

July 21, 2017

VIA E-MAIL

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Reference: Amherst Island Wind Project – Operations Plan Version 8

Dear Mr. Maddocks and Mr. MacPherson,

We are providing you with this letter in response to your letters dated July 19, 2017 and July 20, 2017. For ease of reference we have set forth below each of your comments *and thereafter our response thereto in italics.*

July 19, 2017 Letter

Section 2 - TRAFFIC AND CONSTRUCTION MANAGEMENT PLAN

- **2.1 Haul Routes for Oversized and Heavy Loads**
 - 2.1.1 Major Turbine Component Delivery Routes
 - o References to turbine S12 should be removed.
 - o *References to turbine S12 have been removed in the enclosed copy of the Operations Plan.*
 - 2.1.2 Heavy Load Delivery Routes
 - o Windlectric confirms that spoils from turbine base construction will be managed on site, but they have not discussed excavated material from road improvements and collector system construction; where will this material be managed? Have these loads been considered in Schedule 03? Please address these questions specifically in the operations plan.

Electrical collector system excavation spoils and fill are included in the Heavy Load counts in Schedule 03. Excavation materials from existing public roads will be utilized as gross fill as necessary on the Project's private access roads. Transportation of this material, and aggregate handling associated with reconstruction of public roads, is not included in the Heavy Load count in Schedule 03

- 2.1.3 Other Large Transports

- o Paragraph 1 - if roads are not adequate to facilitate movement of over width equipment, these movements will be completed through a 'Traffic Interruption';

Confirmed. No change necessary.

- o Paragraph 2 - movement of the erection crane(s) will be handled as a 'Road Closure';

A 'Road Closure', as defined in the Operations Plan, is of limited length along a road segment in order to accomplish construction activities. It is simply not appropriate for transport of equipment from one point on the island to another to be called a 'Road Closure', but rather as a Traffic Interruption. Section 2.1.3 is very detailed in describing the proposed movement and transport of large machinery, such as the erection crane.

- **2.2 - Public Road Modifications**

(The comments below do not reflect any modifications made in the July 19th submission; these will be addressed under separate cover.)

Contents of this section should generally reflect the most recent discussions between the Township, their solicitor, and Algonquin. The proposed improvements for trunk roads shall be applied to all roads to be used by Algonquin. Loyalist Township and their consulting engineer are now reviewing the geotechnical report received today, to confirm the final road design. The details of the pre-construction road improvements and the schedule for the road improvements, including installation of the collector system, must be detailed in the Pre-construction Plan.

Please see the responses below under the heading July 20, 2017 Letter

- **2.3 - Public Road Closures and Delays**

- o 'Traffic Interruptions' are still road closures and must be handled as such in regards to the Communications Plan and emergency services.

Confirmed that the Communications Plan in section 3 treats Traffic Interruptions and Road Closures in the same manner.

- o Although the hard-topped roads are believed to be adequate for the proposed construction traffic, the Operations Plan should include proposed maintenance.

See further discussions on road maintenance in Sections no.'s 2.2 and 2.6 of the Operations Plan and this communication.

- **2.5 - Navigable Waters**

- o Marine Logistics Plan has been referenced.

Confirmed. No change necessary.

- **2.6 - Road Maintenance**

- o Section contains references to several different people; statement has been added that references the Communications Plan

Confirmed. No change necessary.

- o Algonquin has committed to use Granular A for road construction and maintenance. Plan should specify that crushed, quarried material must be used.

The adjectives "crushed" and "quarried" have been added to each reference to "Granular A" material in the body of the Operations Plan.

The Pre-Construction Study has identified roads that have insufficient structural adequacy. These roads should be improved based on the recommendations of the Pre-Construction Study, prior to being subjected to heavy truck traffic

Windlectric Inc. refers the Township to Section 2.2 ("Public Road Modifications") and Section 2.6 ("Road Maintenance") of the Operations Plan v7, submitted July 19th, 2017, which contains extensive details on road improvements. The next submission of the Pre-Construction Study (v3) will include municipal roads drawings (MR-200 series) that reflect the details articulated in the above-referenced version of the Operations Plan.

- o Under the heading Structural Road Maintenance Procedure, wording should be revised as follows: If, at any time, segments of gravel roads are determined, either by the Township or Windlectric, to have failed due to the fatigue loading of the construction traffic, reestablishment of the road structure will be executed in accordance with specifications established by the Township's engineer or designate, on a site-specific basis.

The heading referenced is from v6 of the Operations Plan. Windlectric has incorporated the requested text in this section from the Township's July 20th, '17 letter, which appears to address the same topical concern as above

- o Please amend all references to "Transportation and Solid Waste Manager", to be replaced by "Public Works Manager".

All (3) three references have been revised as requested.

