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April 22, 2024

Ethan Laman, BURPI, MCIP, RPP
Planner
Upper Canada Consultants
3-30 Hannover Drive
St. Catharines, ON L2W 1A3

Dear Mr. Laman,

**Re: Update to Zion Road EIS and Impact Assessment
53814 Zion Road, Township of Wainfleet**

In 2021, LCA Environmental prepared an EIS to support an application for proposed severance of 53814 Zion Road, in the Township of Wainfleet, to create six rural residential lots. The EIS was scoped to identify potential impacts of development to the Provincially Significant Wetland (PSW) and the woodland feature.

The EIS identified the presence of the Marshville Station Clay Plain PSW and Significant Woodland, which satisfied criteria for Environmental Conservation Area (ECA) designation in accordance with Regional Official Plan Policy 7.B.1.5. The Significant Woodland, which overlaps the PSW, provided foraging habitat for species of Special Concern birds, including Eastern Wood Pewee and Wood Thrush, as well as Provincially Threatened Barn Swallow.

The EIS identified impacts of development expected to result from the proposed severance and subsequent lot development. Some impacts to the woodland features and associated flora and fauna were identified. However, the woodland was identified as a cultural woodland, and disturbance limited to edge habitat is not expected to negatively impact the function of the woodland, including provision of foraging habitat for Species of Special Concern.

The Region reviewed the EIS and provided comments on January 30, 2022, citing non-compliance with Regional Policy 7.B.1.18, which pertains to the creation of lot lines within natural features to be retained. EES (former associate of LCA Environmental) and Regional Environmental Planning staff visited the site on February 17, 2023 to discuss the Regional comments and review site conditions. Regional staff did not offer objection to the woodland mapping based on this site visit but did recommend relocating the proposed dwellings to minimize tree removal requirements within each proposed lot.

On February 12, 2024, prior to a virtual meeting, NPCA staff provided comments on the EIS report, which was dated January 2022. The comments from the NPCA, which had not previously been provided to LCA Environmental, or EES, included:



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- NPCA staff suggested that based on the results of the EIS, “*it appears that additional wetland communities maybe present on site (e.g., Fresh-Moist Mixed Meadow, MEMM4)*” and requested a site visit during the growing season to verify the features. It was also recommended that fall vegetation surveys be completed to identify goldenrod and aster species.
- NPCA staff requested survey dates of the Headwater Drainage Feature assessment be provided, and a site visit to verify whether the drainage feature is regulated by the NPCA.
- Recommend a buffer greater than 15m be achieved, where feasible.

Several design alternatives were considered to incorporate agency comments, including incorporating minimum front yard setbacks to minimize tree removals necessary for building footprints, reducing the number of lots north of the wetland to preserve mature trees, and the final site plan, which combines the two southern lots, preserving natural areas in one residential lot.

The following provides a response to NPCA comments, a summary of development alternatives considered following Regional feedback, as well as an updated assessment of impacts based on final site plan.

Response to NPCA Comments

The comments provided by the NPCA on February 12, 2024 apply to the EIS completed January 2022. However, these comments had not previously been provided to LCA Environmental of EES.

The EIS utilized an updated list of vegetation communities for Southern Ontario, which was created in 2008 by one of the authors of the Ecological Land Classification (ELC) protocol manual (Lee et al., 1998). This list provided a wider range of vegetation types to describe culturally influenced communities unique to Southern Ontario. However, it has since been made unavailable, and in our current work, EES utilizes the classifications of the approved 1998 ELC protocol.

The community referred to by the NPCA was classified in the EIS as a Fresh-Moist Mixed Meadow community (MEMM4). This was a new community, which was created to provide a more descriptive classification of what would now be classified as a Dry-Moist Old Field Meadow (CUM1-1).

The NPCA has indicated that the MEMM4 polygon may represent a wetland community. EES is not in agreement with this suggestion, as meadow communities are not considered to be part of the wetland system under the ELC protocol. The ELC manual does describe “Meadow Marsh” (MAM) communities, which are considered wetlands. However, no meadow marsh community



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was present on site. The botanical inventory provided in Appendix D of the EIS lists all of the botanical species observed within each polygon and identifies their respective coefficient of wetness. Eighty species were documented in the meadow polygon, and most were considered upland species.

