June 15, 2020

Springfield Construction Limited
240 Taylor Rd, Ancaster
L9G 1P5

Attention: Mr. Michael Corrado, President

RE: Environmental Impact Study for 4063 Upper Middle Road, Burlington, ON

At this time, Environmental Liability Management Inc. (ELM) is pleased to submit the updated Environmental Impact Study for the land located at 4063 Upper Middle Road in Burlington, Ontario to Springfield Construction Ltd. We appreciated the opportunity to work with your team, and ELM would be pleased to assist you on other projects. Please feel free to call my mobile line at: 226-606-1072.

The following document represents the Appendices for the Environmental Impact Study.

Sincerely,

Environmental Liability Management



Dean Fitzgerald, M.Sc., Ph.D.
Senior Ecologist
Director of Environmental Services
ELM Inc.
www.elminc.ca

APPENDIX A

SHORT RESUME FOR DEAN FITZGERALD

Dean G. Fitzgerald, B.Sc. (Hons.), M.Sc., Ph.D.

Senior Ecologist, Director of Environmental Services

Dean@elminc.ca; Mobile: 226-606-1072

FIELDS OF EXPERTISE

Expert witness for aquatic and terrestrial ecology
Species-At-Risk (SAR) studies for plants, animals (including myotis/bats) in Ontario
Environmental Assessments (EA)
Environmental Impact Statements (EIS)
Environmental Chemistry in Soil and Water
SAR Plans and Permits Revegetation Plans
Sample collections and analysis for sediment, plants, invertebrates, water, fish, other fauna in streams, rivers, lakes
Water crossing studies concerning SAR
Demolition and Brownfields Redevelopment
Risk Assessments for Aquatic and Terrestrial Sites
First Nation and Public Consultations
Statistical Analyses (linear, multivariate)

EDUCATION

- Natural Sciences and Engineering Research Council (NSERC) Industrial Fellowship 2006-07, EcoMetrix Incorporated.
- NSERC Ecology Fellowship 2001 – 02, Cornell University, New York, U.S.A.
- Cornell University, 2003 – 05 Additional research funded by government agencies.
- Ph.D. (Biology), University of Windsor, 2000; focus on lake ecology and fisheries biology.
- M.Sc. (Biology), University of Waterloo, 1996; focus on stream ecology and environmental management with chemistry and toxicology.
- Honours B.Sc. (Biology), Wilfrid Laurier University, 1994 with focus on ecology.

PROFESSIONAL HISTORY

- Director, ELM Inc., June 2018 – present
- Senior Ecologist, Premier Services, 2014 – 18
- Senior Ecologist, exp Services, 2010 – 14
- Intermediate Ecologist, EarthTech, 2008 – 10
- Intermediate Ecologist, Ecometrix, 2005 – 08
- Research Associate, Cornell, 2003 – present
- Visiting Research Fellow, Cornell, 2001 – 02

PROFESSIONAL SUMMARY

- Senior Ecologist with experience since 1990s.
- Completed ecological studies across Canada, in U.S.A., Chile, Panama, Peru, and Uruguay.
- Co-author of > 30 peer-reviewed contributions
- Completed > 85 presentations at conferences
- Mentored B.Sc., M.Sc., Ph.D. thesis students at five universities in Canada and U.S.A.
- Interact with scientists at Cornell University to conduct research on aquatic ecology.

SELECTED PROJECT EXPERIENCE

- External Science Advisor for Michipicoten First Nation, Ontario Canada.
- Sample collections and analysis of sediment, water, and fish in all Laurentian Great Lakes.
- Evaluation of impacts from hydrocarbon wells and hydrocarbon processing facilities.

SELECTED SCIENTIFIC CONTRIBUTIONS

Fitzgerald, D., P. Fox, and D. Wade. 2019. Eastern Poison Ivy: A Bioindicator of Natural and Anthropogenic Stress in Fields and Forests. *In press*: Vegetation - Natural and Cultivated Vegetation in a Changing World. Intech Open.

Fitzgerald, D., L. Rudstam, J. Casselman, B. Irwin, D. Fielder, T. Paoli, and C. Kraft. 2016. Fish community responses to environmental perturbations: comparisons of Oneida Lake with three bays of the Great Lakes. In: Oneida Lake: Long-term Dynamics of a Managed Ecosystem and its Fisheries. AFS, Bethesda, Maryland.

Fitzgerald, D., B. Zhu , E. Mills, L. Rudstam, S. Hoskins , D Haddad, N. Burtch , J. Colemen, and D. Crabtree. 2016. Dynamics of Aquatic Vegetation in Oneida Lake, 1915–2005: a Response to Ecosystem Change. In: Oneida Lake: Long-term Dynamics of a Managed Ecosystem and its Fisheries. AFS.

Zhu, B., D.G. **Fitzgerald**, C.M. Mayer, L.G. Rudstam, & E.L. Mills. 2006. Alteration of ecosystem function by zebra mussels in Oneida Lake: impacts on submerged macrophytes. *Ecosystems*, 9(6), 1017-1028.

APPENDIX B

CORRESPONDENCE WITH GOVERNMENT REPRESENTATIVES, 2012 TO 2016

From: Shirali, Nisha [mailto:Nisha.Shirali@burlington.ca]
Sent: March 8, 2013 1:29 PM
To: Lauren Cymbaly
Subject: RE: Request for input - Natural Heritage - 4063 Upper Middle Road, Burlington, Ontario

Hi Lauren,

The tributary on and to the north of the subject property is part of Sheldon Creek (Sheldon Creek Watershed). It is regulated by Conservation Halton. It is also part of the Regional Natural Heritage System as per the Region of Halton Official Plan Amendment 38, Map 1G. If you are not doing so already, I would recommend consulting with the environmental planners at Conservation Halton and the Region for additional information.

In terms of City information, please see below -

- The City has a layer for woodlands by the Ministry of Natural Resources, found on the Land Information Ontario website. The data description can be found here: http://publicdocs.mnr.gov.on.ca/view.asp?Document_ID=9012&Attachment_ID=16928. This layer shows a woodlot located on and to the north of the subject property which surrounds the tributary. The woodlot is possibly 5 ha in area according to my measurement. To determine whether this woodlot classifies as a significant woodland, an Environmental Impact Study would likely need to be done.
- Here are the relevant City Official Plan designations and zones for the subject property and surrounding area:
- In the City's Official Plan, the subject property and the surrounding woodland are designated low, medium and high density residential.
- In the City's Zoning By-law, the surrounding woodland and creek are part of the Open Space zone.

The City's OP can be accessed at http://cms.burlington.ca/Page846.aspx and the Zoning By-law can be accessed at http://cms.burlington.ca/zoning.htm.

Thanks and please let me know if you have any more questions.

Nisha Shirali, M.Pl., MCIP RPP
Environmental Planner
Planning and Building Department, City of Burlington
426 Brant Street, Burlington, ON L7R 3Z6
905.335-7600 x. 7536

From: Brenda Khes [mailto:bkhes@gspgroup.ca]
Sent: July 9, 2013 12:29 PM
To: mcorrado1@cogeco.ca
Cc: Lauren Cymbaly; joe@ashenhurstnouwens.com; Lorne Haverty (lornehaverty@gmail.com)
Subject: 4063 Upper Middle Road - Setback from top of bank

Michael

It is my understanding that when you met with Conservation Halton that they originally requested a 10m setback from the dripline and that they agreed to reduce the setback to 7.5 metres.

Lauren Cymbaly has completed an environmental report for you that is based on maintaining that 7.5 metre setback both above and below grade.

On the basis of your decision, Lorne can amend his drawings/design – and we can all complete and/or revise our respective reports on this basis.

I will wait for your decision.

Brenda

Brenda Khes, MCIP, RPP
Associate Planner

GSP Group Inc.
29 Rebecca Street, Suite 200
Hamilton ON L8R 1B3
(905)572.7477
c: 289.921.1875
www.gspgroup.ca

CORRESPONDENCE AND LETTER INVOLVING OMNRF REGARDING SPECIES-AT-RISK SCREENING

From: Fortini, Natosha (MNR) [mailto:Natosha.Fortini@ontario.ca]
Sent: August 21, 2014 1:58 PM
To: Dean Fitzgerald
Cc: Jefferis, Samantha (MNR)
Subject: RE: 4063 Upper Middle Road, Burlington, Ontario

Hello Dean,

A screening letter was never issued to Premier Environmental Services for this property. One was issued to exp Services. The screening letter is attached.

I have moved on to another position at the District and am no longer taking on SAR files. If you have any additional questions about this file or any other file (e.g. would like to request a screening, request a status update, or just have a general SAR/ESA inquiry), please contact the District by using our dedicated ESA inbox at esa.aurora@ontario.ca and a staff member will be happy to assist you.

Sincerely,

Natosha

Natosha Fortini
Fish and Wildlife Technical Specialist
Aurora District - OMNRF

From: Dean Fitzgerald [mailto:dfitzgerald@premiercorp.ca]
Sent: August 21, 2014 1:10 PM
To: Jefferis, Samantha (MNR)
Cc: Fortini, Natosha (MNR)
Subject: 4063 Upper Middle Road, Burlington, Ontario

August 21

Good Day Samantha and Natosha,

Hope you are having a fine day.

I am the new ecologist here at Premier Environmental Services. I interacted with Natosha when I was at exp Services earlier this year. This is why my name may seem familiar.

This note pertains to follow up work I am doing on a file here at Premier. At this time, we are writing up a study for 4063 Upper Middle Road that was started but not completed by Lauren Cymbally (she has moved on, and as I understand it, will be going back to school in September). The purpose of my email is that I would like to include a copy of the original screening letter issued for this site in an appendix of the report.

For context, I have copied the communications involving Lauren and Natosha from April - June 2013 below. I also included Samantha on this note because she shared other communications with Lauren after June 2013 regarding species-at-risk requests.

To be more specific, we only have a record of the communications for this site involving Natosha. The land owner also cannot find the screening letter. And if my memory serves, I think Natosha's role at MNR changed after July 1, 2013. So, I am thinking that perhaps someone else issued the screening letter after it was requested in June, 2013.

So, can you please re-issue a copy of the letter to myself and the landowner (Michael Corrado)?

I should also mention that Lauren completed extensive field surveys of the site in question during 2013 and did not document any vegetation or wildlife species-at-risk (SAR). It should also be noted that an MNR forester also attended the site during July 2013 and double checked and cleared the site for possible presence of Butternut as the Walnut growing near the creek there looked a bit odd and that was when Lauren requested an expert opinion from the MNR for that aspect. In addition, RJ Burnside completed the bird surveys and also did not find any evidence of SAR.

I look forward to reading your response.

Thanks in advance.
Dean F.

Dean Fitzgerald M.Sc., Ph.D.

Senior Ecologist
Premier Environmental Services Inc.
244 Montrose Street North, Unit 1 Upper
Cambridge, Ontario Canada N3H 2H7

From: Lauren Cymbaly
Sent: June 17, 2013 1:21 PM
To: 'Fortini, Natosha (MNR)'
Subject: RE: Request for SAR and Natural Heritage Information - 4063 Upper Middle Road, Burlington, Ontario - Owner's Authorization Letter

Hi Natosha,

I apologize for the delay, I didn't receive this letter until recently. Please see the attached authorization letter from the current owners of the property to obtain any SAR information relevant the study (EIA).

If you need anything else from us regarding this matter, please let me know.

Best regards,
Lauren

Lauren Cymbaly, B.E.S., Dip. ERR
Premier Environmental Services Inc.

Southern Region
Aurora District Office
50 Bloomington Road West
Aurora, ON L4G 0L8

Ontario

Ministry of Natural Resources | **Ministere des Richesses Naturelles**

April 30, 2013

Melissa Torchia
Environmental Scientist
exp Services Inc.
1595 Clark Blvd.
Brampton, ON L6T 4V1
905.793.9809 x 2335
melissa.torchia@exp.com

Re: MNR Preliminary Species at Risk Screening Letter
4063 Upper Middle Road – Proposed Condominium Development
City of Burlington, Regional Municipality of Halton

Dear Ms. Torchia,

In your email dated March 7, 2013 you requested information on natural heritage features and element occurrences occurring on or adjacent to the above mentioned location.

There are a number of Species at Risk recorded within the vicinity of your study area. We have records of Butternut, Chimney Swift, and Barn Swallow. Some of these species may receive protection under the *Endangered Species Act 2007* and thus, a permit may be required if the work you are proposing could cause harm to these species or their habitat. Please provide additional information on your proposal to our office, and we will assess it to determine whether a permit under the ESA 2007 is required for the works to proceed.

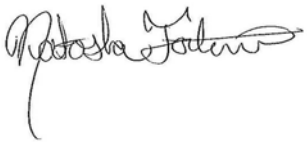
There are no natural heritage features recorded for your area.

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 NHIC/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 the NHIC and to our office. This will assist with updating our database.

If you have any questions or comments, please do not hesitate to contact me at 905.713.6483 or natosha.fortini@ontario.ca.

Sincerely,



Natosha Fortini
Assistant Species at Risk Biologist
Ontario Ministry of Natural Resources, Aurora District

CORRESPONDENCE REGARDING NEED TO SURVEY FOR BATS DURING 2015

From: Clark, Richard [mailto:Richard.Clark@halton.ca]
Sent: July 22, 2015 1:02 PM
To: Dean Fitzgerald <dfitzgerald@premiercorp.ca>
Subject: RE: Bats / Myotis

I haven't read the criteria schedule she's referencing…

Unless I'm missing something, my impression is that she's saying "adjacent lands" as in the area where development may be permitted subject to demonstrating that there will be negative impacts on adjacent natural heritage features and ecological functions. It's a study trigger area, not a no touch area. Since you're already doing an EIA, this shouldn't impact you—it's just one more natural heritage area for you to identify + discuss impacts/mitigation measures for and buffer appropriately if its determined to exist.

Richard

From: Dean Fitzgerald [mailto:dfitzgerald@premiercorp.ca]
Sent: Wednesday, July 22, 2015 12:53 PM
To: Clark, Richard
Subject: RE: Bats / Myotis

Hi Richard,

As a follow up on the last note, Premier is more than willing to inspect the trees on site for possible use by bats.

Given the history of this site and challenges with the tree drip line, I can say with 100% certainty that my clients will be mortified if they were to read an email that says a 120 m buffer along the creek valley is required due to possible Myotis presence in trees that are not being disturbed at all. If a 120 m buffer was a requirement of approval, it would kill the project.

Look forward to your guidance on this matter.

I am not going to update my client until your response comes through.

Thanks again for your help with this site. I absolutely thought it was going to be a straight forward infill project!

Later,
Dean F.

From: Lesley Matich [mailto:lmatich@hrca.on.ca]
Sent: July 22, 2015 12:41 PM
To: Dean Fitzgerald; Clark, Richard
Subject: RE: Bats / Myotis

Hi Richard and Dean,

I think the approach put forward below is reasonable.

I haven't been involved in this project, so I am not familiar with decisions being made regarding dripline buffers etc. so I do apologise if any of this has already been discussed. My only caution on this is with respect to the adjacent lands to the significant woodland/potential significant wildlife habitat (bat hibernacula)/potential species at risk habitat. The Natural Heritage Reference Manual indicates that adjacent lands to the above noted items is 120m, while the PPS Policy 2.1.8 speaks to development of the adjacent lands to those features identified in Policy 2.1.5. Provided that you are able to demonstrate that you are adhering to this section the PPS, then it should be ok. Perhaps you may need to add additional text to reflect this in the EIS or if required, further field studies. Again, having not been involved, these are just things I would be looking for to ensure no negative impact.

As a heads up, the MNRF as now finalized their Significant Wildlife Habitat Criteria Schedules. The 7E Criteria Schedule would be applicable for this site.

I hope that helps.
Lesley
Lesley Matich, H. B.Sc. (Env. Sci.)
Senior Terrestrial Planning Ecologist

Conservation Halton
2596 Britannia Road West, Burlington, ON L7P 0G3
905.336.1158 ext. 2323 | Fax 905.336.7014 | lmatich@hrca.on.ca
conservationhalton.ca

From: Dean Fitzgerald [mailto:dfitzgerald@premiercorp.ca]
Sent: July-17-15 10:05 AM
To: Lesley Matich; Clark, Richard
Subject: Bats / Myotis

Good Day Lesley,

Thanks for the quick feedback. The bats are an interesting but unfortunate situation. I am friends with a key fellow at US FWS in New York whom is co-leading this matter of white nose syndrome. This fellow did his PhD on cormorants and then transitioned from birds to bats.

On this side, for the Upper Middle Road site, the proposed development area does not contain any woodland ELC types you have listed below as possibly representing myotis habitat. We are talking about trees planted on a residential lawn that transition to flood plain forest along Shoreacres Creek. So, the land proposed for development is a cultural landscape that was former woodland. I will also note that the proposed development will not disturb any of the existing flood plain forest associated with Shoreacres Creek that is likely myotis habitat. Indeed, the buffer on the tree drip line along the creek identifies the proposed development will not disturb trees that are associated with the creek and thereby result in no disturbance of trees possibly used by myotis.

Here is the text from the draft EIS as it pertains to the ELC mapping:

Various information collected on-Site during 2013 and 2014 was used to designate these lands using the ELC framework. Specifically, a total of 39 herbaceous plant species were identified along with 20 woody shrubs and tree species representing 32 families on the manicured lawn and lands in proximity to the top-of-bank of Shoreacrese Creek. This information on plant diversity, plant distributions, soil profiles along with other features such as drainage on-Site resulted in the identification of two vegetation types. These are: low density residential with planted deciduous and coniferous trees (CVR_1) and in proximity to the top-of-bank, the flood plain forest along Shoreacres Creek classified as dry-fresh mixed woodlands ecosite (WOMM3; Figure 3).

I have also attached a PDF that displays the ELC map.

Going forward, this is what I suggest: that we inspect each tree that is sufficiently large for possible presence of a cavity. If the tree has a cavity, we will attempt to inspect it, to determine if bats could use the cavity. Then we will provide a list of each tree from the CVR_1 polygon with a comment on the presence/absence and size of the inspected cavity. Does this sound reasonable? In this context, I will also note that we have inspected all candidate trees in the past for cavities and most of the large trees have no cavities. When they are present, we noted the cavities were too small to allow for bats to enter. We did this activity last September. However, if you want us to include this type of tree-by-tree list, we will go back to the site next week and prepare this inventory.

Look forward to reading your response.

Until later,
Dean F.

From: Lesley Matich [mailto:lmatich@hrca.on.ca]
Sent: July 17, 2015 9:21 AM
To: Clark, Richard; Dean Fitzgerald
Subject: RE: Bats / Myotis

Good morning Richard and Dean,
I've asked the MNRF as recent as April of this year and I was told that they are currently working on survey protocols but that formal ones do not exist at this time. I was able to get some direction from them as to what they would be looking for now, which is below. It's not overly detailed but does provide some direction that might be able to help you. I was also referred to the Bat and Bat Habitat Guidelines for Wind Power projects (attached) for more information though it was noted that they are not requesting consultants conduct exit or acoustic surveys as they don't always confirm habitat use. Have a look at that, it might be of assistance.

So in the interim, the MNRF ask for the identification of cavity and snag trees (potential habitat) in appropriate ELC communities, and if present, they assume bats were present and mitigate for them. Below is some guidance on the identification of potential SAR bat habitat:

Use Ecological Land Classification (ELC) to determine the presence of candidate SAR bat habitats. As little brown myotis and northern myotis are known to form roosts in forests and swamps (Foster and Kurta, 1999), candidate SAR bat habitat includes the following ELC communities:

- Deciduous Forests (FOD)
- Mixedwood Forests (FOM)
- Coniferous Forests (FOC)
- Deciduous Swamp (SWD)
- Mixedwood Swamps(SWM)
- Coniferous Swamps (SWC)

In central and northern Ontario the following codes apply:

- G/B015-019 Very Shallow: Dry to Fresh: Mixedwood/hardwood
- G/B023-028 Very Shallow: Humid: Conifer/Mixedwood
- G/B039-043 Dry, Sandy: Hardwood/Mixedwood
- G/B054-059 Dry to Fresh: Coarse: Mixedwood/Hardwood
- G/B069-076 Moist, coarse:Mixedwood/Hardwood
- G/B087-092 Fresh, Clayey: Mixedwood/hardwood
- B103-108 Fresh, Silty to Fine Loamy: Mixedwood/Hardwood
- B118-125 Moist. Fine: Mixedwood/Hardwood
- B130-133: Swamps

In order to accurately address potential negative impacts and clearly identify maternity roost habitat, detailed mapping of snag/cavity trees within the ELC polygon is necessary.
Mapping habitat should consider the following:

- All surveys should be done during leaf-off
- All surveys should be conducted with binoculars
- Walk transects 20m apart throughout the entire polygon in open woodlands with good visibility
- Walk transects 5m apart throughout the entire polygon in woodlands with coniferous understory or poor visibility
- Plot all snags/cavity trees using a GPS and noting characteristics (refer to criteria in STEP 3)
- Conduct surveys only on days with no precipitation and not after recent snowfall

I hope this is helpful. Should you require more information, please feel free to contact me.
Kind regards,
Lesley

Lesley Matich, H. B.Sc. (Env. Sci.)
Senior Terrestrial Planning Ecologist

Conservation Halton
2596 Britannia Road West, Burlington, ON L7P 0G3
905.336.1158 ext. 2323 | Fax 905.336.7014 | lmatich@hrca.on.ca
conservationhalton.ca

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APPENDIX C

CORRESPONDENCE WITH GOVERNMENT REPRESENTATIVES, 2017 TO 2019

For this proposed development to be approved to proceed, it requires an amendment to the existing zoning of the Site. This approval requires the zoning to shift from Development to Residential High Density (RH5) and Open Space (O2) zones. The residential high density RH5 will be represented by an 8 story apartment building while the O2 zone will include all land along Shoreacres Creek. Additional consultations were completed from 2017 to 2019, following the review of the Premier (2017) EIS. It is prudent to note the Premier (2017) EIS was a revision of the Premier (2016) EIS. Since five years had passed since the original guidance was provided for the EIS, a follow-up meeting on-Site was scheduled with CH, COB, and ROH during August 2017 to discuss the current status of the vegetation and suitability of the 2015 tree drip line, given the frequent natural disturbances (e.g., ice and wind storms from 2014 to 2016; insect damage). After the 2017 meeting on-Site, a number of meetings were held at Burlington City Hall. The meetings included Melissa Morgan, COB, as well as ROH representatives Suzanne McInnes, Adam Huycke, and Richard Clark, and others. Letters with technical reviews were submitted by Halton and CH to guide technical revisions of the EIS. Copies of these letters are included at the end of this appendix. The letters identified the need to complete additional studies, as described below.

