

# OPERATIONS PLAN for the Construction of the Amherst Island Wind Project

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Revision 5, 2 May 2017

### **Framework**

This Operations Plan for the construction of the Amherst Island Wind Project has been prepared by Windlectric Inc. in cooperation with its contractors and consultants. It reflects planning relative to Amherst Island Wind Project activities within the road allowances of the Corporation of Loyalist Township and is submitted to the Township in accordance with provisions of the Road Use Agreement made between Windlectric Inc. and the Corporation of Loyalist Township on January 26, 2016 (the “Road Use Agreement”).

This Road Use Agreement provides that the purpose of the Operations Plan “will be to demonstrate how prudent and reasonable practices will be utilized to minimize the level of disruption, disturbance and inconvenience to the Municipality’s residents, given the scope of the Project. The Operations Plan will also demonstrate how the continuing functioning of its roads and other municipal services and facilities will be maintained to the extent reasonable possible and how the Municipality’s residents’ access to emergency services will be maintained at all times.”

The Operations Plan is separate and distinct from the more technical Pre-Construction Study that is contemplated in the Road Use Agreement. As set forth in the Road Use Agreement the Pre-Construction Study will “include, but not be limited to, the following items: (a) the identification of the Municipal Infrastructure that, in the opinion of the Project Engineer in consultation with the Municipal Engineer, will or may be damaged, destroyed or otherwise adversely affected by the construction of the Project; (b) an evaluation of the existing condition and service capacity of the Municipal Infrastructure that have been identified in paragraph (a) above; (c) the appointment of an environmental monitor to ensure the construction activities comply with the conditions of the Renewable Energy Approval and any other provincial or federal environmental legislation; (d) the plans and drawings of the Pre-construction Preparatory Work together with a cost estimate of such works; (e) the plans and drawings of the Collection System Work together with a cost estimate of such works; (f) a schedule, including a phasing plan, for construction and completion of the Pre-construction Preparatory Work and the Collection System Work; (g) an estimate of the projected cost for the Pre-construction Preparatory Work, the Collection System Work and Construction Period Work; (h) the specification to which the Municipal Infrastructure will be left upon completion of the Post-Construction Remedial Works to ensure the Municipal Infrastructure is in the same or better condition as it was upon completion of the Pre-Construction Preparatory Work; and (i) a preliminary estimate of the projected cost to complete the Post-Construction Remedial Works.”

### **Revision History**

<b>Revision</b>	<b>Date</b>	<b>Description</b>
1	14 Oct '16	Initial issue
2	23 Dec '16	Revised draft reflecting comments received from Loyalist Township to earlier submittal
3	7 Feb '17	Revised draft reflecting comments received from Loyalist Township to earlier submittal
4	28 Mar '17	Revised draft reflecting comments received from Loyalist Township to earlier submittal
5	2 May '17	Revised draft reflecting comments received from Loyalist Township, town hall meeting on Amherst Island, Amherst Island residents, and during 25 Apr '17 meeting with Loyalist Township representatives

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03 – Heavy Load Traffic by Road

04 – Site Safety Orientation

05 – Renewable Energy Approval Condition M

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# 1 Introduction

This Operations Plan for the Amherst Island Wind Project (the "Project") has been written by Windlectric Inc. ("Windlectric") and is provided to The Corporation of Loyalist Township (the "Municipality" or "Township") as prescribed by the Road Use Agreement<sup>1</sup> made between Windlectric and the Municipality on January 26, 2016, and commitments made by Windlectric in their Renewable Energy Approval application. The purpose of this Operations Plan is to demonstrate:

- a) how prudent and reasonable practices will be utilized to minimize the level of disruption, disturbance, and inconvenience to the Municipality's residents, given the scope of the Project;
- b) how the continuing function of roads and other municipal services and facilities will be maintained to the extent reasonably possible; and
- c) how the Municipality's residents' access to emergency services will be maintained at all times.<sup>2</sup>

This Operations Plan is comprised of: (i) a Traffic and Construction Management Plan, (ii) a Communications Plan, and (iii) a Public Safety Plan whose minimum contents are stipulated by section 40 of the Road Use Agreement. Multiple schedules, attached and incorporated herein, form an integral part of this Operations Plan. This Operations Plan is intended to be a living document that will be subject to updates and refinement throughout the Project.

Project elements include without limitation docks on Amherst Island and the mainland, private access roads, turbine foundations, wind turbines, meteorological towers, an electrical collection system, an operations and maintenance building, a substation, overhead electrical transmission lines, underwater electrical transmission facilities, and a grid interconnection facility on the mainland. An overview of the Project infrastructure layout is provided on the following pages in **Error! Reference source not found. Infrastructure and Figure 2 - Overview of Project Electrical Infrastructure**. These images are provided to orient the reader of this Operations Plan to the overall layout of the Project and to provide a frame of reference for subsequent discussions in this document as to specific turbines or locations.

Boundaries for the Township owned or controlled public rights of way, roads and streets, ditches, drainage ways, etc. collectively referred to as the "Road Allowances" in the Road Use Agreement were established by a licensed Ontario Land Surveyor in accordance with the Ministry of Transportation of Ontario Standard for boundary survey illustration. Project elements falling within the Road Allowances were designed to be fully contained within the minimum Road Allowance boundary dimensions established by survey. The tolerance for this survey data is within 0.3 metres. To ensure Project construction would not infringe Road

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<sup>1</sup> Road Use Agreement executed on January 26, 2016 between Windlectric Inc. and The Corporation of Loyalist Township available on the Loyalist Township's website ([www.loyalisttownship.ca](http://www.loyalisttownship.ca)).

<sup>2</sup> Road Use Agreement, Section 35.

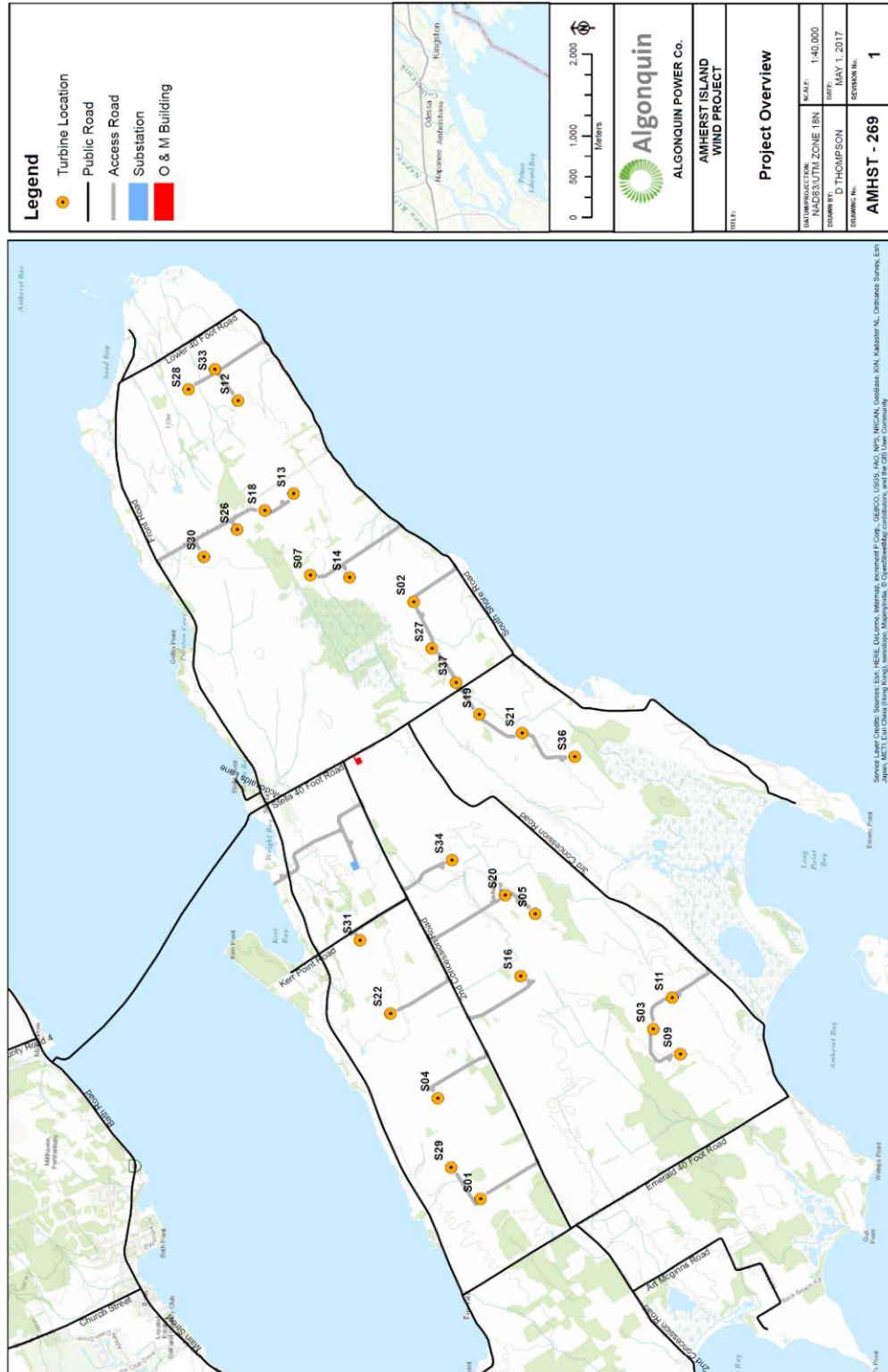


Figure 1 - Overview of Project Turbines and Surface Infrastructure





Allowances, Project elements have generally been kept at least 0.6 metres from the surveyed boundaries (other than, for example, access roads, and electrical collection system, both of which cross over the Road Allowance boundary and onto private property subject to existing landowner lease agreements with Windlectric). In areas where clearance of less than 0.3 metres to the surveyed Road Allowance boundary exists, Windlectric will execute further legal survey work or modify Project design to ensure the minimum 0.6m setback is honored. In all cases, the absolute boundary of the Project work will be held within the Road Allowance.

Consistent with its desire to minimize the level of disruption, disturbance, and inconvenience to the Municipality's residents, Windlectric has made several significant changes to the configuration of the Project during the course of development, including:

- Reduced the number of turbine locations from 33 to 26,
- Eliminated the prior turbine location closest to the Amherst Island Public School,
- Constructed a Project road from the Project dock to Second Concession Road in order to minimize traffic on Front Road, near the Village of Stella, and the Amherst Island Public School.
- Relocated the electrical collector system path to avoid the village of Stella, and
- Committed to utilize directional boring for collector system installation in the vicinity of St. Paul's Presbyterian church in order to protect the root structure of the trees in front of this Cultural Heritage Resource,

Significant construction sequencing and/or execution processes have been made for the same purposes, including:

- Eliminating most Heavy Load deliveries in front of the Amherst Island Public School and through the village of Stella (all Heavy Loads other than four sets of Major Turbine Components<sup>3</sup>),
- Relocating the collector system 'side of the road' where necessary to limit tree removal due to collector system installation to a single tree,
- Ensuring that the collector system is located on the south 'side of the road' in the vicinity of the Pentland Cemetery in order to minimize any risk of harm to this Cultural Heritage Resource,
- Committing to the elimination of blasting as a construction technique within the public road allowances,
- Committing to zero overnight road closures,
- Committing to minimize potential Project traffic interference with public ferry access,
- Committing to delay the start of all full Road Closures on any of the public school's bus routes until after the public school's buses have passed,
- Committing to utilize access road on private land from turbine S37 to South Road to reduce the impact to public roads from construction and deliveries,
- Committing to adjust the Project schedule to ensure minimal impact to community events, and

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<sup>3</sup> Turbine blades, nacelles, rotor hubs, and tower sections (each a "Major Turbine Component").

- Committing to a minimum 3m lane width for traffic during Single Lane Restrictions to ensure that emergency vehicles will always be able to pass by these work zones.

The following sections of this Operations Plan detail the Traffic and Construction Management Plan, Communications Plan, Public Safety Plan developed for the Project.

## **2 Traffic and Construction Management Plan**

Additional details of the Traffic Management Plan are provided as Schedule 02 (“Traffic Management Plan”) to this Operations Plan. That Schedule, along with the other Schedules incorporated in this Operations Plan, should be read in conjunction with the balance of Section 2 below. The Schedules form an integral part of the overall Operations Plan for the Project.