Further, all vegetation assessments were completed by a wetland evaluator, certified by the Ministry of Natural Resources and Forestry (MNR). In accordance with the approved Terms of Reference, verification of wetland boundaries includes existing evaluated wetlands and identification of other wetland communities that have not yet been mapped or evaluated. No other wetland communities are present on the subject property.

Recommendation for a fall vegetation survey is outside of the scope of the Terms of Reference, which were approved by the Region and NPCA in May 2021, and June 2021, respectively. Fall vegetation surveys were not required by Regional staff, nor included in the scope of work because the subject property did not provide candidate habitat for White Wood Aster, the only Species at Risk (SAR) Aster likely to occur in the area.

Conditions of the headwater drainage feature were reviewed during field assessment April 6, 2021, and July 23, 2021. The feature has been identified for protection in the EIS, and the proposed development will not interfere with the feature, or its recommended setbacks.

The recommendation to increase the PSW setback has been incorporated into the final development sit plan, which is described below.

Significant Woodland Boundary

There are three woodland pockets on the subject property, including the central woodlot containing the PSW, a 0.53ha woodland north of the existing driveway, and a 0.09ha woodland pocket inclusion on the southeast side of the property. The Significant Woodland feature was identified for the presence of species of Special Concern and the PSW, both of which are located within the larger central woodland. Eastern Wood-pewee and Wood Thrush were only heard calling from this woodland and did not move into the small woodland north of the existing driveway.

All three woodland pockets were identified as Dry-Fresh Woodland with cultural origin and a high degree of disturbance from the previous residential and agricultural uses. Dominant tree species throughout the cultural woodland communities were Black Walnut and Freeman's Maple. However, the woodland north of the existing driveway had a higher density of invasive species throughout, including Black Locust, Honeysuckle, White Mulberry, and Manitoba Maple. Along the eastern boundary of the northern woodland, there is a large patch of *Phragmites australis* and the ground layer on the west side of the woodland has been altered through placement of fill material.



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The 0.53ha woodland along the northern property boundary was not found to provide significant function or contain significant species. With disturbance (fill piles and garbage) and invasive species present throughout, this woodland is distinct from the larger central Significant Woodland and is more appropriately assessed as a non-significant woodland. Accordingly, the woodland north of the driveway is not subject to ROP 7.B.1.11 or 7.B.1.18 but would be regulated under the Regional Woodland Conservation By-law No. 2020-79.

Development Alternatives

Regional review comments (January 30, 2022) noted that the site plan shows lot lines within the identified features to be retained, contradicting ROP 7.B.1.18, which states that lot lines thus created shall not extend into either the area to be retained in a natural state as part of the Core Natural Heritage System (CNHS) or the buffer.

The EIS showed the proposed six residential lots with the southern-most lot (Lot 6) following the 15m setback from the PSW. This proposal avoided lot lines through the sensitive PSW feature and its recommended setback but resulted in lot lines through the Significant Woodland, which is part of the Regional CNHS. Additionally, the proposed dwellings and associated septic beds were shown on the east side of the lot, directly impacting the woodland features, requiring substantial tree removal.

During the site visit on February 17, 2023, Regional staff noted that, for the four northern lots, relocating the proposed dwellings to the west side of the site within the unvegetated areas would limit the need for tree removal and reduce the impacts associated with creating the lot lines through the wooded areas. Town staff also agreed that larger front yard setbacks could be considered for rural residential lots. Consequently, a minimum front yard setback for Lots 1 – 4 was considered to limit the requirement for tree removal (see Figure 1).

Figure 1 shows the first alternative considered based on the feedback provided by Regional staff during the site visit in February 2023.