The chronology for the document submissions and responses for this Site includes:

- September 30, 2016 - Original EIS prepared by Premier;
- February 15, 2017 – Subsequent revised EIS prepared by Premier;
- September 27, 2017 – Slope Stability Assessment (Soil-Mat Engineers & Consultants Ltd.) was prepared. The stable top-of-bank is now shown on all drawings;
- January 17, 2018 - Premier prepared a letter responding to questions pertaining to the 2017 EIS and the TIPS;
- December 20, 2018 (revised to July 15, 2019) - A document titled Environmental Impact Summary was prepared by Environmental Liability Management Inc. (ELM);
- February 21, 2019 letter from ROH regarding technical review of application materials with additional questions regarding the development design; and
- November 12, 2019 letter from Halton staff to Burlington staff identifying additional questions and requesting a final version of the EIS with all relevant revisions, tables and a copy of the questions of interest and responses in one document.

The chronology of submissions related to the EIS include the following.

- June 18, 2015 – Woodland drip line flagged by Halton Planner and Halton Forester and Dr. Fitzgerald. The flag locations were verified in the field and the drip line was surveyed and is now shown on all drawings associated with the rezoning application.
- September 30, 2016 - Original EIS prepared by Premier; (Premier).
- February 15, 2017 - Subsequent EIS prepared by Premier;
- January 17, 2018 - Premier prepared a letter responding to questions pertaining to the 2017 EIS and the Tree Inventory and Preservation Study;
- December 20, 2018 (revised to July 15, 2019) - A document titled Environmental Impact Summary was prepared by ELM.
- November 12, 2019 – Letter from ROH and COB requesting, among other matters, a final version of the EIS that contains all the relevant revisions, tables and responses.

ENVIRONMENTAL IMPACT SUMMARY

December 20, 2018, updated July 15, 2019, and February 12, 2020

Dean Fitzgerald, M.Sc., Ph.D.
Director of Environmental Services
ELM Inc.
Cambridge, Ontario

Regarding: 4063 UPPER MIDDLE ROAD

PROPOSED ZONING BY-LAW AMENDMENT APPLICATION

FILE NUMBER 520-03-17

Springfield Construction Inc. (Springfield) retained Environmental Liability Management Inc. (ELM) to update the Environmental Impact Study (EIS) prepared for the proposed development at 4063 Upper Middle Road, Burlington ON (hereinafter, the Site)

This proposal pertains to land at 4063 Upper Middle Road in Burlington (hereinafter, the Site). The proponent submitted a proposal to redevelop the Site for an 8 storey, high density condominium apartment building after thorough public consultation including four public meetings. The subject site has a gross land area of 0.55 hectares (1.4 acres). Net of related setbacks and prescribed road widenings, the developable site area is 2,060 m^2 / 0.2 hectares (0. 4.94211 acres). The setbacks are required, as the development is adjacent to Significant Woodlands includes Shoreacres Creek.

Thirty-two (32) residential apartment units are proposed, serviced by 57 parking spaces, located at grade, 2nd level, and underground. The proposed building has a total gross area that includes Main Level Parking & Terraces of 7070 m^2 (76,100.8 Sq Ft) and Gross Floor including Basement Parking: 8,115.5 m^2 (87,354 Sq Ft).

A single full turns access to the site is proposed from Upper Middle Road. The access point aligns with Park City access on the south side of Upper Middle Road 16 bicycle parking spaces are provided (12 indoor and 4 outdoor).

The net density of the project is 188 units per hectare or 76 units per acre.

The following responses will show that the minimum 7.5m buffer will create adequate protection of the Significant Woodlands east of the developable area by proposing a number of steps to prevent damage to the slope, wildlife, woodlands and Shoreacres Creek.

A list of environmental management strategies are described for implementation for the proposed development, based on the findings from the Environmental Impact Study (EIS) completed by Premier Environmental Services. The application of the environmental management strategy is intended to reduce or eliminate the possible disturbance of the Significant Woodlands. This strategy will also actively enhance the vegetation buffer. This enhancement will represent a major improvement over the past land use that involved a single residential house surrounded by a manicured lawn, fruit trees, and flower beds. As reported in the Premier EIS, the past land use included regular vegetation cutting in the Significant Woodlands area. Also, the average distance between the Top of Bank and the Development Boundary in most areas is 10.0m. The area of east of the Top of Bank will initially have invasive plant species removed followed by plantings of native woody and herbaceous species leading to the enhancement of this vegetation community.

SUMMARY OF DRAWINGS AND STUDIES

Environmental Impact Summary references the following Drawings and Studies:

- thinkGiraffe A1 Site Statistics & Renderings, August 1 2019
- thinkGiraffe A2 Site Plan, August 1 2019
- thinkGiraffe A3 O2 Zone / Developable RH5 Boundary, August 1 2019
- thinkGiraffe A4 Elevations, August 1 2019
- thinkGiraffe A5 Building & Site Section, August 1 2019
- thinkGiraffe A6 Floor Plans, August 1 2019
- S.Llewellyn & Associates Ltd Preliminary Grading and Soil Erosion Plan, Aug 14 2019 REV
- S.Llewellyn & Associates Ltd Preliminary Site Servicing Plan, Aug 14 2019 REV
- S.Llewellyn & Associates Ltd Functional Servicing Report Aug 2019 REV
- L1 Reynolds & Associates Tree Inventory & Preservation Plan, Aug 31 2019 REV
- L2 Reynolds & Associates Landscape Master Plan, Aug 31 2019 REV
- L3 Reynolds & Associates Woodlot Planting Plan, Aug 31 2019 REV
- Corbett Land Strategies Inc. Planning Justification Report, May 2019
- Kristen Eccles Sun Shadow Study, March 2018
- dBA Acoustical Consultants Noise Impact Study, August 2018
- Phase 1 ESA Premier Environmental Services Inc., October, 2014, November 2018
- Premier Environmental Services Inc. EIS, Feb 2017. Background Information, emails, meeting notes to current EIS. (Available upon request).
- Soil-Mat Supplemental Hydrogeological Considerations, November, 2018
- Soil-Mat Slope Stability Assessment, September, 2017
- Soil-Mat Soils Report, May, 2013 with 2017 Review Letter
- Premier Environmental Services Myotis Habitat Survey, July 2015
- RJ Burnside Breeding Bird Survey, July 2013

OVERVIEW ON WHY A 7.5m INSTEAD OF A 10.0m SETBACK IS APPLICABLE IN THIS PROJECT

The three main factors that qualify this site for consideration of a 7.5m instead of a 10m setback from either the Stable Top of Bank or the Staked Tree Dripline to the Developable Area are visually summarized in the A5 thinkGiraffe Building and Site Section:

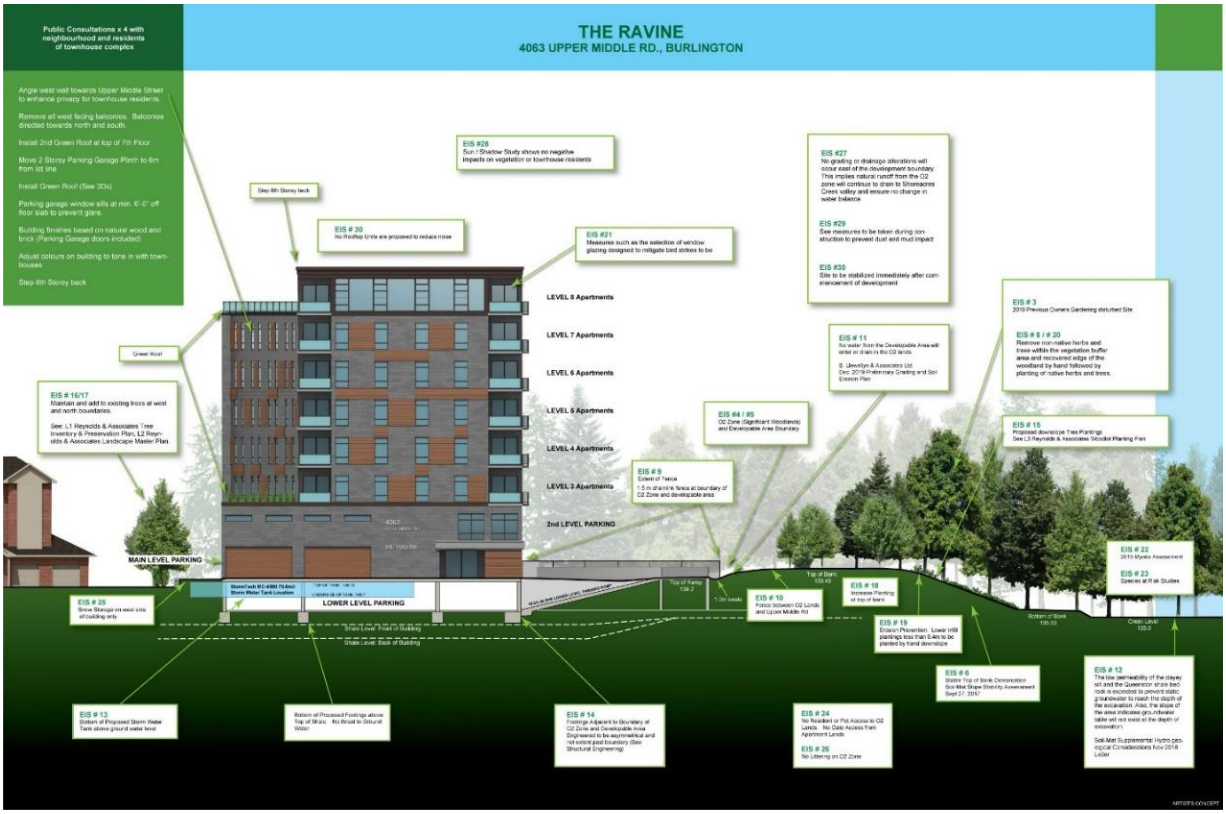


Figure 1: thinkGiraffe A5 Building and Site Section schematic to show relationship to O2 zone.

- ✓ The developable area west of the Stable Top of Bank shows greater stability and near perfect soil conditions for the engineered footings than typical sites reviewed for setback considerations. See thinkGiraffe A5 Building and Site Section for extent of Queenston Shale as well as # 12 & #13 of this document.

- ✓ The Significant Woodlands have been disturbed and the proposed fence and mitigation will significantly contribute to the protection of the slope. It appears that the previous owners extended gardening efforts downslope between 1954 and 2013 and planted non-native tree species in the Significant Woodlands. See #3, #8 & #9 of this report. Repeated Site visits between Halton Region, Conservation and the author of this report confirmed that the Significant Woodlands will benefit from preventing access and remediation. **The effects of the past interference with the slope will be mitigated with the proposed fence and Landscape and Tree Protection guidelines to restore the Significant Woodland. Unlike comparable projects this is not an undisturbed site**.

- ✓ The total infiltration of the project is expected to be considerably less than 50,000 litres/day and a Permit to Take Water is not required for these low volumes. **The low permeability of the clayey silt and the Queenston shale bedrock is expected to prevent static groundwater to reach the depth of the excavation. Also, the slope of the area indicates groundwater table will not exist at the depth of excavation**. See # 14 of this document.

The inherent Site Conditions therefore qualifies the project for a 7.5m setback. It cannot be shown that a 10.0m setback will in any way provide more protection for the Significant Woodland.

A number of questions were identified during reviews of technical documents by government agencies. These questions are listed in the following table, with responses provided. These responses also refer to the source of the technical information.

Table 1: Review of questions regarding the proposed development with corresponding responses and associated technical documents.

POTENTIAL THREATS TO THE CORE NATURAL HERITAGE FEATURE	MITIGATION	SUPPORTING PLANS & STUDIES
1. Burlington Official Plan Designation "Residential High Density and Watercourse"	The Lands associated with the Shoreacres Creek and related setbacks and buffer area will be maintained in the "Watercourse" Designation. Suitable setbacks included within the design.	Corbett Land Strategies Inc. Planning Justification Report

2. Planning Analysis	The Project supports the Provincial Policy Statement 2014 and the Growth Plan for the Greater Golden Horse 2017 The intent of the latter is to "manage growth, build communities, curb sprawl and protect the natural environment". In this project, the design achieves balance for the needs of the residents in the townhouses to the west and the Significant Woodlands to the east. Four public meetings were conducted and the building was set as far west as possible from the creek. The building width is determined by the combined width of two rows of parking stalls and the centre access aisle and cannot be reduced. The higher density form of development better uses the existing Burlington infrastructure than the former single family dwelling did. The Planning Justification section 5.1 and 5.2 argues that the project contributes to the achievement of low carbon communities. Green roofs are proposed and the Tree Protection Plan proposes significant addition of trees. The proposed project will contribute to Burlington's 60% increased intensification by 2031. Intensification is balanced with the goal to maintain green space of Shoreacres Creek and associated woodlands. The Halton Regional Official Plan is in agreement with the Burlington and Provincial Plans (PJR 5.3). See PJS 5.4 for the Burlington Official Plan July 2015. Section 2 of Part 1 outlines the Planning Horizon and Growth context for 2021. The O2 Lands will be deemed to the City of Burlington and add to the protected green space areas.	Corbett Land Strategies Inc. Planning Justification Report Section 5.1 and 5.2 Section 5.3 Section 5.4 Table 2 3.2

	Burlington Strategic Plan Compliance analysis: Table 2 3.2 Environmental and Energy Leadership 3.2(a) The City has a healthy natural heritage system that is protected, well connected, conserved and enhanced and forms a fundamental component of the City's Urban and Rural Areas. There is no doubt that even though this is a small project in scale, it will substantially protect the Significant Woodlands. The City of Burlington does not have the funds and people power to buy all parcels of land similar to 4063 Upper Middle Road and turn such lands into parks. The City requires partnerships with developers such as the proponents to protect significant areas. This project also includes extensive enhancement activities of the disturbed lands within the Significant Woodlands on-Site, a cost borne by the project proponent.	
3. Existing Site disturbance	See Phase 1 ESA 4.1 Residence constructed in 1954 and demolished in 2014 6.1 Describes site after demolition It appears that the owners extended gardening efforts downslope and planted non-native tree species in the Significant Woodlands. The effects of the interference with the slope will be mitigated with the Landscape and Tree Protection guidelines to restore the Significant Woodlands	Phase 1 ESA Premier Environmental Services Inc Oct 2, 2014, Nov 2018 L3 Reynolds & Associates Woodlot Planting Plan
4. Significant Woodland Description	See Phase 1 ESA Appendix A Maps A1 Site Location map A4 Surrounding Land Use Map 4.3.2 Geology, Topography, Hydrology 4.3.4 Water Bodies and Areas of Natural Significance	Phase 1 ESA Premier Environmental Services Inc, Oct 2014, Nov 2018

5. Boundary between proposed O2 Zone and Developable Land	A Zoning By-law Amendment is required to facilitate this proposal. The rezoning application proposes to rezone the lands to "Residential High Density (RH-5)" and "Open Space (O2)". The ***Boundary between the RH-5 Zone and O2 Zone is proposed to be a 7.5m to 8.5m setback from the Stable Top of Bank and the staked Tree Dripline – whichever is the greatest***. This boundary will be referred to as the ***most westerly boundary between the O2 Zone and Developable Area***. The Stable Top of Bank and Tree Drip Line have been plotted on the A2 thinkGiraffe Site Plan, A3 thinkGiraffe O2 Zone / Developable Land Boundary and Reynolds & Associates L2 Landscape Master Plan. The minimum 7.5m setbacks from both of these have been shown.	A2 thinkGiraffe Site Plan A3 thinkGiraffe O2 Zone / Developable Land Boundary Plan L2 Reynolds & Associates Landscape Master Plan.
6. Stable Top of Bank Demarcation	The Stable Top of Bank as determined by Soil-Mat has been plotted as per request of Conservation Halton on the Site Plan, Grading Plan and Landscape Plan. The building size has been cut back in the north easterly corner as per request of Halton Region and Conservation Halton to allow for the 7.5m tree line setback which is more westerly than the 7.5m Stable Top of Bank Setback.	Soil-Mat Slope Stability Assessment Sept 27, 2017
7. O2 Zone to be transferred to city of Burlington	The Planning Justification Report defines the Boundary between the O2 Zone and Developable area conforming to this document. The Report also states that the O2 Zone will be transferred to the City of Burlington. See the PJR attached and drawing A3.	Corbett Land Strategies Inc. Planning Justification Report
8. Remediation of slope disturbance by previous owner	Past land use involved a single residence with lawn and ornamental gardens. This past land use included cutting the herbaceous vegetation in the woodland with a lawn mower as well as extensive tree removals. Since the herbs and trees were previously cut and disturbed, the inactivity during the last five years has allowed this woodland vegetation community to	Premier Environmental Services EIS. 2017. ELM EIS. 2020. L1 Reynolds & Associates Tree

	recover. Such recovery now identifies the current edge of the significant woodland is more dense and thereby more like a woodland and less like a residence. This woodland edge is proposed to be protected by a tree drip line plus vegetation buffer with a width that ranges from 7.5 to 8.5m. Refer to thinkGiraffe drawing A3 and Section A5 for details of this area. The recovered woodland edge with the tree drip line and vegetation buffer will be protected by a chain link fence with no gate, placed outside of the O2 zone. This fence will be installed on the west side in proximity to the development and avoid the damage of any tree roots. A drawing of how the fence will be installed without damage to tree roots is included with this application. Refer to drawing A3 for the fence location. The project proposes to remove non-native herbs and trees within the vegetation buffer area and recovered edge of the woodland by hand followed by planting of native herbs and trees. Such removal of non-native species followed by planting of native species is intended to enhance this vegetation community and create a more resilient vegetation buffer and woodland edge. This removal of non-native species will also benefit the woodland by removing future seeds of non-native species that could cause future harm to the woodland. A planting plan is provided that explains how the removal of non-native species by hand will be completed followed by planting of native species. In this project, the vegetation buffer area is proposed in conjunction with other suitable mitigation measures. The buffer width of 7.5 – 8.5 m is deemed sufficient to ensure they will perform their intended function in light of the expected impacts resulting from the adjacent development (before, during and after construction). Other measures will be implemented to mitigate impacts	Inventory & Preservation Plan L2 Reynolds & Associates Landscape Master Plan. L3 Reynolds & Associates Woodlot Planting Plan Soil-Mat Slope Stability Assessment Sept 27, 2017

	near the buffer and woodland, such as installation of sediment erosion fences to protect the O2 zone. These erosion fences will protect the vegetation buffer from direct disturbance, transport of materials, and redirect water runoff. Other activities will include grading only outside of the O2 zone. The construction activities will also limit dust and avoid dust transport to the O2 zone. This approach will ensure the sensitivity and significance of the features and ecological functions of the buffer and woodland will be protected. These measures are also explained in additional detail later in this document. Per ROP policies, vegetation buffers are to be considered components of the Regional Natural Heritage System located adjacent to key features of the natural heritage system and watercourses. They are intended to provide physical separation between development and site alteration and adjacent Significant Woodlands to help mitigate potential negative impacts on these features and their associated ecological functions. For this project, the vegetation buffers will provide protection of the significant woodland.	
9. Fence between O2 Lands and Developable Area	The Developer will provide a fence west of the boundary between the proposed O2 Lands and Area of Development. See the Landscape Plan for the Fence location and specification. No gate is proposed for this area, to provide further environmental protection. Specifically, no gate will limit access by residents and provided added protection the O2 Lands.	L2 Reynolds & Associates Landscape Master Plan.
10. Fence between O2 lands and Upper Middle Road	The proposed O2 Lands will be conveyed to the City of Burlington and it is assumed that the City will provide a fence and gate of the boundary abutting Upper Middle Road. No gate is proposed near the development.	

11. Drainage patterns on site will be maintained post development.	No water from the Developable Area will enter or drain to the O2 lands. Specifically, due to the existing grade, the drainage from the environmental buffer and tree drip zone will continue to drain toward the creek valley. The grading for the development will drain water from the building and parking to Upper Middle Road. As such, future drainage to the creek valley can be expected to be *status quo* to the current drainage volumes. Since no interaction will occur between the development area and drainage to the O2 Lands, it is inferred the drainage water quality will not be degraded by the development. Also, as described below, snow storage will be near the development and drain to Upper Middle Road. Refer to drawing A5 for a representation of the slope of the Project.	S.Llewellyn & Associates Ltd Aug 14, 2019 REV Preliminary Grading and Soil Erosion Plan S.Llewellyn & Associates Ltd Aug 14, 2019 REV Preliminary Site Servicing Plan S.Llewellyn & Associates Ltd Aug 2018 Functional Servicing Report
12. Soil Conditions favourable for proposed construction	The Clayey Silt is very stiff to hard in consistency and compressive strength consistently was in excess of 4.5kg/cm2. The soil and shale conditions greatly favours multi-storey construction.	Soil-Mat Soils Report, May, 2013 with 2017 Review Letter
13. Slope Stability far exceeds Ministry safety range	The Ministry of Natural Resources "Geotechnical Principals for Stable Slopes" publication Table 7.2 lists a minimum safety factor of 1.3 to 1.5 for Active Land Use. As the calculated factors of safety were found to far exceed this range, the subject slope is considered stable in its present condition in the short and long-term	Soil-Mat Slope Stability Assessment, September, 2017
14. Static Groundwater table not anticipated to depth of excavation	A study estimates the total infiltration of the project is expected to be considerably less than 50,000 litres/day and a Permit to Take Water is not required for these low volumes. The low permeability of the clayey silt and the Queenston shale bedrock is expected to prevent static groundwater to reach the depth of the excavation. Also, the slope of the area indicates groundwater table will not exist at the depth of excavation. Refer to drawing A5 for a representation of the slope of the Project.	Soil-Mat Supplemental Hydrogeological Considerations Nov 2018 Letter

15. Bottom of Storm Water Tank above Groundwater Level	StormTech MC-4500 70.0m3 Storm Water Tank Location: Top of Tank: 138.15 Underside of Tank: 136.7 Creek Level at 135.0	See thinkGiraffe Building & Site Section A5 S.Llewellyn & Associates Ltd Aug 2018 Functional Servicing Report
16. Engineered footings and Shoring not to extend beyond limit of construction	Limit of Building Footing and Shoring not extending beyond O2 Boundary. Footings adjacent to the limit of construction have been designed to be asymmetrical and not extend beyond the fence line. Shoring does not exceed 0.3m and does not extend beyond Limit of Construction	See Structural Engineering thinkGiraffe Building and Site Section A5
17. Proposed downslope Tree Plantings	Trees downslope from the Top of Bank has an existing tree grid of approximately 3m on centre. That adds up to approximately 180 trees. Of these approximately 20% or 36 trees are non-native or diseased and recommended for removal. We propose that only 36 downslope replacement trees be planted. The 3m on centre grid should not be intensified. The replacement trees will be a minimum of 5'-0" tall and exist in the O2 area currently. The species proposed for planting includes: • Towards the top half: Sugar Maple, Bur Oak and Bitternut Hickory • Towards the bottom of bank: Eastern White Cedar, White Pine and Red Maple.	Premier Environmental Services EIS. 2017. L1 Reynolds & Associates Tree Inventory & Preservation Plan L3 Reynolds & Associates Woodlot Planting Plan
18. Tree Plantings on the west and north boundaries of the Developable Area	Mature trees exist along the west and north boundaries. Some of these trees were lost during the past due to storms (e.g., Bitternut Hickory) and to disease (e.g., White Ash). Live trees in these areas will be retained if they are not disturbed by the excavation of the building. See Landscape and TP Plans for additional trees on the west and north boundary of the Developable Area as requested by the residents of the adjacent townhouse complex during four Public Consultations.	L1 Reynolds & Associates Tree Inventory & Preservation Plan L2 Reynolds & Associates Landscape Master Plan.