### **2.1 Haul Routes for Oversized and Heavy Loads**

See Schedule 03 for graphical representation of the Heavy Load routes to be utilized by the Project and Schedule 19 for a graphical representation of the Major Turbine Component delivery routes.

All Project deliveries from the Project island dock (except Major Turbine Component deliveries for turbines S30, S26, S18 and S13) will cross Front Road onto a Project road that provides access to the Project laydown area and Second Concession Road. All Project deliveries from the Project laydown yard will exit the yard to Second Concession Road. This routing greatly reduces the number of deliveries that will need to travel through the village of Stella, or in front of Amherst Island Public School. Additional benefits of utilizing this access road include:

- a straight-through path at the intersection of Front Road and Stella Forty Foot Road for those deliveries, and
- elimination of any construction-related disruption that otherwise would have been necessary for increased traffic on Front Road or turning from Front Road onto Stella Forty Foot Road.

Using a Project road rather than the Stella Forty Foot Road between Front Road and Second Concession Road minimizes the level of disruption, disturbance and inconvenience to the Municipality’s residents related to traffic at the main intersection in the village of Stella and in particular resident’s access to the ferry due to delivery of material and equipment.

The Project access road off of Stella Forty Foot Road to turbines S37, S27 and S02 will also be used as a delivery bypass to eliminate all Major Turbine Component and Heavy Load traffic from the southernmost segment of Stella Forty Foot Road and a segment of South Shore Road immediately east of Stella Forty Foot Road. This routing also eliminates the need for construction activities related to upgrading the bypassed segments of public road, and the need to upgrade the intersection of Stella Forty Foot Road and South Shore Road.

#### **2.1.1 Major Turbine Component Delivery Routes:**

The routes and the direction of travel for the delivery of Major Turbine Components are provided in Schedule 19 (“Delivery Routes for Turbines”). Minor turbine components (those turbine components other than the Major Turbine Components) will follow the Delivery Routes for Heavy Loads. The Major Turbine Components will follow the Delivery Routes for Turbines, described as follows:

- The Major Turbine Components for turbines S30, S26, S18, and S13 will arrive at the Project's island dock and turn left onto Front Road (eastbound) passing through the Village of Stella and onward to a Project access road to these particular turbines.
- The Major Turbine Components for turbines S31, S34, S20, S05, S22, S16, S04, S29, and S01 will arrive at the Project's island dock and cross Front Road onto the Project road that links to Second Concession Road. These components then turn right (westbound) on Second Concession Road to the appropriate Project access road.
- The Major Turbine Components for turbines S11, S03 and S09 will arrive at the Project's island dock and cross Front Road onto the Project road that links Second Concession Road. These component deliveries will then turn left (eastbound) on Second Concession Road, then turn right onto Stella Forty Foot Road (southbound), and then turn right onto Third Concession Road (westbound) until reaching the Project access road to these particular turbines.
- The remaining Major Turbine Components will arrive at the Project's island dock and cross Front Road onto the Project road that links to Second Concession Road. These component deliveries will then turn left (eastbound) on Second Concession Road, then turn right onto Stella Forty Foot Road (southbound) and then enter the appropriate private access road either on the west for turbines S19, S21, and S36 or east for turbines S37, S27, S02, S14, S07, S12, S33, and S28. The Major Turbine Components for turbines S14, S07, S12, S33 and S28 will continue southbound until turning left on South Shore Road (eastbound) before turning north onto the appropriate Project access road.

Windlectric evaluated alternatives for Major Turbine Component deliveries to S30, S26, S18 and S13 that would have further reduced the number of components travelling through the Village of Stella (the "Alternate Turbine Delivery Route").

One Alternative Turbine Delivery Route would have progressed to the eastern end of South Shore Road, turned northbound onto Lower Forty Foot Road, then turned westbound onto Front Road to approach the Project road for these turbines from the east. Unfortunately, Road Allowance geometry at the intersection of South Shore Road and Lower Forty Foot Road precludes use of the Alternative Turbine Delivery Route for Major Turbine Component Delivery to S30, S26, S18, and S13.

A second Alternative Turbine Delivery Route would have progressed down South Shore Road and turned north on the Marshall Forty Foot Road to make Major Turbine Component Deliveries to turbines S30, S26, S18, and S13. This route was not feasible due to existing bird habitat along Marshall Forty Foot Road that would have been negatively impacted by the roadway modifications necessary to make turbine delivery feasible along this route.

### **2.1.2 Heavy Load Delivery Routes:**

All Project vehicles not used for personnel transport are classified as "Heavy Load" trucks in the Traffic Plan. A subset of Heavy Loads, which are addressed separately in Section 2.1.1 above, are the vehicles carrying Major Turbine Components. Heavy Loads, exclusive of Major Turbine Components, include all material and equipment delivery trucks which do not carry turbine component deliveries (the "Heavy Loads"). Examples of these vehicles include (but are not limited to) rubber-tired cranes, aggregate

(crushed rock) delivery trucks, concrete trucks, float trucks for delivering or relocating heavy equipment such as excavators or directional boring drill rigs, water trucks, dry cement tankers, and trucks containing crane parts, tool containers, reinforcing steel bars, anchor bolts, medium-voltage pad-mount transformers, batch plant equipment, substation equipment, spools of electrical cable and minor turbine components (i.e. turbine components other than blades, tower sections, nacelles and hubs). The routes and the direction of travel for the delivery of Heavy Loads are identified in Schedule 03 (see drawing AMHST-207 “Delivery Routes for Heavy Loads”).

Spoils resulting from turbine foundation excavation will largely be replaced as ballast over the foundation and fill around it. Remaining spoils will be consumed in access road construction and/or distributed in the vicinity of their origination. Consequently, these materials will not be transported on Township roads and are not included in the Heavy Load assessment for the Project.

Heavy Load deliveries, exclusive of Major Turbine Components, will originate from either the Project’s island dock or the central staging and laydown area located on a private land access road between Front Road and Second Concession Road. These Heavy Loads will follow the same routes as those described above for the Major Turbine Components with the exception of Heavy Loads to turbines S30, S26, S18 and S13. Heavy Loads other than Major Turbine Components for those four turbines will take the same route as for turbine S33 but will continue along South Shore Road to Lower Forty Foot Road, travel north to Front Road and then west to the Project access road for these turbines. Heavy Loads, with the exception of four sets of Major Turbine Components, will not pass in front of the school or through the Village of Stella.

A table containing a breakdown of the different Heavy Load truck types by Municipal road segment is provided in Schedule 03 (“Heavy Load Traffic by Road”). Many of these trucks will be transported to the island by barge. It is currently planned that two barges will transport personnel, materials, and equipment for the Project throughout the construction period, and that each of the two barges will make five to six trips from the mainland each day. The actual number of daily barge trips will, however, vary depending on weather conditions, material delivery requirements, and any unplanned events or delays.

Some of the Heavy Load truck trips on the island will not originate from barge traffic because:

- Water trucks will be filled from Lake Ontario,
- Concrete delivery trucks will travel between the batch plant on the island and turbine foundations or other concrete placement locations, and
- Equipment utilized in road maintenance and other Project activities will overnight at either the laydown area established on the island or Project work areas that are not within the public rights of way.

### **2.1.3 Other Large Transports:**

In addition to the deliveries described above, residents may encounter transports moving larger equipment loaded on a trailer from one construction site to another. The width of the largest planned wide load is listed in Schedule 10 (“Largest Wide Load”). The drivers of the transport trucks moving over-width equipment will be instructed to give way to residents travelling on any narrow sections of public roads and will move to the side of the roadway in a convenient location to allow traffic to pass. Prior to movement of over-width deliveries, the construction site team will assess the planned route for



the movement. If such route is too narrow to allow on-coming traffic to pass safely, the movement will be performed using flag-staff and will be treated as a Traffic Interruption as that term is defined in Section 2.3 below and in Section 3.2.3 of the Traffic Management Plan detailed in Schedule 02.

The main turbine erection crane will be a Liebherr LG-1750 or equivalent rubber-tired crane. General specifications for this crane are provided in Schedule 16 (“Main Erection Crane”). This crane type provides excellent maneuverability on narrow public roads. In order to minimize any traffic interruption related to the main erection crane movement, this crane will be moved from site to site in a road configuration (and, for further clarity, the crane will not be moved on public roads with the boom installed). When this crane must move within the Township Road Allowances, such movement will be handled as a Traffic Interruption under Section 2.3 below and Section 3.2.3 of the Traffic Management Plan detailed in Section 02.

#### **2.1.4 Management of Inoperable Equipment in the Public Right of Way:**

The planned Public Road Modifications will generally restore the travelled surface of the Township gravel roads on Amherst Island to a 6 metre width so that bi-directional traffic can take place (up to and including the Largest Wide Load described in Section 2.1.3). See Section 2.2 below for description of this road restoration work. The exception to the 6 metre gravel road width restoration will be along South Shore Road.

At every location along the municipal roads that will be subjected to construction traffic, including the narrow sections of South Shore Road, there is an alternate route available to emergency vehicles to every location on the island. Nevertheless, Windlectric will ensure that heavy vehicle towing capability is maintained on the island during construction of the Project to ensure that any vehicle that becomes inoperable or stuck in the Township right of way may be promptly removed. This heavy vehicle towing capability will be in the form of a rubber-tired loader with towing capacity sufficient for the movement of any other inoperable vehicle involved in the construction work.

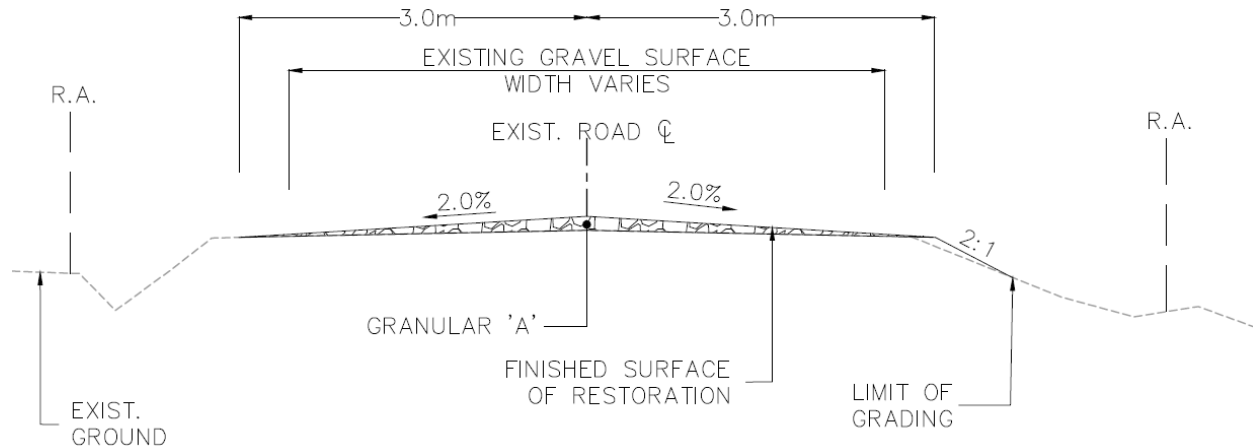
The single remaining hypothetical situation that could result in a complete elimination of road access to any point on the island would be the stranding of a Major Turbine Component Delivery along Third Concession Road at a time during which Emerald Forty Foot Road is impassable. This condition would cause properties to the west of the blockage to not be immediately accessible. To eliminate this risk, Windlectric will ensure that Major Turbine Component Deliveries along Third Concession Road only take place during times when Emerald Forty Foot Road is available as a detour route.

## **2.2 Public Road Modifications**

The planned Public Road Modifications will be fully contained within the surveyed boundaries of the Loyalist Township Road Allowances as described above or will extend onto private lands for which Windlectric has completed land control agreements.