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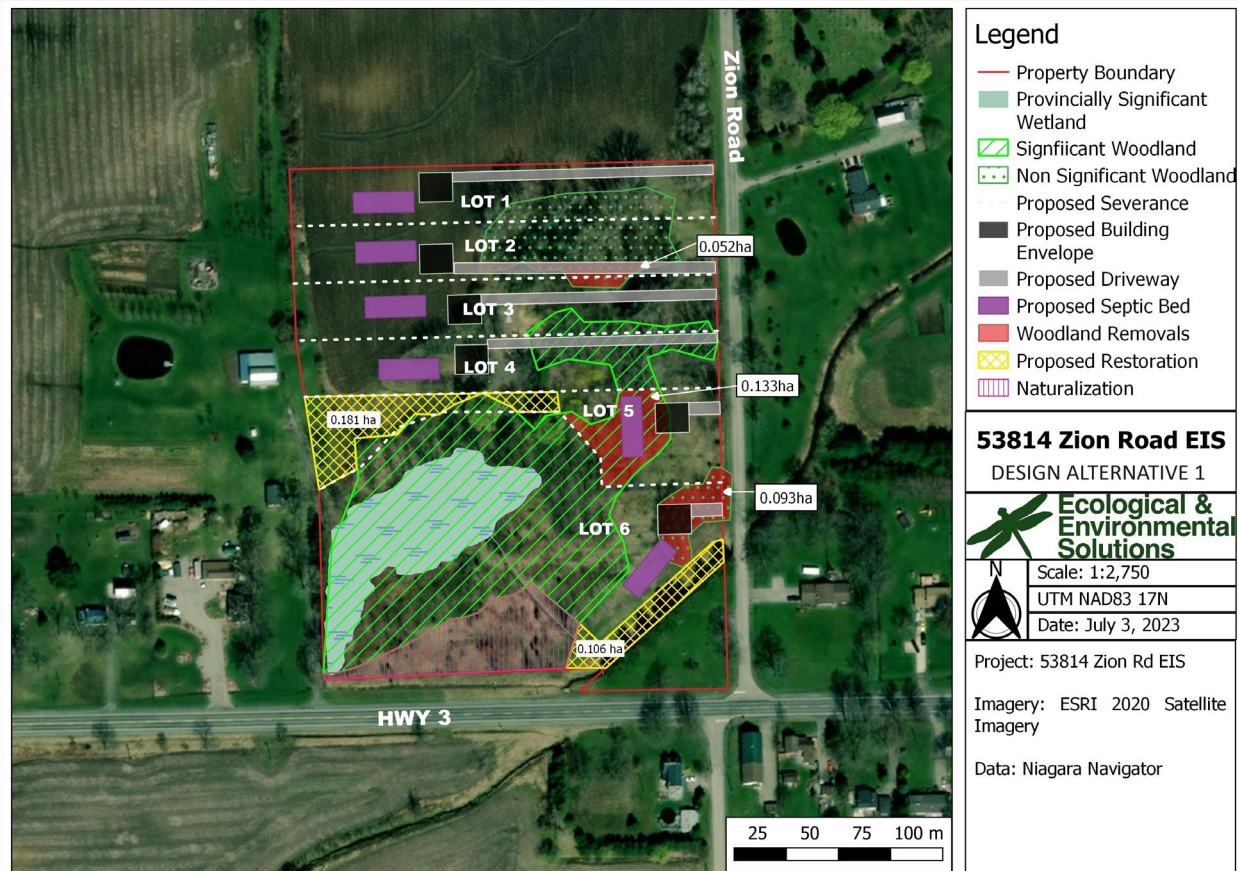


Figure 1: First design alternative considered for 53814 Zion Road, Wainfleet.

The proposed severance for lots 1 through 4 did not change, but the dwellings were relocated to the cleared areas in the west side of the lots to avoid tree removals. The lot line between lots 5 and 6 in this alternative were adjusted to retain 1.245ha of the Significant Woodland within Lot 6.

However, following discussions with Terra-dynamics Consulting, the existing subwatershed divide and presence of a water well immediately west of the property significantly limits the ability to relocate the septic beds for each lot.

Due to the permeability of the soil, the mandatory 30m setback from the well is not sufficient to protect the water well from potential contamination. The recommendation of the hydrogeology study is to maintain the septic beds east of the existing drainage divide on the lot. Consequently, a second design alternative was developed to minimize impacts to trees within the Significant Woodland to the extent possible while also maintaining septic east of the drainage divide (Figure 2).



