



100 John West Way,
Box 1000,
Aurora, ON L4G 6J1
Phone: 905-727-3123 Ext.4223
Email: agreco@aurora.ca
www.aurora.ca

Planning and Development Services
Committee of Adjustment

NOTICE OF PUBLIC HEARING

To: Boards, Commissions, Authorities or other Agencies

Re: Application for Minor Variance
Losar Developments Inc.
684 Henderson Drive
Part Lot 76 Concession 1 King Part 3 65R5578
File Number: MV-2017-16

Notice Date: April 18, 2019

Meeting Date: May 9, 2019

Attached is the above-noted Application, which has been submitted to the Town of Aurora Committee of Adjustment.

The Committee will be holding a Public Hearing to review the Application in the **Council Chambers** (main floor) of the Town Hall, 100 John West Way, Aurora, on the above-noted meeting date to consider the matter. In accordance with the *Planning Act* and Regulations made therein, the Committee must provide certain Boards, Commissions, or other public Authorities with an opportunity to submit comments in respect of the Application. In order for the Committee to have your comments available for the public hearing, I would appreciate receiving them no later than **Thursday, May 2, 2019**.

NOTE:

If we do not receive your comments by the above noted date, we will assume that there are no concerns with this Application.

Antonio Greco
Secretary-Treasurer/Planning Technician
Committee of Adjustment

Attachment

**NOTICE OF PUBLIC HEARING
MINOR VARIANCE**

Pursuant to Section 45(5) of *The Planning Act*

FILE NUMBER: MV-2017-16

APPLICANT: Losar Developments Inc.

PROPERTY: 684 Henderson Drive
Part Lot 76 Concession 1 King Part 3 65R5578

ZONING: Estate Residential Zone (ER)

PURPOSE: The Owner has submitted a Minor Variance Application in proposing a building envelope within the Oak Ridges Moraine key natural heritage features, Minimum Vegetation Protection Zone, Significant Woodland and Category 2 lands.

**BY-LAW
REQUIREMENT:**

- 1) Section 14.1.2(ii) states no development or site alteration shall occur on that portion of said lot that is within the key natural heritage features, as show on Schedule "B", to this By-law, without an amendment to, or relief from the Zoning By-law.
- 2) Section 14.1.3(i) and 14.1.4(i) on the Zoning By-law specifies that no development or site alterations shall occur on that portion of the lot that contains a significant woodland or one or more minimum vegetation protection zones as shown on Schedule "B" of the By-law, without an amendment to, or relief from the Zoning By-law.
- 3) Section 14.4.3(i) states notwithstanding Subsection 14.4.1 no development or site alteration shall occur on Category 2 lands identified on Schedule "E" of the By-law, an amendment to, or relief from the Zoning By-law.

PROPOSAL: **Please note that the proposed building envelope does not represent the future proposed dwelling footprint. The future proposed dwelling unit will be required to be contained within the proposed building envelope. If approved, the building permit process will ensure that the future proposed dwelling is located within the proposed building envelope.**

- a) The applicant is proposing a building envelope of 916.0m² and associated driveway, whereas Section 14.1.2(ii) states that no development or site alteration shall occur on that portion of said lot that is within Key Natural Heritage Features.
- b) The applicant is proposing a building envelope of 916.0m² and associated driveway, whereas Section 14.1.3(i) and 14.1.4(i) states that no development or site alteration shall occur on that portion of the lot that contains Significant Woodland or Minimum Vegetation Protection Zones.

- c) The applicant is proposing a building envelope of 916.0m² and associated driveway, whereas Section 14.4.3(i) states that no development or site alteration shall occur on Category 2 lands.

A Location Map and a Site Plan illustrating the request are attached.

This Application will be heard by the Committee of Adjustment on the Date and Time shown below.

DATE:	May 9, 2019
TIME:	7:00 p.m.
LOCATION:	COUNCIL CHAMBERS (MAIN FLOOR) AURORA TOWN HALL 100 JOHN WEST WAY AURORA, ONTARIO

You are invited to attend this Public Hearing in person to express your views about this Application or you may be represented for that purpose. If you do not attend at the hearing, it may proceed in your absence. Any person who supports or opposes this Application may speak at the hearing. Alternatively, you may forward a signed, written submission, together with reasons for support or opposition, which **must be received by the undersigned no later than 12:00pm on the day of the hearing**. If you do not attend and have not registered with Staff as an interested party, you will not be entitled to any further notice of the proceedings.

If you wish to be notified of the Decision of the Committee of Adjustment with respect to this Application, you must complete a "Request for Decision" form available at the hearing or make a written request to the undersigned prior to the hearing.

Any inquiries for this Application, please contact the undersigned, at **905-727-3123 Ext. 4223**, Monday to Friday between 8:30 am and 4:30 pm. Comments may also be mailed to the Planning and Development Services department, Aurora Town Hall, 100 John West Way, Aurora ON L4G 1J6.

Personal Information Collection Notice

Your personal information and your comments are collected under the legal authority of the *Planning Act, R.S.O. 1990, Chapter c.P.13, as amended*. Your comments in respect to this Application will become part of the decision making process of the Application as noted on this form. Pursuant to Section 27 of the *Municipal Freedom of Information and Protection of Privacy Act, R.S.O. 1990, c. M.56, as amended, (the "Act")* public feedback to planning proposals is considered to be a public record and may be disclosed to any individual upon request in accordance with *the Act*. Questions about this collection should be directed to the Town Clerk, Town of Aurora, 100 John West Way, Box 1000, Aurora ON L4G 6J1 905-727-3123.

DATED THIS 18TH DAY OF APRIL, 2019.



Antonio Greco
Secretary-Treasurer/Planning Technician
Committee of Adjustment

ATTACHMENTS

Attachment 1- Location Map

Attachment 2 – Site Plan

Agenda packages will be available prior to the Hearing at:

<https://www.aurora.ca/TownHall/Pages/Council%20and%20Committee%20Meetings.aspx>



Town of Aurora
Planning and Development Services
Building Division
100 John West Way, Box 1000
Aurora, ON L4G6J1
(905) 727-3123 Ext. 4388
Fax: (905) 726-4731

March 21, 2018

Application # PR20170452

Weston Consulting
201 Millway Avenue, Suite 19
Vaughan, Ontario
L4K 5K8

RE: Preliminary Zoning Review
672 Henderson Drive, Aurora, Ontario

In response to your preliminary zoning review request, the above noted property is zoned ER (Estate Residential Zone) by the Town of Aurora Zoning By-law #6000-17 as amended.

- 1- Based on the information provided to us, we have identified the following areas of non-compliance with the Zoning By-law:
 - a. **Section 14.1.2(ii) states no development or site alteration shall occur on that portion of said lot that is within the key natural heritage features, as shown on Schedule "B", to this By-law, without an amendment to, or relief from the Zoning By-law. The applicant is proposing to develop and alter the site to construct a 480.0m² detached dwelling and associated driveway.**
 - b. **The subject property is located in the Oak Ridges Moraine Settlement Area with Minimum Vegetation Protection Zones and it contains Significant Wood Feature. Section 14.1.3(i) and 14.1.4(i) of the zoning By-law specifics that no development or site alterations shall occur on that portion of the lot that contains a significant woodland or one or more minimum vegetation protection zones as shown on 'Schedule B' of the By-law, without amendment to, or relief from the Zoning By-law. The applicant is proposing to develop and alter the site to construct a 480.0m² detached dwelling and associated driveway, where the entire lot is impacted by Significant Woodland or Minimum Vegetation Protection Zones.**
 - c. **Section 14.4.3(i) states notwithstanding Subsection 14.4.1 no development or site alteration shall occur on Category 2 lands identified on Schedule "E" of the By-law, without an amendment to, or relief from the Zoning By-law. The**

applicant is proposing to develop and alter the site to construct a 480.0m² detached dwelling and associated driveway.

- 2- Due to lack of information, the Building Division is unable to determine the compliance with Section 7.2 with respect to siting and building specifications.
- 3- The subject property is located within the generic regulations of the Lake Simcoe Region Conservation Authority (LSRCA), therefore, an approval from LSRCA is required prior to the issuance of the building permit.

Please be advised that the above noted comments are based on the information submitted by the applicant and in accordance with the status of the Zoning By-law at the time of issuance of this letter. Any additional information or change in status of the Zoning By-law may bring some areas of the proposal in non-compliance with the Zoning By-law.

Please note pre-consultation with the Town's Development Planning Division is required prior to submitting a planning application to the Town.

This is not a building permit. Where the proposed work requires a building permit, the Town's Building Division will be required to perform a comprehensive zoning review of the building permit application.

Regards,



Ashley Vanderwal
Zoning & Application Examiner
(905) 727-3123 extension 4390



Town of Aurora
Planning and Development Services
Building Division
100 John West Way, Box 1000
Aurora, ON L4G6J1
(905) 727-3123 Ext. 4388
Fax: (905) 726-4731

March 21, 2018

Application # PR20170457

Weston Consulting
201 Millway Avenue, Suite 19
Vaughan, Ontario
L4K 5K8

RE: Preliminary Zoning Review
684 Henderson Drive, Aurora, Ontario

In response to your preliminary zoning review request, the above noted property is zoned ER (Estate *Residential Zone*) by the Town of Aurora Zoning By-law #6000-17 as amended.

- 1- Based on the information provided to us, we have identified the following areas of non-compliance with the Zoning By-law:
 - a. **Section 14.1.2(ii) states no development or site alteration shall occur on that portion of said lot that is within the key natural heritage features, as shown on Schedule "B", to this By-law, without an amendment to, or relief from the Zoning By-law. The applicant is proposing to develop and alter the site to construct a 916.0m² detached dwelling and associated driveway.**
 - a. **The subject property is located in the Oak Ridges Moraine Settlement Area with Minimum Vegetation Protection Zones and it contains Significant Wood Feature. Section 14.1.3(i) and 14.1.4(i) of the zoning By-law specifics that no development or site alterations shall occur on that portion of the lot that contains a significant woodland or one or more minimum vegetation protections zones as shown on 'Schedule B' of the By-law, without amendment to, or relief from the Zoning By-law. The applicant is proposing to develop and alter the site to construct a 916.0m² detached dwelling and associated driveway, where the entire lot is impacted by Significant Woodland or Minimum Vegetation Protection Zones.**
 - a. **Section 14.4.3(i) states notwithstanding Subsection 14.4.1 no development or site alteration shall occur on Category 2 lands identified on Schedule "E" of the By-law, without an amendment to, or relief from the Zoning By-law. The**

applicant is proposing to develop and alter the site to construct a 916.0m² detached dwelling and associated driveway.

- 1- Due to lack of information, the Building Division is unable to determine the compliance with Section 7.2 with respect to siting and building specifications.

- 1- The subject property is located within the generic regulations of the Lake Simcoe Region Conservation Authority (LSRCA), therefore, an approval from LSRCA is required prior to the issuance of the building permit.

Please be advised that the above noted comments are based on the information submitted by the applicant and in accordance with the status of the Zoning By-law at the time of issuance of this letter. Any additional information or change in status of the Zoning By-law may bring some areas of the proposal in non-compliance with the Zoning By-law.

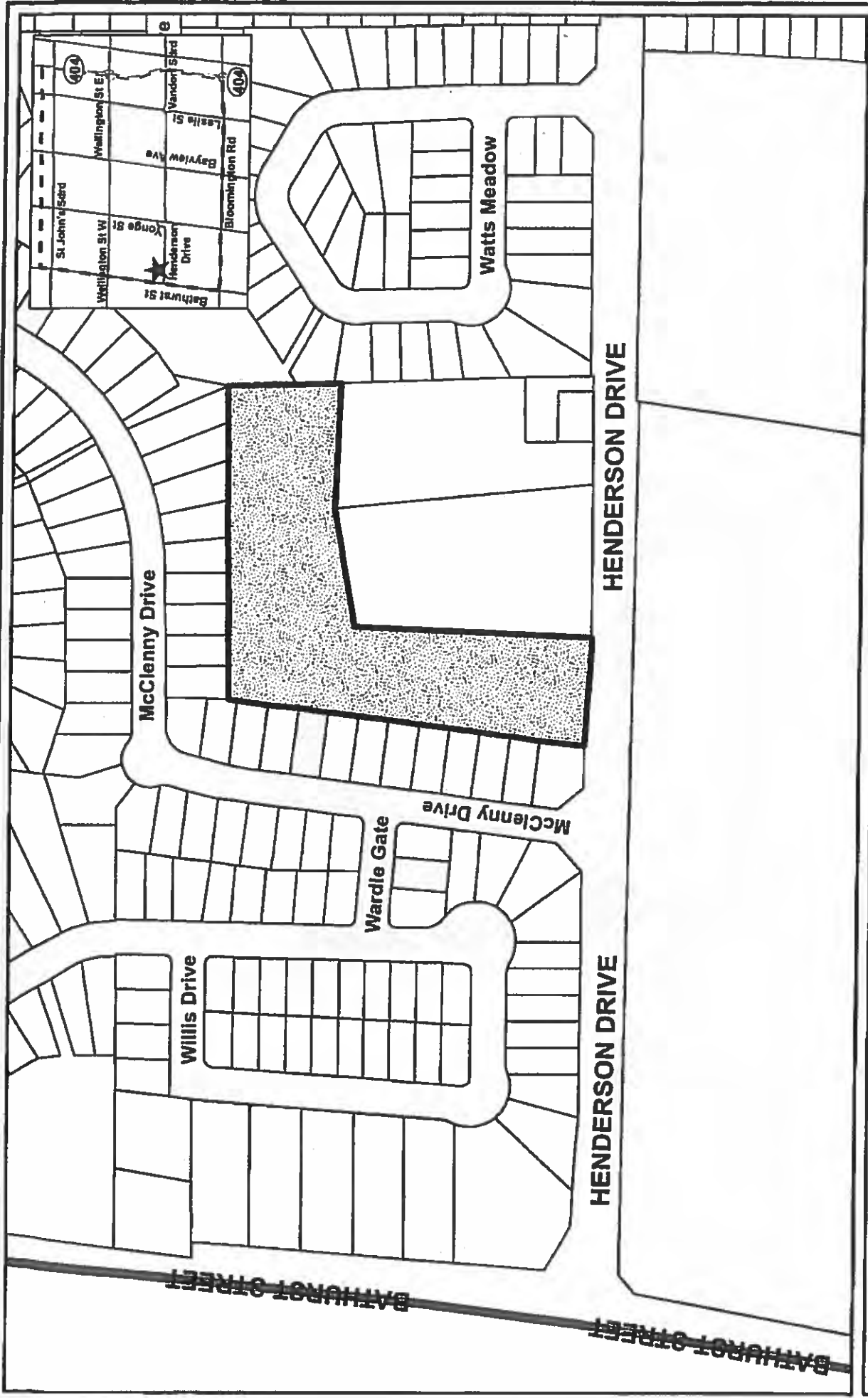
Please note pre-consultation with the Town's Development Planning Division is required prior to submitting a planning application to the Town.

This is not a building permit. Where the proposed work requires a building permit, the Town's Building Division will be required to perform a comprehensive zoning review of the building permit application.

Regards,



Ashley Vanderwal
Zoning & Application Examiner
(905) 727-3123 extension 4390



KEY MAP

FILE NO: MV-2017-16
 ADDRESS: 684 HENDERSON DRIVE
 TOWN OF AURORA
 COMMITTEE OF ADJUSTMENT



Subject Lands





**WESTON
CONSULTING**

planning + urban design

Planning and Development Services
Committee of Adjustment
100 John West Way
Aurora, ON L4G 6J1

March 13, 2019
File 6269

Attn: Antonio Greco, Secretary Treasurer of the Committee of Adjustment

Dear Sir,

**RE: Resubmission of Minor Variance Applications (MV-2017-15A-C, MV-2017-16A-C)
672 and 684 Henderson Drive
Town of Aurora**

Weston Consulting is the planning agent for Losar Developments Ltd. and Michael Stanek, the legally registered land owners of the properties municipally known as 672 and 684 Henderson Drive (herein referred to as the “subject lands” or “Lot 672” and “Lot 684” respectively). It is the intention of the land owners to secure building permissions for the future development of one single detached dwelling per lot, as permitted by the Oak Ridges Moraine Conversation Plan (ORMCP) (2017) and the existing municipal policy context.

At this stage, the precise building footprints of the proposed single detached dwellings have not been determined. The accompanying Concept Plan proposes building envelopes for each lot which define the boundaries for where the future detached dwellings can be situated. These boundaries are based on environmental and grading constraints to ensure the least amount of disturbance. In addition, we can confirm that the future dwellings will not be considered a “major development” by the ORMCP as the ground floor area of each dwelling will not exceed 500m².

Proposed Minor Variance Applications

In order to secure these building permissions, Minor Variance applications (MV-2017-15A-C & MV-2017-16A-C) were first submitted to the Town on April 12, 2017 to seek relief from provisions of the in-force by-law at that time, Town of Aurora Zoning By-law 2213-78, which restrict development for *Oak Ridges Moraine Settlement Area* lands containing natural heritage features and located on Category 2 lands. The applications were deferred by the Committee of Adjustment at the Hearing of May 11th, 2017. A resubmission of the applications was made on February 2, 2018. The resubmission provided a modified concept, an updated Natural Heritage Evaluation (NHE), responses to comments from Town Staff and the Lake Simcoe Region Conservation Authority (LSRCA) and discussion regarding comments raised by members of the public.

Since this resubmission of February 2018, the Town initiated Peer Review process has been completed, sign-off has been received from the LSRCA, further discussions have been held with Town Staff and the previous technical submission materials, specifically the NHE, have been updated to address Town and external agency comments. In addition, a Tree Inventory, at the request of Town Staff, has also been completed.

The purpose of this second resubmission is to provide Town Staff with these additional and updated materials, as well as an update on the progress made since the last resubmission. Also included in this resubmission is a Preliminary Grading Plan and Sight Distance Analysis, to address comments from the Engineering Division, and a Preliminary Zoning Review Letter dated March 21, 2018. In discussion with Planning Staff, we were advised that a further zoning review was not needed. It is our intention to have these applications scheduled for the next Committee of Adjustment Hearing.

Please note that this Covering Letter is supplemental to the previous Cover Letters and planning rationale prepared by Weston Consulting dated April 12, 2017 (Appendix I) and February 2, 2018 (Appendix II). This letter should be read in conjunction with those previously submitted.

Concept Plan

The location and areas of the building envelopes illustrated by the Concept Plan remain consistent with the resubmission of February 2, 2018. The only modification which has been made to the plan is an adjustment to the positioning of the northern portion of the driveway for Lot 684. This adjustment was made to protect additional potential roost trees which were identified through an updated snag survey, conducted in November of 2018. Further detail regarding the need for this updated snag survey and the results is provided in the NHE.

North-South Peer Review

A Town initiated peer review of the NHE, prepared by Beacon Environmental (herein referred to as "Beacon"), was conducted by North-South Environmental Inc. (herein referred to as "North-South") following our resubmission of February 2. The purpose of the peer review was to assess the natural heritage aspects of the NHE and the relevant policy framework. The peer review was completed on May 24, 2018.

North-South commented that the natural heritage aspects of the NHE were well done and acknowledged that impacts to the lands Significant Woodland feature is unavoidable given the fully wooded nature of the site. Impacts to other principal features, such as the watercourse and associated fish habitat, were noted to be "*avoided or mitigated as much as possible.*" The peer review included one policy conformity comment and minor comments related to the more technical content of the NHE. Beacon prepared a response letter dated September 14, 2018 to address the comments raised. This method of response was deemed appropriate by both the Town and North-South.

On September 20, 2018, North-South provided the Town with a letter stating their satisfaction with Beacon's response letter, concluding the peer review process. The enclosed NHE has been updated to incorporate all of Beacon's responses and provides further detail on the Landform Conservation Plan comment raised by North-South. It is our opinion that North-South's satisfaction with the NHE provides further evidence that the proposed Minor Variance applications are appropriate and have merit.

Tree Inventory

Following the first submission, the Town did not identify the preparation of a Tree Inventory as required. Rather, a memo from Parks, Recreation and Cultural Services dated May 3, 2017, noted that the completion of a Tree Inventory would be satisfied as a condition of approval. In addition, the need for a Tree Inventory was not requested or identified as required in any comments received from the LSRCA or North-South. However, based on the Town's request later on in the process, a Tree Inventory has been prepared and is enclosed with this resubmission package.

A meeting was held with Town Staff, Beacon, the land owner and Weston Consulting on October 9, 2018 to discuss the preparation of the Tree Inventory. The objective of the meeting was to establish a Terms of Reference acceptable to Town Staff. The Terms of Reference is set out in the meeting minutes provided in Appendix III.

It is important to recognize that the results of the Tree Inventory are based on the proposed building envelopes for Lot 672 and Lot 684 and are not representative of the final building footprints for each lot. During the detailed design stage for the future dwellings, a new Tree Inventory will be required to provide an accurate calculation of tree removals. For instance, for Lot 684, the total tree removals will be less than what is presented in the Tree Inventory as the building footprint is not proposed to exceed 500m².

Comments: Town and Agency Comments

Town Comments

Additional comments from Town Staff were only received from the Engineering Division in a memorandum dated June 5, 2018, following the last resubmission. Based on discussions with Sabir Hussain, the author of the comments, we have been requested to provide additional information in response to comment 7, regarding the feasibility of sanitary servicing and comment 8, regarding safe sight lines for Lot 672.

A letter from Schaeffers Consulting Engineers, dated March 13, demonstrates that sanitary servicing options have been investigated and details the manner for securing servicing for the subject lands. In relation to comment 8, a Sight Distance Analysis, dated March 2019, has been prepared by NexTrans Consulting Engineers. In addition, a Preliminary Grading Plan prepared by Schaeffers Consulting Engineers is enclosed with this resubmission and addresses the grading related comments. It is important to recognize that this plan is subject to revisions as minor adjustments will occur during the detailed design stage. The remaining comments have been

incorporated as conditions of approval (Appendix IV) as they are premature and relate to matters to be fulfilled at the time of Building Permit application.

In conjunction with the materials prepared by NexTrans Consulting Engineers, we note that a long-standing history exists between the Town and the land owners on this matter relating to the provision of driveway access. This issue first arose in 1984 from the widening and paving of Henderson Drive and continued when Henderson Drive was reconstructed, which began in 1999. The Town committed to preserving access to the properties.

The Concept Plan proposes a driveway access for Lot 672 that is optimally positioned from an ecological standpoint given the existing environmental constraints, and from a grading perspective given the site's topography. The investigation conducted by NexTrans Consulting Engineers indicates that this location is also favourable and supportable from a traffic engineering and stopping sight distance point of view.

Agency Comments

Following the last resubmission, comments were received from the LSRCA dated April 5, 2018. These comments were addressed by Beacon in a Comment Response Letter dated May 14, 2018. Subsequently, clearance was provided by the LSRCA on August 3, 2018, as they confirmed that all of their comments had been addressed. The LSRCA has recommended several conditions of approval to be associated with the applications. These are reflected in the attached proposed Conditions of Approval List (Appendix IV).

It should be acknowledged that the Region of York provided their sign-off on these applications following the initial submission of April 12, 2017 in correspondence dated April 25, 2017.

Proposed Conditions of Approval

Appendix IV provides a list of approval conditions which have been developed based on the Town and agency comments received, along with additional conditions proposed given the nature of the proposal. We recommend that these conditions be imposed on both applications. These conditions relate to the detailed design stage associated with the construction of the future single detached dwellings and will ensure that the proper measures are undertaken at the time of building permit submission.

Concluding Remarks

Our planning opinion on the merits of these applications remains consistent with the reasons outlined in our previous submissions and is further supported by the technical materials enclosed. The requested variances maintain the general intent and purpose of the Town's Official Plan which through Official Plan Amendment (OPA) 48, provides the land's existing development rights for one single detached dwelling per lot. This is consistent with the in-force Provincial policy framework, the ORMCP (2017). The supporting technical materials indicate that the proposed

building envelopes are appropriate from an ecological perspective as they respect the site's various environmental constraints and avoid impacts on Species at Risk (SAR).

The proposed building envelopes comply with all zone requirements dictated by the former Zoning By-law 2213-78, which was in force at the time of the initial submission, and the current Zoning By-law 6000-17. The relief being sought results from zoning provisions related to the existence of natural heritage features on the lands, which is minor in nature given that the Zoning By-law grants development rights to the properties allowing for one single detached dwelling per lot. In our opinion, the proposal meets the general intent and purpose of the Town's Zoning By-law.

The enclosed materials prepared by Beacon, Schaeffers Consulting Engineers and NexTrans Consulting Engineers demonstrate that the applications are desirable and appropriate, as they propose the most limited disturbance to the ecological integrity of the lands. The proposed applications present development envelopes imposing the least level of impact. The intention of these applications is to present proposed building envelopes and driveway locations which will result in the least amount of ecological disturbance, which has been clearly demonstrated.

It is our opinion that the proposed applications satisfy Section 45(1) of the *Planning Act*. Both properties maintain historic and current development rights for one single detached dwelling per lot providing the basis for the proposals. Given the inherent conditions of the subject lands, the building envelopes have been planned in a manner which respects the ecological integrity of the lands and, in our opinion, does not adversely impact the surrounding area.

We believe the proposed applications have merit and should be approved by the Committee of Adjustment. We trust that the enclosed materials are in order for Staff to facilitate their review and we request that these applications be scheduled for the next Committee of Adjustment Hearing.

Yours truly,
Weston Consulting
Per:



Ryan Guetter, BES, MCIP, RPP
Senior Vice President

c. Losar Developments Limited
M. Stanek

Appendix I – Weston Consulting's Submission Covering Letter dated April 12, 2017
Appendix II – Weston Consulting's Resubmission Covering Letter dated February 2, 2018
Appendix III – Minutes from Meeting held on Tuesday, October 9, 2018
Appendix IV – Proposed Conditions of Approval

**Appendix I – Weston Consulting’s Submission Covering
Letter dated April 12, 2017**



**WESTON
CONSULTING**

planning + urban design

Planning and Development Services
Committee of Adjustment
100 John West Way
Aurora, Ontario L4G 6J1

April 12, 2017
File 6269

Attn: Justin Leung, Secretary-Treasurer for Committee of Adjustment

Dear Sir,

**RE: Minor Variance Applications
672 and 684 Henderson Drive
Town of Aurora**

Weston Consulting is the planning agent for Losar Developments Ltd. and Michael Stanek, the legally registered owners of the properties municipally known as 672 and 684 Henderson Drive in the Town of Aurora (herein referred to as the "subject lands"). We have been retained to coordinate the submission of minor variance applications for each property to seek relief from provisions in the Town of Aurora's Zoning By-law 2213-78, which restrict development for settlement area lands located within key natural heritage features. The purpose of this letter is to provide a planning rationale in support of these applications in accordance with Section 45 (1) of the *Planning Act* and good planning principles.

Description of the Subject Lands

The subject lands are located on the north side of Henderson Drive, east of Bathurst Street in the Town of Aurora. The property at 672 Henderson Drive has an area of 1.15 ha (2.84 acres), while the other land parcel is larger, with an area of 2.02 ha (4.99 acres). Both properties maintain frontage on Henderson Drive and are currently undeveloped. Natural heritage features including a watercourse and woodlands exist on the property. The subject lands are surrounded by low density residential uses to the north, east and west. The Cass Woodlot and Norm Weller Park is located to the south of the lands.

Development Proposal

The Concept Plan accompanying these applications illustrates proposed building envelopes and driveway locations for each property. Losar Developments Limited is interested in obtaining the necessary Town of Aurora and Lake Simcoe Region Conservation Authority approvals to develop the subject lands for future residential uses, specifically, one single detached dwelling unit per lot, permitted as of right through existing and historic zoning regulations.

It is important to understand that the proposed building envelopes of 610 m² for 672 Henderson Drive, and of 1,425 m² for 684 Henderson Drive, as depicted on the Site Plan, do not represent the actual proposed dwelling footprints. At this time, the building footprints have not been defined.

This proposal is only to seek approval of the building envelopes and access driveway locations which have been established. These proposed envelopes represent the most optimal locations for siting each dwelling as they provide the lowest possible impact on the surrounding area. The future residential dwellings, and any associated accessory structures, will be located within the building envelopes identified.

Planning Policy Framework

The subject lands are entirely located within the Oak Ridges Moraine Conservation Plan Area (ORMCP) and are designated as “*Settlement Areas*” and are located within a Category 2 Landform Conservation Area. Section 18.(3) of the ORCMP directs that:

“ With respect to land in Settlement Areas, all uses permitted by the applicable official plan are permitted, subject to the provisions of this Plan that are listed in subsections 19 (3) and 31 (4).”

The applicable provisions listed in subsection 19 (3) and 31 (4) provide policy direction for development in proximity to *Natural Heritage Features* (KNHFs) and *Hydrologically Sensitive Features* (HSFs). Beacon Environmental was retained to complete a Natural Heritage Evaluation (NHE) to determine the location of KNHFs and HSFs, along with delineating the required Minimum Vegetation Protection Zones (MVPZs). The NHE provided direction to ensure that the proposed development would not adversely impact the ecological integrity of the lands. The subject lands are also a regulated area under the *Lake Simcoe Protection Plan (LSPP)*.

The Region of York Official Plan classifies the subject lands as “*Urban Areas*”, a designation intended to accommodate much of the planned growth for York Region. The Town of Aurora Official Plan and Official Plan Amendment 48 (OPA 48) identify a number of environmentally significant features on the subject lands. Section 3.13.4.f.vi of OPA 48 directs that a Natural Heritage Evaluation is required for lands within ORMCP *Settlement Areas* containing KNEFs, HSFs and MVPZs to ensure compliance with the ORMCP. Schedule E1 – Environmental Designations on ORM of the Town’s Official Plan indicates the KNHFs on the subject lands which include “*ORM – Endangered, Rare and Threatened Species*”, “*Watercourse*” and “*Woodlands*”. Schedule E1 also identifies required MVPZs of 30 m for both the watercourse and woodland features.

The Town of Aurora Zoning By-law 2213-78, which is in effect, zones the lands as “*Rural Residential (RR)*”, which permits one single detached dwelling per lot. The Town of Aurora is currently in the process of completing a Comprehensive Zoning Review and has indicated that this RR zone is being re-categorized to the “*Estate Residential (ER)*” zone. This new zone will continue to permit one single detached dwelling per lot.

Environmental and Engineering Analyses

Environmental and engineering investigations were conducted to understand how the lands could be developed to ensure the least possible impact on the site's natural heritage feature and maintain conformity with the ORMCP's applicable natural heritage policies. Civil engineering work was conducted by our client's engineering consultant, Schaeffers Consulting Engineers, and environmental analyses were undertaken by Beacon Environmental.

A Preliminary Grading Plan, Cross Sections and Covering Note accompany these applications. The Preliminary Grading Plan considered the site's various constraints and the required environmental features to determine the most appropriate location for the access driveways and building envelopes to minimize impacts on the surrounding area. Additionally, preliminary investigations were undertaken by Schaeffers Consulting Engineers to determine that the properties can be serviced by municipal infrastructure.

A Natural Heritage Evaluation (NHE) was prepared by Beacon Environmental and is enclosed with these applications. The NHE provides a review of applicable background policy documents, overview of the seasonal field investigations conducted, an impact assessment of the proposed development and discussion on appropriate mitigation measures. The NHE concludes that the proposed development has been designed to respect the subject lands natural heritage features in terms of building siting and impacts to the surrounding area.

Also, Appendix A of the NHE details the snag surveys which were conducted to determine the habitat potential for Species at Risk (SAR) bats. A meeting was held with the Ministry of Natural Resources and Forestry (MNRF) on August 4th, 2016 to discuss the requirements of the field studies which were conducted. The Snag Survey Memorandum was issued separately to the MNRF on April 3rd, 2017.

Purpose of Applications and Overview of Requested Variances

The purpose of the applications is to seek relief from several provisions from Zoning By-law 2213-78 which restrict development or site alteration within settlement areas located within key natural heritage features. Relief sought is from the following provisions required to facilitate future residential development on the subject lands (note that all sections listed below have been paraphrased):

- Section 34.1.2.(ii) which states that no development or site alteration shall occur on land that is within key natural heritage features;
- Sections 34.1.3(i) and 34.1.4.(i) which restricts development or site alteration on the portion of a lot that contains a significant woodland or one or more minimum vegetation protection zones; and,

- Section 34.4.3(i) which restricts development or site alteration on Landform Conservation Category 2 Lands.

Preliminary Zoning Reviews were conducted by the Building Division for both properties and identified the above provisions as being the only areas of non-compliance with the Zoning By-law for the submitted proposal.

Planning Analysis and Justification

Section 45 (1) of the *Planning Act* provides that a minor variance may be granted if, in the opinion of the Committee of Adjustment, the following tests are met:

- *The variance requested maintains the general intent and purpose of the Official Plan;*
- *The variance requested maintains the general intent and purpose of the Zoning By-law;*
- *The variance is desirable for the appropriate use of the land; and,*
- *The variance is minor in nature.*

The following is a summary of how the applications meet the four tests under the above Section of the *Planning Act*.

Maintains the General Intent and Purpose of the Official Plan

The Town of Aurora's Official Plan and OPA 48, seek to ensure that development within ORMCP *Settlement Areas* does not adversely affect the ecological integrity of the Oak Ridges Moraine key natural heritage features. The proposed minor variance applications maintain the intent and purpose of these policies as the building envelopes have been positioned in a manner to ensure the least possible disturbance to the surrounding natural landscape.

The proposed development of each of the two lots for one single detached dwelling and related accessory structures is consistent with Section 3.13.3.g of OPA 48 which directs that:

"The use, erection or location of a single dwelling and related accessory uses are permitted on the Oak Ridges Moraine, if:

i the use, erection and location would have been permitted by the applicable zoning by-law on November 15, 2001;

ii prior to issuance of a building permit, the applicant demonstrates, to the extent possible, that the use, erection and location will not adversely affect the ecological integrity of the Oak Ridges Moraine, by means of a natural heritage or hydrological evaluation or other required study in accordance with the policies of the Oak Ridges Moraine Conservation Plan; and

iii notwithstanding Subsection 3.13.3.g.ii above, where said lands are located within the Oak Ridges Moraine Settlement Area, the policies of Subsections 3.13.4.f.iv and 3.13.4.f.v shall also apply."

The subject lands have existing zoning rights, consistent with Section 3.13.3.g.(i), thereby permitting the proposed residential uses. Additionally, the NHE completed by Beacon Environmental satisfies policy 3.13.3.g.(ii) as it demonstrates that the proposed building envelopes and access driveways have been sited in a manner that will not adversely impact the surrounding area. The proposal is also consistent with Section 3.13.3.g.(iii) as best efforts have been made to site the building envelopes outside of the woodland and minimum vegetation protection zone. It is our opinion that the proposed variances meet the intent and purpose of the Town's Official Plan.

Maintains the General Intent and Purpose of the Zoning By-law

The general intent and purpose of the Zoning By-law 2213-78 provisions regulating development and site alteration for ORMCP *Settlement Areas* within key natural heritage features is to ensure development is respectful of the surrounding landscape and will protect the ecological conditions of the Oak Ridges Moraine. The proposed building envelopes have been positioned to ensure the least possible disturbance on the surrounding natural heritage features, thereby meeting the general intent of the provisions for which relief is being sought.

In addition, the proposed development is in compliance with all of the regulations pertaining to the "RR – Rural Residential" zone for the lands. In terms of land use, the RR zone permits one detached dwelling per lot. The requested variances to allow for the proposed future development of both properties meet the intent of this regulation.

The proposed building envelopes also comply with all of the zone requirements regulating actual development on RR zoned lands in terms of lot frontage, setbacks and maximum lot coverage, which is 15%. The lot coverages proposed for both properties is well below the 15% maximum, as illustrated on the submitted Building Envelope Concept Plan. It is our opinion that the proposed variances maintain the general intent and purpose of the Town's Zoning By-law.

Desirable and Appropriate

Whether a minor variance is desirable and appropriate can be addressed by assessing the compatibility of the proposal within the context of the surrounding area. With respect to the proposed building form for single detached dwellings, the proposal is compatible with the low density residential uses located to the north, east and west of the lands. Additionally, given that the lands are located within an ORMCP *Settlement Area*, the use of the lands for one single-detached dwelling per lot is permitted as of right. Therefore, the proposed variances are facilitating an appropriate and desirable form of density and built form that is both consistent with the existing policy framework and respects the surrounding residential neighbourhood.

Along with being a compatible form of development for lands within an ORMCP *Settlement Area* containing natural heritage features, appropriate studies have been conducted. These technical reports indicate that the proposed building envelopes are sited in the most optimal locations resulting in the least possible impact on the surrounding area. The NHE reviewed the existing conditions of the lands to determine the required limits and related buffers for development from the adjacent key natural heritage features. The Grading Plan was designed respecting all of the site's constraints to ensure the most minimal disturbance of the lands.

The NHE confirmed that the proposed building envelopes will have minimal adverse effects on the surrounding natural area and is supportive of the building envelopes proposed on the Concept Plan. Consistent with this, the snag surveys also concluded that the proposed building envelopes will only impact a relatively small portion of candidate maternity roost habitat and larger areas will remain, limiting any impacts on SAR bats. Both the NHE and snag survey reports have provided mitigation measures indicating that future construction practices can be performed in a manner maintaining the health, diversity and functioning of the surrounding area. It is our opinion that the proposed minor variances are desirable and appropriate for the development of the lands.

Minor in Nature

In our opinion, the requested variances for each property are minor in nature. The supporting NHE confirms that the proposed building envelopes will not adversely impact the ecological integrity of the lands consistent with the Provincial policy framework regulating land development. The Grading Plan determined appropriate locations for the building envelopes and access roads, which respect all MVPZs, and seek to limit site disturbance.

In addition to the technical studies conducted illustrating limited ecological disturbance, the nature of the proposed variances comply with all other zoning provisions for *RR* zones and will not change the primary function of the lands for single detached dwellings. The variances comply with the zoning regulations as they pertain to land use, siting, massing, coverage and setbacks. This demonstrates that there will be limited impact on the surrounding residential neighbourhood and its low-density residential built form. It is our opinion that the proposed minor variances are minor in nature.

Conclusion

Based on the information provided above, and accompanying studies, it is our opinion that the requested variances meet the general intent and purpose of the Zoning By-law and Official Plan policies, are desirable and appropriate for the development of the land and are minor in nature. In our opinion, the criteria prescribed by Section 45 (1) of the *Planning Act* are satisfied.

We are of the opinion that the proposed minor variance applications have merit and represent good planning, and should be approved by the Committee of Adjustment.

Submission

In support of these applications, please find enclosed the following documentation:

1. Two completed and signed Minor Variance Applications Forms – one copy per property.
2. Two application fees in the amount of \$1,870.00.
3. Parcel Register for each property (within last 30 days).
4. One Original Preliminary Zoning Review response and stamped drawing from the Building Division for each Minor Variance Application.
5. Four copies of the Building Envelopes Concept Plan – two copies per application.
6. Four copies of the Natural Heritage Evaluation prepared by Beacon Environmental – two reports per application.
7. Four copies of the Preliminary Grading Plan, Cross Sections and Covering Note prepared by Schaeffers Consulting Engineers – two copies of each document per application.
8. Four copies of the Topographic Survey by Schaeffer Dzaldov Bennett Ltd. – two copies per application.

It is our understanding that this matter can proceed to the meeting of May 11th, 2017 based on the filing deadline provided by the Town's Committee of Adjustment Staff. We request confirmation of this at your earliest opportunity. Should you have any questions, please contact the undersigned at ext. 241 or Jenna Thibault at ext. 309.

Yours truly,

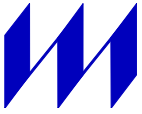
Weston Consulting

Per:

Ryan Guetter, BES, MCIP, RPP
Vice President

c. L. Valliant, Losar Developments Limited
M. Stanek

**Appendix II – Weston Consulting’s Resubmission Covering
Letter dated February 2, 2018**



**WESTON
CONSULTING**

planning + urban design

Planning and Development Services
Committee of Adjustment
100 John West Way
Aurora, ON L4G 6J1

February 2, 2018
File 6269

Attn: Marty Rokos, Planner

Dear Sir,

**RE: Resubmission of Minor Variance Applications (MV-2017-15A-C, MV-2017-16A-C)
672 and 684 Henderson Drive
Town of Aurora**

Weston Consulting is the planning agent for Losar Developments Ltd. and Michael Stanek, the legally registered land owners of the properties municipally known as 672 and 684 Henderson Drive (herein referred to as the “subject lands” or “Lot 672” and “Lot 684” respectively). Applications for Minor Variance (MV-2017-15A-C & MV-2017-16A-C) were submitted to the Town of Aurora on April 12, 2017. The purpose of these applications is to seek relief from regulations in the Town of Aurora Zoning By-law 2213-78, which restrict development for *Oak Ridge’s Moraine Settlement Area* lands containing natural heritage features. These applications were deferred at the May 11, 2017 Committee of Adjustment Hearing to address comments from Town Staff, and due to the absence of Lake Simcoe Region Conservation Authority (LSRCA) comments.

Since the May 11th, 2017 Committee of Adjustment hearing, separate meetings have been held with Town of Aurora Staff and LSRCA Staff to review the provided comments and discuss modifications to the concept plan, including reducing the area of the building envelopes, particularly for Lot 684. Correspondence has also been exchanged with the Ministry of Natural Resources and Forestry (MNRF). The concept has been modified to avoid particular snags to the satisfaction of the MNRF. This correspondence is attached as Appendix 1.

The purpose of this correspondence is to accompany the resubmission package and to provide justification in support of these applications, along with a review of the modifications which have been made to the concept plan. This package includes an updated Concept Plan, updated Natural Heritage Evaluation and a comments response matrix indicating how each of the comments received from the Town and LSRCA have been addressed. In addition, we have provided responses to comments raised by members of the public.

Modified Concept Plan

The concept plan has been modified since the original submission made on April 12th. In terms of Lot 684, the building envelope size has been reduced from 1,425 m² (lot coverage of 7.1%) to 916 m² (lot coverage of 4.5%). The building envelope and access driveway have also been shifted west from the site's western property line, away from the adjacent residential subdivision. The driveway location has been modified to avoid snags 1,5,6,7 and 8, which are classified as high quality candidate roost habitat for bats, and snags 4 and 9 which are classified as moderate quality candidate roost habitat. The building envelope is in conformity with all policies of the Town's applicable Zoning By-law 2213-78, which regulates lot development standards including, lot coverage, yard setbacks and building areas.

The building envelope size for Lot 672 has not been changed. No comments or concerns were raised in regards to the size of this envelope, which covers 4.2% of the total site area. This is well below the maximum lot coverage regulation of 15% as permitted in the Town's Zoning By-law. The driveway location has been adjusted to avoid a moderate quality roost habitat snag identified as 2 on the concept plan.

The concept plan has also been updated to illustrate the area of the subject lands covered by trees and vegetation within the valley lands, and those portions outside of the valley lands. The concept plan clearly indicates that the proposed building envelopes and access driveways do not impact any trees or vegetation within the valley lands, and are located outside of all Key Natural Heritage Features (KNHFs) and Minimum Protection Zones (MPZs).

Comments: Town of Aurora, LSRCA and MNRF

Following the first submission of the Minor Variance Applications, comments were received from the Town of Aurora on May 9th, 2017 and from the LSRCA on June 19th, 2017. Beacon Environmental has updated their Natural Heritage Evaluation since the initial submission to address all Town and Conservation Authority comments. A comments response matrix has also been prepared that identifies each comment and provides a response.