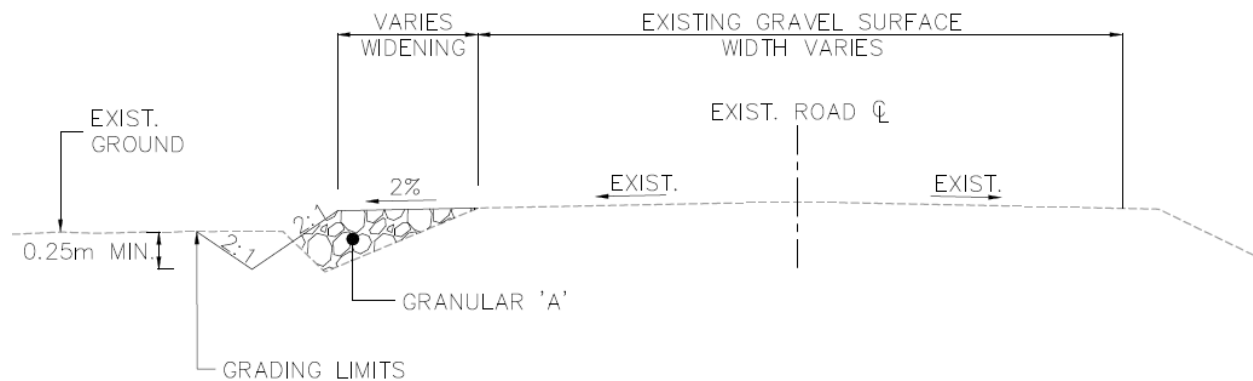
Existing gravel roads other than South Shore Road will be crowned and restored to minimum 6 metre width in the initial stages of the Project by stripping of vegetative overgrowth along the sides and shoulders of the current travelled way and the addition of compacted Granular A, aggregate to re-establish roadway crown. This work is generally illustrated in Figure 3 on the following page. This work will be performed within

the limits of the current roadway width at virtually all locations and will not impact adjacent drainage, nor will it extend beyond the surveyed Road Allowances. This work will be performed prior to use by the Project for Heavy Loads (other than as necessary to perform the road restoration work, and the gravel roadways utilized by the Project will be subsequently maintained by the Project to at least the minimum requirements of Ontario Regulation 239/02, as amended.



**Figure 3 – Typical Road Restoration (N.T.S.)**

In some areas, temporary road widening work, within the Road Allowances, will be required to facilitate Major Turbine Equipment deliveries. This activity will take place on portions of South Shore Road, the “s-curve” on Third Concession Road, and the southern portions of Dump Road. This temporary widening work is illustrated in Figure 4. Temporary widening work will be removed on the completion of Project construction.



**Figure 4 - Typical Temporary Road Widening (N.T.S.)**

In a limited number of areas, existing public road intersections will be temporarily modified to increase the turning radii in a direction of travel to accommodate Project traffic. These temporary turning radius enlargements are required to facilitate Major Turbine Component delivery. Work will either fall within the



Road Allowances or private property under agreement with Windlectric. These temporary turning radius enlargements will be removed after all turbine components have been assembled and commissioned.

Based on geotechnical investigations and survey work performed by Windlectric, existing paved roads that will be utilized for Project traffic (portions of Front and Stella Forty Foot Roads) are believed to have adequate structural capacity and width for Project needs.

Existing Township guardrails will not be affected by Project modifications to public roadways.

Culvert extensions will be required in a limited number of areas where existing public road intersections will be temporarily modified, temporary intersection bypass routes will be installed, and where road restoration work or temporary widening occurs. These culvert extensions will be accomplished by the Project contractor, using the same type of culvert material and sizing as currently exists in each location.

### 2.3 Public Road Closures and Delays

Windlectric is committed to take every reasonable measure - consistent with prudent wind energy practice, prudent road construction practices, and applicable law - to minimize the occurrence and duration of traffic impacts related to: (i) Traffic Interruptions due to delivery of Major Turbine Components, movement of other wide equipment, and very short interruptions to allow construction equipment to reposition in working areas; (ii) Single Lane Restrictions; and (iii) full Road Closures as those terms are defined below and in Section 3.2 of the Traffic Management Plan included as Schedule 02.

Advanced notice of construction activities that will affect usual traffic patterns, including notice of all Single Lane Restrictions, Road Closures and recommended detour routes will be provided as is more fully described in Section 03 (“Communications Plan”).

**Traffic Interruptions:** Very short term (less than 30 minute) closures of public road segment(s) will be required at various locations and times during construction of the Project. Traffic moving in the same direction as an over-width delivery will experience a much shorter ‘full stop’ interruption and will be allowed to proceed behind the over-width delivery. Traffic interruptions will be planned to start after ferry-bound traffic has passed through the Traffic Interruption road segment.<sup>4</sup>

Each Traffic Interruption will be staffed by a minimum of two traffic control flag persons at either end of the Traffic Interruption road segment. Flag persons will have knowledge of alternative routes available and the time that the Traffic Interruption is expected to conclude. The position of the flag staff will be selected to ensure traffic will not have to back-track in order to take advantage of the recommended alternative route.

Appropriate road signage, traffic marshals and flag-persons will be deployed during Temporary Interruptions. Advance coordination with the emergency services provider will be completed to minimize potential impact to services.

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<sup>4</sup> Project staff will not interrupt traffic flow in the direction of the ferry until 5 minutes after the time that a vehicle travelling from the point of interruption could safely reach the scheduled ferry departure from Stella (travelling at maximum permitted speed).

The primary Project activity anticipated to result in Traffic Interruptions will be delivery of oversize loads, including Major Turbine Components, main power transformer, erection crane components, and transmission poles. Approximate dimensions of the Major Turbine Components and their associated delivery vehicles are provided in Schedule 01 (“WTG Components Delivery Vehicle Dimensions”). Movement of some construction equipment within the Project site may also require Traffic Interruptions.

Characteristics and impact mitigations associated with these component and equipment movements include the following:

- Slow moving oversized load vehicles for the transportation of are expected to require rolling Traffic Interruptions affecting public roads ahead of the direction of travel of these vehicles for up to 20 minutes at a time (5 to 10 minutes will be more typical).
- Traffic will be allowed to follow these vehicles; however, traffic speeds will be reduced to less than 40 km/h until these delivery vehicles are able to turn off of the public roads onto the relevant Project access road.
- The Major Turbine Components are planned to be delivered Monday through Friday over an approximately seven-week period. Note there may be special conditions (e.g. weather interruptions causing a delivery to be rescheduled) which will require Major Turbine Component deliveries to occur on a Saturday.
- Plans related to such movements and any changes in schedule for such movements will be communicated in accordance with the Communications Plan.
- Oversized loads will move slowly through intersections and when entering or exiting a public road. A traffic spotter and/or flag person will be deployed for areas where sightlines are limited.
- The schedule for individual Major Turbine Component deliveries for turbines S13, S18, S26, and S30 that will travel through Stella will be coordinated with the ferry schedule. Transport vehicles will not enter Front Road to drive through the Village of Stella until shortly after the ferry has started its return trip to the mainland. Oversized load transport will be managed by a contractor site management representative designated as the traffic coordinator to ensure that vehicles adhere to the ferry-related restriction outlined above.
- Public traffic will be temporarily interrupted to allow the main erection crane and its primary components, as well as other construction equipment, to travel between successive Project access road entrances. Although the crane will be disassembled into its road configuration for these movements (i.e. the crane will not be transported with the boom up), traffic will need to be interrupted due to the width, speed, and turning radius of the crane and its component delivery vehicles.
- For safety purposes, the movement of oversized load vehicles must follow the prescribed routes. These vehicles will follow a pilot vehicle which may be an Ontario Provincial Police cruiser or other private escort vehicle depending upon transportation permit requirements and applicable law.
- Construction trucks carrying aggregate materials or concrete or other Heavy Loads will also reduce speeds as determined by road conditions and will, at all times, adhere to the posted speed limits on all Township roads.

- Performance of work under Single Lane Restrictions, as listed below, may involve periodic Traffic Interruptions as equipment or materials are relocated within a work area.

**Single Lane Restrictions:** Closures of public road segment(s) that will limit traffic flow to a single lane of traffic will be required at various locations and times during construction of the Project (a “Single Lane Restriction”). Single Lane Restrictions will be most often associated with electrical collector installation and road work activities.

Every Single Lane Restriction will allow single lane traffic with a minimum lane width of 3m width. Traffic will be permitted in alternating directions as necessary to mitigate residential traffic delays. Flag persons will be aware of the MTO ferry schedule and will give priority to traffic bound for the public ferry dock. During Single Lane Restriction traffic control, flag persons will be used, in compliance with Ministry of Transportation (MTO) *Ontario Book 7* traffic safety requirements. When Single Lane Restrictions continue for more than thirty minutes after sunset, illumination will be provided in accordance with applicable regulations.

Activities which may result in partial constraints of a public roadway (i.e. a Single Lane Restriction or Traffic Interruption) include, without limitation:

- Trenching along the roadside for the electrical collection system which does not require full road closure.
- Laying material, grading and compacting gravel on public roads to improve their strength and bearing capacity will be generally performed while maintaining single lane use by local residential traffic and emergency services.
- Culvert installation at access road entrances and culvert extensions, if required, will require partial blockage of the public road way.

For illustration purposes, examples of typical electrical collector system installation activity execution within a single traffic lane are provided in Figure 5 through Figure 8 below.



Figure 5 – Trenching Operations



Figure 6 - Cable Spool Trailer



Figure 7 - Trenching and Cable Placement



Figure 8 - Roadside Plowing



**Road Closures:** Full closures of public road segment(s) will be required at various instances during construction of the Project (each, a “Road Closure”). Road Closures are planned to occur during normal working hours. If the duration of a Road Closure continues for more than thirty minutes after sunset, area illumination will be provided in accordance with applicable regulations. Road Closures will not be left in place overnight.

The closed road segment will typically be less than 50 metres in length at any one time, and will occur within a working area that will typically be limited to 500 metres in length. In the case of electrical collector line installation, the closed segment will typically advance within the working area. Where a driveway will be temporarily cut-off within a working area, a steel plate will be used to maintain access to the public road. The length of time that an individual resident’s driveway will be blocked will most often be limited to durations of a few minutes. Affected driveways will be restored to original or better condition upon completion of the Project activities in the immediate area.

Each Road Closure will be planned with a detour route. Road closures will only be performed after the planned detour route has been inspected and confirmed to be available. Windlectric understands that Emerald Forty Foot is seasonally effected. Any detour using Emerald Forty Foot will occur only during times that the road is open for use by residents and emergency services.

Traffic Interruptions will not be planned on a detour route whose use is required by a concurrent Road Closure elsewhere. The possibility of Traffic Interruptions occurring on detour routes cannot be entirely eliminated due to the need to adjust the Project schedule to adapt to actual progress and unexpected changes in the Project plan. Traffic interruptions occurring on detour routes will always be performed with consideration to avoiding any interruption that might interfere with emergency services or public access to the departure of the public ferry.

Construction activities which will result in temporary Road Closures are planned to be limited to the following:

- Turning radius improvement to Third Concession Road at approximately 1.6 km west of Stella Forty Foot Road with an estimated duration of two working days,
- Electrical collector system installation and road improvements along South Shore Road from a point 1.3 km east of the intersection of Stella Forty Foot Road and South Shore Road to a point 2.4 km west of the intersection of South Shore Road and Lower Forty Foot Road with an estimated duration of fifteen individual working days, and
- Road improvements to Dump Road for a 0.8 km segment north of Second Concession Road with an estimated duration of three working days.

## **2.4 Waste Management and Hazardous Materials**

All waste will be promptly removed from the island in accordance with appropriate provincial legislation including Ontario Regulation 347, *General - Waste Management Regulation*.

Non-hazardous waste will be deposited in appropriately labeled and controlled receptacles located at the site laydown area, turbine locations, and substation. These waste receptacles will be provided and

maintained by a licensed third party contractor who will also be responsible for transport (utilizing Project barges) and reuse, recycling and/or disposal at an approved Ministry of Environment and Climate Change (MOECC) off-site facility as required by applicable law. Sanitary waste generated during the construction phase will be collected via portable toilets and wash stations supplied and maintained by a licensed third party contractor who will be retained prior to the start of construction activities.

Hazardous materials utilized in construction of the Project will include those typical of a heavy civil construction project, including liquid fuels, lubricating oil, blasting materials, etc.; insulating oil for the main power transformer (non-PCB); and limited quantities of some chemicals utilized in fiberglass fabrication and painting (resin, solvents, etc.) Handling, transportation, storage, and use of any hazardous materials for the Project will be in accordance with applicable regulations. All contractor personnel and subcontractors working at the site will be properly trained on the Workplace Hazardous Materials Information System (WHMIS) prior to the commencement of the work.

A dedicated receptacle meeting appropriate regulations and standards will be maintained at the central staging and laydown area for any hazardous waste. Hazardous waste materials, if any, will be transported to the mainland regularly by a licensed third-party contractor for recycling or disposal at a licensed facility.

There will be no long-term storage of waste on site during the construction of the Project and final disposal of waste will be conducted by a third-party contractor at an MOECC-approved facility. No waste will be deposited at the Amherst Island waste disposal facility and all third-party contractors involved in waste management will be prohibited from using the public ferry for their activities related to the Project.

