvd. East Suite 300, West Tower Mississauga, ON L4W 4V9				Business Identification Number
Business Name *(the name under which the entity is operating or trading - also referred to as trade name)*				☒ same as Applicant Name
Civic Address- Street information *(includes street number, name, type and direction)*				Unit Identifier *(i.e. apartment number)*
Survey Address (Not required if Street Information is provided) Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number.		Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan.		
Lot	Conc.	Part	Reference Plan	
Municipality	**County/District**	**Province/State**	**Country**	**Postal Code**

PART B: TO BE COMPLETED BY THE MUNICIPALITY OR LOCAL AUTHORITY

Section 4 – Municipal or Local Authority Contact Information (check the one that applies)

Local Municipality (include each local municipality in which project is situated ☐ Yes ☐ No					
Name of Municipality	Address	Phone	Clerk's Name	Clerk's Phone/Fax	E-mail Address
Upper Tier Municipality (include each upper tier municipality in which project location is ☐ Yes ☐ No					
Name of Municipality	Address	Phone	Clerk's Name	Clerk's Phone/Fax	E-mail Address
Local road area (include each local roads area in which project location is situated ☐ Yes ☐ No					
Name of local roads board	Address	Phone	Secretary-treasurer's Name	Secretary-treasurer's Phone/Fax	E-mail Address
Board Area (include each board area in which project location is situated) ☐ Yes ☐ No					
Name of Local Service Board	Address	Phone	Secretary's Name	Secretary's Phone/Fax	E-mail Address

Section 5: Consultation Requirement

5.1 - Project Location
Provide comment on the project location with respect to infrastructure and servicing.
5.2 – Project Roads
Provide comment on the proposed project's plans respecting proposed road access.
Identify any issues and provide recommendations with respect to road access
Provide comment on any proposed Traffic Management Plans
Identify any issues and provide recommendations with respect to the proposed Traffic Management Plans

5.3 – Municipal or Local authority Service Connections
Provide comment on the proposed project plans related to the location of and type of municipal service connections, other than roads.
Identify any issues and provide recommendations with respect to the type of municipal service connections, other than roads.
5.4 – Facility Other
Identify any issues and recommendations with respect to the proposed landscaping design for the facility Provide comment on the proposed project plans for emergency management procedures / safety protocols.

Identify any issues and recommendations with respect to the proposed emergency management procedures /safety protocols.
Identify any issues and recommendations with respect to any Easements or Restrictive Covenants associated with the Project Location
5.5 Project Construction
Identify any issues and recommendations with respect to the proposed rehabilitation of any temporary
Identify any issues and recommendations with respect to the proposed location of fire hydrants and connections to existing drainage, water works and sanitary sewers
Identify any issues and recommendations with respect to the proposed location of buried kiosks and above-grade utility vaults
Identify any issues and recommendations with respect to the proposed location of existing and proposed gas and electricity lines and connections
Provide comment on the proposed project plans with respect to Building Code permits and licenses.
Identify any issues and recommendations related to the identification of any significant natural features and water bodies within the municipality or territory.

Identify any issues and recommendations related to the identification any archaeological resource or heritage resource.

Knight, Mark

From: Knight, Mark
Sent: Wednesday, September 29, 2010 4:28 PM
To: 'leah.klompstra@county-lambton.on.ca'
Cc: 'Dave.poslif@county-lambton.on.ca'; 'Glen.millar@county-lambton.on.ca'; 'Frank.gerardo@county-lambton.on.ca'; 'Brent Hall'; Rowland, Rob
Subject: Brooke-Alvinston Wind Farm - Municipal Consultation Form
Attachments: Municipal Consultation Form.docx

Good Afternoon,

Attached please find a Municipal Consultation Form for the Brooke-Alvinston Wind Farm, as required by ss. 18(2) of Ontario Regulation 359/09 (Renewable Energy Approvals under Part V.0.1 of the Act) under the *Environmental Protection Act*. Reports referenced in the Form can be accessed via the FTP site provided below. A hard copy of the reports will follow.

We look forward to your feedback under Part B of the form. Please do not hesitate to contact me if you have any comments/questions.

Sincerely,

Mark Knight

Automatic Login

FTP site link: ftp://s1013142032:3846524@ftptmp.stantec.com
By clicking on the link above (or pasting the link into Windows Explorer) you will be automatically logged into your FTP site.

Manual Login

FTP link: ftp://ftptmp.stantec.com
Login name: s1013142032
Password: 3846524
Disk Quota: 2GB
Expiry Date: 10/13/2010

Mark Knight, M.A.
Environmental Planner
Assessment, Permitting and Compliance
Stantec
70 Southgate Drive Suite 1
Guelph ON N1G 4P5
Ph: (519) 836-6050 Ext. 218
Fx: (519) 836-2493
mark.knight@stantec.com
stantec.com

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

September 29, 2010
Stantec File: 160960567

Lambton County
789 Broadway Street
P.O. Box 3000
Wyoming, ON N0N 1T0

Attention: **Ms. Leah Klompstra, Executive Assistant, Corporate Services Division**

Reference: **Brooke-Alvinston Wind Farm, RESOP CONTRACT 11836**
Municipal Consultation Form

Zephyr Farms Limited has been awarded a Power Purchase Agreement with the Ontario Power Authority (RESOP 11836) and is proposing to develop the 10MW Brooke-Alvinston Wind Farm in the Township of Brooke-Alvinston, Lambton County, Ontario.

Enclosed please find a Municipal Consultation Form for the Brooke-Alvinston Wind Farm, as required by ss. 18(2) of Ontario Regulation 359/09 (Renewable Energy Approvals under Part V.0.1 of the Act) under the *Environmental Protection Act*. Enclosed also please find copies of the reports referenced in the Form.

We look forward to your feedback under Part B of the Form. To provide your comments or for further information about the project, please contact the undersigned.

Sincerely,

STANTEC CONSULTING LTD.