19. Maintain existing trees on west boundary	Existing trees on the west boundary of the Developable Area will be retained as requested by the residents of the adjacent townhouse complex during four Public Consultations. Gaps in the tree line will be filled in according to the TPP and Landscape Plan	L1 Reynolds & Associates Tree Inventory & Preservation Plan
20. Increase plantings at Top of Bank	Plantings at the Top of Bank within the vegetation buffer will be increased as per the Landscape Plan. The proposed plantings will vary in size and species in order to additional ecological functions and appear more natural.	L1 Reynolds & Associates Tree Inventory & Preservation Plan L2 Reynolds & Associates Landscape Master Plan.
21. Erosion prevention downslope	Lower Infill Plantings less than 0.4m to be planted by hand downslope. See L3 for proposed deciduous and coniferous shrubs specification and plan.	L3 Reynolds & Associates Woodlot Planting Plan
22. Removal of Invasive Species downslope	Invasive species within vegetation buffer and woodland edge will be removed by hand prior to native tree planting. This will involve minimal removal of a total of 40 Buckthorn (*Rhamnus cathartica*) and 20 Manitoba Maple. Invasive herbaceous plants will also be removed by hand. This removal will involve an area of 10-15m^2 of Garlic Mustard (*Alliaria petiolate*), Common Mullein (*Verbascum thapsus*), Wild Carrot (*Daucas carota*), along with 30m^2 of Common Periwinkle (*Vinca minor*).	L3 Reynolds & Associates Woodlot Planting Plan
23. Mitigating Potential Bird Strikes	Light can be a concern where it is directed towards a variety of natural features and functions). Primary sources for “new light” on-Site will be from the proposed development. It is also prudent to review that a mounted light can illuminate in three directions: directly upward, directly to the ground, or at an angle away from the ground. For this Site, it is recommended that the placement of lights on the future building and in the parking area avoid illumination of the adjacent O2	

	Zone. Different strategies can be used to achieve this goal. For example, to minimize light being directed into the O2 Zone, outdoor common area lighting for walkways and parking spots should be directed toward the ground and/or angled toward the building. For this Site, it is recommended to minimize impacts of light on birds, use of upward light should be avoided and lighting should illuminate only non-reflective surfaces. The Architect will also specify window glass for the building that reduces the risk of bird strikes. This glass is available for use, and was designed to reduce harm to birds.	
24. Myotis Assessment	Myotis Survey in 2015 conducted by Premier Environmental shows no tree cavities consistent with Myotis habitat within 120 m of the development property. Trees in this area too small to have cavities, due to past recent forestry. Also, large trees with cavities blew down during past storms and were lost.	Myotis Survey July 2015 Premier Environmental Services
25. Species at Risk	The 2013 bird Survey done by RJ Burnside lists the Species At Risk birds in the area. A list of Species At Risk from the MNRF was also generated in 2013, and was reported in the Premier (2017) EIS. Findings reported in the Premier (2017) EIS identified no observations of Species At Risk during multiple field surveys, attributed to the highly disturbed nature of the land covered previously by the single residence, ornamental gardens, and fruit trees. The Premier (2017) EIS also identified low chance of Species At Risk on-Site to be encountered in the future, due to the disturbed habitat and degraded nature of creek valley. For the proposed development on-Site, great care is being taken by proposing to plant native trees and remove non-native invasive trees and herbs from the Significant Woodland. Since this area gradually slopes to the Shoreacres Creek valley, it is well suited for removal of	RJ Burnside Bird Survey July 2013 L2 Reynolds & Associates Landscape Master Plan.

	invasive trees and herbs as well as the planting of native trees. This slope toward the creek also indicates the existing drainage to the valley will remain unchanged following the completion of the development. A fence will also be installed to separate the Significant Woodlands from the proposed development and thereby afford additional protection of this area from disturbance. This fence plus plantings represents a significant improvement over the existing conditions where members of the public and pets freely access and litter the Significant Woodlands. Refer to the proposed fences and gate protection plans on the drawings. In summary, the O2 zone will be controlled by the City of Burlington. We propose that the City in conjunction with Halton Conservation study whether any public access to the Significant Woodlands should be allowed. Due to the absence of species at risk and lack of habitat for species at risk on-Site, no impacts to Species At Risk are anticipated in the future.	
26. Resident and pet access to the natural heritage features and the buffer along O2 Zone.	The O2 Zone is to be conveyed from the Owner to the City of Burlington. The City will propose restricted access via fence. It is expected that there will be no access from the developable area to the O2 Zone. Refer to the Landscape Plan for the proposed fence location.	L2 Reynolds & Associates Landscape Master Plan.
27. Snow clearing and snow storage.	See Landscape Plan and Site Plan. No snow will be stored on the east side of the development. The only snow storage proposed is on the west side of the building. This snow will then drain to Upper Middle Road, *status quo* to current drainage.	L2 Reynolds & Associates Landscape Master Plan.
28. Littering in O2 Zone	The O2 Zone is to be conveyed to the City of Burlington. The City will propose restricted access via fence or not. Hence, it is expected there will be no access from the developable area to the O2 Zone. It is assumed that the City will clean up litter, in the future, should they decide to allow access to the area.	

29. Grading and drainage alterations.	No grading or drainage alterations will occur east of the development boundary. This implies natural runoff from the O2 zone will continue to drain to Shoreacres Creek valley and ensure no change in water balance.	S.Llewellyn & Associates Ltd Preliminary Grading and Soil Erosion Plan
30. Sun shadow impact on vegetation in O2 Zone	See Sun Shadow Study from 2018 attached. Projections show that the building cast shadows into parts of the O2 zone only in the weeks around March 21 at 3:30 in the afternoon and December 21st at 12:30 and 3:30. These dates correspond to when the plants are dormant due to winter season and do not have leaves. Consequently shading will not result in any negative effects on these plants.	Sun Shadow Study March 2018 Kristen Eccles
31. O2 Zone Protection during construction	An Erosion and Sediment Control Fence (ESCF) is proposed on the limit of the developable area. The foundation will be shored during construction in areas where the proposed building is within 3.0m from the limit of the developable area. Representatives from Conservation Halton and Halton Region will be informed by the builder if the fence is erected, and can be on site to inspect the location of the ESCF. Details of the location of the ESCF is also specified on the Llewellyn Grading Plan.	S.Llewellyn & Associates Ltd Preliminary Grading and Soil Erosion Plan (REV to show ESC fence on limit of developable area)
32. Noise generated by rooftop Mechanical Units	No rooftop units are proposed. Each apartment will have individual furnaces and air conditioners located in Mechanical "closets". central air conditioning units for each individual unit are to satisfy Section C7.8.1 of the Ministry of the Environment, Conservation and Park's Environmental Noise Guideline (Publication NPC-300) A Noise Study is shows noise has been reduced.	Noise Impact Study dBA Acoustical Consultants Rev Aug 2018
33. Site Stabilization	Site to be stabilized immediately after commencement of development	L2 Reynolds & Associates Landscape Master Plan.

LETTERS FROM GOVERNMENT AGENCIES REGARDING TECHNICAL REVIEWS

CITY OF BURLINGTON
"SERVICE ... AN ATTITUDE, A COMMITMENT"

INTEROFFICE MEMORANDUM

Capital Works Department
Site Engineering Group

Date: July 19, 2018

TO: Suzanne McInnes, Senior Planner

FROM: Jeff McIsaac, Senior Engineering Technologist

Re: Revised Application to Amend the Zoning By-law
4063 Upper Middle Road
File: 520-03/17

Site Engineering staff have completed our review of the June 2018 circulation for the Zoning By-law Amendment application and require additional information prior to providing final comments.

Comments and Conditions

Environmental Site Condition

As previously indicated in the Site Engineering comments from June 22, 2017, an updated Phase One Environmental Site Assessment that conforms to O. Reg. 153/04, includes all outstanding information and is certified by a Qualified Person, will be required as part of the Site Plan Application.

As previously indicated in the Site Engineering comments from June 22, 2017, the *Geotechnical Investigation by Soil-Mat Engineers and Consultants Ltd. and dated May 16, 2013* provides the findings of the subject site's soil analysis as well as recommendations for building construction and parking lot pavement structure. The Geotechnical Investigation is satisfactory and the requirement for further soil investigation is not anticipated at this time by Site Engineering. An updated copy of the Geotechnical Investigation, that is stamped and signed by a Professional Engineer, will be required as part of the Site Plan Application.

The Geotechnical Investigation indicates that it may be necessary to control the site's groundwater temporarily during construction. As such, please be advised that should temporary groundwater control be necessary, any groundwater which is pumped into the storm sewer is required to satisfy the City's storm sewer discharge criteria for water quality.

Engineering and Architectural Plans

The *Site Plan by thinkGiraffe Environmental Design and dated March 13, 2018* proposes revisions to the site's design that was submitted in May 2017. As previously indicated in the Site Engineering comments from June 22, 2017, revisions to the site's design require a resubmission of updated engineering plans. As such, updated engineering plans for the revised 8 storey site design will be required prior to the approval of the Application to Amend the Zoning By-law.

As previously indicated in the Site Engineering comments from June 22, 2017, revisions to the site's design require a resubmission of an updated Functional Servicing Report (FSR). As such, an updated FSR for the revised 8 storey site design, that includes pre and post development drainage area plans which are plotted to scale and on 24"x36" sheets, will be required prior to the approval of the Application to Amend the Zoning By-law.

The *Proposed Floors 1-8 Layout Summary by thinkGiraffe Environmental Design and dated March13, 2018* proposes four (4) barrier free parking spaces within the parking structure, all of which appear to be sized at 4.4 metres x 6 metres. Site Engineering staff have discussed the proposed barrier free parking space layout with the City's Accessibility Coordinator, Judi Lytle, and the following revisions are required:

- One (1) of the barrier free parking spaces is required to be Type A space (minimum 3.4 metres x 6 metres);
- The remaining barrier free parking spaces may be Type B spaces (minimum 2.75 metres x 6 metres);
- All barrier free parking spaces are to be accompanied by an access aisle (minimum 2 metres x 6 metres). Please note that one access aisle may be shared between two adjacent barrier free parking spaces;
- On the underground level of parking, please relocate the P56 barrier free parking space to the location of P50, if possible, or P38/P39, alternatively;
- On the main level of parking, please relocate the P6 barrier free parking space to the location of P16/P17; and
- On the second level of parking, please relocate the P20 barrier free parking space to the location of P30/P31.

Additionally, the *Site Plan, Elevations* and the *Proposed Floors 1-8 Layout Summary* have not been plotted at an acceptable metric scale (i.e. 1:200 or 1:250).

Revised architectural plans, which are plotted to an acceptable metric scale, will be required prior to the approval of the Application to Amend the Zoning By-law.

Environmental Noise

The *Environmental Noise Impact Study by dBA Acoustical Consultants Inc. and dated May 2018* indicates that mitigation of the traffic noise from Upper Middle Road is feasible provided that the proposed building is constructed in accordance with the building component and ventilation

recommendations of the Environmental Noise Impact Study. Site Engineering staff has provided dBA Acoustical Consultants Inc. with some comments that will require resolution prior to final acceptance of the Environmental Noise Impact Study, but as previously indicated in the Site Engineering comments from June 22, 2017 the revised Study may be provided as part of the Site Plan Application. As such, an updated Environmental Noise Study, that satisfactorily addresses the Site Engineering comments, will be required as part of the Site Plan Application.

Land Conveyances

Please be advised that the following property interest shall be conveyed at the expense of the Owner to the City as a condition of approval for the subsequent Site Plan Application:

- A 5 metre road widening of Upper Middle Road; and
- The lands regulated by Conservation Halton.

Furthermore, for any property interest to be conveyed to the City, any survey, reference plan, transfer fee and all costs associated with registration, including legal fees incurred by the municipality, are to be paid by the Owner. The reference plan and all associated plans shall be related to 6 degrees UTM NAD 83, Zone 17.

Please note that notwithstanding the above a detailed review of all documents and drawings will be completed during review of the Site Plan Application and that Site Engineering may provide additional comments, raise additional concerns or request additional information at that time.

Regards,

Jeff McIsaac, C. Tech.
Senior Engineering Technologist
Capital Works Department
Development & Stormwater Engineering

Conservation Halton

905.336.1158
Fax: 905.336.7014
2596 Britannia Road West
Burlington, Ontario L7P 0G3
conservationhalton.ca

Protecting the Natural Environment from Lake to Escarpment

February 13, 2019

Ms. Melissa Morgan
City of Burlington
Planning and Building Department
426 Brant Street, P.O. Box 5013
Burlington, Ontario L7R 3Z6

BY MAIL & EMAIL

Dear Ms. Morgan,

Re: 4063 Upper Middle Road
Proposed Zoning By-law Amendment Application
File Number: 520-03- 17 (Third Circulation)
City of Burlington

Conservation Halton (CH) staff has reviewed the third circulation documents listed in Appendix B submitted for the Proposed Zoning By-Law Amendment for 4063 Upper Middle Road. Staff previously provided letters regarding the first and second circulations in letters dated June 30, 2017 and July 24, 2018.

Staff appreciate that many prior comments have been addressed or can be deferred to the Site Plan review process. However, the drawings provided do not clearly delineate the development limit, regulated lands, woodlands, setbacks and corresponding boundary of the O2 Zone. As such, it is unclear whether all development and associated disturbance, fill and grading can be accommodated outside of the O2 Zone lands to be dedicated to the City. Therefore, additional information and revisions are necessary prior to CH supporting approval of the requested Zoning By-law Amendment. Appendix A outlines the comments that are required to be addressed in support of the Zoning application, and Appendix B outlines those that can be addressed through the Site Plan process.

Staff again request that the applicant provide a response matrix or cover letter outlining how each comment has been addressed. Please note that a re-submission fee will be required based on the fee schedule applicable at the time of re-submission.

Staff trust the above is of assistance. Please contact the undersigned at extension 2335 with any questions.

Yours truly,

Emma DeFields
Environmental Planner

cc: Adam Huycke, Region of Halton, by email

Appendix A: Comments to be Addressed Prior to Approval of Zoning By-Law Amendment

The following comments are required to be addressed in support of the Zoning By-law Amendment. The comments below generally relate to the cover letter and comments 1 and 31 within the appendix of the July 24, 2018 letter from CH.

Ontario Regulation 162/06

1. The drawings do not clearly delineate the regulated lands, are not all appropriately scaled, and do not all correspond. For example, drawing A3 does not clearly show the stable slope line or setback; has a drawing scale (1:200) that does not correspond to the plot size; and shows the dripline and stable slope offset in a location that differs from drawing C1. The following revisions are required to all drawings:
   a. Clearly delineate the top of bank as staked by CH (include the date of staking), the long term stable top of bank as determined by the slope stability assessment, and the 7.5m regulatory allowance that extends from the stable top of bank.
   b. Show the slope stability cross section locations.
   c. Clearly label and distinguish all lines (e.g. with different hatching or colour).
   d. Ensure all drawings are plotted to scale and that the scales are appropriate such that lines are not too thick.
   e. Ensure lines on all drawings by thinkGiraffe, S.Llewellyn and Reynolds & Associates correspond.
   f. Clearly delineate development limits (including grading, fill, swales, structures, pavement, etc.).

2. The Proposed Concept Plan (Figure 2) within the Planning Justification Report should be updated to reflect the features, hazards and setbacks and clearly delineate the O2 Zone as outlined above.

3. The drawings must demonstrate that all development (including grading, fill, swales, structures, pavement, etc.) and any related construction and disturbance will be located outside of the regulated area (outside of the stable top of bank and associated 7.5m allowance) and O2 Zone. Staff understand that some grade restoration may be required in the area where the dwelling was demolished. Staff will review any grade restoration details through the site plan and CH permit processes.

4. Comment 28 of the Environmental Impact Summary should be revised, as it currently notes that the ESC fence will be located 1 metre east of the limit of the developable area. The proposed ESC fence should be shown on the drawings outside of the regulated area and natural heritage feature setbacks.

5. In light of the above, it must be demonstrated that the proposed 0 metre building setback from the Creek Block (as per page 30 of the Planning Justification Report) can be feasibly achieved and that construction will be completed without causing disturbance to the regulated area or natural heritage features and setbacks (i.e. the O2 Zone).

CH/Halton Region MOU

Environmental Impact Study and Tree Inventory and Preservation Study

6. The chainlink fence is required to be outside of the regulated area and should be outside of the O2 Zone. Staff will review the fence location once setbacks are clear and consistent on all drawings.

Appendix B: Comments to be Addressed Through Site Plan and CH Permit Process

Based on review of the previous and current submissions, the following at a minimum will need to be addressed during the Site Plan review process and any associated CH Permit applications. Additional regulatory and advisory comments will be provided through the forthcoming review processes.

Ontario Regulation 162/06

1. Further to prior comment 32, a note should be added to the ESC plans indicating that the site will be stabilized immediately.

2. Further to prior comment 38, all drawings should indicate removal of the shed in the buffer area.

3. The grading plan must show any required grading to restore the area where the dwelling was removed. This is the only location where some grading may be allowed within the regulated area, subject to obtaining a CH permit.

4. Staff understand that the 'proposed road widening' as labelled on the Grading and Servicing Plans is not proposed as part of this application and would be reviewed through a separate process. CH would assess any proposed road works within the regulated area at the time of the future related application.

CH/Halton Region MOU

Environmental Impact Study and Tree Inventory and Preservation Study

5. Staff appreciate that a naturalized buffer has been shown on the Landscape Drawings L1, L2 and ThinkGirrafe Drawing A2. It will need to be confirmed that the entire O2 zone is appropriately naturalized once the boundaries are clearly delineated based on the comments in Appendix A.

6. Further to prior comment 39, a nurse crop species should also be included with the seed mix for the vegetation buffer.

Stormwater Management and Groundwater - Supplemental Hydrogeological Considerations Report

7. Staff advise that seasonal groundwater level data specific to this site should be provided through the Site Plan process to confirm that there are no impacts associated with ground water as it relates to the proposed stormwater tank or building/foundation design/construction.

Appendix B: Third Submission Documents

The following documents were received January 16, 2019:

- Cover letter, thinkGiraffe Design & Construction Connections, dated December 12, 2018
- Set of 3 Drawings A1-A3 (SiteStatistics, Site Plan, O2 Zone/ Developable Lands RH5 Boundary), prepared by thinkGiraffe Design & Construction Connections, last dated December 3, 2018
- Set of 3 Drawings L.1-L.3 (Tree Inventory and Preservation Plan, Landscape Master Plan, Woodlot Planting Plan) prepared by Reynolds & Associates., last dated December 13, 2018
- Set of 2 Drawings C1-C2 (Preliminary Grading & Erosion Control Plan, Preliminary Site Servicing Plan), prepared by S. Llewellyn + Associates Ltd., last dated December 12, 2018
- Functional Servicing Report, 4063 Upper Middle Road, City of Burlington, prepared by S. LLewenllyn & Associates LTD., revised August 2018
- Supplemental Hydrogeological Considerations , Soil-Mat Engineers & Consultants Ltd., November 28, 2018
- Slope Stability Assessment, Soil-Mat Engineers & Consultants Ltd., September 27, 2017
- Geotechnical Investigation, Soil-Mat Engineers & Consultants Ltd., May 16, 2013

The following documents were not circulated but were referenced online once available, January 25, 2019:

- Planning Justification Report, prepared by Corbett Land Strategies Inc., dated January 2019
- Environmental Impact Summary, prepared by Environmental Liability Management Inc., dated December 20, 2018

Legislative & Planning Services
Community Planning
1151 Bronte Road
Oakville ON L6M 3L1
Fax: (905) 825-0267

February 21, 2019

Ms. Melissa Morgan
Planning and Building Department – Planning Division
City of Burlington
426 Brant Street Po Box 5013
Burlington, ON L7R 3Z6

RE: Zoning By-law Amendment – Third Submission
4063 Upper Middle Road
Think Giraffe Designs
City of Burlington File No. 520-03/17

Dear Ms. Morgan:

Regional Staff are in receipt of the Third Submission for a Zoning By-law Amendment (**ZBA**) application by Think Giraffe Design to permit the development of a 7-storey, high density residential apartment building (**Development Proposal**) on the lands known municipally as 4063 Upper Middle Road (Subject Lands). The following amendment is requested:

- To amend the current zone designation ('D-Development') to a site specific Residential High Density'RH5' and an Open Spacer 'O2' zone to permit the Development Proposal.

Regional Planning Staff have reviewed the subject applications within the context of Provincial planning documents and Regional Official Plan (ROP) and are **NOT** in a position to provide a recommendation on the submitted ZBA as there remain a number of issues with the development proposal as outlined herein.

Matters of Provincial and Regional Interest:

The Provincial Policy Statement 2014 (PPS) and the Growth Plan for the Greater Golden Horseshoe 2017 (P2G) provide a planning framework to manage growth, protect the natural environment and support economic development. Land use decisions with respect to the subject lands must be consistent with the PPS and conform to the P2G. Based upon the forgoing comments and a review of the submitted supporting materials, Regional Staff are not satisfied that the proposed development and ZBA application is consistent with and conforms to the PPS and P2G plan.