Correspondence was received from the MNRF on May 2nd, 2017 (Appendix 1) in regards to the Bat Memorandum, which was issued directly to the Ministry on April 3rd, 2017. The comments received from the MNRF were related to minimizing the number of snags removed on Lot 684, while still adhering to all other site constraints. In addition, the building envelope for Lot 684 has been adjusted, thereby satisfying MNRF comments.

Comments: Local Residents

It is acknowledged that residents have expressed concerns in regards to the submitted applications. The Town of Aurora provided us with a PowerPoint Presentation prepared by residents on August 18th, 2017 as well as a letter from a resident named Wendy Kenyon on September 13th, 2017. The comments contained in these materials, along with our responses, are

included in a Comments Response Matrix that accompanies this resubmission package. The Comments Response Matrix should be reviewed together with this letter.

There appears to be a misunderstanding among residents with respect to the amount of land that is covered by the proposed building envelopes, the size of the proposed future dwellings and the amount of treed areas that are to be removed. The proposed building envelope for 672 Henderson Drive is 480 m² (approximately 5,166 ft²), covering 4.2% of the total lot area. The proposed building envelope for 684 Henderson Drive is 916 m² (approximately 9,860 ft²), covering 4.5% of the total lot area. The future single detached dwellings have not been designed, but will be required to be built within the limits of these proposed envelopes. The building envelope to lot area relationship indicates that the future development of the subject lands will cover a small percentage of the total lot area. The building envelope, for each land parcel, is anticipated to cover less than 95% of the total lot area. With respect to tree removal, the letter written by Wendy Kenyon indicated that *"this application requests the clearing and reshaping of 34,350 square feet of pristine greenspace in order to accommodate two residential estate dwellings."* This has not been stated in any of the submitted materials and is erroneous.

It must also be emphasized that the subject lands are privately owned. There appears to be a misunderstanding among residents that these lands are under public ownership, and can be referred to as "The Henderson Forest". Local residents have initiated a petition on Change.org, which includes comments from residents discussing their experiences using these lands. Any use of the lands not attended by or authorized by the land owners is considered trespass.

Encroachment issues on the lands by neighboring property owners have been ongoing for decades. In some areas along the perimeter of the lands, neighbours have removed the wire fence, which was placed by the land owners, and there is evidence of the land being used to dispose of garbage, compost, and pool water. At one point, based on these concerns, the land owners issued letters to neighbours asking that the fence be reinstalled, but unfortunately, the lands were continually used, and this still remains to be the case.

The land owners have posted signs on their lands stating "Private Property" and "No Trespassing". Despite the landowner's best efforts to educate residents on the ownership of the lands, there have been issues with these signs being removed, and this misunderstanding remains to be an issue.

Correspondence with Residents

Weston Consulting has been committed to engaging with the public to provide information on these applications and respond to resident inquiries since the initial submission of the Minor Variance Applications in April of 2017. In advance of the Committee of Adjustment Meeting on May 11th, a Notice of the Applications was prepared by Weston Consulting (Appendix 2). This notice was circulated to residents within the 120 m catchment area surrounding the subject lands. This notice provided details on the applications, as well as the firm's contact information to encourage residents to provide their feedback on the proposal, and have their inquiries responded to.

Following the deferral of the applications at the May 11th Committee of Adjustment Meeting, Weston Consulting held a meeting with residents in a breakout room to respond to resident comments and concerns. Email and phone correspondence with residents continued following the deferral of the applications.

The Oak Ridges Moraine Conservation Plan (2017)

The subject lands are designated *Settlement Area* under the 2017 Oak Ridges Moraine Conservation Plan (ORMCP). Section 18 of the ORMCP establishes that each property is a lot of record and states that there are existing zoning rights on the subject lands that would allow for the development of the lands for residential uses. Section 18.(6).(a) of the ORCMP permits the use erection and location of a building or structure if it would have been permitted by the applicable Zoning By-law on November 15, 2001. At that time the applicable Zoning By-law was By-law 2213-78, zoning the lands *RR – Rural Residential* and permitting one dwelling per lot.

The ORMCP classifies that subject lands as *Landform Conservation Area (Category 2)*. There are specific policies which must be adhered to when proposing development in a Category 2 area which are as follows:

30.(6) An application for development or site alteration with respect to land in a landform conservation area (Category 2) shall identify planning, design and construction practices that will keep disturbance to landform character to a minimum, including,

maintaining significant landform features such as steep slopes, kames, kettles, ravines and ridges in their natural undisturbed form;

limiting the portion of the net developable area of the site that is disturbed to not more than 50 per cent of the total area of the site; and

limiting the portion of the net developable area of the site that has impervious surfaces to not more than 20 per cent of the total area of the site.

The concept plan proposes building envelopes for each lot for the future siting of a single detached residential dwelling. The footprint of these future dwellings cannot extend beyond the boundaries of these envelopes. As illustrated by the concept plan, these building envelopes are placed outside of the site's various environmental features to ensure that the natural landform features of each lot are maintained. The Natural Heritage Evaluation prepared by Beacon Environmental provides further details on existing environmental conditions.

Lot 684 proposes a building envelope of 916 m² and a driveway of 668 m², providing for a total lot coverage of 1,584 m² (7.8%). Lot 672 proposes a building envelope of 480 m² and a driveway of 208 m², providing for a total coverage of 688 m² (6%). In determining the net developable area of the lots (the building envelopes and driveways), grading is to be considered. At this stage of the process, exact grading limits have not been defined. However, preliminary work has been done by Schaeffers and Associates to determine the most appropriate areas to position the building envelopes, outside of the lot's various environmental constraints and based on anticipated grading

design requirements. These estimated grading limits have determined that the net developable area for Lot 684 that is disturbed will be approximately 17% and approximately 10% for Lot 672. This is well below 50%, thereby conforming with the policies of the ORCMP.

Of this area (building envelopes and driveways), the ORMCP requires that not more than 20% of the total lot area can have impervious surfaces, which refers to a surface that does not permit the infiltration of water. For the subject proposal, this equates to 6% for Lot 672 and 7.8% for Lot 684, thereby conforming to the policies of the ORMCP. Low-impact development techniques, such as the use of permeable pavers and the use of gravel for the driveways, can also assist with water retention.

There will be some disturbance for each land parcel given that they are to be developed for detached homes; however, the majority of disturbance will be temporary in nature. Careful planning and house design within the building envelopes will ensure that this disturbance to the site's natural landform features is limited and adheres to all policies of the ORMCP.

Updated Natural Heritage Evaluation and Peer Review

The initial Natural Heritage Evaluation prepared by Beacon Environmental dated March 2017 has been updated to address comments received from commenting agencies, as well as local residents. We understand from correspondence with Town Staff that a third party peer review of the Natural Heritage Evaluation is being requested given the extra level of scrutiny surrounding these applications. We are in agreement with the conditions set out in the proposal dated August 29, 2017 by North-South Environmental Inc. This proposal provides a timeline of three (3) weeks for the completion of a draft report for the Town's review. We expect that the Town will provide us with North-South's draft report in accordance with this proposed timeframe.

North-South includes a site reconnaissance visit in the proposal's work program and indicates that it is *"optional and is dependent on the review of written materials and permission to access the property"* on page 1 of their proposal. Based on this, it is our interpretation that North-South must seek permission from the property owners to access the land. We request that North-South provide us with advanced notice if a site visit is needed, and we will have a representative attend in order to respond to any comments or questions that may arise.

Town of Aurora – Proposed Trail

As discussed during a meeting with Town of Aurora Staff on June 27th, Schedule K – Trail Network Schedule of the Town of Aurora Official Plan identifies a *Future Trail Route* through the subject lands, on the eastern side of Lot 684. This *future trail route* is positioned along the west side of the Tannery Creek running through the lands. The Town's Official Plan indicates that the trails are shown *"conceptually as recommended in the Town of Aurora Master Plan (Section 14.2.7.a)."*

We recognize that this proposed trail is conceptually shown in the Town's Official Plan. At this time, we await further feedback from the Town on this matter.

The Proposed Minor Variance Applications

An added layer of complexity has emerged with these Minor Variance Applications due to the public interest which has arisen since the initial submission. However, it is our opinion that the proposed relief being sought for the subject lands, which maintain historic and current development rights for one single detached dwelling per lot, are minor in nature. The applications conform to all applicable Provincial, Regional and Town policies. The relief being sought is a technicality resulting from provisions in the Town's Zoning By-law relating to natural heritage features given that a portion of the Town is constrained by the Oak Ridges Moraine.

Since the initial submission, the proposed building envelopes for both lots have conformed to all zoning regulations applicable to the RR Zone. Following the deferral at the Committee of Adjustment, the proposed concept plan has been modified to address all Town, LSRCA and MNRF comments, and to respond to concerns related to the proposed building envelope size for Lot 684.

The proposed building envelopes cover a very small portion of the total land area, and leave the vast majority of the lands undeveloped, and in their natural state. The building envelope for Lot 672 represents 4.2% of the total lot area, and the proposed building envelope for Lot 684 represents 4.5% of the total lot area. This equates to more than 95% of each land parcel not being occupied by a future single detached dwelling. The building envelope to lot area relationship indicates that this future development is very low density.

Additionally, the proposed built form typology is compatible with the surrounding residential area which consists of single detached dwellings. A significant portion of the existing trees and vegetation will not be removed, and the proposed setbacks site the building envelopes away from the surrounding residential neighbourhood. It is our opinion that the impact of the dwellings will not be perceivable from the street or from the surrounding area.

There is a clear distinction between minimal impact, and no impact, which needs to be understood. The intention of the proposed Minor Variance Applications is to provide appropriate building envelopes that will allow for the future development of the lands for one single detached dwelling per lot. This means that there will be some ecological disturbance. However, it is our opinion, that the concept supports the position of building envelopes in a manner which will not adversely impact the ecological integrity of the subject lands as assessed and confirmed by Beacon Environmental. This is based on appropriate technical studies, which have determined where to position the building envelopes and access roads to ensure that they are outside of all KNHFs and MPZs, and propose limited disturbance from a grading perspective.

It is our opinion that the proposed Minor Variance Applications maintain the general intent and purpose of the Official Plan and Zoning By-law, are desirable and appropriate for the use of the lands, and are minor in nature.

Concluding Remarks

Based on the information above, and the updated materials accompanying this Resubmission Cover Letter, it is our opinion that all comments raised since the initial submission have been satisfied. We are of the opinion that the proposed Minor Variance applications have planning merit and represent good planning.

It is our understanding that the above is in order and suggest that staff has all of the required materials to facilitate their review. We request that the scheduling of a future Committee of Adjustment Hearing be discussed between ourselves and Planning Staff, prior to confirmation of a hearing date.

Yours truly
Weston Consulting
Per

Ryan Guetter, BES, MCIP, RPP
Senior Vice President

c. Losar Developments Limited
M. Stanek
M. Bessey, Lake Simcoe Region Conservation Authority
S. Fernandes, Lake Simcoe Region Conservation Authority

Appendix 1: Correspondence with the Ministry of Natural Resources and Forestry
Appendix 2: Notice of Minor Variance Applications.

**Appendix I: Correspondence with the Ministry of Natural Resources
and Forestry**

From: Shapiera, Melanie (MNRF) <melanie.shapiera@ontario.ca>
Sent: Tuesday, June 13, 2017 8:34 AM
To: Julianna MacDonald
Cc: Jesse Harnden; Jenna Thibault; Ryan Guetter; Nina Tanti
Subject: RE: 672 & 684 Henderson Drive, Aurora

Thank you for working to avoid impacts to the majority of the cavity trees. Please send me the concept plan and ownership details when finalized.

Melanie

Melanie Shapiera

Management Biologist | Ontario Ministry of Natural Resources and Forestry | Aurora District Office
50 Bloomington Road, Aurora, Ontario, L4G 0L8 | [Tel:905-713-7425](tel:905-713-7425) | Email: melanie.shapiera@ontario.ca

From: Julianna MacDonald [mailto:jmacdonald@beaconenviro.com]
Sent: June-12-17 4:55 PM
To: Shapiera, Melanie (MNRF)
Cc: Jesse Harnden; 'Jenna Thibault'; Ryan Guetter (rguetter@westonconsulting.com); Nina Tanti
Subject: RE: 672 & 684 Henderson Drive, Aurora

Hi Melanie,

Further to your email dated May 2nd, 2017 I have spoken with the Planning Consultant about the possibility of moving the building envelope and driveway for 684 Henderson Drive in order to minimize the number of snags removed. We anticipate that we can make these modifications, reducing the size of the building envelope for 684 Henderson Drive to avoid snags #1 and #5 and shifting the driveway to the west to avoid snags #6, #7 and #8. This can be accommodated while still adhering to the other site constraints. A modified Concept Plan will be provided to you at a future date illustrating these changes.

Clarification on the issue of addressing an LOA relative to ownership will be provided at that time.

Thank you,
Julianna

Julianna MacDonald, B.Sc., MES (PI) / Senior Planning Ecologist
BEACON ENVIRONMENTAL
144 Main St. North, Suite 206, Markham, ON L3P 5T3
T) 905.201.7622 x225 F) 905.201.0639 C) 416.670.9387
www.beaconenviro.com

From: Shapiera, Melanie (MNRF) [mailto:melanie.shapiera@ontario.ca]
Sent: Tuesday, May 02, 2017 12:18 PM
To: Jesse Harnden <jharnden@beaconenviro.com>
Cc: Julianna MacDonald <jmacdonald@beaconenviro.com>
Subject: RE: 672 & 684 Henderson Drive, Aurora

Just quickly following up on my call with Juliana.

I advised Juliana to discuss with the architect the possibility of moving the building envelope and driveway for 684 Henderson Dr in such a way to minimize the # of snags removed while still adhering to your other constraints. I also indicated that if impacts can be mitigated through the design changes above as well as timing, etc., that MNRF may be able to issue a Letter of Advice for the two Species at Risk bat species initially identified by Megan Eplett. However, we issue our LOAs to the person/company actually conducting the building operations. It's my understanding the current owners wish to sell the lots without building, in which case I will require the names of the buyers to issues any ESA authorization such as an LOA.

One thing I forgot to mention Juliana is the work done in the memo to qualify the snag trees in the study area. The guidance provided in the Guelph District survey protocol document can be easily misunderstood. When it indicates "best" potential maternity roost trees, this is solely to inform best placement of acoustic monitors. It is not intended to imply that all snags should be ranked as high/med/low quality. Such categorizations are not factored into my impact assessments.

Melanie

From: Jesse Harnden [<mailto:jharnden@beaconenviro.com>]
Sent: April-03-17 1:51 PM
To: Shapiera, Melanie (MNRF)
Cc: Julianna MacDonald
Subject: 672 & 684 Henderson Drive, Aurora

Hi Melanie,

Please find attached a memorandum which summarizes the results of the snag surveys at the above mentioned subject properties. This memorandum is further to scoping in direction that was received from Megan Eplett during a meeting on August 4, 2016 and telephone correspondence in September 2016.

Please review the memorandum and advise if any further steps are required.

Sincerely,

Jesse Harnden, B.Sc., ISA Certified Arborist/ Botanist

BEACON ENVIRONMENTAL

305 Reid Street, Peterborough, ON K9J 3R2

T) 705.243.7251 x402 C) 905.375.9514

www.beaconenviro.com

Appendix II: Notice of Minor Variance Applications



WESTON CONSULTING

planning + urban design

Notice of Minor Variance Applications

Application File No.(s): MV-2017-15 and MV-2017-16

Applicants: Losar Developments Ltd. and Michael Stanek

Properties: 672 and 684 Henderson Drive

Dear Sir/Madame,

Applications for Minor Variance have been submitted for the lands located at 672 and 684 Henderson Drive in the Town of Aurora. These lands are zoned *Rural Residential (RR)* by the Town of Aurora Zoning By-law 2213-78. The applicants are proposing building envelope and driveway locations for the future development of one single detached dwelling per lot.

To facilitate this, Minor Variance Applications have been submitted to seek relief from provisions of the Town's Zoning By-law. Prior to filing these applications, environmental and engineering studies were undertaken to ensure that the proposed future development will have minimal impact on the site's surrounding landscape.



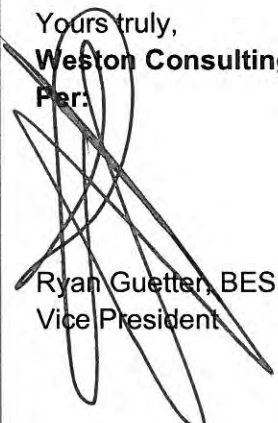
Figure 1: 672 and 684 Henderson Drive.

In advance of the Committee of Adjustment Hearing on May 11th, if you have any questions or would like further information on the applications, please contact Ryan Guetter at Weston Consulting, the planning agent for the applicants (e:rguetter@westonconsulting.com; p: 905-738-8080 ext. 241).

Yours truly,

Weston Consulting

Per:


Ryan Guetter, BES, MCIP, RPP
Vice President

**Appendix III – Minutes from Meeting held on Tuesday,
October 9, 2018**

Jenna Thibault

From: Jenna Thibault
Sent: Thursday, October 25, 2018 12:57 PM
To: 'MRamunno@aurora.ca'; 'AGreco@aurora.ca'; 'STienkamp@aurora.ca'
Cc: 'Julianna MacDonald'; Sevan Torus; Ryan Guetter
Subject: 672 and 684 Henderson Drive - Memo Summarizing Meeting of October 9

Hi Marco,

Further to our meeting of Tuesday, October 9th, this correspondence has been prepared as a record of our meeting discussion concerning the North South Peer Review and confirmation of the Tree Scoping Exercise terms.

Meeting Attendees:

- Marco Ramunno – Town of Aurora, Director of Planning and Development Services
- Antonio Greco – Town of Aurora, Secretary Treasurer/Planning Technician
- Sara Tienkamp – Town of Aurora, Parks Planning
- Landowner
- Julianna MacDonald – Beacon Environmental
- Sevan Torus – Beacon Environmental
- Ryan Guetter – Westin Consulting
- Jenna Thibault – Weston Consulting

Meeting Discussion

Item 1: North-South Peer Review

It was confirmed that a revised/updated Natural Heritage Evaluation is satisfactory for responding to North South's Letter dated September 20, 2018. This letter of September 20th was a response to Beacon Environmental's Response Letter to North South's Peer Review comments of May 24th, 2018. This approach has been confirmed with Mirek Sharp of North South as sufficient.

Item 2: Tree Inventory Exercise

The objective of the Tree Inventory Exercise is to provide an estimate of the number of trees which may be removed as a result of construction. This is not to be a detailed Tree Inventory as would be required with a Building Permit submission.

This Tree Inventory Exercise will follow the sample plot methodology and is to provide the species classification and tree diameter (DBH) measurements for the sample groupings evaluated. This analysis will evaluate the following components of each land parcel:

- a. The proposed driveways; and,
- b. The proposed building envelopes.

This analysis is also to include a description of the tree makeup for the rest of the land area outside of the driveway and proposed building envelopes, which will not be disturbed. It was acknowledged that this tree make-up information is already provided in Beacon's Natural Heritage Evaluation and can be presented in the same manner in this Tree

Inventory Memorandum. Town of Aurora Staff confirmed that the findings of this exercise can be presented in a memorandum format.

Kindly confirm that this scope outline is acceptable to Staff as the basis of supporting the applications.

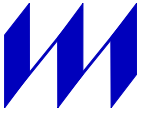
Thanks,
Jenna

Jenna Thibault, B.Sc., M.PL
Planner



Vaughan office: T. 905.738.8080 ext. 309 | 201 Millway Ave, Suite 19, Vaughan, ON. L4K 5K8
1-800.363.3558 | F: 905.738.6637 | jthibault@westonconsulting.com | www.westonconsulting.com

Appendix IV – Proposed Conditions of Approval



Proposed Conditions of Approval

Date: March 13, 2019

Re: 672 and 684 Henderson Drive – Minor Variance Applications (MV-2017-15A-C, MV-2017-16A-C)

We propose that any approval of these applications be subject to the following conditions. The same set of conditions is proposed for each application.

Town of Aurora

1. Prior to Building Permit issuance, a detailed Tree Inventory and Preservation Plan is to be prepared by a Certified Arborist in accordance with the Town of Aurora's Private Tree Protection By-law 5850-16 and policies set forth in the Town of Aurora's Tree Protection/Preservation Policy (2015), Tree Removal/Pruning and Compensation Policy (2015) and Tree Planting and Approved Plant List Policy (2015). The report shall include a site plan showing the location of all trees and vegetation that will be impacted and or preserved both on or adjacent to the site. The Owner will be required to provide vegetation compensation and a replanting plan for trees removed to facilitate construction.
2. (Condition taken directly from Parks, Recreation and Cultural Services Memo dated May 3, 2017).
Should it be determined by the Arborist that trees and vegetation warrants preservation and protection then the report shall include a schedule of monitoring the ongoing site work through a series of scheduled site visits by the Arborist during and post construction to ensure the vegetation preservation measures remain in compliance throughout the project, each site visit to be documented and any resulting action items required by the Arborist shall be implemented and confirmed on site forthwith by the Arborist following each visit. The Owner shall agree to provide copies of the Arborist site visit reports to the Town following each visit.
3. Prior to submission of a Building Permit, the Owner shall agree to provide financial securities based on the total value of the Tree Compensation evaluation and all Arboriculture works as defined by the Town and the Owners Arborist. This is to be carried out to the satisfaction of the Director of Parks and Recreation. Compensation planting shall be completed prior to release of the financial securities.
4. (Condition taken directly from Parks, Recreation and Cultural Services Memo dated May 3, 2017)
The Owner shall agree to comply with the Aurora Tree Permit By-law #5850-16 prior to the removal of any trees on the property.

5. The Owner shall agree that any single detached dwelling permitted to be constructed shall not exceed a total ground floor area of 500m².
6. Prior to Building Permit issuance, an updated, final Grading Plan is to be provided to the satisfaction of the Engineering Division of the Town.
7. Prior to Building Permit issuance, a Stormwater Management Plan and Report is to be prepared to describe the manner in which stormwater will be conveyed and detail the associated stormwater management measures to maintain predevelopment levels of the stormwater quantity and quality to the satisfaction of the Town of Aurora and Lake Simcoe Region Conservation Authority.
8. Prior to Building Permit issuance, an Erosion and Sediment Control plan is to be prepared that demonstrates how soil mobilization from the site will be controlled to protect the downstream areas during and after construction.

Lake Simcoe Region Conservation Authority (LSRCA)

All conditions have been taken directly from LSRCA Letter dated August 3, 2018.

9. A restrictive covenant shall be registered on title for both properties to ensure that the remaining natural heritage features be protected in perpetuity.
10. An Edge Management Plan for the boundary of the proposed woodland removal areas shall be prepared to the satisfaction of the Lake Simcoe Region Conservation Authority. A cedar rail / natural living fence will be required to delineate the development boundary.
11. A Restoration Plan shall be prepared to the satisfaction of the Lake Simcoe Region Conservation Authority.
12. A detailed grading plan shall be prepared to the satisfaction of the Lake Simcoe Region Conservation Authority and the Town which demonstrates the use of retaining walls as a means to reduce the impacts associated with the required grading.

Other Conditions

13. Prior to Building Permit issuance, appropriate approvals, as may be required, from the Ministry of Natural Resources and Forestry (MNR) are to be obtained by the Owner regarding Species at Risk (SAR).

DEVELOPMENT CONCEPT
 PART OF LOT 76
 CONCESSION 1
 TOWN OF AURORA
 REGIONAL MUNICIPALITY OF YORK



DEVELOPMENT STATISTICS

#684 HENDERSON DRIVE	
Lot Area	20,197 m ²
Proposed Building Envelope	916 m ²
Proposed Lot Coverage	4.5%
#672 HENDERSON DRIVE	
Lot Area	11,506 m ²
Proposed Building Envelope	480 m ²
Proposed Lot Coverage	4.2%

- Legend**
- Subject Lands
 - Proposed Building Envelope
 - Trees/vegetation within valley lands
 - Trees/vegetation outside valley lands

For grading details and natural heritage candidate roost tree locations, please refer to Beacon Environmental's Natural Heritage Evaluation (2019) Bat Habitat Assessment Figure 1.

Building footprints are conceptual only and subject to change.

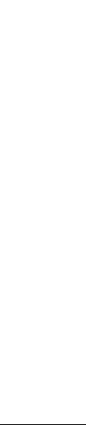
- Source:**
- Schaeffers Consulting Engineers Preliminary Grading Plan updated March 2019,
 - Beacon Environmental, environmental constraints dated Oct. 2016
 - Schaeffer Dzalodov Bennett Ltd., topographic plan dated Mar. 2014.

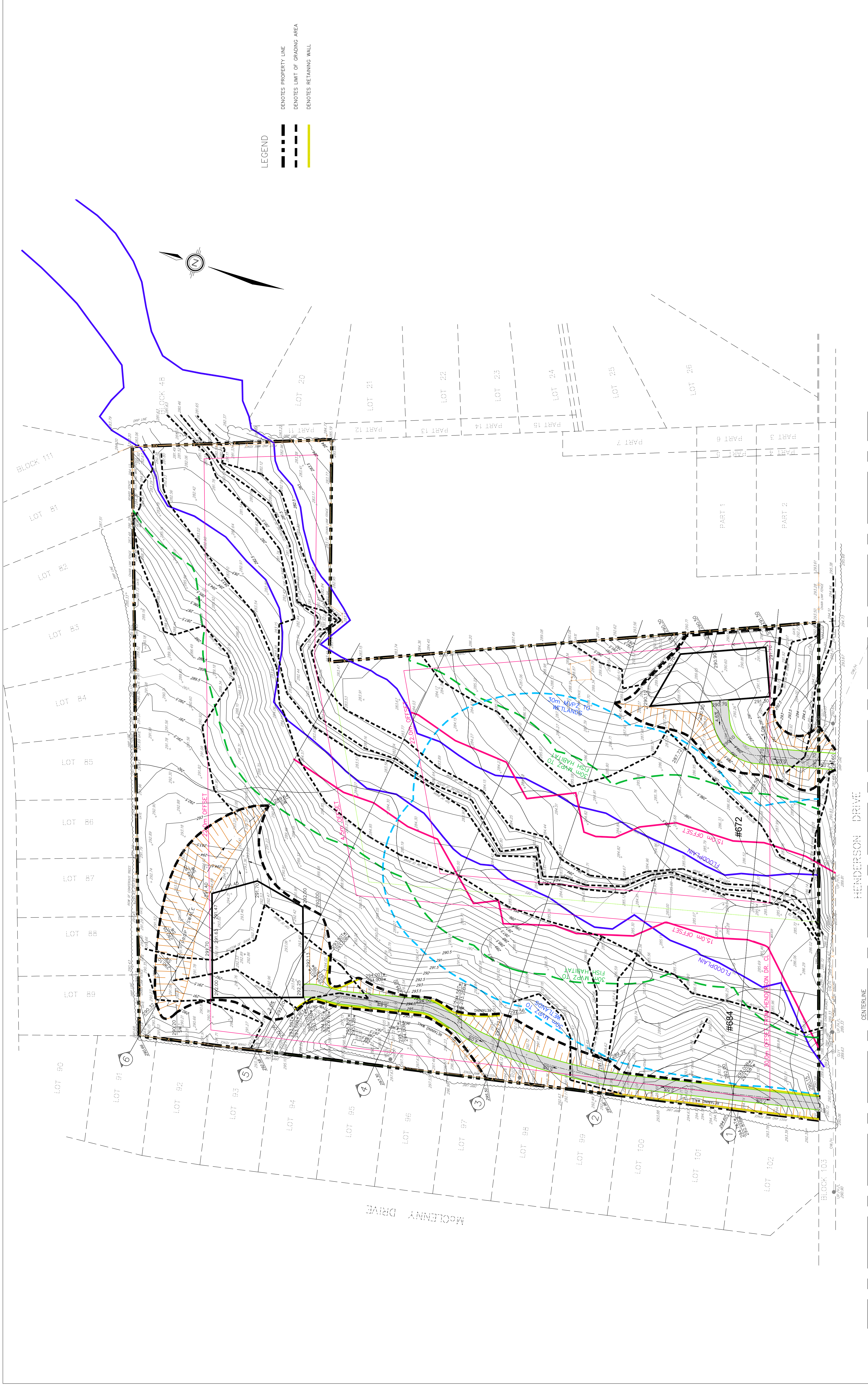


DRAWN / REVISED

13 MAR 2019	For Submission
25 FEB 2019	Adjusting path of driveway on #684 Henderson Dr
04 FEB 2019	Based on updated grading plan and building envelope January 2019.
28 NOV 2017	Based on updated grading plan and building envelope October 2017.
21 SEP 2017	Based on updated grading plan and building envelope September 2017.
6 SEP 2017	Tone vegetated areas
1 SEP 2017	Revised building envelope, limit of grading as per updated engineering drawings
14 AUG 2017	Highlighting trees and vegetation, building envelopes etc.
17 JUL 2017	Revises to building envelope and driveway as per staff comments
08 MAY 2017	Revises to building envelope and driveway to protect Roost Trees locations.
28 NOV 2016	First Draft

File Number: 6269
Drawn By: SD
Planner: RG
Scale: see scale bar
CAD: 6269-concept 2019 - Concept CHL_2019-05-13.dgn





LEGEND

- DENOTES PROPERTY LINE
- - - DENOTES LIMIT OF GRADING AREA
- DENOTES RETAINING WALL

BENCHMARK ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO TOWN OF AURORA BENCHMARK No. 3160 HAVING A PUBLISHED ELEVATION OF 295.366 METRES

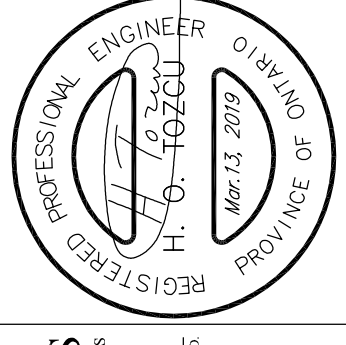
NOTE:
THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE DURING CONSTRUCTION.

No.	REVISIONS	DATE	APPROVED

SCHAEFFERS
CONSULTING ENGINEERS

REGISTERED PROFESSIONAL ENGINEER
H. O. 16600
MAY 13 2017
PROVINCE OF ONTARIO

2000 SHEPPARD AVENUE EAST, SUITE 100
SCARBOROUGH, ONTARIO M1S 1T7
TEL: (416) 291-8888
WWW.SCHAEFFERS.COM



PART OF LOT 76 CONCESSION 1
PRELIMINARY GRADING PLAN

TOWN OF AURORA
ENGINEERING DEPARTMENT

DESIGN T.A.
DRAWN I.V.
SCALE 1:500
REVIEWED H.T.
DATE MAY 2016

DRAWING NO. **GR - 1**
PROJECT NO. **2016-4398**
SHEET NO.

FILE: P:\2016\4398\4398_ENVIRONMENTAL_CONSTRAINTS.dwg 2016-05-13 10:58:23 AM, Jobby

CENTERLINE HENDERSON DRIVE

March 13, 2019

Our File: 2017-4398

Town of Aurora
Planning and Development Services, Engineering
Division
Box 1000,
Aurora, Ontario, Canada
L4G 6J1



SCHAEFFERS
CONSULTING ENGINEERS

6 Ronrose Drive, Vaughan, Ontario L4K 4R3
Tel: (905) 738-6100 Fax: (905) 738-6875
Tor. Line: (416) 213-5590 E-mail: general@schaeffers.com

**Attention: Mr. Sabir Hussain,
Municipal Engineer**

Dear Mr. Hussain,

**Re: File No. MV-2017 15 & 16
Application for Minor Variance – Stanek & Losa Development Inc.
672 & 684 Henderson Drive.**

Thank you for your review and subsequent comments dated June 05, 2018. We have prepared this response letter addressing comment 7. Your comment will be highlighted in italics below with our response in bold.

There is no sanitary sewer on Henderson Drive at front of the subject properties. Sanitary servicing for the propose development needs to be investigated and addressed prior to the approval of the subject variance applications.

Please note that a gravity connection to the sewers along McLenny Drive is not possible as the downstream sewer invert is too high to maintain a positive outlet from the subject properties. Instead, grinder pumps will be utilized within each building to pump sewage. From each site, a forcemain will be utilized to pump the sewage to the gravity sanitary sewer system along McLenny Drive.

We trust that our response address your comment. Should you have any questions or comments, please do not hesitate to contact us.

SCHAEFFER & ASSOCIATES LTD.

Sadh Katukurunde, B.A.Sc.

Water Resources Analyst

Koryun Shahbikian, M.Eng, P.Eng, LLM

Partner

Sight Distance Analysis

PROPOSED SINGLE DETACHED DWELLING

672 Henderson Dr
Town of Aurora ON

March 2019
Project No: NT-19-035

520 Industrial Parkway South, Suite 201
Aurora, Ontario L4G 6W8

Phone: 905-503-2563
Fax: 1-877-957-2929
www.nextrans.ca

nexTrans
CONSULTING ENGINEERS

NextEng Consulting Group Inc.

March 12, 2019

Town of Aurora
Planning & Development Services
Box 1000
Aurora ON L4G 6J1

Attention: Mr. Sabir Hussain

Re: Sight Distance Analysis
Proposed Single Detached Dwelling
672 Henderson Drive, Town of Aurora
Our Project No. NT-19-035

NexTrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) acknowledges receipt of Town of Aurora Planning & Development Services Staff comments dated June 5th, 2018 (Appendix A), with respect to the proposal for a building envelope for Lot 672 Henderson Drive, in the Town of Aurora which defines the boundaries for where a future single detached dwelling can be situated, and a driveway access.

As such, NexTrans **was retained by Losar Developments Ltd. and Michael Stanek (the 'Land Owners')** to undertake a Sight Distance Analysis in support of a Minor Variance application submitted for Lot 672 Henderson Drive to seek relief from provisions in the Zoning By-law which restrict development for Oak Ridges Moraine Settlement Area lands containing natural heritage features and located on Category 2 lands. The concept plan is provided in Appendix B.

Based on the comments received from the Town of Aurora Planning & Development Services Staff, our responses in the context of the concept plan are addressed as follows:

8. *As mentioned previously that the proposed driveway location at 672 Henderson Drive may not have safe sight lines from westbound traffic along Henderson Drive. As such, the sight line/distance investigation to this effect should be conducted to ensure that proposed driveway location is safe.*

Response

Henderson Drive serves as a two-lane collector road with a speed limit of 60 km/h in the vicinity of the proposed subject site. For the purpose of sight distance assessment, a design speed of 70 km/h under stop control will be utilized (posted speed plus 10 km/h). Sight distance requirements will be considered for passenger vehicles approaching the stopped position at the intersections of the proposed site access via Henderson Drive. The criteria applied for vehicles approaching the intersection is stopping sight distance, refer to *Transportation Association of Canada (TAC 2011) Section 1.2.5.2 Stopping Sight Distance*. Under the stopping sight distance assessment, the target height applied is 0.38m for vehicle tail lights and a driver eye height of 1.05m is applied. A road grade of -1.37% has been applied from the eastbound approach and +3.84% from the westbound approach based on the topographic plan provided in Appendix C along Henderson Drive.

Required stopping distance, adjusted for effect of grade, is determined using the formula:

$$d = V^2 / 254(f +/-G)$$

Where:

V = design speed

f = coefficient of friction (0.31) (TAC 1999, Table 1.2.5.2)

then: Stopping Sight Distance = 0.278tV + d

Where:

t = perception / reaction time = 2.5s (TAC 1999, Table 1.2.5.3)

G = the percent grade divided by 100

Average G for Eastbound approach = -0.0137

Average G for Westbound approach = +0.0384

Minimum sight dist. for Eastbound approach = 0.278 x 2.5 x 70 + 70² / 254(0.31-0.0137)
= 113.75m say 115m

Minimum sight dist. for Westbound approach = 0.278 x 2.5 x 70 + 70² / 254(0.31+0.0384)
= 104.02m say 105m

Actual sight distances approaching the proposed site access via Henderson Drive has been determined through on-site visit illustrated in Appendix D. The results are summarized in Table 1.1 and illustrated in Figure 1-1.

Table 1.1 –Stopping Sight Distance Assessment

Approach @ Henderson Drive / Site Access	Stopping Sight Distance		
	Required	Achieved	Difference
Eastbound Approach	115m	250+	+135
Westbound Approach	105m	110	+5

Table 1.1 indicates that the stopping sight distances achieve an excess of 135m and 5m in distances for the eastbound and westbound approach sight distance requirement, respectively.

Based on discussion with the Owner, the trees/vegetation outside the valley lands between the proposed site access of 672 Henderson Drive development and the property lines are expected to remain untouched. On this basis, NexTrans recommends the following traffic calming measures be considered as follow and is illustrated in Figure 1-2:

- Although it is not required, it is recommended to maintain the posted speed limits of 50km/h east of Watts Meadow and Henderson Drive intersection to the west along Henderson Drive in order to establish a stopping sight distance requirement of 82.3m (say 85m) and achieve an excess of 25m as opposed to 5m.
- A 'hidden intersection' advisory sign shall be placed on north side of the roadway, east of the proposed entrance for westbound approach vehicles. The advisory signage will consist of a controlled intersection sign (Wa-13A) with a 'HIIDDEN' tab (Wa-18t) in accordance with the Ontario Traffic Manual (OTM) Book 6 – Warning Signs (or Town of Aurora approved equivalent).

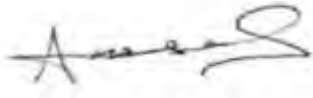
Given the information and recommendation summarized above, it is our opinion the proposed site entrance for Lot 672 Henderson Drive allows for the design vehicles to safely make all maneuvers along Henderson Drive that are permitted by the layout without significantly affecting vehicles from the proposed single detached dwelling and is supportable from a traffic engineering and stopping sight distance perspective

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

Nextrans Consulting Engineers

A Division of NextEng Consulting Group Inc.



Prepared by:
Annosan Srikantha, EIT
Transportation Analyst

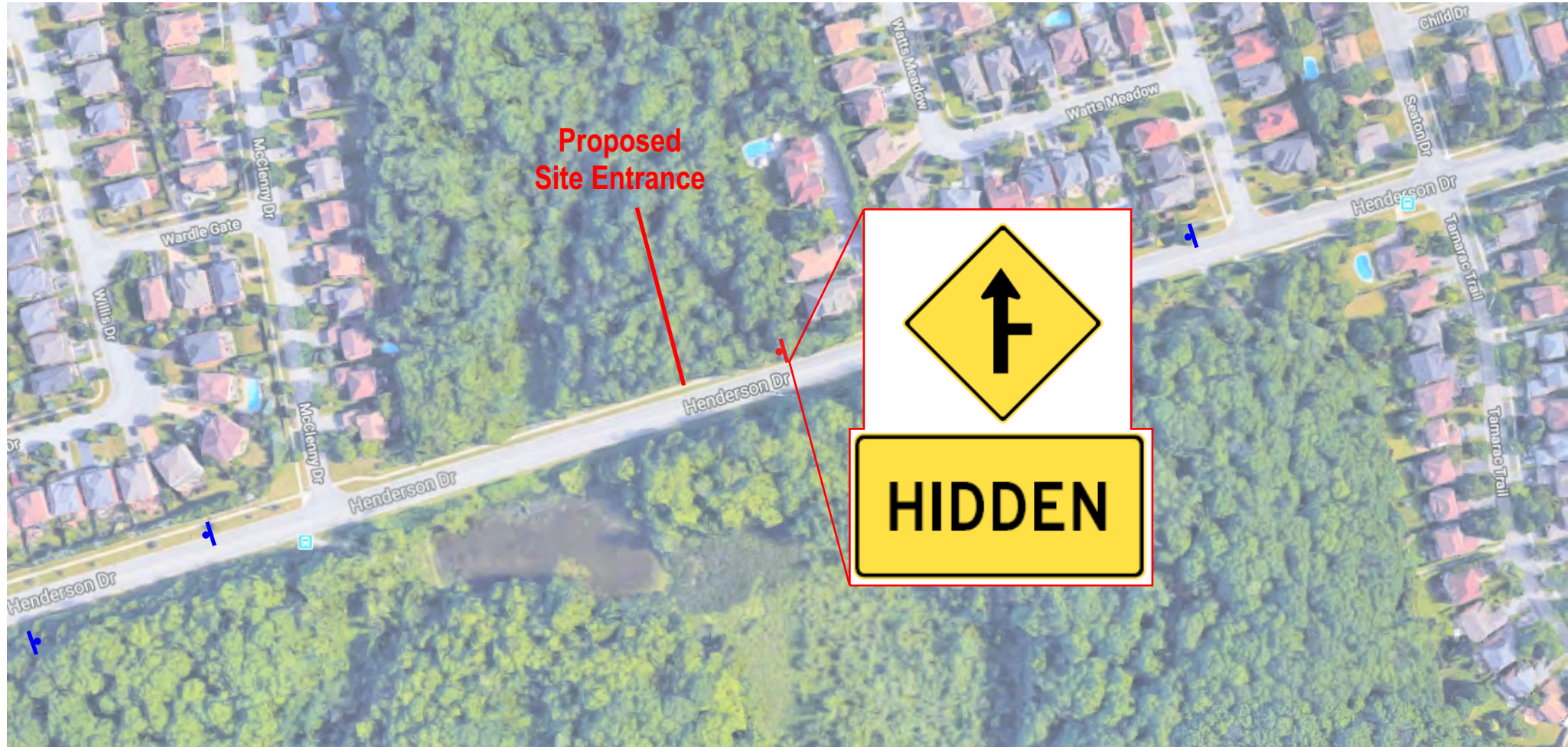


Reviewed by:
Richard Pernicky, CET, MITE
Principal



Figure 1-1 - Sight Distance Analysis



Figure 1-2 - Traffic Calming Signage Plan



Legend

-  - Hidden Intersection Sign
-  - Replace Existing Posted Speed Limit to (50k/h)

Appendix A – Townof Aurora Comments (June 5th, 2018)



Box 1000
Aurora, Ontario
L4G 6J1
Phone: 905-727-3123 ext. 4378
Email: shussain@aurora.ca
www.aurora.ca

Town of Aurora
Planning & Development Services
Engineering Division

MEMO

Date: June 5, 2018 **File No.** MV-2017- 15 & 16

To: Marty Rokos, Planning & Development Services

From: Sabir Hussain, Municipal Engineer

Re: Applications for Minor Variance – Stanek & Losa Development Inc.
672 & 684 Henderson Drive

Engineering Division has reviewed the revised submission for the above noted application and have following comments;

1. Revised Natural Heritage Evaluation Report (NHE) states that establishing a top of bank was not feasible due to site undulating topography and refers consultation with LSRCA. Please clarify how this effects the proposed development on the subject lands.
2. Grading areas for both properties (430M2 for 672 Henderson Dr. and 1860M2 for 684 Henderson Dr.) should be further reduced to minimize impacts on sensitive environmental features on site. Grading and land disturbance can be confined to the proposed building envelope and driveway width by incorporate retaining walls.
3. Given the site contains sensitive environmental features, grading plan be provided showing details including but not limited to the existing and proposed ground elevations, slopes, retaining walls, swales and surface drainage etc. in order to exactly define the land disturbance limits and grading areas as part of minor variance applications for the subject sites.
4. Establishing the limit of grading/land disturbance shall be subject to addressing the impacts of the proposed grading on the effected environmental features/ecological integrity of the site to the satisfaction of LSRCA, MNR and other agencies having jurisdiction to the site.
5. Stormwater Management Plan and report be provided describing the manner in which stormwater will be conveyed from the site to the receiving water course and associated stormwater management measures to maintain the predevelopment levels of the stormwater quantity and quality to the satisfaction of the Town and LSRCA.