Robert Rowland
Senior Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
Rob.Rowland@stantec.com

Enclosure: Municipal Consultation Form, Project Description Report, Construction Plan Report, Design & Operations Report, Decommissioning Plan Report

CC. Brent Hall, Zephyr Farms Limited

Knight, Mark

From: Knight, Mark
Sent: Wednesday, September 29, 2010 4:30 PM
To: 'cathycase@amtelecom.net'
Cc: 'tbaroads@brktel.on.ca'; 'Brent Hall'; Rowland, Rob
Subject: Brooke-Alvinston Wind Farm - Municipal Consultation Form
Attachments: Municipal Consultation Form.docx

Good Afternoon,

Attached please find a Municipal Consultation Form for the Brooke-Alvinston Wind Farm, as required by ss. 18(2) of Ontario Regulation 359/09 (Renewable Energy Approvals under Part V.0.1 of the Act) under the *Environmental Protection Act*. Reports referenced in the Form can be accessed via the FTP site provided below. A hard copy of the reports will follow.

We look forward to your feedback under Part B of the form. Please do not hesitate to contact me if you have any comments/questions.

Sincerely,

Mark Knight

Automatic Login

FTP site link: ftp://s1013142032:3846524@ftptmp.stantec.com
By clicking on the link above (or pasting the link into Windows Explorer) you will be automatically logged into your FTP site.

Manual Login

FTP link: ftp://ftptmp.stantec.com
Login name: s1013142032
Password: 3846524
Disk Quota: 2GB
Expiry Date: 10/13/2010

Mark Knight, M.A.
Environmental Planner
Assessment, Permitting and Compliance
Stantec
70 Southgate Drive Suite 1
Guelph ON N1G 4P5
Ph: (519) 836-6050 Ext. 218
Fx: (519) 836-2493
mark.knight@stantec.com
stantec.com

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

September 29, 2010
Stantec File: 160960567

Township of Brooke-Alvinston
3236 River Street
P.O. Box 28
Alvinston, ON N0N 1A0

Attention: **Ms. Cathy Case, Clerk**

Reference: **Brooke-Alvinston Wind Farm, RESOP CONTRACT 11836**
Municipal Consultation Form

Zephyr Farms Limited has been awarded a Power Purchase Agreement with the Ontario Power Authority (RESOP 11836) and is proposing to develop the 10MW Brooke-Alvinston Wind Farm in the Township of Brooke-Alvinston, Lambton County, Ontario.

Enclosed please find a Municipal Consultation Form for the Brooke-Alvinston Wind Farm, as required by ss. 18(2) of Ontario Regulation 359/09 (Renewable Energy Approvals under Part V.0.1 of the Act) under the *Environmental Protection Act*. Enclosed also please find copies of the reports referenced in the Form.

We look forward to your feedback under Part B of the Form. To provide your comments or for further information about the project, please contact the undersigned.

Sincerely,

STANTEC CONSULTING LTD.

Robert Rowland
Senior Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
Rob.Rowland@stantec.com

Enclosure: Municipal Consultation Form, Project Description Report, Construction Plan Report, Design & Operations Report, Decommissioning Plan Report

CC. Brent Hall, Zephyr Farms Limited

Appendix N

Municipal Consultation Form Response

3236 River St. P.O. Box 28
Alvinston, ON N0N 1A0
Phone: 519.898.2173
Fax: 519.898.5653

February 15th, 2011

Stantec consulting Ltd
Suite 1 – 70 Southgate Drive
Guelph, Ontario
N1G 4P5

Attention: Robert Rowland

Dear Mr. Rowland

Enclosed please find the Municipal Consultation Form to be sent in to the Ministry Of Environment. Your letter of September 29th, 2010 did not provide any direction as to where to send it.

Please direct any questions to the undersigned.

Yours truly,

Richard Holland
Treasurer Administrator

Encl:

Ontario

Ministry of the Environment

Renewable Energy Approval
Consultation Form: municipalities, local authorities
ss. 18(2) Ontario Regulation 359/09
Ce formulaire est disponible en français

PART A: TO BE COMPLETED BY THE APPLICANT BEFORE SUBMITTING TO MUNICIPALITY OR LOCAL AUTHORITY

Section 1 – Project Description

1.1 – Renewable Energy Project					
Project Name (Project identifier to be used as a reference in correspondence): **Brooke Alvinston Wind Farm**					
Project Location: **Township of Brooke-Alvinston, Lambton County, Ontario.**					
Same as Applicant Physical Address? ☒Yes ☐No (If no, please provide site address information below					
Civic Address – Street information (includes street number, name, type and direction				Unit Identifier (i.e. apartment number)	
Survey Address (Not required if Street information is provided)					
Lot and Conc.: Used to indicate location within a subdivided township and consists of a lot number and a concession number.			Part and Reference: Used to indicate location within unorganized territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan.		
Lot **pt lot 13 S ½ lot 13 pt lot 14 pt lot 15 pt W ¾ of N ¾ of lot 15**	Conc. **Con 14 S Con 14 S Con 14 N**		Part	Reference Plan	
Location Information *(includes any additional information to clarify physical location)(e.g. municipality, ward/ township)* **Brooke-Alvinston Township**					
Geo Reference : **Southeast Corner of Study Area**					
Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing
NAD83	**17T**	**Sub meter**	**Arc GIS 9.3**	**427148.49**	**4751965.29**

Project Phasing *(outline construction, operation and decommissioning activities)*

Key Project Activities

Project Phase	Activities
Construction	**Turbine Sites**
	Preparation of laydown areas
	Delineation of temporary work areas
	Access road construction
	Completion of necessary site grading
	Installation of tower foundations
	Installation of crane pads
	Tower/turbine erection
	Installation of step-up transformer and required wiring
	Installation of collector lines, usually parallel to access roads
	Reclamation of temporary work areas
	Site landscaping (final grading, topsoil replacement, etc.)
	Substation Site
	Preparation of laydown area
	Installation of substation and connection with grid
	Reclamation of temporary work areas
	Site landscaping (final grading, topsoil replacement, etc.)
	Additional Activities
	Installation of collector lines
Operation	**Turbine Sites**
	Preventative maintenance
	Routine maintenance (access road s– including snow clearing)
	Unplanned maintenance
	Meter calibrations
	Grounds keeping
	Substation Site
	Preventative maintenance for substation
	Unplanned maintenance for substation
	Remote wind farm condition monitoring
	Additional Activities
	Electrical line maintenance and inspection
Decommissioning	**Turbine Sites**
	Removal of turbine infrastructure
	Removal of step-up transformers
	Site grading (dependent upon new proposed use)
	Possible removal of access roads dependent upon agreement with property owner
	Possible excavation and removal of collector lines depending upon agreement with property owner
	Additional Activities
	Disconnection of substation from provincial grid
	Removal of substation