## 2.5 Navigable Waters

The primary Project-related factor that has the potential to affect marine navigation in the North Channel between Amherst Island and the mainland is increased vessel traffic (which includes the Project's transport barges, associated tug boats and personnel vessels):

- Vessel traffic is governed by the *Collision Regulations of chapter 1416 of the Canada Shipping Act*. All Project marine equipment, whether anchored, at a dock, or under way, will comply with these regulations. During emergency situations (e.g. a 911 call) all Project marine traffic will yield to the public ferry. Dedicated Project docks will be constructed and utilized on both the mainland (temporary) and the island (permanent) so there will be no Project impact to use of the existing MTO ferry docks.
- There will be continuous communication between the Project marine vessels and the Frontenac II ferry (or any temporary replacement) in accordance with marine protocol and Collision Regulations.
- It may be necessary to have the outer mooring dolphins of the Project docks lit at night; this determination will be made by Transport Canada.
- All Project marine vehicles and Project docks must adhere to Transport Canada requirements at all times.

## 2.6 Road Maintenance

- Township roads with a gravel surface being utilized for Project activities will be maintained by the Project to at least the minimum standards set forth in Ontario Regulation 239/02, “*Minimum Maintenance Standards for Municipal Highways*”, as amended.
- At the end of each day during construction of the Project, the contractor will inspect public roads that were utilized for Project Heavy Loads and/or Major Turbine Component deliveries during that day and prepare a Public Road Daily Inspection Report using the form provided as Schedule 18 (“Form of Daily Public Road Inspection Report”) on the condition of the Heavy Load Routes and any Turbine Delivery Routes used that day. The Public Road Daily Inspection Reports will be made available to the Township’s Transportation and Solid Waste Manager upon request (including providing a daily email if requested).
- The Project contractor will inspect the condition of the public road at each site entrance being used at the end of the day and any excess mud, stone and debris will be cleared after the final vehicles have left the site road. Inspection sheets will be completed by contractor personnel to ensure that each entrance is clear before closing the site.
- In addition to the daily inspection above, Project construction personnel will monitor the condition of the roads and report any issues for coordination of remedial work to the contractor’s Roads Superintendent or designee.
- A dedicated road sweeper and dust control water truck will be maintained on-site and will sweep Front Road at the Project’s island dock access road at least twice per day and will move around the island to clean roads at private access road entrances as necessary. The Project’s mainland dock will be maintained in a similar manner.
- There will be a road maintenance crew with a grader deployed on roads being used for construction. The contractor will have equipment on site to maintain existing roads throughout Heavy Load and Major Turbine Component deliveries. The road maintenance crew will have their activities scheduled based on the daily traffic plan, but will also be dispatched to take care of reasonable road problem complaints.
- By-passes and temporary intersection improvements built for Project purposes will be blocked off with cones or barricades when not in use for Project traffic and will not be available for public use.
- All temporary intersection improvements, whether made available for use to non-construction traffic or not, will be signed in accordance with Ministry of Transportation (MTO) *Ontario Book 7* traffic safety requirements.
- Windlectric does not expect to impose any changes in intersection control for public traffic from current control measures in place. The contractor's Construction Superintendent will be in close communication with the Township's Transportation and Solid Waste Manager (or other Township designated representative) allowing them to address any concerns directly.
- In addition to the Projects efforts as outlined above, the construction manager will respond to any reasonable request by Township’s Transportation and Solid Waste Manager to correct any section of the road in which the condition of the road has deteriorated, or been left, in a condition that might reasonably be considered unsafe to the public.



- Complaints from all sources will be addressed via the Complaint Resolution Protocol in accordance with the requirements of the REA and Section 3.2 of this Operations Plan.
- Potential Road Failure - Given the structural condition of the existing gravel roads on Amherst Island, it is probable that structural integrity of some road sections, particularly the road segments with the heaviest Project traffic (as shown in Schedule 03), could deteriorate significantly as Project work progresses. At this point, maintenance thereof to at least the minimum standards set forth in Ontario Regulation 239/02, “Minimum Maintenance Standards for Municipal Highways”, as amended, will become problematic.
- Structural Road Maintenance Procedure - In segments of gravel roads where Windlectric determines structural improvements should be made because the existing road has failed under the fatigue loading of construction traffic, re-establishment of the road structure will be executed in accordance with specifications established by the engineer of record, and generally as follows: removal of failed and failing existing road bed material to a 150 mm depth or more, compaction of the subgrade at the base of that removed existing road bed section to achieve required density, installation of structural geotextile polymer grid, and then the build-up of the road structure with new Grade B, Type II aggregate.
- Structural Road Maintenance Schedule - This re-establishment of road structure will only be performed in one lane at a time so as not to impede regular traffic. Onset of frozen conditions will, of course, help mitigate road structural issues for a portion of the Project construction duration. This maintenance protocol will be followed through-out the project construction schedule as road sections fail.
- Project Closure Protocol - The project engineer of record will work with Township staff using generally accepted road maintenance measuring techniques to ensure the road integrity at the close of the project replicates that found in the balance of the road network on Amherst Island.

### 2.6.1 Winter Conditions

Windlectric recognizes that the Township’s regular winter road maintenance activities are planned and executed in accordance with Ontario Regulation 239/02, as amended, “*Minimum Maintenance Standards for Municipal Highways*”.

With the submittal of this Operations Plan, Windlectric requests that the Township enter into and administer a supplemental snow removal contract, on the behalf of and at the expense of Windlectric, to provide snow removal services over portions of the Project infrastructure within the Township Road Allowances during construction. The scope of the proposed snow removal contract would include, without limitation,

- Plowing Township roads utilized by Project traffic to the greater of their available width or 6 metres (as opposed to a minimum of available width or 5 metres under O. Reg. 239/02);
- Plowing Project infrastructure within the Road Allowances, such as widened intersections, bypass routes, and entrances to private access roads;
- Application of abrasive materials to the Project infrastructure within the Road Allowances during icing conditions; and

- Limited bulk snow removal within the Road Allowances where necessary for electrical collection system installation or to maintain sight lines (subject to appropriate permits and/or regulatory approvals).

Windlectric's contractor has engaged Morven Construction, Ltd., of Napanee for a variety of Project services, including snow plowing and de-icing on Project infrastructure upon private lands. As they will be performing similar work on this island, and will have equipment mobilized for that purpose, Windlectric requests that Morven Construction, Ltd. be included in the proposal solicitation process related to this snow removal contract.

### **2.6.2 Half-Load Conditions**

Windlectric is aware of the reduced load restriction of 5 tonnes per axle that are effective on Township roads from 1 March through 30 April each year due to By-law 2003-12, "*A By-law to Designate Dates for a Reduced Load Period for commercial vehicles or trailers on Municipal Highways*". While Project erection activities are expected to be complete prior to the inception date for load restrictions, schedule delays could potentially push completion of turbine erection work past 1 March. Such an occurrence would make movement of the primary erection crane(s) contravene the by-law restrictions, as its 8-axle carrier (the road-mobile portion of the crane) has axle weights ranging from 5.5 – 6.5 tonnes (0.5 – 1.5 metric ton per axle exceedance over required weight limits) when it is stripped down to its minimum weight (with outriggers removed and transported separately). Specifics as to this crane are provided in Schedule 16 ("Main Erection Crane"). See pages 12 and 13 for normal and stripped crane carrier weights, respectively.

Windlectric requests that, should Project construction schedule require movement of primary erection crane(s) over Township roads between March 1<sup>st</sup>, and April 30<sup>th</sup>, 2018, that

1. The Township's Director of Engineering Services grant exemptions, pursuant to Part III of the by-law to the load restrictions imposed for the dates and routes as reasonably proposed by Windlectric.
2. That such exemptions be subject to Windlectric moving the primary erection crane(s) carrier unit at its minimum weight as outlined above and repairing any resultant damage to the Township roads.

## **2.7 Impact Mitigation**

The following section outlines further specific mitigation measures that will be utilized to minimize the level of disruption, disturbance and inconvenience to the Municipality's residents and to reduce the potential impacts from Project activities. The following section provides details of unique mitigation and communication plans with respect to specific stakeholders, such as the school, agricultural traffic, public parking, and community events. A very important component of the overall Project impact mitigation will be the implementation effectiveness of the Communication Plan (Section 3), including the handling and resolution of any stakeholder concerns or complaints, the process for which is specifically detailed in Section 3.2.

### 2.7.1 Bicycle Traffic

- Informational materials with maps identifying construction road traffic routes will be provided at various locations in the community including the post office, museum, ferry terminal and others as described in Section 3 (Communications Plan).
- All site personnel will be warned to pay particular attention to cyclists during their mandatory site safety orientation prior to commencing work and will be periodically reminded at daily morning site meetings. Daily morning site meetings are mandatory and will be used to disseminate new information and to re-enforce existing site rules. Sample representative content of the mandatory site safety orientation meeting is provided in Schedule 04 (Site Safety Orientation).
- All construction traffic will be instructed to be courteous to cyclists and to provide them the right of way in accordance with the site construction rules. Interaction between Project-related traffic and pedestrian and cyclist activity on the public roads will be governed by specific Contractor safety policies that will include the following measures whenever construction vehicles encounter pedestrians or cyclists on the public roads: (i) a maximum vehicle speed of 20 km per hour within 50 metres of a cyclist or pedestrian; (ii) a minimum separation of 2 metres when passing a cyclist or pedestrian, and (iii) construction vehicles will remain behind cyclists or pedestrians until it is safe to pass. It will be a policy of the Project contractor that failure to comply with these safety rules will be grounds for driver dismissal from the Project.
- Areas of active construction activity on private land will be off-limits to bicycle traffic and will be clearly indicated as such. Bicycle traffic on public roadways will be treated as vehicular traffic and directed accordingly through active construction sites.

### 2.7.2 School Functions

- Prior to the start of major construction, a coordination meeting will be scheduled with the school principal to review traffic management and safety plans.
- Regular meetings will be organized with the school principal or other designated representative(s) to provide advance notice of traffic routing and schedules. These meetings will be scheduled by mutual agreement and will occur as frequently as requested by representatives of the school.
- Construction work will be planned in order to mitigate any impact on special school functions and these mitigation plans will be communicated to the site personnel via the daily morning meetings leading up to the school functions.
- The school representative will be invited to attend the Project daily coordination meeting to communicate directly with site staff if they wish. School staff will have access to the site construction planning map referred to in Section 3 (Communications Plan). As soon as practicably possible, the school principal and any other school representatives so designated, will be oriented to the Project's Communication Plan, specifically those sections that relate to the two-way access to multiple channels for providing the Project team with feedback including: the Complaint Response Protocol, the CLC, and the CWG, email to the Project team at [Windlectric@amherstislandwindproject.com](mailto:Windlectric@amherstislandwindproject.com), or calling the Project's toll-free number at 1-844-379-7740.

- A calendar of scheduled school functions including but not limited to bus times, professional development days, parent nights, and theatrical productions will be posted in a location of high visibility at the site health and safety trailer and reviewed regularly. Site management will bring attention to special dates as required.
- In the event of an unplanned school event such as school closure due to mechanical/electrical problems at the school or snow day, the school will have the direct cell phone numbers of the senior site management team who will immediately review construction planning for the day and respond reasonably, in relation to traffic management and safety.
- During transportation of the Major Turbine Components in front of the school, a traffic safety monitor will be positioned near the school entrance to ensure traffic flow is maintained and safety is regulated at all times. This traffic safety monitor will be in constant contact with the site manager and transportation coordinators.

