



# Michalski Nielsen

ASSOCIATES LIMITED

June 14, 2016

Mr. Blair Welch  
Queen's Court Developments Ltd.  
80 Richmond Street West  
13<sup>th</sup> Floor  
Toronto, Ontario M5H 2A4

**Re: Addendum to Environmental Impact Study, Harbourview Heights Property,  
Penetanguishene; Our File 1709**

Dear Mr. Welch:

The purpose of this addendum is to address peer review comments received from Beacon Environmental, dated December 1, 2015, in relation to our earlier prepared Environmental Impact Study (EIS) (October 2010; updated January 2013) for the Harbourview Heights Property in Penetanguishene. As background, our original report of October 2010 was peer reviewed by Beacon Environmental on December 19, 2011, and was subsequently updated, to address changes in the orientation of a collector road through the property, changes in the subdivision layout, and the peer review comments. Prior to updating the EIS, a meeting was held with the applicant, its agents, the Town of Penetanguishene and Beacon Environmental on December 21, 2011. The project became dormant for a period of time, with an updated EIS not prepared until January 2013. The project was again put on hold for a period of time, with the peer review comments on the updated report prepared December 1, 2015 (four years after the original peer review comments were prepared). A copy of these most recent comments are included in **Appendix A**. Because of the time lapse between the meeting of December 21, 2011 to discuss changes to the report, and the subsequent peer review of December 1, 2015, there was some concern of there being a disconnect between the direction taken from that meeting and the corresponding peer review comments on the addendum. In largest part, these relate to the acknowledgement of this being an infill development in an urbanized environment, with the subject property being in a state of transition owing to changes in surrounding land use, and with a required north-south collector road proposed to bisect the property. Development of these lands will result in further impacts on its natural heritage values, with the intent of all parties being to maintain such values to the extent possible, within the context of an urbanized environment.

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A copy of the Draft Plan of Subdivision is included in **Appendix B**. There are no substantial changes in the layout of the subdivision. As such, the earlier proposed EIS remains relevant, and a full update of that report is not necessary. What is required, and is achieved through this addendum letter, is further clarification and details on how those natural features and values of the property which were intended to receive protection in accordance with the January 2013 EIS are being protected, and to provide acknowledgement as to where full protection of such features and values are not possible. Further, it is to describe steps being taken to address recent changes regarding the protection of bat species in Ontario, in accordance with the *Endangered Species Act*, other work which will need to be completed to address the requirements of that legislation prior to the development of these lands, and recommended conditions of Draft Plan approval to address other environmental issues.

A meeting with Town officials to discuss the peer review comments was held on April 5, 2016. The agenda and minutes for that meeting are included in **Appendix C**. To simplify this addendum, the comments which follow are organized in accordance with the contents of the meeting agenda.

### **1. Physical Protection of Wetland**

There is a small area of deciduous ash swamp in the northwest portion of the property. This feature contains a number of vernal (seasonally wet) pools, providing amphibian breeding habitat. Although this is not an evaluated wetland, and only comprises an area of about 0.8 ha, it was a feature considered worthy of protection in the original EIS, with an attempt to route the collector road around it and provide some buffering. The recent peer review comments on the addendum expressed concern regarding changes between the development plans included in the original 2010 EIS report and the 2013 updated EIS report in relation to this wetland, which is acknowledged. Those changes included the removal of the most southerly portion of the wetland to accommodate a collector road with geometry improvements that had been discussed with the Town, and the removal of the northern tip of the wetland to facilitate a more efficient development plan; collectively, this results in a reduction of the wetland size by roughly 0.05 ha, or 6%, with 94% of the feature to be retained. While allowing for the protection of natural or naturalized areas of between 15 m to 30 m over the majority of the remaining boundary of this feature that is within the subject lands, the changes also result in an overall reduction in the extent of buffering of this feature.

The changes in the design of the subdivision that impact this wetland were driven by both the desire to improve the geometry of the collector road, and by concerns of the municipality and peer reviewer that earlier development plans included too much disturbance of areas of steeper forested slopes, both of which were discussed in the meeting of December 21, 2011. To address these changes, and to also ensure a viable development, changes in the level of protection being afforded this wetland were necessary. This included protecting larger amounts of forest within the eastern portion of the property, but as a consequence, reducing the amount of forest/wetland protection within the western portion of the property. It is acknowledged that these changes will result in some loss of wetland habitat, and some potential reduction in the extent of amphibian breeding habitat associated with this wetland. However as discussed

further below, maintaining (within reasonable limits) the existing groundwater and surface water flows into this low area of the property, and thereby maintaining the vernal pooling and generally wet nature of this feature, is possible. With this, and the maintenance of some forested land surrounding this feature, it is possible to generally maintain its capabilities as amphibian breeding habitat. At the meeting of April 5, 2016, opportunities to install drift fencing on the downgradient side of Beck Boulevard, upgradient of the wetland area, were discussed. This fencing is to discourage any amphibian dispersing from the pond from crossing Beck Boulevard, and will funnel amphibians towards a culvert beneath that road, to a drainage swale between Lots 33-35 and Lots 27-31.