The subject lands are designated as 'Urban Area' and adjacent to lands forming part of the Regional Natural Heritage System within the 2009 Official Plan (ROP). The policies of Urban Area designation support a form of growth that is compact and supportive of transit, the development of vibrant and healthy mixed use communities which afford maximum choices for residence, work and leisure. Sections 77, 78 and 81 of the ROP further supports providing opportunities for live/ work relationships, and achieving higher densities and mix of uses as defined and prescribed by Local Official Plan policies.

Section 89(3) of the ROP requires all new development within the Urban Area be on the basis of connection to Halton's municipal water and wastewater systems. Detailed discussion on existing Regional Services adjacent to these lands and availability of servicing capacity are detailed below under the Municipal Services heading.

The Natural Heritage System of the ROP implements and is consistent with the policy direction of the PPS in that the Natural Heritage System. The objectives of the Natural Heritage System are numerous and are found under section 114.1. Some of those objectives include: the protection and enhancement of the diversity of flora and fauna, the protection and enhancement of Key Features, preserving and enhancing the quality and quantity of ground and surface water, directing *development* to locations outside of *hazard lands*, and preserving native species and communities that are rare, threatened or endangered based on regional, provincial or national scales of assessment. The ROP also requires a system based approach to implementing the RNHS by not permitting the alteration of any component if the RNHS unless it is demonstrated that there will be *no negative impacts* to the *natural features and areas* or their *ecological functions*.

Policy 118(1) requires Local Official Pans and Zoning By-laws to recognize the Regional Natural Heritage System as identified in this plan and include policies and mapping to implement the policies of this plan. This is an important policy given the context of the existing development in relation to what is being proposed through the submitted ZBA. In considering this ROP requirement, an Environmental Impact Statement (ELM, December 20, 2018) has been submitted and reviewed by Regional Staff.

Based upon a review of the submitted EIA, Regional Staff are NOT satisfied that ROP policy direction has been satisfied based upon the submitted information and supporting justification. Appendix 'A' to this letter contains all outstanding comments from a natural heritage and hazards lands perspective.

Site Contamination:
Section 147(17) of the ROP requires that prior to the Region considering any development application proposals, the proponent must identify whether there is any potential for soils on the site to be contaminated. A Phase I Environmental Site Assessment (Premier Environmental Services Inc., October 2, 2014) was submitted as part of this ZBA resubmission. Regional Staff note that the submitted ESA is older than 18 months and was completed to CSA standards. Regional Staff advise that the ROP and supporting Guidelines require ESA's to be completed based upon Ontario Regulation 153/04 standards. As such, and in order to address ROP policy requirements, revised ESA's will be required to evaluate whether there is potential for site contamination on these lands and the steps necessary to bring the site to a condition suitable for its intended use.

Municipal Services:
Policy 58 (1.1) of 2009 ROP permits development provided that "adequate supply of water and treatment of wastewater for the proposed use has been secured to the satisfaction of the Region". Further, Policy 89(3) of the 2009 ROP requires that all new development within the Urban Area be on the basis of connection to Halton's municipal water and wastewater system. A Functional Servicing Report (FSR) prepared by S. Llewellyn & Associates Limited (January 2017, revised August 2018) was provided as part of this resubmission. This FSR notes that the proposed development is to be serviced via the existing municipal services. The following comments are provided as it relates to the submitted FSR and the proposed site servicing scheme:

Existing Watermains:
- There are 400 mm and 600mm diameter watermains located within Upper Middle Road (Regional Road 38) adjacent to the property.

Existing Wastewater Mains:
- There is a 200 mm diameter wastewater main located within Upper Middle Road (Regional Road 38) adjacent to the property.

Existing Stormwater Mains:
- There is a 825/900 mm diameter sormwatrer main located within Upper Middle Road (Regional Road 38) adjacent to the property.

Functional Servicing Report Comments:
Regional Staff have now had an opportunity to consider the revised FSR as provided as part of this resubmission. This report is satisfactory for the purposes of the ZBA application at this time; however, the FSR did not make the following changes based on previously provided comments:

- The watermain, wastewater main and stormwater main within Upper Middle Road (Regional Road #38) are all under the jurisdiction of the Regional Municipality of Halton. The pipe tapping notes on the draft Preliminary Site Servicing Plan drawing will need to be revised to indicate this.
- The portion of the storm and sanitary sewer connection laterals, within the Region's road right-of-way, will need to be revised to show a minimum 2% slope.
- Sanitary manhole covers are to be stamped "danger" and "sanitary".
- Road cut permit notes will need to be revised to state that a Regional Excavation Permit (Municipal Consent), and/or Regional Servicing Agreement will be required for the Regional Road.
- the existing water and sanitary service lateral to the old property, and their proposed disconnects, should be shown on the site servicing drawing, at the respective mains within the Upper Middle Road road right-of-way
- disturbed boulevard notes regarding sod to indicate 150mm of topsoil not 100mm.
- the owner must enter into a Regional Servicing Agreement (through the Region's Development Project Manager) for the completion of required works for all development associated road improvements (median closure, pavement markings, access construction (2), boulevard restoration, re-grading, etc.,). The owner is responsible for all costs associated with the improvements detailed as part of the works and must submit for approval detail design drawings and cost estimates.
- Some of the details of the required works as a result of the proposed site plan included, but are not limited to:
    - centre median closure at the westerly access;
    - completion of pavement markings for the eastbound left-turn lane;
    - access construction for the development site (2);
    - boulevard restoration in the area of the accesses;
    - re-grading along the Regional right-of-way
- Regional Road Operations: Once all utility connections are complete within the Regional roadway, the developer will make one all-encompassing asphalt patch to ensure minimal undulations from old to new and back to old asphalt. The owner/developer is to ensure their design follows the most recent version of the Region's Municipal Consent conditions. Further review and Region comments will be provided upon Regional Servicing Agreement drawing circulation by the developer's civil consulting engineering firm.
- Regional Permits: Regional Permits will provide a complete review of the proposed site servicing connection laterals and water quality when the most recent site servicing drawings are submitted to the Region Services Permits section for permitting.
- Upper Middle Road is a Regional Road, all works must conform to Halton Region Standards.
- In addition to the Regional Servicing Agreement, a Regional Municipal Consent should be applied for, for the proposed excavation and occupancy of the Regional roadway.

While Regional Staff acknowledge that this report is satisfactory for the purposes of the identifying how they site can be services and any capacity constraints (downstream or otherwise), capacity within the Region's system to accommodate growth does not imply support for growth and intensification/redevelopment of uses.

Regional Transportation:
Section 173(8) of the ROP states that the Region and the Local municipalities will work together to control access to Arterial Roads in accordance with Council adopted access management policies. On Map 3 of the ROP, Regional Road 38 (Upper Middle Road) is defined as Minor Arterial road. In considering development applications, the ROP further requires that the proponent for any development considered to have a transportation impact to carry out a detailed transportation study to assess the impact of the proposal and to recommend necessary improvements. Regional Staff have considered the Traffic Impact Study (Paradigm, December 2018) prepared in support of the revised development proposal. Regional Staff are generally satisfied with the report and conclusions as submitted. In considering the revised submission, Staff note the following:

- The westerly access originally proposed at the existing site entrance has been deleted from the revised site plan.
- The easterly access point originally proposed is shown widened and centred with the opposing entrance to #4030/4040 Upper Middle Road, and will become the singular access.

Noise Study:
Section 143(12) of the ROP requires the proponent of any sensitive land use in proximity to transportation and utility source to undertake appropriate analysis of any impacts (e.g. noise, vibration, air quality) associated with the source, and implement any recommendations contained within the analysis. To this end, a Noise Study was completed for the proposed development by dBA Accoustical Consulting Inc. (February 2017, Revised August 2018). Regional Staff are generally satisfied with the conclusions of this submitted study as it applies to the submitted ZBA. Further, Appendix 'B' to this letter contains additional technical comments from a Regional Roads noise perspective to be addressed as part of the implementation of this proposed development.

Land Dedication:
In accordance with ROP policy, land dedications will be required at the appropriate stage in the planning approval process for these lands:

- The proposed land dedication of 5m, as shown on the site plan, is acceptable (to match the existing property line to the west of the development site);

Regional Staff note that the implementing By-laws, and circulated concept site plan are to protect for the above noted land dedications.

Conclusion:
As noted above, there remain a number of outstanding technical issues associated with the ZBA application that remain outstanding. It is the opinion of Regional Planning staff that background supporting documentation submitted in support of the ZBA application require further comprehensive analysis and updating prior to Halton Region being in a position to provide further detailed comments on this development proposal.

I trust these comments are of assistance to you. Should you have any questions or require additional information, please do not hesitate to contact me directly.

Yours truly,

Adam Huycke, MCIP, RPP, CPT
Senior Planner, Community Planning

APPENDIX 'A' –Regional Natural Heritage System and Hazard Lands Comments to be Addressed

1. CH staff comments of June 30, 2017 were reviewed. We are in support of these comments and we request that they be satisfactorily addressed as part of a formal revised submission. We understand that the limits of development and the extent of the proposed O2 zones may be subject to change pending the resolution of some of CH staff's concerns.	CH staff provides environmental advisory and technical review services to the Region in relation to the protection of certain natural heritage features and areas and natural hazard land management. As such, it is recommended that any outstanding CH staff comments, as provided in their February 13, 2019 comment letter, be addressed to their satisfaction prior to the approval of the application.
Planning Justification Report (PJR):	
2. The PJR references an Environmental Impact Assessment (EIA) that was not submitted for review. It is recommended that it be updated to reflect the updated EIA dated September 30, 2016.	• **Not Addressed.**
3. Schedule 'B' to the draft Zoning By-law Amendment is appended to the PJR (Appendix "A"). This schedule indicated that there are two separate "Open Space (O2)" zones proposed. The distinction between these two appears to be that one contains the valleylands and the other the buffers. However, this is not specifically explained in the PJR. Please clarify the reason for the two distinct O2 zones in this area. Consideration should be given for one restrictive area zone category over the entire NHS are on site (which would include the key features and associated buffers).	• **Partially Addressed.** Report and subsequent plans were revised to show one "Open Space (O2)" zone. However, it is not clear on Schedule 'B' if the "Open Space (O2)" zone includes the 7.5m buffer.
4. The limit of the O2 zone(s) may be subject to change pending the resolution of outstanding CH and Regional staff concerns relating to the EIA and slope stability.	• **Addressed.**
5. The PJR indicates that the O2 zoned lands will be gratuitously conveyed to Conservation Halton through this application. It is not clear whether this proposed conveyance applies to the entire O2 zoned lands or just the valeylands portion. The Region would support the conveyance of all O2 lands. Additionally, if CH is not willing to accept this conveyance, we would recommend that the	• **Addressed.** Report states that the lands in the O2 zone will be conveyed to the City of Burlington.

City be offered these lands as an alternative.	
Environmental Impact Assessment (EIA):	
1. General – Limits of Development: In their comments of June 30, 2017, CH staff indicated that proponent must submit additional information to delineate the stable slope line on the subject property. This information may impact the limits of development on site. The EIA should be updated once outstanding CH staff concerns relating to the delineation of stable slope limits and associated setbacks are satisfactorily addressed.	• **Addressed.** Soil-Mat Slope stability Assessment dated September 27, 2017 was submitted and was approved by CH. This is outlined in the Environmental Impact Summary prepared by ELM (dated December 20, 2018).
2. *General – Proposed Buffers:* a. It would be typical to apply a 10m buffer to help mitigate potential negative impacts resulting from development on lands adjacent to significant woodlands in infill situations. However, a reduced buffer may be appropriate in this instance providing the EIA provides further justification to support this reduction. Per ROP policies, buffers are to be considered components of the Regional Natural Heritage System located adjacent to key features of the natural heritage system and watercourses. They are intended to provide physical separation between development and site alteration and adjacent natural areas to help mitigate potential negative impacts on these features and their associated ecological functions. They may be proposed in conjunction with other suitable mitigation measures. Their extent (width) must be sufficient to ensure that they can perform their intended function in light of the likely negative impacts resulting from the adjacent development or site alteration (before, during and after construction), the other measures being implemented to mitigate these impacts (eg. vegetated buffers and permanent fencing), and the sensitivity and significance of the features	• **Not Addressed.** • Comments 6 and 9: The comments provided for justification that the reduced buffer from 10m to 7.5m is appropriate as the naturalized buffer will be minimum 23.5m wide (8.5m Naturalized buffer + 15m Cultural Woodland) are insufficient. As discussed at the September 14, 2018 meeting with the consultants, CH, Regional and City staff, the Cultural Woodland meets the Region's Official Plan definition of the Significant Woodlands (Section 277) and would be considered part of the feature, not the buffer. Therefore, the buffer from the dripline of the significant woodlands to the development would be 7.5m to 8.5m. The Environmental Impact Summary should be amended to remove this statement. • As stated in our previous comment 2a), it is typical to apply a 10m buffer to the woodlands in infill situations like this. However, a minimum 7.5m buffer is being applied. What is the rationale for why this reduction is appropriate for this development? The Environmental Impact Summary should elaborate on all the suitable mitigation measures to help provide justification to support the reduced buffer of 7.5m to 8.5m.

and ecological functions being protected. Please provide further discussion regarding the appropriateness of the proposed buffer width in light of these considerations. b. Please confirm whether buffer lands will be fenced-off to restrict access to the valleylands and form part of the NHS lands to be conveyed to the City or CH as part of this application.	• **Addressed.** The Developer will provide a fence and gate on or west of the boundary between the proposed O2 Lands and Area of Development as Environmental Impact Summary prepared by ELM (dated December 20, 2018). • The Landscape and Engineering plans show the fence at the 7.5 metre setback from the Top of Slope as requested by CH in their comments date July 24, 2018.
3. Section 2.0 – Summary: The EIA assumes that drainage patterns on site will be maintained post development but acknowledges (see last sentence, p.12) that storm water management plans were not available for review by the author at the time of writing. The assumptions and conclusions provided in the EIA should be updated based on the proposed storm water management plan prepared in relation to this application.	• **Addressed.** Comment # 26 in the Environmental Impact Summary prepared by ELM (dated December 20, 2018).
4. *Section 4.2.3 – Tree Inventory and Preservation Plan:* a. Trees located along the edge of the Significant Woodland are recommended for removal. Further information about the potential for these trees to serve as roosting habitat for bats is needed to address CH comments of June 30, 2017. Should these trees be proposed for removal, Region staff would recommend that they be replaced with suitable native trees within the vegetated buffer area, at a 3:1 replacement ratio. We understand that CH staff is recommending that a 3:1 replacement ratio be followed to offset all trees removed within their Regulated Area on site. b. The compensation strategy proposes the planting of 60 trees along the shoreline of Shoreacres Creek, between the creek and the proposed development. Additional trees are recommended per recommendation of ourselves and CH.	• **Addressed.** Comment addressed as per CH comments dated July 24, 2018. • **Partially Addressed.** Please include a nurse crop species with the seed mix.

Please clarify where these trees will be replaced on a Restoration and Enhancement Plan and outline details relating to species, sizes, location, planting methods, monitoring and maintenance. This information will assist in demonstrating that conformity with the relevant natural heritage protection and enhancement policies of the City, Region, and Province.	
5. Section 9 – Recommendations for Environmental Management: The section should be updated to include an impact assessment and associated mitigation strategy. It may be beneficial to include a table that documents the potential direct and indirect negative impacts resulting from the proposal and the recommended avoidance/mitigation measures required to address each (including, but not limited to, restrictive area zoning over the valleylands and associated buffer/setbacks and land conveyance). It is recommended that the following potential impacts, among others, be considered: a. bird strikes, b. resident and pet access to the c. natural heritage features and the vegetated buffer area, d. snow clearing and snow storage, e. littering, f. tree removal and replacement, and g. grading and drainage alterations.	As part of the Environmental Impact Summary prepared by ELM (dated December 20, 2018), points a-g where **addressed**. It is further recommended that the mitigations for potential bird strikes outlined in the above noted report should be included in the architectural plans to be submitted with the future site plan application.

New concerns arising from review:

i. All plans submitted do not provide clear and consistent setbacks (i.e. 7.5 metre setback from woodland dripline). Please revise plan accordingly.

ii. The building orientation appears to differ from the Landscape and Site Plans to the Engineering drawings. This may be due to the inconsistent setbacks shown on the plans. Please revise plan accordingly.

iii. The Landscape Plans appears to show that the building and grading are encroaching into the 7.5 metre setback from top of slope and woodlands in the north section of the property. As discussed at the September 14, 2018 meeting, CH and Regional staff cannot support encroachments into the 7.5 metre setback. Please revise plan accordingly.

iv. The *Site Plan Zoning prepared by thinkGiraffe (dated Dec 3, 2018)* shows a proposed 15 metre

naturalized buffer that is considered to be part of the existing Significant Woodlands. Reference to this buffer should be removed on this plan.

v. It is not clear on the *Site Plan Zoning prepared by thinkGiraffe (dated Dec 3, 2018)* what will be included in the "Open Space" O2 zone.

vi. Any reference to the "15m tree buffer zone", which is considered to be part of the existing Significant Woodlands, not a buffer, should be removed from the Woodlot Planting Plan prepared by Reynolds & Associated (revised Dec. 13, 2018).

vii. All comments from Conservation Halton's February 13, 2019 comment letter be addressed.

APPENDIX 'B' – Additional Noise Study Comments to be Addressed

Revisions to the dBA Acoustical Consulting Inc. (February 2017, Revised August 2018) study will be required to address the following at implementation stage:

General (Noise):

- For noise studies to be reviewed and approved by Halton, every effort must be made to mitigate noise levels to as close to 55dBA as technically, economically and administratively feasible.
- Purchasers are to be advised that ground floor units with balconies with direct unobstructed access to the Regional road system and/or the Active Transportation Network will not be eligible under the retrofit provisions of the Region's Noise Attenuation Policy/Noise Abatement Guidelines in the future.
- A detailed noise study should be conducted when grading information is available to refine report findings & recommendations.
- Prior to the issuance of occupancy permits, the City's building inspector or a Professional Engineer qualified to perform acoustical engineering services in Ontario shall certify that the noise control measures have been properly installed and constructed as per the recommendations of Halton Region.
- The proposed Warning Clauses **B** and **D** appear to be acceptable and must be reviewed and approved by the City of Burlington.
- All applicable warning clauses shall be listed in the City's Site Plan Agreement and also be inserted in the Agreements of Purchase and Sale or Lease.
- A condition should be included in the plan of subdivision agreement whereby confirmation is received from the noise consultant that the recommendations from the final noise study have been implemented prior to the release of securities.

CITY OF BURLINGTON
"SERVICE ... AN ATTITUDE, A COMMITMENT"

INTEROFFICE MEMORANDUM

Capital Works Department
Site Engineering Group

Date: April 15, 2019

TO: Melissa Morgan, Planner II

FROM: Jeff McIsaac, Senior Engineering Technologist

Re: Revised Application to Amend the Zoning By-law
4063 Upper Middle Road
File: 520-03/17

Site Engineering staff are pleased to provide the following comments for the applications' supporting documentation.

Site Engineering staff have completed our review of the January 2019 circulation for the Zoning By-law Amendment Application and require additional information prior to providing final comments.

Requirements for Zoning By-law Amendment Application:

1. An updated Environmental Impact Summary, for approval;
2. An updated Geotechnical Investigation and/or Supplemental Hydrogeological Considerations, for approval;
3. A letter of reliance from the Geotechnical Consultant, for approval;
4. A Construction & Mobility Management Plan, for approval;
5. Engineering details of the underground parking structure, for approval;
6. Updated architectural drawings, for approval;
7. Updated engineering drawings, for approval;
8. Updated landscape drawings, for approval; and
9. If necessary, an updated Functional Servicing & Stormwater Management Report, for approval.

Conditions for Site Plan Application:

1. An updated Phase One Environmental Site Assessment will be required as part of the Site Plan Application, for approval;
2. A Utility Coordination Plan will be required as part of the Site Plan Application, for approval;

3. An updated Noise Study will be required as part of the Site Plan Application, for approval; and
4. Property conveyances will be required as part of the Site Plan Application.

Comments

Site Conditions

As previously indicated in the Site Engineering comments from June 22, 2017 and July 19, 2018, the *Phase I Environmental Site Assessment by Premier Environmental Services Inc. and dated October 2, 2014* indicates it was developed in general accordance with Canadian Standards

been completed in accordance with the requirements of Ontario Regulation 153/04, as amended, includes all outstanding information and is certified by a Qualified Person, will be required as part of the Site Plan Application.

The *Environmental Impact Summary* (EIS) *by Environmental Liability Management and dated December 20, 2018* indicates that no snow will be stored near the Shoreacres Creek O2 zone (EIS Item #24); however the architectural and landscaping drawings indicate that snow is to be stored within the Conservation Halton regulated area that is east of the underground parking ramp. If the proposed snow storage location is to be considered by Conservation Halton, please note that the engineering drawings show a retaining wall between the parking lot and the proposed snow storage location and this wall is not shown on the architectural and landscaping drawings.

The EIS indicates that erosion and sediment control (ESC) fencing is to be installed 1 metre into the Conservation Halton regulated area and that excavation shoring is to be installed when the foundation excavation is within 3 metres of the Conservation Halton regulated area (EIS Item #28); however, the engineering drawings indicate the ESC fencing to be more than 4 metres from the boundary in some areas and no excavation shoring has been shown on the engineering drawings. An updated EIS and updated engineering drawings, that include an ESC design that is to the satisfaction of Conservation Halton, will be required prior to the approval of the Zoning By-law Amendment Application.

The EIS indicates that individual furnaces and air conditioners for each living unit shall be provided in a mechanical closet inside each living unit (EIS Item #29). The details of the mechanical equipment and the design of the mechanical closet shall be in accordance with Section C7.8.1 of the Ministry of the Environment, Conservation and Park's Environmental Noise Guideline (Publication NPC-300).

An update to the *Geotechnical Investigation by Soil-Mat Engineers and Consultants Ltd. and dated May 16, 2013* and/or *Supplemental Hydrogeological Considerations by Soil-Mat Engineers and Consultants Ltd. and dated November 28, 2018* will be required prior to approval of the Zoning By-law Amendment Application. Please be advised that an updated Geotechnical Investigation, that is stamped and signed by a Professional Engineer, has not yet been provided and is still required prior to the approval of the Zoning By-law Amendment Application.