1.2 - Environmental Context

Describe any negative environmental effects that may result from engaging in the project *(consider construction, operation and decommissioning activities.)*

Construction:

Construction of the project has the potential to impact the following environmental features:

HERITAGE AND ARCHAEOLOGICAL RESOURCES

A Stage I Archaeological Assessment was undertaken by Archaeological Research Associates for the Project Location. The Stage I Assessment found that it is reasonable to expect that archaeological sites may be found in most, if not all, of the areas which may be utilised for the Project. Given the potential for the discovery of as-yet unrecovered artefacts, should they exist in the excavation areas, there is some potential for these resources to be lost or damaged over the course of Project construction activities. As with most areas in southern Ontario there is also a limited potential to discover unmarked burial areas. However, a Stage II Archaeological Assessment will be conducted prior to construction and may locate archaeological resources before they are lost or damaged.

Based on archival research, consultation with relevant groups and individuals and a visual survey of the Study Area no protected properties are expected to be impacted by the current Project. No cultural heritage landscapes were identified in or adjacent to the Study Area.

NATURAL HERITAGE RESOURCES

An assessment of how the Project may cause potential effects was conducted and some of the identified potential effects ranged from but were not limited to construction activities such as vegetation clearing; installation of turbines, access roads and laydown areas; and accidental spills.

The following provides a summary of the key findings within the **Draft Construction Plan Report**, **Draft Design and Operations Report**, related to natural features within the Study Area.

Species at Risk, Wildlife and Wildlife Habitat

The following provides a summary of the potential effects related to species at risk, wildlife and wildlife habitat.

Terrestrial Habitat

The predominant effect from construction will result from disturbance of habitat through changes in existing activity levels or land-use. Due to the currently agricultural nature of the Study Area and that no project activities are anticipated in natural areas no loss of species diversity is anticipated from the construction of the Project.

Birds

Installation of Project components in open agricultural land and adjacent to hedgerows will result in limited bird habitat removal.

Bats

No direct effects to bats are anticipated as a result of construction of the Project.

Species at Risk

No species at risk were identified within the project area.

Fish and Fish Habitat

No waterbodies as defined in O.Reg. 359/09 were identified that would support fish or fish habitat.

Wetlands and Other Significant Natural Features

No wetlands or other significant natural areas are found in or within 120 m of the Project Location. One small isolated woodlot that experiences some disturbance from active logging is located within 120m of the Project Location – the woodlot has been deemed not significant from a natural heritage perspective.

Groundwater and Water Bodies

Potential effects to surface and ground water features were assessed for all stages of Project development. It is possible that some dewatering activities may be required when installing the tower foundations, access roads, and/or underground collector lines, however in quantities well below 50,000 L/day. With the implementation of good construction practices, it is anticipated any potential effects from an accidental spill would be short term in nature and have little to no effect on surface and/or groundwater quality and adjacent private water wells.

The Project is not anticipated to require significant alteration to surface water runoff, or to involve the storage of surface water or the crossing of watercourses. No Project features are within 120 m of the average annual high water mark of a lake, within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity, or within 120 m of a seepage area.

AIR, ODOUR, DUST

Potential effects related to air, odour, and dust will be a result of construction/decommissioning activities such as dust emissions from gravel road travel by construction vehicles. The application of the recommended protection and mitigation measures during construction / decommissioning (contained within the **Draft Construction Plan Report**) should limit fugitive dust and odour emissions to the work areas and limit combustion emissions.

ENVIRONMENTAL NOISE

During the construction/decommissioning period (approximately five (5) months), noise will be generated by the operation of heavy equipment at each of the work areas and associated vehicular traffic on-site. The audible noise at receptors beyond the construction areas is expected to be a minor, short-term disruption consistent with noise generated by any industrial construction project.

LAND USE AND RESOURCES

During construction some short term disruption to agricultural activities and agricultural infrastructure may occur in the form of disruption of typical cultivation and harvesting orientations and some damage artificial agricultural drainage.

PROVINCIAL AND LOCAL INFRASTRUCTURE

The increase in construction-related traffic will likely result in a short-term, localized disturbance to traffic patterns, and may create potential traffic safety hazards, and/or produce abnormal wear and tear on local roads. The Construction Contractor will implement a *Traffic Management Plan* to identify and deal with specific traffic planning issues. The program may include the use of signage, road closures, speed restrictions, truck lighting, load

restrictions, and equipment inspections.

Wastes such as equipment packaging, wrappings and scraps generated during construction will require reuse, recycling, and/or disposal at an appropriate off-site facility within the County. During construction and operation, the Construction Contractor and Operations Firm will implement a site-specific waste collection and disposal system to properly address waste material disposal. Disposal of wastes will be the responsibility of the contracted third party and they will ensure disposal in accordance with appropriate legislation, standards and policies.

PUBLIC HEALTH AND SAFETY

During construction/decommissioning, potential effects to public health and safety are largely in the form of increased construction related traffic and unauthorized access of the public to the work sites.

Operation

NATURAL HERITAGE RESOURCES

Terrestrial Wildlife Habitat

Direct effects of Project operation to wildlife habitat are not expected from the project. The project is sited within agricultural fields, which provide limited wildlife habitat. One woodland is located within 120m of the project location. The project does not contain any significant wildlife habitat. The site layout does not involve direct habitat loss to the woodlot and minimizes disturbance. No anticipated loss of function to this feature is associated with the Project.

There are potential indirect disturbance effects of operation of wind turbines to wildlife. Some large mammals may avoid wind facilities if there is high level of human activity relative to baseline conditions (Arnett et al., 2007). Noise from operational turbines could mask the calls of breeding frogs. However, given the limited amount of natural habitat found in the Study Area and the active use of land for agricultural activities, it is likely that resident wildlife will adapt to the presence of operational turbines.

Birds

The effects of wind turbine operation on birds can be either direct, through collision, or indirect, through loss, alteration, or fragmentation of habitat and through disturbance. The risk of direct collision varies between species and is most likely a function of abundance and behavioural characteristics (National Academy of Sciences, 2007).

