



The Corporation of Loyalist Township  
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June 15, 2017

Algonquin Power Co.  
354 Davis Road  
Oakville, ON  
L6J 2X1

Attn: Ariel Bautista, Senior Project Manager

Dear Mr. Bautista:

**Re: Review of Draft Pre-Construction Study Submission 2 – Windlectric Project**

Loyalist Township once again reiterates the need for a high level of detail in the submissions made by Algonquin Power Co. The expectations of the Township are reasonable and remain unchanged. The Township is hopeful that recent discussions with Algonquin Power Co. have provided additional insight into the level of detail we expect and why it is required. The Township's priorities continue to be mitigating impacts of the project on residents, municipal infrastructure, Amherst Island heritage, and Emergency Services during construction.

During our meeting of April 25, 2017, there were extensive discussions regarding what was considered an acceptable level of accuracy when establishing the limits of the road allowance. Algonquin Power Co. agreed to the completion of legal surveys in areas where works could potentially encroach on private property. This acknowledgement is appreciated by the Township and we await the list of areas where legal surveys will be completed. We also encourage Algonquin Power Co. and its selected legal surveyor(s) to provide very descriptive information with regard to the forced roads; since, as Algonquin is aware, several property owners have put the Township and Algonquin on notice about the extent of ownership along forced roads.

While Loyalist Township is pleased to have received a more fulsome version of the Pre-Construction Study, we offer the following comments based on the information that was provided;

(A.01) Municipal Roadways Utilized

- Dwg AMHST – 243 does not identify Emerald Forty Foot Road as impacted municipal infrastructure; Emerald Forty Foot Road has been identified as a detour route; Proponent should confirm that construction traffic will not utilize detour routes

(A.02) Municipal Signage Impacted

- The Proponent has included an assessment of signs and culverts with this package, which is new, but we are still missing fences, guiderail, private water services, and utilities. The Road Use Agreement requires the proponent to assess the condition of all municipal infrastructure. Documenting the condition

of infrastructure in advance of construction will help to reduce the number of claims made against the project after construction.

- Municipal Infrastructure Obstruction List – This report lists, with photographs, 10 signs that may need to be removed to allow rotor blades to pass. The report states that signs “will be reinstated on completion of deliveries.” This is unacceptable; cautionary signs should be reinstated immediately after each load passes. Reinstatement to the requirements of the Ontario Traffic Manual with temporary supports would be acceptable.
- A number of signs have been listed as impacted by deliveries. Many of these signs are warning signs related to road curvature or object markers which, when removed, could pose a liability to drivers. A more detailed plan is required to explain how driver risk will be mitigated during periods when signs are not present and a schedule of removal and reinstatement relative to deliveries.
- At point 9, there is mention of a guard rail potentially being impacted. More detail is required regarding the potential impact to the guard rail and whether it will be removed, moved, or relocated.

#### (B.01) Roadways - Existing Conditions

- Municipal Roads Geotechnical Borehole Investigation:
  - The report notes that they did not investigate Front Road through the hamlet of Stella. How does the proponent defend its statement that the paved roads on Amherst Island can support the proposed loads without improvement? What about the load capacity of the large culvert located near 5475 Front Road?
  - It is also noted that the geotechnical consultant did not investigate the detour routes.
  - The report is clear that the gravel roads will not support the proposed loading. The geotechnical consultant should provide recommendations for improvements to the roads that will allow the roads to support the proposed loadings.
  - Recommendations are required to address soft shoulders to achieve 6m width.
  - 6.2.3 Drainage – Stantec notes that most of the roads are inadequately drained but make no recommendations for improvement. Solutions must be provided.
  - 6.5.2 Temporary Turning Alignments at Existing Intersections – Stantec recommends excavation and add gravel in 200mm lifts, but they do not indicate thickness of gravel required.
  - The report concluded that the current conditions of the existing roads (except a portion of Front Road) will not be able to support the anticipated future construction traffic. However, section 2.2 Public Road Modifications in the Operations Report indicates that existing paved roads, including Stella Forty Foot Road, have adequate structural capacity. The geotechnical report contradicts the Operations Report.