- **2.6.1 - Winter Conditions**

- o Algonquin will ask Loyalist Township Council to enter into an agreement with respect to additional winter maintenance requirements resulting from this project.

Text in the initial paragraph has been changed to be consistent with this request.

- o Please add the following statement: "Algonquin will be responsible to obtain the necessary approvals from all agencies with respect to a snow dumping area, prior to any snow being placed in this area."

The requested statement has been added with substitution of "Windlectric" for "Algonquin".

- **2.7 - Impact Mitigation**

- **2.7.3 - Student Transportation**

- o Additional details should be provided on the 'turn-arounds' - buses to execute a 3 point turn.

Windlectric has provided additional details on the execution of a 'turn-around' manoeuvre in v6 of the Operations Plan, and has reviewed these details with the consent of the Tri-Board Student Transportation Service. The detail provided is quite clear, and Windlectric is unclear as to what 'additional details' are requested here. ("the delivering bus would execute a turn-around manoeuvre, using a conventional 3-point turn, but within an existing driveway/entrance feature associated with the last student drop-off nearest the start of the 'road closure' feature. This existing driveway/entrance feature may be found at a residence, an agricultural field or farm entrance. There is no need or intention to construct any new turn-around features within the road allowance.")

- o The operations plan references beginning at 9 am after student transportation has completed morning runs. The plan does not reference how impacts to afternoon student transportation will be mitigated. Algonquin needs to describe this as well.

Windlectric will revise the wording of Section 2.7.3 as follows – “There will be no impact to school buses on their way to the ferry in the morning and from the ferry in the afternoon, 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 and from the ferry will not be interrupted.”

- 2.7.8-Wells

- o Loyalist Township has previously advised Windlectric that we have limited information on service lines in the road allowance. This should be stated in the Operations Plan.

A statement has been included as requested.

- 2.11 Road Dust Control

- o If a nuisance situation occurs with respect to dust, Windlectric will consider the application of calcium chloride at the request of Loyalist Township.

Confirmed. No change necessary.

- 2.13 - Cultural Heritage Features

- o 2450 South Shore Road is listed as a Built Heritage Resource (but not in the original REA Condition M1 as this property was added as a result of REA Amendment 4); Schedule 17 (Cultural Heritage Feature Monitoring Program) discusses monitoring in relation to the nine Built Heritage Resources identified as requiring protection under section M1 of the REA; confirm that 2450 South Shore Road is included in the Cultural Heritage Feature Monitoring Program; 2450 South Shore Road has not been added to Schedule 17.

The latest updated version of Schedule 17 includes 2450 South Shore road – please see Section 2.1.5.

- o Cultural heritage landscapes and built heritage resources are all listed. The dry stone walls need to be listed here as well.

The dry stone walls have now been listed as requested in Section 2.1.3.

- o It was requested in previous comments that a commitment be made for the retention of a dry stone waller if repairs are required on the stone walls. The March 15, 2017 table of responses from Algonquin indicated that the following statement would be added in the Operations Plan "Should project activities cause damage to a stone wall, repairs will be carried out by a qualified and professional dry stone wall mason." This sentence has still not been added (currently states will be repaired by a qualified professional).

The requested statement has been added.

- **2.13.1 General Preventative and Mitigation Efforts**

- o Location of heritage features should be identified on the construction drawings.

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 will be indicated on the detailed construction drawings for the Project. A version of the drawings with such locations marked is not yet available, but will be prior to the start of any related construction and will be made available to the Township at that time.

- **2.14 - Drainage, Grading, and Fences**

- o Limits of the road allowance need to be established with a legal survey prior to moving any fences, for properties where permission from the owner is not provided in advance.

The new survey protocol in Schedule 21 addresses all such survey issues. No fences will be moved without advance permission from the owner.

- o All proposed culvert reinforcement must be detailed in cross section in the pre-construction drawings.

Existing culverts may be bridged with plates, or, if significantly large, require reinforcement with internal shoring prior to Project work. Drawings of any such reinforcement will be provided to the Township for review prior to the execution of any such reinforcement or shoring work.

Schedule 2 TRAFFIC MANAGEMENT PLAN

- **2.1.2 - Modifications to the Public Roads**

- o Schedule 2 needs to be updated to reflect the changes being made in Section 2.2 of the Ops Plan

Windlectric has reviewed again the latest version of Schedule 2, the Traffic Management Plan, specifically against the various changes made to Section 2.2 of the Operations Plan, and is not aware of any changes that would be required

- **2.4 - Types of Construction Vehicles**

- o Definitions need to be updated to reflect the definitions in the Ops Plan

The description of the construction-related vehicles in Schedule 02, Section 2.4, are completely consistent with the descriptions utilized in the body of the Operations Plan.

Schedule 3 - HEAVY LOAD TRAFFIC BY ROAD

- The Operations Plan should explain why the number of heavy loads have been reduced significantly.