### 2.7.3 Student Transportation

- Presently, public school bus services on the island are provided by two 30 passenger buses for senior students and one bus for the Amherst Island School.
  - The senior student bus operates in the morning from 6:30 am to 7:00 am, with one bus on each side of the island, and then utilizes the public ferry to take the senior students to their school on the mainland. In the afternoon, the senior student buses return to the island at 4:00 pm.
  - The Amherst Island Public School bus travels on the island in the morning from 7:20 am to 8:25 am. The Amherst Island Public School drops off students between 3:30 pm and 4:35 pm.
- The site team will coordinate with school officials to ensure appropriate safety precautions are set in place for any construction activities which may impact student transportation.
- The TriBoard Student Transportation Service, who is responsible for the public school's bus services on the island, was contacted as part of the development of this Operations Plan. The TriBoard has requested that they be notified of any Road Closures at least one week in advance so that their drivers may make route adjustments. Weekly notification of Road Closures will be provided to the TriBoard as part of the Communications Plan. The Project team will co-operate with the TriBoard if any reasonable change is requested to this notification plan.
- There will be no impact to school buses on their way to the ferry in the morning as any Road Closure on a school bus route on school days will be delayed until both school buses have passed (a Single Lane Restriction may be in place to initiate work). Furthermore, deliveries of Major Turbine Components will be scheduled to ensure that school bus service to the ferry will not be interrupted.
- Turn-arounds will be provided on either side of each Road Closure to ensure that school buses can complete all their regular drop-off stops using modified routes if necessary. These turn-arounds will be provided either using existing driveways off of public roads, nearby existing intersections, or via a specifically constructed turn-around feature in the road allowance. These latter specifically constructed turn-around features may incorporate existing turn-offs to agricultural fields.

#### **2.7.4 Agricultural Traffic**

- Types of agricultural traffic expected are transporters with animals, herds or flocks on foot, and farming equipment. Seasonal agricultural traffic will be taken into consideration in the day-to-day construction planning for the Project.
- The site team will communicate closely with farmers as per the Communications Plan, and will request advice as to the agricultural traffic to be expected. This information will then be coordinated with the construction management team during daily meetings and with the general site personnel during mandatory daily morning meetings.
- Agricultural traffic awareness training will also be provided to each worker during their mandatory pre-work site orientation meeting. This training will include detailed communicated to workers regarding the timing, types, size, location, speed and extent of agricultural traffic to be expected.
- The site Safety Supervisor will coordinate with local farmers to understand their individual needs and work to mitigate the impact. This will include providing farmers with phone numbers to call in advance of particular equipment movements as well as regular meetings.
- If a large piece of agricultural equipment such as a tractor or combine does encounter a construction transport vehicle, the construction vehicle will pull over as far as possible onto the shoulder and come to a complete stop to allow the farm equipment to pass. If there is still not enough room the construction vehicle will summon a pilot vehicle or spotter and back up to a suitable location where the farmer can pass.

#### **2.7.5 Vehicular Traffic to and From the Public Ferry Docks**

- Mainland: A traffic coordinator will be located on the mainland at all times that the Project barges are active to ensure construction traffic does not impede commuter traffic to and from the MTO public ferry on Highway 33. The mainland traffic coordinator will marshal traffic between Project parking areas and the Project's mainland dock.
- Island: A traffic coordinator will be located at the intersection of Front Road and the entrance to the Project's island dock at all times to control the timing of Project traffic travelling towards the public ferry dock area to ensure that construction traffic does not impact either ferry-bound traffic at the intersection of Front Road and Stella Forty Foot Road, or access to the pre-boarding area.
- The traffic coordinators will ensure that Project drivers are aware of protocols and all public traffic and safety implications. Also, during periods of heavy construction traffic activity, (i.e. delivery of Major Turbine Components) a traffic coordinator will also be located in these locations on a full-time basis. During all other periods, various other construction contractor supervisors will be trained and responsible to act as traffic coordinators in the event such coordination is required.

#### **2.7.6 Parking and Public Ferry**

- There will be sufficient parking areas at the Project's mainland dock and staging yard for construction traffic preparing to board the construction barge. This provision avoids traffic congestion on Highway 33.
- After construction of the Project's island dock, no construction vehicles will be permitted to use the MTO public ferry or to park at either the island or mainland MTO public ferry terminal parking area.

- Site construction personnel will park on the mainland and be bussed to/from the Project's mainland dock, transit to/from Amherst Island on Project barges, and to/from the Project's island dock to the laydown area. Crew trucks and vans will be used on the island for personnel carrying tools and other equipment.
- Windlectric and its subcontractors may use the MTO public ferry for non-construction traffic to and from Amherst Island including, without limitation, for project management, consultants, surveying, planning, engineering, and compliance monitoring personnel. This usage is expected to generate average usage on the order of 10 – 12 vehicle round trips per day.
- Work vehicles and equipment brought to the island for crew and equipment transport will be parked at the site trailer offices, the construction laydown areas, and at work areas during the construction period. Construction equipment will also be parked at turbine sites and on private access roads during the construction period.

Windlectric has read and reviewed Loyalist Township Bylaw no. 2007-031, as amended, pertaining to parking matters on public roads. As part of this Operations Plan, Windlectric would:

1. Declare via signage in accordance with the requirements of MTO Book 7 that temporary no parking zone(s) exist within active, demarcated, Project work zones during planned Single Lane Restrictions and Road Closures.
2. Install temporary no parking signs to support safe transportation of Major Turbine Components between the Project's dock entrance and the Project's access road to turbines S30 on up to eight weekday dates between 1 December 2017 and 28 February 2018. In order to post these temporary no parking zones:
  - a. No less than three working days prior to the delivery of certain Major Turbine Components, the Windlectric Site Manager would submit a request to the Loyalist Township Public Works Manager in person, which request would contain a map detailing the route of the proposed delivery and zone of the proposed parking restriction, the date, start time and duration of the proposed restriction, and the proposed signage to be installed. Windlectric would request a Loyalist Township reply (consent, comment) to the application within 24 hours of submission (on a working day).
  - b. If requested, a meeting would be arranged between the Windlectric Site Manager and the Loyalist Township Public Works Manager to review specific details of the requested restriction.
3. Windlectric will place portable signage along the no parking zone day before the Major Turbine Components delivery. Signage shall be removed immediately after transport vehicles have returned to the Projects staging area following completion of the delivery. The no parking signage will follow the dimensional and technical specifications for fire route signage found in Loyalist Township By-law 2007-31, Schedule "A", but with the phrase "Fire Route" replaced with the phrase "Construction Route".

4. Any upcoming temporary parking restrictions will be communicated to the community as part of the regular traffic information updates provided in accordance with the Communications Plan.
5. In addition to the above communication of parking restrictions via Communication Plan updates, the traffic coordinator working for the Windlectric team will be stationed along the subject Delivery Route early during the day of the Major Turbine Component delivery to advise residents of the then-current temporary restriction.
6. The Project will rely upon enforcement provisions of Section 29 of the by-law as may be needed or requested.

#### **2.7.7 Community Events**

1. The Project team is aware of the community events listed in Schedule 12 (“Amherst Island Community Events”).
2. No construction activities are permitted for any Sunday.
3. No construction activities are permitted after 8:00 pm (with the exception of those activities listed in Section 2.9 (Hours of Operation)).
4. Processions related to special church services (i.e. weddings and funerals) should be coordinated by contacting the Windlectric Site Manager at (613) 985-4466. The Project team will take reasonable steps to minimize (the goal will be to eliminate) the impact of traffic disruptions on these processions if sufficient advance notice is received.
5. As Windlectric staff become aware of special church services, or other community events not listed on Schedule 12 and known as of the publication date of this Operations Plan, the Project team will take reasonable steps to minimize the Project impact on these events.
6. In all cases, and to the extent possible, Windlectric staff will respond to persons involved in public community events in order to fully understand the timing and location implications of the event (i.e. parking, traffic routes, etc.), such that construction activities can be re-scheduled or otherwise planned to minimize the impact on these events to an extent that is reasonably possible.
7. A comparison of the current planned schedule for the Project Construction and known community events indicates the following overlaps that are mitigated as follows:
  - a. To ensure that there is no interference with the Fish Fry at St. Paul’s Presbyterian Church on September 3, 2017, the Project will not use Stella Forty Foot Road on this date after 3:00 pm.
  - b. The Walling and Carving workshop on Saturday, October 21 is not located near any planned Project activities except Delivery of Major Turbine Components to S30, S26, S18 and S23. Delivery of Major Turbine Components along Front Road to these sites will not be performed on Saturday, October 21.
  - c. To ensure there is no interference with St. Paul’s Christmas Bazaar on Saturday, November 18, 2017, the Project will not deliver Major Turbine Components along Front Road on this date.



### **2.7.8 Wells**

Shore wells and associated water lines occur along South Shore Road and a portion of Front Road. Prior to the start of construction, Project staff will endeavor to locate any such facilities by consulting with homeowners along these routes and physical inspection.

When electrical collection line installation crosses such water lines, vacuum excavation techniques will be used to expose the water line. If a water line must be cut for Project installation, or in the event of accidental damage, Project will repair any damage to equal or better conditions. The Project will also have sources of potable water available to provide in the event of a service disruption.

No damage is expected to water lines from construction traffic. In the event of known water line burials that are extremely shallow, the Project will evaluate placement of steel plates on the roadway surface (with appropriate signage) for protection of the water lines.

Similarly, no damage is reasonably expected to existing dug or drilled wells from construction activities as a result of Project construction activities.

## **2.8 Enforcement of Speed Limits and Traffic Management Plan Training**

The Site Safety Supervisor will have the authority and responsibility to ensuring that all Project staff comply with public and Project-specific speed limits, and obey traffic rules in accordance with the Operations Plan. The Project's employee training procedures and enforcement policies are described in Section 4.4 ("Employee Training and Enforcement").

As noted in Section 3.3.12 of Schedule 02, a mobile radar-based speed tracking system (Traffic Logix SafeSpace Cruiser or equivalent) will be deployed in varying locations around the island during Project construction to increase awareness of travel speeds.

## **2.9 Hours of Operation**

Construction activity will take place within the time periods specified in the Municipality's noise bylaw 2011-6 (as amended by bylaw 2012-046). There are, however, circumstances when activities directly or indirectly related to the Project will or may occur outside of these hours as outlined below.

### **2.9.1 Emergency Response**

As is recognized by the noise bylaw, certain emergency service responders including ambulance, police, fire trucks, or helicopter ambulance may operate outside of the standard hours of operation.

### **2.9.2 Turbine Foundation Preparation and Foundation Curing**

Given the expected climatic conditions during winter construction of some foundations, the use of heating systems to thaw subgrade, melt snow accumulations, and de-ice reinforcing steel and forms will be necessary before concrete placement. Additionally, supplemental heat will be required during initial stages of concrete curing to prevent freezing of the newly-placed concrete.



In either instance, heat would be provided by fuel-fired equipment, similar in size and noise emissions to a trailer-mounted electrical generator. As the Project's turbines are generally remote from residential locations (minimum 550 metres), noise impact to residents would be minimal.

### **2.9.3 Turbine Foundation Placement and Finishing**

Each wind turbine foundation is placed in a continuous process which cannot be interrupted. Concrete delivery will begin early in the morning from 7:00 am onwards. Based on the volume of concrete required for each foundation and the capacity of delivery trucks, concrete placement should be complete by 2:00 pm each afternoon. A maximum of two foundations are anticipated to be placed each day. These placements will be planned to complete within the normal working day and concrete batch plant operational hours must end at 7 pm in accordance with the conditions of the REA permit. For reasons of unplanned delays, a concrete truck or trucks that fill near the end of the batch plant's operational hours, it is possible that transit and discharge times will push completion of concrete discharge from that truck or trucks beyond normal working hours. Additionally, if concrete delivery takes place near the end of normal working hours, the time required to finish that concrete and put curing measures in place may extend beyond normal working hours.

In the case of concrete delivery, vehicle engines would be operating for the concrete truck or trucks and associated concrete pumping or conveying equipment. In the case of finishing concrete or application of curing measures, activities would involve only manual labor. In either instance, location of Project turbines relative to residences (minimum 550 metres), would mitigate any noise impact to residents. It is estimated that this scenario of hours of operation excursion may occur two to three times during the foundation construction period.

### **2.9.4 Turbine Erection**

During the process of erecting a wind turbine, an individual lift must be completed once it has commenced and there are certain specific erection milestones which have to be completed once a preceding activity has been performed (for example, the nacelle must be placed in position once the upper tower section is installed). Erection work will be planned to allow completion of activities by the end of normal daily working hours. On occasion, due to weather or mechanical delay, or unexpected fit-up issues, there is a possibility that erection activities will have to proceed beyond normal working hours in order to complete a lift or related sequence of lifts.

During erection activities, primary noise sources will be a) the engines of equipment that is running (cranes, light plants, etc.) and b) the operation of torqueing/tensioning equipment (impact and hydraulic wrenches) used in bolting primary turbine components together. As the Project's turbines are generally remote from residential locations (minimum 550 metres), noise impact to residents would be minimal. It is estimated that this scenario of hours of operation excursion may occur four to five times during turbine erection activities.