- Section 6.5 indicates that “continual monitoring, maintenance, repairs, and upgrades” are the methods to be used to deal with the structurally inadequate roads. This appears to contradict the method indicated in section 2.2 Public Road Modifications in the Operations Report. Clarification is required regarding how the roads will be made adequate for the heavy truck traffic anticipated.
- As a general comment, Loyalist Township completed additional field geotechnical evaluation during the week of June 5-9. The preliminary results of this investigation indicate only minimal surface gravel in the outer 1.0m of road surface for all locations tested, underlaid by silt and clay sized soil.

(B.02) Culvert Conditions

- In his letter of transmittal dated May 10, 2017, Trevor Dwyer, P.Eng., of Pennecon Heavy Civil states that culverts will not be harmed in any way, Pennecon will use steel plate to span the width of the road above each culvert. In the letter report by Stantec, Stantec recommends that one box culvert and 11 CSP be replaced. The use of steel plates is not acceptable to Loyalist Township between November 1 and April 1. There are safety concerns concerning the use of steel plates in the winter. Alternative details are required.
- In the May 4, 2017 letter report by Stantec, Culvert #41 is described as a concrete box 2500x1250 with severe cracking and wall separation. Culvert #41 is on the far west end of Front Road, near Lower 40' Road. On the inspection sheet it is described as 1300wx1000hx6900l, which (based on photos on Google Maps) seems more accurate. The drawing should be corrected.
- The culvert inventory appears to be a thorough review of the existing culverts. Due to the minimal cover on many of the culverts, there is potential for damage. Windlectric is proposing to replace many that are in poor condition. Others that become damaged during work may require replacement later; the detail of the newly submitted inventory will allow any damage caused by the construction to be identified.

(C) Construction Drawings

- General Comments
  - It is worth noting that this set of drawings is far better than anything we have seen to date. It is apparent that the proponent has made an effort to limit the project's impacts – there are far fewer road improvements and culvert extensions on this set of drawings than on the previous. Proponent should confirm if the drawings include areas where the roads will be restored to 6.0m.
  - The ROW boundary is clearly shown as a red line, but there is nothing to indicate the accuracy of this line – are there survey markers in the field, is the boundary based on a registered plan? Providing all available legal survey information might result in a crowded drawing; a separate drawing with the legal survey data would be acceptable. How

will the property limit markers be maintained and monitored over the life of the project, especially those close to the travelled portion of the road?

- Note 6 (common to all drawings) instructs contractor to undertake road repairs on an as needed basis; this is unacceptable. The capacity of the roads must be improved before construction commences.
- Several drawings indicate temporary removal of a traffic sign, to be reinstated when construction is completed. Removal of traffic signs for more than the length of time that it takes a load to pass is unacceptable. The use of temporary supports would be acceptable.
- The proponent is intending many new and extended culverts. Length and grades for new culverts and for culvert extensions should be indicated on the drawings. The proponent should provide design notes to confirm culvert sizes. Culvert extensions must respect private property limits.
- MR204 and others indicate a road widening; we should have a cross section detail of how widenings will be constructed.
- MR207 and others show limit of obstacle free area over guiderails; should confirm on drawings that removal of guiderails is not required.
- MR221 and others show an asphalt road repair detail: states use Granular B surface until construction is finished. This is not a construction road. Cuts need to be dressed with a minimum depth of 150mm of Granular A.
- MR262 and others show typical Road Restoration cross section: restore crown with gravel tapering out to 3.0m each side of center. This restoration will not address the deficiency in load bearing capacity of the roads, or soft shoulders, and is unacceptable.
- MR277 and others show Bell and hydro crossings. The proponent has not indicated what is planned at utility crossings. All private utilities, water and electrical services to shore wells, should also be shown on the drawings.
- MR279 and others show temporary access roads that encroach on private lands. The proponent should provide documentation indicating that access to these lands has been granted by the landowner.
- MR201 shows removal of two trees that are in close proximity to the property line. A legal survey is required to confirm that these trees are in ROW. As a general comment, any tree described for removal that is located within 0.6m of a property line should be accompanied by a survey prepared by an OLS, that clearly shows that the tree is within the municipal ROW.
- MR201 shows a 550mm concrete culvert and indicates a 1.2m extension with CSP. Extensions should be in same material as existing culvert; we need to see detail.
- MR205 shows widening to north side, very close to lilacs. We should have cross section detail of this, and confirmation that impacted lilacs are on the ROW.
- MR240 shows a 2500 by 1250 culvert at around 15+943. This is culvert #41 that is recommended for replacement in the Stantec culvert report. Stantec's

inspection report has it at 1300x1000. Based on the photos, the smaller size is likely correct.