**Recommendation 1:** That Draft Plan conditions require the developer to install drift fencing downgradient of Beck Boulevard adjacent to Block 93 during the construction of that road. This fencing should funnel amphibians towards a culvert beneath Beck Boulevard, towards a drainage swale running between Lots 33-35 and Lots 27-31. The developer shall prepare plans for such drift fencing which are deemed suitable by the municipality, using materials and construction methods which have been proven elsewhere in Ontario.

**Recommendation 2:** The Draft Plan Conditions require a grading plan be submitted for the west side of Beck Boulevard adjacent to Block 93, to the satisfaction of the municipality, which demonstrates that all required grading can be kept within the right-of-way of that road, and that this will minimally impact adjacent trees within Block 93.

## 2. Protection of Wetland Hydrology

As noted above, it is important to protect the hydrology of the wetland area of the property, by reasonably maintaining existing flows to it. A Hydrogeological Study and Water Balance Analysis has been completed for this property (Wilson Associates, Consulting Hydrogeologists, December 18, 2015). The water balance for the property indicates a surplus of 466 mm/year, over a combined internal and external drainage area of 29.3 ha. This drainage, which includes surface water runoff from the subdivision to the east, flows as either surface runoff or as groundwater flow towards the west side of the property. Given the north-south orientation of the wetland, and its central location within the property, this feature presently intercepts a reasonably large proportion of this surplus, calculated to be that from 13.0 ha (see **Figure 1** for pre to post wetland catchment areas). This equates to a surplus within the catchment area of the wetland of  $13.0 \times 10^4 \text{ m}^2 \times 0.466 \text{ m/year} = 6.06 \times 10^4 \text{ m}^3/\text{yr}$ . Note that for the purposes of this assessment, we are assuming 100% of this surplus ends up flowing to the wetland, which is unlikely entirely true (as a small proportion of infiltration may recharge deeper groundwater systems), however it is a good approximation, with this same assumption being carried through to the analysis of future conditions.

Recall that there will be a small reduction in the size of the wetland, to 94% of its present size, which thereby reduces future flow requirements by 6% (i.e.; from  $6.06 \times 10^4 \text{ m}^3/\text{yr}$  down to  $5.70 \times 10^4 \text{ m}^3/\text{yr}$ ).

**The objective is to maintain as much of this surplus as possible, as a best effort to maintain its existing conditions.** Note that there are large year-to-year differences in precipitation within Ontario, often in the order of 40%. Wetland systems are quite resilient, and easily adjust to such year-to-year changes. Accordingly, while it is desirable to maintain flows as close to existing conditions as possible, a change of  $\pm 10\%$  would not have any appreciable influence on wetland conditions. Recognizing that portions of the present drainage area (roads, driveways, and portions of front yard areas) must have runoff directed to stormwater management facilities, and that a preferred means of maintaining wetland hydrology is to direct external drainage (upon polishing), clean groundwater, roof leader and infiltration runoff from lawn areas to it, wetland flows will be somewhat reduced in the future; to maintain this within 10% of the existing, they must be maintained at  $5.13 \times 10^4 \text{ m}^3/\text{yr}$  or more. This is to be achieved through a number of mechanisms, as follows:

- within Block 95, which contains a swale conveying external runoff from the subdivision to the east, the swale is to be routed into a ditch to run in a southerly direction just behind the rear lot limits of Lots 38-35, turning in an easterly direction to flow as a swale in an easement between the rear of Lots 35-33 and Lots 27-31. This swale is to be lined with a minimum of 600 mm of clear stone, similar to the gravel ditch detail shown in the cross-section for Lot 22, to maximize infiltration opportunities (**Appendix D**).
- a swale additionally be constructed within Lots 18-25, just to the rear of those portions of these lots being identified for development, in the edge of the area to be zoned Environmental Protection. That swale will help to define the limits of lot development. It will be constructed in a manner similar to the general ditch detail shown in the Cross-section for Lot 22, and will drain to the north, turning west along the rear of Lots 25 to 27, joining with the swale that runs in an easement between the rear of Lots 38 -33 and Lots 27-31.
- the swales described above will include rock check dams, at intervals as required, to maintain a gentle gradient which encourages infiltration and settlement of solids;
- the terminal portion of this swale will be conveyed in a culvert beneath Beck Boulevard, emptying into a level spreader within the westerly portion of the road allowance, with rock protection incorporated on its downgradient side, dispersing flows across the approximate 20 m area of treed buffer occurring upgradient of the maintained wetland feature; and
- in addition to the above, Lots 19-69 and Lots 85-87, are all to include lot-level measures to encourage the infiltration of stormwater. These are to include roof leaders draining to soakaway pits and enhanced topsoil placement in front yard areas (as lot grading permits), to a minimum average depth of 400 mm.