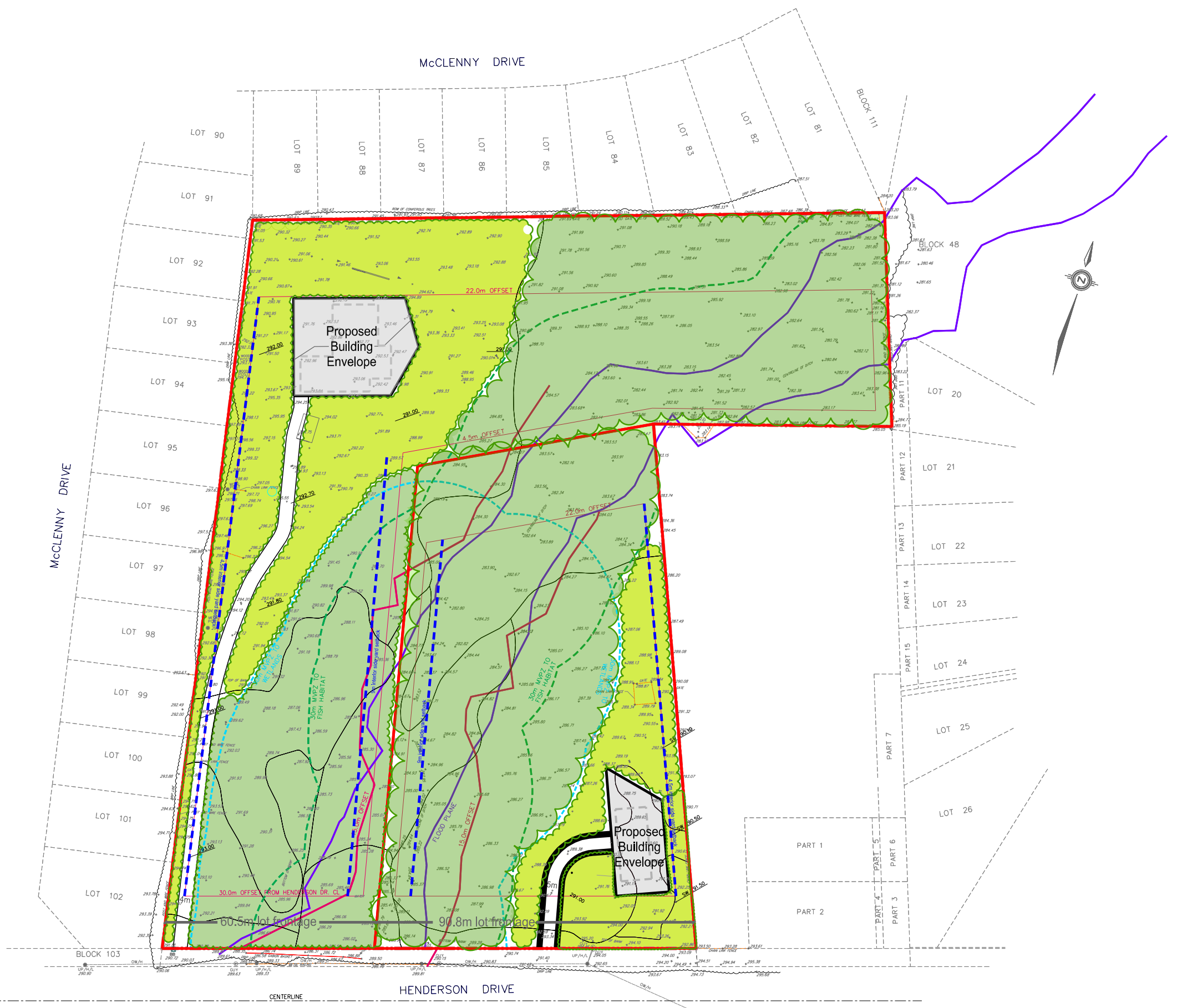
Box 1000
Aurora, Ontario
L4G 6J1
Phone: 905-727-3123 ext. 4378
Email: shussain@aurora.ca
www.aurora.ca

**Town of Aurora
Planning & Development Services
Engineering Division**

6. Provide Erosion & Sediment Control plans demonstrating how soil mobilization from the site will be controlled to protect the downstream areas during and after construction.
7. There is no sanitary sewer on Henderson Drive at front of the subject properties. Sanitary servicing for the proposed development needs to be investigated and addressed prior to approval of the subject variance applications.
8. As mentioned previously that the proposed driveway location at 672 Henderson Drive may not have safe sight lines from westbound traffic along Henderson Drive. As such, the sight line/distance investigation to this effect should be conducted to ensure that proposed driveway location is safe.

Sabir Hussain,
Ext. 4378

Appendix B – Concept Plan



DEVELOPMENT CONCEPT
 PART OF LOT 76
 CONCESSION 1
 TOWN OF AURORA
 REGIONAL MUNICIPALITY OF YORK



DEVELOPMENT STATISTICS

#684 HENDERSON DRIVE	
Lot Area	20,197 m ²
Proposed Building Envelope	916 m ²
Proposed Lot Coverage	4.5%
#672 HENDERSON DRIVE	
Lot Area	11,506 m ²
Proposed Building Envelope	480 m ²
Proposed Lot Coverage	4.2%

- Legend**
- Subject Lands
 - Proposed Building Envelope
 - Trees/vegetation within valley lands
 - Trees/vegetation outside valley lands

For grading details and natural heritage candidate roost tree locations, please refer to Beacon Environmental's Natural Heritage Evaluation (2019) Bat Habitat Assessment Figure 1.

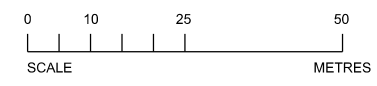
Building footprints are conceptual only and subject to change.

- Source:
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28 NOV 2016	First Draft

File Number: 6269
 Drawn By: SD
 Planner: RG
 Scale: see scale bar
 CAD: 6269/concepts 2019/ Concept C14_2019-03-13.dgn

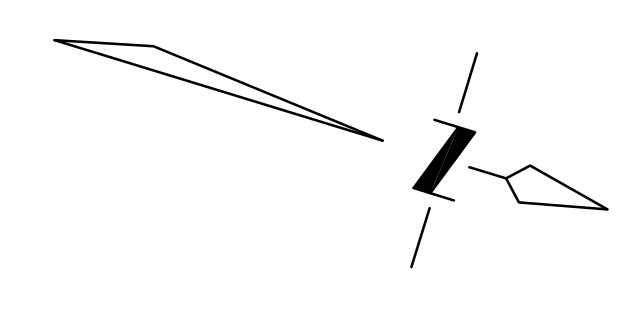


Appendix C – Topographic Plan



TOPOGRAPHIC PLAN OF
PART OF LOT 76
CONSESSION 1
(GEOGRAPHIC TOWNSHIP OF KING)
TOWN OF AURORA
REGIONAL MUNICIPALITY OF YORK
SCALE 1:500

0 5 10 20 30 METRES
SCHAEFFER DZALDOV BENNETT LTD.
© COPYRIGHT



- NOTES**
- BB DENOTES BELL BOX
 - UP DENOTES UTILITY POLE
 - L DENOTES LIGHT
 - OW DENOTES OVERHEAD WIRES
 - GY DENOTES GUY / ANCHOR

BENCHMARK
ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO TOWN OF AURORA BENCHMARK NO. 3160 HAVING A PUBLISHED ELEVATION OF 285.366 METRES

CAUTION
THIS IS NOT A PLAN OF SURVEY OF THE BOUNDARY AND SHALL NOT BE USED EXCEPT FOR THE PURPOSES AND IN THE MANNER IN WHICH THE FIELD SURVEY REPRESENTED ON THIS TOPOGRAPHIC PLAN HAS BEEN COMPILED FROM RESISTIVE OFFICE RECORDS.

DURING THE SURVEY WE ATTEMPTED TO UNCOVER ALL SURFACE FEATURES, HOWEVER WE ARE NOT LIABLE FOR ANY SUCH FEATURES THAT WERE COVERED BY SNOW OR ICE AT THE TIME OF THE SURVEY.

SURVEYOR'S CERTIFICATE
I CERTIFY THAT
THE FIELD SURVEY REPRESENTED ON THIS TOPOGRAPHIC PLAN
WAS COMPLETED ON THE 7TH DAY OF MARCH, 2014

DATE: MARCH 12, 2014

SCHAEFFER DZALDOV BENNETT LTD.
ONTARIO LAND SURVEYORS
64 JARON DRIVE CONCORD, ONTARIO L4K 3Y3 TEL (416)-897-0101
DRAWN: SAWI CHECKED: SCALE 1:500 JOB NO. 14-068-00

Appendix D – Site Visit



**WESTBOUND APPROACH
FROM PROPOSED
SITE ACCESS**



**PROPOSED
SITE ACCESS FROM
WESTBOUND APPROACH**



**EASTBOUND APPROACH
FROM PROPOSED
SITE ACCESS**



**PROPOSED
SITE ACCESS FROM
EASTBOUND APPROACH**

March 13, 2019

BEL 216078

Losar Developments

Re: Tree Inventory Memorandum for 672 and 684 Henderson Drive, Town of Aurora, York Region

Beacon Environmental Limited (Beacon) was retained by Losar Developments to undertake a tree inventory assessment for the properties located at 672 and 684 Henderson Drive, in the Town of Aurora, York Region (**Figure 1**).

Background

As per the tree inventory scoping exercise conducted on October 9, 2018 at Aurora Town Hall, with the proponent and staff present from the Town of Aurora, Beacon, and Weston Consulting, it was agreed upon that a tree inventory assessment will be necessary to estimate the number of trees to be removed to accommodate the proposed building envelopes, proposed driveways, and their associated construction. The proposed concept plan as shown on **Figure 2** is conceptual and may be subject to refinement during the final design stage (i.e. detailed building and final grading). Furthermore, this assessment includes an estimate of the number of trees, species relative abundance, and average diameter at breast height (DBH) for both 672 and 684 Henderson Drive properties.

Methodology

A total of 53 circular plots with a radius of 5.64 m (area of 100 m²) were sampled within both 672 and 684 Henderson Drive properties on November 22, 23 and 28, 2018. The locations of the tree inventory sample plots are shown on **Figure 2** which is appended to this memorandum, and as summarized in Appendix A.

Approximate plot locations were pre-determined prior to visiting the study area on an aerial photograph with each plot separated by approximately 20 m to 25 m in distance. Plots were sampled in a west to east and north to south direction for both subject properties. The location of each plot was recorded using a handheld GPS, then incorporated into GIS platform. A 5.64 m long rope was affixed to a central tree/shrub to establish plot boundaries. The DBH, measured 1.4 m from the ground for all trees 5 cm DBH or greater within each plot was recorded and tabulated by species. The DBH for multi-stemmed trees that forked below 1.4 m was determined by taking the square root of the sum of squares of each stem's DBH.

An estimated stem count of *each* tree species on each of the subject properties (672 and 684 Henderson Drive) was determined using the following formula:

Estimated Stem Count (Per Species) = Average Number of Stems (Across Sample Plots per Property) x 100 (Plot Per Hectare Factor) x Area of Subject Property.

Similarly, an estimated stem count of *each* tree species within the proposed development footprint (building envelope, proposed driveway, and associated anticipated grading) was determined for both 672 and 684 Henderson Drive. This was achieved by calculating the average number of stems of each species within vegetation communities (ELC units) representative of the development footprint, by multiplying the average by a plot per hectare factor of 100, and by multiplying the stems per hectare value by the area of the development footprint. The estimated stem count for the proposed development area for each of the properties was determined using the following formula:

Estimated Stem Count (Per Species) = Average Number of Stems (Across Sample Plots per Vegetation Community) x 100 (Plot Per Hectare Factor) x Area of Proposed Development.

In addition to estimated stem counts, trees were categorized by species and size class (5 to 10 cm, 11 to 20 cm, > 20 cm) for both subject properties as well as each vegetation community representative of the proposed development. The size classes used for this study are consistent with those presented in Section 7.2 of the Town of Aurora's Tree Removal/Pruning and Compensation Policy (2015).

For the purposes of this tree inventory assessment, shrubs including but not limited to Common Buckthorn (*Rhamnus cathartica*), Alternate-leaved Dogwood (*Cornus alternifolia*), Red-Osier Dogwood (*Cornus sericea*) and Chokecherry (*Prunus virginiana*) were not tallied within the sample plots.

Results

Data collected from the 53 circular tree inventory sample plots for both subject properties are presented in a Raw Sample Plot Data Table that is appended to this memorandum.

684 Henderson Drive:

Thirty-six sample plots (1 to 18, 20 to 24, 27 to 30, and 32 to 40) were located on 684 Henderson Drive. The 684 Henderson Drive property is approximately 2.02 ha (4.99 ac; 20,200 m²) in area.

Sample plot data was summarized by species and size class for 672 Henderson Drive and is presented in **Table 1** below:

Table 1. Sample Plot Trees Categorized by Species and Size Class for 684 Henderson Drive

Scientific Name	Common Name	Size Class (DBH in cm)			
		5-10	11-20	>20	Total
<i>Acer saccharum</i>	Sugar Maple	77	26	39	142
<i>Tsuga canadensis</i>	Eastern Hemlock	6	9	23	38
<i>Fagus grandifolia</i>	American Beech	17	5	9	31
<i>Fraxinus pennsylvanica</i>	Green Ash	9	8	2	19
<i>Ostrya virginiana</i>	Ironwood	6	10	1	17
<i>Betula papyrifera</i>	White Birch	7	8	1	16
<i>Betula alleghaniensis</i>	Yellow Birch	0	5	7	12
<i>Prunus serotina</i>	Black Cherry	4	2	2	8
<i>Tilia americana</i>	Basswood	2	2	2	6
<i>Fraxinus americana</i>	White Ash	1	1	3	5
<i>Quercus rubra</i>	Red Oak	1	3	1	5
<i>Thuja occidentalis</i>	Eastern White Cedar	4	0	1	5
<i>Populus grandidentata</i>	Largetooth Aspen	0	1	3	4
<i>Populus tremuloides</i>	Trembling Aspen	1	0	0	1
Totals:		135	80	94	309

As per the results presented in **Table 1**, approximately 44% of the trees range between 5 to 10 cm DBH, 26% range between 11 to 20 cm DBH, and 30% are over 20 cm DBH. Slightly more than half (54%) of the Sugar Maple trees sampled are in the 5 to 10 cm DBH size class. The majority of mature trees (> 20 cm DBH) are composed of Sugar Maple and to a lesser extent, of Eastern Hemlock.

Based on an analysis of the sample plot data, the estimated count for each tree species, relative abundance, average DBH, and condition range for 684 Henderson Drive are presented in **Table 2** below:

Table 2. Estimated Stem Count, Relative Abundance, Average DBH, and Condition Range for 684 Henderson Drive

Scientific Name	Common Name	Average DBH (cm)	Estimated Stem Count	Relative Abundance (%)	Condition Range
<i>Acer saccharum</i>	Sugar Maple	18	797	46.0	Poor to Good
<i>Tsuga canadensis</i>	Eastern Hemlock	27	213	12.5	Poor to Good
<i>Fagus grandifolia</i>	American Beech	20	174	10.0	Dead to Good
<i>Fraxinus pennsylvanica</i>	Green Ash	13	107	6.0	Dead to Fair

Scientific Name	Common Name	Average DBH (cm)	Estimated Stem Count	Relative Abundance (%)	Condition Range
<i>Ostrya virginiana</i>	Ironwood	13	95	5.5	Fair to Good
<i>Betula papyrifera</i>	White Birch	13	90	5.0	Poor to Good
<i>Betula alleghaniensis</i>	Yellow Birch	31	67	4.0	Poor to Fair
<i>Prunus serotina</i>	Black Cherry	16	45	2.5	Fair to Good
<i>Tilia americana</i>	Basswood	16	34	2.0	Fair to Good
<i>Fraxinus americana</i>	White Ash	22	28	1.5	Dead to Fair
<i>Quercus rubra</i>	Red Oak	26	28	1.5	Fair to Good
<i>Thuja occidentalis</i>	Eastern White Cedar	13	28	1.5	Poor to Good
<i>Populus grandidentata</i>	Largetooth Aspen	29	22	1.5	Good
<i>Populus tremuloides</i>	Trembling Aspen	10	6	0.5	Good
Approximate Number of Trees on 684 Henderson Drive:			1,734		

Based on the data presented in **Table 2**, there is approximately a total of 1,734 trees (5 cm DBH or greater) located on 684 Henderson Drive. Sugar Maple represents an estimated 46% of the total number of trees followed by Eastern Hemlock with a relative abundance of approximately 12.5% and American Beech with a relative abundance of approximately 10%. As per **Table 2**, approximately 8% of the total number of trees are composed of Green Ash and White Ash. With the exception of ash saplings, ash trees on the property were observed to be dead or in a state of decline as a result of infestation by the Emerald Ash Borer (*Agrilus planipennis*). Based on an analysis of the Raw Sample Plot Data Table that is appended to this memorandum, approximately 168 (10%) of the 1,734 trees on the property are in a state of decline (poor condition) or dead.

Tree Inventory Within Development Footprint:

The proposed building envelope, driveway and associated grading span an area that is occupied by three vegetation communities (FOD5-2, FOC3-1, and CUW1) as shown on **Figure 2**. As the CUW1 vegetation community is relatively narrow (~10 m in width), it was included as part of the FOD5-2 unit in the southwest corner of the 684 Henderson Drive property. A full description of the vegetation communities can be found in the Natural Heritage Evaluation for 672 and 684 Henderson Drive report prepared by Beacon (2019).

As shown on **Figure 2**, 14 sample plots (1 to 3, 12 to 17, 20 to 23, and 28) were located within the FOD5-2 community located within the northwest corner of 684 Henderson Drive. Two sample plots (34 and 35) were located within the FOD5-2 community within the southwest corner of the property while five sample plots (27, 29, 30, 33, and 36) were located within the FOC3-1 vegetation community.

Based on an analysis of the sample plot data, trees were categorized by species and size class for the FOD5-2 (northwest and southwest corner of the property) and FOC3-1 vegetation communities representative of the proposed development on 684 Henderson Drive. The trees categorized by species and size class are shown in **Table 3** below:

Table 3. Sample Plot Trees Categorized by Species and Size Class for Vegetation Communities on 684 Henderson Drive

FOD5-2 Community - Northwest Corner					
Scientific Name	Common Name	Size Class (DBH in cm)			
		5-10	11-20	>20	Total
<i>Acer saccharum</i>	Sugar Maple	34	7	18	59
<i>Fagus grandifolia</i>	American Beech	15	4	5	24
<i>Ostrya virginiana</i>	Ironwood	4	9	1	14
<i>Betula papyrifera</i>	White Birch	5	3	1	9
<i>Fraxinus pennsylvanica</i>	Green Ash	3	2	1	6
<i>Tsuga canadensis</i>	Eastern Hemlock	0	1	4	5
<i>Populus grandidentata</i>	Largetooth Aspen	0	1	3	4
<i>Prunus serotina</i>	Black Cherry	1	0	2	3
<i>Fraxinus americana</i>	White Ash	0	1	1	2
<i>Quercus rubra</i>	Red Oak	0	1	0	1
<i>Betula alleghaniensis</i>	Yellow Birch	0	1	0	1
Totals:		62	30	36	128
FOD5-2 Community - Southwest Corner					
Scientific Name	Common Name	5-10	11-20	>20	Total
<i>Acer saccharum</i>	Sugar Maple	9	5	3	17
<i>Tsuga canadensis</i>	Eastern Hemlock	5	2	0	7
<i>Betula papyrifera</i>	White Birch	0	5	0	5
<i>Tilia americana</i>	Basswood	0	1	2	3
<i>Ostrya virginiana</i>	Ironwood	2	0	0	2
<i>Quercus rubra</i>	Red Oak	0	2	0	2
<i>Prunus serotina</i>	Black Cherry	0	1	0	1
<i>Populus tremuloides</i>	Trembling Aspen	1	0	0	1
Totals:		17	16	5	38

FOC3-1 Community					
Scientific Name	Common Name	5-10	11-20	>20	Total
<i>Acer saccharum</i>	Sugar Maple	3	4	6	13
<i>Tsuga canadensis</i>	Eastern Hemlock	0	4	4	8
<i>Fagus grandifolia</i>	American Beech	0	0	1	1
<i>Fraxinus pennsylvanica</i>	Green Ash	1	3	0	4
<i>Betula alleghaniensis</i>	Yellow Birch	0	0	1	1
<i>Quercus rubra</i>	Red Oak	0	0	1	1
<i>Ostrya virginiana</i>	Ironwood	0	1	0	1
<i>Tilia americana</i>	Basswood	1	0	0	1
<i>Thuja occidentalis</i>	Eastern White Cedar	0	0	1	1
<i>Prunus serotina</i>	Black Cherry	1	0	0	1
Totals:		6	12	14	32

Based on the sample plot results presented in **Table 3**, 85 trees (43%) are within the 5 to 10 cm DBH size class, 58 trees (29%) are within the 11 to 20 cm DBH size class, and 55 trees (28%) are over 20 cm in DBH. Sugar Maple is the dominant species within all three size classes.

The proposed development footprint that consists of the building envelope, grading, and driveway is approximately 0.3806 ha (3,806 m²) in total area with 0.3278 ha (3,278 m²) of the footprint within the FOD5-2 community in the northwest section of the property, 0.0345 ha (345 m²) of the footprint within the FOD5-2 community in the southwest corner of the property, and 0.0183 ha (183 m²) of the footprint within the FOC3-1 community immediately north of the FOD5-2 community in the southwest corner of the subject property. The footprint of the proposed dwelling within the building envelope on the property will be less than 500 m² in area.

The proposed development footprint within the FOD5-2 community in the northwest section of the property is 0.3278 ha (3,278 m²) in area and is broken down in the following manner:

Building Envelope and Driveway: 0.1263 ha (1,263 m²); and
Grading : 0.2015 ha (2,015 m²).

The 0.3278 ha (3,278 m²) area to the northwest, includes grading north and east of the proposed building envelope approximately 0.1161 ha (1,161 m²) in size that is associated with a storm swale. This area of grading may be modified or excluded during the final design stage.

The proposed development footprint within the FOD5-2 community in the southwest corner of the property is 0.0345 ha (345 m²) in area and is broken down in the following manner:

Driveway: 0.0225 ha (225 m²); and
Grading: 0.0120 ha (120 m²).

The proposed development footprint within the FOC3-1 community is 0.0183 ha (183 m²) in area and is broken down in the following manner:

Driveway: 0.0077 ha (77 m²); and

Grading: 0.0106 ha (106 m²).

An analysis of the sample plot data within the relevant vegetation communities, including the estimated count for each tree species, relative abundance, average DBH, and condition range within the development footprint on 684 Henderson Drive is presented in **Table 4** below.

Table 4. Estimated Stem Count, Relative Abundance, Average DBH, and Condition Range within the Proposed Development Footprint on 684 Henderson Drive

FOD5-2 Community - Northwest Corner						
Scientific Name	Common Name	Average DBH (cm)	Estimated Stem Count (Grading)	Estimated Stem Count (Building Envelope and Driveway)	Relative Abundance (%)	Condition Range
<i>Acer saccharum</i>	Sugar Maple	18	85	53	46	Fair to Good
<i>Fagus grandifolia</i>	American Beech	16	35	22	19	Dead to Good
<i>Ostrya virginiana</i>	Ironwood	13	20	13	11	Fair to Good
<i>Betula papyrifera</i>	White Birch	12	13	8	7	Fair to Good
<i>Fraxinus pennsylvanica</i>	Green Ash	13	9	5	5	Dead to Fair
<i>Tsuga canadensis</i>	Eastern Hemlock	22	7	5	4	Fair to Good
<i>Populus grandidentata</i>	Large-tooth Aspen	29	6	4	3	Good
<i>Prunus serotina</i>	Black Cherry	26	4	3	2	Fair to Good
<i>Fraxinus americana</i>	White Ash	26	3	2	2	Dead
<i>Quercus rubra</i>	Red Oak	12	1	1	1	Good
<i>Betula alleghaniensis</i>	Yellow Birch	16	1	1	1	Fair
Total Estimated Stem Count:			184	115		

FOD5-2 Community - Southwest Corner						
Scientific Name	Common Name	Average DBH (cm)	Estimated Stem Count (Grading)	Estimated Stem Count (Driveway)	Relative Abundance (%)	Condition Range
<i>Acer saccharum</i>	Sugar Maple	16	19	10	44	Fair to Good
<i>Tsuga canadensis</i>	Eastern Hemlock	10	8	4	18	Fair to Good
<i>Betula papyrifera</i>	White Birch	16	6	3	13	Good
<i>Tilia americana</i>	Basswood	22	3	2	8	Good
<i>Ostrya virginiana</i>	Ironwood	8	2	1	5	Good
<i>Quercus rubra</i>	Red Oak	19	2	1	5	Good
<i>Prunus serotina</i>	Black Cherry	13	1	1	3	Good
<i>Populus tremuloides</i>	Trembling Aspen	10	1	1	3	Good
Total Estimated Stem Count:			43	23		
FOC3-1 Community						
Scientific Name	Common Name	Average DBH (cm)	Estimated Stem Count (Grading)	Estimated Stem Count (Driveway)	Relative Abundance (%)	Condition Range
<i>Acer saccharum</i>	Sugar Maple	32	3	2	21	Fair to Good
<i>Tsuga canadensis</i>	Eastern Hemlock	28	2	1	12.5	Fair to Good
<i>Fagus grandifolia</i>	American Beech	55	1	1	8.5	Fair to Good
<i>Fraxinus pennsylvanica</i>	Green Ash	11	1	1	8.5	Poor to Fair
<i>Betula alleghaniensis</i>	Yellow Birch	30	1	1	8.5	Fair to Good
<i>Quercus rubra</i>	Red Oak	73	1	1	8.5	Good
<i>Ostrya virginiana</i>	Ironwood	14	1	1	8.5	Good
<i>Tilia americana</i>	Basswood	8	1	1	8.5	Fair
<i>Thuja occidentalis</i>	White Cedar	38	1	1	8.5	Poor
<i>Prunus serotina</i>	Black Cherry	5	1	1	8.5	Good
Total Estimated Stem Count:			13	11		

Based on the results presented in **Table 4**, there is a total of 389 trees with a DBH of 5 cm or greater, within the development footprint on 684 Henderson Drive. The 389 trees are composed of approximately 184 trees within areas proposed for grading and 115 trees within the building envelope/driveway footprint within the FOD5-2 community (northwest corner), approximately 43 trees

within areas proposed for grading and 23 trees within the building envelope/driveway footprint within the FOD5-2 community (southwest corner), and approximately 13 trees within areas proposed for grading and 11 trees within the building envelope/driveway footprint within the FOC3-1 community immediately north of the FOD5-2 community in the southwest corner of the property. As per **Table 4**, Sugar Maple was observed to be the dominant species within the development footprint within all three vegetation communities.

Of the estimated 1,734 trees (5 cm DBH or greater) on the 684 Henderson Drive property (**Table 2**), approximately 389 (22.4%) of the trees (**Table 4**) on the property are recommended for removal to accommodate the proposed development. Of the 389 trees recommended for removal, 240 trees (13.8%) are located within areas proposed for grading and 149 trees (8.6%) are located within the footprint of the building envelope and driveway. Based on an analysis of the Raw Sample Plot Data Table that is appended to this memorandum, approximately 22 (6%) of the 389 trees within the proposed development footprint are in a state of decline (poor condition) or dead.

As per the results presented in **Tables 1** and **3**, the majority of trees recommended for removal consist of Sugar Maple, with a little more than half (52%) within the 5 to 10 cm DBH size class. The tree removal estimate is based on a concept plan and will likely require less tree removals during the final siting design with additional opportunities for tree preservation within areas proposed for grading.

672 Henderson Drive:

Seventeen sample plots (19, 25, 26, 31 and 41 to 53) were located on 672 Henderson Drive. The 672 Henderson Drive property is approximately 1.15 ha (2.84 ac; 11,500 m²) in area.

Sample plot data was summarized by species and size class for 672 Henderson Drive and is presented in **Table 5** below:

Table 5. Sample Plot Trees Categorized by Species and Size Class for 672 Henderson Drive

Scientific Name	Common Name	Size Class (DBH in cm)			
		5-10	11-20	>20	Total
<i>Acer saccharum</i>	Sugar Maple	19	15	14	48
<i>Fraxinus pennsylvanica</i>	Green Ash	22	12	0	34
<i>Tsuga canadensis</i>	Eastern Hemlock	3	5	17	25
<i>Betula alleghaniensis</i>	Yellow Birch	0	0	6	6
<i>Populus tremuloides</i>	Trembling Aspen	2	2	1	5
<i>Tilia americana</i>	Basswood	1	1	1	3
<i>Fraxinus americana</i>	White Ash	0	1	2	3
<i>Betula papyrifera</i>	White Birch	1	0	0	1
Totals:		48	36	41	125

As per the results presented in **Table 5**, approximately 38% of the trees range between 5 to 10 cm DBH, 29% range between 11 to 20 cm DBH, and 33% are over 20 cm DBH. Sugar Maple trees are distributed relatively evenly between the three size classes. Approximately 65% of the Green Ash within the property are within the 5 to 10 cm DBH size class and as mentioned above, were observed to be dead or in a state of decline as a result of infestation from the Emerald Ash Borer.

Based on an analysis of the sample plot data, the estimated count for each tree species, relative abundance, average DBH, and condition range for 684 Henderson Drive are presented in **Table 6** below:

Table 6. Estimated Stem Count, Relative Abundance, Average DBH, and Condition Range for 672 Henderson Drive

Scientific Name	Common Name	Average DBH (cm)	Estimated Stem Count	Relative Abundance (%)	Condition Range
<i>Acer saccharum</i>	Sugar Maple	19	325	38	Poor to Good
<i>Fraxinus pennsylvanica</i>	Green Ash	9	230	27	Dead to Fair
<i>Tsuga canadensis</i>	Eastern Hemlock	25	169	20	Poor to Good
<i>Betula alleghaniensis</i>	Yellow Birch	46	41	5	Poor to Good
<i>Populus tremuloides</i>	Trembling Aspen	17	34	4	Fair to Good
<i>Tilia americana</i>	Basswood	18	20	2.5	Poor to Good
<i>Fraxinus americana</i>	White Ash	28	20	2.5	Dead to Poor
<i>Betula papyrifera</i>	White Birch	9	7	1	Good
Approximate Number of Trees on 672 Henderson Drive:			846		

Based on the results presented in **Table 6**, there is a total of approximately 846 trees (5 cm DBH or greater) within the 672 Henderson Drive property. Trees within this property are composed primarily of Sugar Maple with a relative abundance of approximately 38%, and to a lesser extent by Green Ash (27%) and Eastern Hemlock (20%). As per **Table 6**, of the 846 trees, approximately 250 trees (30%) are composed of Green Ash and White Ash. Similar to 684 Henderson Drive, all ash trees were observed to be dead or declining as a result of infestation from the Emerald Ash Borer. Based on an analysis of the Raw Sample Plot Data Table that is appended to this memorandum, approximately 223 (26%) of the 846 trees on the property are in a state of decline (poor condition) or dead.

Tree Inventory Within Development Footprint:

The proposed building envelope, driveway and associated grading span an area that is occupied by three vegetation communities (FOD8-1, FOC3-1, and CUW1) as shown on **Figure 2**. As the CUW1 vegetation community is relatively narrow (~10 m in width), it was included as part of the FOC3-1 unit that occupies the central portion of 672 Henderson Drive property. A full description of the vegetation communities can be found in the Natural Heritage Evaluation for 672 and 684 Henderson Drive report prepared by Beacon (2019).

As shown on **Figure 2**, eight sample plots (44 to 47, and 49 to 52) were located within the FOC3-1 community on the 672 Henderson Drive property while two sample plots (48 and 53) were located within the FOD8-1 vegetation community.

Based on an analysis of the sample plot data, trees were categorized by species and size class for the FOC3-1 and FOD8-1 vegetation communities' representative of the proposed development on 672 Henderson Drive. The trees categorized by species and size class are shown in **Table 7** below:

Table 7. Sample Plot Trees Categorized by Species and Size Class for Vegetation Communities on 672 Henderson Drive

FOC3-1 Community					
Scientific Name	Common Name	Size Class (DBH in cm)			
		5-10	11-20	>20	Total
<i>Acer saccharum</i>	Sugar Maple	12	4	10	26
<i>Tsuga canadensis</i>	Eastern Hemlock	1	5	15	21
<i>Fraxinus pennsylvanica</i>	Green Ash	13	2	0	15
<i>Fraxinus americana</i>	White Ash	0	0	2	2
<i>Betula alleghaniensis</i>	Yellow Birch	0	0	3	3
Totals:		26	11	30	67
FOD8-1 Community					
Scientific Name	Common Name	Size Class (DBH in cm)			
		5-10	11-20	>20	Total
<i>Fraxinus pennsylvanica</i>	Green Ash	6	4	0	10
<i>Populus tremuloides</i>	Trembling Aspen	2	2	1	5
Totals:		8	6	1	15

Based on the results presented in **Table 7**, 34 trees (41%) are within the 5 to 10 cm DBH size class, 17 trees (21%) are within the 11 to 20 cm DBH size class, and 31 trees (38%) are over 20 cm in DBH. Tree species within the development footprint are composed primarily of Sugar Maple, Eastern Hemlock and Green Ash.

The proposed development footprint that consists of the building envelope, grading, and driveway is approximately 0.1663 ha (1,663 m²) in area with 0.1240 ha (1,240 m²) of the footprint within the FOC3-1 community which occupies the majority of the 672 Henderson Drive property, and 0.0423 ha (423 m²) of the footprint within the FOD8-1 community in the southeast corner of the property. The footprint of the proposed dwelling within the building envelope within the building envelope will be less than 500 m² in area.

The proposed development footprint within the FOC3-1 community is 0.1240 ha (1,240 m²) in area and is broken down in the following manner:

Building Envelope and Driveway: 0.0453 ha (453 m²); and
Grading: 0.0787 ha (787 m²).

The proposed development footprint within the FOD8-1 community is 0.1240 ha (423 m²) in area and is broken down in the following manner:

Building Envelope: 0.0233 ha (233 m²); and
Grading: 0.0190 (190 m²).

An analysis of the sample plot data within the relevant vegetation communities, including the estimated count, relative abundance, average DBH, and condition range for each tree species within the development footprint on 672 Henderson Drive is presented in **Table 8** below:

Table 8. Estimated Stem Count, Relative Abundance, Average DBH, and Condition Range within the Proposed Development Footprint on 672 Henderson Drive

FOC3-1 Community						
Scientific Name	Common Name	Average DBH (cm)	Estimated Stem Count (Grading)	Estimated Stem Count (Building Envelope and Driveway)	Relative Abundance (%)	Condition Range
<i>Acer saccharum</i>	Sugar Maple	23	26	15	39	Poor to Good
<i>Tsuga canadensis</i>	Eastern Hemlock	26	21	12	31	Poor to Good
<i>Fraxinus pennsylvanica</i>	Green Ash	7	15	8	22	Dead to Fair
<i>Betula alleghaniensis</i>	Yellow Birch	43	3	2	5	Dead
<i>Fraxinus americana</i>	White Ash	35	2	1	3	Poor to Good
Total Estimated Stem Count:			66	38		

FOD8-1 Community						
Scientific Name	Common Name	Average DBH (cm)	Estimated Stem Count (Grading)	Estimated Stem Count (Building Envelope)	Relative Abundance (%)	Condition Range
<i>Fraxinus pennsylvanica</i>	Green Ash	9	10	12	67	Dead to Good
<i>Populus tremuloides</i>	Trembling Aspen	17	5	6	33	Good
Total Estimated Stem Count:			15	18		

As per the results presented in **Table 8**, there is an estimated total of 137 trees with a DBH of 5 cm or greater, within the development footprint on 672 Henderson Drive. The 137 trees are composed of approximately 66 trees within areas proposed for grading and 38 trees within the building envelope/driveway footprint within the FOC3-1 community, and approximately 15 trees within areas proposed for grading and 18 trees within the building envelope footprint within the FOD8-1 community.

As per **Table 8**, trees within the proposed development footprint situated within the FOC3-1 community are composed primarily of Sugar Maple, Eastern Hemlock and Green Ash. Trees within the footprint situated within the FOD8-1 community are composed entirely of Green Ash and Trembling Aspen.

Of the estimated 846 trees on the 672 Henderson Drive property (**Table 5**), approximately 137 (16.2%) of the trees (**Table 8**) are recommended for removal to accommodate the proposed development. Of the 137 trees recommend for removal, 81 trees (9.6%) are located within areas proposed for grading and 56 trees (6.6%) are located within the footprint of the building envelope and driveway. Based on an analysis of the Raw Sample Plot Data Table that is appended to this memorandum, approximately 32 (23%) of the 137 trees within the proposed development footprint are in a state of decline (poor condition) or dead.

As per the results in **Tables 7 and 8**, most of the trees within the footprint that are recommended for removal consist of Sugar Maple, Eastern Hemlock, and Green Ash. The ash trees were all observed to be dead or in a state of decline due to the presence of the Emerald Ash Borer. The tree removal estimate is based on a concept plan and will likely require less tree removals during the final siting design with additional opportunities for tree preservation within areas proposed for grading.

Compensation

A detailed tree inventory within the development footprint will be conducted as part of the final siting design for each property. At that time, tree compensation can be calculated based on the detailed tree inventory and recommended removals.

As per Section 7.2 of the Town of Aurora’s Tree Removal/Pruning and Compensation Policy (2015), trees within meadows and woodlots are valued based on the cost to replace them with the same species (if native), using nursery stock sizes and quantities listed below (**Table 9**).

Table 9. Replacement Tree Size and Quantity of Nursery Stock for Each Tree Removed in Meadows and Woodlot Areas.

Subject Tree Diameter at Breast Height (cm)	Replacement Size of Tree Nursery Stock	Quantity of nursery stock required to replace 1 tree
5 - 10	5 gal pots (1.0 - 3.0 m tall)	1
11 - 20	150 cm tall wire basket (conifer), 45 mm caliper (hardwood)	2
> 20	175 - 200 cm tall wire basket (conifer), 60 mm caliper (hardwood)	3

The installed cost shall be 2.5 times the cost of nursery stock. The value for trees that are assessed as being in fair condition or poor condition is calculated as 0.6 times or 0.2 times the replacement cost of a healthy specimen, respectively. An additional species rating criterion shall be applied based on the latest ISA Ontario Species Rating list.

A sampling procedure may be used to estimate the tree inventory within each of the following DBH classes (5 – 10 cm, 11 – 20 cm, > 20 cm) in the area of interest. A fixed area plot sampling procedure is recommended which samples at least 5% of the area of interest. The plots must be located in areas which are representative of the vegetation communities and their locations illustrated on a map.

Disclaimer

The following clause regarding limitations has been included with the intent of ensuring that the client is aware of what is technically and professionally realistic in assessing and/or retaining trees.

The assessment of the trees presented in this report has been made using accepted arboricultural techniques. These techniques include a visual examination of the above-ground parts of each tree for structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of insect attack, crown dieback, discoloured foliage, the condition of any visible root structures, the degree and direction of lean (if any), the general condition of the tree(s) and the surrounding site, and the proximity of property and people. Except where specifically noted in the report, none of the trees examined were dissected, cored, probed, or climbed, and detailed root crown examinations involving excavation were not undertaken.

Notwithstanding the recommendations and conclusions made in this report, it must be recognized that trees are living organisms and their health and vigour constantly change over time. They are not immune to changes in site conditions, pests, or variations in the weather conditions including severe storms with high-speed winds. Furthermore, some symptoms may only be visible seasonally; the extent of observations that can be made may be limited by the time of year in which the inspection took place.

Although every effort has been made to ensure that this assessment is reasonably accurate, it is recommended that trees be re-assessed periodically to identify changes in condition. Design or site plan changes may also necessitate re-assessment and/or revisions to this report. **The assessment presented in this report is valid at the time of the inspection and is intended for sole use of the client.** Any use of this report by a third party, and any decision based on this report, is the singular responsibility of the third party.