- MR276 – there is a beautiful tree canopy over Concession Road 3 on this drawing. What has the proponent proposed to protect this canopy?
- MR281 is indicating limits of road restoration as if this is a gravel road. This needs to be clarified.
- MR288 – Why does the access off Dump Road require large turning radii from both directions?
- MR303 cross section indicates “Granular A as per Geotechnical Required.” Proponent should provide a copy of geotechnical recommendation.

(E) Collection System Works

- The plan is to put the cables on the edge of the road. Main cables have 1000mm cover but copper ground is only 500mm down. Ground wire should be lowered in detail to minimum cover of 600mm.
- E408A specifies inside wall of trench at 3.5m to 3.8m from centerline. This will be in the ditch on some roads, and possibly outside the municipal ROW at several locations, particularly on forced roads. Loyalist Township does not want the Collector Circuit located in the road ditchline. We suggest the outside limit of vertical face of trench be located a minimum 0.3m inside of the edge of travelled road and no greater than 3m from the travelled road centreline.
- Note 4 prescribes cable markers at frequent locations. What is a cable marker? Would it be destroyed the next time the road is graded?
- E407A – How do you feed cables through a HDPE Carrier Pipe? Will there be a junction box? If so, what does the junction box consist of and where would it be located?
- The detail shown for 300mm (30 cm) width is for One circuit; the Ontario Electrical Safety Code does not detail out specific trench requirements for the direct buried cables. However, from a constructability point of view, it is difficult to install direct buried cable in middle of the 300mm wide trench without adequate support. Therefore, direct buried cable is recommended to install with adequate support so it remains in the middle. The trench widths are recommended for 300 mm and 450mm. Please review detail and describe how compaction will be achieved in narrow trenches.
- Please clarify Notes 4 and 5 on Drawing 406A on specific material to be used around conductors and padding backfill. For instance, masonry sand, stone dust, etc.?

(F.02) Summary Project Schedule

- Turbine base construction and turbine delivery and erection conflict with cable system installation. How will this be coordinated to avoid heavy truck use of detours?

(G) Estimate of Project Costs, and

(H) Post Construction Remedial Works Estimate

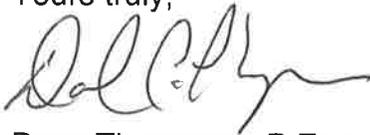
- Construction cost estimates are a single line item, not detail enough to permit review. Greater detail must be provided, to allow the Township to collect

adequate securities from Algonquin Power Co. An engineer (or other qualified person) should certify the accuracy of this estimate.

- (I) Post Construction Remedial Works Specifications
  - 3.0 Post Construction Remediation, topsoil will be stripped and stockpiled alongside the existing ROW. Does this mean within the ROW or on private lands? Contractor should identify candidate stockpile areas in advance.
  - Roads will be final graded and asphalt fixed. The commitment to repair asphalt is too vague. We need to know when this will involve patching and when an asphalt spreader will be used.
  - Intersections – there needs to be a commitment to reduce turning radii to rural standard. Should mention regrading of ditches.
- (J) All drawings must be stamped by Professional Engineer.

In light of these comments, we look forward to further detail being provided in the next revision to the Pre-Construction Survey.

Yours truly,



Dave Thompson, P.Eng.  
Director of Infrastructure Services  
DCT/aka

cc: Robert Maddocks, CAO  
Murray Beckel, Director of Planning and Development Services  
David MacPherson, Public Works Manager  
Dan Fencott, Jewell Engineering  
Guy Laporte, AECOM (retired)