The Geotechnical Investigation and Supplemental Hydrogeological Considerations indicate that it may be necessary to control the site's groundwater temporarily during construction. As such, an update to the Geotechnical Report and/or Supplemental Hydrogeological Considerations will be required to confirm the short-term construction dewatering discharge rate. Please note that short-term construction dewatering into the City storm sewer will be restricted to a discharge rate that does not exceed the site's pre-development 5-year storm peak flow. Furthermore, in keeping with the requirements of Ontario Regulation 63/16, as amended, details of the following will be required for the short-term construction dewatering:

1. The maximum quantity of groundwater, stormwater or both to be discharged each day;
2. The location of discharge;
3. An identification of the method of transfer or discharge that is to be employed under normal operation;
4. An identification of the method of transfer or discharge that is to be employed in the event of a 100-year storm event;
5. If the method of transfer or discharge in either of items 3 or 4 is discharge to land or a storm sewer, an identification of the control measures required to minimize erosion and sedimentation from occurring as a result of the discharge of the water or stormwater taken;
6. If the method of transfer or discharge in either of items 3 or 4 is discharge to land or a storm sewer that is within 30 metres of a water body, the turbidity of the discharge shall not exceed eight Nephelometric Turbidity Units above the background levels of the nearest water body;
7. If the method of discharge referred to in either of items 3 or 4 is discharge to land or a storm sewer, a statement that in the opinion of the person who has prepared the plan, the discharge of the groundwater, stormwater or both will not cause an adverse effect to the environment; and
8. A statement by the person who prepared the plan that the temperature of the groundwater or stormwater to be discharged was considered in determining the method of transfer or discharge referred in either of items 3 or 4.

The update to the Geotechnical Investigation and/or Supplemental Hydrogeological Considerations will also be required to confirm if long-term groundwater dewatering is required. Confirmation of the long-term groundwater dewatering discharge rate and seasonal groundwater elevations will be required as it may be necessary to increase the size of the proposed stormwater tank in order to accommodate the long-term groundwater discharge rate and/or revise the stormwater management design if the site's groundwater elevations prove too high and conflict with the stormwater tank.

The update to the Geotechnical Investigation and/or Supplemental Hydrogeological Considerations will also be required to provide a groundwater quality analysis and confirm that the groundwater quality satisfies the City's Storm Sewer Discharge By-law prior to any short-term and long-term dewatering into the City storm sewer. Please note that the City's Storm Sewer Discharge By-law does not currently provide parameters and the City should be consulted for further requirements. The City is in the process of updating the Storm Sewer Discharge By-

law and in keeping with that proposed update any water discharged into City storm sewers is required to satisfy the City's storm sewer discharge criteria for water quality. Please contact Jeff McIsaac (jeff.mcisaac@burlington.ca) for detailed storm sewer discharge criteria.

A letter of reliance from the Geotechnical Consultant will be required prior to approval of the Zoning By-law Amendment Application. The letter is required to indicate that the City of Burlington, Region or Halton and Conservation Halton may rely on the Geotechnical Investigation, the Slope Stability Assessment and the Supplemental Hydrogeological Considerations.

Construction and Mobility Management

A Construction & Mobility Management Plan, to ensure that the development works can be completed in a manner that is to the satisfaction of the Executive Director of Capital Works and the Director of Transportation Services, will be required prior to approval of the Zoning By-law Amendment Application. The Construction & Mobility Management Plan is required due to the nature of the proposed development (e.g. large excavation for underground parking structure and proximity to Conservation Halton regulated lands) and the likelihood that use of the City's road allowance will be necessary during construction of the proposed development. As the use of the City's road allowance for construction staging has not been approved and in order to minimize the impact to vehicles and pedestrians the following is required:

- Construction & Mobility Management Plan, plotted to scale on a 24" x 36" sheet;
- Proposed limits of construction;
- Proposed construction staging areas, including any staging areas required on the City's road allowance for dewatering and groundwater treatment, concrete pours, material deliveries, site servicing, etc. and written justification for any construction staging areas on the City's road allowance;
- Proposed temporary/permanent encroachments on the City's road allowance and written justification for any required encroachment on the City's road allowance;
- Proposed truck haulage route and location of truck stacking;
- Proposed location of mud mat and vehicle wash down area;
- Proposed location of site trailer, trades parking, material storage and sanitary facilities prior to, during and following excavation for the underground parking structure;
- Proposed location of crane assembly and swing radius;
- Proposed traffic control measures, specifically addressing signage and/or any lane closures/restrictions; and
- Pedestrian control measures, specifically addressing signage and pedestrian routing.

Underground Parking Structure

All elements of the underground parking structure are required to be within the limits of the subject property and outside of the Conservation Halton regulated area; however, the engineering details of the underground parking structure (i.e. excavation shoring wall design, shoring pile locations and tie-back extents, exterior drainage system design, etc.) have not been

provided as part of the Zoning By-law Amendment Application. Engineering details of the underground parking structure will be required prior to approval of the Zoning By-law Amendment Application.

Architectural, Engineering and Landscaping Drawings and Reports

The architectural drawings by thinkGiraffe Environmental Design indicate drawing scales of 1:200; however it appears the architectural drawings have been plotted at 1:100.

The architectural drawings by thinkGiraffe Environmental Design, the engineering drawings by S. Llewellyn & Associates and the landscaping drawings by Reynolds & Associates all need to be revised to show the Conservation Halton regulated area boundary, as approved by Conservation Halton. On the architectural drawings the location of the Conservation Halton regulated area boundary differs between the *Site Plan* (Drawing A2) and the *O2 Zone/Developable Land RH5 Boundary* (Drawing A3). On the engineering drawings, the Conservation Halton regulated area boundary is not shown and the "Revised 7.5m offset from dripline" boundary is shown to be as close as 6 metres to the dripline near the northeast corner of the proposed building. On the landscaping drawings, the Conservation Halton regulated area boundary, the stable top of bank and the dripline are not shown. Please note that the proposed building location appears to encroach into the Conservation Halton regulated area.

The architectural drawings, engineering drawings and landscaping drawings do not all show the same parking lot design. The Site Plan (Drawing A2), the *Landscape Master Plan* (Drawing L2) and the *Woodlot Planting Plan* (Drawing L3) propose: curbing and pavement in the southwest corner of the property and along the west side of the proposed building; curbing and pavement between the road allowance and the underground parking ramp; an underground parking ramp that is about 6.5 metres wide and has a south wall that is straight; and, curbing and pavement adjacent to the front property line and sidewalk on the City's road allowance. The O2 Zone/Developable Land RH5 Boundary (Drawing A3), the engineering drawings and the *Tree Inventory & Preservation Plan* (Drawing L1) propose: a retaining wall and smaller pavement area in the southwest corner of the property and along the west side of the proposed building; a retaining wall between the road allowance and the underground parking ramp; an underground parking ramp that is about 5.5 metres wide and has a south wall which turns before entering the underground garage; and, curbing and parking lot pavement on the City's road allowance and no sidewalk. Please revise the design of the site such that all parking lot curbing and pavement is located within the limits of the subject site. Furthermore, the sidewalk as proposed should be deleted and replaced with a sidewalk that connects the main entrance of the proposed building to the sidewalk on the road allowance. Updated architectural drawings, engineering drawings and landscaping drawings will be required prior to the approval of the Zoning By-law Amendment Application.

The updated *Functional Servicing & Stormwater Management Report* (FSR) *by S. Llewellyn & Associates and dated August 2018* may require further updating as the site's long-term dewatering discharge rate has not yet been confirmed nor has the site's groundwater elevation, which may or may not conflict with the proposed stormwater tank. Please refer to Site Conditions comments for further clarification.

The FSR may require further updating as the *Preliminary Grading & Erosion Control Plan* (Drawing C1) *by S. Llewellyn & Associates and dated December 12, 2018* proposes a top of underground parking ramp elevation of 138.20 metres, which appears to be lower than the existing back of sidewalk elevation of approximately 138.40 metres at the future driveway location. The future driveway is required to be the parking lot's outlet for major overland flow and as such the top of underground parking ramp elevation is required to a minimum of 0.15 metres higher than the existing back of sidewalk elevation. Updated engineering drawings will be required prior to the approval of the Zoning By-law Amendment Application. Please be advised that if an increase to the gradient of the uncovered outdoor underground parking ramp is necessary, the revised design is to be to the satisfaction of the Transportation Services Department.

As previously indicated in the Site Engineering comments from July 19, 2018 and June 22, 2017, pre and post development drainage area plans which are plotted to scale and on 24"x36" sheets, will be required in support of the FSR prior to the approval of the Zoning By-law Amendment Application.

The Preliminary Grading & Erosion Control Plan (Drawing C1) indicates the proposed buildings finished ground floor elevation (FFE) to be 138.60 metres, which appears to be lower than the proposed top of finished ground elevation against the exterior of the building of 139.00 metres. As such, a top of foundation wall elevation (TFW) also needs to be provided on the drawing and the TFW is required to be a minimum of 0.15 metres higher than the top of finished ground elevation against the exterior of the building. Updated engineering drawings will be required prior to the approval of the Zoning By-law Amendment Application.

The *Preliminary Site Servicing Plan* (Drawing C2) *by S. Llewellyn & Associates and dated December 12, 2018* proposes an oil/grit separator (OGS) on the property line shared with the road allowance. The location of the OGS and all private storm sewers are to be off the property line and within the limits of the subject property. Updated engineering drawings will be required prior to the approval of the Zoning By-law Amendment Application.

Please be advised that a Utility Coordination Plan will be required as part of the Site Plan Application. Additionally, certification by the Civil Engineering Consultant's Professional Engineer will be required which confirms that the approved Utility Coordination Plan has been reviewed and that the civil design does not conflict with any of the utility information. The details of the Utility Coordination Plan shall include, but are not limited to:

- the location of all existing and proposed above ground utilities (i.e. street lights, hydro poles, transformers and pedestals, cable and Bell pedestals, hydrants, and gas meters) within the City's road allowance that fronts the subject property and within limits of the subject property;
- the location and elevations of all existing and proposed underground utilities (i.e. road crossings, conduits and duct banks, gas mains, and hand hole boxes) within the City's road allowance that fronts the subject property and within the limits of the subject property. Existing underground utility elevations are to be confirmed by daylighting; and

- the location of all existing and proposed trees within the City's road allowance that front the subject property, are within 3 metres of any other shared property line or are within the limits of the subject property.

Environmental Noise

The updated *Environmental Noise Impact Study* (Noise Study) *by dBA Acoustical Consultants Inc. and dated August 2018* indicates that mitigation of the traffic noise from Upper Middle Road is feasible provided that the proposed building is constructed in accordance with the building component and ventilation recommendations of the Noise Study. An updated Noise Study will be required as part of the Site Plan Application. The required updates to the Noise Study include:

- Updating Section 3.2 to indicate that the first and eighth floors are considered the worst-case scenario for free traffic noise from Upper Middle Road, not the first and seventh floors;
- Updating Table 6 to include building component recommendations for exterior doors;
- Updating Section 5 to indicate that the central air conditioning units for each individual unit are to satisfy Section C7.8.1 of the Ministry of the Environment, Conservation and Park's Environmental Noise Guideline (Publication NPC-300); and
- Updating the receiver heights in the STAMSON modeling.

Land Conveyances

Please be advised that the following property interest shall be conveyed to the City, at the expense of the Owner, as a condition of approval for the subsequent Site Plan Application:

- A 5 metre road widening of Upper Middle Road; and
- The lands regulated by Conservation Halton.

Furthermore, for any property interest to be conveyed to the City, any survey, reference plan, transfer fee and all costs associated with registration, including legal fees incurred by the municipality, are to be paid by the Owner. The reference plan and all associated plans shall be related to 6 degrees UTM NAD 83, Zone 17.

Please note that notwithstanding the above a detailed review of all documents and drawings will be completed during review of the Site Plan Application and that Site Engineering may provide additional comments, raise additional concerns or request additional information at that time.

Regards,

Jeff McIsaac, C. Tech.
Senior Engineering Technologist
Capital Works Department
Development & Stormwater Engineering

905-335-7600 ext. 7428
905-335-7880 (FAX)
Tania.Dowhaniuk@burlington.ca

CITY OF BURLINGTON
"SERVICE ... AN ATTITUDE, A COMMITMENT"

INTEROFFICE MEMORANDUM

Capital Works Department
Development and Infrastructure Group

Date: April 22, 2019

TO: Melissa Morgan, Planner II, Development Review
Department of City Building

CC: Jeff McIsaac, Senior Engineering Technologist
Capital Works

FROM: Tania Dowhaniuk, Intermediate Technician - Landscaping
Capital Works

Re: Revised application to amend the Zoning By-law
4063 Upper Middle Road
Application to amend the Zoning by-law to permit and eight-storey residential building

File: 520-03/17

Summary

This Urban Forestry and Landscaping review is based on the December 2018 circulation of the following documents and plans:

- Site Statistics (A1), Site Plan (A2), O2 Zone/Developable Land RH5 Boundary, prepared by thinkGiraffe (Re-Issue for Zoning By-Law Amendment, Dec 3, 2018)
- Preliminary Grading & Erosion Control Plan (C1), Preliminary Site Servicing Plan (C2), prepared by S. Llewellyn & Associates Limited Consulting Engineers (No. 03 Dec 12/18)
- Tree Inventory + Preservation Plan (L.1), prepared by Reynolds + Associates (No. 3, Issued for Municipal Review, 12/13/18)
- Landscape Master Plan (L.2), prepared by Reynolds + Associates (No. 5, Issued for Municipal Review, 12/13/18)
- Woodlot Planting Plan (L.3), prepared by Reynolds + Associates (No. 2, Issued for Municipal Review, 12/13/18)
- Environmental Impact Summary, prepared by Environmental Liability Management Inc. (December 20, 2018)

Please be advised that the Urban Forestry and Landscaping review of this application is considered preliminary at this time. Urban Forestry and Landscaping staff may provide additional comments, raise additional concerns, or request additional information upon receiving any outstanding or revised information, and upon further comprehensive review of its contents.

905-335-7600 ext. 7428
905-335-7880 (FAX)
Tania.Dowhaniuk@burlington.ca

Request for Revisions and Clarification

Site Statistics (A1):

1. The scale is noted as 1:200 but should probably read NTS.
2. Plans should be submitted at 24”x36”.
3. The key plan at the top right of the drawing is not labeled.
4. The View from Upper Middle Road does not reflect the Site Plan (A2) (e.g. there are two entrances to Upper Middle Road shown but only one shown on the Site Plan).

Site Plan (A2):

1. The scale is noted as 1:200 but is not exactly that scale.
2. Plans should be submitted at 24”x36”.
3. It appears that river stone is shown graphically around the west, north and east of the proposed building but it is not noted on the plan and there is no line separating what looks like riverstone from the sodded areas.
4. Some of the existing trees to be removed are shown as solid circles but are not labeled or shown on a legend. Remove the circles for clarity.
5. Including a legend that defines the surface treatments (concrete, sod, riverstone, etc) and lines types (e.g. property line, proposed chainlink fence, boundary 02 zone and developable area, Top of Bank, etc) is recommended.
6. The view from Upper Middle Road at the top right hand side of the page is not labeled, and it does not reflect what is shown on the Site Plan (e.g. there are two entrances to Upper Middle Road shown in bird’s eye view but only one shown on the Site Plan).
7. Coordinate the curb lines, limits of paving and proposed toe walls and retaining wall locations with the Preliminary Grading & Erosion Control Plan (C1).
8. Remove the proposed concrete sidewalk that runs parallel to the existing sidewalk, along the drive aisle, and show only one sidewalk running perpendicular to the existing sidewalk, that connects to the main entrance.
9. Please clearly show and label the O2 Boundary Line.
10. Comment 24. of the Environmental Impact Summary states that “No snow will be stored piling up against the proposed fence or near o2 zone” and refers to the L2 Landscape Master Plan, but the L2, L3 Woodlot Planting Plan, and A2 Site Plan all show a “Snow Deposition” area. Please remove the snow storage area and coordinate the plans with the Environmental Impact Summary.

O2 Zone/Developable Land RH5 Boundary (A3):

1. The scale is noted as 1:200 but is not exactly that scale.
2. Plans should be submitted at 24x36.
3. It would be easier to read the plan if the lines (7.5m setback from Tree Dripline etc.) were drawn at different line types and included in a legend.
4. Please clearly show and label the O2 Boundary Line.

905-335-7600 ext. 7428
905-335-7880 (FAX)
Tania.Dowhaniuk@burlington.ca

Preliminary Grading & Erosion Control Plan (C1) & Preliminary Site Servicing Plan (C2):

1. It is difficult to differentiate between the Revised 7.5m Offset from Top of Bank, 7.5m Offset from Dripline, Staked Tree Dripline and Soil-Mat Stable Top of Bank 2017 because they are all drawn in the same line type and width. It would be easier to read the plan if the lines were graphically differentiated and shown in the legend.
2. Please clearly show and label the O2 Boundary Line.

Tree Inventory + Preservation Plan (L.1):

1. The plan appears to be printed slightly smaller than 1:200 scale. The bar scale is off, and dimensioned widths shown on the Site Plan are slightly smaller on the plan.
2. The Tree Inventory and Analysis chart lists tree 3 is missing an asterisk.
3. Note the measurement units for DBH and crown.
4. Detail TP-1 – Tree Protection Detail from the City of Burlington Tree Protection and Preservation Specification No. SS12A should be used, which lists the required minimum tree protection zones.
5. Trees 58 to 61 are to be preserved, but are not shown graphically (with stippled hatching, as shown in the Legend for trees to be protected).
6. Coordinate the curb lines, limits of paving and proposed toe walls and retaining wall locations with the Preliminary Grading & Erosion Control Plan.
7. Include Detail TP-1 – Tree Protection Detail from the City of Burlington SPEC SS12A on the plans (the detail shows the required Minimum Tree Protection Zones).
8. Coordinate the proposed sidewalk location with the Site Plan (A2).
9. Please clearly show and label the O2 Boundary Line.

Landscape Master Plan (L.2):

1. The plan appears to be printed slightly smaller than 1:200 scale. The bar scale is off, and dimensioned widths shown on the Site Plan are slightly smaller on the plan.
2. Coordinate the curb lines, limits of paving and proposed toe walls and retaining wall locations with the Preliminary Grading & Erosion Control Plan (C1).
3. Using a grey tone for the terraseed hatch layer and using an arc to join non-adjacent plants that share a plant key (e.g. Ps2, Ps3, Pp2, Pp3) is recommended for legibility.
4. Offset the 5 AfJ (Autumn Blaze Maple) from the row of Tof (Pyramid Cedar).
5. Coordinate the proposed sidewalk location with the Site Plan (A2).
6. Please clearly show and label the O2 Boundary Line.
7. I defer to CH for comment on the proposed planting within the15m of conservation land.
8. It is difficult to read where the proposed 1500mm high black vinyl chainlink fence commences and terminates.
9. Comment 24. of the Environmental Impact Summary states that “No snow will be stored piling up against the proposed fence or near o2 zone” and refers to the L2 Landscape Master Plan,

905-335-7600 ext. 7428
905-335-7880 (FAX)
Tania.Dowhaniuk@burlington.ca

but the L2, L3, and A2 Site Plan all show a “Snow Deposition” area. Please remove the snow storage area and coordinate the plans with the Environmental Impact Summary.

10. Please consolidate the Legends.

Woodlot Planting Plan (L.3):

1. The plan appears to be printed slightly smaller than 1:200 scale. The bar scale is off, and dimensioned widths shown on the Site Plan are slightly smaller on the plan.
2. Coordinate the curb lines, limits of paving and proposed toe walls and retaining wall locations with the Preliminary Grading & Erosion Control Plan (C1).
3. The grouping of ToW (Eastern White Cedar) nearest to the north property line lists 5, but shows 6. Update the Plant List to show 11 ToW.
4. Coordinate the proposed sidewalk location with the Site Plan (A2).
5. Please clearly show and label the O2 Boundary Line.
6. I defer to CH for comment on the proposed planting within the15m buffer zone of the woodlot.
7. Comment 18 says that “Lower Infill Plantings less than 0.4m to be planted by hand in 15m Naturalized Buffer. See L3 for proposed deciduous and coniferous shrubs specification and plan” but there is no note about planting by hand on the L3 drawing. Please add a note to the L3 plan regarding the requirement to plant by hand. Also confirm how trees should be planted in the 15m Tree Buffer Zone and add a note to the L3 drawing. Please coordinate notes with recommendations of the Environmental Impact Summary.
8. Comment 24. of the Environmental Impact Summary states that “No snow will be stored piling up against the proposed fence or near o2 zone” and refers to the L2 Landscape Master Plan, but the L2, L3, and A2 Site Plan all show a “Snow Deposition” area. Please remove the snow storage area and coordinate the plans with the Environmental Impact Summary.

Environmental Impact Summary:

1. Comment 11. says “it is assumed hat the City will provide a fence and gate of the boundary abutting Upper Middle Road. Please remove reference to a gate.
2. Comment 14 says that “We proposed that only 36 replacement trees be planted…..The replacement trees will be a minimum of 5’-0” tall. The species proposed are as follows…” and refers to the L3 Woodlot Planting Plan.

   The L3 Woodlot Planting Plan shows a total of 79 trees; 50 deciduous trees that are 1500mm tall, and 29 coniferous trees that are 800-1200mm tall.

   Since the number, size, species and distribution of trees shown on the L3 Woodlot Planting Plan deviate from what is “proposed” in the Environmental Impact Study, please confirm whether what is described in the report is recommended, but what is shown as proposed on the plan is acceptable, or whether the plan and report need to be coordinated.
3. Comment 18 says that “Lower Infill Plantings less than 0.4m to be planted by hand in 15m Naturalized Buffer. See L3 for proposed deciduous and coniferous shrubs specification and plan” but there is no note about planting by hand on the L3 drawing. Please add a note to the L3 plan regarding the requirement to plant by hand. Also confirm how trees should be planted in the 15m Tree Buffer Zone and add a note to the L3 drawing. Please coordinate notes and recommendations with L3 plan.

905-335-7600 ext. 7428
905-335-7880 (FAX)
Tania.Dowhaniuk@burlington.ca

4. Comment 24. of the Environmental Impact Summary states that “No snow will be stored piling up against the proposed fence or near o2 zone” and refers to the L2 Landscape Master Plan, but the L2, L3, and A2 Site Plan all show a “Snow Deposition” area. Please remove the snow storage area and coordinate the plans with the Environmental Impact Summary.

Public and Private Trees

1. There are fifteen (15) trees in the city’s right-of-way (ROW), including trees located in the 5m road widening. The city trees include Black Pine, Black Walnut, White Ash, Black Walnut, Bur Oak, Honey Locust, Norway Maple, Little Leaf Linden and Red Oak.