### **2.9.5 Main Transformer Fill**

The Main Power Transformer ("MPT") will be located within the Project's island substation and must be shipped partially disassembled and empty of oil. Once assembled on site, it must be filled in a process that involves drawing a vacuum within the tank, holding that vacuum for a prescribed period to pull any moisture out of the core, then slowly filling the tank and conservator volume with oil. This oil filling process cannot be interrupted while underway and will take longer than a single work day to

complete. This is a one-time task that will occur within the substation boundaries near the end of substation construction.

Operation of vacuum and liquid pumps will be necessary for this task. These items of equipment emit relatively modest amounts of noise. This excursion of the hours of operation under the by-law will occur once during the Project construction period.

#### **2.9.6 Nightshift Electrical and Commissioning Work**

Nightshift electrical work or commissioning activity is not currently planned to be required during Project construction. However, it may become necessary to perform such work at the Project island substation and/or at some of the turbine sites in order to maintain Project schedule.

These activities will be limited to work that can be carried out with hand-tools, perhaps supported by electrical generators. The nature of this work, and the relatively large distance between the location(s) of this work from noise receptors, will ensure that such work will not disturb residents.

#### **2.9.7 Operations Outside of Noise By-Law Time Limits**

For the limited activities and contemplated circumstances outlined above, Windlectric requests Township approval of the following:

1. Applications for Exemption – Windlectric requests that this Operations Plan serve as an application to the Director of Administrative Services for The Corporation of Loyalist Township for two exemptions under Section 5.4 of the Township’s By-Law 2011-6, “*A By-law to control noise*”, as amended. One application for exemption is for the activities described in 2.9.2 and 2.9.3, and is for the time period from 15 September 2017 through 14 March 2018. The second application for exemption is for the activities described in 2.9.4 through 2.9.6, and is for the time period from 1 November 2017 through 30 April 2018. In both instances, the overall duration of the exemption window is designed to encompass the Project’s scheduled occurrence of the activities listed. Actual utilization of either exemption would be limited to discrete activity dates within that overall schedule window.
2. Approval of Exemptions – Windlectric requests the Director of Administrative Services for the Corporation of Loyalist Township approve the two exemptions requested.
3. Actual Exemption Event Township Notification – During execution of the Project work, if Windlectric becomes aware that one of the exempted activities may or will occur outside the noise bylaw time limits, the Project Site Manager will notify the Township’s Public Works Manager via either a cell phone or a provided after-hours contact phone number. If the Township’s Public Works Manager is not available by phone, this notification shall be made fax transmission, text message, or email. The notice will be transmitted as soon as practicable after the Site Manager becomes aware that such an event may occur. The notice provided will include the location of work to be performed, the nature of work, and the estimated duration of work to occur outside of the bylaw limits.
4. Actual Exemption Event Public Notification – Windlectric will also notify the general public of the pending circumstances and excursions above as soon as practicable after it becomes aware of same, using the general provisions of the Communications Plan (i.e. Facebook, Twitter and the Project web-site).

5. Mitigation – During the occurrence of such work outside of the noise bylaw time limits, Windlectric will utilize commercially reasonable efforts to minimize the duration of the occurrence and the noise generated by the ongoing work activities.
6. Post-event Notification – Within twelve hours of completing work that occurred outside the noise bylaw time limits, Windlectric will notify Township staff and the general public of the time such work was completed using the notification processes in steps 3 & 4 above.

## 2.10 Construction Noise Mitigation

Sources of noise from typical wind farm construction activities include, but are not limited to:

- Foundation construction - excavators, loaders, steel transport on flatbed trucks, concrete trucks, concrete tele-belt or pump trucks, dewatering pumps, crane, compaction equipment, mechanical rock breakers, portable light plants, and blasting;
- Road construction - bulldozers, loaders, motor graders, gravel trucks, smooth drum and sheep's foot rollers, and portable light plants;
- Trench construction – excavation by trencher, excavator, or vacuum truck; trucks for cable delivery and placement; loader and compaction equipment for backfilling; directional boring machines and materials delivery, and portable light plants;
- Electrical installation – delivery trucks, hydraulic crimping equipment, generators, and portable light plants; and
- Wind turbine erection - multiple cranes, impact wrenches, hydraulic pumps for tower bolting equipment, electrical generators, and portable light plants.

Noise during construction will be unavoidable, but the contractor will take all reasonable measures consistent with prudent wind energy practice in order to mitigate noise impacts. Such efforts include: optimizing work practice efficiency to reduce equipment run times, controlling the amount of re-work through the use of quality controls, ensuring all equipment is serviced and operating properly, and ensuring all regulatory compliance noise suppressing equipment is installed and functional by performing regular equipment inspections and audits.

Prior to electrical collector system trenching work along public roads near households, the trenching crew foreman will personally visit each residence in the day's work area to make sure occupants are aware of the pending activity, and to provide a description of the anticipated activities and their duration. This day-of-the-work courtesy notice will be in addition to notices provided in accordance with Section 3 (Communications Plan) of this Report.

The construction schedule will be set to ensure that construction noise does not interfere with the annual Emerald Island Music Festival. This Festival is located at 12675 Front Road and is generally scheduled for the first weekend following the August long weekend (next summer's festival is August 11 to 13, 2017). The location of the festival is 1,800 metres from the nearest potential construction activity. At this distance, the construction work will be barely audible but to reduce general disturbance the contractor will avoid particularly noisy activities at the nearest turbine (S01, S29 and S04) during these days.

## 2.11 Road Dust Control

A water truck will be on-site full time once road construction begins until completion of construction activities. The water truck route and water spraying activity will be planned based on road conditions and the work planned for the day. The water truck will also be dispatched to locations where additional dust control is required. All water for construction purposes will be drawn from Lake Ontario at approved locations.

The concrete batch plant will be equipped with Best Available Control Technology (BACT) to control fugitive dust from normal operations and meet all applicable law and permit requirements. Conveyors used for stockpiling aggregate materials will employ dust collection systems including discharge chutes to mitigate fugitive dust. Water will also be used at the batch plant and on stockpiles to suppress dust. The contractor will make routine inspections and prepare an audit including dust mitigation measures being employed on the Project. This audit of environmental controls will identify if a control measure is in place and functioning and if corrections identified from previous inspections have been completed. This audit will be included with the inspections of Erosion and Sediment Controls and shared with the Municipality's Engineer. The Township's Engineer will have the inspection schedule and may witness any and all inspections at his or her discretion.

## 2.12 Impact to Trees and Vegetation Within Municipal Road Allowances

Trees in the public road allowances may be impacted by specific Project-related activities including: (i) installation of the electrical collector system, (ii) removal of trees located at turns in the road that will interfere with Major Turbine Component Deliveries, (iii) removal of trees located at entrances to new turbine access roads, and (iv) trimming of overhanging branches that are expected to interfere with Major Turbine Component Deliveries. The revised arborist's report regarding tree removals, which is based on the updated alignment and configuration of the electrical collector system, is included as Schedule 13 (Tree Removal in Municipal Road Allowances) and illustrated in Figure 9 below. Any Emerald Ash Borer affected tree material will be removed in accordance with the applicable Canadian Food Inspection Agency guidelines.<sup>5</sup>

**Trees and the Electrical Collector System:** The trees along the electrical collector path in the public road allowance were reviewed by a professional arborist, and the location (particular side of the road) of the electrical collector system was adjusted in order to minimize damage to the roots of existing trees in the public right-of-way. Directional boring will be utilized in the area of St. Paul's Church in order to avoid detrimental impact to the trees on either side of Stella Forty Foot road. As a result of these electrical collection system design choices, only one tree must be removed to facilitate electrical collector system installation. The Project will obtain a tree permit for the tree to be removed if required by the Loyalist Township's Tree By-Law and tree replacements will be made in accordance with such tree removal permit.

The Project will obtain a Tree Permit from Loyalist Township for each tree greater than 15 cm diameter as measured at chest height that the arborist determines may experience 'Moderate' negative impact from

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<sup>5</sup> Available at [www.inspection.gc.ca/plants/plant-pests-invasive-species/insects/emerald-ash-borer/faq/eng/1337355937903/1337356019017](http://www.inspection.gc.ca/plants/plant-pests-invasive-species/insects/emerald-ash-borer/faq/eng/1337355937903/1337356019017)

electrical collector system installation if required by the Loyalist Township's Tree By-Law and will plant replacement trees in accordance with such permit(s).

**Tree Removal To Allow Major Turbine Component Deliveries and at Access Road Entrances:** A list of trees within the public road allowance that will be removed due to the Project's turbine delivery or access road construction activities is also provided in Schedule 13 (Tree Removal in Municipal Road Allowances). Most of these have a diameter of greater than 15 cm diameter at chest height, but some smaller trees are included in the report. These trees will be removed to allow either Major Turbine Component deliveries or construction of the private access roads to turbine sites. The Project will obtain a tree permit for each tree removed if required by the Loyalist Township's Tree By-Law and tree replacements will be made in accordance with such tree removal permits.



Figure 9 - Tree Removal in Municipal Road Allowances

**Tree Trimming to Allow Delivery of Major Turbine Components:** The Major Turbine Component delivery trucks require a height of up to 5.7 metres and a width of 4.4 metres for zero clearance travel in a straight line as outlined in Schedule 01 (WTG Component Delivery Dimensions). A Certified Arborist shall review the travel routes and prune trees with branches that enter into the traveled roadway as necessary to achieve required horizontal and vertical clearances for the deliveries that will transit that route. If any tree requires removal due to pruning, that tree shall be identified prior to pruning to Windlectric and they will notify the Township.

The Project will obtain a Tree Permit from Loyalist Township for each tree that is greater than 15 cm diameter as measured at chest height that the arborist determines may experience ‘Severe’ or ‘Moderate’ negative impact due to trimming, if any. The Project will plant replacement trees in accordance with such permit(s).

The following locations have tree cover which will be measured for transport clearance to further assess the need for tree trimming:

- Front Road approximately:
  - 930 m west of Stella Forty Foot Road
  - 720 m west of Stella Forty Foot Road
  - 225 m east of Stella Forty Foot Road
  - 290 m east of Stella Forty Foot Road
  - 536 m east of Stella Forty Foot Road
  - Foot of Preston Cove
  - 700 m west of Lower Forty Foot Road
  - Intersection with Lower Forty Foot Road
- South Shore Road approximately:
  - 230 m east of Stella Forty Foot Road
  - 450 m east of Stella Forty Foot Road
  - 550 m east of Stella Forty Foot Road
  - 700 m east of Stella Forty Foot Road
  - 1450 m east of Stella Forty Foot Road
- Third Concession Road approximately:
  - 600 m west of Stella Forty Foot Road
  - 840 m west of Stella Forty Foot Road
  - 3750 m west of Stella Forty Foot Road
- Second Concession Road approximately:
  - 850 m west of Stella Forty Foot Road
  - 1150 m west of Stella Forty Foot Road
  - 2400 m west of Stella Forty Foot Road
  - 2700 m west of Stella Forty Foot Road
  - 4540 m west of Stella Forty Foot Road
  - 5450 m west of Stella Forty Foot Road
- Stella Forty Foot Road approximately:
  - In the vicinity of St. Paul’s Presbyterian Church

## 2.13 Cultural Heritage Features

The mitigation measures related to Cultural Heritage Features described herein are based upon the recommendations of the Heritage Assessment Report (as modified by REA Amendment 4), the further recommendations of the Ministry of Tourism, Culture and Sport. The Heritage Assessment Report is available on the Project website<sup>6</sup>.

The Cultural Heritage Features exposed to Project activities are:

<u>Cultural</u>	<u>Heritage</u>	<u>Location</u>	<u>Item</u>
<u>Landscapes (CHL)</u>			
CHL 1		Village of Stella	Related structures
CHL 3		St. Paul's Presbyterian Church	Related structures
CHL 4		Ferry Landscape	Related structures, vista
<u>Built</u>	<u>Heritage</u>		
<u>Resources (BHR)</u>			
BHR 1		1830 South Shore Road*	Structure
BHR 2		2090 South Shore Road*	Structure
BHR 3		2450 South Shore Road	Structure
BHR 4		3500 South Shore Road	Structure
BHR 5		4125 South Shore Road	Structure
BHR 6		2750 Front Road	Structure
BHR 7		3190 Front Road	Structure, stone fence
BHR 19		3475 Second Concession Road	Structure
BHR 20		4725 Second Concession Road	Structure

\*Mitigation not required for these features per the Heritage Assessment Report

The general preventative and mitigation efforts related to the Cultural Heritage Features within the Project study area are detailed in Section 2.13.1 (General Preventative and Mitigation Efforts) below. Specific preventative and mitigation measures with the monitoring program for each of the cultural heritage features that are expected to be exposed to Project activities will be performed in accordance with the Schedule 05 ("Renewable Energy Approval Condition M") and Schedule 17 ("Cultural Heritage Feature Monitoring Program"), respectively.