In combination, these measures will collect and convey, by either surface runoff or groundwater flow, external drainage plus rear lot (EP zone) area of Lots 19-25, from an area of 11.2 ha, the surplus of which is assumed, just as in the present circumstance, to be fully intercepted by the wetland (see **Figure 1** for pre to post wetland catchment areas). Based once again on a surplus of 0.466 m/yr, this equates to  $5.22 \times 10^4 \text{ m}^3/\text{yr}$ , or 92.6% of what would constitute identical flow conditions to the wetland, given its small reduction in size. This is within the targeted value of  $\pm 10\%$ .

**Recommendation 3:** As a Draft Plan condition, the construction of enhanced swales within the rear of Lots 38-35, Lots 18-26, and within an easement between the rear of Lots 38-33 and Lots 27-31, all be required prior to development of those lots, with an easement in favour of the municipality for the servicing of such swales to be registered on title.

**Recommendation 4:** As a condition of Draft Plan approval, during construction of Beck Boulevard, a culverted crossing be required beneath Beck Boulevard, to empty into a level spreader within the westerly portion of the road allowance, with rock protection incorporated on its downgradient side, dispersing flows across the approximate 20 m of treed buffer upgradient of the maintained wetland feature.

**Recommendation 5:** That as a condition of Draft Plan approval, Lots 19-69 and Lots 85-87 are to include lot level measures to encourage the infiltration of stormwater. These are to involve roof leader draining to soakaway pits and enhanced topsoil placement in front yard areas (as lot grading permits) to a minimum average depth of 400 mm.

### 3. Maintenance of Natural Area Functions of Wetland

The measures described in Sections 1 and 2 of this letter will maintain the majority of the small wetland feature within the property, will allow for the general maintenance of groundwater and surface water flows to this feature, will protect some wooded area around the wetland, and will include for some opportunity for amphibians which might breed in this wetland to disperse to both those woodland areas, woodland areas off property to the west, and to a more limited extent woodland areas which are being preserved in the eastern portion of the property. It will allow for the character of this wetland to be maintained, for it to continue to contribute to local wildlife habitat, and for it to continue to perform hydrologic and water quality functions in its role in intercepting local runoff.

The strategy to supply this wetland with external runoff, the quality of which is improved through the enhanced swale features and by outletting via a level spreader through the riparian area of the wetland, and clean runoff from internal portions of the property, are considered a better alternative to conveying surplus flow from the adjacent stormwater facility to this wetland. In addition to allowing for a small reduction in the size of the stormwater facility (and thereby some additional retention of natural

vegetation), the recommended strategy is preferred for maintaining the existing seasonality of flows to this wetland.

#### **4. Tree Protection and Lot Grading to Protect Woodland Areas being Preserved**

Lots 12 to 25 include a large rear yard area that is to be zoned Environmental Protection and which is to be maintained as undisturbed forested slope. Lots 26 and 27, and Lots 35-38, back onto areas of forested slope. Lots 18-26 and 36-39 additionally contain areas of steep slope within those portions of the lots to be developed. It is very important to maintaining the integrity of adjacent woodland areas that there be attention to both edge management within the rear of these lots (or the developable portion of these lots), and proper consideration of how lot grading can be accommodated without impacts on those adjacent woodland areas to be protected. Further to this, Lots 55-61 grade to the area of wetland and adjacent woodland within Block 93 that is to be protected, with it being additionally important that grading for those lots not impact on areas to be protected.

**Appendix D** includes cross-sections which provide information on how such lots can be developed in a manner consistent with the protection of these adjacent woodland/wetland areas, which are further described below.

With respect to edge management on the rear of Lots 12 to 27 and Lots 35 to 38, all of these lots excepting Lots 12-17 include a swale at the rear limits of the lot/development area, as illustrated on the cross-section for Lot 22 (**Appendix D**). The function of such swales in conveying and providing a treatment of external drainage has already been discussed. The upgradient side of this swale will serve as the general limit for clearing, with tree protection fencing (simply a visible barrier, such as snow fencing) to be established on the upgradient edge of it prior to any tree removal. However, there is to be a further 5 m edge management area beyond this limit (which for Lots 12-17, is to commence immediately along the rear limit of development). Within this edge management area, an arborist is to selectively cut trees, by hand, to create a staggered edge. This management plan will include removal of trees posing a hazard, and will also include the removal of the majority of those mature overstory trees within the first 2.5 m of this edge (which are most vulnerable to root compaction, sun scald and wind throw once a rear edge is created). Trees of 25 cm diameter or less will generally be maintained within this first 2.5 m area as part of the edge management strategy.