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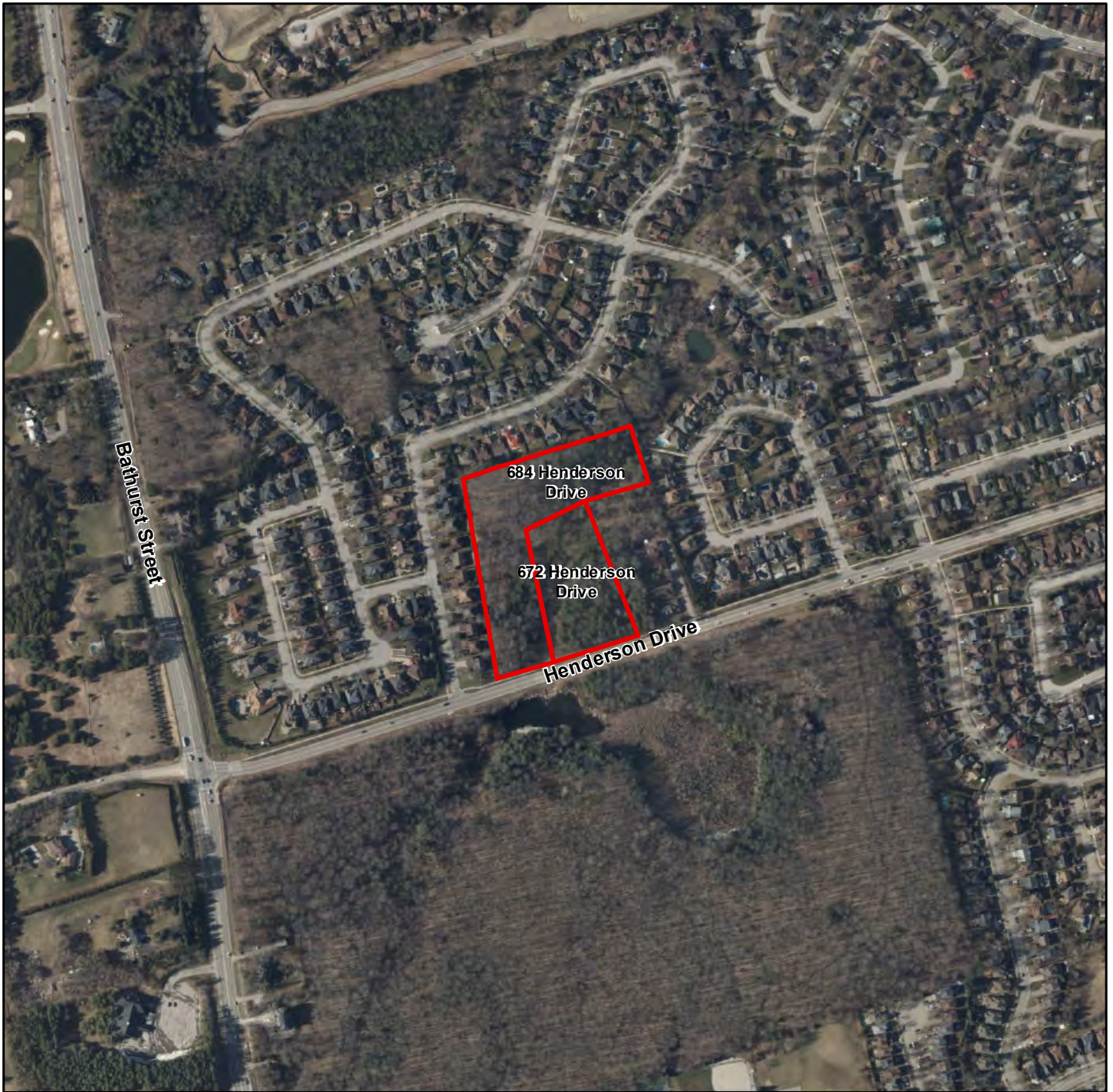


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Attachments:

Figure 1
Figure 2
Appendix A. Raw Sample Plot Data



Site Location		Figure 1	
672 & 684 Henderson Drive Aurora			
First Base Solutions Web Mapping Service 2018			
UTM Zone 17 N, NAD 83			
		1:6,000	
		Project 216078 December 2018 DRAFT	



Legend

- Subject Property
- Proposed Development
- ELC Communities
- Watercourse (Beacon 2016)
- Sample Plot Locations

ELC Code	Description
CUW1	Mineral Cultural Woodland
FOC3-1	Fresh-Moist Hemlock Coniferous Forest
FOD5-2	Dry-Fresh Sugar Maple - Beech Deciduous Forest
FOD8-1	Fresh-Moist Poplar Deciduous Forest
FOM3-2	Dry-Fresh Sugar Maple - Hemlock Mixed Forest
MAM2-9	Jewelweed Mineral Meadow Marsh
MAS2-1	Cattail Mineral Shallow Marsh

Tree Inventory

Figure 2

672 & 684 Henderson Drive Aurora

UTM Zone 17 N, NAD 83

First Base Solutions
Web Mapping Service 2018

0 10 20 40 Metres



1:1,000



Project 216078
March 2019

DRAFT

Appendix A

Plot Number	Scientific Name	Common Name	DBH (cm)	Condition
1	<i>Acer saccharum</i>	Sugar Maple	21	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	42	Fair
	<i>Acer saccharum</i>	Sugar Maple	21	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	61	Fair
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Acer saccharum</i>	Sugar Maple	13	Fair
	<i>Acer saccharum</i>	Sugar Maple	49	Fair-Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	11	Fair
2	<i>Fraxinus pennsylvanica</i>	Green Ash	31	Poor
	<i>Acer saccharum</i>	Sugar Maple	5	Good
	<i>Acer saccharum</i>	Sugar Maple	5	Good
	<i>Acer saccharum</i>	Sugar Maple	10	Good
	<i>Acer saccharum</i>	Sugar Maple	23	Fair
	<i>Ostrya virginiana</i>	Ironwood	10	Good
	<i>Acer saccharum</i>	Sugar Maple	8	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	16	Poor
	<i>Acer saccharum</i>	Sugar Maple	7	Good
	<i>Ostrya virginiana</i>	Ironwood	25	Good
	<i>Fraxinus americana</i>	White Ash	33	Dead
<i>Ostrya virginiana</i>	Ironwood	15	Good	
3	<i>Fraxinus americana</i>	White Ash	19	Dead
	<i>Prunus serotina</i>	Black Cherry	9	Fair
	<i>Prunus serotina</i>	Black Cherry	40	Fair
	<i>Acer saccharum</i>	Sugar Maple	16	Good
	<i>Ostrya virginiana</i>	Ironwood	13	Fair-Good
	<i>Ostrya virginiana</i>	Ironwood	11	Fair-Good
4	<i>Acer saccharum</i>	Sugar Maple	46	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	9	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	23	Dead
	<i>Acer saccharum</i>	Sugar Maple	21	Good
5	<i>Tsuga canadensis</i>	Eastern Hemlock	32	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	49	Good
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Acer saccharum</i>	Sugar Maple	48	Fair
6	<i>Prunus serotina</i>	Black Cherry	14	Good
	<i>Prunus serotina</i>	Black Cherry	7	Fair
	<i>Prunus serotina</i>	Black Cherry	9	Fair
	<i>Acer saccharum</i>	Sugar Maple	56	Poor-Fair
7	<i>Tsuga canadensis</i>	Eastern Hemlock	27	Good
	<i>Fraxinus americana</i>	White Ash	22	Dead
	<i>Fraxinus americana</i>	White Ash	30	Dead
	<i>Betula alleghaniensis</i>	Yellow Birch	39	Fair
	<i>Fraxinus americana</i>	White Ash	7	Poor-Fair
	<i>Acer saccharum</i>	Sugar Maple	60	Fair
	<i>Fagus grandifolia</i>	American Beech	6	Good
	<i>Acer saccharum</i>	Sugar Maple	5	Fair
	<i>Acer saccharum</i>	Sugar Maple	6	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	51	Good
	<i>Betula alleghaniensis</i>	Yellow Birch	20	Fair
<i>Acer saccharum</i>	Sugar Maple	5	Good	
	<i>Acer saccharum</i>	Sugar Maple	28	Poor
	<i>Acer saccharum</i>	Sugar Maple	18	Fair

8	<i>Acer saccharum</i>	Sugar Maple	7	Fair
	<i>Betula alleghaniensis</i>	Yellow Birch	55	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	51	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	5	Good
	<i>Acer saccharum</i>	Sugar Maple	5	Good
	<i>Tilia americana</i>	Basswood	3,3,4,13 (14)	Fair
9	<i>Tsuga canadensis</i>	Eastern Hemlock	38	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	38	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	22,10 (24)	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	12	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	9	Fair-Good
10	<i>Tsuga canadensis</i>	Eastern Hemlock	43	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	31	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	31	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	71	Fair
	<i>Acer saccharum</i>	Sugar Maple	23	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	20	Fair-Good
11	<i>Tsuga canadensis</i>	Eastern Hemlock	35	Good
	<i>Fagus grandifolia</i>	American Beech	17	Good
	<i>Fagus grandifolia</i>	American Beech	50	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	17	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	8	Good
	<i>Acer saccharum</i>	Sugar Maple	53	Fair
12	<i>Acer saccharum</i>	Sugar Maple	5	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	60	Fair
	<i>Fagus grandifolia</i>	American Beech	10	Good
	<i>Acer saccharum</i>	Sugar Maple	5	Fair
	<i>Acer saccharum</i>	Sugar Maple	5	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	6	Dead
	<i>Fraxinus pennsylvanica</i>	Green Ash	7	Dead
	<i>Acer saccharum</i>	Sugar Maple	36	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	13	Good
13	<i>Fagus grandifolia</i>	American Beech	42	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	5	Good
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Acer saccharum</i>	Sugar Maple	8	Good
	<i>Acer saccharum</i>	Sugar Maple	49	Fair
	<i>Ostrya virginiana</i>	Ironwood	7	Good
	<i>Acer saccharum</i>	Sugar Maple	8	Good
	14	<i>Acer saccharum</i>	Sugar Maple	22
<i>Fagus grandifolia</i>		American Beech	59	Good
<i>Fagus grandifolia</i>		American Beech	5	Good
<i>Fagus grandifolia</i>		American Beech	7	Good
<i>Fagus grandifolia</i>		American Beech	6	Good
<i>Acer saccharum</i>		Sugar Maple	8	Fair
<i>Acer saccharum</i>		Sugar Maple	7	Good
<i>Fagus grandifolia</i>		American Beech	5	Good
<i>Fagus grandifolia</i>		American Beech	8	Good
<i>Fagus grandifolia</i>		American Beech	6	Good
	<i>Prunus serotina</i>	Black Cherry	29	Good
	<i>Ostrya virginiana</i>	Ironwood	18	Good
	<i>Fagus grandifolia</i>	American Beech	7	Good

15	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Acer saccharum</i>	Sugar Maple	7	Good
	<i>Fagus grandifolia</i>	American Beech	13	Good
	<i>Fagus grandifolia</i>	American Beech	11	Good
	<i>Quercus rubra</i>	Red Oak	12	Good
	<i>Ostrya virginiana</i>	Ironwood	14	Good
	<i>Fagus grandifolia</i>	American Beech	5	Good
	<i>Fagus grandifolia</i>	American Beech	5	Good
16	<i>Fagus grandifolia</i>	American Beech	10	Good
	<i>Fagus grandifolia</i>	American Beech	55	Dead
	<i>Tsuga canadensis</i>	Eastern Hemlock	25	Fair
	<i>Acer saccharum</i>	Sugar Maple	35	Good
	<i>Fagus grandifolia</i>	American Beech	5	Good
	<i>Fagus grandifolia</i>	American Beech	33	Fair-Good
17	<i>Acer saccharum</i>	Sugar Maple	51	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	6	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	22	Good
	<i>Acer saccharum</i>	Sugar Maple	65	Fair
	<i>Acer saccharum</i>	Sugar Maple	13	Good
18	<i>Acer saccharum</i>	Sugar Maple	16	Fair
	<i>Acer saccharum</i>	Sugar Maple	9	Good
	<i>Acer saccharum</i>	Sugar Maple	22	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	7	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	11	Good
	<i>Acer saccharum</i>	Sugar Maple	16	Good
	<i>Acer saccharum</i>	Sugar Maple	8	Good
	<i>Acer saccharum</i>	Sugar Maple	14	Fair
	<i>Betula alleghaniensis</i>	Yellow Birch	32	Fair
	<i>Acer saccharum</i>	Sugar Maple	10	Good
19	<i>Tilia americana</i>	Basswood	27	Fair
	<i>Acer saccharum</i>	Sugar Maple	5	Good
	<i>Betula alleghaniensis</i>	Yellow Birch	60	Fair
	<i>Acer saccharum</i>	Sugar Maple	11	Good
	<i>Acer saccharum</i>	Sugar Maple	11	Good
	<i>Acer saccharum</i>	Sugar Maple	20	Good
20	<i>Tsuga canadensis</i>	Eastern Hemlock	27	Good
	<i>Acer saccharum</i>	Sugar Maple	7	Good
	<i>Acer saccharum</i>	Sugar Maple	72	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	25	Good
	<i>Acer saccharum</i>	Sugar Maple	7	Good
	<i>Fagus grandifolia</i>	American Beech	12	Good
	<i>Acer saccharum</i>	Sugar Maple	5	Good
21	<i>Acer saccharum</i>	Sugar Maple	19	Good
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Acer saccharum</i>	Sugar Maple	13	Good
	<i>Acer saccharum</i>	Sugar Maple	12	Good
	<i>Acer saccharum</i>	Sugar Maple	5	Good
	<i>Acer saccharum</i>	Sugar Maple	13	Good
	<i>Acer saccharum</i>	Sugar Maple	9	Good
	<i>Acer saccharum</i>	Sugar Maple	25	Good
	<i>Acer saccharum</i>	Sugar Maple	26	Good
	<i>Fagus grandifolia</i>	American Beech	15	Good
	<i>Acer saccharum</i>	Sugar Maple	7	Good
	<i>Acer saccharum</i>	Sugar Maple	9	Good

22	<i>Acer saccharum</i>	Sugar Maple	6	Fair-Good
	<i>Ostrya virginiana</i>	Ironwood	11	Good
	<i>Ostrya virginiana</i>	Ironwood	11	Good
	<i>Acer saccharum</i>	Sugar Maple	8	Fair-Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	9	Fair
	<i>Fagus grandifolia</i>	American Beech	46	Fair
	<i>Ostrya virginiana</i>	Ironwood	13	Good
	<i>Ostrya virginiana</i>	Ironwood	18	Good
	<i>Acer saccharum</i>	Sugar Maple	7	Poor-Fair
23	<i>Acer saccharum</i>	Sugar Maple	50	Fair
	<i>Ostrya virginiana</i>	Ironwood	8,5 (9)	Good
	<i>Ostrya virginiana</i>	Ironwood	7,7,3 (10)	Good
	<i>Fagus grandifolia</i>	American Beech	8	Good
	<i>Acer saccharum</i>	Sugar Maple	25	Good
	<i>Fagus grandifolia</i>	American Beech	3,8 (9)	Good
	<i>Fagus grandifolia</i>	American Beech	5	Good
24	<i>Tsuga canadensis</i>	Eastern Hemlock	31	Good
	<i>Fagus grandifolia</i>	American Beech	54	Fair
	<i>Acer saccharum</i>	Sugar Maple	11	Good
	<i>Acer saccharum</i>	Sugar Maple	8,4 (9)	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	7	Fair-Good
	<i>Fagus grandifolia</i>	American Beech	47	Poor
	<i>Acer saccharum</i>	Sugar Maple	10	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	10	Fair
	<i>Fagus grandifolia</i>	American Beech	6	Good
25	<i>Fraxinus pennsylvanica</i>	Green Ash	14	Poor
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	5	Dead
	<i>Acer saccharum</i>	Sugar Maple	12	Poor
	<i>Acer saccharum</i>	Sugar Maple	13	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	11	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	5	Good
	<i>Betula alleghaniensis</i>	Yellow Birch	35	Fair-Good
26	<i>Acer saccharum</i>	Sugar Maple	26	Fair
	<i>Acer saccharum</i>	Sugar Maple	8,7 (11)	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	8	Poor
27	<i>Acer saccharum</i>	Sugar Maple	12	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	8,2 (8)	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	12	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	6,3,3 (7)	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	49	Fair-Good
	<i>Fagus grandifolia</i>	American Beech	55	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	4,4,5,5 (9)	Fair
28	<i>Populus grandidentata</i>	Largetooth Aspen	31	Good
	<i>Populus grandidentata</i>	Largetooth Aspen	37	Good
	<i>Betula alleghaniensis</i>	Yellow Birch	16	Fair
	<i>Betula papyrifera</i>	White Birch	5	Fair
	<i>Betula papyrifera</i>	White Birch	6	Fair
	<i>Populus grandidentata</i>	Largetooth Aspen	19	Good
	<i>Populus grandidentata</i>	Largetooth Aspen	27	Good
	<i>Betula papyrifera</i>	White Birch	10	Fair-Good
	<i>Betula papyrifera</i>	White Birch	19	Good
	<i>Betula papyrifera</i>	White Birch	8	Good
<i>Betula papyrifera</i>	White Birch	16	Good	

	<i>Acer saccharum</i>	Sugar Maple	7	Good
	<i>Betula papyrifera</i>	White Birch	11	Good
	<i>Betula papyrifera</i>	White Birch	22	Good
	<i>Acer saccharum</i>	Sugar Maple	8	Good
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Betula papyrifera</i>	White Birch	9	Good
29	<i>Acer saccharum</i>	Sugar Maple	56	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	37	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	6	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	20	Good
	<i>Acer saccharum</i>	Sugar Maple	59	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	11	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	13	Poor
30	<i>Tsuga canadensis</i>	Eastern Hemlock	41	Good
	<i>Betula alleghaniensis</i>	Yellow Birch	30	Fair
	<i>Acer saccharum</i>	Sugar Maple	8,7 (11)	Fair-Good
31	<i>Betula papyrifera</i>	White Birch	9	Good
	<i>Tilia americana</i>	Basswood	7,6 (9)	Good
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Acer saccharum</i>	Sugar Maple	5	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	11	Poor
	<i>Acer saccharum</i>	Sugar Maple	33	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	9	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	8	Dead
	<i>Fraxinus pennsylvanica</i>	Green Ash	20	Poor
32	<i>Fraxinus pennsylvanica</i>	Green Ash	10	Poor
	<i>Thuja occidentalis</i>	Eastern White Cedar	7	Good
	<i>Thuja occidentalis</i>	Eastern White Cedar	7	Good
	<i>Thuja occidentalis</i>	Eastern White Cedar	7	Good
	<i>Thuja occidentalis</i>	Eastern White Cedar	7	Good
	<i>Betula alleghaniensis</i>	Yellow Birch	10,8 (13)	Fair
	<i>Betula alleghaniensis</i>	Yellow Birch	7,6,5 (10.5)	Poor
	<i>Fraxinus pennsylvanica</i>	Green Ash	4,5,8 (10)	Poor
	<i>Betula papyrifera</i>	White Birch	10	Poor
33	<i>Tsuga canadensis</i>	Eastern Hemlock	12	Good
	<i>Acer saccharum</i>	Sugar Maple	50,17 (53)	Fair-Good
	<i>Quercus rubra</i>	Red Oak	73	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	11	Good
	<i>Ostrya virginiana</i>	Ironwood	14	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	14	Good
	<i>Acer saccharum</i>	Sugar Maple	58	Fair
	<i>Acer saccharum</i>	Sugar Maple	20	Good
34	<i>Prunus serotina</i>	Black Cherry	13	Good
	<i>Acer saccharum</i>	Sugar Maple	18	Good
	<i>Acer saccharum</i>	Sugar Maple	10	Fair
	<i>Acer saccharum</i>	Sugar Maple	17	Good
	<i>Acer saccharum</i>	Sugar Maple	5	Good
	<i>Acer saccharum</i>	Sugar Maple	10	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	19	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	19	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	8	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	7	Poor
	<i>Tsuga canadensis</i>	Eastern Hemlock	9	Fair
<i>Acer saccharum</i>	Sugar Maple	56	Fair	

	<i>Acer saccharum</i>	Sugar Maple	40	Poor-Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	5	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	5	Good
	<i>Populus tremuloides</i>	Trembling Aspen	10	Good
	<i>Acer saccharum</i>	Sugar Maple	9	Good
	<i>Tilia americana</i>	Basswood	22	Good
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Acer saccharum</i>	Sugar Maple	5	Good
35	<i>Ostrya virginiana</i>	Ironwood	9	Good
	<i>Acer saccharum</i>	Sugar Maple	8	Good
	<i>Quercus rubra</i>	Red Oak	20	Good
	<i>Ostrya virginiana</i>	Ironwood	7	Good
	<i>Tilia americana</i>	Basswood	20	Good
	<i>Betula papyrifera</i>	White Birch	13	Good
	<i>Betula papyrifera</i>	White Birch	18	Good
	<i>Betula papyrifera</i>	White Birch	17	Good
	<i>Betula papyrifera</i>	White Birch	14	Good
	<i>Acer saccharum</i>	Sugar Maple	15	Good
	<i>Acer saccharum</i>	Sugar Maple	19	Good
	<i>Tilia americana</i>	Basswood	24	Good
	<i>Acer saccharum</i>	Sugar Maple	22	Good
	<i>Acer saccharum</i>	Sugar Maple	7	Good
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Quercus rubra</i>	Red Oak	18	Good
	<i>Acer saccharum</i>	Sugar Maple	19	Good
	<i>Betula papyrifera</i>	White Birch	17	Good
36	<i>Tsuga canadensis</i>	Eastern Hemlock	41	Good
	<i>Tilia americana</i>	Basswood	8	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	15	Fair
	<i>Thuja occidentalis</i>	Eastern White Cedar	38	Poor
	<i>Prunus serotina</i>	Black Cherry	5	Good
	<i>Acer saccharum</i>	Sugar Maple	45	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	67	Fair
37	<i>No Trees Recorded</i>			
38	<i>Tsuga canadensis</i>	Eastern Hemlock	45	Fair
	<i>Acer saccharum</i>	Sugar Maple	11	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	12	Good
	<i>Betula papyrifera</i>	Yellow Birch	38	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	5	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	11	Fair-Good
	<i>Betula alleghaniensis</i>	Yellow Birch	57	Fair
	<i>Quercus rubra</i>	Red Oak	8	Fair
	<i>Acer saccharum</i>	Sugar Maple	6	Fair
	<i>Acer saccharum</i>	Sugar Maple	8	Fair
	<i>Acer saccharum</i>	Sugar Maple	8	Fair
	<i>Acer saccharum</i>	Sugar Maple	5	Poor
	<i>Acer saccharum</i>	Sugar Maple	10	Good
	<i>Acer saccharum</i>	Sugar Maple	7	Good
	<i>Acer saccharum</i>	Sugar Maple	5	Fair
39	<i>Tsuga canadensis</i>	Eastern Hemlock	41	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	15	Fair
	<i>Acer saccharum</i>	Sugar Maple	10	Fair
	<i>Acer saccharum</i>	Sugar Maple	8	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	36	Fair-Good

40	<i>Acer saccharum</i>	Sugar Maple	17,12 (21)	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	2,3,17 (17)	Dead
	<i>Betula alleghaniensis</i>	Yellow Birch	32	Poor-Fair
	<i>Betula alleghaniensis</i>	Yellow Birch	20	Poor
	<i>Acer saccharum</i>	Sugar Maple	10	Good
	<i>Betula alleghaniensis</i>	Yellow Birch	35	Fair
41	<i>Betula alleghaniensis</i>	Yellow Birch	51	Poor
	<i>Acer saccharum</i>	Sugar Maple	20	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	27	Good
42	<i>Acer saccharum</i>	Sugar Maple	28	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	37	Good
	<i>Acer saccharum</i>	Sugar Maple	12	Good
	<i>Acer saccharum</i>	Sugar Maple	27	Good
	<i>Acer saccharum</i>	Sugar Maple	17	Fair
	<i>Acer saccharum</i>	Sugar Maple	13	Poor
43	<i>Acer saccharum</i>	Sugar Maple	5	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	11	Dead
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Acer saccharum</i>	Sugar Maple	7	Fair-Good
	<i>Fraxinus americana</i>	Green Ash	12	Dead
	<i>Acer saccharum</i>	Sugar Maple	12	Fair
	<i>Tilia americana</i>	Basswood	17	Poor
	<i>Fraxinus americana</i>	White Ash	16	Poor
44	<i>Acer saccharum</i>	Sugar Maple	68	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	19	Fair
	<i>Betula alleghaniensis</i>	Yellow Birch	40	Fair
	<i>Acer saccharum</i>	Sugar Maple	7	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	29	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	8	Poor
	<i>Fraxinus pennsylvanica</i>	Green Ash	9	Poor
	<i>Fraxinus pennsylvanica</i>	Green Ash	5	Dead
45	<i>Fraxinus pennsylvanica</i>	Green Ash	10	Poor
	<i>Fraxinus pennsylvanica</i>	Green Ash	5	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	11	Poor
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	5	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	5	Fair
	<i>Betula alleghaniensis</i>	Yellow Birch	27,27 (38)	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	41	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	42	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	7	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	9	Poor
	<i>Acer saccharum</i>	Sugar Maple	5	Good
46	<i>Fraxinus pennsylvanica</i>	Green Ash	10	Poor
	<i>Fraxinus pennsylvanica</i>	Green Ash	7	Poor
	<i>Acer saccharum</i>	Sugar Maple	5	Fair
	<i>Acer saccharum</i>	Sugar Maple	8	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	5	Fair
	<i>Acer saccharum</i>	Sugar Maple	14,6 (15)	Fair
	<i>Acer saccharum</i>	Sugar Maple	10	Good
	<i>Acer saccharum</i>	Sugar Maple	18	Good
	<i>Acer saccharum</i>	Sugar Maple	14	Fair

	<i>Tsuga canadensis</i>	Eastern Hemlock	15	Good
	<i>Acer saccharum</i>	Sugar Maple	5	Good
	<i>Acer saccharum</i>	Sugar Maple	9	Good
	<i>Acer saccharum</i>	Sugar Maple	15	Poor
	<i>Acer saccharum</i>	Sugar Maple	6	Good
	<i>Acer saccharum</i>	Sugar Maple	21	Good
47	<i>Tsuga canadensis</i>	Eastern Hemlock	23	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	21	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	21	Poor
	<i>Tsuga canadensis</i>	Eastern Hemlock	24	Fair
	<i>Acer saccharum</i>	Sugar Maple	43	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	29	Good
	<i>Acer saccharum</i>	Sugar Maple	70	Fair
48	<i>Fraxinus pennsylvanica</i>	Green Ash	5	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	18	Poor
49	<i>Acer saccharum</i>	Sugar Maple	24,28,20 (42)	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	34	Fair-Good
	<i>Acer saccharum</i>	Sugar Maple	10	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	16	Good
50	<i>Fraxinus americana</i>	White Ash	39	Dead
	<i>Tsuga canadensis</i>	Eastern Hemlock	6	Good
	<i>Acer saccharum</i>	Sugar Maple	8	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	15	Dead
	<i>Fraxinus americana</i>	White Ash	30	Dead
	<i>Tsuga canadensis</i>	Eastern Hemlock	32	Good
	<i>Betula alleghaniensis</i>	Yellow Birch	36,35 (50)	Poor
	<i>Fraxinus pennsylvanica</i>	Green Ash	5	Fair
	<i>Fraxinus pennsylvanica</i>	Green Ash	5	Fair
51	<i>Tsuga canadensis</i>	Eastern Hemlock	41	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	37	Good
	<i>Acer saccharum</i>	Sugar Maple	45	Good
52	<i>Acer saccharum</i>	Sugar Maple	51	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	13	Good
	<i>Acer saccharum</i>	Sugar Maple	22	Good
	<i>Acer saccharum</i>	Sugar Maple	54	Fair-Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	29	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	26	Fair
	<i>Tsuga canadensis</i>	Eastern Hemlock	30	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	15	Good
	<i>Tsuga canadensis</i>	Eastern Hemlock	42	Good
53	<i>Populus tremuloides</i>	Trembling Aspen	41	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	12	Poor
	<i>Fraxinus pennsylvanica</i>	Green Ash	15	Poor
	<i>Fraxinus pennsylvanica</i>	Green Ash	6	Poor
	<i>Fraxinus pennsylvanica</i>	Green Ash	5	Fair
	<i>Populus tremuloides</i>	Trembling Aspen	8	Fair
	<i>Populus tremuloides</i>	Trembling Aspen	15	Good
	<i>Populus tremuloides</i>	Trembling Aspen	8	Good
	<i>Populus tremuloides</i>	Trembling Aspen	15	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	6	Dead
	<i>Fraxinus pennsylvanica</i>	Green Ash	5	Good
	<i>Fraxinus pennsylvanica</i>	Green Ash	11	Poor
	<i>Fraxinus pennsylvanica</i>	Green Ash	5	Fair



GUIDING SOLUTIONS IN THE
NATURAL ENVIRONMENT

Natural Heritage Evaluation 672 & 684 Henderson Drive Town of Aurora, Region of York

Prepared For:

Losar Developments Limited

Prepared By:

Beacon Environmental Limited

Date: *Project:*

March 2017 **216078**

Revised January 2018

Revised March 2019

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1. Introduction

Beacon Environmental Limited (Beacon) has been retained by Losar Developments Limited to undertake a Natural Heritage Evaluation (NHE) study for the future development of a residential dwelling on each lot of record for the properties identified as 672 and 684 Henderson Drive (Part of Lot 76, Concession 1 WYS), in the Town of Aurora, Regional Municipality of York (**Figure 1**). The subject properties are respectively an approximate 1.15 ha (2.84 ac) and 2.02 ha (4.99 ac) in area and located entirely within the Oak Ridges Moraine, and therefore development of the lands is subject to the *Oak Ridges Moraine Conservation Plan* (ORMCP) (MMAH 2017). The site and surrounding area are designated as *Settlement Area*, and are also within a Landform Conservation Area – Category 2 (Moderately Complex Landform) designation of the ORMCP.

The Town of Aurora Official Plan (2010) and the Lake Simcoe Region Conservation Authority's (LSRCA) regulations and policies require the preparation of a NHE as part of a development application. The purpose of this report is to identify existing conditions on the subject property and to assess the interaction between the proposed development and the existing conditions consistent with relevant regulations and policies. The purpose of this study is to determine the location of any Key Natural Heritage Features (KNHFs) and Key Hydrologic Features (KHF) on and adjacent to the subject property and to delineate the required Minimum Vegetation Protection Zones (MVPZs). The NHE is used to determine the limits of the proposed development so as to not adversely affect the ecological integrity of the Plan area as defined under the ORMCP. This document identifies opportunities and constraints for development of the subject property, with recommendations for appropriate mitigation requirements for natural features that may be affected.

The NHE was completed by a review of background documents and seasonally appropriate field investigations undertaken in 2016 and 2017. These field investigations included an assessment of existing conditions with respect to terrestrial and aquatic features, and investigations into the potential presence of species of conservation concern on the subject property. Review of background data and existing conditions enabled an accurate determination of the boundaries of natural heritage features and proposed development setbacks as tested against the existing policy framework.

This NHE report has been updated to reflect revisions to the proposed development areas, including reduction in the extent of the building envelope for each site and realignment of the driveways on 672 and 684 Henderson Drive based on further consultation with the Ministry of Natural Resources and Forestry (MNRF) (**Appendix A**) and LSRCA (**Appendix B**). As well, comments received from the Town, peer review by the Town's consultant North-South Environmental, LSRCA and the public have been reviewed and addressed where relevant.

2. Methodology

The following sections describe the details of the scope of work and explain how the project was undertaken.

2.1 Background Review

Background information was gathered and reviewed at the outset of the project. This involved existing documentation for the subject property.

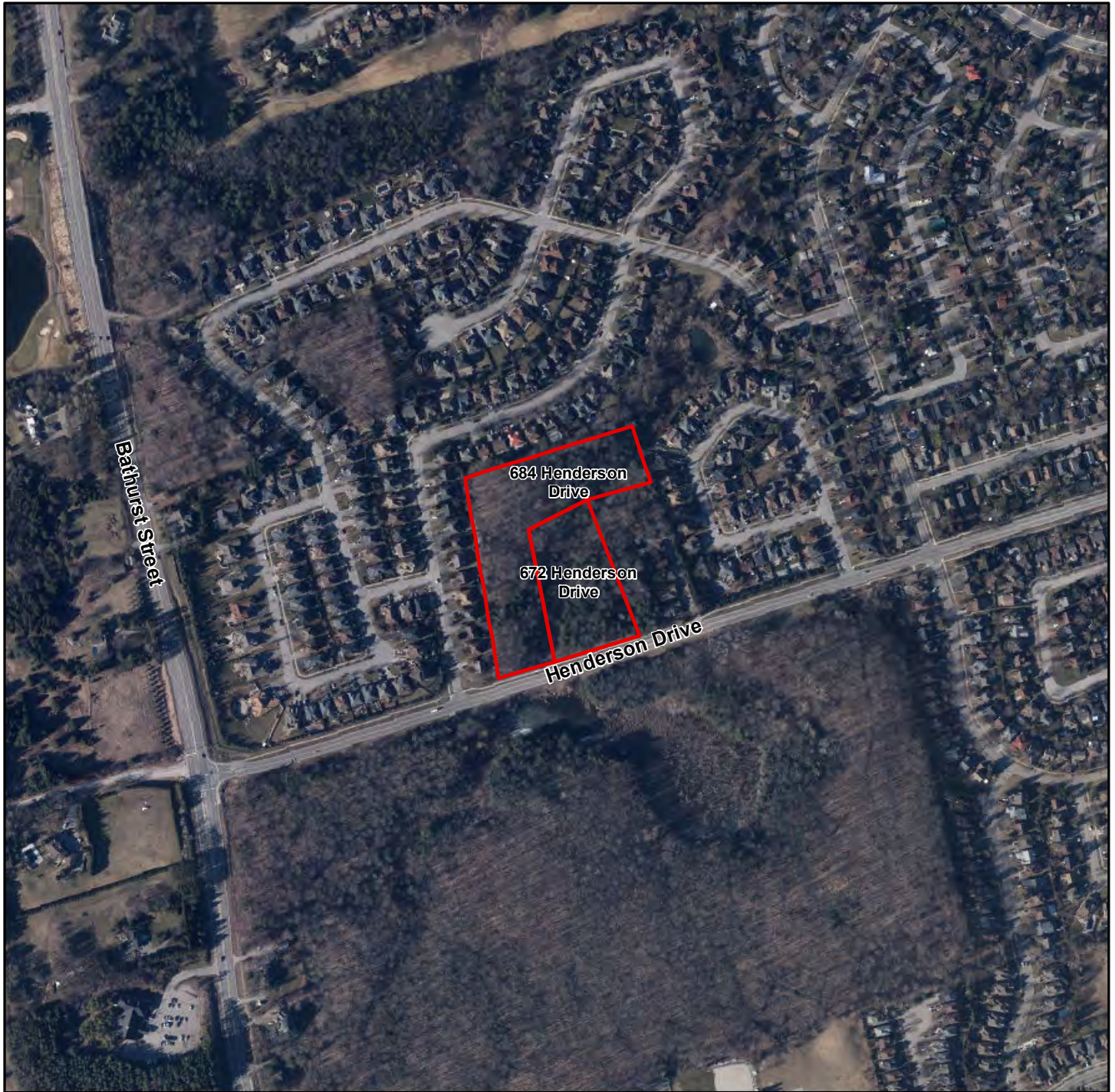
- Ministry of Natural Resources and Forestry (MNR), Aurora District Office information request;
- Ministry of Natural Resources' Natural Heritage Information Centre (NHIC) rare species database;
- Lake Simcoe Region Conservation Authority (LSRCA) policies and regulations;
- Provincial Policy Statement (2014);
- Oak Ridges Moraine Conservation Plan (2017);
- Regional Municipality of York Official Plan (2016 Office Consolidation);
- Town of Aurora Official Plan (2010); and
- *Endangered Species Act, 2007*.

A letter was sent to the Aurora District Office of the Ministry of Natural Resources and Forestry requesting data on specific Elemental Occurrences that may occur on the subject lands. An "Element" is defined as a unit of natural biological diversity and includes the location of species of conservation concern, rare and exemplary plant communities, wildlife concentration areas, and natural areas. An Elemental Occurrence is defined as an area where an "Element" is or was present (NHIC website). Data received from the MNR and LSRCA have been incorporated into this report.

Other sources of information, such as aerial photography and topographic maps, were consulted prior to commencing field investigations.

2.2 Field Investigations

Field investigations were conducted by Beacon ecologists between March 2016 and January 2017 to characterize site conditions that were present at different times of the year. **Table 1** below lists the dates on which visits occurred.



Site Location		Figure 1	
672 & 684 Henderson Drive Aurora			
First Base Solutions Web Mapping Service 2016			
UTM Zone 17 N, NAD 83			
		1:6,000	
		Project 216078 November 2017	

Table 1. Field Survey Dates

Surveys Undertaken	Dates
Aquatic Assessment	April 17, June 19 and July 7, 2016
Amphibian Surveys	April 17, May 22 and June 19, 2016
Vegetation Community and Floral Survey	July 7, 2016
Breeding Bird Surveys	May 29 and June 8, 2016
Snag Survey for Assessment of Potential Bat Habitat	January 9, 2017 and November 14, 2018

Consultation with LSRCA was completed prior to field investigations and identified that establishment of a top of bank would not be feasible given the site’s undulating topography, with a determination based on an engineering assessment of topography and grading (S. Fernandes, LSRCA, pers. comm. 2016), as completed by Schaeffers Consulting Engineers.

2.2.1 Aquatic Assessment

For the assessment of aquatic resources the subject property was inspected on April 17 and July 7, 2016 to identify the presence of watercourses, ponds, water flow regimes and the presence/absence of fish. The drainage features were assessed consistent with the Toronto Region Conservation Authority/Credit Valley Conservation (2014) document entitled: *Evaluation, Classification and Management of Headwater Drainage Features Guidelines*. The feature was classified according to flow regime, defined as follows:

Permanent Watercourse – maintains continuous surface flows most years, well defined low-flow.

Intermittent Watercourse – water flows for several months during the year, typically during the spring and early summer, and late fall; these watercourses have a defined high-flow channel with a poorly defined or absent low flow channel.

Ephemeral Watercourse – water flows for a short period of time primarily during snow melt (spring freshet) or storm events, typically have no clearly defined high or low-flow channel or sorting of substrate, frequently occurring as vegetated swales or bare soils rills in agricultural fields where they are often ploughed through.

2.2.2 Amphibian Surveys

Three evening visits were made to the subject property to survey for breeding amphibians: April 17, May 22, and June 19, 2016. The surveys were conducted as per the protocol outlined in the Great Lakes Marsh Monitoring Program (2003). Surveys consisted of auditory surveys undertaken during the prime breeding period to record calling males that are present, spread throughout the breeding season in an attempt to include the short temporal peak for each species of interest. The surveys involved visiting the site after dusk with minimum night-time air temperatures of at least 5°C during the first visit, 10°C during the second visit, and 17°C during the third visit. Calling amphibians, if present, were identified to species and chorus activity was assigned a code from the following options:

- 0 no calls;
- 1 individuals of one species can be counted, calls not simultaneous;
- 2 some calls of one species simultaneous, numbers can be reliably estimated and shown in brackets; and
- 3 full chorus, calls continuous and overlapping.

As discussed during the site meeting with North-South Environmental, the presence of potential habitat for ambystomid salamanders is absent on the site. There is potential habitat for Eastern Red-back Salamander (*Plethodon cinereus*), which are common and widespread, and although targeted surveys were not completed, none were identified beneath natural cover that was overturned during field investigations.

2.2.3 Vegetation Communities and Floral Survey

Vegetation surveys of the subject property were conducted on July 7, 2016. Vegetation communities were described and mapped according to the Ecological Land Classification (ELC) system for Southern Ontario (Lee *et al.* 1998), which is a standardized vegetation classification protocol utilized in southern Ontario. Vegetation communities were delineated on an aerial photograph of the site and pertinent information on the vegetation structure and composition of each community was recorded. A floral inventory of plants observed on the subject property was also conducted while the vegetation community mapping was being undertaken. Additionally, searches for provincially Endangered Butternut (*Juglans cinerea*) trees and listed plant species at risk were conducted during the vegetation community survey.

2.2.4 Breeding Birds

Breeding birds were surveyed on May 29 and June 8, 2016. The visits to the subject property commenced between 5:00 am and 8:00 am, on days with low to moderate winds (0-3 on the Beaufort Scale), no precipitation, and temperatures within 5°C of the normal average temperature. The entire site was walked such that all singing birds could be heard or observed and recorded. That is, the surveyor was within 50 to 100 m of all parts of the site depending on habitat. All birds heard and seen were recorded in the location observed on an aerial photograph of the site.

2.2.5 Snag Survey for Assessment of Potential Bat Habitat

Following the assessment of vegetation communities and consultation with MNRF for screening of species at risk (followed by further consultation on August 4, 2016), a snag survey was completed in January 2017 to assess the potential for bat habitat on the site within candidate vegetation communities. Detailed bat snag surveys were undertaken within the proposed area of the driveways and building envelope to determine snag numbers and quality in the area of tree removal required to accommodate the proposed building envelopes. Candidate maternity roost habitat was identified as any treed areas and snag surveys were completed in accordance with Step 1 and 2 of the MNRF Guelph District's *Bat and Bat Habitat Surveys of Treed Habitats* guideline (May 2016). The areas proposed for removal to accommodate the proposed building envelopes were surveyed in their entirety to identify all snags present.

In response to the memorandum dated November 29, 2017 by Beacon, and following further correspondence with MNRF and review of the revised MNRF guideline, re-assessment of the properties was completed in November 2018. This re-assessment recorded any maple species with a diameter at breast height (DBH) greater than 25 cm or oak species with a diameter at breast height (DBH) greater than 10 cm when considering habitat for Tri-coloured Bat (*Perimyotis subflavus*). The re-assessment also surveyed the revised driveway alignment for Lot 684, areas of grading, and decreased building envelope footprints. Further discussion is provided in Section 4.3.1 with documentation to MNRF provided in **Appendix A**.

2.2.6 Tree Inventory

A total of 53 circular plots were sampled within both 672 and 684 Henderson Drive properties on November 22, 23 and 28, 2018. Plots were sampled in a west to east and north to south direction for both subject properties. The location of each plot was recorded using a handheld GPS, then incorporated into GIS platform.

The diameter at breast height (DBH), measured 1.4 m from the ground for all trees 5 cm DBH or greater within each plot was recorded and tabulated by species.

An estimated stem count of *each* tree species on each of the subject properties (672 and 684 Henderson Drive) as well as within the proposed development footprint on both subject properties.

In addition to estimated stem counts, trees were categorized by species and size class (5 to 10 cm, 11 to 20 cm, > 20 cm) for both subject properties as well as each vegetation community representative of the proposed development.

Details with respect to the tree inventory have been presented in a *Tree Inventory Memorandum* prepared by Beacon (2019) and summarized in Sections 4.2.3 and Section 6 of this report.

3. Policy Context

The following natural heritage policies were reviewed in the context of the proposed development on the subject property.

3.1 Provincial Policy Statement (2014)

Natural Heritage Policy 2.1 of the *Provincial Policy Statement* (PPS) (MMAH 2014) provides direction to regional and local municipalities regarding planning policies for the protection and management of natural heritage features and resources for applications pursuant to the *Planning Act*. The PPS 2014 defines eight natural heritage features and provides planning policies for each. The *Natural Heritage Reference Manual* (OMNR 2010) is a technical document used to help assess the natural heritage features listed below:

- i. significant wetlands;

- ii. significant coastal wetlands;
- iii. significant habitat of endangered and threatened species;
- iv. fish habitat;
- v. significant woodlands;
- vi. significant valleylands;
- vii. significant Areas of Natural and Scientific Interest (ANSIs); and
- viii. significant wildlife habitat.

Each of these features is afforded varying levels of protection subject to guidelines, and in some cases, regulations. Of these features, significant wetlands and ANSIs can be designated and/or identified either by the Ministry of Natural Resources and Forestry (MNRF) and/or the municipality. Habitat of threatened and endangered species is determined in accordance with provincial and federal requirements. Fish habitat is governed by Fisheries and Oceans Canada (DFO). The identification and regulation of the remaining features is the responsibility of the municipality or other planning authorities. However this does not absolve applicants for development from collecting data and determining the significance of features through a detailed natural heritage study, unless it is explicitly excluded through pre-consultation scoping.

PPS natural heritage features relevant to the subject properties include significant valleylands, significant woodlands, fish habitat and potential significant habitat of Endangered species. Conformity with the *Endangered Species Act* (2007) is required.

3.2 Oak Ridges Moraine Conservation Plan (2017)

The subject properties lie entirely within the Oak Ridges Moraine Conservation Plan (ORMCP) area, within a *Settlement Area* land use designation. This designation is used to describe areas of existing and future urban development and permits a range of residential, commercial, industrial and institutional uses. In terms of natural heritage, the objective of development in *Settlement Areas* is “*maintaining, and where possible improving or restoring, the health, diversity, size, and connectivity of Key Natural Heritage Features [KNHFs], Key Hydrologic Features [KHF]s and the related ecological functions*”.

Section 7 is the key applicable policy of the ORMCP as it allows for previously authorized residential dwellings. Section 7 states:

Nothing in this Plan applies to prevent the use, erection or location of a single dwelling if,

- (a) the use, erection and location would have been permitted by the applicable zoning by-law on November 15, 2001; and*
- (b) the applicant demonstrates, to the extent possible, that the use, erection and location will not adversely affect the ecological integrity of the Plan Area.*

As identified in the Minor Variance Application letter prepared by Weston Consulting (April 12, 2017) the Town of Aurora’s Zoning By-law 2213-78, which was approved in 1979, zones the lands as “Rural Residential (RR)” permitting one single detached dwelling per lot. The Town recently completed a Comprehensive Zoning Review, which re-categorized the lands as “Estate Residential (ER)”, which is consistent with Section 7(a) of the ORMCP.

Section 18 (3) of the ORMCP states that “*with respect to land in Settlement Areas, all uses permitted by the applicable official plan are permitted, subject to the provisions of this Plan that are listed in subsections 19 (3) and 31 (4).*” The applicable subsections pertain to provisions for development proposed in proximity to KNHFs and/or KHF.

Section 21 (1) a) of the ORMCP identifies the requirement of a Minimum Vegetation Protection Zone (MVPZ) from KNHFs and KHFs, which is generally 30 m in width.

As guidance in assessment of impact and determining conformity with Section 7(b) of the ORMCP, Section 21 identifies the requirements for application of a Minimum Vegetation Protection Zone (MVPZ) from KNHFs and KHFs, which is generally 30 m in width.