   Four (4) of the fifteen (15) trees in the city’s ROW are to be removed and the remainder are to be protected and preserved.

   Removal of city trees will require council approval and compensation.
2. A Tree Permit is required for any and all works around city trees, in accordance with Public Tree Bylaw 68-2013, including the payment of the Tree Permit fee and securities for trees to be retained and compensation for trees to be removed. The amount required for compensation and security will be determined by the Manager of Urban Forestry or delegate and paid at the Site Plan Approval stage.
3. **Please do not remove any trees from the site until after the Rezoning application has been approved.**

Conclusion

At this time, Urban Forestry and Landscaping staff has no objections to the proposed zoning by-law amendment, subject to the submission and approval of revised plans, as outlined in the Request for Revisions and Clarification section of these comments.

Please feel free to contact me if you have any questions.

Regards,

Tania Dowhaniuk, OALA, CSLA
Intermediate Technician - Landscaping
Capital Works
City of Burlington | www.burlington.ca
P. 905 335 7600, ext 7428 | **F.** 905 335 7880 | **E.** Tania.Dowhaniuk@burlington.ca
Address 426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6

Conservation Halton

905.336.1158
Fax: 905.336.7014
2596 Britannia Road West
Burlington, Ontario L7P 0G3
conservationhalton.ca

Protecting the Natural Environment from Lake to Escarpment

October 21, 2019

Ms. Melissa Morgan, City of Burlington Planning and Building Department
426 Brant Street, P.O. Box 5013
Burlington, Ontario L7R 3Z6

BY MAIL & EMAIL

Dear Ms. Morgan,

Re: 4063 Upper Middle Road
Proposed Zoning By-law Amendment Application
File Number: 520-03- 17 (Fourth Circulation)
City of Burlington

Conservation Halton (CH) staff have reviewed the fourth circulation documents listed in Appendix C submitted for the Proposed Zoning By-Law Amendment for 4063 Upper Middle Road. Staff previously provided letters regarding the first, second, and third circulations in letters dated June 30, 2017, July 24, 2018, and February 13, 2019.

A review of the drawings notes that the stable top of bank line has changed between the 3rd and 4th submission. As such, the development limits cannot yet be confirmed. Staff request that the original scaled drawing from the Slope Stability Assessment be provided for verification. Furthermore, the stable top of bank shown on all drawings must be updated to follow the line shown in the Slope Stability Assessment.

Given the need to verify the stable top of bank, many of the previous comments made in February 2019 remain applicable. These detailed comments have been updated an included as a response in Appendix A and Appendix B of this letter. Comments in Appendix A need to be addressed prior to CH being able to support the approval of the Zoning By-law amendment application.

Staff request that the applicant provide a response matrix and the re-submission fee based on the applicable fee schedule. Staff would be pleased to discuss the remaining comments with the applicant to assist in finalizing this application. The undersigned may be contacted at extension 2279 in this regard.

Sincerely,

tur Ola Panczyk
Environmental Planning Analyst
OP/

cc: Adam Huycke, Region of Halton, by email

Appendix A: Comments to be Addressed Prior to Approval of Zoning By-Law Amendment

The following comments are required to be addressed for CH to support the approval of the Zoning By-law Amendment. These comments and responses are based on CH's previous letter dated February 13, 2019.

Ontario Regulation 162/06

1. The drawings do not clearly delineate the regulated lands, are not all appropriately scaled, and do not all correspond. For example, drawing A3 does not clearly show the stable slope line or setback; has a drawing scale (1:200) that does not correspond to the plot size; and shows the dripline and stable slope offset in a location that differs from drawing C1. The following revisions are required to all drawings:
   a. Clearly delineate the top of bank as staked by CH (include the date of staking), the long term stable top of bank as determined by the slope stability assessment, and the 7.5m regulatory allowance that extends from the stable top of bank.
   b. Show the slope stability cross section locations.
   c. Clearly label and distinguish all lines (e.g. with different hatching or colour).
   d. Ensure all drawings are plotted to scale and that the scales are appropriate such that lines are not too thick.
   e. Ensure lines on all drawings by thinkGiraffe, S.Llewellyn and Reynolds & Associates correspond.
   f. Clearly delineate development limits (including grading, fill, swales, structures, pavement, etc.).

   Partially Addressed: As identified above, the stable top of bank line differs from prior submissions and needs to be verified. All other line work is acceptable. Staff suggest the line work be digitally colour coded on drawings for ease of review.

2. The Proposed Concept Plan (Figure 2) within the Planning Justification Report should be updated to reflect the features, hazards and setbacks and clearly delineate the O2 Zone as outlined above.

   Not Addressed: An updated report was not included in this submission. It is understood that that the document will be provided in a subsequent submission.

3. The drawings must demonstrate that all development (including grading, fill, swales, structures, pavement, etc.) and any related construction and disturbance will be located outside of the regulated area (outside of the stable top of bank and associated 7.5m allowance) and O2 Zone. Staff understand that some grade restoration may be required in the area where the dwelling was demolished. Staff will review any grade restoration details through the site plan and CH permit processes.

   Not Addressed: As per comment 1 above, the stable top of bank line needs to be verified and all drawings must be updated to demonstrate that all development, including construction disturbance (e.g. silt fence, staging, shoring) is outside of the regulated area. Staff note that the swale shown on drawing A2 is not delineated on the grading plans. The grading plan also notes a 3:1 slope to match dripline, which would encroach into the regulated area.

4. Comment 28 of the Environmental Impact Summary should be revised, as it currently notes that the ESC fence will be located 1 metre east of the limit of the developable area. The proposed ESC fence should be shown on the drawings outside of the regulated area and natural heritage feature setbacks.

   Not Addressed: While Comment 28 of the Environmental Impact Summary (now Comment 31 in fourth submission) notes that erosion and sediment control fence is proposed on the limit of the developable area, the grading plan shows the fence located within the regulated area.

5. In light of the above, it must be demonstrated that the proposed 0 metre building setback from the Creek Block (as per page 30 of the Planning Justification Report) can be feasibly achieved and that construction will be completed without causing disturbance to the regulated area or natural heritage features and setbacks (i.e. the O2 Zone).

   Not Addressed: Based on a review of the grading plan, it appears there may be areas where the construction boundary/disturbance enters the regulated area. Further, there are inconsistencies between the grading, foundation section and O2 Zone boundary drawings (e.g. regarding width of shoring). Please update the foundation section to show CH's regulated and the limit of the O2 boundary.

CH/Halton Region MOU

Environmental Impact Study and Tree Inventory and Preservation Study

6. The chainlink fence is required to be outside of the regulated area and should be outside of the O2 Zone. Staff will review the fence location once setbacks are clear and consistent on all drawings.

   Not Addressed: The fence location will need to be updated once the stable top of bank has been verified.

Appendix B: Comments to be Addressed Through Site Plan and CH Permit Process

Based on review of the previous and current submissions, the following at a minimum will need to be addressed during the Site Plan review process and any associated CH Permit applications. Additional regulatory and advisory comments will be provided through the forthcoming review processes. Comments made in the February 2019 letter that have been addressed are removed.

Ontario Regulation 162/06

1. Further to prior comment 32, a note should be added to the ESC plans indicating that the site will be stabilized immediately.

   Partially Addressed: While prior comment 32 of the Environmental Impact Summary (now comment 33 in fourth submission) notes that the site will be stabilized immediately, the note should be added to the ESC plans.

2. Further to prior comment 38, all drawings should indicate removal of the shed in the buffer area.

   Not Addressed: Shed has not been removed from all drawings.

3. The grading plan must show any required grading to restore the area where the dwelling was removed. This is the only location where some grading may be allowed within the regulated area, subject to obtaining a CH permit.

   Not Addressed. The above comment remains applicable. Further, staff note that a swale is proposed adjacent to the regulated area on drawing A2 but not reflected on the grading plan. The grading plan also notes a 3:1 slope to match dripline, which would encroach into the regulated area.

CH/Halton Region MOU

Environmental Impact Study and Tree Inventory and Preservation Study

4. Staff appreciate that a naturalized buffer has been shown on the Landscape Drawings L1, L2 and ThinkGirrafe Drawing A2. It will need to be confirmed that the entire O2 zone is appropriately naturalized once the boundaries are clearly delineated based on the comments in Appendix A.

   Partially Addressed: Drawings will need to be updated once stable top of bank has been verified.

5. Further to prior comment 39, a nurse crop species should also be included with the seed mix for the vegetation buffer.

   Note Addressed: A nurse crop species should be included on the drawing.

Stormwater Management and Groundwater - Supplemental Hydrogeological Considerations Report

6. Staff advise that seasonal groundwater level data specific to this site should be provided through the Site Plan process to confirm that there are no impacts associated with ground water as it relates to the proposed stormwater tank or building/foundation design/construction.

   Partially Addressed: It is understood that interaction between groundwater and the underground parking and footings is no anticipated. Supporting/detailed information should be provided through the Site Plan Process. Staff note inconsistencies between invert numbers on the servicing drawing and ravine drawing.

Appendix C: Third Submission Documents

The following documents were received August 27, 2019:

- Response Matrix, prepared by thinkGiraffe Design & Constructions, dated August 24, 2019
- Cover letter, thinkGiraffe Design & Construction Connections, dated August 25, 2010
- Set of 3 Drawings A1-A3 (SiteStatistics, Site Plan, O2 Zone/ Developable Lands RH5 Boundary), prepared by thinkGiraffe Design & Construction Connections, last dated August 1, 2019
- Set of 3 Drawings L.1-L.3 (Tree Inventory and Preservation Plan, Landscape Master Plan, Woodlot Planting Plan) prepared by Reynolds & Associates., last dated August 31, 2019
- Set of 2 Drawings C1-C2 (Preliminary Grading & Erosion Control Plan, Preliminary Site Servicing Plan), prepared by S. Llewellyn + Associates Ltd., last dated August 14, 2019
- Supplemental Hydrogeological Considerations , Soil-Mat Engineers & Consultants Ltd., November 28, 2018
- Slope Stability Assessment, Soil-Mat Engineers & Consultants Ltd., September 27, 2017
- Geotechnical Investigation, Soil-Mat Engineers & Consultants Ltd., May 16, 2013
- Environmental Impact Summary, prepared by Environmental Liability Management Inc., revised July 15, 2019
- Foundation Section (S2) and Partial Foundation Plan (S1) prepared by WitzelDyce Engineering Inc. dated August 2019
- Response Matrix from S. Llewellyn & Associates Limited dated August 8, 2019
- The Ravine submitted by thinkGiraffe Design & Constructions

Legislative & Planning Services
Community Planning
1151 Bronte Road
Oakville ON L6M 3L1
Fax: (905) 825-0267

November 12, 2019

Ms. Melissa Morgan
Planning and Building Department – Planning Division
City of Burlington
426 Brant Street Po Box 5013
Burlington, ON L7R 3Z6

RE: Zoning By-law Amendment – Fourth Submission
4063 Upper Middle Road
Think Giraffe Designs
City of Burlington File No. 520-03/17

Dear Ms. Morgan:

Regional Staff are in receipt of the Fourth Submission for a Zoning By-law Amendment (**ZBA**) application by Think Giraffe Design to permit the development of a 8-storey, high density residential apartment building (**Development Proposal**) on the lands known municipally as 4063 Upper Middle Road (Subject Lands). The following amendment is requested:

- To amend the current zone designation ('D-Development') to a site specific Residential High Density'RH5' and an Open Spacer 'O2' zone to permit the Development Proposal.

Regional Planning Staff have reviewed the subject applications within the context of Provincial planning documents and Regional Official Plan (ROP) and are **NOT** in a position to provide a recommendation on the submitted ZBA as there continues to remain a number of issues with the development proposal as outlined herein.

Matters of Provincial and Regional Interest:

Further to the Region's February 21, 2019, Regional Staff continue to be of the opinion that based upon the foregoing comments and review of the materials provided as part of this resubmission, that the proposed development is not consistent Provincial Policy Statement 2014 (PPS). Further, since providing our previous comments, the Province of Ontario has release a new Growth Plan for the Greater Golden Horseshoe, A Place to Grow (2019). Based upon the foregoing comments, Regional Staff are of the opinion that the policies of A Place to Grow (2019) have not been satisfied.

As noted in our February 2019 comment letter, the subject lands are designated as 'Urban Area' and adjacent to lands forming part of the Regional Natural Heritage System within the 2009 Official Plan (ROP). The policies of Urban Area designation support a form of growth that is compact and supportive of transit, the development of vibrant and healthy mixed use communities which afford maximum choices for residence, work and leisure. Sections 77, 78 and 81 of the ROP further supports providing opportunities for live/ work relationships, and achieving higher densities and mix of uses as defined and prescribed by Local Official Plan policies.

Section 89(3) of the ROP requires all new development within the Urban Area be on the basis of connection to Halton's municipal water and wastewater systems. Detailed discussion on existing

Regional Services adjacent to these lands and availability of servicing capacity are detailed below under the Municipal Services heading.

Further to our February 21, 2019 comment letter, Regional Staff have considered the response materials provided as part of this resubmission against the Region Natural Heritage System policies of the ROP. Staff note that a consolidated version of the required supporting Environmental Impact Assessment (EIA) prepared by a Qualified Professional was not included as part of this resubmission. While we are generally satisfied with the extent of various addendum/response documents provided as it relates to the evaluation of the RNHS and the proposed development (save and accept the below noted matters), a consolidated version of this evaluation document was not provided. This remains outstanding and is required prior to the Region preparing a formal recommendation being provided.

Regional Staff further note the following matters remain outstanding and are to be addressed:

i) Matters identified in Conservation Halton's October 21, 2019 comment letter;
ii) The Site Plan and Landscape Plan identifies a proposed swale adjacent to the underground parking ramp. This swale is located within the buffer to the woodlands and slope. This swale was not assessed as part of the EIA as all development and site alterations were to remain outside of the 7.5m buffer. Further, the revised Engineering Drawings prepared by S. Llewellyn and Associates do not identify a swale in this location. Please amend the plans;
iii) L.3 – Woodlot Planting Plan prepared by Reynolds and Associates(revised August 31, 2019) needs to be updated to remove reference to the *15m tree buffer zone*;
iv) A final version of the EIA that contains all the relevant revisions, tables and responses should be submitted. This is a standard practice as outlined in the Region's Environmental Impact Assessment Guideline;
v) Confirmation that the Draft Zoning By-law Schedule 'B' is consistent with/implements the greater of the constraints (natural hazards constraints as approved by Conservation Halton or the Regional Natural Heritage System constraints).

Based upon the above, Regional Staff are NOT satisfied that ROP policy direction with respect to the preservation and protection of the Regional Natural Heritage System has been satisfied.

Site Contamination:
As noted in our February 21, 2019 comment letter, a revised/updated Environmental Assessment Study, in accordance with ROP policy and Guidelines, was not included as part of this resubmission. As such, and in order to address ROP policy requirements, revised ESA's are still required to evaluate whether there is potential for site contamination on these lands and the steps necessary to bring the site to a condition suitable for its intended use.

Municipal Services:
Regional Staff have considered this resubmission based upon ROP policy, and based upon the technical comments contained within our February 2019 comment letter. Regional Staff are satisfied with the response provided as part of this resubmission from a municipal servicing and ZBA perspective. In providing this, the Owner should be aware of the following development requirement to be addressed through subsequent planning processes:

- A more fulsome and technical servicing review related to servicing the proposed buildings, will be undertaken during the Site Plan approval review when the owner applies for a Regional Services Permit.
- As part of the Site Plan approval process, a Regional Municipal Consent should be applied for to permit all proposed excavation of the Regional roadway.
- The proposed off-site road/entrance works will require a specific set of engineering drawings for review and approval, detailed cost estimate, signed and registered-on-title Regional Servicing Agreement for the Regional Road works, Securities in the form of a Letter of Credit, the payment of Agreement fees, and the submission of a Certificate of Insurance (liability) to the Region's satisfaction.
- At the Site Plan approval, in order to initiate a fulsome review of the comprehensive engineering drawing submission package related to the off-site road/entrance works, the Region will require an initial non-refundable Engineering & Inspection Fee Deposit ($ 5,000.00 plus $ 650.00 HST = $ 5,650.00) in the form of a certified cheque made out to The Regional Municipality of Halton.
- Satisfy the other requirements of The Regional Municipality of Halton as issues arise during the review and construction process.

While Regional Staff acknowledge that this report is satisfactory for the purposes of the identifying how they site can be services and any capacity constraints (downstream or otherwise), capacity within the Region's system to accommodate growth does not imply support for growth and intensification/redevelopment of uses.

Regional Transportation:
Section 173(8) of the ROP states that the Region and the Local municipalities will work together to control access to Arterial Roads in accordance with Council adopted access management policies. On Map 3 of the ROP, Regional Road 38 (Upper Middle Road) is defined as Minor Arterial road. In considering development applications, the ROP further requires that the proponent for any development considered to have a transportation impact to carry out a detailed transportation study to assess the impact of the proposal and to recommend necessary improvements.

- Please note that our February 21, 2019 comments as it relates to the submitted Traffic Impact Study prepared in support of the proposed development continue to apply.

Noise Study:
Our February 21, 2019 noise comments, including those contained within Appendix 'B' continue to apply.

Land Dedication:
In accordance with ROP policy, land dedications will be required at the appropriate stage in the planning approval process for these lands:

- As previously, noted, Regional Staff are generally supportive of a 5 metres land dedication along the frontage of the subject lands. This road widening would appear to align with the property to the west and east. Regional Staff note that the plans provided as part of this recirculation identify a 5.28 metre road widening. Regional Staff are unable to confirm if this identified road widening is accurate as a proper OLS survey did not accompany the resubmission.

Regional Staff note that the implementing By-laws, and concept plans should identify all lands to be dedicated. Lastly, in considering the revised submission, Regional Staff recommends that careful consideration of all required turning movements, and required site works are contained within the future property limits (i.e. the limits of development following all require dedications).

Conclusion:

As noted above, there remain a number of outstanding technical issues associated with the ZBA application that remain outstanding. It is the opinion of Regional Planning staff that background supporting documentation submitted in support of the ZBA application require further comprehensive analysis and updating prior to Halton Region being in a position to provide further detailed comments on this development proposal.

I trust these comments are of assistance to you. Should you have any questions or require additional information, please do not hesitate to contact me directly.

Yours truly,

Adam Huycke, MCIP, RPP, CPT
Senior Planner, Community Planning

APPENDIX D

SELECT PHOTOGRAPHS FROM SITE

APPENDIX D

REPRESENTATIVE PHOTOGRAPHS FROM SITE

PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
1	25-Apr-13

Description:

House side view. The chimney is also visible. This type of chimney does not allow for bird nests, so the chimeny was noted as not suitable for birds.



Photo No.	Date:
2	25-Apr-13

Description:

Lawn of house



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
3	25-Apr-13

Description:

House, front view. The chimney is also visible. This type of chimney does not allow for bird nests,so the chimeny was noted as not suitable for bird nests.



Photo No.	Date:
4	25-Apr-13

Description:

Lawn



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
5	25-Apr-13

Description:

Looking West at front of site



Photo No.	Date:
6	25-Apr-13

Description:

Shed located near top-of-bank



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
7	25-Apr-13

Description:

Top of bank



Photo No.	Date:
8	25-Apr-13

Description:

West side of manicured lawn



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
9	25-Apr-13

Description:

View of manicured lawn adjacent to top-of-bank



Photo No.	Date:
10	25-Apr-13

Description:

View of manicured lawn



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
11	25-Apr-13

Description:

View of flood plain forest - more than 120m from top-of-bank



Photo No.	Date:
12	25-Apr-13

Description:

View of flood plain forest at base of slope – about 25m from top-of-bank



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
13	25-Apr-13

Description:

View of flood plain forest - more than 120m from top-of-bank



Photo No.	Date:
14	25-Apr-13

Description:

Looking West at top-of-bank flagged by Conservation Halton.



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
15	25-Apr-13

Description:

Looking west at top-of-bank. Mature white pine evident in background



Photo No.	Date:
16	25-Apr-13

Description:

Likely Eastern Gray Squirrel Nest



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
17	25-Apr-13

Description:

Close up of lawn



Photo No.	Date:
18	25-Apr-13

Description:

View of mature white pine located away from top-of-bank. Note the dead branches.



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
19	26-Apr-13

Description:

Looking east to top-of-bank (orange flag) and tree drip line (blue flag)



Photo No.	Date:
20	26-Apr-13

Description:

Another view of flood plain forest 120 m from top-of-bank



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
21	26-Apr-13

Description:

Spring vegetation on-Site



Photo No.	Date:
22	26-Apr-13

Description:

View of Swamp White Oak found 150+ m from top-of-bank.