The Operations Plan v5 incorrectly aggregated heavy load counts because the estimating team(s) did not yet have access to finalized construction execution plans, equipment lists, and Bills of Materials lists for the final construction drawings. Their estimates, therefore, were simply conservatively high. The Operations Plan v6 corrected this above aggregation estimating error, and included the quantity of Heavy Loads related to the proposed municipal road improvement plans available at the time. Operations Plan v7 and v8 no longer includes Heavy Loads related to municipal road improvements in the estimates, as these do not contribute to road fatigue and wear – they are loads contributing to road rebuilding.

- This section should address the Township's comments provided above under 2.1.2., with respect to excess materials excavated from collector system trenching and pre-construction road improvements

See above response to question in Section 2.1.2 above.

Schedule 4 - SITE SAFETY ORIENTATION

- Safety measures included in the Operations Plan and Traffic Management Plan should be included in this document

Windlectric has required it's EPC Contractor – Pennecon Heavy Civil Ltd. – to perform a subsequent thorough review of the Operations Plan (v6), the Schedule 2 – Traffic Management Plan, and this Schedule 4 – Site Safety Orientation. The 'Site Safety Orientation' (Schedule 4) submitted July 20th, (dated July 17) was updated to ensure safety measures included in the Operations Plan and the Traffic Management Plan are now also carried in the Site Safety Orientation.

Schedule 8 - PUBLIC SAFETY PLAN

- Document needs to be consistent with the Operations Plan, Traffic Management Plan, and Site Safety Orientation document

Windlectric has required its EPC Contractor – Pennecon Heavy Civil Ltd. – to perform a subsequent thorough review of the Operations Plan (v6), the Schedule 2 – Traffic Management Plan, and this Schedule 4 – Site Safety Orientation, and have confirmed they are each consistent with the others.

- Detour routes must be confirmed prior to commencing work

No revision to Schedule 8 is required. Confirmation of detour routes prior to their utilization is an explicit requirement of section 2.3 of the Operations Plan. "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."

Schedule 9 - EMERGENCY RESPONSE PLAN

- The directions on the top of Page 29 of the Emergency Response Plan should read as follows: "In an emergency, dial 9-1-1 to access fire, police or ambulance, and identify yourself as being on Amherst Island in Loyalist Township. Loyalist Township Emergency services can be contacted directly at 613-548-4001 - 0 for accident or spill reporting."

The requested statement has been added to the Emergency Response plan.

- The Emergency Response Plan cannot be approved until Algonquin Power have identified a High Angle Rescue Contractor on page 30.

The requested information has been added to Schedule 9, the Emergency Response plan, specifically Appendix D.

Schedule 17 – CULTURAL HERITAGE MONITORING PROGRAM

- 2.1 - PPV monitoring is only described under 2.1.2 Cultural Heritage Landscapes - the Built Heritage Resources section (2.1.1) and the Dry Stone Walls section (2.1.3) only speak to "monitoring." Please state in these two sections that when construction activity is within 50 metres of these resources, that PPV monitoring will occur.

The requested statements have been added to Sections 2.1.1 and 2.1.3.

- 2.1.3 - States that if no construction activities are within 50 metres of the dry stone walls, then no monitoring will be required. REA Condition M6 requires ongoing monitoring of their condition and to assess and evaluate their condition after the completion of construction activity. Monitoring is therefore still required even if construction activity is not within 50 metres (PPV monitoring is not required if not in the 50-metre buffer as per M3 but visual monitoring should still be occurring). This needs to be stated.

REA Condition M6(2) does indicate the monitoring requirements, without specific reference to the 50 metre zone. However, Windlectric has had subsequent meetings with MOECC staff regarding this point, and the 50 metre zone is comprehensive. No monitoring (visual or seismographic) is required outside of the 50 metre zone. Windlectric will, however, go beyond the requirements of the REA conditions related to this matter, and commit to Loyalist Township to provide visual monitoring for those cultural heritage resources that also reside outside of the 50 metre zone.

- 2.1.4 - Dry stone walls identified in Road Use Agreement - please state that when construction is within 50 metres of these walls that PPV monitoring will occur. These stone walls should have the same protection as the stone walls identified in Condition M. The Operations Plan also states that if not within 50 metres of construction, no monitoring will be required. Visual monitoring still needs to occur if not within 50 metres, particularly since 5 of those stone walls are designated under the Ontario Heritage Act. Any damage needs to be prepared by a professional stone waller.

Section 2.1.4 of the Cultural Heritage Monitoring Program includes the seven stone dray walls explicitly identified in the Road Use Agreement; the Program also clearly indicates that these resources will be monitored (visually, seismographic) when construction is within 50 meters. As responsive to the related section in the Operations Plan, damages will be repaired by a professional stone wall tradesperson.