**Recommendation 6:** That Conditions of Draft Plan Approval include the implementation of an edge management plan for the rear of Lots 12 to 27 and Lots 35 to 38, requiring the installation of tree protection fencing at the rear limits of proposed swales/development area, and selective tree removal by an arborist to remove hazard trees up to 5 m from that fencing (where such trees pose a hazard to rear yard areas), selective removal of mature overstory trees within 2.5 m of that fencing, and creation of a staggered edge

Edge management activities are similarly required for Lots 55-61, where filling will be required towards the rear of those lots, however in these instances such edge management activities can be accomplished towards the rear of the lot. To this end, tree protection fencing should be established 3 m upgradient of the rear lot limit, with this defining the limits of grading. Beyond this limit, an arborist is to selectively cut trees, by hand, to create a staggered edge through the rear 3 m of each property. This management plan will include removal of trees posing a hazard, and will include the removal of the majority of mature overstory trees. Trees of 25 cm diameter or less can generally be maintained as part of the edge management strategy.

**Recommendation 7:** That a condition of Draft Plan approval include the implementation of an edge management plan for the rear of Lots 55-61, requiring the installation of tree protection 3 m upgradient of the rear lot limit, and selective tree removal by an arborist to remove hazard trees where such trees pose a hazard to rear yard areas), selective removal of mature overstory trees, and creation of a staggered edge, all within the rear most 3 m of these lots.

The sample lot grading cross-sections included in **Appendix B** show how lots will be graded to match existing contours at the rear development limits. The cross-section for Lot 22, the lot which has about the steepest grades of any, shows how a combination of rear lot grading and a front walk-up home design can be used to manage such grades. Grading issues are less significant over most of the remaining lots.

## 5. Bat Investigations

Since the time of preparing the updated EIS report in January, 2013, a number of bat species in Ontario have been listed as Endangered in Ontario under the *Endangered Species Act*. This includes the northern long-eared bat, which is known to this area. Although this species was spoken to in both the original and updated EIS reports, it was not a protected species at that time. The subject property does not contain areas suitable for hibernation of this species but does include mature trees with cavities and loose bark which could be suitable for roosting.

Northern long-eared bat has recently been listed as Endangered due to a very rapid and substantial decline in populations of this, and a couple of other bat species, across North America. This decline is caused by a fungal disease, white nose syndrome. That disease spreads easily through bat populations due to their communal hibernation habits. Although the loss of summer roosting habitat, as may occur within this property, is not a factor in the decline of the species, such habitat nevertheless receives protection under the *Endangered Species Act*. To address this issue, surveys are presently being undertaken by a firm with specific expertise in this area. Ministry of Natural Resources and Forestry (MNRF) protocols are being followed in the completion of these surveys, with MNRF staff from the Midhurst District Office being consulted as part of this process.

**Recommendation 8:** That as a condition of Draft Plan approval, bat studies following MNRF protocols be completed to the satisfaction of that agency. The Town is to be provided with summary information on the survey findings, and with any correspondence with MNRF, including either acknowledgement from that office that there are no concerns, or clearance form that office on strategy to protect or compensate for lost summer roosting habitat.

## 6. Butternut Surveys

Butternut is a tree species which is listed as Endangered in Ontario and protected under the *Endangered Species Act*. This species is also in decline because of a fatal fungal disease, butternut canker, not because of habitat loss. This species was not identified during vegetation surveys or other field visits completed as part of the EIS work. However it remains possible that specimens do occur on the property, particularly young trees or saplings which could be easily missed during broad surveys of vegetation communities. For saplings, it is best that investigations for presence be completed a relatively short time (within one year) of site clearing activities. It is noted that there are policies and procedures in place for the identification and management of butternut, and provisions for removal of specimens which have been identified by a butternut health assessor as non-retainable. For retainable trees, there are a variety of possible options, which can include the removal of a limited number of specimens.

**Recommendation 9:** A condition of Draft Plan approval include a requirement for a butternut survey by a qualified butternut health assessor within areas of proposed tree removal prior to the removal of any such trees. If butternut are found, MNRF are to be consulted. The Town is to be provided with summary information on the assessment and, should butternut be found, with any correspondence with MNRF on a strategy to address such trees.

In closing, I trust this addendum appropriately addresses the issues raised in the peer review, and look forward to discussions on any modifications or additions to the recommendations made herein.

Yours truly,

MICHALSKI NIELSEN ASSOCIATES LIMITED

Per:



Gord Nielsen, M.Sc.  
Ecologist  
President

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