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
23	2-May-13

Description:

View of ground vegetation near top-of-bank



Photo No.	Date:
24	2-May-13

Description:

View of lawn near top of bank



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
25	14-May-13

Description:

Looking west from the rear of the residence toward the top-of-bank



Photo No.	Date:
26	14-May-13

Description:

View of coppiced Crabapple



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
27	14-May-13

Description:

View of Crabapple in flower



Photo No.	Date:
28	14-May-13

Description:

View 1 of American Basswood on lawn



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
29	14-May-13

Description:

View 2 of American Basswood on lawn

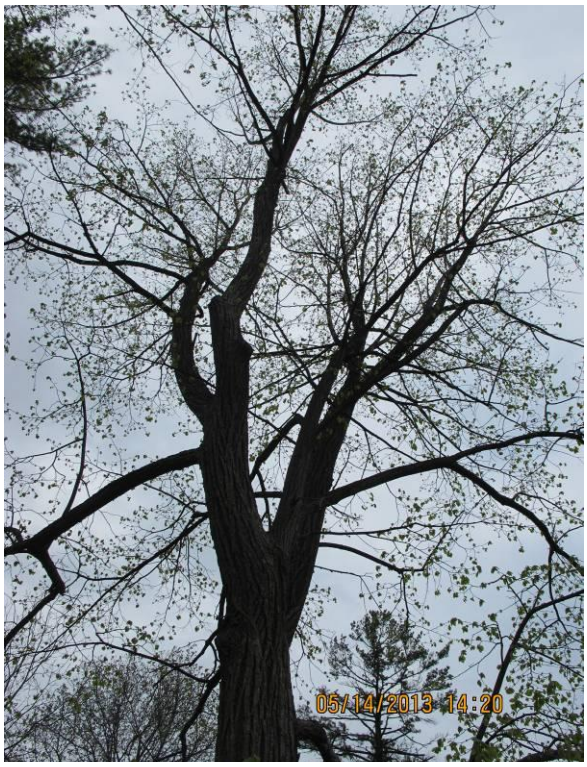


Photo No.	Date:
30	14-May-13

Description:

View of Norway Maple on lawn



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
31	14-May-13

Description:

View of White Ash with Poison Ivy vine



Photo No.	Date:
32	14-May-13

Description:

View 1 of ground vegetation near top-of-bank



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
33	14-May-13

Description:

View 2 of ground vegetation near top-of-bank



Photo No.	Date:
34	14-May-13

Description:

View 3 of ground vegetation near top-of-bank



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
35	14-May-13

Description:

View 4 of ground vegetation near top-of-bank



Photo No.	Date:
36	14-May-13

Description:

View 5 of ground vegetation near top-of-bank



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
37	14-May-13

Description:

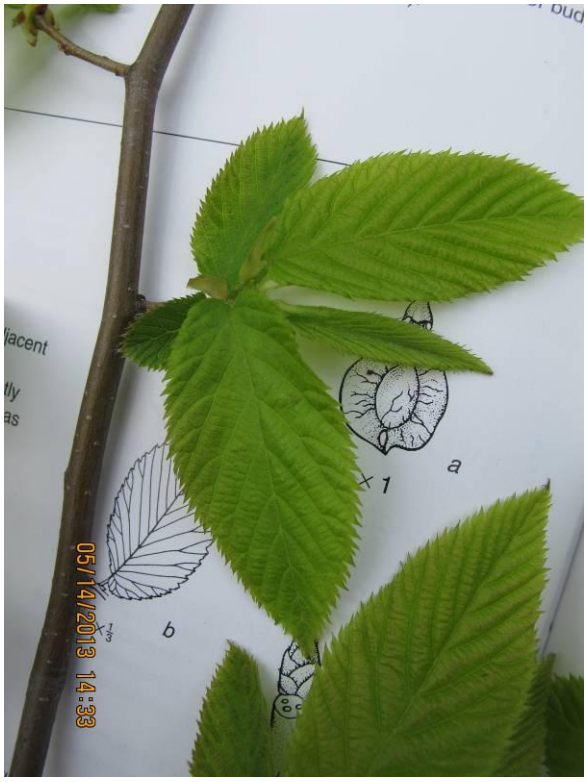
View 1 of ground vegetation on manicured lawn



Photo No.	Date:
38	14-May-13

Description:

View of American Elm branch from tree on lawn



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
39	14-May-13

Description:

View of Black Pine on lawn



Photo No.	Date:
40	14-May-13

Description:

Spring plant survey 1



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
41	8-Sept-14

Description:

View of mature White Pine located away from the top-of-bank. Broken branches are evident that were likely caused by the December 2013 ice storm.



Photo No.	Date:
42	8-Sept-14

Description:

View of a Bitternut Hickory that had the crown severed from the trunk of the tree, inferred to have been caused by the December ice storm.



PREMIER ENVIRONMENTAL SERVICES INC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Springfield Homes	4063 Upper Middle Road, Burlington, Ontario	613015.CE

Photo No.	Date:
43	8-Sept-14

Description:

View of a Bitternut Hickory that was uprooted from the flood plain and fell on to the top-of-bank, inferred to have been caused by the December ice storm. This tree is adjacent to the one in Photograph 42.

In other words, several Hickory trees fell due to one storm. This is why the tree drip line was reset.



APPENDIX E

FIELD DATA SHEETS FOR PLANT SURVEYS

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Upper middle	POLYGON: WOMM3
	SURVEYORS: WDF DATE:	TIME: start 1100
		end 1200
	UTMZ: UTME: 596827	UTMN: 4803830

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒Terrestrial	☐Organic	☐Lacustrine	☐Natural	☐Plakton	☐Lake
☐Wetland	☐Mineral Soil	☐Riverine	☒Cultural	☐Submerged	☐Pond
☐Aquatic	☐Parent Mat'l	☐Bottomland		☐Floating-LVD	☐River
	☐Acidic Bedrock	☐Terrace		☐Graminoid	☐Stream
	☐Basic Bedrock	☐Valley Slope		☐Forb	☐Marsh
	☐Carb. Bedrock	☒Tableland		☐Lichen	☐Swamp
		☐Roll Upland		☐Bryophyte	☐Fen
		☐Cliff		☒Deciduous	☐Bog
		☐Talus		☐Coniferous	☐Barren
		☐Crevice/Cave		☐Mixed	☐Meadow
SITE:		☐Alvar			☐Prairie
		☐Rockland	COVER:		☐Thicket
☐Open Water		☐Beach/Bar			☐Savannah
☐Shallow Water		☐Sand Dune	☐Open		☒Woodland
☒Surficial Dep		☐Bluff	☐Shrub		☐Forest
☐Bedrock			☒Treed		☐Plantation

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> Much greater than; > Greater than; = About equal to)
1 Canopy	1	2	JUGNIGR > PINSTRO
2 Sub-Canopy	2	1,2	ACENEGU > PINSYLV > QUESHUM = PRUNRG
3 Understory	3	1	MALSYLV > FRAAMER
4 Grd. Layer	4,5	3,4	SOLCANA > ASTNOVA = RUBIDAE

HT CODES: 1= >= 25m; 2= 10 - <25m; 3= 2 - <10m; 4= 1 - <2m; 5= 0.5 - <1m; 6= 0.2 - <0.5m; 7= <0.2m

CVR CODES: 0 = None; 1 = >0 - 10%; 2 = >10 - 25%; 3 = >25 - 50%; 4 = >50%

STAND COMPOSITION: JUGNIGR 100	BA: N/A

SIZE CLASS ANALYSIS:	O	< 10	R	10 - 24	R	25 - 50	R	> 50
STANDING SNAGS:	R	< 10	R	10 - 24	N	25 - 50	N	> 50
DEADFALL / LOGS:	R	< 10	R	10 - 24	N	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMMUNITY AGE:		PIONEER		YOUNG		MID-AGE		OLD GRWTH

SOIL ANALYSIS:

TEXTURE: CL	DEPTH TO MOTTLES/GLEY: g = N/A G = N/A	
MOISTURE:	DEPTH OF ORGANICS: 0	(cm)
HOMOGENOUS/VARIABLE	DEPTH TO BEDROCK: 7120	(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	Woodland	WO
COMMUNITY SERIES:	Mixed Woodland	WOM
ECOSITE:	Dry-fresh Mixed Woodland Ecosite	WOMM3
VEGETATION TYPE:		
INCLUSION:		
COMPLEX:		

ELC **PLANT SPECIES LIST**	SITE: 40[illegible] Upper Middle Road
	POLYGON: [illegible]
	DATE:
	SURVEYORS: DJ, DF

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTORY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

damaged some saplings

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
PINSTRO	R				
JUGNIGR	D				
ACEPLAT	R				
MALSYLV			R		
FRAAMER			R		

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
ACENEGU		O			
PRUVIRG		R			
QUESHUM		R			
PINSYLV		R			
ASTANVA				R	
SOLCANA				A	
RUBIDAE				R	
ANAARVE				R	
OXASTRI				R	
GEUCANA				R	
RANACRI				R	
RUDHIRT				R	

ELC

SOILS ONTARIO

SITE: 9063 Upper Middle Rd
POLYGON: WDM3
DATE:
SURVEYORS: BD, DF

	P/A	PP	Dr	SLOPE: Position	Aspect	%	Type	Class	UTM Z	EASTING	NORTHING
1	A	4	3	1	WD	5	5	3	17	546327	4803830
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE X HORIZON	A 7 120cm				
A TEXTURE	CL				
COURSE FRAGMENTS	N/A				
B TEXTURE	/				
COURSE FRAGMENTS					
C TEXTURE	/				
COURSE FRAGMENTS					
EFFECTIVE TEXTURE	CL				
SURFACE STONINESS	1				
SURFACE ROCKINESS	1				
DEPTH TO/OF					
MOTTLES	N/A				
GLEY	N/A				
BEDROCK	7120				
WATER TABLE	7120				
CARBONATES	7120				
ORGANICS	0				
PORE SIZE DISC #1	/				
PORE SIZE DISC #2	/				
MOISTURE REGIME	3				
SOIL SURVEY MAP					
LEGEND CLASS					

ELC STAND CHARACTERISTICS	SITE: 4065 Vance Middle RD
	POLYGON:
	DATE:
	SURVEYORS:

TREE TALLY BY SPECIES:

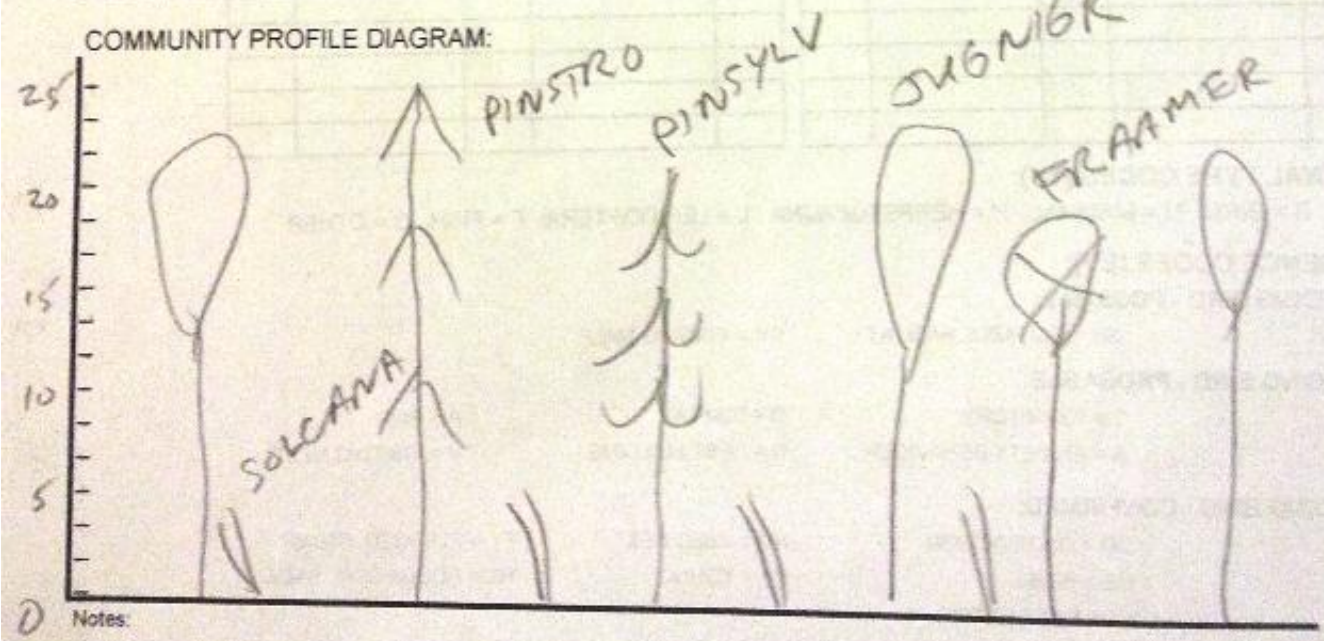
PRISM FACTOR: 2X

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG.
JUGNIGR						2	100
TOTAL	2					2	100
BASAL AREA (BA)	4					4	
DEAD							

STAND COMPOSITION:

JUGNIGR 100

COMMUNITY PROFILE DIAGRAM:



Notes:

100

ELC	SITE: 1058 Upper Middle Rd
	POLYGON:
	DATE:
WILDLIFE	SURVEYORS: RJ, DF
	START TIME: 1100 END TIME: 1200

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS	X	SNAGS
	HIBERNACULA	X	FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#
B	AMRO	OB		6
M	E.S.-squirrel	OB		2

TY	SP. CODE	EV	NOTES	#

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:

SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:

T = TERRITORY D = DISPLAY P = PAIR

A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:

DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG

NE = EGGS NY = YOUNG FS = FOOD/FECAL SACK

AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:

OB = OBSERVED VO = VOCALIZATION CA = CARCASS

DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS/YOUNG

TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT

SI = OTHER SIGNS (specify)

floodplain forest.

Cuday

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: 4063 uMP	POLYGON:	
	SURVEYORS: DF	DATE: 28 Aug 17	TIME: start 1:00 end 3:00
	UTMZ:	UTME: 0	UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☑ Terrestrial	☐ Organic	☐ Lacustrine	☑ Natural	☐ Plakton	☐ Lake
☐ Wetland	☑ Mineral Soil	☐ Riverine	☐ Cultural	☐ Submerged	☐ Pond
☐ Aquatic	☐ Parent Mat'l	☑ Bottomland		☐ Floating-LVD	☐ River
	☐ Acidic Bedrock	☐ Terrace		☐ Graminoid	☐ Stream
	☐ Basic Bedrock	☐ Valley Slope		☐ Forb	☐ Marsh
	☐ Carb. Bedrock	☐ Tableland		☐ Lichen	☐ Swamp
		☐ Roll Upland		☐ Bryophyte	☐ Fen
		☐ Cliff		☑ Deciduous	☐ Bog
		☐ Talus		☐ Coniferous	☐ Barren
		☐ Crevice/Cave		☐ Mixed	☐ Meadow
SITE:		☐ Alvar	**COVER:**		☐ Prairie
☐ Open Water		☐ Rockland			☐ Thicket
☐ Shallow Water		☐ Beach/Bar			☐ Savannah
☑ Surficial Dep		☐ Sand Dune	☐ Open		☐ Woodland
☐ Bedrock		☐ Bluff	☐ Shrub		☑ Forest
			☑ Treed		☐ Plantation

CARCORD
FRAPENN
PINSTRO
CARLACI
ACENEGU
ACESACC
ULMAMER
OSTVIRG

minor trees:
ACESPIC
FAGGRAN

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> Much greater than; > Greater than; = About equal to)
1 Canopy	2	4	CARCORD = FRAPENN > PINSTRO > CARLACI
2 Sub-Canopy	3	2	ACENEGU > ACESACC > ULMAMER > OSTVIRG
3 Understory	4	2	ACENEGU > ACESACC > ULMAMER
4 Grd. Layer	5	2	TOXRADI > IMPCAPE > ARCMINU > URTDIO

HT CODES: 1= >= 25m; 2= 10 - <25m; 3= 2 - <10m; 4= 1 - <2m; 5= 0.5 - <1m; 6= 0.2 - <0.5m; 7= <0.2m

CVR CODES: 0 = None; 1 = >0 - 10%; 2 = >10 - 25%; 3 = >25 - 50%; 4 = >50%

+ some RHACATH on edge, close to CUW as understory but minor - should be removed

STAND COMPOSITION:			BA:

SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	O	25 - 50	R	> 50
STANDING SNAGS:	A	< 10	A	10 - 24	O	25 - 50	R	> 50
DEADFALL / LOGS:	O	< 10	O	10 - 24	O	25 - 50	R	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMMUNITY AGE:		PIONEER		YOUNG	✓	MID-AGE		OLD GRWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES/GLEY: g =	G =
MOISTURE:	DEPTH OF ORGANICS: >50	(cm)
HOMOGENOUS/VARIABLE	DEPTH TO BEDROCK: >120	(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	FOREST	FO
COMMUNITY SERIES:	Deciduous Forest	FOD
ECOSITE:	Fresh Moist Deciduous	
VEGETATION TYPE:	B. Hemlock Hickory	FOD9-5
INCLUSION:		
COMPLEX:		

Notes:

Dominant canopy tree → CARCORD,
All ash are dead
2nd abundant live canopy tree → PINSTRO ; some ACESACC in canopy (rare)
↳ even aged w similar size of trees, due to disturb.

Dominant subcanopy → ACENEGU

Dominant understory → ACENEGU

Ground → extensive TOXRADI with patches of other key species like IMPCAPE, ARCMINU, URTDIO

no JUGNIGR in FOD but it is in CUW; FOD too wet for walnut.

ELC STAND CHARACTERISTICS	SITE: 4063 UMR
	POLYGON: flood plain forest
	DATE: 28 AUG
	SURVEYORS: DF

TREE TALLY BY SPECIES:

PRISM FACTOR: 2

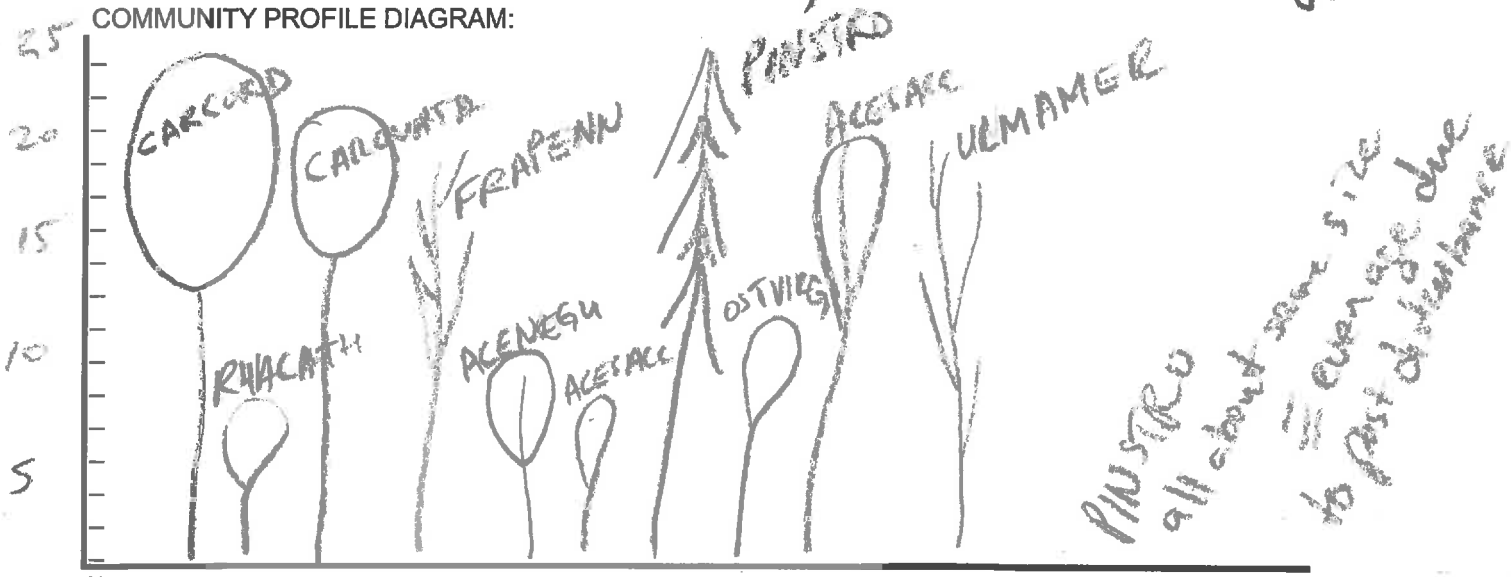
SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG.
CARCORD	11		1	1		4	40
FRAPENN		1		1	1	3	30
PINSTRO			11	1		3	30
CARGLABA					1	1	10
ACESACC		1				1	10
TOTAL	2	2	2	3	3	11	100
BASAL AREA (BA)	4	2	3	4	2	15	
DEAD		1		1	1	3	

no JUGNIG in FOD but in CUW too wet in FOD for walnut

STAND COMPOSITION:

All ash and elm dead; hickory most common tree type

COMMUNITY PROFILE DIAGRAM:



Notes:

understory dominated by TOXRADI with patches of IMPCAPE, ARCMINU, URT DIOI

* some RHACATH on edge of FOD, at ecotone with CUW.
* couple FAGGRAN in area but rare and small
* ACENEGU near edge of FOD, at ecotone w CUW

Table 1: Amphibian survey results using MMP for Site on May 2. Rain observed during previous 24 h (> 1 mm).

Zero - light wind
Arrival ~9.45 → 10:50

T°C start ~13°C
T°C end ~11°C

Station Number	Listening times Amphibian Calling Activity		Other notes
	1	2	
1 (South)	9:50 → 9:54 Ø	9:53 – 10:01 Ø	Light traffic; little residual noise
2 (North)	10:05 – 10:09 Ø	10:10 – 10:13 Ø	Little to zero noise from adjacent complex
Other	10:20 – 10:35 Sat in middle of site for ~15 minutes and just observed		No wild life, no amphibian calls

→ not much action
→ wind was not a factor, as it was generally quiet

Table 2: Amphibian survey results using MMP for Site on May 9. Rain observed during previous 24 h (> 1 mm).

Some light winds
Arrival @ 9:30 Departed @ 10:45 T°C start ~9C
T°C end ~7C

Station Number	Listening times			Other notes
	1	2	3	
1 (South)	10:35 - 10:39 1GF	10:42 - 10:45 0		light traffic low noise from road
2 (North)	10:58 - 11:02 0	11:05 - 11:08 0		zero noise from apartment complex
Other	10:10 - 10:25 Sat in middle of site for ~15 mins No amphibian calls; no wildlife			

→ one GF heard calling from Flood Plain Forest
- no action on building side
- wind/rain not a factor, as noise was low.
- spoke to person walking brown dog about land development.

Table 3: Amphibian survey results using MMP for Site on May 27. Rain observed during previous 24 h (> 1 mm).

Arrived at 9:45, departed at 11:00
light rain not loud - perhaps ideal for this survey
wind mostly light but sometimes absent
T°C @ start 15 T°C @ end 12

Station Number	Listening times			Other notes
	1	2	3	
1 (South)	9:50 - 9:53 1GF	9:55 - 9:59 1GF	10:03 - 10:06 Ø	low traffic with splashes from water on roadway
2 (North)	10:10 - 10:12 Ø	10:15 - 10:18 Ø		zero noise from land developed next door
Other	10:20 to 10:35 Sat in middle of site for 15 minutes no amphibian calls, no wildlife observed			

- one GF heard on south side, near edge of flood plain forest
- otherwise quiet
- wind rain not a problem for background noise.

Table 4: Amphibian survey results using MMP for Site on June 14. Rain observed during previous 24 h (> 1 mm).

Arrived at 10:00; departed at 11:00
T °C at start – 20; T °C at end 17.
light winds; rain last night.