No significant wildlife habitat features for birds were identified within the Project location. The Project is sited within agricultural land, which generally supports a low diversity of breeding birds. Stantec studies conducted for several proposed wind facilities indicate that the majority of birds observed in cropland habitats are active on the ground or below the height of blade sweep (Stantec, 2005; Stantec, 2006; and Stantec, 2007).

Siting of turbines outside natural habitat features (i.e., woodlands), and the implementation of setbacks to natural habitat features will minimize direct and indirect impacts to birds. Impacts of the Project to birds within the Study Area are expected to be low and not significant at the population level.

Bats

Based upon data collected during the site investigation and the information presented in background sources, it is unlikely that bats are present in large numbers within the study area. The project location does not contain known bat hibernacula or maternity roosts. The project is located in farmland, which typically results in the lowest bat mortality rates (MNR, 2010). It is not located near forested ridge tops or lakeshores of major waterbodies, factors which have been found to result in higher mortality rates. Turbines have been sited away from buildings and woodlots, which may be used as roosting areas. Therefore, the Project is not expected to have significant negative effects on bat habitat or populations.

Species at Risk

No species at risk were identified from the Project location.

GROUNDWATER AND WATER BODIES

Some materials, such as fuel, lubricating oils and other fluids associated with turbine construction and maintenance have the potential for discharge to the on-site environment through accidental spills.

AIR, ODOUR, DUST

There will be no effects of odour or dust during the operation of the Project. Air quality will be minimally impacted by the used of standard equipment and vehicles during operation and maintenance activities.

ENVIRONMENTAL NOISE

An environmental noise report will be conducted to confirm that all turbines proposed as part of the Project are located at a distance of at least 650 m from the nearest noise receptor. Based upon the Project design, and adherence to the setbacks stipulated in the regulation noise produced by the Project will be within the acceptable limits established by the MOE at all noise receptors.

LAND USE AND RESOURCES

Wind turbines also have the potential to interfere with radio or TV signals as a result of a turbine being in the "line-of-sight" between a receiver and the signal source. Potential impacts to telecommunication networks were also assessed within the **Draft Design and Operations Report**. It was confirmed that the Project will not have any effects on the public safety mobile communications systems. The Department of National Defence (DND) has no objections with the Project with regards to DND's radiocommunication systems. The DND Air Traffic Control and Defence Radars unit also confirmed that they have no objections or concerns with the Project.

During operation, the Construction Contractor and Operations Firm will implement a site-specific waste collection and disposal system to properly address waste material disposal. Disposal of wastes will be the responsibility of the contracted third party and they will ensure disposal in accordance with appropriate legislation, standards and policies.

PUBLIC HEALTH AND SAFETY

Health and safety concerns, as determined through searching peer-reviewed literature and general internet searches

(i.e., not peer-reviewed sources) are primarily associated with operation of the turbines and include:

- Audible environmental noise;
- Low frequency noise (LFN);
- Infrasound;
- Shadow flicker;
- EMF;
- Stray voltage;
- Turbine blade and structural failure;
- Ice fall and shed; and,
- Other potential health effects.

Decommissioning

The main impacts that will occur as a result of decommissioning the Project include disturbance to the existing agricultural activities and infrastructure as a result of the activities needed to remove the turbines, foundations, transformers, gathering lines and access roads. Additional impacts could be from the increased traffic required to remove the components and a temporary increase in dust and noise.

Propose early avoidance/prevention/mitigation concepts and measures

The following mitigation measures will be implemented to ameliorate the impacts of the project on environmental and socio-economic features:

Construction:

Construction of the project has the potential to impact the following environmental features:

HERITAGE AND ARCHAEOLOGICAL RESOURCES

Mitigation measures on archaeological resources will be identified in the **Stage II Archaeological Assessment Report**. Should other archaeological or historical materials or features be found, all work within the vicinity of the find will be suspended and a Ministry of Culture archaeologist contacted. In the event that human remains are encountered or suspected of being encountered before or during construction all work will stop immediately. Notification will be made to the Ontario Provincial Police or local police who will conduct a site investigation and contact the district coroner. The Ministry of Culture and the Registrar of Cemeteries, Cemeteries Regulation Unit, Ministry of Small Business and Consumer Services will also be notified.

NATURAL HERITAGE RESOURCES

An assessment of how the Project may cause potential effects was conducted and some of the identified potential effects ranged from but were not limited to construction activities such as vegetation clearing; installation of turbines, access roads and laydown areas and accidental spills.

The following provides a summary of the recommended mitigation measures for natural features within the Study Area.

Terrestrial Habitat

Due to the currently agricultural nature of the Study Area and that no project activities are anticipated in natural areas

no loss of species diversity is anticipated from the construction of the Project. Habitat removal will not reduce the amount of available habitat to below thresholds necessary to sustain current populations.

Birds

Installation of Project components in open agricultural land will result in limited bird habitat removal. To the extent practical, brush clearing (if required) will be completed prior to or after the breeding season for migratory birds (May 1 to July 23). Should clearing be required during the breeding bird season, prior to construction, surveys will be undertaken within 48 hours of clearing to identify the presence/absence of nesting birds or breeding habitat. If a nest is located, a designated buffer will be marked off within which no construction activity will be allowed while the nest is active.

Bats

No direct effects to bats are anticipated as a result of construction of the Project. Potential indirect negative effects could result from an increase in human activity or the removal of habitat element, such as roost trees or wetland vegetation.

Species at Risk

No species at risk were identified within the project area.

Fish and Fish Habitat

No water bodies as defined in O.Reg. 359/09 were identified that would support fish or fish habitat. As hazard lands occur within the Project Location, as identified by the St. Clair Region Conservation Authority (SCRCA), consultation will occur with SCRCA to obtain necessary permits.

Wetlands and Other Significant Natural Features

As appropriate and prior to construction the limits of vegetation clearing will be staked in the field. The Construction Contractor will ensure that no construction disturbance occurs beyond the staked limits and that edges of sensitive areas adjacent to the work areas are not disturbed. No rare species of vegetation are to be removed as part of the Project.