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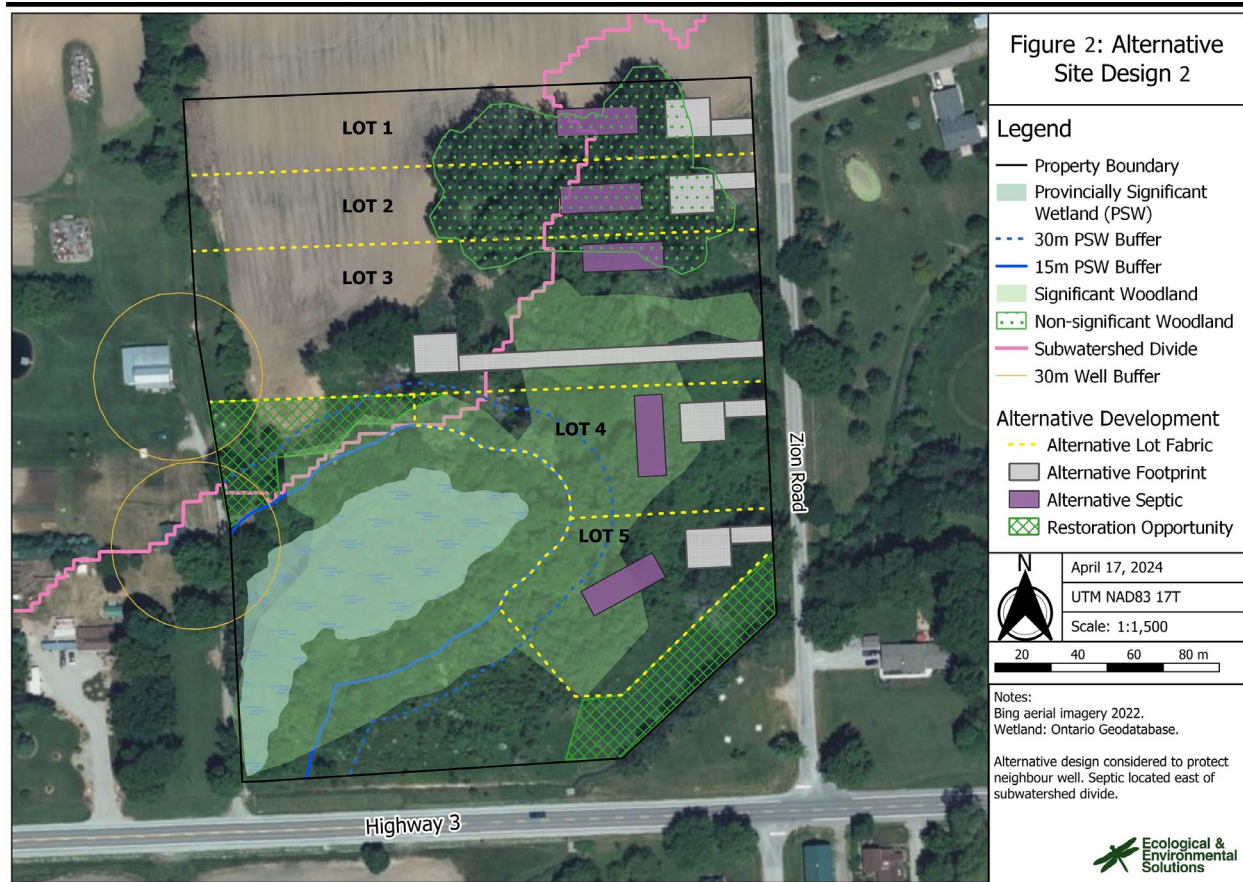


Figure 2: Second design alternative considered for 53814 Zion Road, Wainfleet.

The subwatershed divide identified by Terra-Dynamics begins just north of the PSW along the west boundary of the property, then extends generally northeast through the north three lots. This design alternative combined two of the northern lots, to what is shown in Figure 2 as Lot 3, so that the building footprint and septic could both remain outside of the woodland boundary to minimize tree removal, while protecting the adjacent private well by maintaining the septic system east of the subwatershed divide.

This design alternative also preserved the PSW and 15m setback in its own block, distinct from the proposed residential lots, with the expectation that a public agency would have interest in acquiring the lands.

During a meeting held on February 12, 2024 to discuss the revisions to the site plan, the Township, the Region, and the NPCA indicated that their preference was to protect the natural features within a proposed residential lot. The Region of Niagara also expressed continued concern with the impacts to the Significant Woodland by maintaining Lots 4 and 5 as two separate building lots. A third design alternative for 5 building lots was negotiated, in which Lots 4 and 5 were combined to include the PSW and Significant Woodland feature.



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Final Proposed Site Plan

The final site plan, established through discussions with the Region of Niagara, NPCA, and Township of Wainfleet, proposes five rural residential lots, through severance. The proposed severance will result in four lots (Lots 1- 4) located north of the PSW and Significant Woodland, and one lot (Lot 5) which includes a proposed building and septic footprint, the PSW and associated setbacks, as well as the Significant Woodland feature to be preserved (Figure 3).