21. (1) *For the purposes of this Part,*
 - (a) *the minimum area of influence that relates to a key natural heritage feature or a key hydrologic feature described in Column 2 of the Table to this Part is the area referred to in the corresponding item in Column 3 of the Table; and*
 - (b) *the minimum vegetation protection zone that relates to a key natural heritage feature or a key hydrologic feature described in Column 2 of the Table is the area determined in accordance with the corresponding item in Column 4 of the Table.*

- (2) *If land falls within more than one key natural heritage feature or key hydrologic feature described in Column 2 of the Table, the minimum area of influence described in Column 3 that is the largest and the vegetation protection zone described in Column 4 that is the largest shall apply with respect to each feature for the purposes of this Plan.*

- (3) *With respect to land that is in a Settlement Area on April 22, 2002, any provision referred to in subsection (4) prevails, to the extent of any conflict, over clause (1) (b) and subsection (2).*

- (4) *Subsection (3) applies with respect to a provision of the applicable official plan or zoning by-laws, as the case may be, that is adopted on the basis of,*
 - (a) *environmental studies; or*
 - (b) *infrastructure planning including, without limitation, environmental assessments, infrastructure servicing studies and master environmental servicing studies.*

As the properties occur fully within Significant Woodland, Section 21(1)(b) of the ORMCP was applied in reference to respecting minimum vegetation protection zones to KNHF and KHF where possible, as the buffers to wetland, watercourse and fish habitat occur within the feature. Section 21(3) and (4) relates to the applicable official plan and zoning by-law designating the land as residential.

Section 22 (1) of the ORMCP identifies eight Key Natural Heritage Features (KNHFs). These include:

1. *Wetlands;*
2. *Significant portions of the habitat of endangered, rare and threatened species;*
3. *Fish habitat;*
4. *Areas of natural and scientific interest;*
5. *Significant valleylands;*
6. *Significant woodlands;*
7. *Significant wildlife habitat; and*

8. Sand barrens, savannahs and tallgrass prairies.

Section 22 (3) of the ORMCP states that “an application for development or site alteration with respect to land within the minimum area of influence that relates to a key natural heritage feature, but outside the key natural heritage feature itself and the related minimum vegetation protection zone, shall be accompanied by a natural heritage evaluation under Section 23”.

The ORMCP defines “development” as being the creation of a new lot, a change in land use, or the construction of buildings and structures, any of which require approval under the *Planning Act*, the *Environment Assessment Act*, or the *Drainage Act*.

Under Section 23 (1) of the ORMCP, a natural heritage evaluation shall:

- (a) demonstrate that the development or site alteration applied for will have no adverse effects on the key natural heritage feature or on the related ecological functions; and
- (b) identify planning, design and construction practices that will maintain and, where possible, improve or restore the health, diversity and size of the key natural heritage feature and its connectivity with other key natural heritage features.
- (d) if the Table to this Part specifies the dimensions of a minimum vegetation protection zone, determine whether it is sufficient, and if it is not sufficient, specify the dimensions of the required minimum vegetation protection zone and provide for the maintenance and, where possible, improvement or restoration of natural self-sustaining vegetation within it; and
- (f) in the case of a key natural heritage feature that is fish habitat, ensure compliance with the requirements of the Department of Fisheries and Oceans (Canada).

Section 26 (1) of the ORMCP also identifies Key Hydrologic Features (KHF's). These include:

1. Permanent and intermittent streams;
2. Wetlands;
3. Kettles lakes; and
4. Seepage areas and springs.

Section 26 (3) of the ORMCP states that “An application for development or site alteration with respect to land within the minimum area of influence that relates to a key hydrologic feature, but outside the key hydrologic feature itself and the related minimum vegetation protection zone, shall be accompanied by a hydrological evaluation under subsection (4).”

Under Section 26 (4) of the ORMCP, a hydrological evaluation shall:

- (a) demonstrate that the development or site alteration will have no adverse effects on the key hydrologic feature or on the related hydrological functions;
- (b) identify planning, design and construction practices that will maintain, and, where possible, improve or restore, the health, diversity and size of the key hydrologic feature and its connectivity with other key hydrologic features and with key natural heritage features.
- (c) determine whether the minimum vegetation protection zone whose dimensions are specified in the Table to this Part is sufficient, and if it is not sufficient, specify the dimensions of the required minimum vegetation protection zone and provide for the

- maintenance and, where possible, improvement or restoration of natural self-sustaining vegetation within it, and*
- (d) *in the case of an application relating to land in a Natural Core Area, Natural Linkage Area or Countryside Area, demonstrate how connectivity within and between key natural heritage features and key hydrologic features will be maintained and, where possible, improved or restored before, during and after construction.*

The Table for Policies 23 and 26 of the ORMCP requires that Minimum Vegetation Protection Zones (MVPZs) be applied to the limits of KNHFs and KHF and that the width of these can either be a 30 m minimum or in Settlement Areas the MVPZs can be determined through an environmental study as detailed in Section 21 (3) & (4). If a reduction is possible, through the completion of a site specific study, the vegetation protection zone or buffer is determined by that study.

Permitted uses are very limited within the MVPZs. These are: forest, fish, and wildlife management; conservation and flood or erosion control projects under certain conditions; transportation, infrastructure, and utilities under certain conditions; and low intensity recreation.

Landform Conservation Areas

Landform Conservation Areas are shown on maps entitled “Landform Conservation Areas of the Oak Ridges Moraine” and are separated into *Category 1* and *Category 2* lands. The subject properties are located within a *Category 2* Landform Conservation Area.

As per Section 30(6), an application for development or site alteration with respect to land in a *Category 2* landform conservation area shall identify planning, design and construction practices that will keep disturbance to landform character to a minimum including,

- a) *maintaining significant landform features such as steep slopes, kames, kettles, ravines and ridges in their natural undisturbed form;*
- b) *limiting the portion of the net developable area of the site that is disturbed to not more than 50 per cent of the total area of the site; and*
- c) *limiting the portion of the net developable area of the site that has impervious surfaces to not more than 20 per cent of the total area of the site.*

The subject lands contain both KNHF (*Wetlands, Significant portions of the habitat of endangered, rare and threatened species, Fish habitat, Areas of natural and scientific interest, Significant valleylands, Significant woodlands*) and KHF (*Permanent and intermittent streams, Wetlands*), with the potential habitat of a Threatened and Endangered species addressed through consultation with MNRF.

As per Section 30(13) of the ORMCP, with respect to land in Settlement Areas, in considering applications for development or site alteration within landform conservation areas (Category 1 and 2) the approval authority shall consider the importance of adopting planning, design and construction practices that will keep disturbance to landform character to a minimum, so as to satisfy the requirements of subsections (5) to (11) if possible.

Further assessment of impact from the proposed development is outlined in Section 5 and 6 below.

3.3 Lake Simcoe Protection Plan (2009)

The *Lake Simcoe Protection Plan* (LSPP) was developed by the Province of Ontario in 2009, and is a plan that addresses the promotion and protection of Lake Simcoe proper, its shoreline, and the natural heritage features and functions associated with the entire Lake Simcoe watershed. The subject property is located within this regulated area.

The main objectives of the LSPP are to:

- i. Protect, improve or restore the elements that contribute to the ecological health of the Lake Simcoe watershed;
- ii. Reduce loadings of phosphorus and other nutrients to Lake Simcoe and its tributaries; and
- iii. Prohibit and remove any direct discharge of pollutants to Lake Simcoe and its tributaries.

As outlined in the LSPP, if the construction of a building or buildings with a ground floor area of 500 m² or more, the proposed development constitutes *major development* under the LSPP and, as such, is subject to Policy 4.8-DP of the Plan. This policy outlines various requirements for stormwater management, including the use of an *integrated treatment train approach* to “minimize stormwater management flows and reliance on end-of-pipe controls through measures including source controls, lot-level controls and conveyance techniques”. The stormwater management design must satisfy the *Enhanced Protection level* in the Ministry of the Environment’s (MOE) *Stormwater Management Planning and Design Manual* (2003), as identified in Policy 4.9-DP of the LSPP.

The MOE Enhanced Protection is to be applied when sensitive aquatic habitat will be impacted by end-of-pipe discharge, including receiving waters that have aquatic communities that have adapted to a low suspended solids environment. This level of protection corresponds with end-of-pipe storage volumes required for the long-term average removal of 80% of suspended solids.

For development within an existing *Settlement Area*, the LSPP regulates proposed development or site alteration through Policy 6.32-DP. The Designated Policies under Policy 6.32-DP require, where applicable, improvement to riparian areas as wildlife habitat and movement corridors, management and mitigation of impacts associated with urban stormwater run-off to receiving watercourses or wetlands, and the establishment of a buffer through application of the PPS to natural features.

3.4 Region of York Official Plan (2016 Office Consolidation)

The Region of York Official Plan was approved by the Minister of Municipal Affairs and Housing on September 7, 2010 and appealed to the Ontario Municipal Board (OMB). Since that time, the York Region Official Plan – 2010 has been partially approved by the OMB (Office Consolidation April 2016).

Map 1 - Regional Structure identifies the subject properties as being entirely within the Urban Area Designation within the Oak Ridges Moraine Conservation Boundary.

Map 2 - Regional Greenlands System depicts the subject properties as being immediately north of and outside the Regional Greenlands System, within the Urban Area designation.

Map 4 - Key Hydrologic Features depicts a Permanent or Intermittent Stream traversing the subject properties.

Map 5 - Woodlands identifies Woodlands on the subject properties.

Figure 1 - Oak Ridges Moraine Landform Conservation Areas depicts the subject properties as being within a Category 2 Landform Conservation Area.

Section 2.1.9 of the Region's Official Plan states that development and site alteration shall be prohibited within the Regional Greenlands System and that development and site alteration applications within 120 metres of the Regional Greenlands System shall be accompanied by an environmental impact study. The requirement for, content, and scope of the study will be determined through a pre-consultation meeting and terms of reference shall be submitted to the approval authority early in the application process. The environmental impact study shall also address any requirements of the local municipality. Within the Oak Ridges Moraine, the Greenbelt and the Lake Simcoe watershed, environmental impact studies shall also meet the requirements of those plans.

Correspondence received from the Region, dated April 25, 2017, has indicated no objection to the Minor Variance application for either property (**Appendix C**).

3.5 Town of Aurora Official Plan (2010)

The Official Plan for the Town of Aurora implements both Regional and provincial planning directives, and provides policies and guidance regarding local land use.

Chapter 12 of the Town's Official Plan establishes a linked Greenlands System that includes policies and mapping that protects and complements *key natural heritage features* and *key hydrologic features*. This Plan also promotes a system of public parks and open spaces that are integrated and connected within the linked Greenlands System.

Schedule A - Structure Plan identifies 684 Henderson Drive as being within the Private Parkland Area under the Town's Greenlands System and 672 Henderson Drive as being within the Stable Neighbourhoods Area outside the Town's Greenlands System. Both subject properties are within the Town's Built Boundary. The woodlands and wetlands on the south side of Henderson Drive are depicted as being within the Environmental Protection Area under the Town's Greenlands System.

Schedule E1 - Environmental Designations on ORM depicts Woodlands and a corresponding Minimum Vegetation Protection Zone of 30 m, a Watercourse and a corresponding Minimum Vegetation Protection Zone of 30 m on the subject properties. The subject properties are also entirely within the ORM – Endangered, Rare and Threatened Species area designation.

Schedule F - Generic Regulations identifies the subject properties as being within the Lake Simcoe Conservation Authority Regulation Limit.

As per Section 12.4.2 of the Town's Official Plan, permitted uses on lands identified as Private Parkland on Schedule A include:

- I. passive and active recreation uses;
- II. conservation uses;
- III. cemeteries;

- IV. commercial and/or office uses accessory to uses i to iii above; and
- V. public uses and public and private infrastructure.

As per Section 12.4.3(e), in the case where private open space is proposed to be developed for another use, Council may require:

- I. an evaluation of the environment impact;
- II. evidence that the proposed use compatible with the surrounding uses;
- III. an Official Plan, Secondary Plan and/or Zoning By-Law amendment; and
- IV. a Plan of Subdivision and development agreement, including the approval of the applicable agencies.

As per Section 12.4.3(f), where the appropriate Conservation Authority, the Ministry of the Environment and the Ministry of Natural Resources have approved minor infill and development, limited extension of uses permitted on the property shall be allowed without requiring an Official Plan Amendment.

Policy 12.6.4 of the Official Plan relates to the presence of Endangered, Threatened and Special Concern Species and their Habitats, indicating the following.

- a) *Development and site alteration is not permitted within the habitat of endangered or threatened species, as identified on the Species at Risk in Ontario List.*
- b) *Development and site alteration is not permitted within the habitat of endangered, threatened, or special concern species as identified on the Species at Risk in Ontario List and Provincially rare species on the Oak Ridges Moraine.*
- c) *Council shall encourage private land stewardship which protects and enhances the habitat of threatened, endangered and special concern species.*

3.5.1 Official Plan Amendment No. 48

The Town of Aurora Official Plan Amendment No. 48 (OPA 48) was created to bring the Town's Official Plan into conformity with the ORMCP, as required under the *Oak Ridges Moraine Conservation Act, 2001*. OPA 48 identifies a number of KNHF and KHF on the subject properties, with existing uses and prior approval policies outlined in Section 3.13.3(g), as discussed in the Minor Variance Application letter completed by Weston Consulting (April 2017), which identifies that one single dwelling is permitted per lot.

3.5.2 Town of Aurora Zoning By-law

The subject properties are identified within the Town of Aurora Zoning By-law 2213-78 as a Rural Residential (RR) zone, which permits one (1) single detached dwelling per lot. The Town has undertaken a comprehensive review, with mapping for Zoning By-law 6000-17 identifying the subject properties within an Estate Residential (ER) zone, as discussed in the Minor Variance Application letter completed by Weston Consulting (April 2017).

3.5.3 Town of Aurora Private Tree Protection By-Law No. 5850-16

The Town of Aurora regulates the injury or destruction of trees on all private property within the Town, and provides an exemption conditional upon site plan approval as per Section 3.(1)(i) of the By-law. With respect to the subject properties, the Town of Aurora Private Tree Protection By-Law applies to “more than two (2) trees per every 0.25 ha of area on a given property within any twelve (12) month period having a trunk diameter of more than twenty (20) centimeters DBH and less than seventy (70) centimeters DBH, any tree having a trunk DBH greater than seventy (70) centimeters, or any Heritage Tree”.

3.6 Lake Simcoe Region Conservation Authority Policies and Regulations

3.6.1 Ontario Regulation 179/06

The LSRCA regulates land use activities in and adjacent to wetlands, watercourses and valleylands under Ontario Regulation 179/06 (*Regulation for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*), made under the *Conservation Authorities Act*. For any development proposal located within 30 m of an unevaluated wetland (or within 120 m of a Provincially Significant Wetland) the LSRCA can require that an NHE/EIS be prepared to the satisfaction of the Authority. The regulation requires the issuance of a permit from the Conservation Authority to allow “interference” with a wetland (or, as was the case in the past, for infringement within the flood and fill areas associated with a watercourse).

Generally speaking, development within the flood limit of a watercourse is not allowed. However, subject to conformity with the OP and completion of appropriate studies and Conservation Authority permits, some development may be permitted within the fill constraint area. As noted in Subsection 3(1) of *Ontario Regulation 179/06*, LSRCA may grant permission for development in or on the areas described in subsection 2 (1) if, in its opinion, the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development. The LSRCA generally requires that all watercourses remain in their natural state with respect to development proposals. The permission of the Authority shall be given in writing, with or without conditions.

Subsection 2.1 outlines the required setback from natural features and, as identified in Subsection 2.1(b)(iii) where the river or stream valley is not apparent (as is the case with the subject property), the feature buffer is determined based on the greater of:

- a) the distance from a point outside the edge of the maximum extent of the flood plain under the applicable flood event standard, plus 15 metres, to a similar point on the opposite side, and
- b) the distance from the predicted meander belt of a watercourse, expanded as required to convey the flood flows under the applicable flood event standard, plus 15 metres, to a similar point on the opposite side.

Further defined in this Subsection, LSRCA regulates hazard lands, wetlands, and as it applies to the adjacent property, areas within 30 m of non-provincially significant wetlands.

The LSRCA generally requires that all watercourses be protected from adjacent development by a vegetative buffer. A buffer will also be applied from the greater of the maximum extent of the floodplain

under the applicable flood event standard or the distance from the predicted meander belt of a watercourse under the applicable flood event standard or stable top of bank.

Regulated features and policy-protected areas occur on the subject property, with a LSRCA regulated watercourse traversing both properties.

3.6.2 LSRCA Watershed Development Policies (2014)

The LSRCA's Watershed Development Policies (2014) aim to protect the environmental integrity of the Lake Simcoe watershed through implementation of the Regulation, as well as providing technical review support to their member municipalities.

Policies provide direction regarding valleyland, watercourse and wetland protection, Environmentally Significant Areas, stormwater management, floodplain management, and hazard lands, as well as guidance on plan review and approvals.

Generally, the LSRCA directs development away from: regulatory floodplains, Environmentally Significant Areas, wetlands, Areas of Natural and Scientific Interest, significant woodlands, significant valleylands, sensitive and/or significant wildlife habitat(s), habitats of Endangered and Threatened species, areas of unstable slopes, and fish habitat.

Section 4 provides watercourse protection guidance and under policy 4.2 requires an undisturbed vegetative buffer strip running along both sides of all watercourses. The buffer shall be a minimum of 15 m for warmwater watercourses and a minimum of 30 m for all coldwater or marginally coldwater (coolwater) watercourses. As per 4.2 (b), a 30 m buffer will be required on each side of a watercourse if the creek is situated within the ORMCP area. Greater buffer widths may be required for areas of sensitive soil conditions, areas subject to the recommendations of subwatershed plans, and in habitat of endangered or threatened species.

LSRCA requires a 30 m minimum buffer from all other wetlands for all new development unless it can be demonstrated that the hydrological function of adjacent lands has been evaluated and it has been demonstrated through the submission of a hydrologic study to the satisfaction of the LSRCA that there will be no negative impacts on the wetland as a result of the proposed development.

3.7 Endangered Species Act, 2007

Ontario's *Endangered Species Act, 2007* (ESA) came into effect on June 30, 2008 and replaced the former 1971 Act. The ESA protects species listed as endangered and threatened by the Committee on the Status of Species at Risk in Ontario (COSSARO). The purposes of the *Endangered Species Act* (ESA) are:

- To identify species at risk based on the best available scientific information, including information obtained from community knowledge and aboriginal traditional knowledge;
- To protect species that are at risk and their habitats, and to promote the recovery of species that are at risk; and

- To promote stewardship activities to assist in the protection and recovery of species that is at risk.

An endangered or threatened species is protected, as is its habitat. Specifically, Section 9 of the ESA prohibits the killing, harming, harassing, possession, collection, buying and selling of extirpated, endangered, and threatened species on the Species at Risk in Ontario (SARO) List; and Section 10 prohibits the damage or destruction of protected habitat of species listed as extirpated, endangered or threatened on the SARO List.

Authorization from MNR is required under the ESA for any works proposed within the habitat of a threatened or endangered species. Searches for these species require seasonal field work and in some cases, even if the species are found to be present, certain permit exemptions may be available.

4. Existing Conditions

The subject properties are currently vacant and are situated within the *Settlement Area* designation under the Oak Ridges Moraine Conservation Plan area and within a kame moraine landform in York Region. There are no informal pathways or structures within the subject properties, however there is evidence of encroachment and dumping, particularly along the perimeter.

The entirety of the subject properties are occupied by a forest and valley corridor with a watercourse and wetland at the base of the valley. Woodlands occupying the subject properties are comprised primarily of coniferous and deciduous mature trees that are relatively uniform in age. The majority of 672 Henderson Drive is comprised primarily of coniferous trees, with the exception of the southeast section which is populated with poplars (*Populus* sp.). Woodlands on 684 Henderson Drive vary in composition, with the northwest corner dominated by deciduous trees, the northeast corner comprised by an equal number of deciduous and coniferous trees, and the south (on the western slope of the valley corridor) comprised of distinct patches of coniferous and deciduous trees. Based on historical imagery from 1954 (York Region 2017), the woodland has decreased in size due to surrounding residential development along McClenny Drive to the west and Watts Meadow to the east.

4.1 Aquatic Resources

The subject properties contain a permanent watercourse of the East Holland River subwatershed, contained within a valley feature and associated with wetland identified as unevaluated swamp as per the MNR's Natural Heritage Areas Map Tool. The East Holland River Subwatershed study (LSRCA 2010) identifies the watercourse as a coldwater tributary to the East Holland River. The watercourse is in a natural state on-site, and drainage is conveyed northeast towards an existing subdivision. Seasonal field observations did not identify the presence of ephemeral drainage features as evaluated through application of the Credit Valley Conservation Authority (CVC) and Toronto and Region Conservation Authority (TRCA) document entitled *Evaluation, Classification and Management of Headwater Drainage Features Guidelines*, which was approved July 2013 (Finalized January 2014). The valley corridor is well vegetated, with a dominance of Spotted Jewelweed (*Impatiens capensis*) along the valley floor, indicating potential for groundwater discharge (**Photograph 1**), and an area of cattail marsh to the south. No sampling of the aquatic community was completed during field investigations, as sufficient

data is available on the feature, and the proposed development envelopes do not occur within 30 m of fish habitat, and within 30 m of the meander belt of an intermittent or permanent watercourse (with exception to driveway access of 672 Henderson Drive, and minor grading at the northern extent of 684 Henderson Drive), consistent with ORMCP policy. This approach was found to be acceptable by LSRCA.

The LSRCA generally requires that all watercourses be protected from adjacent development by a vegetative buffer measured from the annual high water mark. A minimum buffer of 30 m on each side of the watercourse would apply to this coldwater system.



Photograph 1. Tributary within the Valley Corridor (July 7, 2016)

4.1.1 Fish Habitat

Review of MNR Aquatic Resource Area fisheries data identifies this watercourse within Fisheries Management Zone 16. The following species are identified within the subject reach through review of historic records, including Provincial Ranking (SRank) and Species at Risk Ontario (SARO) status.

Table 2. Historic Fisheries Data

Common Name	Scientific Name	OMNR Species Code	Thermal Regime and Spawning Season	Conservation Status	
				Provincial Rank (SRank)*	SARO Status
White Sucker	<i>Catostomus commersonii</i>	163	Coolwater April-June	S5	None
Northern Redbelly Dace	<i>Chrosomus eos</i>	182	Coolwater May-July	S5	None
Mottled Sculpin	<i>Cottus bairdii</i>	381	Coolwater April-May	S5	None
Slimy Sculpin	<i>Cottus cognatus</i>	382	Coldwater April-May	S5	None
Brook Stickleback	<i>Culaea inconstans</i>	281	Coolwater May-July	S5	None
Pumpkinseed	<i>Lepomis gibbosus</i>	313	Warmwater May-August	S5	None
Common Shiner	<i>Luxilus cornutus</i>	198	Coolwater May-June	S5	None
Largemouth Bass	<i>Micropterus salmoides</i>	194	Warmwater May-June	S5	None
Golden Shiner	<i>Notemigonus crysoleucas</i>	317	Coolwater June-August	S5	None
Bluntnose Minnow	<i>Pimephales notatus</i>	208	Warmwater June-August	S5	Not at Risk
Fathead Minnow	<i>Pimephales promelas</i>	209	Warmwater May-August	S5	None
Eastern Blacknose Dace	<i>Rhinichthys atratulus</i>	210	Coolwater May-June	SNR	None
Longnose Dace	<i>Rhinichthys cataractae</i>	211	Coolwater May-July	S5	None
Western Blacknose Dace	<i>Rhinichthys obtusus</i>	630	Coolwater May-June	S5	None
Brook Trout	<i>Salvelinus fontinalis</i>	080	Coldwater Sept-Nov	S5	None
Creek Chub	<i>Semotilus atromaculatus</i>	212	Coolwater May-June	S5	None

*SRank: S5 relates to a secure provincial ranking of conservation status, while SNR is an unranked species. Source: Ontario Freshwater Fishes Life History Database, 2002

The majority of species are listed as cool or coldwater, which would be expected given the possible groundwater contribution and classification as a coldwater tributary. The presence of warmwater species may be attributed to thermal input and migration of species from the online pond located within

the Case Woodlot south of the subject properties. The inclusion of Eastern Blacknose Dace in historic records, which has an Ontario distribution within the St. Lawrence River, was likely misidentified in place of Western Blacknose Dace, which is common within southern Ontario's Great Lakes basin.

Through review of historic data and consultation with MNRF, aquatic species at risk were not identified within the study area. This includes records of the Provincially Endangered Redside Dace (*Clinostomus elongatus*), of which there are no historic records for the study area, nor has the subject watercourse and surrounding area been identified by MNRF as regulated habitat for the species.

As there is no instream work proposed, and development is indicated to occur greater than 30 m from the watercourse as required for fish habitat within the ORMCP, no negative effects are anticipated, provided mitigation measures outlined in the NHE are implemented. Self-assessment screening for DFO authorization has been completed, and it was determined that further consultation with DFO is not required.

4.2 Terrestrial Resources

4.2.1 Vegetation Communities

ELC vegetation communities were mapped and described according to the Ecological Land Classification (ELC) system for southern Ontario (Lee *et al.* 1998). Vegetation communities on the subject property are illustrated on **Figure 2**.

Mineral Cultural Woodland (CUW1)

This vegetation community located along the southern property boundary adjacent to the sidewalk along Henderson Drive is separated by a wetland community and permanent watercourse. This community is characterized as a Mineral Cultural Woodland (CUW1) dominated by Manitoba Maple (*Acer negundo*) and primarily non-native groundcover plant species. Other tree species within this community include Basswood (*Tilia americana*), Black Cherry (*Prunus serotina*), Red Oak (*Quercus rubra*), and Black Walnut (*Juglans nigra*). The outer edge of the mineral cultural woodland community to the east is occupied by Staghorn Sumac (*Rhus hirta*). Patches of non-native groundcover plant species include Purple Crown Vetch (*Securigera varia*), Greater Burdock (*Arctium lappa*), Canada Thistle (*Cirsium arvense*) and Goutweed (*Aegopodium podagraria*). Large sections along the edge of this community are occupied by Poison Ivy (*Toxicodendron radicans*).

Fresh-Moist Hemlock Coniferous Forest (FOC3-1)

This woodland community located along the eastern and western valley slopes in the southern half of the subject property is dominated by Eastern Hemlock (*Tsuga canadensis*) and is characterized as a fresh-moist Hemlock Coniferous Forest (FOC3-1). This woodland community is lacking an understory and there is little to no groundcover species, as the ground is littered with hemlock needles (**Photograph 2**). Groundcover species within and along the edges of this community include Evergreen Wood Fern (*Dryopteris intermedia*), Red Baneberry (*Actaea rubra*), Canada Mayflower (*Maianthemum canadense*), and Zig-zag Goldenrod (*Solidago flexicaulis*).



Legend

- Subject Property
- ELC Communities
- Watercourse (Beacon 2016)

ELC Code	Description
CUW1	Mineral Cultural Woodland
FOC3-1	Fresh-Moist Hemlock Coniferous Forest
FOD5-2	Dry-Fresh Sugar Maple - Beech Deciduous Forest
FOD8-1	Fresh-Moist Poplar Deciduous Forest
FOM3-2	Dry-Fresh Sugar Maple - Hemlock Mixed Forest
MAM2-9	Jewelweed Mineral Meadow Marsh
MAS2-1	Cattail Mineral Shallow Marsh

Existing Conditions

Figure 2

672 & 684 Henderson Drive Aurora

UTM Zone 17 N, NAD 83

Project 216078
November 2017



0 10 20 40 Metres



1:1,000





Photograph 2. View of Understory of Hemlock Coniferous Forest (FOC3-1) Community

Fresh-Moist Poplar Deciduous Forest (FOD8-1)

This woodland community located in the southeast corner of the subject property is dominated by Trembling Aspen (*Populus tremuloides*) and is characterized as a Fresh-Moist Poplar Deciduous Forest (FOD8-1). Other tree species within this community are represented primarily by saplings and include such species as White Ash (*Fraxinus americana*), Sugar Maple (*Acer saccharum*), and Bitternut Hickory (*Carya cordiformis*). Shrubs within this community include mainly Common Buckthorn (*Rhamnus cathartica*) and Tartarian Honeysuckle (*Lonicera tatarica*). Groundcover species include, but are not limited to, False Solomon's Seal (*Maianthemum racemosum* ssp. *racemosum*), Red Baneberry, Stellata Sedge (*Carex radiata*), Northern Red Currant (*Ribes rubrum*) and Red Trillium (*Trillium erectum*). There are several patches of Sensitive Fern (*Onoclea sensibilis*) occupying depressions in the ground within this community; however, more than half of the groundcover within this community is composed of terrestrial plant species.

Dry - Fresh Sugar Maple - Beech Deciduous Forest (FOD5-2)

This forest community occupies the northwest corner of the subject property and is found in two smaller patches along the western slope of the valley in the southwest corner of the property. As this community is comprised primarily of Sugar Maple and American Beech (*Fagus grandifolia*), it is characterized a Sugar Maple–Beech Deciduous Forest (FOD5-2). Trees species found to a lesser extent within this community include Basswood, Ironwood (*Ostrya virginiana*), and White Ash (*Fraxinus americana*). Understorey plant species within this community include Choke Cherry (*Prunus virginiana*), Alternate-leaf Dogwood (*Cornus alternifolia*) and Common Buckthorn. Groundcover species within this

community include, but are not limited to, Virginia Waterleaf (*Hydrophyllum virginianum*), Blue Cohosh (*Caulophyllum giganteum*), Red Baneberry, White Baneberry (*Actaea pachypoda*), White Trillium (*Trillium grandiflorum*), Red Trillium (*Trillium erectum*), and Christmas Fern (*Polystichum acrostichoides*). Patches of non-native invasive plant species such as Garlic Mustard (*Alliaria petiolata*), Dame's Rocket (*Hesperis matronalis*), Periwinkle (*Vinca minor*), and Goutweed are also present within this community.

Dry-Fresh Sugar Maple – Hemlock Mixed Forest (FOM3-2)

This forest community occupies the northeast section of the subject property and represents a transitional area between the FOC3-1 and FOD5-2 forest communities. This community is represented primarily by Eastern Hemlock and Sugar Maple (**Photograph 3**) and is therefore characterized as a Dry-Fresh Sugar Maple – Hemlock Mixed Forest (FOM3-2). Other tree species found to a lesser extent within this community include Ironwood, Basswood and few individuals of mature Yellow Birch (*Betula alleghaniensis*). Understorey shrubs within this community include Alternate-leaf Dogwood, Common Buckthorn, and Choke Cherry. Groundcover species within this community are similar to those found in the FOD5-2 forest community.



Photograph 3. View of Dry-Fresh Sugar Maple - Hemlock Mixed Forest (FOM3-2) Community

Cattail Mineral Shallow Marsh (MAS2-1)

This wetland community is located in the southcentral section of the subject property within the valley bottom surrounding the permanent watercourse. As the wetland community is dominated by Narrow-leaved Cattail (*Typha angustifolia*), as seen in **Photograph 4**, it is characterized as a Cattail Mineral

Shallow Marsh (MAS2-1). Other plant species found along the edge of this community include Eastern White Cedar, Trembling Aspen, Basswood, and Red-osier Dogwood (*Cornus sericea* ssp. *sericea*) shrubs.



Photograph 4. View of Cattail Mineral Shallow Marsh (MAS2-1) Community Facing North from Sidewalk

Jewelweed Mineral Meadow Marsh (MAM2-9)

This wetland community is located adjacent to the northern limit of the MAS2-1 community and surrounding the permanent watercourse. This community is dominated by Spotted Jewelweed as seen in **Photograph 5** and is therefore characterized as a Jewelweed Mineral Meadow Marsh (MAM2-9). Other plant species within this community include, but are not limited to, Green Ash (*Fraxinus pennsylvanica*), Herb-robert (*Geranium robertianum*), Colt's Foot (*Tussilago farfara*), and Sensitive Fern (*Onoclea sensibilis*).



Photograph 5. View of Northern Limit of Jewelweed Mineral Meadow Marsh (MAM2-9) Community

4.2.2 Flora

Seventy-one plant taxa were observed on the subject property (**Appendix D**), with a little more than three-quarters (76%) being native plant species. There were no floral Species at Risk recorded on the subject property. The majority (96%) of native plant species were ranked provincially as S5 (Secure) with the exception of Black Walnut and Long-fruited Anemone (*Anemone cylindrica*) which are listed as S4 (Apparently Secure). There are no Provincially rare species (ranked S1 to S3 by the Natural Heritage Information Centre) identified on the subject properties.

Of the S4 species, Long-fruited Anemone is listed as rare in York Region and uncommon in the Greater Toronto Area (GTA) and Oak Ridges Moraine (ORM), while Black Walnut is listed as rare in York Region by Varga (2005). The latter species is also listed as a rare vascular plant on the Oak Ridges Moraine as per Technical Paper 6 of the ORMCP, although it is encountered relatively frequently within the GTA. The Long-fruited Anemone plant was encountered near the bottom of the slope on the western side of the valley on 684 Henderson Drive. Long-fruited Anemone has been known to be used as a landscape plant and in this case, may have spread from the rear yards of adjacent properties to the west. The Black Walnut trees are located along the southern property limits, on the north side of Henderson Drive, and are likely of planted origin.

4.2.3 Tree Inventory

As per the results presented in *Tree Inventory Memorandum* prepared by Beacon (2019), on the property located 684 Henderson approximately 44% of the trees range between 5 to 10 cm DBH, 26%

range between 11 to 20 cm DBH, and 30% are over 20 cm DBH on 684 Henderson Drive. Slightly more than half (54%) of the Sugar Maple trees sampled are in the 5 to 10 cm DBH size class. The majority of mature trees (> 20 cm DBH) are composed of Sugar Maple and to a lesser extent, of Eastern Hemlock. Based on the results of the tree inventory, there is approximately a total of 1,734 trees (5 cm DBH or greater) located on 684 Henderson Drive. Sugar Maple represents an estimated 46% of the total number of trees followed by Eastern Hemlock with a relative abundance of approximately 12.5% and American Beech with a relative abundance of approximately 10%. Approximately 8% of the total number of trees are composed of Green Ash and White Ash. With the exception of ash saplings, ash trees on the property were observed to be dead or in a state of decline as a result of infestation by the Emerald Ash Borer (*Agrilus planipennis*). Furthermore, approximately 168 (10%) of the 1,734 trees on the property are in a state of decline (poor condition) or dead.

On the property located at 672 Henderson Drive, approximately 38% of the trees range between 5 to 10 cm DBH, 29% range between 11 to 20 cm DBH, and 33% are over 20 cm DBH. Sugar Maple trees are distributed relatively evenly between the three size classes. Approximately 65% of the Green Ash within the property are within the 5 to 10 cm DBH size class and as mentioned above, were observed to be dead or in a state of decline as a result of infestation from the Emerald Ash Borer. Based on the results of the tree inventory, there is a total of approximately 846 trees (5 cm DBH or greater) within the 672 Henderson Drive property. Trees within this property are composed primarily of Sugar Maple with a relative abundance of approximately 38%, and to a lesser extent by Green Ash (27%) and Eastern Hemlock (20%). Approximately 250 trees (30%) are composed of Green Ash and White Ash. Similar to 684 Henderson Drive, all ash trees were observed to be dead or declining as a result of infestation from the Emerald Ash Borer. Furthermore, approximately 223 (26%) of the 846 trees on the property are in a state of decline (poor condition) or dead.

A detailed analysis of the tree inventory on both 672 and 684 Henderson Drive are provided in the *Tree Inventory Memorandum* prepared by Beacon (2019)

4.2.4 Breeding Birds

A total of 14 avian species which are presumed to be breeding were recorded within the property boundaries (**Appendix E**). Most species observed are regularly encountered in fragmented and urban landscapes, including Northern Cardinal (*Cardinalis cardinalis*), American Robin (*Turdus migratorius*), Song Sparrow (*Melospiza melodia*), and Red-winged Blackbird (*Agelaius phoeniceus*).

The subject properties are mostly surrounded by residential development; however they are separated from a large, continuous woodland to the south by Henderson Drive. The Northern Flicker (*Colaptes auratus*), Great Crested Flycatcher (*Myiarchus crinitus*) and White-breasted Nuthatch (*Sitta carolinensis*) are typically associated with more heavily treed areas and were recorded at this location.

Birds that require larger tracts of suitable habitat in which to breed, or those that have a higher breeding success in larger areas of suitable habitat, are considered “area-sensitive” species. A single area sensitive species, the White-breasted Nuthatch, was encountered at this location. This species is tolerant of some forest disturbance and are relatively common birds of partially wooded urban areas throughout southern Ontario. Additionally, the species seems to be able to nest successfully in smaller, disturbed woodlots. The occurrence of an area-sensitive species is likely in part due to the presence of larger forests to the south and west, as landscape context influences the bird community of a given location.

No 'provincially rare' bird species (ranked as S1-S3, Critically Imperiled through Vulnerable, by the Natural Heritage Information Centre, MNRF), or Species at Risk birds were recorded.

4.2.5 Amphibians

Breeding amphibian surveys were conducted in the northeast corner of the subject properties, as well as from the sidewalk on the north side of Henderson Drive in areas with the potential to provide breeding habitat.

There were no breeding amphibians heard calling on the subject properties during any of the three site visits. All breeding amphibians were heard calling off the subject properties. During the first site visit, a full chorus of Spring Peepers (*Pseudacris crucifer*) was heard calling from the wetland on the south side of Henderson Drive and during the second site visit, a full chorus of Spring Peepers and Gray Tree Frogs (*Hyla crucifer*) were heard calling from this same wetland. During the third site visit, only five Green Frogs (*Lithobates clamitans*) with overlapping calls were heard calling within 100 m northeast and off-site from the northeast corner of the properties. These frogs were likely located within the pond behind the rear yards of 9 to 15 Willis Drive.

4.2.6 Incidental Wildlife

Any wildlife species observed on the subject property during field investigations were recorded as incidental observations. Mammals including Eastern Cottontail (*Sylvilagus floridanus*) and Eastern Chipmunk (*Tamias striatus*) and birds including Common Grackle (*Quiscalus quiscula*), Hairy Woodpecker (*Picoides villosus*), Mourning Dove (*Zenaida macroura*), Cedar Waxwing (*Bombycilla cedrorum*), and Red-tailed Hawk (*Buteo jamaicensis*) were observed on the subject property. During the third breeding amphibian survey a Snapping Turtle (*Chelydra serpentina*), classified Provincially as a species of Special Concern, was observed on a strip of grass between the sidewalk and the southern limit of Henderson Drive, south of the subject properties.

Other common mammal species that are likely present on and adjacent to the subject property include Gray Squirrel (*Sciurus carolinensis*), Raccoon (*Procyon lotor*), Striped Skunk (*Mephitis mephitis*), Red Fox (*Vulpes vulpes*) and Eastern Coyote (*Canis latrans*).

4.3 Species at Risk

Information was requested from the Aurora District MNRF regarding records of the occurrence of Species at Risk (SAR) on or adjacent to the subject properties.

In a letter response from Aurora District MNRF, Management Biologist, M. Eplett dated May 13, 2015 (**Appendix A**), it was indicated that there is a single Species at Risk occurrence recorded for the study area:

- Snapping Turtle (*Chelydra serpentina*) – Special Concern

Furthermore, the following five species were advised to have the potential to occur within the study area:

- Little Brown Myotis (*Myotis lucifugus*) – Endangered
- Northern Myotis (*Myotis septentrionalis*) – Endangered
- Butternut (*Juglans cinerea*) – Endangered
- Eastern Wood-Pewee (*Contopus virens*) – Special Concern
- Wood Thrush (*Hylocichla mustelina*) – Special Concern

Snapping Turtle was not observed on the subject properties and turtle nesting areas were not identified during field investigations. However, as noted, one individual was observed south of the subject properties associated with the pond to the south of Henderson Drive. The species has the potential to migrate within wetlands along the floor of the valley corridor, however the subject properties do not provide overwintering or breeding habitat.

No specimens of the Provincially Endangered Butternut tree was found on the subject properties during field investigations.

There is potential habitat for Eastern Wood-Pewee and Wood Thrush within the deciduous/mixed woodland communities on both subject properties. The Wood Thrush occupies deciduous and mixed forests with mature trees, moderate understorey, shade and abundant leaf litter for foraging on invertebrates. Their population is noted to be rapidly declining due to Brown-headed Cowbird (*Molothrus ater*) nest parasitism at the edges of fragmenting habitat, and acid rain's impact on its invertebrate prey. The Eastern Wood-Pewee is an aerial insectivore, a group of birds that has been declining rapidly in the past few decades. Like many other aerial insectivores, populations have decreased due to a variety of factors, including potential changes in insect populations and loss of habitat on their wintering grounds in Latin America. Although Eastern Wood-Pewee numbers have declined by about 25% in the past decade, they are still common in forests through eastern North America and seem to be able to breed in relatively small forest patches and woodlots. The breeding bird surveys conducted on the subject properties did not identify Eastern Wood-Pewee or Wood Thrush.

There is potential habitat for Endangered bats on the subject properties given that both properties are occupied by mature woodland. Details with respect to bats are discussed in the proceeding section.

4.3.1 Bats

Based on vegetation communities and correspondence with MNRF, the potential for bat habitat was identified on the subject properties. Further consultation was completed to determine the extent of field studies, methodology required and criteria for evaluation. During snag surveys completed in January 2017 under leaf-off conditions, individual trees were assessed to determine significance relative to their potential in providing habitat. An additional survey was completed in November 2018 to provide detailed assessment of the revised driveway alignment for Lot 684, grading information and building footprint adjustments, and inclusion of assessment for Tri-coloured Bat. The results of the January 2017 and November 2018 surveys and a revised memo detailing correspondence with MNRF and revisions made to the building envelopes are provided in **Appendix A**.

5. Proposed Development

The proposed development of each of the two lots will include a single residential dwelling, accessory uses, an associated driveway, and areas of grading, subject to detailed building siting and specific grading design. It is our understanding that the building footprint for each property has not been defined at this time, but consideration has been made for it to be located anywhere within the proposed building envelope (**Figure 3**). Additionally, the properties are to be serviced using municipal servicing. Driveway access for each lot is being proposed off Henderson Drive, with each driveway access and alignment carefully selected to minimize impacts on the surrounding area, with reduction in width proposed in the revised plan to further minimize impact to natural features. As well, recommendation for an edge management plan is proposed to limit encroachment to the natural feature and reduce impact to the existing vegetation. Areas of grading (where necessary and subject to detailed design) are proposed to be restored.