GROUNDWATER AND WATER BODIES

Should pumping be required to dewater excavated areas, appropriate energy dissipation techniques should be utilized to reduce the potential for erosion and sourcing. Discharge piping should be free of leaks and should be properly anchored to prevent bouncing and snaking during surging. The rate of discharge should be monitored to ensure no erosion or flooding occurs. If energy dissipation measures are found to be inadequate, the rate of dewatering should be reduced or ceased until satisfactory mitigation measures are in place.

If a spill occurs, the MOE Spills Action Centre will be contacted immediately. The Construction Contractor will also develop an *Emergency Response Plan* (discussed in **Section 4.0**) which will outline the proper procedures in the event of a spill. Any spills that have the potential to create an impact to the environment shall be reported to the MOE as required by provincial spills legislation.

AIR, ODOUR, DUST

The application of the recommended protection and mitigation measures during construction / decommissioning (contained within the **Draft Construction Plan Report**) should limit fugitive dust and odour emissions to the work areas and limit combustion emissions.

To reduce emissions from equipment and vehicles, several mitigation measures should be employed. Multi-passenger vehicles should be utilized to the extent practical. Company and construction personnel should avoid idling of vehicles when not necessary for construction activities. Equipment and vehicles should be turned off when not in use unless required for construction activities and/or effective operation of the equipment or vehicle. Equipment and vehicles should be maintained in good working order with functioning mufflers and emission control systems as available. All vehicles should be fitted with catalytic converters as required. All construction equipment and vehicles should meet the emissions requirements of the MOE and/or MTO. As appropriate, records of vehicle maintenance should be retained and made available for periodic review by the Construction Contractor.

To protect adjacent receptors from potential off-site dust concerns, the Construction Contractor should implement good site practices during construction which may include: maintaining equipment in good running condition and in compliance with regulatory requirements; protecting stockpiles of friable material with a barrier or windscreen and in the event of dry conditions and excessive dust; dust suppression (e.g. water and/or calcium chloride) of source areas; and/or covering loads of friable materials during transport.

ENVIRONMENTAL NOISE

It is generally accepted that construction activities will result in short term environmental noise effects. To minimize inconvenience brought on by noise during the construction phase of the Project, all engines associated with construction equipment should be equipped with mufflers and/or silencers in accordance with MOE and/or MTO guidelines and regulations. Noise levels arising from equipment should also be compliant with sound levels established by the MOE.

To the greatest extent possible, construction activities that could create excessive noise should be restricted to daylight hours and adhere to any local noise by-laws. If construction activities that cause excessive noise must be carried out outside of these time frames, adjacent residents should be notified in advance and by-law conformity will occur, as required. Sources of continuous noise, such as portable generator sets, should be shielded as appropriate or located so as to minimize disturbance to off-site receptors.

LAND USE AND RESOURCES

During construction some short term disruption to agricultural activities and agricultural infrastructure may occur in the form of disruption of typical cultivation and harvesting orientations and some damage artificial agricultural drainage.

<u>Soils</u>

Where agriculturally productive lands are impacted by heavy rainfall events and wet soil conditions, Zephyr should implement a wet soil shutdown practice; if conditions deteriorate to a situation where ruts under vehicles become deep enough to cause topsoil/subsoil mixing or create excessive compaction or make topsoil/subsoil separation too difficult, those activities would cease. Construction activities would continue when conditions improve and those soil qualities are protected.

Where topsoil stripping is undertaken, topsoil and subsoil should be stripped and stockpiled separately to avoid mixing. Topsoil stripping methods should ensure adequate separation of topsoil and subsoil stockpiles. Stone picking should occur before and after topsoil replacement, and during cleanup.

For areas to be restored after construction, such as crane pads, where subsoil has been compacted by heavy equipment or construction traffic appropriate compaction relief may be necessary. The option of sub-soiling with an agricultural subsoiler, followed by discing, chisel ploughing or cultivating, to smooth the surface, should be considered on a site-specific basis. In areas where extreme compaction persists, additional deep tillage or subsoiling may be required on a site-specific basis. Soil density and/or penetrometer measurements on and off the right-of-way may be used as a means of assessing the relative degree of soil compaction and to determine if additional compaction relief is required.

Where there is potential for erosion or where erosion has already developed, silt fence and straw bales (or appropriate substitutes) should be installed to reduce soil transport. The location of such protection measures will be determined by the Construction Contractor. Topsoil salvage and/or replacement should be avoided during heavy precipitation or extremely windy conditions. Silt control fencing should be installed and maintained throughout construction and restoration until lands are fully stabilized.

Artificial Drainage

Tile drains severed or crushed during construction activities should be recorded and flagged. If a main drain, header tile, or large diameter tile is severed, a temporary repair should be made to maintain field drainage and prevent flooding of the work area and adjacent lands. Severed tile drains that are not immediately repaired should be capped to prevent the entry of soil, debris, or rodents. After the repair of each severed tile, and prior to backfilling, the landowner should be invited to inspect and approve the repair. If flooding of adjacent agricultural land occurs as a result of a severed tile and subsequently soils are damaged or crops are lost, the impacted area should be rehabilitated as soon as possible.

Soybean Cyst Nematode

A pre-construction soil sampling program should be implemented to identify potential SCN infestation, upon approval of the landowner.

The pre-construction program would include soil analysis for each agricultural row crop field to determine the extent of SCN infestation. Any field identified to contain SCN would be recorded and the location provided to the Construction Contractor. Additionally, any imported topsoil would have a composite sample analyzed for SCN before it is placed on the right-of-way. If SCN fields are identified, appropriate mitigation measures would be developed. Examples of mitigation measures may include washing stations for equipment, and/or restricted access to fields.

PROVINCIAL AND LOCAL INFRASTRUCTURE

The Construction Contractor will implement a *Traffic Management Plan* to identify and deal with specific traffic planning issues. The program may include the use of signage, road closures, speed restrictions, truck lighting, load restrictions, and equipment inspections.

Wastes such as equipment packaging, wrappings and scraps generated during construction will require reuse, recycling, and/or disposal at an appropriate off-site facility within the County. During construction and operation, the Construction Contractor and Operations Firm will implement a site-specific waste collection and disposal system to properly address waste material disposal. Disposal of wastes will be the responsibility of the contracted third party

and they will ensure disposal in accordance with appropriate legislation, standards and policies.

PUBLIC HEALTH AND SAFETY

Implementing transportation planning and safety measures during construction will minimize the potential for traffic related safety concerns. No additional mitigation measures are proposed.