The recommendations of the Ministry of Tourism, Culture and Sport to mitigate Project-related negative impacts to Cultural Heritage Features are summarized in the Heritage Assessment Report and provided below for reference:

*In order to lessen or avoid potential indirect negative impacts from construction vibrations on BHRs 4, 5, 6, 19, 20 and 21 and components of CHLs 1 and 3, the following recommendations have been made:*

- Project activities should be avoided within 50 m of identified BHRs and any structures or buildings within identified CHLs.*
- If Project activities within a 50 m buffer zone cannot be avoided, maximum acceptable vibration levels, or peak particle velocity (PPV) levels, should be determined by a qualified engineer with previous experience working with built heritage resources under similar circumstances.*

<sup>6</sup> [www.amherstislandwindproject.com](http://www.amherstislandwindproject.com) (the Heritage Assessment Report can be accessed on the web site under the 'Approvals' drop-down, by selecting the 'Final Renewable Energy Approval Technical Documents' link).



- *Project activities within the 50 m buffer zone should be monitored to ensure that PPV levels are not exceeded.*
- *Photographically record condition of burial vault and monitor its physical condition during construction process;*
- *All Project activities should cease immediately if levels are exceeded, or changes to resources occur, until a solution can be determined.*

*With respect to the dry stone walls associated with BHRs 7 and 18, the following recommendations have been made:*

- *It is recommended that Project activities be avoided within a 50 m buffer zone of any dry stone walls.*
- *In the event that Project activities cannot be avoided within 50 m of any dry stone wall, the wall should be documented prior to the commencement of said activities.*
- *The stone wall should be assessed periodically by a qualified individual during Project activities to ensure that no damage is occurring.*
- *Project activities should cease immediately if vibrations are found to be resulting in damage until the wall can be adequately reinforced or supported.*
- *The stone wall should be evaluated by a qualified mason or engineer following Project activities to ensure that no damage has occurred and any damage to the wall should be repaired immediately following Project activities.*

*Finally, prior to construction of shoreline Project infrastructure, views from the Ferry Landscape should be more thoroughly documented, particularly towards the proposed locations of new permanent and temporary infrastructure. This documentation should include, at the very least, a photographic record of existing conditions and views<sup>7</sup>.*

Additionally, the Project has committed in the Road Use Agreement to protect seven stone walls identified as 360 MacDonald's Lane, 6345 and 9000 Second Concession Road, 4000, 5675, 15095 Front Road, and 5830 Front Road. As with the other resources discussed above, details of the monitoring and protection program for these features is also provided in Schedule 17 ("Cultural Heritage Monitoring Program"). Mitigation details will follow those outlined in Schedule 05 ("Renewable Energy Approval Condition M").

### **2.13.1 General Preventative and Mitigation Efforts**

The locations of the historically-significant sites identified in: (i) the Heritage Assessment Report, (ii) the Amherst Island Wind Energy Project Irish Stone Fence Detailed Review, and (iii) those specific locations identified in the Road Use Agreement<sup>8</sup>, will be indicated on the site map issued to all site personnel and on the detailed construction drawings for the Project. Appropriate signage or warning flagging will be installed at any of these sites that would reasonably be expected to be impacted by Project activities in order to bring them to the attention of site personnel working in proximity to the site. The contractor's site quality representative will audit these flagged sites on a regular basis to ensure all required signage is in place.

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<sup>7</sup> The views from the Ferry Landscape have been photographed prior to the issuance date of this Operations Plan.

<sup>8</sup> Specifically, 360 MacDonald Lane, 6345 and 9000 Second Concession Road and 4000, 5675 and 15095 Front Road, and stone walls erected as part of the Stone Wall Festival at 5830 Front Road.



All site construction personnel will receive training during site orientation on the specific Cultural Heritage Features and protected properties located on the island, the importance of protecting these features, and the mitigation procedures and systems put in place to protect them.

A qualified consultant will periodically give an informational presentation to all site personnel in order to provide context to the heritage features of concern and thereby deepen construction personnel's understanding of the cultural features.

In the cases where the Heritage Assessment Report has indicated that there are potential effect(s) from vibration related to Project activities that will occur within a 50 metre buffer zone around a Cultural Heritage Resource, the maximum acceptable vibration level at such Cultural Heritage Resource will be determined by a qualified engineer with appropriate professional designation and experience prior to the start of Project activities. Each of these potentially affected Cultural Heritage Resources will be photographically recorded prior to commencement of any work in the area.

Peak Particle Velocity (PPV) vibration levels will be monitored and logged around a Cultural Heritage Resource during Project activity within a 50 metre buffer zone around a Cultural Heritage Resource by a qualified vibration analyst to ensure established thresholds are not exceeded in accordance with Schedule 17 (Cultural Heritage Feature Monitoring Program). The contractor will cease construction activities if PPV levels are exceeded and will alter construction activities to ensure compliance with PPV levels. The contractor will also periodically visually monitor these structures during periods when Project activities are taking place within the related 50 metre buffer zone to ensure no damage is occurring. A qualified mason or engineer with appropriate expertise will visually evaluate the stone structures before and after Project activities to ensure that no damage has occurred; any damage will be recorded, reported and repaired by a qualified professional.

Baseline vibration studies will be performed at a location (or locations) away from any Cultural Heritage Feature to determine typical PPV vibration levels produced by: (i) electrical collector cable trenching activities, (ii) road work, and (iii) construction traffic. The studies will be carried out at location(s) representative of typical road and geotechnical structures to determine PPV vibration levels at different distances from the road. For the traffic-related PPV studies, expected vibration levels will be studied using loaded concrete and aggregate trucks at various speeds.

The Project will comply with the requirements of condition M of the REA issued for the Project attached as Schedule 05 (REA Condition M).

## **2.14 Drainage, Grading and Fencing**

Windlectric has studied potential hydrologic impacts associated with the construction and operation of the Project. This work has reviewed the surface topology, cover permeability, and drainage infrastructure that will exist for affected drainage basins within the Project's extents during various stages of the Project's life cycle (conditions currently existing, during construction, and proposed). The studies conclude that the relative lack of change in impervious cover presented by the Project (both during construction and in its final form) and the resultant total drainage within local catchments will result in insignificant changes in or

impacts to either the quality or the quantity of surface water runoff and/or groundwater discharge within the Project area.

Schedule 20 (“Stormwater Management Plan Report”) provides full documentation for the studies conducted relative to the initial stages of the Project (Island dock, access road, and central staging area) and a technical memo from Stantec, Ltd. summarizing their draft study findings for the balance of the Project facilities located on Amherst Island.

The final study for the balance of the Project facilities is nearing completion and will be provided to the Township when it is finalized. Relevant portions of that study will form part of the Fill Permit application process for each private land access road. The technical memo summarizes review of thirty-two catchment areas delineated to encompass all Project infrastructure. Evaluation of those catchments for impervious fill conditions that are currently existing, will exist during construction, and will exist post-construction of the Project using the techniques employed for the initial two studies supports a conclusion that development of the Project will have negligible impact on the hydrology of the area and receiving stormwater systems.

The technical memo summarizes:

*“Owing to the dispersed characteristic of the proposed wind farm, with infrastructure distributed at very low density across a large area, it was concluded that both the relative lack of change in impervious coverage associated with the proposed development and the resultant total impervious coverage within the local drainage catchments are sufficiently limited as to not impact the pre-development hydrologic characteristics of the area during construction or longterm operation of the Project, including any impact to the drainage features associated with the existing public road network. There should be negligible change/impact on the quality and/or quantity of surface water runoff and/or groundwater recharge and, therefore, there is no requirement for the implementation of formal stormwater quality or quantity controls.”*

During construction, best management practices will be utilized to control erosion and sediment runoff from Project work areas while maintaining drainage as per the Condition H of the REA (attached as Schedule 06 (REA Condition H)). Condition H of the REA imposes substantive requirements related to storm water management upon the Project. Windlectric will share any documents produced pursuant to Condition H of the REA with Loyalist Township. Typical erosion and sediment control details for the Project are attached in Schedule 07 (Erosion and Sediment Control Typical Details).

Windlectric will apply for a fill permit for each new access road and turbine location, and for other elements of the Project (e.g. Project laydown yard and the Project island substation), as required by Loyalist Township By-Law 2003-22 (“A bylaw to prohibit or regulate the placing or dumping of fill or the alteration of the grade of land in Loyalist Township”) to ensure that impacts to drainage from alterations to grade are properly designed, and that Loyalist Township has the opportunity to review such designs prior to construction of the related Project work in order to be assured that impacts to both adjoining properties and to the the public drainage system have been reasonably minimized.

Windlectric will retain the services of a professional environmental monitor to ensure that the contractor has the required erosion and sediment controls put in place and ensure they are constructed per the

contractor's approved engineered plans. A weekly audit of all drainage, erosion and sediment controls will be conducted by Windlectric's environmental monitor and the contractor to ensure these controls are installed per the plans and are maintained continuously. The Township's Engineer may choose to witness these inspections and provide reasonable direction for improvements. The Township's Engineer's directions will be forwarded to the contractor's engineers for review and approval. Once approved, the contractor will implement them.

Impacts from construction activities to private fencing and other private improvements (e.g. signage) located within the public road allowance will be avoided to the extent reasonably possible. Whenever impacts to fencing cannot be avoided, the fence line will be moved temporarily to the boundary of the road allowance to maintain continuity with yard fencing as needed to maintain equivalent security to the property it surrounds. Following construction activities, a fence with the same or superior quality will be installed on either the original fence line, or at the Road Allowance boundary at the discretion of the Township.

## **2.15 Village of Stella, the Ferry Landscape, St. Paul's Presbyterian Church, and the Catholic Cemetery**

The specific efforts and preventative measures planned to mitigate impacts on the historic Village of Stella, the Ferry Landscape, St. Paul's Presbyterian Church, and Catholic Cemetery are encompassed in the mitigation efforts described in Section 2.13.

Project design has eliminated any Project infrastructure within the Village of Stella and Project execution planning has eliminated all Heavy Load traffic passing through the Village of Stella other than for delivery of Major Turbine Components for four of the twenty-six individual wind turbines comprising the Project.

Ferry Landscape was documented in a report to the MOECC in November of 2015.

Potential impacts to St. Paul's Presbyterian Church and its surrounding area have been further mitigated by a) Project's commitment to use directional boring techniques for installation of the electrical collector system along Stella Forty Foot Road in front of the church and b) design of specialized transport equipment to eliminate the need for any adjustment to vertical grade of Stella Forty Foot Road in the vicinity of the church.

The Catholic Cemetery is located at Front Road Lot 5. The only permanent Project infrastructure in this area is the buried electrical collection system. As noted in the heritage assessment report, no project-related negative impacts of significant magnitude are expected at this location.

## **2.16 Ferry Operations**

The Project's barge operators shall be required to manage the Project's water-based activities in such a way to ensure that operations of the public ferry are not delayed. Radio communication and coordination between the barge operator and the ferry captains will ensure that there is no impact to the ferry schedule. The contractor's barge operator will be required to meet with the public ferry's captain in order to review Project barge operational and communication procedures. The *Collision Regulations chapter 1416 of the*

*Canada Transport Act* will govern the communication and sharing of the waterway between the various vessels.

Specific commitments made by the Project to minimize impact to resident's use of the MTO public ferry include:

- The Project's island dock construction contractor will ensure that its use of the public ferry will cause no delay of or restriction to the public use of the ferry, and will ensure that the public ferry is able to offload and reload without delay to its schedule caused by the contractor.
- After construction of the Project's island dock, no construction vehicles associated with the Project will be permitted to use the public ferry or to park at either the island or mainland public ferry terminal parking area.
- Site construction personnel will park on the mainland and be bussed to/from the Project's mainland dock, transit to/from Amherst Island on Project barges, and to/from the Project's island dock to the laydown area. Crew trucks and vans will be used on the island for personnel carrying tools and other equipment.