The property at 672 Henderson Drive has an area of 1.15 ha (2.84 acres; 11,500 m²). The total footprint for the proposed development is 1,663 m² and is broken down in the following manner:

- Building Envelope (including building footprint): 480 m²
- Driveway: 206 m²
- Grading: 977 m²

The property at 684 Henderson Drive has an area of 2.02 ha (4.99 acres; 20,200 m²). The total footprint for the proposed development of this parcel is 3,806 m² and is broken down in the following manner:

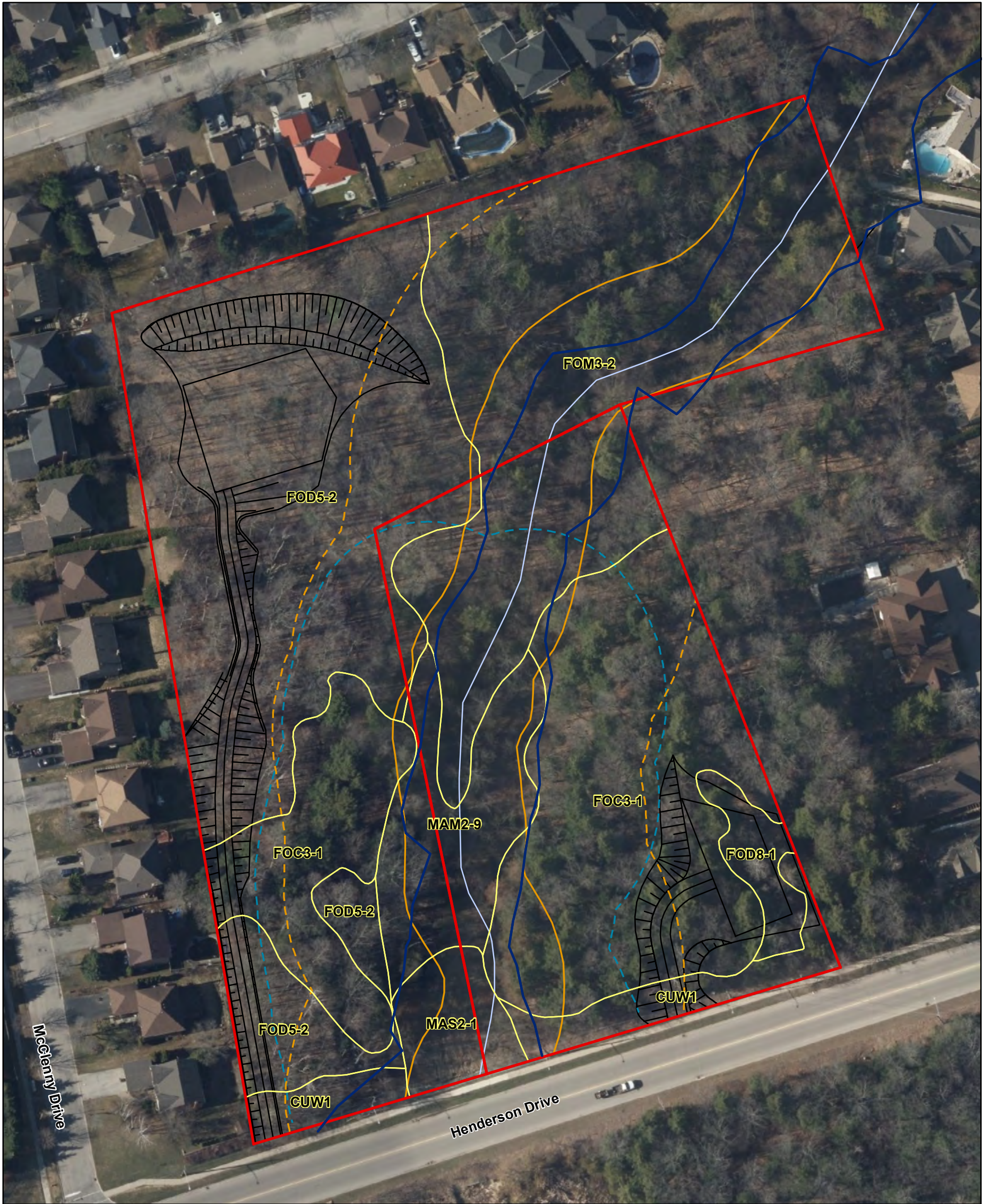
- Building Envelope (including building footprint): 915 m²
- Driveway: 650 m²
- Grading: 2,241 m²

Should either of the proposed residential building footprints exceed 500 m² and as a result be considered *major development* under the LSPP, additional consideration for stormwater management and completion of a Landform Conservation Plan as per ORMCP 30(9) are required. It is our understanding that the building footprint for either property will not exceed 500 m².

Landform Conservation

Both 672 and 684 Henderson Drive are mapped within a Category 2 Landform Conservation Area. Development within Category 2 lands is required to limit the disturbed portion of each property to no more than 50% and to limit the impervious surfaces to not more than 20% of the total area of the site. The following estimates of impervious surface for each lot is based on the area of the building envelope and driveway. However, it is anticipated that through detailed design the actual building footprint within the allocated building envelope areas will be less than calculated below resulting in a reduced impervious area.

The total area of 672 Henderson Drive is approximately 1.15 ha (11,500 m²). The impervious surfaces on this property post- development will include the building envelope (480 m²), and the associated



Legend

- Subject Property
- ELC Communities
- Meander Belt (LSRCA 2017)
- Meander Belt + 30 m MVPZ
- Floodline (LSRCA 2017)
- Watercourse (Beacon 2016)
- Wetlands + 30 m MVPZ (Beacon 2016)
- Proposed Development

ELC Code	Description
CUW1	Mineral Cultural Woodland
FOC3-1	Fresh-Moist Hemlock Coniferous Forest
FOD5-2	Dry-Fresh Sugar Maple - Beech Deciduous Forest
FOD8-1	Fresh-Moist Poplar Deciduous Forest
FOM3-2	Dry-Fresh Sugar Maple - Hemlock Mixed Forest
MAM2-9	Jewelweed Mineral Meadow Marsh
MAS2-1	Cattail Mineral Shallow Marsh

Proposed Development

Figure 3

672 & 684 Henderson Drive Aurora

UTM Zone 17 N, NAD 83

Project 216078
March 2019

0 10 20 40 Metres



1:1,000



driveway (206 m²). The impervious surface on this property will therefore be approximately 6% of the total area of the site, which is in conformity with ORMCP requirements.

The disturbed area on 672 Henderson Drive is approximately 1,663 m² and includes the building envelope, proposed driveway, and areas proposed for grading. This results in approximately 14% of the property being disturbed at some point in the process which is in conformity with ORMCP requirements.

The total area of 684 Henderson Drive is approximately 2.02 ha (20,200 m²). The impervious surfaces on this property post-development will include the building envelope (915 m²), and the associated driveway (650 m²). The impervious surface on this property will therefore be approximately 8% of the total area of the site, which is in conformity with ORMCP requirements.

The disturbed area on 684 Henderson Drive is approximately 3,806 m² and includes the building envelope, proposed driveway, and areas proposed for grading. This results in approximately 19% of the property being disturbed at some point in the process, which is in conformity with ORMCP requirements.

Given the subject properties are located within the *Settlement Area* designation under the ORMCP, the impervious surface and disturbed areas are less than the permissible threshold values as per Section 30(6) of the ORMCP, and based on the locations of the building envelopes on both properties, best efforts have been made for the builder to adopt design and construction practices to keep disturbance to landform character to a minimum to satisfy the requirements of the ORMCP. Impervious areas may be mitigated through detailed design with the use of low-impact development measures, such as permeable pavers or gravel.

6. Impact Assessment

Background review and field investigations identified that the properties are currently vacant and are occupied entirely by Key Natural Heritage Features (KNHFs) and Key Hydrologic Features (KHF). KNHFs include deciduous woodland (FOD5-2 & FOD8-1), mixed woodland (FOM3-2), coniferous woodland FOC3-1) and cultural woodland (CUW1) that meet the Regional and ORMCP criteria for significant woodland. KHFs on the subject property include wetland units dominated by Spotted Jewelweed (MAM2-9) and Mineral Shallow Marsh dominated by Narrow-leaved Cattail (MAS2-1).

The proposed development, which includes the building envelope (which will include the future footprint of the proposed dwelling), driveway and areas proposed for grading, will occupy an area that is currently comprised of coniferous, deciduous and cultural woodland for both subject properties. As per the area calculations in Section 5 of this report, approximately 1,663 m² of woodland on 672 Henderson Drive, and 3,806 m² of woodland on 684 Henderson Drive will require removal to accommodate the proposed development. Of this, the areas of proposed grading are indicated to be restored. Based on the proposed development, impervious surfaces on 672 Henderson Drive and 684 Henderson Drive will be limited to 6% and 8% of each total site area, respectively which assumes the building envelope will be entirely impervious. This increase in impervious surface as a result of the proposed development may alter the conveyance of overland stormwater drainage on the subject properties at the localized area of the proposed dwellings. This may be mitigated through detailed design (e.g. use of permeable pavers).

Based on the results presented in the *Tree Inventory Memorandum prepared by Beacon (2019)*, there is a total of 389 trees with a DBH of 5 cm or greater recommended for removal on 684 Henderson Drive to accommodate the proposed development. Sugar Maple was observed to be the dominant species within the development footprint on the subject property. Approximately 22 (6%) of the 389 trees within the proposed development footprint are in a state of decline (poor condition) or dead. In addition, there is an estimated total of 137 trees with a DBH of 5 cm or greater recommended for removal on 672 Henderson Drive to accommodate the proposed development. The majority of trees within the development footprint on 672 Henderson Drive consist of Sugar Maple, Eastern Hemlock, and Green Ash. Approximately 32 (23%) of the 137 trees within the proposed development footprint are in a state of decline (poor condition) or dead. A detailed analysis of the tree inventory in the context of the proposed development is provided in the *Tree Inventory Memorandum prepared by Beacon (2019)*

The proposed development on 672 Henderson Drive will be entirely outside the MVPZ from the permanent watercourse (meander belt + 30 m), fish habitat (bankfull width of watercourse + 30 m), the floodplain associated with the watercourse, as well as the MVPZ associated with wetlands located at the bottom of the valley (**Figure 3**). The proposed development on 684 Henderson Drive will be outside the MVPZs mentioned above, with the exception to an area of proposed grading in the northwest corner of the property that may encroach onto the MVPZ for the permanent watercourse by approximately 15 m (**Figure 3**). This is subject to revision through detailed design. The area encroaching into the MVPZ, along with other areas proposed for grading, are to be replanted with native trees and shrubs. Details with respect to replanting are outlined in the proceeding section (Edge Management/Restoration Planting).

No floral Species at Risk or Provincially rare species (S1 to S3) were recorded on the subject property. Black Walnut is listed as rare in York Region (Varga 2005) and ORMCP Technical Paper 6 although it is frequently encountered as originating from planted specimens throughout the local area and GTA. There were no Butternut trees identified on either subject property.

No avian Species at Risk or Provincially rare (S1-S3) birds were recorded on the subject property. Potential habitat for Eastern Wood-Pewee and Wood Thrush exists on the subject properties, although neither was encountered. These two bird species are listed as Special Concern and were advised to have the potential to occur within the subject properties by the MNRF (**Appendix A**). As both species are Special Concern, they are not subject to the ESA. The White-breasted Nuthatch, considered an “area-sensitive” species, was encountered on the subject properties. As outlined in Section 4.2.3 of this report, this species is tolerant of some forest disturbance, and is found in partially wooded urban areas throughout southern Ontario, and are able to nest successfully in smaller, disturbed woodlots.

The portions of significant woodland that will require removal to accommodate the future development have been surveyed based on the potential for endangered bat roosting habitat, as required by MNRF regulations. Following these assessments, and consultation with the MNRF, the proposed building envelopes for each lot have been revised in order to protect particular identified snags.

As per the MNRF screening letter, dated May 13, 2015 (**Appendix A**), Snapping Turtle, a species of Special Concern, was recorded for the study area. This species was not observed on the subject property, nor were there any nesting areas (relatively open sandy or gravelly areas along the watercourse) identified during field investigations. There are no suitable turtle overwintering areas on the subject properties, as the wetland is relatively shallow and likely freezes solid during the winter. There was one individual observed on the south side of Henderson Drive, south of the subject

properties. There is likely suitable habitat for Snapping Turtle within the pond and surrounding wetlands on the south side of Henderson Drive.

There will be noise and light effects on the surrounding environment during and post-development. These effects are impossible to quantify and it should be noted that this system is already heavily influenced by the light and noise of the surrounding residential community. This has resulted in a suite of species that is already fairly urban-tolerant.

Generally speaking and without any mitigative measures, it can be anticipated that dumping waste (garbage/compost) into natural areas could have negative effects on the natural system. This can smother native plant species, encourage the propagation of non-native plants and disturb wildlife habitat. Furthermore, uncontrolled access into natural areas by people and their companion animals may result in trampling, a proliferation of unofficial trails and direct effects on flora and fauna. Non-native, invasive plant species are also spread in this manner, and overuse of an area can result in physical damage and degradation of the natural system that is being protected from development.

Development of the subject properties will result in some localized ecological disturbance, and a loss of habitat for plant and animal species found within the construction footprint, and potentially the immediate adjacent area. Providing that adequate erosion control measures during construction and restoration of the disturbed areas are addressed, no impact to this feature is anticipated.

The summary below provides an overview of anticipated impacts on natural features associated with the development, both during construction and following occupancy of the residential dwellings.

Potential impacts as a result of the proposed development of the subject properties include:

- soil mobilization during site grading and stockpiling of material;
- indirect impacts on fish habitat during the construction phase, as a result of sediment transport;
- temporary displacement of wildlife from the development limit, resulting from site preparation and disturbance during construction works; and
- alteration in the conveyance of overland stormwater drainage.

Potential impacts following completion of construction and upon occupancy could include:

- dumping of garbage/composting and further encroachment onto natural areas;
- effects of light and noise;
- alteration of surface water conveyance to the watercourse as a result of stormwater management; and
- trampling of valleyland vegetation.

6.1 Bats

Following comments received from the MNR on the March 30, 2017 memorandum by Beacon, the proposed building envelopes were revised, and realignment of the driveway for 684 Henderson was completed to reduce grading and further reduce impact to identified snags. An additional snag survey was completed on November 14, 2018 to address areas that were previously not surveyed (i.e. where

revised building envelopes extend beyond the original building envelopes and all areas of grading), as well as the addition of surveys for Tri-coloured Bat as described in the revised MNRF guideline (2017). The impacts to bat habitat and correspondence with MNRF are detailed in **Appendix A**.

The proposed areas of grading are not definitive, and may be subject to change during detailed design, particularly relating to the area north of the proposed building envelope on 684 Henderson Drive.

The proposed revised building envelope, driveway and associated grading at 672 Henderson Drive will remove 0.11 ha of 1.15 ha (approximately 9.5%) of candidate maternity roost habitat. Within the proposed footprint a total of 14 snags were recorded as part of the habitat re-assessment, of which eight (8) snags provide potential habitat for *Myotis* spp. and six (6) snags were recorded based on their dbh as potential habitat for Tri-coloured Bat.

The proposed building envelope, driveway and associated grading at 684 Henderson Drive will remove 0.39 ha of 1.28 ha (approximately 30.5%) of candidate maternity roost habitat. The most central (2019) driveway alignment and dwelling footprint minimizes the impact to potential SAR bat habitat. There are eight (8) less snags proposed for removal, of which six (6) snags provide potential habitat for *Myotis* spp. and two (2) snags provide potential habitat for Tri-colour Bat than the eastern (2017) driveway alignment and dwelling footprint. As shown on **Figure 1** of the Bat Snag Survey Memorandum (**Appendix A**), the proposed building envelopes will only impact a portion of the candidate maternity roost habitats present on the subject property and larger areas will remain. Furthermore, the plots based surveys completed in 2017 indicate that there is high quality (>10 snag/ha) candidate maternity roost habitat present on the subject property and will not be affected by the proposed works.

The following mitigation measures are proposed to be implemented to reduce the potential for harm to SAR bats:

- All tree removals are to occur during the winter months to avoid interacting with potential SAR bats;
- Restoration planting is recommended in areas on both subject properties, primarily along the edges of the proposed driveways, and within the areas proposed for grading. Restoration plantings should be comprised of a mix of native trees and shrubs well suited to the growing conditions within the planting area, and should include native species that are currently found within the significant woodland on the subject properties;
- All tree removals will be supervised by a certified Arborist to ensure that there is no unnecessary tree removal or damage to the snag/cavity trees; and
- The Arborist onsite will keep record of all trees removed and the works completed and this information will be available to MNRF, if required.

7. Recommended Mitigation Measures

Based on the assessment of existing conditions within the subject properties and the proposed development, the following recommendations for mitigation have been provided to ensure that any potential impacts detailed in Section 6 can be avoided or minimized.

Minimum Vegetation Protection Zone

As required by the ORMCP a 30 m MVPZ has been applied to the meander belt associated with the permanent watercourse, as well as from the wetland communities (MAS2-1 and MAM2-9 units) (**Figure 3**).

A 30 m coldwater setback from the bankfull of the watercourse, as prescribed in LSRCA's Watershed Development Policies, also corresponds to fish habitat as per the ORMCP. This 30 m setback is contained within the MVPZ from the wetlands and meander belt (**Figure 3**).

Floodlines and their associated buffer on the subject property are also contained within the MVPZ for wetlands and permanent watercourses.

As the proposed developments are situated within a significant woodland. Where possible, impacts to this feature have been mitigated through reduction in size of building envelopes, and recommendation for replanting in areas where grading is proposed.

Consultation with LSRCA was completed prior to field investigations, identifying that establishment of a top of bank would not be feasible given the undulating topography, with a determination based on an engineering assessment of topography and grading (Schaeffers 2017). The proposed alignment of driveways and positioning of building envelopes have been situated based on results of the above study. Authorization from the LSRCA under *Ontario Regulation 179/06* is required as part of the development approval.

Timing of Vegetation Removal

The federal *Migratory Bird Convention Act* (1994) protects the nests, eggs and young of most bird species from harm or destruction. Environment Canada considers the 'general nesting period' of breeding birds in southern Ontario to be between late March and the end of August. This includes times at the beginning and end of the season when only a few species might be nesting. In light of this it is recommended that during the peak period of bird nesting, no vegetation clearing or disturbance to nesting bird habitat occur (between mid-May and mid-July). In the 'shoulder' seasons of April 1 to May 15, and July 16 to August 31, vegetation clearing could occur, but only after an ecologist with appropriate avian knowledge has surveyed the area to confirm the absence of nesting. Any nesting surveys conducted during the shoulder breeding bird window should occur within 24-48 hrs of proposed vegetation removal. If evidence of nesting is found, then vegetation clearing (in an area around the nest) has to wait until nesting has concluded. Generally speaking, the smaller and simpler the habitat is, the easier it is to confirm that no nesting is occurring. Likelihood of nesting birds being present in the 'shoulder' seasons also depends on the habitat type. From September 1 through to March 31, of any year, vegetation clearing can occur without nest surveys, but the law for nest protection still holds (i.e. if an active nest is known it should be protected).

Bats

The proposed building envelopes and alignment of driveways and grading were revised to minimize impacts to bat habitat by avoiding bat snags to the extent possible. As advised in Section 4.3.1 of this report, the concept plan was revised after the bat snag survey and results were completed to allow for

the protection of identified snags. During the final stages of the building permit application, areas of grading may be reduced subject to final detailed design to further reduce impact to Endangered bats, and would be subject to confirmation with MNRF.

Stormwater Management Plan

There is a potential requirement for the implementation of an enhanced stormwater management plan if the construction of a building or buildings within a ground floor area exceeds 500 m² in area as per Policy 4.8-DP of the Lake Simcoe Protection Plan.

As indicated in Section 5, specific details and stormwater management requirements are to be determined and confirmed at the application stage for a building permit to demonstrate sufficient control of stormwater and reduction in phosphorous loading.

Sediment and Erosion Control

Construction works such as grading, grubbing and excavation have the potential to result in the movement of sediment into the offsite watercourses. An erosion and sediment control (ESC) plan should be developed and implemented to the satisfaction of the Town of Aurora and LSRCA prior to the start of construction works. The ESC plan should follow the standards presented in *Erosion and Sediment Control Guidelines for Urban Construction* (Credit Valley Conservation 2006).

Any grading or site alteration related activities should be confined to the established limit of development. Fencing at the development limit should be regularly inspected and maintained in good working order throughout the construction period. Fencing should be removed upon completion of construction after exposed soils have been stabilized. Standard Best Management Practices, including the provision of sediment control measures, should also be employed during the construction process.

Edge Management/Restoration Planting

Restoration planting is recommended in areas on both subject properties, primarily along the edges of the proposed driveways, and within the areas proposed for grading. Through discussions with LSCRA, the development of an Edge Management Plan and Restoration Plan at detailed design are required as a condition of approval. Restoration plantings should be comprised of a mix of native trees and shrubs well suited to the growing conditions within the planting area, and should include native species that are currently found within the significant woodland on the subject properties. Where possible prior to grading, best efforts should be made to relocate native herbaceous species and small wood shrubs and saplings for replanting in suitable areas onsite. The Restoration Plan should detail restoration plantings within areas subject to grading following construction of each driveway and residence, with shrub plantings and a cedar rail fence along each driveway to limit encroachment into the retained natural area.

Native trees and shrubs recommended for the edge management/restoration planting are shown in **Table 3**.

Table 3. List of Native Trees and Shrubs for Edge Management/Restoration Planting

	Scientific Name	Common Name
Trees	<i>Acer saccharum</i>	Sugar Maple
	<i>Populus tremuloides</i>	Trembling Aspen
	<i>Prunus serotina</i>	Black Cherry
	<i>Quercus rubra</i>	Red Oak
	<i>Tilia americana</i>	Basswood
	<i>Tsuga canadensis</i>	Eastern Hemlock
Shrubs	<i>Amelanchier laevis</i>	Smooth Serviceberry
	<i>Cornus alternifolia</i>	Alternate-Leaf Dogwood
	<i>Hamamelis virginiana</i>	Witch Hazel
	<i>Prunus virginiana</i>	Choke Cherry
	<i>Rubus odoratus</i>	Flowering Raspberry
	<i>Sambucus racemosa</i>	Red Elderberry
	<i>Viburnum lentago</i>	Nannyberry
	<i>Viburnum dentatum</i>	Southern Arrowwood
	<i>Viburnum lentago</i>	Nannyberry

Areas of grading that fall within the Fresh-Moist Hemlock Coniferous (FOC3-1) communities should be replanted with Eastern Hemlock. Planting of this species of tree should be avoided in areas currently comprised primarily of deciduous trees (FOD5-2 and CUW1 units).

As detailed in the Tree Inventory Memorandum (Beacon 2019), a detailed tree inventory within the development footprint will be conducted as part of the final site plan design for each property. At that time, tree compensation can be calculated based on the detailed tree inventory and recommended removals.

As per Section 7.2 of the *Town of Aurora's Tree Removal/Pruning and Compensation Policy (2015)*, trees within meadows and woodlots are valued based on the cost to replace them with the same species (if native), using nursery stock sizes and quantities listed below (**Table 9**).

Table 4. Replacement Tree Size and Quantity of Nursery Stock for Each Tree Removed in Meadows and Woodlot Areas.

Subject Tree Diameter at Breast Height (cm)	Replacement Size of Tree Nursery Stock	Quantity of nursery stock required to replace 1 tree
5 - 10	5 gal pots (1.0 - 3.0 m tall)	1
11 - 20	150 cm tall wire basket (conifer), 45 mm caliper (hardwood)	2
> 20	175 - 200 cm tall wire basket (conifer), 60 mm caliper (hardwood)	3

The installed cost shall be 2.5 times the cost of nursery stock. The value for trees that are assessed as being in fair condition or poor condition is calculated as 0.6 times or 0.2 times the replacement cost of a healthy specimen, respectively. An additional species rating criterion shall be applied based on the latest ISA Ontario Species Rating list.

A sampling procedure may be used to estimate the tree inventory within each of the following DBH classes (5 – 10 cm, 11 – 20 cm, > 20 cm) in the area of interest. A fixed area plot sampling procedure is recommended which samples at least 5% of the area of interest. The plots must be located in areas which are representative of the vegetation communities and their locations illustrated on a map.

As per Section 7.4 of the Tree Removal/Pruning and Compensation Policy (2015), where it has been determined by the Town that compensation tree planting cannot be accommodated on the lands due to space limitations, the applicant/owner will be required to pay fees as determined through compensation calculations (noted above). All funds will then be applied to the purchase and planting of trees by the Town, at an alternative site within the Town of Aurora at the discretion of the Town.

Given that the subject properties are occupied entirely by woodland, it is likely that fees would be provided to the Town, at least in part for compensation requirements that cannot be accommodated within areas of grading, as determined through compensation calculations and development of a Edge Management/Restoration Plan and detailed Tree Inventory and Preservation Plan at detail design.

Tree Inventory and Preservation Plan

As part of this study, a Tree Inventory Memorandum was prepared by Beacon (2019) to provide an estimate of tree removal based on the proposed building envelopes and driveway alignments. As a condition of building permits, a detailed tree inventory and preservation plan is recommended to inventory individual trees and/or use sample plots prior to/as a condition of building permit to determine the extent of tree removal from the significant woodland as a result of the proposed development of the subject properties. The Tree Inventory and Preservation Plan should be prepared in adherence with the Town of Aurora’s Private Tree Protection By-law 5850-16 and policies set forth in the Town of Aurora’s Tree Protection/Preservation Policy (2015), Tree Removal/Pruning and Compensation Policy (2015)

and Tree Planting and Approved Plant List Policy 2015). The tree inventory and preservation plan should illustrate tree protection zones and prescribe protection measures for individual trees and tree groups that are to be retained.

Low Impact Development Measures

To reduce the impact of residential use on the surrounding natural heritage features, measures are to be implemented during the detail design stage to include the use of permeable pavers or gravel driveway to reduce impervious surfaces. As well, exterior lighting should be directed downwards.

8. Policy Conformity

Beacon has reviewed the existing policy documents pertaining to the subject properties in order to address the applicable provisions of the natural heritage policies and regulations of the Provincial Policy Statement, Oak Ridges Moraine Conservation Plan, Lake Simcoe Protection Plan, York Region Official Plan, Town of Aurora Official Plan and By-laws, the LSRCA, and the *Endangered Species Act*.

Field investigations identified that the subject properties are occupied by KNHFs and KHF, including significant woodland, significant valleyland, wetlands, and a permanent watercourse at the base of the valley. These natural features have been identified and KNHF, including significant woodland, that occur beyond the indicated building envelopes will be protected through MVPZs and setbacks consistent with applicable policies and regulations. However, there will be direct impact through removal of significant woodland within the building envelope. It is anticipated through detailed design that tree removal within the proposed building envelopes be minimized to the extent possible to further reduce impacts and would be set out in a detailed Tree Inventory based on the precise building footprints, once confirmed.

As indicated in the preceding section, consultation with LSRCA was completed prior to field investigations, identifying that establishment of a top of bank would not be feasible given the undulating topography, with a determination based on an engineering assessment of topography and grading. There are no Areas of Natural and Scientific Interest (ANSIs) recorded on or adjacent to the subject properties.

Regarding Policy 12.6.4 of the Town's Official Plan, no Species at Risk plants or animals have been recorded on the subject properties; however, it was determined that there is potential roosting habitat for endangered bats on the subject properties. Further discussion with the MNRF will be needed to determine if additional field studies may be required to reflect changes to the grading based on detail design and/or detect the presence of endangered bats on the subject properties. It was determined that there is no suitable nesting habitat or wintering sites for Snapping Turtle (Special Concern) on the subject properties.

As it relates to Section 7(b) of the ORMCP, through detailed assessment of the property in preparation of the NHE, including modification to the building envelopes to reduce impact, it is our professional opinion that the applications have demonstrated to the extent possible that the use, erection and location will not adversely affect the ecological integrity of the Plan Area, which is the applicable test.

Based on these assessments and recommended mitigation measures, the proposed development on 672 and 684 Henderson Drive should not adversely affect natural heritage features on the subject properties, and therefore demonstrates conformity with the ORMCP, LSPP, Regional and Municipal Official Plans.

9. Summary

A background review, detailed seasonal field investigations and an assessment of potential impacts to the adjacent natural features were undertaken as part of Minor Variance applications for the subject lands. An analysis of features and functions was undertaken, both on the subject properties and for the adjacent lands, and potential impacts identified.

The two properties identified as 672 and 684 Henderson Drive are lots of record, situated within *Settlement Area* of the ORMCP. The properties were found to contain KNHF and KHF associated with the ORMCP. Field studies were completed in consultation with LSRCA, with the following revised Natural Heritage Evaluation addressing comments following further consultation with MNR and LSRCA (refer to **Appendix A** and **Appendix B**). Based on the above, the proposed building envelopes and alignment and width of driveways were revised to further reduce impact to these natural heritage features and their associated MVPZs, including an overall reduction in size of the proposed building envelopes and realignment of driveways, with a reduction in grading requirements and removal of existing vegetation.

The proposed development of 672 Henderson Drive will have a permanent area of disturbance of 1,663 m² based on the total area of the building envelope, driveway, and grading within a property that is 1.15 ha (2.84 acres; 11,500 m²). This represents approximately 14% of the total area of the property.

The property at 684 Henderson Drive has an area of 2.02 ha (4.99 acres; 20,200 m²). As a result of the proposed development, this property will have a permanent area of disturbance of 3,806 m², which represents approximately 19% of the total area of the property.

Both building envelopes for each of the subject properties respect the MVPZ of the identified watercourse, fish habitat and wetlands, with consultation with MNR to address the habitat of Endangered and Threatened species. The significant valleyland has been addressed through consultation with LSRCA and engineering input to the proposed driveway alignments and building envelopes. A reduction in the significant woodland area will occur as a result of the proposed development, permanent removal of approximately 14% of the total area woodland will result, with removals in proposed grading areas mitigated through planting of native woody vegetation.

In summary, this NHE has demonstrated evaluation of natural heritage features for the assessment of the proposed development and addressed comment from MNR and LSRCA. Through assessment of the property, the following has been identified:

- Compliance with ORMCP policy on application of a 30 m MVPZ from greater of the wetland, watercourse, and fish habitat (revised to be applied from meander belt as requested by the LSRCA), with both proposed building envelopes located outside of the MVPZ.

- Conformity with the ORMCP policy on Landform Conservation, with neither property exceeding the limit of not more than 50%, and the impervious surfaces to a limit of not more than 20% of the total area of the site. Proposed development of 684 Henderson Drive will result in an estimated impervious surface of 8% and total disturbance of 17% (subject to further reduction through detail design), while the development of 672 Henderson Drive will result in an estimated impervious surface of 6%, with an estimated 10% total disturbance of the site, which is in conformity with ORMCP requirements for Landform Conservation.
- Consultation with MNRF on the potential for Species at Risk, including bat habitat.
- Completion of snag surveys to reflect the revised driveway alignment and reduced grading associated with 684 Henderson Drive for a reduction in impact to identified potential bat habitat, and an update to include potential habitat for Tri-coloured Bat.
- Reduction to the building envelope of 684 Henderson Drive, and grading associated with the driveway alignment as requested by the Town of Aurora and local residents.
- Maintenance of access and egress and building envelopes outside of the identified floodplain.

An assessment of impact and recommended mitigation measures have been provided to minimize impact to the identified natural features and their functions.

This Natural Heritage Evaluation has:

1. Demonstrated that the proposed development and site alteration will have minimal adverse effects on the adjacent natural area;
2. Identified planning, design and construction practises that will maintain the health, diversity, function, and area of the adjacent natural features;
3. Provided recommendations for design of the detailed building siting based on natural features identified on the subject properties; and
4. Protected fish habitat, wetland and the watercourse riparian corridor by ensuring that development takes place outside of feature limits and related buffers.

The proposed development has been designed to respect each properties natural features, with respect to building siting and minimizing impact to the natural environment. The NHE has provided recommendations for measures mitigating any negative environmental impacts, including sediment and erosion control and storm water management to addresses water quality and quantity associated with the construction stage and upon completion of the development.

Report prepared by:
Beacon Environmental



Sevan Torus, B.Sc. (Hons)
Ecologist/ISA Certified Arborist ON-1924A

Report prepared and reviewed by:
Beacon Environmental



Julianna MacDonald, B.Sc., MES (PI)
Senior Planning Ecologist

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Appendix A

MNRF Correspondence

May 13, 2015

Sevan Torus
Beacon Environmental
144 Main Street North, Suite 206
Markham, ON L3P 5T3
Phone: (905) 201-7622 ext. 236
Email: storus@beaconenviro.com

Re: Request for Information for 672 and 684 Henderson Drive, Aurora, ON

Dear Mr. Torus,

In your email dated May 5, 2015 you requested information on natural heritage features and element occurrences occurring on or adjacent to the above mentioned location. There are Species at Risk recorded for your study area. As of the date of this letter, we have records of Snapping Turtle (SC).

Additionally, the species listed below have the potential to occur in your study and may require further assessment or field studies to determine presence. We have records of the following species within the vicinity of your study area:

Butternut	END	Little Brown Myotis	END
Northern Myotis	END	Wood Thrush	SC
Eastern Wood-pewee	SC		

Natural heritage features recorded in the vicinity of your area include identified wetlands.

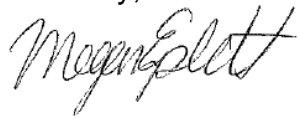
These species may receive protection under the *Endangered Species Act 2007* and thus, an approval from MNR may be required if the work you are proposing could cause harm to these species or their habitats. If the Species at Risk in Ontario List is amended, additional species may be listed and protected under the *ESA 2007* or the status and protection levels of currently listed species may change.

Absence of information provided by MNR for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. For these reasons, the MNR cannot provide a definitive statement on the presence, absence or condition of biological elements in any part of Ontario.

This species at risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any species at risk to our office. This will assist with updating our database and facilitate early consultation regarding your project.

If you have any questions or comments, please do not hesitate to contact
ESA.aurora@ontario.ca.

Sincerely,

A handwritten signature in black ink, appearing to read "Megan Eplett". The signature is written in a cursive, flowing style.

Megan Eplett
Management Biologist
Ontario Ministry of Natural Resources and Forestry, Aurora District

From: Jenna Thibault <jthibault@westonconsulting.com>
Sent: Friday, October 21, 2016 2:52 PM
To: Megan.Eplett@ontario.ca
Cc: Ryan Guetter; Julianna MacDonald; Apple; Nina Tanti
Subject: 672 and 684 Henderson Drive, Aurora - Discussion regarding Potential for At Risk Bat Species
Attachments: 2016.08.04 - Ministry of Natural Resources and Forestry Meeting Minutes.pdf

Good afternoon Megan,

Further to our meeting with you on August 4, 2016, we would like to provide you with the attached meeting minutes providing a record of our discussion.

If you have any questions, feel free to contact me at ext. 309.

Thanks,
Jenna

Jenna Thibault, B.Sc., M.PL
Planner

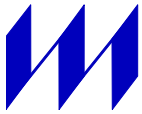


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planning + urban design

Minutes

Prepared by: Weston Consulting
Meeting Date: August 4, 2016
Meeting Purpose: Potential for Additional Targeted Studies for At Risk Bat Species on Site
Meeting Location: Ministry of Natural Resources and Forestry Aurora District Office
File: 6269

Participants:

Property Owners

Megan Eplett (Ministry of Natural Resources and Forestry)

Julianna MacDonald (Beacon Environmental)

Ryan Guetter (Weston Consulting)

Jenna Thibault (Weston Consulting)

Discussion:

- Through Species at Risk screening, two provincially endangered species of *Myotis* (bats) were identified within the vicinity of the study area, with the potential to occur on the subject properties.
- Megan Eplett outlined two different approaches which can be taken to assess whether at risk bat species maintain habitat on the subject lands:

1. Assume the property provides bat habitat.

- The properties are forested and Megan Eplett indicated that bats are near certain to be present onsite. Extensive effort would be required to demonstrate that they are not present onsite, which is unlikely.
- The MNRF would prefer the proposed dwellings to be positioned at the front of each lot to minimize site disturbance and tree removal.
- With respect to the development proposal, the MNRF will consider:
 - The impact caused by the dwellings; and,
 - Whether an authorization would be required, either in the form of a mitigation report or similar, or a permit under the *Endangered Species Act*, if damaging the habitat. Assessment of impact would need to be completed through a snag survey, documenting the number of snags within the proposed building footprints relative to the overall site.
- A permit application will require an overall benefit to be provided which is greater than the impact resulting from loss of habitat.

- Megan Eplett indicated that she does not think we would require an MNRF permit since the proposed development on each lot is for a small area, and there would be little impact on the overall forested area → The appropriate mechanism for approval (i.e. a mitigation type review or 17(2)(c) permit is to be verified by MNRF.
- In the case of a mitigation-type application, the MNRF will review the Environmental Impact Study (EIS) completed by Beacon Environmental.
- Satisfying mitigation requirements for bats is about timing.
 - From May to September bats use forests.
 - Any removal of trees would need to occur between September and May as trees cannot be removed when bats are potentially residing in them.

2. Conduct snag surveys of the building footprint area in order to determine where the houses can actually sit (this is done during leaf off).

- Bats are newly listed so they are not too sure about monitoring and mitigation.
- The MNRF's concern is total tree removal → their position is for minimal tree removal.
- The snag surveys could be conducted just near the building envelope to justify the building locations **OR** if you want to try and prove that no bats exist on the lands, snag surveys and acoustic monitoring for the entire property would be required.

So do we go with approach 1 or 2?

- Megan Eplett will need to review the Environmental Impact Study and the Town of Aurora will be assisting through the Species at Risk process.
- A separate submission will be required for the MNRF (The Environmental Impact Study with an accompanying Cover Letter to form an application in place of a Mitigation Report).
- A building footprint is required as the end result (both approach 1 and 2 will allow for this).
- The MNRF won't be giving guidance until a development plan indicates details of the proposed development. Need to know the exact location of buildings, building timing and etc.
- Megan Eplett raised the question of whether the MNRF will be staking the wetland.
 - However, the wetland was noted to not be identified as provincially significant, and occurs within the valley feature. By applying appropriate buffers and through consultation with LSRCA, staking the wetland should not be required by MNRF.
- **If we prove that there are not bats, is that better for the buyer?** It would remove that restriction **BUT** bats are most likely there so it is not worth the effort to try and prove this.

Final Remarks:

- Removing trees for a small area of each site to allow for two homes has a much smaller impact than clear cutting the entire area for a subdivision.
- Megan Eplett's biggest concern is whether the building footprints get altered after the property owners sell the lands. → If the buyer of the property is to do this, they will need to prove why. Site plan approvals may require further consultation with MNRF.

- Before providing the MNRF with documentation for review, applicable policy buffers will need to be applied to determine appropriate citing and access of building envelopes.

From: Shapiera, Melanie (MNRF) <melanie.shapiera@ontario.ca>
Sent: Tuesday, June 13, 2017 8:34 AM
To: Julianna MacDonald
Cc: Jesse Harnden; 'Jenna Thibault'; Ryan Guetter (rguetter@westonconsulting.com); Nina Tanti
Subject: RE: 672 & 684 Henderson Drive, Aurora

Thank you for working to avoid impacts to the majority of the cavity trees. Please send me the concept plan and ownership details when finalized.

Melanie

Melanie Shapiera
Management Biologist | Ontario Ministry of Natural Resources and Forestry | Aurora District Office
50 Bloomington Road, Aurora, Ontario, L4G 0L8 | [Tel:905-713-7425](tel:905-713-7425) | Email: melanie.shapiera@ontario.ca

From: Julianna MacDonald [mailto:jmacdonald@beaconenviro.com]
Sent: June-12-17 4:55 PM
To: Shapiera, Melanie (MNRF)
Cc: Jesse Harnden; 'Jenna Thibault'; Ryan Guetter (rguetter@westonconsulting.com); Nina Tanti **Subject:** RE: 672 & 684 Henderson Drive, Aurora

Hi Melanie,

Further to your email dated May 2nd, 2017 I have spoken with the Planning Consultant about the possibility of moving the building envelope and driveway for 684 Henderson Drive in order to minimize the number of snags removed. We anticipate that we can make these modifications, reducing the size of the building envelope for 684 Henderson Drive to avoid snags #1 and #5 and shifting the driveway to the west to avoid snags #6, #7 and #8. This can be accommodated while still adhering to the other site constraints. A modified Concept Plan will be provided to you at a future date illustrating these changes.

Clarification on the issue of addressing an LOA relative to ownership will be provided at that time.

Thank you,
Julianna

Julianna MacDonald, B.Sc., MES (PI) / Senior Planning Ecologist

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From: Shapiera, Melanie (MNRF) [mailto:melanie.shapiera@ontario.ca]
Sent: Tuesday, May 02, 2017 12:18 PM
To: Jesse Harnden <jharnden@beaconenviro.com>
Cc: Julianna MacDonald <jmacdonald@beaconenviro.com>; **Subject:** RE: 672 & 684 Henderson Drive, Aurora

Just quickly following up on my call with Juliana.

I advised Juliana to discuss with the architect the possibility of moving the building envelope and driveway for 684 Henderson Dr in such a way to minimize the # of snags removed while still adhering to your other constraints. I also indicated that if impacts can be mitigated through the design changes above as well as timing, etc., that MNRF may be able to issue a Letter of Advice for the two Species at Risk bat species initially identified by Megan Eplett. However, we issue our LOAs to the person/company actually conducting the building operations. It's my understanding the current owners wish to sell the lots without building, in which case I will require the names of the buyers to issues any ESA authorization such as an LOA.

One thing I forgot to mention Juliana is the work done in the memo to qualify the snag trees in the study area. The guidance provided in the Guelph District survey protocol document can be easily misunderstood. When it indicates "best" potential maternity roost trees, this is solely to inform best placement of acoustic monitors. It is not intended to imply that all snags should be ranked as high/med/low quality. Such categorizations are not factored into my impact assessments.

Melanie

From: Jesse Harnden [<mailto:jharnden@beaconenviro.com>]
Sent: April-03-17 1:51 PM
To: Shapiera, Melanie (MNRF)
Cc: Julianna MacDonald
Subject: 672 & 684 Henderson Drive, Aurora

Hi Melanie,

Please find attached a memorandum which summarizes the results of the snag surveys at the above mentioned subject properties. This memorandum is further to scoping in direction that was received from Megan Eplett during a meeting on August 4, 2016 and telephone correspondence in September 2016.

Please review the memorandum and advise if any further steps are required.

Sincerely,

Jesse Harnden, B.Sc., ISA Certified Arborist/ Botanist

BEACON ENVIRONMENTAL

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Memorandum

To: Melanie Shapiera, Ministry of Natural Resources and Forestry - Aurora District

From: Jesse Harnden and Julianna MacDonald, Beacon Environmental Limited

Date: March 13, 2019

Ref: 216078.1

Re: Species at Risk Bat Snag Survey Results –
672 & 684 Henderson Drive, Town of Aurora

Beacon Environmental Limited (Beacon) has been retained to determine the quality of bat habitat present on the subject property, located at 672 and 684 Henderson Drive, Town of Aurora, Regional Municipality of York. The subject property is comprised of two lots of record and a building envelope for the future development of a single detached dwelling is proposed on each lot. The subject properties are respectively an approximate 1.15 ha (2.84 ac) and 2.02 ha (4.99 ac) in area. The future buildings will not exceed 500 m² for each property.

Further to the memorandum dated November 29, 2017 by Beacon, a habitat assessment has been completed for the proposed area of impact to include the revised building envelope, driveway alignments and proposed grading limits. The proposed building envelopes and driveway alignments were revised to reflect the changes in the proposed development plan to address the comments received from Melanie Shapiera on May 2, 2017 to minimize the number of snags removed that were identified during the original habitat assessment.

It is Beacon's understanding that new guidelines to assess bat habitat have been released since the habitat assessment completed in January 2017. The re-assessment of bat habitat on the subject property was completed in accordance with the Ministry of Natural Resources and Forestry Guelph District's '*Survey Protocol for Species at Risk Bats within Treed Habitats*' guideline (2017).

The purpose of this memorandum is to provide MNRF the results of the updated habitat assessment for the proposed area of impacts. The revised building envelopes have been proposed in locations that respect the following setbacks:

- Approximate Top of Bank (based on provided surveyed elevations)
- 30 m buffer to wetlands
- 30 m buffer to watercourse

Methodology

Detailed bat snag surveys were completed on November 14, 2018 during leaf off, and under suitable conditions (i.e., no precipitation, not immediately following heavy snowfall) to determine the occurrence of potential roost trees in the woodland communities present on the subject lands. Candidate maternity roost habitat was identified, and snag surveys were completed in accordance with Step 1 and 2 of the Ministry of Natural Resources and Forestry Guelph District's 'Survey Protocol for Species at Risk Bats within Treed Habitats' guideline. Proposed communities were surveyed in their entirety to identify any snags present.