Land access to the construction site should be controlled through signage and restricted to authorized personnel only. The Construction Contractor should also employ good site safety practices during the construction phase.

The Construction Contractor will implement a Health and Safety Plan that will consider both public and occupational health and safety issues. This may include protecting the public from equipment and construction areas by posting warning signs, use of personal protective equipment, accident reporting, equipment operation, and confined space entry

Operation

NATURAL HERITAGE RESOURCES

The following mitigation measures should be implemented:

- In the event of an accidental spill, the MOE Spills Action Centre should be contacted and emergency spill procedures implemented immediately. Any fuel storage and activities with the potential for contamination should occur in properly protected and sealed areas. As appropriate, records of waste generation and disposal should be maintained. Where waste disposal monitoring is undertaken it should include a periodic review of all waste records. The purpose of the inspection is to ensure that wastes are properly recycled and/or disposed of, consistent with provincial standards and good industry practices. Where a third party's activities are identified as non-compliant or insufficient, the Construction Contractor should seek out an alternative recycling or disposal solution;

- Turbine lighting must conform to Transport Canada standards. Although there is no evidence that bird and bat mortality is influenced by turbine lighting (Arnett et al., 2007), lights with the shortest allowable flash durations and the longest allowable pause between flashes are preferred;

- Turbine setback as specified in O. Reg. 359/09 from blade tip to natural features to mitigate direct mortality and disturbance effects to wildlife; and,

- Post-construction mortality monitoring consisting of regular bat and bird mortality surveys should be conducted in accordance with current MNR guidance. The post-construction monitoring plan has been developed and is provided in the **Draft Design and Operations Report**.

The siting of the Project within agricultural lands with a minimum distance of 120 m between the turbines and natural features is considered sufficient to reduce or preclude many effects to local wildlife resulting in no significant negative effects anticipated from operation of the Project.

GROUNDWATER AND WATER BODIES

To assist in meeting the performance objective including minimizing the likelihood of accidental spills and the

potential for surface water contamination, materials used in the operation and maintenance of the Project will be stored in appropriate containers within a secure storage area off site (to be determined by the Operations Firm). An *Emergency Response Plan* will be developed by the Firm and/or Zephyr Farms to plan for the proper handling of material spills and associated procedures to be undertaken in the event of a spill. Any spills that have the potential to create an impact to the environment shall be reported to the MOE as required by provincial spills legislation. Since effects to surface water features and waterbodies are anticipated to be limited to construction/decommissioning activities, no other protection or mitigation plans are required for the operation phase of the Project.

AIR, ODOUR, DUST

There will be no potential effects to air quality, odour, or dust during the operation of the Project.

ENVIRONMENTAL NOISE

The Project will be required to operate according to the terms and conditions of the Renewable Energy Approval (REA). In the event the Project does not operate according to the terms and conditions of the REA, the problematic turbine(s) may be shut down until the problem is resolved.

LAND USE AND RESOURCES

During the operation phase of the Project, road usage will be similar to any other business and no additional road modifications are anticipated to facilitate the Project's operational activities. As recreational land uses will return to pre-existing conditions (with the exception for the leased lands including access roads), no mitigation measures are required.

Although no effects are anticipated to telecommunications, in the unlikely event that signal disruption is experienced, mitigation measures are available to alleviate the impact. This may include replacing the receiving antenna with one that has a better discrimination to the unwanted signals, relocating either the transmitter or receiver, or switching to an alternate means of receiving the information (fibre optic or other means). Zephyr Farms will review potential incidents of telecommunications interference on a case by case basis.

During operation, the Construction Contractor and Operations Firm will implement a site-specific waste collection and disposal system to properly address waste material disposal. Disposal of wastes will be the responsibility of the contracted third party and they will ensure disposal in accordance with appropriate legislation, standards and policies.

PUBLIC HEALTH AND SAFETY

With the implementation of appropriate operations protocols and routine maintenance there is minimal increased or new risk to public health and safety from the operation of the Project. Though the possibility of injury from ice falling or shed from the turbine tower or blades or from the collapse of the entire structure exists, the likelihood of this happening with the built in safety features to the structures and ongoing maintenance of the equipment is very low. In addition, under the new O.Reg 359/09, minimum setback requirements (in which this Project meets) were introduced specifically to ensure the protection of people and the environment from wind farm projects. An extensive review of potential effects to public health and safety as a result of environmental noise, low frequency noise, infrasound, shadow flicker, electric and magnetic fields, and stray voltage is provided within the **Draft Design and Operations Report**. With the implementation of appropriate operations protocols there is minimal increased or new risk to public

health and safety from the operation of the Project.

Decommissioning

NATURAL HERITAGE RESOURCES

The following provides a summary of the recommended mitigation measures for natural features within the Study Area.

Terrestrial Habitat

Due to the currently agricultural nature of the Study Area (and that this land use will continue for the foreseeable future) and that no project activities are anticipated in natural areas no loss of species diversity is anticipated from the construction of the Project. Habitat removal will not reduce the amount of available habitat to below thresholds necessary to sustain current populations.

Birds

No direct effects to birds are anticipated as a result of decommissioning of the Project.

Bats

No direct effects to bats are anticipated as a result of decommissioning of the Project.

Species at Risk

No species at risk were identified within the project area.

Fish and Fish Habitat

No water bodies as defined in O.Reg. 359/09 were identified that would support fish or fish habitat.

Wetlands and Other Significant Natural Features

As appropriate and prior to decommissioning the limits of vegetation clearing will be staked in the field. The Construction Contractor will ensure that no construction disturbance occurs beyond the staked limits and that edges of sensitive areas adjacent to the work areas are not disturbed. No rare species of vegetation are to be removed as part of the Project.

GROUNDWATER AND WATER BODIES

The Project is not anticipated to require significant alteration to surface water runoff, or to involve the storage of surface water or the crossing of watercourses. No Project features are within 120 m of the average annual high water mark of a lake, within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity, or within 120 m of a seepage area.

AIR, ODOUR, DUST

The application of the recommended protection and mitigation measures during construction / decommissioning (contained within the **Draft Construction Plan Report**) should limit fugitive dust and odour emissions to the work areas and limit combustion emissions.