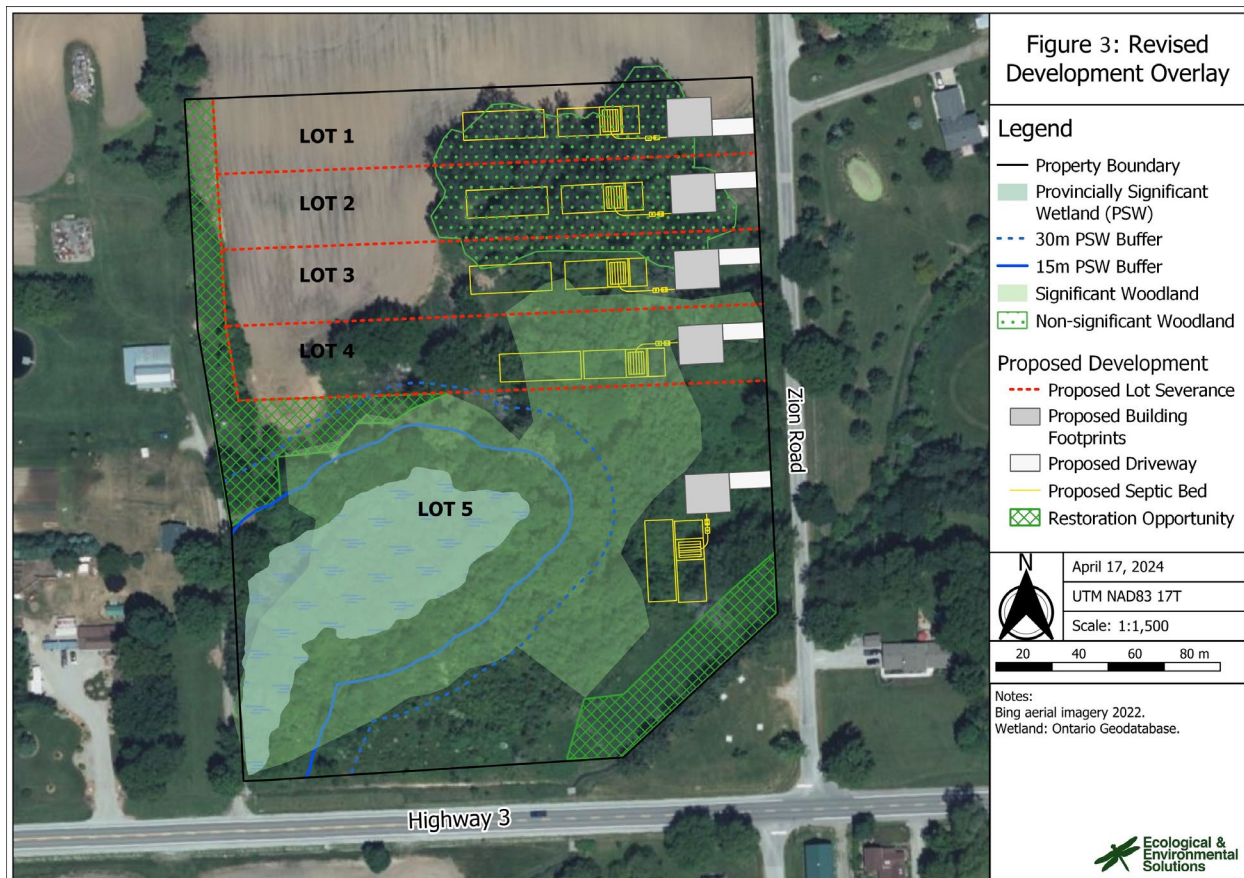


Figure 3: Final proposed Site Plan for 58314 Zion Road, Wainfleet.

The footprints for future dwellings and septic design are located east of the subwatershed divide to protect the neighbouring private well system. The proposed lot line for Lot 5 extends north along the western property boundary to maintain connectivity to the hedgerow which extends north through the adjacent agricultural lands and provides a direct linkage to other woodland and wetland communities.

Previous design alternatives proposed lot lines which abutted or extended along the minimum recommended 15m setback from the PSW. However, the final site plan protects an increased setback, with a minimum 25m from the adjacent lot (Lot 4), but mainly exceeding 30m.