Snag trees with characteristics favourable to Little Brown Myotis (*Myotis lucifugus*), Eastern Small-footed Myotis (*Myotis leibii*) and Northern Myotis (*Myotis septentrionalis*) were documented. Any snag or cavity trees observed were provided a unique code and the following parameters were documented:

- Species;
- Location;
- Approximate tree height;
- Diameter breast height (dbh);
- Number of cavities;
- Characteristics of cavity;
- Approximately height of cavities; and
- Tree condition

Any maple species with a diameter at breast height (DBH) greater than 25 cm or oak species with a diameter at breast height (DBH) greater than 10 cm were recorded when considering habitat for Tri-coloured Bat (*Perimyotis subflavus*).

Results

The results presented below includes the data from the January 2017 snag surveys detailed in the March 30, 2017 memorandum by Beacon and the data from the habitat re-assessment (**Figure 1**). The results presented below represent the habitat assessment completed for the proposed driveway grading and the proposed building envelopes. The assessment did not include the areas of potential grading around the proposed building envelopes as these limits will be set through detailed design and specific site application permits.

672 Henderson Drive

The revised building envelope and driveway footprint at 672 Henderson Drive is 0.07 ha and the proposed grading is 0.10 ha for an overall area of impact of 0.17 ha. This is an increase from the previous footprint of 0.08 ha, all of which is a result of the proposed grading. **Tables 1 and 2** summarize the snag survey results by ELC community for habitat type and incorporate the results of both habitat assessments.

Table 1. Myotis Species Habitat Assessment – Proposed Area of Impact at 672 Henderson Drive

Proposed Development	ELC Code	Number of Snags	Total Area of ELC Polygon on Subject Property (ha)	Area Impacted (ha)
Building Envelope and Driveway	FOD8-1	1	0.05	0.02
	FOC3-1	-	0.57	0.04
	CUW1	-	0.08	0.005
Grading	FOD8-1	-	0.05	0.02
	FOC3-1	4	0.57	0.06
	CUW1	2	0.08	0.02

Table 2. Tri-coloured Bat Habitat Assessment – Proposed Area of Impact at 672 Henderson Drive

Proposed Development	ELC Code	Number of Snags	Total Area of ELC Polygon on Subject Property (ha)	Area Impacted (ha)
Building Envelope and Driveway	FOD8-1	-	0.05	0.02
	FOC3-1	1	0.57	0.04
	CUW1	-	0.08	0.005
Grading	FOD8-1	-	0.05	0.02
	FOC3-1	5	0.57	0.06
	CUW1	1	0.08	0.02

Within the proposed footprint a total of 14 snags were recorded as part of the habitat re-assessment, of which 8 snags provide potential habitat for *Myotis* spp. and 6 snags were recorded based on their dbh as potential habitat for Tri-coloured Bat (**Figure 1**). The proposed building envelope and associated grading at 672 Henderson Drive will remove 0.17 ha of 0.70 ha of candidate maternity roost habitat. As shown on **Figure 1**, the proposed building envelope is limited to the southeast portion of the subject property and will only impact a portion of the candidate maternity roost habitats present with larger areas to remain.

684 Henderson Drive

The revised building envelope and driveway alignment at 684 Henderson Drive is 0.15 ha and the proposed grading is 0.11 ha for an overall area of impact of 0.26 ha. This is an increase from the previous footprint of 0.23 ha, all of which is a result of the proposed grading.

Following the original January 2017 habitat assessment, the proposed footprint was revised to include an area of grading north of the building envelope to facilitate surface water flow across the property. It is anticipated that all snags identified between the building envelope and the northern swale will be removed, as the likelihood for disturbance due to operation of construction equipment and grading is high. The grading for the swale north of the property for surface water conveyance will remove an additional 0.12 ha of candidate maternity roost habitat. The requirement for this grading is not confirmed and is subject to detailed engineering review.

Tables 3 and 4 summarize the snag survey results by ELC community for habitat type and incorporate the results of both habitat assessments.

Table 3. Myotis Species Habitat Assessment – Proposed Area of Impact at 684 Henderson Drive

Proposed Development	ELC Code	Number of Snags	Total Area of ELC Polygon on Subject Property (ha)	Area Impacted (ha)
Building Envelope and Driveway	FOD5-2	2	1.02	0.14
	FOC3-1	-	0.22	0.008
	CUW1	-	0.04	0.005
Grading	FOD5-2	4 ¹	1.02	0.10
	FOC3-1	-	0.22	0.011
	CUW1	-	0.04	0.003
Grading for Swale	FOD5-2	8	1.02	0.12

1. Two snags (Trees No. 23 and 24) are at the edge of the proposed retaining wall and may be able to be preserved through detailed design.

Table 4. Tri-coloured Bat Habitat Assessment – Proposed Area of Impact at 684 Henderson Drive

Proposed Development	ELC Code	Number of Snags	Total Area of ELC Polygon on Subject Property (ha)	Area Impacted (ha)
Building Envelope and Driveway	FOD5-2	6	1.02	0.14
	FOC3-1	-	0.22	0.008
	CUW1	-	0.04	0.005
Grading	FOD5-2	11 ¹	1.02	0.10
	FOC3-1	-	0.22	0.011
	CUW1	-	0.04	0.003
Grading for Swale	FOD5-2	13	1.02	0.12

1. Two snags (Trees No. 60 and 61) are at the edge of the proposed retaining wall and may be able to be preserved through detailed design.

Within the proposed footprint a total of 42 snags were recorded as part of the habitat re-assessment, of which 15 snags provide potential habitat for *Myotis* spp. and 27 snags were recorded based on their dbh as potential habitat for Tri-coloured Bat (**Figure 1**). Potential Tri-Colour Bat habitat was included in the assessment, although the occurrence of this species is less likely in the urban Aurora landscape. The revised building envelope and driveway alignment preserve Snags 1 and 5 through 8 recorded in the January 2017 habitat assessment. The proposed building envelope and associated grading (including grading for swale) at 684 Henderson Drive will remove 0.38 ha of 1.28 ha of candidate maternity roost habitat. As shown on **Figure 1**, the proposed building envelope will only impact a portion of the candidate maternity roost habitats present on the subject property and larger areas will remain.

The FOD5-2 community has a uniform species and age distribution throughout the entire community. The community within and beyond the proposed area of impact has a similar species and age distribution. As the habitat assessment for Tri-coloured Bat considered all maples greater than 25 cm dbh, it is unlikely that revising the location of the proposed area of impact will result in a significant change in the results of the habitat assessment.

The building envelope and driveway re-alignment and associated grading have gone through numerous re-iterations to minimize the impacts. Below is a brief summary of the driveway alignments that have been proposed and impact on identified potential snags (**Table 5**). The original (2016) alignment is provided for some comparison, although grading analysis was not completed at that time for a relative assessment of impact.

The analysis is separated based on SAR bat Genus (i.e. *Myotis* spp. or Tri-colour Bat).

Table 5. Proposed Development Impact Analysis

Proposed Development	Myotis Species			Tri-colour Bat ¹			Total
	Building Envelope and Driveway	Grading	Grading (Swale)	Building Envelope and Driveway	Grading	Grading (Swale)	
1. Original (2016)	11	-	-	-	-	-	11
2. East (2017)	7	6	8	8	8	13	50
3. Central (2019)	2	4	8	6	11	13	44

1. Tri-colour Bat habitat assessment was not included in the January 2017 snag surveys as the MNRF protocol did not include guidelines for this species.

Based on the information above, the most central (2019) driveway alignment and building envelope minimizes the impact to potential SAR bat habitat. There are seven 7 less snags which provide potential habitat for *Myotis* spp. proposed for removal and one 1 additional snag which provides potential habitat for Tri-colour Bat proposed for removal than the eastern (2017) driveway alignment and building envelope. It is also encouraged that where possible, limits of proposed grading or driveway alignment be adjusted to accommodate retention of trees (i.e. snags 17, 18, 23, 24, 60, and 61).

Mitigation

The following mitigation is proposed to be implemented to reduce the potential for harm to SAR bats.

- All tree removals are to occur during the winter months to avoid interacting with potential SAR bats;
- Restoration planting is recommended in areas on both subject properties, primarily along the edges of the proposed driveways, and within the areas proposed for grading. Restoration plantings should be comprised of a mix of native trees and shrubs well suited to the growing conditions within the planting area, and should include native species that are currently found within the significant woodland on the subject properties;
- All tree removals will be supervised by a certified Arborist to ensure that there is no unnecessary tree removal or damage to the snag/cavity trees; and
- The Arborist onsite will keep record of all trees removed and the works completed, and this information will be available to MNRF, if required.

Next Steps and Conclusions

The grading requirements for both properties shall be confirmed through detailed design and site plan application. The area of impact to potential bat habitat recorded on the subject properties should be confirmed following the completion of detailed design.

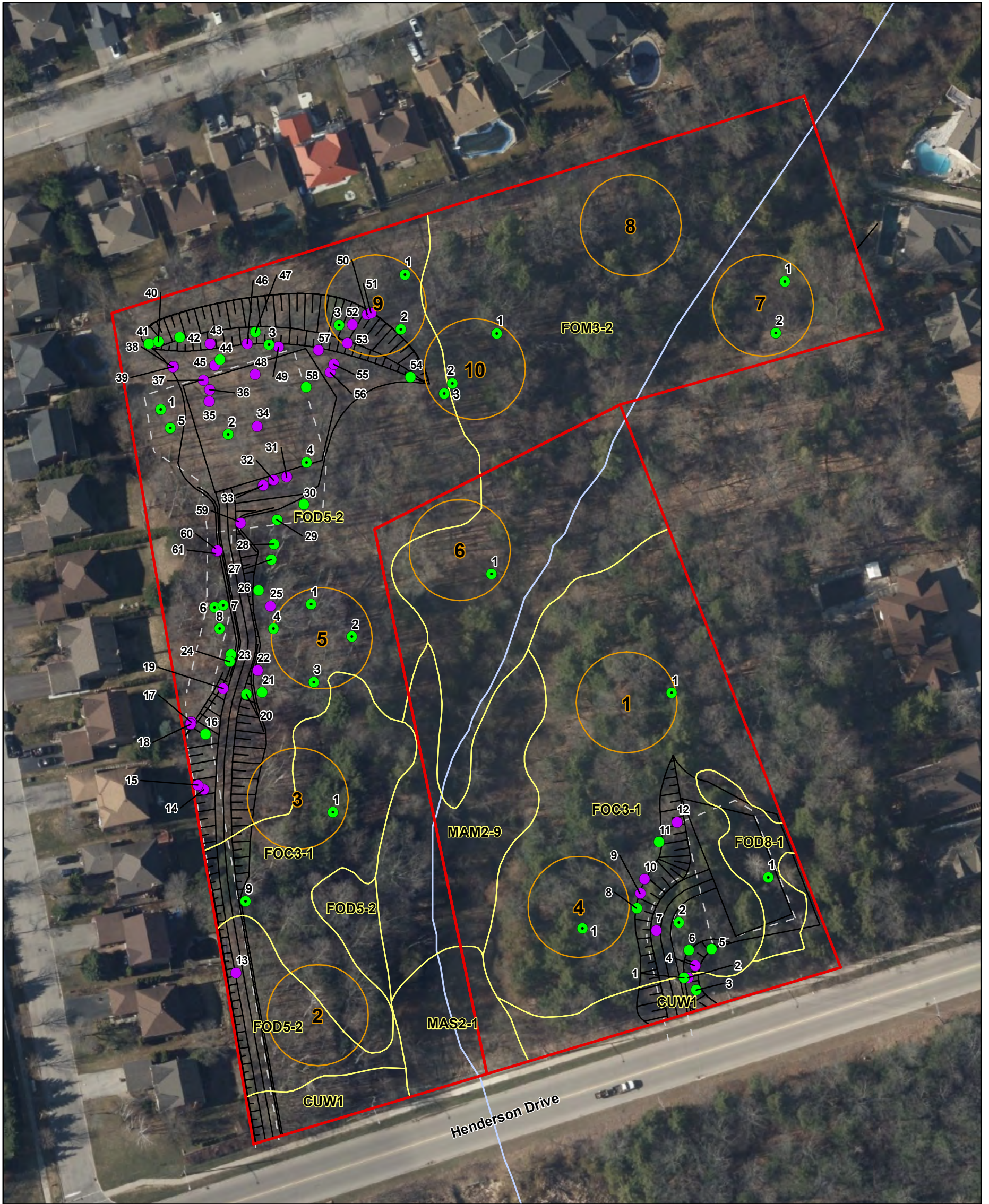
It is trusted that the information provided in this memorandum is sufficient for MNRF to verify the next steps related to SAR bats in order to proceed with the proposed development.

Attachments:

Figure 1

References

Ontario Ministry of Natural Resources and Forestry – Guelph District. 2017.
Survey Protocol for Species at Risk Bats within Treed Habitats. Updated April 2017. 13 p.



Legend

- Subject Property
- ELC Communities
- Sample Plot (January 2017)
- Watercourse
- Proposed Development
- Original Proposed Development
- Tri-Colour Candidate Roost Tree (November 2018)
- Candidate Roost Trees (January 2017)
- Candidate Roost Trees (November 2018)

ELC Code	Description
CUW	Mineral Cultural Woodland
FOC3-1	Fresh-Moist Hemlock Coniferous Forest
FOD5-2	Dry-Fresh Sugar Maple - Beech Deciduous Forest
FOD8-1	Fresh-Moist Poplar Deciduous Forest
FOM6-1	Fresh-Moist Sugar Maple - Hemlock Mixed Forest
MAM2-9	Jewelweed Mineral Meadow Marsh
MAS2-1	Cattail Mineral Shallow Marsh

Bat Habitat Assessment

Figure 1

672 & 684 Henderson Drive Aurora

UTM Zone 17 N, NAD 83

First Base Solutions
Web Mapping Service 2018

0 10 20 40 Metres



1:1,000



Project 216078.1
March 2019

Appendix B

LSRCA Correspondence



Sent by E-mail: jleung@aurora.ca

June 19, 2017

File No.: MV-2017-16
IMS No.: PVOC1881

Mr. Justin Leung
Secretary-Treasurer
Committee of Adjustment
Corporation of the Town of Aurora
100 John West Way, Box 1000
Aurora, ON L4G 6J1

Dear Mr. Leung:

RE: Application for Minor Variance
672 and 684 Henderson Drive, Aurora Ontario

Thank you for circulating the captioned application to the Lake Simcoe Region Conservation Authority (LSRCA) for review and comment. It is our understanding the Applicant is seeking relief from the Zoning By-law to permit the construction of a detached dwelling within the Oak Ridges Moraine key natural heritage features, minimum vegetation protection zone and significant woodland and category 2 lands.

Based on a review of current environmental mapping, the majority of the subject site is located within an area governed by Ontario Regulation 179/06 under the *Conservation Authorities Act*. This is reflective of a watercourse (Tannery Creek) being located on the lands as well as identified areas of wetland and significant valleyland. The site also contains significant woodland. It is noted that the subject lands are designated "Settlement Area" by the Oak Ridges Moraine Conservation Plan (ORMCP) and are identified as Category 2 lands within the ORMCP Area. Please note, any site alteration or development within the regulated area will require a permit from the LSRCA prior to issuance of a Municipal Building Permit.

The application has been reviewed in the context of the natural heritage and natural hazard policies of the Provincial Policy Statement (PPS), The Lake Simcoe Protection Plan (LSPP) and Ontario Regulation 179/06 under the *Conservation Authorities Act*. Based on our review of the Application, including the submitted Natural Heritage Evaluation (NHE), we provide the following comments:

1. The features on site as per the ORMCP include significant woodland, wetlands, fish habitat and likely significant valleyland. In addition the woodland is candidate SWH and ESA habitat. This shows the ecological integrity of this woodland located in an urban system.
2. While the NHE addresses impacts to wetlands, setbacks for fish habitat in the ORMCP Area should include Meanderbelt Width + 30 m. additionally; the impacts to significant woodland and valleyland have not been addressed.

3. It is recognized that the potentially developable area on the property municipally addressed 684 Henderson Drive is in the North-West corner. The proposed driveway may negatively impact the significant valleyland. The Applicant is asked to address the impact and how it will be minimized / mitigated and also to address how the access can be accommodated in accordance with the Lake Simcoe Region Conservation Authority Guidelines for the Implementation of Ontario Regulation 179/06.
4. Additionally, the development footprint and impact to significant woodland have not been addressed through the NHE. The woodlands appear to be mature and old growth forest. The Applicant is requested to confirm this. Finally, the NHE has not demonstrated that no negative impact or that adverse impact to the ecological integrity will not occur. The proposal includes the removal of part of the woodland feature and FOD5-2 and FOC3-2. Naturally occurring FOC3-2 is considered a rare vegetation type in Southern Ontario.
5. An Edge Management Plan will be required to address the boundary of the proposed woodland removal areas. A cedar rail fence will be required in order to preserve the remainder of the feature.

Should you have any questions concerning the above, please contact the undersigned or Shauna Fernandes Chagani, Natural Heritage Ecologist (s.fernandes@LSRCA.on.ca).

Sincerely,



Melinda Bessey, MSc, MCIP, RPP

- c. Shauna Fernandes, LSRCA
Jenna Thibault, Weston Consulting

From: Shauna Fernandes <S.Fernandes@lsrca.on.ca>
Sent: Friday, July 28, 2017 5:09 PM
To: Julianna MacDonald
Cc: Melinda Bessey
Subject: RE: 672 and 684 Henderson Dr., Aurora
Attachments: MBW.pdf

Hi Juliana,

You are correct, this habitat type is not considered rare as per NHRM and its associated tools. Please find attached the MBW boundary for the property.

Thanks,

Shauna

Shauna Fernandes Chagani, HBSc, EP

Natural Heritage Ecologist

Lake Simcoe Region Conservation Authority

120 Bayview Parkway,

Newmarket, Ontario L3Y 3W3

905-895-1281, ext. 247 | 1-800-465-0437

s.fernandes@LSRCA.on.ca | www.LSRCA.on.ca

Twitter: @LSRCA

Facebook: LakeSimcoeConservation

The information in this message (including attachments) is directed in confidence solely to the person(s) named above and may not be otherwise distributed, copied or disclosed. The message may contain information that is privileged, confidential and exempt from disclosure under the Municipal Freedom of Information and Protection of Privacy Act and by the Personal Information Protection Electronic Documents Act. If you have received this message in error, please notify the sender immediately and delete the message without making a copy. Thank you.

From: Julianna MacDonald [mailto:jmacdonald@beaconenviro.com]

Sent: Wednesday, July 26, 2017 10:48 AM

To: Shauna Fernandes

Subject: RE: 672 and 684 Henderson Dr., Aurora

Hi Shauna,

Just following up on whether you can provide the requested information for the Henderson property.

Julianna MacDonald, B.Sc., MES (PI) / Senior Planning Ecologist

BEACON ENVIRONMENTAL

144 Main St. North, Suite 206, Markham, ON L3P 5T3

T) 905.201.7622 x225 F) 905.201.0639 C) 416.670.9387

www.beaconenviro.com

From: Julianna MacDonald
Sent: Thursday, July 20, 2017 4:15 PM
To: Shauna Fernandes Chagani - Lake Simcoe Region Conservation Authority (S.Fernandes@lsrca.on.ca)
<S.Fernandes@lsrca.on.ca>
Subject: FW: 672 and 684 Henderson Dr., Aurora

Hi Shauna,

Just following up on my email below. If you could please provide the meanderbelt study for the area and comment on the ELC unit, it would be appreciated.

Julianna MacDonald, B.Sc., MES (PI) / Senior Planning Ecologist

BEACON ENVIRONMENTAL

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From: Julianna MacDonald
Sent: Monday, July 17, 2017 2:36 PM
To: Shauna Fernandes Chagani - Lake Simcoe Region Conservation Authority (S.Fernandes@lsrca.on.ca)
<S.Fernandes@lsrca.on.ca>
Cc: 'Jenna Thibault' <jthibault@westonconsulting.com>
Subject: 672 and 684 Henderson Dr., Aurora

Hi Shauna,

Further to our meeting last week, if you could please provide the meanderbelt study/mapping that is relevant to 672 and 684 Henderson Drive.

As well, if you could please clarify an item regarding the LSRCA comment 4 issued on June 19, 2017. There is reference to an FOC3-2 ELC unit, which in the comments is indicated to be considered a rare vegetation type in Southern Ontario. Review of our ELC mapping for the properties (attached) does not include this ELC community, and did not identify any rare vegetation types on the property. If you could please review and confirm that this comment applies.

Thank you,
Julianna

Julianna MacDonald, B.Sc., MES (PI) / Senior Planning Ecologist

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May 14, 2018

BEL 216078

Melinda Bessey, Development Planner
Lake Simcoe and Region Conservation Authority
120 Bayview Parkway
Newmarket, ON L3Y 3W3

Re: Response to LSRCA comments dated April 5, 2018
Application for Minor Variance - 672 and 684 Henderson Drive, Aurora
File No.: MV-2017-16, IMS No.: PVOC1881

Dear Ms. Bessey:

Beacon Environmental Limited (Beacon) has prepared a revised Natural Heritage Evaluation (NHE) in support of the proposed Application for Minor Variance for the properties identified as 672 and 684 Henderson Drive in the Town of Aurora. This letter provides a response to comments received on April 5, 2018 relating to revisions to the NHE and should be read in conjunction with that document.

LSRCA comments (including original comments from June 19, 2017) are provided below for reference, with a response immediately following.

1. The features on site as per the ORMCP include significant woodland, wetlands, fish habitat and likely significant valleyland. In addition the woodland is candidate SWH and ESA habitat. This shows the ecological integrity of this woodland located in an urban system.

Partially addressed:

The response should clearly demonstrate that no negative impact will be afforded to observed and candidate significant wildlife habitat (special concern species); red-headed woodpecker (documented evidence from neighbouring community), snapping turtle, Eastern wood pewee and wood thrush.

Beacon Response:

As per the Natural Heritage Evaluation, we have noted that although there have been sightings of Snapping Turtle along Henderson Drive south of the subject properties, there were no nesting areas or suitable wintering areas observed on the subject properties based on general observations during field surveys. Snapping turtles may utilize the valley floor of the subject property, which will not be impacted from the proposed development. Furthermore, as noted in the NHE, the pond and surrounding wetlands on the south side of Henderson Drive (known as Salamander Pond), south of the subject properties provide suitable habitat for Snapping Turtle, whereas the subject property would be less preferred.

During seasonal field investigations for the identification of breeding birds, the above listed bird species of special concern were not identified. Eastern Wood-Pewee and Wood Thrush could have been recorded if present during the two breeding season bird surveys, since these species are readily observed. It is our understanding that the surrounding residential community's observation of a Red-headed Woodpecker is partly related to the use of a feeding station outside the properties of interest. While the species may use the woodland on occasion, we did not observe the species during seasonal field investigations, and cannot conclusively say that the woodland is or is not Significant Wildlife Habitat for Red-headed Woodpecker. We note within the Community PowerPoint presentation, the photos of woodpecker cavities shown on the same page as the Red-head Woodpecker, are likely photos of Pileated Woodpecker holes and not Red-headed Woodpecker activity.

2. While the NHE addresses impacts to wetlands, setbacks for fish habitat in the ORMCP Area should include Meanderbelt Width + 30 m. additionally; the impacts to significant woodland and valleyland have not been addressed.

Partially addressed:

Impacts to the significant woodland are inconclusive; the EIS consistently refers to potential changes to grading outside of the building footprint that will all be determined through the detailed design. An additional EIS will not be provided during detailed design and as such grading will be need to be confirmed during this application and contained within the building footprint. Please note, that the removal of a percent of the entire woodland does not acknowledge the loss of microhabitat ELC communities and their importance to the existing urban system. In addition, the grading associated with the driveway should be minimized, especially in areas where it is greater than 20 m.

Beacon Response:

The revised EIS reflects a 30 m buffer to the meander belt. Based on Section 6 of the EIS and to address LSRCA's comment regarding microhabitat, for 672 Henderson Drive, approximately 1,118 m² of woodland is recommended for removal to accommodate the proposed building envelope. The total area of woodland proposed for removal is comprised of approximately 732 m² of Hemlock Coniferous Forest (FOC3-1), 231 m² of Poplar Deciduous Forest (FOD8-1) and 155 m² of Cultural Woodland (CUW1).

For 684 Henderson Drive, approximately 3,444 m² of woodland is recommended for removal to accommodate the proposed building envelope. The total area of woodland proposed for removal is comprised of approximately 3,177 m² of Sugar Maple–Beech Forest (FOD5-2), 185 m² of Hemlock Coniferous Forest (FOC3-1), and 82 m² of Cultural Woodland (CUW1).

On this basis, approximately 44% of the FOD8-1 community, 32% of the FOD5-2 community, 19% of the CUW community, and 12% of the FOC3-1 community will be impacted as a result of the proposed buiding envelopes. As detailed in Section 5 of the EIS, the total area of 672 Henderson Drive is approximately 1.15 ha (11,500 m²). The impervious surfaces on this property post- development will include the building envelope (480 m²), and the associated driveway (208 m²). The impervious surface

on this property will therefore be approximately 6% of the total area of the site, which is in conformity with ORMCP requirements.

The total area of 684 Henderson Drive is approximately 2.02 ha (20,200 m²). The impervious surfaces on this property post- development will include the building envelope (916 m²), and the associated driveway (668 m²). The impervious surface on this property will therefore be approximately 7.8% of the total area of the site, which is in conformity with ORMCP requirements.

With respect to grading, it is the owner's expectation based on guidance from the engineer that grading will be reduced and confined only to areas along the driveway and where necessary with the use of a retaining wall, and be limited to the indicated building envelopes. This will further reduce the extent of grading and associated tree removal to obtain safe access to the indicated building envelopes.

3. It is recognized that the potentially developable area on the property municipally addressed 684 Henderson Drive is in the North-West corner. The proposed driveway may negatively impact the significant valleyland. The Applicant is asked to address the impact and how it will be minimized / mitigated and also to address how the access can be accommodated in accordance with the Lake Simcoe Region Conservation Authority Guidelines for the Implementation of Ontario Regulation 179/06.

Addressed:

4. Additionally, the development footprint and impact to significant woodland have not been addressed through the NHE. The woodlands appear to be mature and old growth forest. The Applicant is requested to confirm this. Finally, the NHE has not demonstrated that no negative impact or that adverse impact to the ecological integrity will not occur. The proposal includes the removal of part of the woodland feature and FOD5-2 and FOC3-2. Naturally occurring FOC3-2 is considered a rare vegetation type in Southern Ontario.

Not addressed:

It is unclear how impacts to the woodland are addressed when the EIS clearly states that grading extents of the woodland reviewed could be subject to change during the detailed design, this is not appropriate to support the minor variance. In addition grading proposed outside of the development footprint will not be supported by the LSRCA; the building footprint should be adjusted to incorporate all development within the boundary or retaining walls proposed. With respect to the driveways, further review of grades should be investigated to realign and reduce the associated grading.

The previous comments requested information on the maturity and age class of the woodland in order to address impacts or assess the potential for Significant Wildlife Habitat (old growth mature forest), please update including site photos of the FOD5-2 and FOD8-1.

Beacon Response:

As reflected in email correspondence with LSRCA documented within Appendix B of the EIS (Beacon 2018), ELC community FOC3-2 was not noted to be identified on the subject properties nor does this code exist. Therefore, an FOC3-2 ELC unit does not occur on either property.

All grading will be restricted to the proposed building envelopes and reduced along the length of the driveways through the use of retaining walls. A review of topography was completed by the project engineer to provide a preliminary design of the driveway alignments. These proposed alignments were modified since the initial submission in order to reduce impacts from grading and avoid identified 'snag' trees, as requested by MNRF.

Section 5.4.2.3 of the Significant Wildlife Habitat Technical Guide (OMNR 2000) advises that definitions of old-growth forest vary depending on tree species, but generally are characterized as being rare and by having a large proportion of trees in older age classes, many of them over 120 to 140 years old. Furthermore, other features are noted as including a broad spectrum of tree sizes with some very small trees, an uneven canopy with scattered gaps due to fallen trees and large limbs, abundant fallen logs in various stages of decomposition.

As per the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF 2015), old-growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris. Furthermore, old-growth forest include woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming a 100 m buffer at edge of forest.

Based on general observations of the woodland communities during the field surveys and an analysis of aerial photography of the subject property, we can conclude that:

- the forest communities (FOD5-2, FOC3-1, FOD8-1, FOM3-2, and CUW) on the subject property are part of a woodland that is approximately 4 ha in size;
- the majority of dominant trees within each forest community (eg. Sugar Maple in FOD5-2, Eastern Hemlock in FOC3-1, Trembling Aspen in FOD8-1, etc.) is less than 120 years in age based on tree height and diameter at breast height;
- the canopy within each of the forest communities is relatively uniform; and
- the understorey within the forest communities is relatively clear with a low number of snags and downed woody debris.

On this basis, the forest communities on the subject property cannot not be characterized as "old growth".



Photograph 1. Fresh-Moist Poplar Deciduous Forest (FOD8-1) at the Southeast Extent of 672 Henderson Drive.



Photograph 2. Dry-Fresh Sugar Maple – Beech Deciduous Forest (FOD5-2) at the Location of the Proposed Dwelling on 684 Henderson Drive.

5. An Edge Management Plan will be required to address the boundary of the proposed woodland removal areas. A cedar rail fence will be required in order to preserve the remainder of the feature.

Partially addressed:

Subject to revised boundary changes as requested in this set of comments, the edge management and restoration plans will be subject to the minor variance approval.

Beacon Response:

Agreed. The Edge Management Plan will provide details of a cedar rail fence in order to preserve the remainder of the feature.

6. **NEW** - Landform Conservation Area 2 is related to net developable area minus key natural heritage areas and key hydrological features. This interpretation of impact to the site is inaccurate.

Beacon Response:

The ORMCP defines “net developable area” as:

“means the area of a lot or site, less any area that is within a key natural heritage feature or a hydrologically sensitive feature”.

Based on the definition above, the entirety of the subject property (672 & 684 Henderson Drive) is within a key natural heritage feature located in a Category 2 Landform Conservation Area, within the Settlement Area designation under the ORMCP.

As per Section 30(6) of the ORMCP, an application for development or site alteration with respect to land in a Category 2 landform conservation area shall identify planning, design and construction practices that will keep disturbance to landform character to a minimum including:

- a) maintaining significant landform features such as steep slopes, kames, kettles, ravines and ridges in their natural undisturbed form;
- b) limiting the portion of the net developable area of the site that is disturbed to not more than 50 per cent of the total area of the site; and
- c) limiting the portion of the net developable area of the site that has impervious surfaces to not more than 20 per cent of the total area of the site.

As per Section 30(13) of the ORMCP, with respect to land in Settlement Areas, in considering applications for development or site alteration within landform conservation areas (Category 1 and 2) the approval authority shall consider the importance of adopting planning, design and construction

practices that will keep disturbance to landform character to a minimum, so as to satisfy the requirements of subsections (5) to (11) if possible.

As per Section 5 (Proposed Development) of the Natural Heritage Evaluation, for 672 Henderson Drive, the total impervious surface is 6% of the site and the total disturbed area is 10% of the site. For 684 Henderson Drive, the total impervious surface is 7.8% of the site and the total disturbed area is 17% of the site. Furthermore, the location of the proposed building envelopes are partially on tableland portions of both properties and were carefully selected to avoid steep slopes associated with the valley corridor. Given the subject properties are located within the Settlement Area designation under the ORMCP, the impervious surface and disturbed areas are less than the permissible threshold values as per Section 30(6) of the ORMCP, and based on the locations of the building envelopes on both properties, best efforts have been made for the builder to adopt design and construction practices to keep disturbance to landform character to a minimum to satisfy the requirements of the ORMCP. Based on the ORMCP's definition of "net developable area" our previous calculation from Section 30(6) remains correct as the entire site, which is identified as a Settlement Area, is to be considered."

7. **NEW** - Any nesting surveys conducted during the shoulder breeding bird window should occur within 24-48 hrs of proposed vegetation removal.

Beacon Response:

Agreed – this can be provided as a condition of minor variance approval.

8. **NEW** - Stormwater Management Plan page 27 states that an enhanced SWM plan may be required at a later date. Please revise the text to state that any required SWM will occur within the approved development limits.

Beacon Response:

As indicated by Schaeffers Consulting Engineers, since the area to be developed is small, any required stormwater management measures will occur within the approved development limits.

9. **NEW** – It is recommended that restrictive covenant be placed on the remainder of the property securing the protection of the natural heritage features.

Beacon Response:

The landowners have agreed that a restrictive covenant be placed on the remainder of the property securing the protection of the natural heritage features. This can be provided as a condition of minor variance approval.

If there are any other questions or further discussion required please do not hesitate to contact the undersigned at (905) 201-7622 ext. 225 (MacDonald).

Report prepared by:
Beacon Environmental



Sevan Torus, B.Sc. (Hons)
Ecologist/ISA Certified Arborist ON-1924A

Report prepared and reviewed by:
Beacon Environmental



Julianna MacDonald, B.Sc., MES (PI)
Senior Planning Ecologist

Appendix C

Town of Aurora Peer Review – North South Environmental



24th May 2018

Marty Rokos
Planning and Development Services
Town of Aurora
100 John West Way, Box 1000
Aurora, Ontario L4G 6J1

Dear Marty,

Re: Peer Review of Natural Heritage Evaluation for 672 and 684 Henderson Drive, Town of Aurora.

Per your request, we have reviewed the Natural Heritage Evaluation (NHE) for the proposed developments at 672 and 684 Henderson Drive, prepared by Beacon Environmental (Beacon) (March 2017, revised January 2018). As part of the review, a site reconnaissance was undertaken on 9th March 2018 with the owners, Mr. Ryan Guetter (Weston Consulting), Julianna MacDonald (Beacon Environmental) and Marty Rokos (Town of Aurora). The application is to permit two single family dwellings, one on each of the two lots. The two lots are adjacent to each other and from a natural heritage perspective they are considered as one site. At present, the design of the two residences has not been undertaken so the impact is assessed on the basis of a concept showing proposed development limits, entrance drives and associated preliminary grading requirements (Figure 3).

The site is entirely covered by mature woodland (the entire site is a Significant Woodland) and there is a watercourse, Tannery Creek, that flows northward, approximately through the middle of the site. The site also contains a Significant Valleyland, which is associated with Tannery Creek. The site is bounded on the south side by Henderson Drive, and by single family residences on the other three sides. There is an existing storm water management facility to the northeast of the site. On the south side of Henderson Drive there is a fairly extensive woodland that contains an unevaluated wetland, which is the headwater for Tannery Creek.

The property is within a "Settlement Area" as defined in the Oak Ridges Moraine Conservation Plan (ORMCP); and is also subject to the policies of the Provincial Policy Statement (PPS), Region of York Official Plan, Town of Aurora Official Plan, Lake Simcoe Protection Plan (LSPP), and the Lake Simcoe Region Conservation Authority (LSRCA).

Owing to the potential for bats that are protected under the Endangered Species Act (ESA), Beacon also undertook consultation with the Aurora District MNR office to discuss survey requirements and subsequent mitigation. The two properties are zoned to allow one single family dwelling on each lot.

The site is complicated from a planning perspective, in part owing to the plethora of plans that are applicable to the site, and partially as the site is fully wooded and is a Key Natural Heritage Feature (KNHF) in its entirety. Thus the application for the two residences is within a KNHF. We note that this review primarily addresses the natural heritage aspects of the NHE. The NHE also summarizes the relevant policy framework and provides a section on policy conformity. We also comment on the policy aspects of the NHE but as our primary expertise is ecology, not planning, we defer to the Town's planning department to confirm our opinions on policy interpretation and the policy conformity aspects of the NHE.

In general, our opinion is that the natural heritage aspects of the NHE are well done, and particularly note the effort to evaluate the potential bat habitat on the site and refine the proposed development concepts to minimize the impacts. Because the site is fully wooded, impacts to the Significant Woodland are unavoidable, however, impacts to the other principal features: the watercourse and associated fish habitat, the Significant Valleyland, and potential bat habitat have, in our opinion, been avoided or mitigated as much as possible. The report notes that when the design of the houses has been undertaken, and the final building footprint is determined, some additional bat survey will be required if the footprint extend into the revised building envelope area (this is discussed in comment 12 below).

Our main comment relates to the policy conformity aspect of the NHE. Although our opinion is that at this concept stage the potential impacts have been mitigated to the extent possible, the report has not sufficiently discussed how the application conforms with the relevant policies, in particular the ORMCP. Given that this application is proposed within a KNHF with several natural heritage features, and the Town is responsible to ensuring that any application conforms to the ORMCP, it is important that policy conformity of these applications be fully and accurately documented. In addition to this, we have relatively minor comments on the NHE as provided below under "Other Comments". We suggest that the policy conformity issue and the minor comments could be addressed in either a revised report, or in a response letter, at the discretion of the Town (recognizing that for future reference it is generally preferable to have a one final document that fully satisfies all requirements).

Policy Conformity

1. The Policy Conformity section does not sufficiently discuss how conformity is achieved. It simply identifies the features being protected, features that do not occur on the property, and the process with respect to valleylands and bats. No-where does it address the policies that need to be satisfied for the application to be considered as being in conformity with the ORMCP and other plans. Normally, the key ORMCP policy

that needs to be discussed would be section 18, which addresses development proposed in Settlement Areas.

In our understanding, the second paragraph on page 7 mis-interprets Section 21 (3) and (4) of the ORMCP regarding the identification of the minimum Areas Of Influence and the minimum Vegetation Protection Zones. Section 21 (4) gives precedence to provisions of the Town's OP or a Zoning By-Law, ONLY when the OP conflicts with either Sections 21(1) or (2) of the ORMCP. The Town's OP was brought into conformity with the ORMCP through OPA 48, so there should be no conflicts. In the case of these two properties, Schedule E1 of the OP indicates there is woodland and a watercourse, and applies a buffer of 30 m to both (this is also identified in section 3.5 of the NHE). This is not in conflict with Section 21 (1) or (2) of the ORMCP, and so in our opinion 21 (3) and (4) do not apply and these sections would not permit a reduction in the VPZ as is suggested in the text of the NHE. Moreover, this section of the ORMCP only addresses the minimum area of influence and minimum vegetation protection zones, not development within a KNHF or KHF.

Despite this mis-interpretation, we note that the applicable zoning for the properties allows one single detached residence per lot (as indicated in section 3.5.2 of the NHE). If to achieve this a reduced VPZ is required, the use allowed by the zoning by-law would prevail. This policy interpretation issue is a planning matter as opposed to a natural heritage issue and needs to be verified by a planner.

However, in our opinion, the interpretation of 21 (3) and (4) is a bit of a moot point. The key ORMCP policy is not addressed in the NHE. Our understanding for this application is that the existing zoning permits a dwelling on each lot, and we presume the zoning predates November 15th 2001. If this is the case, then the key applicable policy is in ORMCP section 7. This policy allows the erection of a "previously authorized" single family dwelling regardless of the entire Plan, subject to two tests. The purpose of the NHE should be to demonstrate conformity with these two tests, sections 7(a) and (b). Our opinion is that, subject to our other comments being addressed, adequate natural heritage evaluation has been done, and we think it should be possible to demonstrate conformity with s. 7(a) and (b).

Other Comments

2. pg. 3 s.2.2.2 Amphibian Surveys: we note that there were no salamander surveys undertaken, and no explanation regarding the presence/absence of potential habitat. This was discussed at the site meeting and it was agreed there was no habitat for ambystomid salamanders, which are the only ones that might have policy implications. It is likely that there are red-backed salamanders present, but they are common and widespread and would not pose constraint. We request that this be confirmed in writing.

3. pg. 5, s.3.1 PPS: This section notes that the identification of natural heritage features is the responsibility of the municipality, other than wetlands (which could be the municipality or MNR), habitat of threatened or endangered species, and fish habitat. The list of exceptions should include ANSIs as well. The statement is misleading. Although planning authorities, including municipalities, have the ultimate responsibility for determining significant woodland, significant valleyland and significant wildlife habitat, they may require development proponents to collect the appropriate information and data, and undertake analyses through an EIS or NHE, to determine significance (e.g., see section 9.4 of the NHRM). Thus the responsibility of planning authorities as noted in the NHRM does not absolve applicants for development from collecting data and determining the significance of features through an EIS or NHE, unless it is explicitly excluded through pre-consultation scoping. Although this does not affect this application directly, we suggest that if the report is revised, the wording be refined to more accurately reflect responsibilities, or omitted entirely.
4. Also, regarding the last paragraph in 3.1, there is the possibility of Significant Wildlife Habitat (SWH) on the site. The LSRCA comments also note candidate SWH (comment 1, letter to the Town June 19 2017). The NHE should address the potential for Significant Wildlife Habitat and evaluate it with reference to the several categories of SWH.
5. pg. 6-7, s. 3.2 ORMCP: The paragraph addressing section 32 (1) of the ORMCP identifies just two requirements of a NHE, however, there are six requirements, albeit not all are relevant to this application. In addition to (a) and (b) provided in the NHE, sub-sections (d) and (f), and possibly (e), may also be relevant (in part depending on the presence of SWH). Regardless, the NHE should not leave the impression that there are only two requirements for an NHE.

Likewise, for Hydrological Evaluations, only two of the three requirements are noted in the report, all of which should be identified.

6. The section on Landform Conservation Areas notes that the two properties are within a Category 2 Landform Conservation Area and identifies three requirements that need to be adhered to. The text does not indicate whether a Landform Conservation Plan was prepared, and we are unaware of one for these applications. The ORMCP s. 30 (9) requires a Landform Conservation Plan be prepared for an application for major development. Section 5 of the NHE indicates that the proposed building envelopes are 480 m² for 672 Henderson Drive, and 916 m² for 684 Henderson Drive. Major development includes buildings with a ground floor area of 500 m² or greater. Thus if the actual building footprint for 684 Henderson Drive exceeds this, it would be deemed a major development and will require a Landform Conservation Plan. We note a very similar issue related to the potential building footprints is raised in Section 5 of the NHE, where it is noted that if the footprint is 500 m² or greater it deemed to be major development under the LSPP and will have repercussions for stormwater management. We suggest that the easiest way to avoid this additional work is to agree to a condition that would limit the building footprints to less than 500 m².