To reduce emissions from equipment and vehicles, several mitigation measures should be employed. Multi-passenger vehicles should be utilized to the extent practical. Company and construction personnel should avoid idling of vehicles when not necessary for construction activities. Equipment and vehicles should be turned off when not in use unless required for construction activities and/or effective operation of the equipment or vehicle. Equipment and vehicles should be maintained in good working order with functioning mufflers and emission control systems as available. All vehicles should be fitted with catalytic converters as required. All construction equipment and vehicles should meet the emissions requirements of the MOE and/or MTO. As appropriate, records of vehicle maintenance should be retained and made available for periodic review by the Construction Contractor.

To protect adjacent receptors from potential off-site dust concerns, the Construction Contractor should implement good site practices during construction which may include: maintaining equipment in good running condition and in compliance with regulatory requirements; protecting stockpiles of friable material with a barrier or windscreen and in the event of dry conditions and excessive dust; dust suppression (e.g. water and/or calcium chloride) of source areas; and/or covering loads of friable materials during transport.

ENVIRONMENTAL NOISE

During the construction/decommissioning period (approximately five (5) months), noise will be generated by the operation of heavy equipment at each of the work areas and associated vehicular traffic on-site. The audible noise at receptors beyond the construction areas is expected to be a minor, short-term disruption consistent with noise generated by any industrial construction project.

It is generally accepted that construction activities will result in short term environmental noise effects. To minimize inconvenience brought on by noise during the construction phase of the Project, all engines associated with construction equipment should be equipped with mufflers and/or silencers in accordance with MOE and/or MTO guidelines and regulations. Noise levels arising from equipment should also be compliant with sound levels established by the MOE.

To the greatest extent possible, construction activities that could create excessive noise should be restricted to daylight hours and adhere to any local noise by-laws. If construction activities that cause excessive noise must be carried out outside of these time frames, adjacent residents should be notified in advance and by-law conformity will occur, as required. Sources of continuous noise, such as portable generator sets, should be shielded as appropriate or located so as to minimize disturbance to off-site receptors.

LAND USE AND RESOURCES

During decommissioning some short term disruption to agricultural activities and agricultural infrastructure may occur in the form of disruption of typical cultivation and harvesting orientations and some damage artificial agricultural drainage.

<u>Soils</u>

Where agriculturally productive lands are impacted by heavy rainfall events and wet soil conditions, Zephyr should implement a wet soil shutdown practice; if conditions deteriorate to a situation where ruts under vehicles become deep enough to cause topsoil/subsoil mixing or create excessive compaction or make topsoil/subsoil separation too difficult, those activities would cease. Construction activities would continue when conditions improve and those soil qualities are protected.

Where topsoil is replaced over removed access road stone picking should occur after topsoil replacement, and during cleanup.

For areas to be restored after removal of project components where subsoil has been compacted by heavy equipment or construction traffic appropriate compaction relief may be necessary. The option of sub-soiling with an agricultural subsoiler, followed by discing, chisel ploughing or cultivating, to smooth the surface, should be considered on a site-specific basis. In areas where extreme compaction persists, additional deep tillage or subsoiling may be required on a site-specific basis. Soil density and/or penetrometer measurements on and off the right-of-way may be used as a means of assessing the relative degree of soil compaction and to determine if additional compaction relief is required.

Where there is potential for erosion or where erosion has already developed, silt fence and straw bales (or appropriate substitutes) should be installed to reduce soil transport until such time as the area has be revegetated. The location of such protection measures will be determined by the decommissioning Contractor. Topsoil replacement should be avoided during heavy precipitation or extremely windy conditions. Silt control fencing should be installed and maintained throughout restoration until lands are fully stabilized.

Artificial Drainage

Tile drains severed or crushed during decommissioning activities should be recorded and flagged. If a main drain, header tile, or large diameter tile is severed, a temporary repair should be made to maintain field drainage and prevent flooding of the work area and adjacent lands. Severed tile drains that are not immediately repaired should be capped to prevent the entry of soil, debris, or rodents. After the repair of each severed tile, and prior to backfilling, the landowner should be invited to inspect and approve the repair. If flooding of adjacent agricultural land occurs as a result of a severed tile and subsequently soils are damaged or crops are lost, the impacted area should be rehabilitated as soon as possible.

Soybean Cyst Nematode

Any field identified to contain SCN during the construction of the project, if undertaken, should be identified and the location provided to the decommissioning Contractor. Additionally, any imported topsoil should have a composite sample analyzed for SCN before it is brought into the project location. If SCN fields are identified, appropriate mitigation measures should be developed. Examples of mitigation measures may include washing stations for equipment, and/or restricted access to fields.

PROVINCIAL AND LOCAL INFRASTRUCTURE

The decommissioning Contractor will implement a *Traffic Management Plan* to identify and deal with specific traffic planning issues. The program may include the use of signage, road closures, speed restrictions, truck lighting, load restrictions, and equipment inspections.

Wastes such as concrete, scrap metal, equipment packaging, wrappings and scraps generated during decommissioning will require reuse, recycling, and/or disposal at an appropriate off-site facility within the County. Disposal of wastes will be the responsibility of the contracted third party and they will ensure disposal in accordance with appropriate legislation, standards and policies.

PUBLIC HEALTH AND SAFETY

Implementing transportation planning and safety measures during construction will minimize the potential for traffic

related safety concerns. No additional mitigation measures are proposed.

Land access to the construction site during decommissioning should be controlled through signage and restricted to authorized personnel only. The decommissioning Contractor should also employ good site safety practices during the construction phase.

The decommissioning Contractor will implement a Health and Safety Plan that will consider both public and occupational health and safety issues. This may include protecting the public from equipment and construction areas by posting warning signs, use of personal protective equipment, accident reporting, equipment operation, and confined space entry

1.3 – Renewable Energy Generation Facility

Type of Facility / Operation *(select all that apply & complete all appropriate sections)*

☒Wind Facility (Land Based)
☐Wind Facility (Off Shore)
☐Biogas Facility (Anaerobic Digesters
☐Biomass Facility (Thermal Treatment)
☐Biofuel Facility
☐Solar Power Voltaic Facility
☐Other describe:
☐Class (if applicable):

Name Plate Capacity	*Expected Generations*	Service Area	Total Area of Site (hectares)
10MW	***N/A***	**South western Ontario**	**471 Ha**

Provide a description of the facilities equipment or technology that will be used to convert the renewable energy source or any other energy source to electricity.