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Opportunities for enhancement of native vegetation and/or ecological function have been identified in Figure 3. In the northwest part of Lot 5, native tree/shrub planting will increase woodland canopy cover while also improving the function of both the wetland buffer, and north-south hedgerow corridor. Additional plantings along the north bank of the Ellsworth drain will also enhance buffer function, protecting water quality from runoff associated with future residential use.

Updated Assessment of Impacts

The EIS concluded that there would be no significant negative impact to the PSW or the function of the Significant Woodland resulting from the proposed development. However, the site plan has been updated to reduce the number of lots, minimizing feature fragmentation to conform to ROP 7.B.1.18, and improve connectivity within the landscape.

Approximately 0.235ha of the Significant Woodland will be fragmented and impacted by development of Lot 3 and Lot 4. It was noted through discussions with Regional staff that this portion of the Significant Woodland is associated with trees lining the former residential driveway. While they represent some of the largest trees on the property, they were planted in a row and are distinct from the naturally occurring trees within the woodland.

However, based on the proposed development footprints shown in Figure 3, there are opportunities to preserve trees associated with the fragmented portion of the Significant Woodland through development of Lot 4.

A total of 1.4ha of the Significant Woodland will be retained within Lot 5, and by increasing the size of the lot, construction of the dwelling and septic system can occur without further impacts to the woodland feature.

The north boundary of the proposed Lot 5 has been disturbed from previous development and site alteration, leaving an area at the back of the lot clear of vegetation. Reforestation of this area could increase the size of the Significant Woodland by 0.154ha.

In previous design iterations, the small woodland pocket located on the east side of Lot 5 would have been impacted by the proposed development footprints. However, the revised plan in Figure 3 provides potential for protection of these trees.

Enhancement of the Ellsworth drain buffer and adjacent fish habitat by planting trees and shrubs within the 10m setback along the municipal drain would provide approximately 0.106ha of naturalized plantings, in addition to the 0.266ha outside of the woodland which will be left to naturalize.

The proposed site plan will result in removal of all or a portion of the northern woodland feature to accommodate development that protects the neighbouring private well. While this woodland



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was not characterized as Significant Woodland, there is potential for preservation of trees on Lots 1 and 2, as the replacement septic system, shown in Figure 3, will not be constructed at the time of development. Additionally, the open space at the back of Lots 1 – 4 provides opportunities for future landowners to either utilize the space for amenities without needing to remove vegetation, or to further naturalize a portion of their property.

Conclusion

The proposed development has been updated so that 1.4ha of Significant Woodland and the PSW are retained entirely within Lot 5. The proposed footprint of the dwelling and septic system on Lot 5 are located entirely outside of the Significant Woodland feature, and 30m wetland setback. It also provides opportunities to protect additional trees along Zion Road.

The proposed severance and construction of Lot 4 will result in fragmentation of approximately 0.235ha of the Significant Woodland, which is already impacted by the existing driveway. There is potential to protect woodland trees through construction of Lot 4, but the fragmentation of 0.235ha of Significant Woodland through lot severance represents 14% of the woodland feature, while 86% will be retained within Lot 5.

Approximately 0.154ha has been identified for potential reforestation within Lot 5, which would increase the size of the Significant Woodland from 1.4ha to 1.554ha, approximately 95% of its current size. A 10m corridor along the western property boundary has also been identified and protected within Lot 5, which will improve connectivity to adjacent hedgerow features. This corridor provides an additional 0.1ha of naturalized area, achieving a net gain in area and ecological function of the Significant Woodland feature.

Based on the above information, the proposed changes to the development bring the plan into conformity with ROP 7.B.1.11, as well as ROP 7.B.1.18. The site plan also provides increased setbacks from the PSW, minimizing interference within NPCA-regulated lands, and enhances connectivity in the landscape.

Should you have any questions or require additional information, please contact our office.

Sincerely,



Anne McDonald, B.Sc., EP
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Appendix A
Revised Development
Overlay Mapping





Figure 2: Revised Development Overlay

Legend

- Property Boundary
- Provincially Significant Wetland (PSW)
- - - 30m PSW Buffer
- 15m PSW Buffer
- Significant Woodland
- Non-significant Woodland

Proposed Development

- - - Proposed Lot Severance
- Proposed Building Footprints
- Proposed Driveway
- Proposed Septic Bed
- Restoration Opportunity

	April 17, 2024
	UTM NAD83 17T
	Scale: 1:1,500
	

Notes:
 Bing aerial imagery 2022.
 Wetland: Ontario Geodatabase.