Note that Windlectric and its subcontractors may use the MTO public ferry for non-construction traffic to and from Amherst Island including, without limitation, for project management, consultants, surveying, planning, engineering, and compliance monitoring personnel. This usage is expected to generate average usage on the order of 10 – 12 vehicle round trips per day.

## **2.17 Electrical and Phone Interruptions**

Reasonable efforts in accordance with prudent construction practice will be undertaken to ensure electrical and phone service interruptions are avoided wherever possible, and minimized where absolutely necessary. Affected residents will be notified at least three days in advance of any planned outage. Windlectric will work with HONI and Bell Canada in accordance with the protocols of those entities for necessary planned outages related to raising lines and other activities necessary to facilitate construction of the Project.

Windlectric will promptly notify the public of any unplanned outage using: (i) the Project's Twitter feed, (ii) the Project's Facebook site, and (iii) by notifying the local Amherst Island radio station. The Township will also be notified by phone or email of any such unplanned outage. Any unplanned outage will be repaired and returned to service as rapidly as is possible.

### 3 Communications Plan

Efficient and prompt communications will be a fundamental requirement for good relations and effective coordination between the various Project stakeholders on the Island and within the Township as a whole. This Communications Plan describes the means and methods that will be used by Windlectric to communicate Project activities to the public, and in particular communications as to any activities that may disrupt, disturb or inconvenience the Municipality's residents. The Communication Plan will use multiple channels including the internet, social media, radio, and weekly mail flyers to ensure that the Municipality's residents are able to access updates using various means that different residents find most convenient.

The Communications Plan will also ensure communication between the Project and the public is bidirectional. The public will be able to access multiple means of providing the Project team with feedback or advising them of concerns, including:

- the Complaint Response Protocol outlined below,
- access to the Community Liaison Committee (the CLC) and the Community Working Group (the CWG),
- email to the Project team at [Windlectric@amherstislandwindproject.com](mailto:Windlectric@amherstislandwindproject.com), or by
- calling the Project's toll-free number at 1-844-379-7740.

Elements of the overall Communications Plan are further detailed below.

#### 3.1 Municipality and Resident Notices

A construction activity map will be produced on a weekly basis to provide a simple visual description of which roads will be impacted by Project activity during the upcoming week. The map will identify trenching, aggregate deliveries, concrete deliveries and component deliveries with separate colours. The construction activity map will be updated weekly and will be made publicly available through the Project website ([http://amherstislandwindproject.com/site\\_main/](http://amherstislandwindproject.com/site_main/)), the Project Facebook page (<https://www.facebook.com/search/top/?q=amherst%20island%20wind%20project>), and Twitter (@Amherst\_WindP). The weekly construction activity map will also be mailed as a flyer to Amherst Island residents.

Daily reminders of expected Traffic Interruptions, Single Lane Restrictions, and Road Closures will be issued via the Project website, the Project Facebook page, and Twitter (including tweeting at YGKTraffic). The Project team will also ensure that the school, the TriBoard student transportation services, and EMS personnel have available the latest Project information and website updates. In addition to the social media feeds, the local radio station will also be provided with communication from the site construction management in order to relay it to listeners.

A general photographic information brochure on the nature of each type of construction activity will be produced and made available to the public on the Project website.

Windlectric has assembled a committee of representatives from the island and surrounding community to act as the Community Liaison Committee (the CLC). This committee will review the log of all complaints

and the resolution of these complaints. The CLC will convene at least 2 meetings per year that will be open to observation by the public. The CLC meetings will be augmented by a Community Working Group (the CWG) that will meet monthly in between the CLC meetings. The CWG meetings will not be open to the public so that members of the group will feel comfortable expressing their views frankly and openly. The CWG will be composed of the CLC members and will be joined by additional parties as the CWG may invite (e.g. the Project contractor, the Project's management team, emergency services, subject matter experts, etc.). The CLC and CWG can be accessed by sending an email to the Project website (such email will be forwarded to the members of these committees).

### 3.2 Complaint Response Protocol

- Written complaints during construction will be accepted by the Project team via email at [Windlectric@amherstislandwindproject.com](mailto:Windlectric@amherstislandwindproject.com). Each complaint will be transferred to a Complaint Form by Project staff, and logged. A sample complaint form is provided as Schedule 15 ("Sample Complaint Form").
- All telephone complaints received by the Project team will be transferred to a Complaint Form and logged. Information will include complainant name, time, location and description of complaint. The Complaint Form will also record the Project Team's response to the complaint including what will be done, if appropriate, to mitigate the issue.
- The Project team will acknowledge each and every complaint within one business day of receipt, and will work to a service level response of five business days for either a full or initial response. Some complaints may not receive a fulsome answer within the five business days due to either the complexity of the required response, and/or the availability of subject matter experts.
- The construction team will make every reasonable effort to resolve all complaints in a timely manner.
- Complaints received, and the response provided, will be posted to the Project's website on a monthly basis. Individually identifiable information will be redacted in these postings.
- Complaints that require immediate action (e.g. a driveway inadvertently blocked by construction activities) can be directed to the Windlectric Site Manager by calling either (613) 985-4466 or the Project's toll-free number at 1-844-379-7740. Any such complaints will be addressed in an expedited manner.

### 3.3 On-site Staff

- Windlectric will establish a physical office on Amherst Island when construction activities on the island resume.
- A dedicated site execution team comprised of construction contractor and Windlectric representatives will be on the island on a daily basis while Project work is underway.
- A two-person security detail will be present on the island Project site overnight, and during holidays and weekends, to ensure round-the-clock response to emergency situations. This security detail will be present during the following construction activities: i) road restoration, maintenance, and re-construction as necessary; ii) electrical collector line

construction; (iii) island electrical substation construction; (iv) turbine component delivery; (v) turbine erection; (vi) turbine mechanical completion; and (vii) turbine and wind farm commissioning.

- The site team will establish a regular time slot for meeting with the Township. This will be a scheduled meeting at the construction site office or another suitable location with at least two members of the construction management team in attendance. These meetings will be documented and minutes will be issued.
- Urgent or emergency issues will be received by the site construction management team at any time.



## 4 Public Safety Plan

### 4.1 Emergency Services

- Construction planning will ensure that Emergency Services (ES) will have access to all residences at all times during construction. Each Road Closure, and its related detour route, will be communicated to Emergency Services at least one week in advance. Road Closures will not be left in place overnight.
- All Single Lane Restrictions will ensure that a minimum 3 metres width<sup>9</sup> is maintained for public traffic in order to ensure that emergency service vehicles have room to pass; flag-staff at Traffic Interruptions will give priority to Emergency Services vehicles.
- If any emergency service vehicle is called to a particular location on the island, the ES team will be able to contact the contractor's site representative who, upon request, will
  - stop all contractor work or deliveries on Township roads throughout the Project,
  - ensure all trucks and other equipment except those in the immediate vicinity of a Road Closure are moved off the Township roads, and
  - offer to provide guidance to ES regarding any detour routing necessary to reach the site of the emergency.
- The contractor's safety supervisor will be available for weekly meetings with ES personnel to discuss any ongoing or upcoming activities and potential concerns. ES will be advised of the construction activities scheduled for the following week and ES will have the opportunity to propose revisions or additions to the Public Safety Plan, the contractor's Health and Safety Plan, and the Emergency Response Plan.
- ES will have access to the emergency radio frequency and radio equipment (if necessary) that will be used by the contractor and will have the authority to cut in at any time in order to direct traffic in an emergency situation.
- ES personnel will be invited to speak at the Plan of Day (POD) coordination meeting to ensure all Project personnel fully understand the emergency response plans and systems in place on the island. This information will also be presented to site personnel during their mandatory site orientation.
- All contractor vehicles will be equipped with fire extinguishers and all vehicle operators will be trained in the use of this equipment.
- All contractor vehicles will be equipped with first aid kits and contractor personnel will be trained in first aid application.
- The contractor's safety supervisor or their designee will be on site and available at all times that construction activities are ongoing. In the event of an emergency he/she will be able to communicate with all site personnel via a dedicated safety channel on radio communication. Each work site will be equipped with at least one radio.
- Access roads to primary Project facilities (turbines, substation, etc.) will be marked with signage for locating purposed. When civic addresses are assigned, they will be posted to site signage.

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<sup>9</sup> The largest emergency vehicle width on the island has been measured to have a width of 2.5m.

## **4.2 Public Health and Safety Plan**

Safety will be the top priority every day, for all Project staff on site. Field personnel and work crews are trained to provide themselves with a safe workplace and to plan their work with safety as the top priority including public safety when worksites overlap with public spaces.

The contractor will be responsible for executing Project work activities in a safe manner and for implementing the Public Health and Safety Plan on a day-to-day basis in accordance with the applicable regulations. In addition, Windlectric will have full-time safety management personnel on-site when Project work is ongoing to monitor the performance of all contractors and stop any potentially unsafe work immediately. The municipal engineer engaged by Loyalist Township, if present on site, will also have the authority to direct work stoppages to address public safety concerns.

The public will not be permitted to access active construction areas either on private and municipal property. Public safety will be maintained through implementation and strict adherence to the Traffic Management Plan, the Emergency Response and Communications Plan, and the Public Health and Safety Plan.

The Project-specific Public Health and Safety Plan is attached as Schedule 08 (Public Health and Safety Plan). This Public Safety Plan is authored by the contractor and will govern the safety practices of all Project personnel at the site including staff of the contractor, their subcontractors, and Windlectric.

## **4.3 Emergency Response and Communications Plan**

The Project's Emergency Response and Communication Plan is attached as Schedule 09 (Emergency Response Plan).

## **4.4 Employee Training and Enforcement**

Every person who works at the site must attend a mandatory site orientation training session. These site orientation training sessions will be conducted in small groups and will be led by the contractor's site Safety Supervisor. These orientation sessions will include a presentation of the site environmental and traffic rules, site specific health and safety training including emergency response training, traffic management, accident/incident reporting processes, and training regarding the heritage and protected properties located on the island.

The training session will include a question and answer period to address any questions and to ensure complete understanding. At the end of each session there will be a test to confirm understanding of the material. If an individual is unsuccessful at the test, the Safety Supervisor will have the discretion to provide additional resources to assist the individual with the material, or remove the worker from the site.

On completion of the session, each trainee and the trainer will sign a certificate to confirm successful completion of the orientation and the commitment of the trainee to abide by all the site rules. A hard hat sticker will be issued to workers that have successfully completed site orientation. All personnel must have a valid and site-specific orientation sticker affixed to their hard hat in order to work on the site.

Orientation training will be supplemented by mandatory attendance at the daily morning safety meeting. The daily morning safety meetings will provide the Safety Supervisor and Project management staff the

opportunity to: convey any reports from the Township or public regarding traffic interruption or safety, introduce any new mitigation efforts, and to re-enforce orientation training.

Individuals in violation of any site safety or traffic rules will be subject to the contractor's progressive discipline policies, which will include consequences up to and including removal from site depending on severity of the infraction or a repetition of offence. By signing the orientation certificate, each worker will have agreed to such disciplinary measures. Each vehicle will have a site map with relevant information and reminders of specific site safety rules. Each worker will have available a copy of the site-specific safety rules and emergency contact number card at all times.

## **5 Operations Plan Approval, Evaluation, and Revision**

As outlined in the sections 36 – 49 of the Road Use Agreement, the formulation of this Operation Plan has been the subject of iterative review and revision by Windlectric, its contractor, Township staff, and Township residents. Upon approval by the Council of the Municipality, Windlectric shall implement and comply with the Operations Plan and the Municipal Engineer, or other Township designee, shall monitor Windlectric's compliance with the Operations Plan.

The effectiveness of the planned Project management and impact mitigation measures included in the Operations Plan will be subject to ongoing evaluation and revision during Project construction. Project staff will rely on the measures detailed in the Communications Plan to receive and collect feedback from all stakeholders in the Project. Stakeholder feedback on actual impacts, and changes to planned Project activity, will be reviewed by the Project team to evaluate opportunities to further minimize the level of disruption, disturbance and inconvenience to the Municipality's residents, or to improve public or worker safety.

Once the Project team has completed the evaluation of feedback, reasonable changes to mitigation measures outlined in the Operations Plan may be implemented. Staff from Loyalist Township and members of the Community Liaison Committee will be kept informed of feedback received in accordance with the Communications Plan (Section 3) and will be advised of any planned or implemented changes in Project mitigation efforts. Windlectric may elect to immediately implement changes to mitigation efforts that improve safety of the public or workers, or as required by applicable law; with subsequent notification to Loyalist Township and the Community Liaison Committee.