The Project will utilize four Samsung Heavy Industries 2.5 MW, 60 Hz wind turbines, model 25xc, for a total of 10 MW (nameplate capacity). A summary of the basic specifications of the turbine model is provided below. The final turbine coordinates will be determined as part of the REA process.

Basic Wind Turbine Specifications	
Manufacturer	Samsung
Model	25xc
Name plate capacity (MW)	2.5 MW
Hub height above grade	80 m
Rotor diameter	99.8 m
Blade sweep area	7,823 m^2
Nominal revolutions	13.77 rpm
Frequency	60 Hz

1.4-Renewable Energy Generation Activities

Describe the activities that will be engaged in as part of the renewable energy project:

The following activities will occur as part of the renewable energy project:

- Access Road Construction;
- Foundation and Crane Pad Construction;

- Turbine Assembly;
- Electrical Line Construction;
- Step-Up Transformer Construction;
- Operations and Maintenance Building Construction;
- Substation Construction;
- Commissioning;
- Operation; and,
- Decommissioning at the end of the operable life of the project.

Section 2 – Supporting Documents

2.1- Requirement	Name of Draft Document distributed for consulting	Date available to Municipal or Local Authority Contact
DRAFT Project Description Report	**Ibid**	**September 29, 2010**
DRAFT Design and Operations Report	**Ibid**	**September 29, 2010**
DRAFT Construction Plan Report	**Ibid**	**September 29, 2010**
DRAFT Decommissioning Plan	**Ibid**	**September 29, 2010**
List of Other Documents		

Location where written draft reports can be obtained for public inspection *(physical location for viewing and the applicants project website if one is available)*:

To be determined prior to 60-day review period.

Section 3 – Applicant Address and Contact Information

3.1 Applicant Information (Owner of project/facility)

Applicant Name *(legal name of individual or organization as evidenced by legal documents)*	Business Identification Number
Zephyr Farms Limited 2700 Matheson Blvd. East Suite 300, West Tower Mississauga, ON L4W 4V9	
Business Name *(the name under which the entity is operating or trading - also referred to as trade name)*	☒ same as Applicant Name
Civic Address- Street information *(includes street number, name, type and direction)*	Unit Identifier *(i.e. apartment number)*

Survey Address (Not required if Street Information is provided)

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number.	Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan.

Lot	Conc.	Part	Reference Plan

Municipality	County/District	Province/State	Country	Postal Code

PART B: TO BE COMPLETED BY THE MUNICIPALITY OR LOCAL AUTHORITY

Section 4 – Municipal or Local Authority Contact Information (check the one that applies)

Local Municipality (include each local municipality in which project is situated ☒ Yes ☐ No					
Name of Municipality	Address	Phone	Clerk's Name	Clerk's Phone/Fax	E-mail Address
BROOKE-ALVINSTON	3236 River P.O. Box 28 Alvinston, ON N0N 1A0	519-898-2173	Cathy Case Municipal Rick Holland	519-898-2173 519-898-5653 Contact d Treasurer Administrator	cathycase@amtelecom.net rholland@amtelecom.net
Upper Tier Municipality (include each upper tier municipality in which project location is ☐ Yes ☐ No					
Name of Municipality	Address	Phone	Clerk's Name	Clerk's Phone/Fax	E-mail Address
COUNTY OF LAMBTON	789 Broadway Box 3000 Wyoming, ON	519-845-0801	Stephane Thiffeault	519-845-5402 519-845-0818	stephane.thiffeault@county.lambton.on.ca
Local road area (include each local roads area in which project location is situated ☐ Yes ☐ No					
Name of local roads board	Address	Phone	Secretary-treasurer's Name	Secretary-treasurer's Phone/Fax	E-mail Address
Board Area (include each board area in which project location is situated) ☐ Yes ☐ No					
Name of Local Service Board	Address	Phone	Secretary's Name	Secretary's Phone/Fax	E-mail Address

Section 5: Consultation Requirement

5.1 - Project Location
Provide comment on the project location with respect to infrastructure and servicing. Rural area of Municiplaity service by a gravel road that has a poor base. Services include hydro, telephone and water.
5.2 – Project Roads
Provide comment on the proposed project's plans respecting proposed road access. Not yet developed. Agreement is in the development stage and will have to include the County.
Identify any issues and provide recommendations with respect to road access Road is not structurally able to handle heavy traffic and is narrow. Agreement will cover local traffic issues.
Provide comment on any proposed Traffic Management Plans To be developed and included in agreement.
Identify any issues and provide recommendations with respect to the proposed Traffic Management Plans To be developed and included in agreement.

5.3 – Municipal or Local authority Service Connections
Provide comment on the proposed project plans related to the location of and type of municipal service connections, other than roads.
Water and phone services will require separate Agreements/ Contracts.
Identify any issues and provide recommendations with respect to the type of municipal service connections, other than roads.
N/A
5.4 – Facility Other
Identify any issues and recommendations with respect to the proposed landscaping design for the facility Provide comment on the proposed project plans for emergency management procedures / safety protocols.

Identify any issues and recommendations with respect to the proposed emergency management procedures /safety protocols.
N/A
Identify any issues and recommendations with respect to any Easements or Restrictive Covenants associated with the Project Location
N/A
5.5 Project Construction
Identify any issues and recommendations with respect to the proposed rehabilitation of any temporary
N/A
Identify any issues and recommendations with respect to the proposed location of fire hydrants and connections to existing drainage, water works and sanitary sewers
Tile drainage to be dealt with by Landowner outlets to Municipal Drains should not be impacted.
Identify any issues and recommendations with respect to the proposed location of buried kiosks and above-grade utility vaults
To be located on Private Lands
Identify any issues and recommendations with respect to the proposed location of existing and proposed gas and electricity lines and connections
Hydro Poles to be located to the extreme side of road allowance as to not impact on road maintenance.
Provide comment on the proposed project plans with respect to Building Code permits and licenses.
Permit is required.
Identify any issues and recommendations related to the identification of any significant natural features and water bodies within the municipality or territory.
N/A

Identify any issues and recommendations related to the identification any archaeological resource or heritage resource.
N/A