7. pg. 8, section 3.4 York Official Plan. This section notes that subject properties are immediately north and outside of the Regional Greenlands. From a policy perspective, it is relevant that the properties are within 120 m of the Regional Greenlands. Section 2.1.9 of the Regional OP requires a demonstration of no negative impact through an EIS, as well as pre-consultation and a terms of reference for the EIS to be submitted early in the process. We are unaware of a pre-consultation or early submission of a proposed EIS (or NHE). We suggest that if any pre-consultation with the Region was undertaken it be identified, or if consultation with the Town was deemed to be sufficient then this be explained.
8. pg. 13, Section 4.1 Aquatic Resources. This section indicates that there was no sampling of the aquatic community as there was sufficient existing data. However, these data are neither presented nor discussed, so their sufficiency cannot be assessed. We recommend that the data be discussed to better characterize the aquatic resources, and identify how they will be protected.
9. We note that the meander belt analysis was not described, but that it was requested from the LSRCA (Appendix B, email from Julianna MacDonald [Beacon] to Shauna Fernandes [LSCA] July 20, 2017). Since the meander belt and associated 30 m VPZ is illustrated on Figure 3, we assume the analysis was provided. However, the source of the meander belt analysis and whether LSRCA is satisfied with it is not identified in the report. Given that the location of the 30 m VPZ is important as part of demonstrating that ORMCP 7 (b) is adequately addressed, and that the limit of the preliminary grading extends right to the edge of the 30 m VPZ, the Town will require confidence that the meander belt is sufficiently accurate to claim there are no encroachments into it, and that the LSRCA is satisfied with it.
10. pg. 22, Development Proposal. The NHE notes that if either building footprint is over 500 m², it would be considered “major development” as defined in the ORMCP, and additional stormwater management will be required. We note that as the building envelope for 672 Henderson Drive is less than 500 m² the footprint cannot exceed this area and thus this concern only applies to 684 Henderson Drive. As noted above, if the eventual building proposed meets the definition of Major development, a Landform Conservation Plan will be required per ORMCP 30(9).
11. pg. 24, Impact Assessment. Figure 3 shows the relationship between the meander belt +30 m VPZ and the proposed development. We note that the driveway for 684 Henderson Drive comes to the edge of the meander belt plus 30 m, but also that the drive was re-aligned to preserve Bat Habitat. We support the propose alignment because it creates the least impact to bat habitat, even if it does bring the edge of the area to be disturbed up the edge of the VPZ. We note the encroachment into the VPZ for the entrance drive for 672 Henderson Drive, and suggest that an effort be made to eliminate, or at least minimize the encroachment when the design of the proposed

residence is undertaken. If the alignment as shown on Figure 3 represents the minimum impact to the VPZ, then it is acceptable with respect to natural heritage.

12. pg. 25, Bats. We note that in the refined plan the areas that the building envelopes were extended into and the grading areas have not been surveyed for snag trees. We suggest that this be done so it can inform the location and extent of the building footprint for the final house design, with the aim of avoiding the removal of any additional snag trees.
13. pg 29. Tree Inventory and Preservation Plan. The NHE correctly identifies the need for a Tree Inventory and Preservation Plan, including compensation consistent with the Town's requirements, but does not describe the compensation requirements. However, owing to the number of mature trees that will need to be removed to accommodate the proposal, and that there is virtually no opportunity for compensation planting on-site, we suggest that the repercussions of this requirement be described. This would not have to approximate the number of compensation trees, but at least provide the compensation requirements for mature woodland, and identify how the compensation could be achieved (e.g., identify if the Town has locations where off-site compensation can be achieved).
14. pg. 29. Policy Conformity. The second paragraph in this section notes that the KNHFs and KHF's "... including significant woodland..." have been "...identified and protected..." We note that portions of the significant woodland will be removed, and thus it is not protected as suggested by the text. We recognize that this proposal will unavoidably negatively impact the Significant Woodland, but that given this does not preclude the development conforming with the relevant policies.

We trust that this review will assist the Town in its review of this development application. Please contact the under-signed if there are any questions or comments regarding the above. We would be pleased to discuss any of the above with the applicant or their consultants.

Yours very truly,



Mirek Sharp,
Principal, North-South Environmental Inc.



20th September, 2018

Antonio Greco
Planning and Development Services
Town of Aurora
100 John West Way, Box 1000
Aurora, Ontario L4G 6J1

Dear Antonio,

Re: Beacon Environmental Response to our Peer Review of Natural Heritage Evaluation for 672 and 684 Henderson Drive, Town of Aurora.

We have reviewed the Beacon Environmental (Beacon) response to the NSE Peer Review of the Henderson Road Natural Heritage Evaluation and offer the following comments.

We are generally satisfied with the technical responses provided by Beacon and feel that their proposed responses address all our concerns. There is one comment that we would like further clarification on, as noted below. We would also request that all of the responses provide by Beacon be incorporated into a revised NHE, as discussed below.

Outstanding Comment

Comment 6. Beacon's response of "Noted", leaves us unclear whether and how the revised NHE will address our comment. Since the NHE brings up the issue of the Landform Conservation, we think it needs to comment on the repercussions for the application. We understand that no definitive conclusion can be made on the need for a Landform Conservation Plan until the footprints for the buildings have been established, and the NHE simply needs to acknowledge this, rather than stay silent on it.

Documentation of Responses in a Revised NHE

In the second paragraph Beacon indicate that they "anticipate" that a revised NHE will be prepared. As many of the responses that Beacon provide involve changes and/or additions to the NHE, it is important that the NHE report be revised prior to any approvals. Given the sensitivity of the application, having all environmental concerns addressed in one document would be preferable to having to refer to the several sets of comments and responses that have been prepared.

To be clear, we are satisfied with the responses themselves (excepting the requested clarification to Comment 6 as noted above). We are simply recommending that all of the Beacon responses should be reflected in a revised NHE.

We would be pleased to discuss any of the above with the Town or directly with staff from Beacon Environmental and encourage them to contact us if there is any disagreement on the comments provided above.

Yours very truly,

A handwritten signature in black ink, appearing to read "Mirek Sharp". The signature is fluid and cursive, with the first name "Mirek" and last name "Sharp" clearly distinguishable.

Mirek Sharp,
Principal, North-South Environmental Inc.

September 14, 2018

BEL 216078

Mr. Mirek Sharp
North-South Environmental Inc.
P.O. Box 518
35 Crawford Cres
Suite U5
Campbellville, ON L0P 1B0

c/o Mr. Antonio Greco
Town of Aurora
Planning and Development Services
100 John West Way, Box 1000
Aurora, ON L4G 6J1

**Re: Response to North-South Environmental Inc. Peer Review dated May 24, 2018
Applications for Minor Variance - 672 and 684 Henderson Drive, Aurora
File No.: MV-2017-15A-C and MV-2017-16A-C IMS No.: PVOC1881**

Dear Mr. Sharp:

Beacon Environmental Limited (Beacon) is pleased to provide the following response to Peer Review comments received on May 24, 2018 relating to the Natural Heritage Evaluation (NHE) in support of the proposed Applications for Minor Variance for the properties identified as 672 and 684 Henderson Drive in the Town of Aurora. This letter should be read in conjunction with that document.

It is anticipated that a final NHE document will be prepared to address comments received from North-South Environmental Inc. (North-South) and Lake Simcoe and Region Conservation Authority (LSRCA).

We note that the LSRCA has recommended approval of these applications (letter dated August 3, 2018) subject to several conditions of approval.

North-South comments are provided below for reference in italics, with a response immediately following.

Policy Conformity

- 1. The Policy Conformity section does not sufficiently discuss how conformity is achieved. It simply identifies the features being protected, features that do not occur on the property, and the process with respect to valleylands and bats. No-where does it address the policies that need to be satisfied for the application to be considered as being in conformity with the ORMCP and other plans. Normally, the key ORMCP policy that needs to be discussed would be section 18, which addresses development proposed in Settlement Areas.*

In our understanding, the second paragraph on page 7 misinterprets Section 21 (3) and (4) of the ORMCP regarding the identification of the minimum Areas Of Influence and the minimum Vegetation Protection Zones. Section 21 (4) gives precedence to provisions of the Town's OP or a Zoning By-Law, ONLY when the OP conflicts with either Sections 21(1) or (2) of the ORMCP. The Town's OP was brought into conformity with the ORMCP through OPA 48, so there should be no conflicts. In the case of these two properties, Schedule E1 of the OP indicates there is woodland and a watercourse, and applies a buffer of 30 m to both (this is also identified in section 3.5 of the NHE). This is not in conflict with Section 21 (1) or (2) of the ORMCP, and so in our opinion 21 (3) and (4) do not apply and these sections would not permit a reduction in the VPZ as is suggested in the text of the NHE. Moreover, this section of the ORMCP only addresses the minimum area of influence and minimum vegetation protection zones, not development within a KNHF or KHF.

Despite this misinterpretation, we note that the applicable zoning for the properties allows one single detached residence per lot (as indicated in section 3.5.2 of the NHE). If to achieve this a reduced VPZ is required, the use allowed by the zoning by-law would prevail. This policy interpretation issue is a planning matter as opposed to a natural heritage issue and needs to be verified by a planner.

However, in our opinion, the interpretation of 21 (3) and (4) is a bit of a moot point. The key ORMCP policy is not addressed in the NHE. Our understanding for this application is that the existing zoning permits a dwelling on each lot, and we presume the zoning predates November 15th 2001. If this is the case, then the key applicable policy is in ORMCP section 7. This policy allows the erection of a "previously authorized" single family dwelling regardless of the entire Plan, subject to two tests. The purpose of the NHE should be to demonstrate conformity with these two tests, sections 7(a) and (b). Our opinion is that, subject to our other comments being addressed, adequate natural heritage evaluation has been done, and we think it should be possible to demonstrate conformity with s. 7(a) and (b).

Beacon Response:

As identified in the Minor Variance Application letter prepared by Weston Consulting (April 12, 2017) the Town of Aurora's Zoning By-law 2213-78, which was approved in 1979, zones the lands as "Rural Residential (RR)" permitting one single detached dwelling per lot. The Town recently completed a Comprehensive Zoning Review, which re-categorized the lands as "Estate Residential (ER)", which is consistent with Section 7(a) of the ORMCP. The NHE will be revised to reflect the above and provide clarification and reference to Sections 7(a) and (b) of the ORMCP.

As the properties occur fully within Significant Woodland, Section 21(1)(b) of the ORMCP was applied in reference to respecting minimum vegetation protection zones to KNHF and KHF where possible, as the buffers to wetland and watercourse and fish habitat occur within the feature. Section 21(3) and (4) relates to the applicable official plan and zoning by-law designating the land as residential.

As it relates to Section 7(b), through detailed assessment of the property in preparation of the NHE, including modification to the building envelopes to reduce impact, it is our professional opinion that the applications have demonstrated to the extent possible that the use, erection and location will not adversely affect the ecological integrity of the Plan Area, which is the applicable test..

Other Comments:

2. *pg. 3 s.2.2.2 Amphibian Surveys: we note that there were no salamander surveys undertaken, and no explanation regarding the presence/absence of potential habitat. This was discussed at the site meeting and it was agreed there was no habitat for ambystomid salamanders, which are the only ones that might have policy implications. It is likely that there are red-backed salamanders present, but they are common and widespread and would not pose constraint. We request that this be confirmed in writing.*

Beacon Response:

As discussed during the site meeting, the presence of potential habitat for ambystomid salamanders is absent on the site. We agree that there is potential habitat for Eastern Red-back Salamander (*Plethodon cinereus*) to occur, and although targeted surveys were not completed, none were identified beneath natural cover that was overturned during field investigations.

3. *pg. 5, s.3.1 PPS: This section notes that the identification of natural heritage features is the responsibility of the municipality, other than wetlands (which could be the municipality or MNR), habitat of threatened or endangered species, and fish habitat. The list of exceptions should include ANSIs as well. The statement is misleading. Although planning authorities, including municipalities, have the ultimate responsibility for determining significant woodland, significant valleyland and significant wildlife habitat, they may require development proponents to collect the appropriate information and data, and undertake analyses through an EIS or NHE, to determine significance (e.g., see section 9.4 of the NHRM). Thus the responsibility of planning authorities as noted in the NHRM does not absolve applicants for development from collecting data and determining the significance of features through an EIS or NHE, unless it is explicitly excluded through pre-consultation scoping. Although this does not affect this application directly, we suggest that if the report is revised, the wording be refined to more accurately reflect responsibilities, or omitted entirely.*

Beacon Response:

Revision to the report will be completed to refine this statement, which was provided for general information purposes. In preparation of the NHE, appropriate seasonal field studies were complete to identify KNHF and KHF as outlined in the ORMCP.

4. *Also, regarding the last paragraph in 3.1, there is the possibility of Significant Wildlife Habitat (SWH) on the site. The LSRCA comments also note candidate SWH (comment 1, letter to the Town June 19 2017). The NHE should address the potential for Significant Wildlife Habitat and evaluate it with reference to the several categories of SWH.*

Beacon Response:

The potential for Significant Wildlife Habitat (SWH) would relate to nesting habitat of Snapping Turtle and breeding habitat for birds of Special Concern. A response was provided to LSRCA, dated May 18, 2018 to address comments received April 5, 2018. Correspondence received from LSRCA has indicated satisfaction with the applications (**Appendix A**).

5. *pg. 6-7, s. 3.2 ORMCP: The paragraph addressing section 32 (1) of the ORMCP identifies just two requirements of a NHE, however, there are six requirements, albeit not all are relevant to this application. In addition to (a) and (b) provided in the NHE, sub-sections (d) and (f), and possibly (e), may also be relevant (in part depending on the presence of SWH). Regardless, the NHE should not leave the impression that there are only two requirements for an NHE.*

Likewise, for Hydrological Evaluations, only two of the three requirements are noted in the report, all of which should be identified.

Beacon Response:

As it relates to Section 23 (1) of the ORMCP, we are in agreement that the above sub-sections apply. With sub-section (d) relating to determination of minimum vegetation protection zones, and sub-section (f), which applies to compliance with the requirements of the federal Department of Fisheries and Oceans (DFO), as there is fish habitat onsite. We also note that self-assessment screening for authorization has been completed, and it was determined that further consultation with DFO is not required. Revision to text of the NHE will be completed to reflect this.

In reference to Hydrologic Evaluations, text will be updated to reflect the policy noted in the ORMCP. Based on the proposed development of a single detached residence per lot, with the area of impervious surface meeting the requirements of the ORMCP, and anticipated use of mitigation measures to include downspouts directed to vegetated areas, it is our professional opinion that no further investigations are required.

6. *The section on Landform Conservation Areas notes that the two properties are within a Category 2 Landform Conservation Area and identifies three requirements that need to be adhered to. The text does not indicate whether a Landform Conservation Plan was prepared, and we are unaware of one for these applications. The ORMCP s. 30 (9) requires a Landform Conservation Plan be prepared for an application for major development. Section 5 of the NHE indicates that the proposed building envelopes are 480 m² for 672 Henderson Drive, and 916 m² for 684 Henderson Drive. Major development includes buildings with a ground floor area of 500 m² or greater. Thus if the actual building footprint for 684 Henderson Drive exceeds this, it would be deemed a major development and will require a Landform Conservation Plan. We note a very similar issue related to the potential building footprints is raised in Section 5 of the NHE, where it is noted that if the footprint is 500 m² or greater it deemed to be major development under the LSPP and will have repercussions for stormwater management. We suggest that the easiest way to avoid this additional work is to agree to a condition that would limit the building footprints to less than 500 m².*

Beacon Response:

Noted. The building footprint for each property has not been defined at this time.

7. *pg. 8, section 3.4 York Official Plan. This section notes that subject properties are immediately north and outside of the Regional Greenlands. From a policy perspective, it is relevant that the properties are within 120 m of the Regional Greenlands. Section 2.1.9 of the Regional OP requires a demonstration of no negative impact through an EIS, as well as pre-consultation and a terms of reference for the EIS to be submitted early in the process. We are unaware of a pre-consultation or early submission of a proposed EIS (or NHE). We suggest that if any pre-consultation with the Region was undertaken it be identified, or if consultation with the Town was deemed to be sufficient then this be explained.*

Beacon Response:

The following response has been provided by the project planners, Weston Consulting:

“Early in the process, prior to the initial submission of the Minor Variance Applications, consultation was conducted with the Region. A meeting to discuss the current proposal of one single detached dwelling per lot was held with the Region on January 13th, 2016. The Region indicated that the applicant needed to meet the applicable Regional policies, but never provided comments in reference to the preparation for the EIS nor advised that a pre-consultation and a terms of reference for the EIS was required. Additionally, the Region of York was circulated on the initial submission of the submitted Minor Variance Applications and stated that they had no objections (see **Appendix B**).”

8. pg. 13, Section 4.1 Aquatic Resources. This section indicates that there was no sampling of the aquatic community as there was sufficient existing data. However, these data are neither presented nor discussed, so their sufficiency cannot be assessed. We recommend that the data be discussed to better characterize the aquatic resources, and identify how they will be protected.

Beacon Response:

The NHE included review of the East Holland River Subwatershed study (LSRCA 2010), which identifies the watercourse as a coldwater tributary to the East Holland River. Seasonal field observations included visual assessment of the watercourse and surrounding area, which did not identify the presence of ephemeral drainage features as evaluated through application of the Credit Valley Conservation Authority (CVC) and Toronto and Region Conservation Authority (TRCA) document entitled *Evaluation, Classification and Management of Headwater Drainage Features Guidelines*, which was approved July 2013 (Finalized January 2014), as referenced in the NHE.

The valley corridor was observed to be well vegetated, with a dominance of Spotted Jewelweed (*Impatiens capensis*) along the valley floor, indicating potential for groundwater discharge, and an area of cattail marsh to the south.

As indicated in the NHE, no sampling of the aquatic community was completed during field investigations, as sufficient data was indicated to be available, and the development envelopes are not proposed to occur within 30 m of fish habitat, and within 30 m of the meander belt of an intermittent or permanent watercourse (with exception to driveway access of 672 Henderson Drive), consistent with ORMCP policy. This approach as presented in the NHE was found to be acceptable by LSRCA.

Review of MNRF Aquatic Resource Area fisheries data identifies this watercourse within Fisheries Management Zone 16. The following species are identified within the subject reach through review of historic records, including Provincial Ranking (SRank) and Species at Risk Ontario (SARO) status.

Common Name	Scientific Name	OMNR Species Code	Thermal Regime and Spawning Season	Conservation Status	
				Provincial Rank (SRank)*	SARO Status
White Sucker	<i>Catostomus commersonii</i>	163	Coolwater April-June	S5	None
Northern Redbelly Dace	<i>Chrosomus eos</i>	182	Coolwater May-July	S5	None
Mottled Sculpin	<i>Cottus bairdii</i>	381	Coolwater April-May	S5	None
Slimy Sculpin	<i>Cottus cognatus</i>	382	Coldwater April-May	S5	None
Brook Stickleback	<i>Culaea inconstans</i>	281	Coolwater May-July	S5	None

Common Name	Scientific Name	OMNR Species Code	Thermal Regime and Spawning Season	Conservation Status	
				Provincial Rank (SRank)*	SARO Status
Pumpkinseed	<i>Lepomis gibbosus</i>	313	Warmwater May-August	S5	None
Common Shiner	<i>Luxilus cornutus</i>	198	Coolwater May-June	S5	None
Largemouth Bass	<i>Micropterus salmoides</i>	194	Warmwater May-June	S5	None
Golden Shiner	<i>Notemigonus crysoleucas</i>	317	Coolwater June-August	S5	None
Bluntnose Minnow	<i>Pimephales notatus</i>	208	Warmwater June-August	S5	Not at Risk
Fathead Minnow	<i>Pimephales promelas</i>	209	Warmwater May-August	S5	None
Eastern Blacknose Dace	<i>Rhinichthys atratulus</i>	210	Coolwater May-June	SNR	None
Longnose Dace	<i>Rhinichthys cataractae</i>	211	Coolwater May-July	S5	None
Western Blacknose Dace	<i>Rhinichthys obtusus</i>	630	Coolwater May-June	S5	None
Brook Trout	<i>Salvelinus fontinalis</i>	080	Coldwater Sept-Nov	S5	None
Creek Chub	<i>Semotilus atromaculatus</i>	212	Coolwater May-June	S5	None

*SRank: S5 relates to a secure provincial ranking of conservation status, while SNR is an unranked species.
Source: Ontario Freshwater Fishes Life History Database, 2002

The majority of species are listed as cool or coldwater, which would be expected given the possible groundwater contribution and classification as a coldwater tributary. The presence of warmwater species may be attributed to thermal input and migration of species from the online pond located within the Case Woodlot south of the subject properties. The inclusion of Eastern Blacknose Dace in historic records, which has an Ontario distribution within the St. Lawrence River, was likely misidentified in place of Western Blacknose Dace, which is common within southern Ontario's Great Lakes basin.

Through review of historic data and consultation with MNRF, aquatic species at risk were not identified within the study area. This includes records of the Provincially Endangered Redside Dace (*Clinostomus elongatus*), of which there are no historic records for the study area, nor has the subject watercourse and surrounding area been identified by MNRF as regulated habitat for the species.

As there is no instream work proposed, and development is indicated to occur greater than 30 m from the watercourse as required for fish habitat within the ORMCP, no negative effects are anticipated, provided mitigation measures outlined in the NHE are implemented.

9. *We note that the meander belt analysis was not described, but that it was requested from the LSRCA (Appendix B, email from Julianna MacDonald [Beacon] to Shauna Fernandes [LSRCA] July 20, 2017). Since the meander belt and associated 30 m VPZ is illustrated on Figure 3, we assume the analysis was provided. However, the source of the meander belt analysis and whether LSRCA is satisfied with it is not identified in the report. Given that the location of the 30 m VPZ is important as part of demonstrating that ORMCP 7 (b) is adequately addressed, and that the limit of the preliminary grading extends right to the edge of the 30 m VPZ, the Town will require confidence that the meander belt is sufficiently accurate to claim there are no encroachments into it, and that the LSRCA is satisfied with it.*

Beacon Response:

The meander belt study was received from LSRCA. Correspondence received from LSRCA has indicated satisfaction with the applications (**Appendix A**).

10. *pg. 22, Development Proposal. The NHE notes that if either building footprint is over 500 m², it would be considered “major development” as defined in the ORMCP, and additional stormwater management will be required. We note that as the building envelope for 672 Henderson Drive is less than 500 m² the footprint cannot exceed this area and thus this concern only applies to 684 Henderson Drive. As noted above, if the eventual building proposed meets the definition of Major development, a Landform Conservation Plan will be required per ORMCP 30(9).*

Beacon Response:

Agreed, as it relates to Section 30(8) and (9) of the ORMCP for 684 Henderson Drive.

11. *pg. 24, Impact Assessment. Figure 3 shows the relationship between the meander belt +30 m VPZ and the proposed development. We note that the driveway for 684 Henderson Drive comes to the edge of the meander belt plus 30 m, but also that the drive was re-aligned to preserve Bat Habitat. We support the proposed alignment because it creates the least impact to bat habitat, even if it does bring the edge of the area to be disturbed up the edge of the VPZ. We note the encroachment into the VPZ for the entrance drive for 672 Henderson Drive, and suggest that an effort be made to eliminate, or at least minimize the encroachment when the design of the*

proposed residence is undertaken. If the alignment as shown on Figure 3 represents the minimum impact to the VPZ, then it is acceptable with respect to natural heritage.

Beacon Response:

It is our understanding that the alignment of the driveway for 672 Henderson Drive is situated as a result of engineering design considerations. This does result in encroachment in to the MVPZ of the meaderbelt + 30 m, which has been limited to the extent possible. Should there be additional opportunity to further limit the extent of impact through detailed design, this would be supported.

12. pg. 25, Bats. We note that in the refined plan the areas that the building envelopes were extended into and the grading areas have not been surveyed for snag trees. We suggest that this be done so it can inform the location and extent of the building footprint for the final house design, with the aim of avoiding the removal of any additional snag trees.

Beacon Response:

Agreed. Additional surveys to identify snag trees will be completed during seasonally appropriate conditions for areas that were not previously surveyed. MNRF has been notified, and will be provided with the results upon completion.

13. pg 29. Tree Inventory and Preservation Plan. The NHE correctly identifies the need for a Tree Inventory and Preservation Plan, including compensation consistent with the Town's requirements, but does not describe the compensation requirements. However, owing to the number of mature trees that will need to be removed to accommodate the proposal, and that there is virtually no opportunity for compensation planting on-site, we suggest that the repercussions of this requirement be described. This would not have to approximate the number of compensation trees, but at least provide the compensation requirements for mature woodland, and identify how the compensation could be achieved (e.g., identify if the Town has locations where off-site compensation can be achieved).

Beacon Response:

The Town of Aurora has a Tree and Shrub Compensation Procedure (Section 7.0) within the Town's Tree Removal/Pruning and Compensation Policy (2015) that outlines compensation requirements for trees located in landscaped settings, meadows, and woodlots.

As per Section 7.2, trees within woodlots are valued based on the cost to replace them with the same species (if native), using nursery stock sizes and quantities listed below:

Subject Tree Diameter at Breast Height (cm)	Replacement Size of Tree Nursery Stock	Quantity of nursery stock required to replace 1 tree
5 - 10	5 gal pots (1.0 - 3.0 m tall)	1
11 - 20	150 cm tall wire basket (conifer), 45 mm caliper (hardwood)	2
> 20	175 - 200 cm tall wire basket (conifer), 60 mm caliper (hardwood)	3

The installed cost shall be 2.5 x the cost of nursery stock. The value for trees that are assessed as being in fair condition or poor condition is calculated as 0.6 times or 0.2 times the replacement cost of a healthy specimen, respectively. An additional species rating criteria shall be applied based on the latest ISA Ontario Species Rating list.

A sampling procedure may be used to estimate the tree inventory within each of the following DBH classes (5 – 10 cm, 11 – 20 cm, > 20 cm) in the area of interest. A fixed area plot sampling procedure is recommended which samples at least 5% of the area of interest. The plots must be located in areas which are representative of the vegetation communities and their locations illustrated on a map.

As per Section 7.4 of the Tree Removal/Pruning and Compensation Policy (2015), where it has been determined by the Town that compensation tree planting cannot be accommodated on the lands due to space limitations, the applicant/owner will be required to pay fees as determined through compensation calculations (noted above). All funds will then be applied to the purchase and planting of trees by the Town, at an alternative site within the Town of Aurora at the discretion of the Town.

Given that the subject properties are occupied entirely by woodland, it is likely that fees would be provided to the Town as determined through compensation calculations.

14. pg. 29. Policy Conformity. The second paragraph in this section notes that the KNHFs and KHF's "... including significant woodland..." have been "...identified and protected..." We note that portions of the significant woodland will be removed, and thus it is not protected as suggested by the text. We recognize that this proposal will unavoidably negatively impact the Significant Woodland, but that given this does not preclude the development conforming with the relevant policies.

Beacon Response:

The NHE will be refined to indicate that KNHFs, including significant woodland, that occur beyond the indicated building envelopes will be protected, however there will be direct impact through removal of significant woodland within the building envelope. It is anticipated through detail design that tree removal within the proposed building envelopes be minimized to the extent possible to further reduce impacts and would be set out in a detailed Tree Inventory based on the precise building footprints, once confirmed.

If there are any other questions or further discussion required please do not hesitate to contact the undersigned at (905) 201-7622 ext. 225 (MacDonald).

Report prepared by:
Beacon Environmental



Sevan Torus, B.Sc. (Hons)
Ecologist/ISA Certified Arborist ON-1924A

Report prepared and reviewed by:
Beacon Environmental



Julianna MacDonald, B.Sc.(Hons), MES (PI)
Senior Planning Ecologist

Report reviewed by:
Beacon Environmental



Brian E. Henshaw
Principal

Attach.

Appendix A – LSRCA Correspondence
Appendix B – York Region Correspondence

Appendix A

LSRCA Correspondence



Sent by E-mail: AGreco@aurora.ca

August 3, 2018

File No.: MV-2017-16
IMS No.: PVOC1881

Antonio Greco
Secretary-Treasurer
Committee of Adjustment
Corporation of the Town of Aurora
100 John West Way, Box 1000
Aurora, ON L4G 6J1

Dear Mr. Greco:

RE: Application for Minor Variance
672 and 684 Henderson Drive, Aurora Ontario

Thank you for circulating the re-submission documents for the captioned application to the Lake Simcoe Region Conservation Authority (LSRCA) for review and comment. We have reviewed the latest submission and confirm that our comments have been addressed. On this basis, it is recommended that any approval of this application be subject to the following conditions:

1. A restrictive covenant shall be registered on title for both properties to ensure that the remaining natural heritage features be protected in perpetuity.
2. An Edge Management Plan for the boundary of the proposed woodland removal areas shall be prepared to the satisfaction of the LSRCA. A cedar rail / natural living fence will be required to delineate the development boundary.
3. A Restoration Plan shall be prepared to the satisfaction of the LSRCA.
4. A detailed grading plan shall be prepared to the satisfaction of the LSRCA and the Town which demonstrates the use of retaining walls as a means to reduce the impacts associated with the required grading.

Please note: a permit from the LSRCA will be required prior to issuance of municipal approvals for any site alteration or development on the part of these lands that is within an area governed by Ontario Regulation 179/06 under the *Conservation Authorities Act*. Permit requirements may require the preparation of additional technical studies.

Should you have any questions concerning the above, please contact the undersigned. Please advise us of the Committee's decision in this matter.

Sincerely,

A handwritten signature in blue ink, appearing to read 'MB', with a horizontal line extending to the right and a vertical line dropping down from the end of that line.

Melinda Bessey, MSc, MCIP, RPP
Development Planner

c. Jenna Thibault, Weston Consulting

S:\Planning and Development Services\Planning Services\Planning Act\Aurora\20619_672 and 684 Henderson Drive\Planning\8-3-2018 PVOC1881 672 and 684 Henderson Dr Conditions.docx

Appendix B

York Region Correspondence

Leung, Justin

From: Hurst, Gabrielle <Gabrielle.Hurst@york.ca>
Sent: Tuesday, April 25, 2017 3:20 PM
To: Leung, Justin
Subject: FW: May 13 2017 - Minor Variance Applications - Committee of Adjustment, Aurora
Attachments: MV-2017-15 and MV-2017-16 joint application package.pdf; MV-2017-17 application package.pdf; MV-2017-18 application package.pdf; MV-2017-11 application package.pdf; MV-2017-12 application package.pdf; MV-2017-13 application package.pdf; MV-2017-14 application package.pdf

Good Afternoon Justin,

The Regional Municipality of York has completed its review of the following Minor Variance application and has no objection:

- 122 & 32 Wells Street
- 145 Industrial Parkway South
- 250 Don Hillock Drive
- 672 & 684 Henderson Drive
- 212 Earl Stewart Drive
- 155 Edward Street

Regards,

Gabrielle Hurst MCIP. RPP. C.Tech | Programs and Process Improvement Section | Planning and Economic Development Branch | Corporate Services

The Regional Municipality of York | 17250 Yonge Street | Newmarket, ON L3Y 6Z1
O 1-877-464-9675 ext. 71538 | gabrielle.hurst@york.ca | www.york.ca Our Values: *Integrity, Commitment, Accountability, Respect, Excellence*



From: JLeung@aurora.ca [<mailto:JLeung@aurora.ca>]
Sent: Monday, April 24, 2017 10:56 AM
To: jmcdonald@cyfs.ca; Development Services; MRamunno@aurora.ca; gletman@aurora.ca; jtree@aurora.ca; STienkamp@aurora.ca; ABazar@aurora.ca; KSethi@aurora.ca; jvanscheyndel@aurora.ca; AMihail@aurora.ca; PPalombi@aurora.ca
Subject: April 13 Committee of Adjustment Application packages

In accordance with Planning and Building Services electronic circulation procedures, attached are the following Committee of Adjustment (COA) Decision forms heard at the April 13 COA meeting:

C-2017-03- Cwenar-Worthman - 19-21 Machell Avenue
C-2017-04 - Saadat - 36 Mark Street
C-2017-05 - Watters - 24 & 26 Bailey Crescent
MV-2017-11 - Lewis - 122 Wells Street
MV-2017-12 - Momot - 32 Wells Street
MV-2017-13 - Aurora Investments Inc - 145 Industrial Parkway South, Unit 16 & 17
MV-2017-14 - Gineve Inc - 250 Don Hillock Drive, Unit 1

MV-2017-15 - Stanek - 672 Henderson Drive
MV-2017-16 - Losa Developments Inc - 684 Henderson Drive
MV-2017-17 - 212 Earl Stewart Drive Inc - 212 Earl Stewart Drive, Unit 5
MV-2017-18 - Lorr Investments in Trust - 155 Edward Street, Unit 1

Justin Leung
Secretary-Treasurer
Committee of Adjustment/Planning Technician

Planning & Building Services
Development Planning Division
Committee of Adjustment Section
Town of Aurora
100 John West Way, Box 1000
Aurora, Ontario L4G 6J1
Phone: 905-727-3123 ext. 4223
Fax: 905-726-4736
jleung@aurora.ca
www.aurora.ca

From: Mirek Sharp <msharp@nsenvironmental.com>
Sent: October 10, 2018 1:14 PM
To: Julianna MacDonald
Cc: Ryan Guetter (rguetter@westonconsulting.com); 'Jenna Thibault'
Subject: RE: 672 and 684 Henderson Drive, Aurora

Thanks Julianna

From: Julianna MacDonald
Sent: October-10-18 12:44 PM
To: Mirek Sharp
Cc: Ryan Guetter (rguetter@westonconsulting.com); 'Jenna Thibault'
Subject: 672 and 684 Henderson Drive, Aurora

Hi Mirek,

Further to our conversation yesterday, this is to confirm that response to your Peer Review comments provided on May 24, 2018 and an additional comment from September 20, 2018 (attached) to address Landform Conservation will be included in a revised/updated NHE.

Thank you,
Julianna

Julianna MacDonald, B.Sc., MES {PI}/ Senior Planning Ecologist
BEACON ENVIRONMENTAL
80 Main Street North, Markham, ON L3P 1X5
T1 905.201.7622 x225 F) 905.201.0639 C) 416.670.9387
www.beaconenviro.com

Vacation Alert: October 19th (afternoon) - 29th inclusive,

Appendix D

List of Flora

Appendix D

List of Flora

Family Name	Scientific Name	Common Name	Origin	COSEWIC (Sep 2007)	COSSARO (Sep 2009)	S- RANK (2016)	YORK (Varga 2005)	GTA (Varga 2005)	ORM (Varga 2005)	ORM List (MNR ORMCP T.P. #6)
Aceraceae	<i>Acer negundo</i>	Manitoba Maple	N			S5				
Aceraceae	<i>Acer rubrum</i>	Red Maple	N			S5				
Aceraceae	<i>Acer saccharum</i> var. <i>saccharum</i>	Sugar Maple	N			S5				
Aceraceae	<i>Acer spicatum</i>	Mountain Maple	N			S5				
Anacardiaceae	<i>Rhus hirta</i>	Staghorn Sumac	N			S5				
Anacardiaceae	<i>Toxicodendron radicans</i> ssp. <i>negundo</i>	Poison Ivy	N			S5				
Apiaceae	<i>Aegopodium podagraria</i>	Goutweed	I			SNA				
Apocynaceae	<i>Vinca minor</i>	Periwinkle	I			SNA				
Araceae	<i>Arisaema triphyllum</i> ssp. <i>triphyllum</i>	Jack-in-the-pulpit	N			S5				
Aristolochiaceae	<i>Asarum canadense</i>	Wild Ginger	N			S5				
Asclepiadaceae	<i>Asclepias syriaca</i>	Common Milkweed	N			S5				
Asteraceae	<i>Arctium lappa</i>	Greater Burdock	I			SNA				
Asteraceae	<i>Arctium minus</i>	Lesser Burdock	I			SNA				
Asteraceae	<i>Cirsium arvense</i>	Canada Thistle	I			SNA				
Asteraceae	<i>Prenanthes altissima</i>	Tall Rattlesnake-root	N			S5				
Asteraceae	<i>Solidago canadensis</i>	Canada Goldenrod	N			S5				
Asteraceae	<i>Solidago flexicaulis</i>	Zig-zag Goldenrod	N			S5				
Asteraceae	<i>Tussilago farfara</i>	Colt's Foot	I			SNA				
Balsaminaceae	<i>Impatiens capensis</i>	Spotted Jewelweed	N			S5				
Berberidaceae	<i>Caulophyllum giganteum</i>	Blue Cohosh	N			S5				
Betulaceae	<i>Betula alleghaniensis</i>	Yellow Birch	N			S5				

Family Name	Scientific Name	Common Name	Origin	COSEWIC (Sep 2007)	COSSARO (Sep 2009)	S- RANK (2016)	YORK (Varga 2005)	GTA (Varga 2005)	ORM (Varga 2005)	ORM List (MNR ORMCP T.P. #6)
Betulaceae	<i>Betula papyrifera</i>	White Birch	N			S5				
Betulaceae	<i>Ostrya virginiana</i>	Ironwood	N			S5				
Brassicaceae	<i>Alliaria petiolata</i>	Garlic Mustard	I			SNA				
Brassicaceae	<i>Hesperis matronalis</i>	Dame's Rocket	I			SNA				
Caprifoliaceae	<i>Lonicera tatarica</i>	Tartarian Honeysuckle	I			SNA				
Caprifoliaceae	<i>Sambucus racemosa</i> var. <i>racemosa</i>	Red-berried Elder	N			S5				
Cornaceae	<i>Cornus alternifolia</i>	Alternate-leaf Dogwood	N			S5				
Cornaceae	<i>Cornus sericea</i> ssp. <i>sericea</i>	Red-osier Dogwood	N			S5				
Cupressaceae	<i>Thuja occidentalis</i>	Eastern White Cedar	N			S5				
Cyperaceae	<i>Carex radiata</i>	Stellate Sedge	N			S5				
Dryopteridaceae	<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	N			S5				
Dryopteridaceae	<i>Dryopteris intermedia</i>	Evergreen Wood Fern	N			S5				
Dryopteridaceae	<i>Onoclea sensibilis</i>	Sensitive Fern	N			S5				
Dryopteridaceae	<i>Polystichum acrostichoides</i>	Christmas Fern	N			S5				
Fabaceae	<i>Securigera varia</i>	Purple Crown Vetch	I			SNA				
Fagaceae	<i>Fagus grandifolia</i>	American Beech	N			S5				
Fagaceae	<i>Quercus rubra</i>	Red Oak	N			S5				
Geraniaceae	<i>Geranium robertianum</i>	Herb-robert	I			SNA				
Grossulariaceae	<i>Ribes rubrum</i>	Northern Red Currant	I			SNA				
Hydrophyllaceae	<i>Hydrophyllum virginianum</i>	Virginia Waterleaf	N			S5				
Juglandaceae	<i>Carya cordiformis</i>	Bitternut Hickory	N			S5				
Juglandaceae	<i>Juglans nigra</i>	Black Walnut	N			S4	R			R
Liliaceae	<i>Maianthemum canadense</i>	Canada Mayflower	N			S5				
Liliaceae	<i>Maianthemum racemosum</i> ssp. <i>racemosum</i>	False Solomon's Seal	N			S5				
Liliaceae	<i>Maianthemum stellatum</i>	Star-flowered Solomon's Seal	N			S5				

Family Name	Scientific Name	Common Name	Origin	COSEWIC (Sep 2007)	COSSARO (Sep 2009)	S- RANK (2016)	YORK (Varga 2005)	GTA (Varga 2005)	ORM (Varga 2005)	ORM List (MNR ORMCP T.P. #6)
Liliaceae	<i>Streptopus lanceolatus</i> var. <i>roseus</i>	Rosy Twisted-stalk	N			S5				
Liliaceae	<i>Trillium erectum</i>	Red Trillium	N			S5				
Liliaceae	<i>Trillium grandiflorum</i>	White Trillium	N			S5				
Oleaceae	<i>Fraxinus americana</i>	White Ash	N			S5				
Oleaceae	<i>Fraxinus pennsylvanica</i>	Green Ash	N			S5				
Onagraceae	<i>Circaea lutetiana</i> ssp. <i>canadensis</i>	Enchanter's Nightshade	N			S5				
Orchidaceae	<i>Epipactis helleborine</i>	Eastern Helleborine	I			SNA				
Papaveraceae	<i>Sanguinaria canadensis</i>	Bloodroot	N			S5				
Pinaceae	<i>Tsuga canadensis</i>	Eastern Hemlock	N			S5				
Ranunculaceae	<i>Actaea pachypoda</i>	White Baneberry	N			S5				
Ranunculaceae	<i>Actaea rubra</i>	Red Baneberry	N			S5				
Ranunculaceae	<i>Anemone cylindrica</i>	Long-fruited Anemone	N			S4	R8	U	U	
Ranunculaceae	<i>Thalictrum dioicum</i>	Early Meadowrue	N			S5				
Rhamnaceae	<i>Rhamnus cathartica</i>	Common Buckthorn	I			SNA				
Rosaceae	<i>Prunus serotina</i>	Black Cherry	N			S5				
Rosaceae	<i>Prunus virginiana</i> var. <i>virginiana</i>	Choke Cherry	N			S5				
Rosaceae	<i>Rubus odoratus</i>	Flowering Raspberry	N			S5				
Rosaceae	<i>Sorbus aucuparia</i>	European Mountain-ash	I			SNA				
Rubiaceae	<i>Galium</i> sp.	Bedstraw Species								
Salicaceae	<i>Populus tremuloides</i>	Trembling Aspen	N			S5				
Solanaceae	<i>Solanum dulcamara</i>	Bittersweet Nightshade	I			SNA				
Taxaceae	<i>Taxus canadensis</i>	Canadian Yew	N			S5				
Tiliaceae	<i>Tilia americana</i>	American Basswood	N			S5				
Typhaceae	<i>Typha angustifolia</i>	Narrow-leaved Cattail	N			S5				
Vitaceae	<i>Vitis riparia</i>	Riverbank Grape	N			S5				

Provincial S-Rank:

S4 Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 Secure—Common, widespread, and abundant.

SNA Not Applicable - A conservation status rank is not applicable because the species is not a suitable target for conservation activities (usually refers to non-native species)

York (Varga 2005) RANK:

R Rare

GTA (Varga 2005) RANK:

U Uncommon

ORM (Varga 2005) RANK:

U Uncommon

ORM List (MNR ORMCP Technical Paper #6)

R Listed as a rare vascular plant on the Oak Ridges Moraine, excluding provincially rare species.

Appendix E

Breeding Bird List

Appendix E

Breeding Bird List

Common Name	Scientific Name	Status				Number of Estimated Pairs or Territories
		National Species at Risk COSEWICa	Species at Risk in Ontario Listing a	Provincial breeding season SRANK ^b	Area-sensitive (OMNR)c	
Downy Woodpecker	<i>Picoides pubescens</i>			S5		1
Northern Flicker	<i>Colaptes auratus</i>			S4		1
Great Crested Flycatcher	<i>Myiarchus crinitus</i>			S4		1
Blue Jay	<i>Cyanocitta cristata</i>			S5		1
American Crow	<i>Corvus brachyrhynchos</i>			S5		1
Black-capped Chickadee	<i>Poecile atricapillus</i>			S5		1
White-breasted Nuthatch	<i>Sitta carolinensis</i>			S5	A	2
American Robin	<i>Turdus migratorius</i>			S5		2
Red-eyed Vireo	<i>Vireo olivaceus</i>			S5		2
Northern Cardinal	<i>Cardinalis cardinalis</i>			S5		4
Song Sparrow	<i>Melospiza melodia</i>			S5		2
Red-winged Blackbird	<i>Agelaius phoeniceus</i>			S4		2
Common Grackle	<i>Quiscalus quiscula</i>			S5		1
American Goldfinch	<i>Spinus tristis</i>			S5		1

Field Work Conducted On: May 29 & June 9, 2016

Number of Species: 14

Number of (provincial and national) Species at Risk: 0

Number of S1 to S3 Species: 0

Number of Forest Area-sensitive Species: 1 (White-breasted Nuthatch)

Number of Grassland Area-sensitive Species: 0

KEY

a COSEWIC = Committee on the Status of Endangered Wildlife in Canada

a Species at Risk in Ontario List (as applies to ESA) as designated by COSSARO (Committee on the Status of Species at Risk in Ontario)

END = Endangered, THR = Threatened, SC = Special Concern

^b SRANK (from Natural Heritage Information Centre) for breeding status if:

S1 (Critically Imperiled), S2 (Imperiled), S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure)

SNA (Not applicable...because the species is not a suitable target for conservation activities'; includes non-native species)

c Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide (Appendix G). 151 pp. plus appendices.