- 2.1.5 - This section only speaks to monitoring the dry stone walls. 2450 South Shore Road is a built heritage resource - ensure that this is included in the monitoring as well (if within 50 metre buffer). PPV monitoring also needs to be stated.

As mentioned above 2450 South Shore road has been included in the updated vibration monitoring program.

- 3 - Technical Support - M4 of Condition M indicates that acceptable vibration levels shall be determined for each cultural heritage resource within the 50 metre buffer by a Qualified Independent Structural Engineer with previous experience working with built heritage under similar circumstances. The comment was previously made to confirm that the engineer had this experience. The bio for Paul Walkington was revised in the last submission indicating projects worked on with built heritage under similar circumstances. The July 12th submission no longer includes Paul Walkington on the project team and the current project team's bios do not indicate this experience.

Mr. Walkington has had a health issue and is no longer able to assist with the project. The updated document has the list of technical personnel involved in the project which includes their experience. Note that Dr. Kana Ganesh will act as the Qualified Independent Engineer - his experience is as follows: Dr. Ganesh will provide technical leadership and expert support for this project. Dr. Kana Ganesh is a Senior Engineer with over 16 years of consulting and research experience in acoustics, noise, and vibration (ANV). Dr. Ganesh obtained a Doctorate from the Institute of Sound and Vibration Research (ISVR), University of Southampton, UK for his research work in active sound and vibration control. Dr. Ganesh has extensive experience in ANV monitoring and impact assessments. Dr. Ganesh has led several vibration assessment and measurement projects for construction and operations vibration that includes Niagara Wind farm, CN rail expansions in Ontario and Winnipeg, as well as others for TransCanada Pipelines Inc., Enbridge Gas and Union Gas.

July 20, 2017 Letter

- **2.2 Public Road Modification**

- Under heading Structural Reconstruction of Public Roads, paragraph 1, items listed in red below are to be inserted into paragraph: "A woven geo-synthetic (Terrafix Combigrid 40/40, or approved equivalent) will be placed over prepared subgrade to provide separation from the underlying finer grained soils and then 200mm of compacted crushed granular A material will be placed, etc."

The requested insertions have been made to the document, with the exception that the geo-synthetic material specification was conformed to the recommendations of the Geotechnical Report (i.e. Combigrid 30/30 instead of 40/40); other requested insertions have been made

- Structural Reconstruction of Public Roads, paragraph 2: Insert at beginning of paragraph: "If field conditions are encountered during the pre-construction road improvements where the road sub-base appears to be organic or similar materials, there may be a need to adjust the previously- noted road bed improvements. Under this scenario, Algonquin's engineers would need to provide a solution to the satisfaction of the Township."

The requested insertion has been made also with the substitution of "Windlelectric" for "Algonquin".

- Paragraph 2, replace "...and infilled with 200mm of compacted Granular A material..." with the following: "... and infilled with 200mm of compacted crushed Granular A material and the approved geosynthetic material."

The requested insertion has been made.

- Paragraph 3: Remove "Road segments with hard surface (portions of Stella Forty-Foot Road and...". Begin paragraph with "Front Road will be utilized..."

The requested change has been made.

- Add the following paragraph: "For the segments of Stella Forty-Foot Road that currently have existing hard surfaces, Algonquin will remove the hard surface and prepare the road as per the proposed methodology for gravel roads as outlined above, with the exception that upon completion of the construction phase of the windmill project, the road surface that is currently hard surfaced will be repaved with 50mm depth of HL4 (as per OPS specifications)."

The requested insertion has been made as follows: "For the segments of Stella Forty-Foot Road that currently have existing hard surfaces, ~~Algonquin~~ Windlelectric will remove the hard surface and prepare the road as per the proposed methodology for gravel roads as outlined above, ~~with the exception that upon completion of the construction phase of the windmill project, the road surface that~~

~~is currently hard surfaced will be repaved with 50mm depth of HL4 (as per OPS specifications) Further surface treatment to be discussed with Township staff."~~

- **2.6 Road Maintenance**

- o Add bullet before heading Project Closure Protocol:" Potential Failure of Improved Roadbed: If after the road has been improved as per Clause 2.2, there is a subsequent road failure, Algonquin's engineers will propose a solution for the Township's review and acceptance, and undertake repairs as expediently as reasonably possible."

The requested insertion has been made, with the exception of substituting "Windlelectric" for "Algonquin" and "Clause" to "Section".

Schedule 21 - Survey Protocols

Township staff will not provide comments on the survey protocol; comments on this schedule will be provided by the Township's solicitor shortly.

No change required.

We believe the foregoing and the enclosed revised Operations Plan and schedules address each of the comments that have been raised.

Regards,

Algonquin Power Co.
(on behalf of Windlectric Inc.)



Homer Lensink
Vice-President - Development