Station Number	Listening times			Other notes
	1	2	3	
1 (South)	10:03 – 10:06 3 - 3GF	10:09 – 10:13 3 - 4GF	10:15 – 10:19 3 - 3GF	lower steady hum of traffic but not loud
2 (North)	10:22 – 10:25 0	10:28 – 10:31 0		zero residual noise from neighbour's apartments
Other	10:35 – 10:50 sat in middle of site for ~15 minutes no amphibian calls; no wildlife observed			

- multiple GF heard calling from floodplain forest
- north side of site to no amphibian calls
- wind rain not a problem for noise
- striped skunk observed near fence line as I was leaving
  - seemed to be attracted to adjacent garbage can on other side of wooden fence.

APPENDIX F

TREE INVENTORY INFORMATION FOR MYOTIS SCREENING

SURVEY OF TREES FOR CAVITIES, JULY 2015

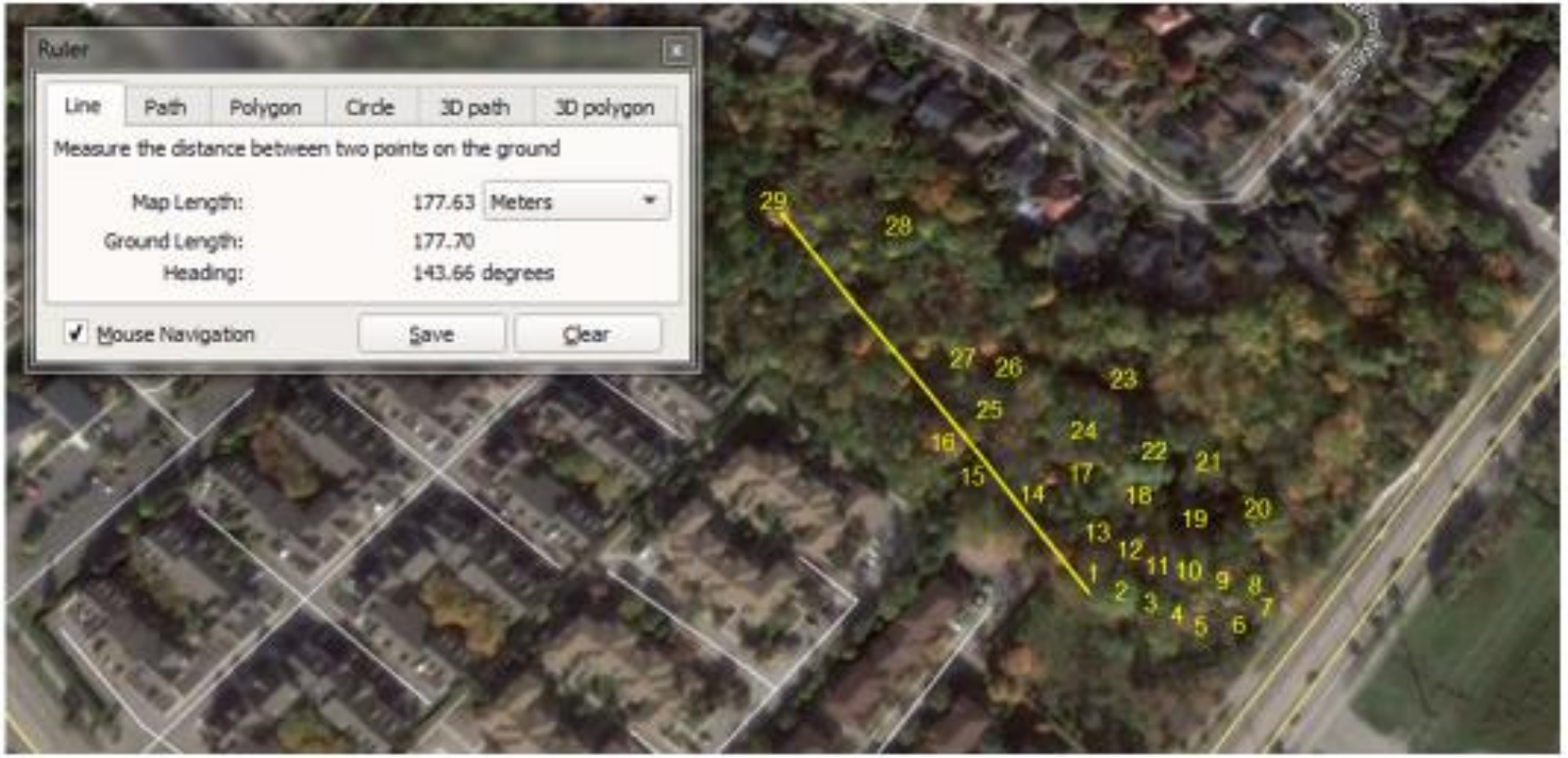


Figure 1: View of the distribution of 29 trees with DBH > 25 cm inspected for cavities, representing candidate myotis habitat. The largest tree was a Weeping Willow (#29), located about 177 m from the top of bank (distance marked with yellow line). The second largest tree was a Swamp White Oak (#28) located about 159 m from the top of bank. All other trees were located in the area were included within 120 m of the top of bank.

Table 1: Summary of trees evaluated for possibly use by Myotis (i.e., bats) in FOD9-1 on July 29, 2015. This evaluation of the flood plain forest focused on inspections of the largest trees only. Specifically, inspections involved looking at the tree and also using binoculars to assess the top part of the canopy for presence of cavities.

Scientific Name	Common Name	DBH (m)	Circumference (m)	Ice damage (Y/N)	Distance from Site Top-of-Bank (m)	Visual evidence of cavities (Y/N)	Could cavities, if present, be used by bats?
Pinus strobus	Eastern White Pine	0.40	1.25	Y	10	N	
Pinus strobus	Eastern White Pine	0.41	1.3	Y	15	N	
Pinus strobus	Eastern White Pine	0.46	1.45	Y	15	N	
Acer rubrum	Red Maple	0.39	1.22	Y	20	N	
Carya ovata	Shagbark Hickory	0.37	1.15	Y	20	N	
Carya ovata	Shagbark Hickory	0.43	1.35	Y	20	N	
Fagus grandifolia	American Beech	0.31	0.97	Y	25	N	
Juglans nigra	Black Walnut	0.33	1.05	N	25	N	
Fagus grandifolia	American Beech	0.25	0.79	Y	15	Y	Cavities too shallow for use by bats
Pinus strobus	Eastern White Pine	0.49	1.55	Y	50	N	
Carya cordiformis	Bitternut Hickory	0.46	1.45	Y	60	N	
Carya ovata	Shagbark Hickory	0.45	1.4	Y	60	N	
Pinus strobus	Eastern White Pine	0.31	0.98	Y	65	N	
Carya ovata	Shagbark Hickory	0.33	1.04	Y	70	N	
Carya ovata	Shagbark Hickory	0.32	0.99	Y	70	N	
Fagus grandifolia	American Beech	0.26	0.82	Y	75	Y	Cavities too shallow for use by bats
Carya cordiformis	Bitternut Hickory	0.43	1.35	Y	60	N	
Tilia americana	American Basswood	0.27	0.85	Y	70	N	
Juglans nigra	Black Walnut	0.35	1.1	N	75	N	
Carya ovata	Shagbark Hickory	0.43	1.35	Y	85	N	
Acer rubrum	Red Maple	0.32	0.99	N	85	N	
Pinus strobus	Eastern White Pine	0.41	1.3	Y	90	N	
Carya ovata	Shagbark Hickory	0.45	1.4	Y	95	N	
Carya cordiformis	Bitternut Hickory	0.41	1.3	Y	~100	N	
Pinus strobus	Eastern White Pine	0.59	1.85	Y	~100	N	
Quercus rubra	Red Oak	0.37	1.15	Y	~115	N	
Carya cordiformis	Bitternut Hickory	0.38	1.18	Y	~120	N	
Salix babylonica	Weeping Willow	1.04	3.28	Y	150+	Y	Cavities likely evident but not inspected, due to far distance from top-of-bank.
Quercus bicolor	Swamp White Oak	0.92	2.89	Y	150+	Y	

APPENDIX G

TREE INVENTORY AND PRESERVATION STUDY (CIRCA 2015)

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Figure 2: Detailed drawing of proposed development.

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Table 3-1: Inventory of trees evaluated along Upper Middle Road, adjacent to the Site

Table 3-2: Inventory of trees evaluated for this study on-Site

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Appendix A PHOTOGRAPHS OF TREES SCREENED FOR CAVITIES AND MYOTIS USE (PORTION OF TREES INCLUDED IN APPENDIX E FROM EIS)

1.0 INTRODUCTION

Premier Environmental Services Inc. (Premier) was retained by Springfield Construction (Springfield) to prepare an Tree Inventory and Preservation Study (TIPS) as a component of an Environmental Impact Study (EIS) for land at 4063 Upper Middle Road, in Burlington, Ontario (hereinafter, the Site; Figure 1). This TIPS within the EER represents a required step, as identified in the City of Burlington Official Plan (CBOP). In this context, the TIPS is intended to document the existing trees that may be disturbed by the proposed development and identify what trees are proposed to be preserved and removed. The documentation of the trees to be removed relative to the total trees then provides a basis to identify compensation measures such as replacement plantings, as a mitigation strategy for disturbance to this environment.

A requirement for TIPS in the Region of Halton (ROH) is that it is prepared by qualified professionals. This TIPS was prepared by Dean Fitzgerald, M.Sc., Ph.D. and David Jolly, B.Sc., Senior Ecologists at Premier. In the past, Dr. Fitzgerald has taught field ecology at four universities in Canada and U.S.A. While in the U.S.A, Dr. Fitzgerald also team-taught forest ecology courses at Cornell University within different forests located across New York State. Mr. Jolly has taught plant identification skills to 100s of students across Ontario. Mr. Jolly is also an Ontario Ministry of Natural Resources (OMNR) certified Butternut Health Assessor in Ontario. Collectively, Dr. Fitzgerald and Mr. Jolly have more than 40 years of professional experience with terrestrial ecology in general and tree ecology in particular.

This Site is identified as parcel number 07228-0147 and is legally described as Part of Lot 10, Concession 1, South of Dundas Street in Nelson/Burlington Township (Premier, 2013). During 2013, staff from Premier inspected the Site, and documented it contained a single level residence that was surrounded by manicured lawn, shrubs, flower beds, fruit trees, and other planted and volunteer deciduous and coniferous trees (Premier, 2013). The distribution of plants across the manicured lawn and area at the top-of-bank varies, but confirms the ecotone between the residential lot and Shoreacres Creek flood plain is well defined (Premier, 2014).

Information provided by Springfield (M. Corrado, pers. comm., September 2014) identified to Premier that the residence on-Site was demolished during June, 2014. On September 8, 2014, staff from Premier inspected the Site and a summary of this inspection is included in Premier (2014). When the Site was inspected, it was noted that some of the planted ornamental trees found next to the residence had been removed during demolition (Premier, 2014). Other trees located on the manicured lawn and in proximity were noted to have experienced damage during the December 2013 ice storm. As such, this TIPS provides a detailed assessment of the current status of the live trees on the manicured lawn and in proximity to the top-of-bank that show a diameter-at-breast height (DBH) > 10 cm.

4063 Upper Middle Road Constraint Map

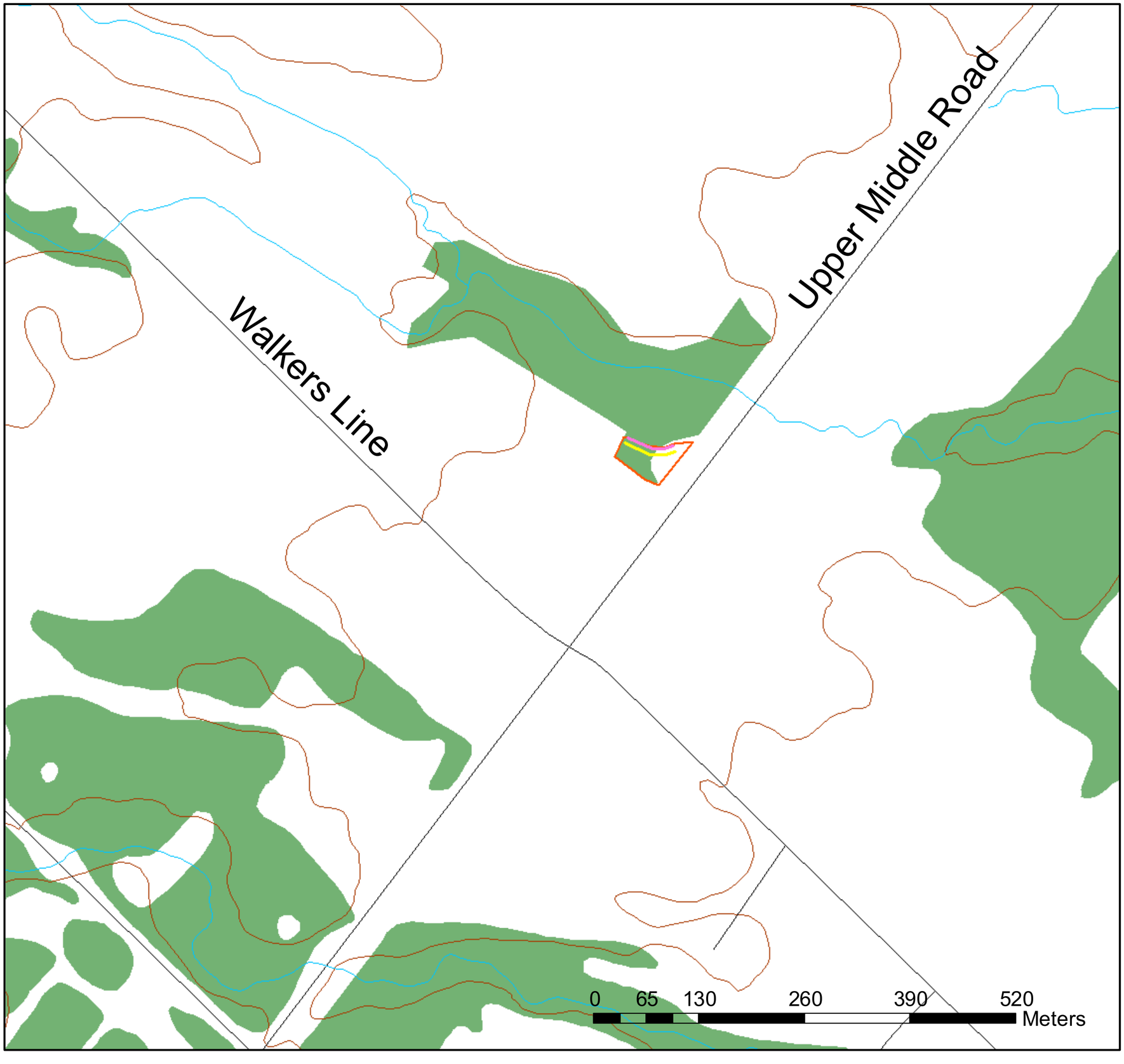


Figure 1

This drawing has been prepared for Premier and it's clients and may not be used, reproduced or transmitted in any way by third parties without permission from Premier Environmental.

PREMIER ENVIRONMENTAL SERVICES INC. *Environmental Challenges BUSINESS SOLUTIONS*

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UTM Zone Projection
North American Datum 1983
September 29, 2014

N W E S

Legend

- Drip line
- 7.5 m buffer
- Water course
- Road
- Contour line
- Woodland
- Study area



Relationship between the Proposed Development and City of Burlington Official Plan

In the CBOP, the Site is designated as 'High Density Residential and Watercourse' because it contains a portion of Shoreacres Creek (CBOP 2012). As noted above, this flood plain forest is separated from the manicured lawn by the top-of-bank, where the lawn is relatively flat and then the land slopes down to the flood plain on one side and toward the residence on the other side. This flood plain forest is designated as Greenlands A (CBOP, 2012, HROP 2009).

Information provided by Springfield (Michael Corrado, pers. comm., September 2014) identified to Premier that the residence on-Site was demolished during June, 2014. At this time, Premier understands that the appropriate demolition permits were obtained from the City of Burlington (COB) by the previous landowner and best practices were used during the demolition activity. On September 8, 2014, staff from Premier inspected the Site and a summary of this inspection is included in Premier (2014). This recent inspection identified no evidence of environmental contamination near the foundation of the demolished residence. When the Site was inspected, it was also noted that the majority of debris from the residence had been removed. In addition, it was also noted that some of the planted ornamental trees adjacent to the residence were removed during demolition, as the roots were close to the foundation (Premier, 2014). This 2014 inspection also noted the trees found along the top-of-bank were not disturbed during the demolition, another indication that best practices were used.

1.1 Review of Government Guidance for Top-of-Bank and Tree Drip Line

On October 12, 2012, Mr. Charles Priddle, Coordinator, Regulations Program of CH, marked the top-of-bank of the flood plain forest of Shoreacres Creek. This marking identified the extent of the regulated flood plain on-Site, as previously defined by CH and represented in the RHOP. This process of the identification of the flood plain and top-of-bank is pursuant to the Ontario Regulation 150/06 (Development, Interference with Wetlands and Alterations to Shorelines and Watercourses). This regulation applies to any proposed development in, near, or on areas near water (e.g. river or stream valleys, hazardous land, wetlands). Thus, any proposed development in proximity to regulated lands (i.e., near a flood plain) requires permission from CH.

Then, on April 26, 2013, Ms. Jane Devito, Senior Planner CH, participated in the inspection of the Site, to set the tree drip line along with staff from ROH and Ms. Lauren Cymbaly from Premier. At this meeting, Ms. Cymbaly agreed the top-of-bank seemed to be appropriate relative to the other features on-Site. Then the tree drip line was interpreted to match the trees observed growing at and in close proximity to the top-of-bank previously marked by Mr. Priddle.

On May 8, 2013, Ms. Devito shared a telephone conversation with Ms. Cymbaly. This conversation confirmed that a geotechnical slope stability study was not required by CH for the proposed development, as long as a 7.5 m setback is maintained from the top-of-bank. It was also discussed during this conversation that this 7.5 m setback would also include the noted tree drip line established along the top-of-bank. In other words. Ms. Devito acknowledged a 7.5 m setback was very similar to the tree drip line plus 7.5 m buffer, and it would protect the roots of all trees found in proximity to the top-of-bank. This information provided by CH identifies that tree drip line plus 7.5 m buffer identified for the Site can be expected to protect the roots of all trees found near the top-of-bank and in the flood plain forest. Thus, it is inferred that a setback from the top-of-bank and 7.5 m is a reasonable buffer to protect the trees in this area. This is the conclusion included in the Premier (2015) EIS as well.

On June 18, 2015, the tree drip line was re-set, with staff from ROH. The ROH was represented by Senior Planner Richard Clark and Senior Forester Ronald Reinholt while Premier was represented by Senior Ecologist Dean Fitzgerald. It was necessary to re-set the tree drip line, as a number of large trees were toppled by the ice storm of December 2013, and these large trees in the past had been used to set the original tree drip line. Since these trees were no longer part of the Shoreacres woodland, it was necessary to re-set the tree drip line. No changes were made to the top-of-bank previously set by CH on-Site.

1.2 Proposed Development

Springfield has prepared a development plan for the Site. This plan identifies a scenario to develop a multi-level condominium building. The general layout of this plan for the Site is identified within Figure 2. For this plan, the extent of the footprint of the development specifically is set back from the flood plain that is located on-Site. Thus, the proposed disturbance for the future development specifically is set back from the tree drip line found along the top-of-bank of Shoreacres Creek by 7.5 m. This proposed 7.5 setback from the tree drip line is a relatively flat area. This flat area is intended to achieve the following:

- to separate future development from the flood plain of Shoreacres Creek; and.
- to separate future development from existing trees and roots along the top-of-bank.

For the proposed development, the future drainage is expected to either drain toward Shoreacres Creek as it does currently or be directed away from Shoreacres Creek, toward existing infrastructure located along Upper Middle Road. This expectation is due to the proposed setback from the tree drip line within a flat area that will allow for natural precipitation to continue to drain naturally toward to Shoreacres Creek. Then, the existing natural slope of the land associated with the landscaping and foundation of the former residence will result in water to drain away toward Upper Middle Road. In other words, the setback from the top-of-bank is a

PLAN OF TOPOGRAPHY OF
PART OF LOT 10, CONCESSION 1
SOUTH OF DUNDAS STREET
(GEOGRAPHIC TOWNSHIP OF NELSON)
IN THE
CITY OF BURLINGTON
REGIONAL MUNICIPALITY OF HALTON

SCALE 1 : 200 m.

5 0 5 10 15 METRES

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METRIC NOTE
DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

THIS SURVEY WAS PREPARED FOR MICHAEL CORRADO AND THE UNDERSIGNED ACCEPTS NO RESPONSIBILITY FOR USE BY OTHER PARTIES.

REGISTERED EASEMENTS AND/OR RIGHT-OF-WAY.
NONE

BEARING NOTE
BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE WESTERLY LIMIT OF UPPER MIDDLE ROAD AS SHOWN ON REGISTERED PLAN No. 417 HAVING A BEARING OF N37°24'30"E.

BENCHMARK
CITY OF BURLINGTON BENCHMARK No. 429
BRASS PLAQUE SET ON THE NORTHWEST FACE OF HEADER WALL ON WEST END OF BRIDGE OVER SHOREACRES CREEK ON UPPER MIDDLE ROAD, 380m EAST OF WALKERS LINE, 15c EAST AND 40cm BELOW TOP OF WALL.

ELEVATION=139.935

LEGEND

■—	DENOTES	STANDARD IRON BAR
—□—	DENOTES	IRON BAR
—○—	DENOTES	ROUND IRON BAR
OU	DENOTES	ORIGIN UNKNOWN
BURL	DENOTES	CITY OF BURLINGTON
Y&Y	DENOTES	YATES & YATES SURVEYING INC.
■— FOUND □— PLANTED		
P1	DENOTES	PLAN OF SURVEY BY ASHENHURST NOUWENS LTD, DATED JULY 15, 2002.
P2	DENOTES	P2 – PLAN 20R-8438
P3	DENOTES	PLAN 20M-463
FF	DENOTES	FINISHED FLOOR ELEVATION
GF	DENOTES	GARAGE FLOOR ELEVATION
CT	DENOTES	CONIFEROUS TREE
DT	DENOTES	DECIDUOUS TREE
WV	DENOTES	WATER VALVE
CB	DENOTES	CATCH BASIN
MH	DENOTES	MANHOLE
WMH	DENOTES	WATER MANHOLE
HP	DENOTES	HYDRO POLE
RRW	DENOTES	ROCK RETAINING WALL
LS	DENOTES	LIGHT STANDARD
GW	DENOTES	GUY WIRE

SURVEYOR'S CERTIFICATE
I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT, THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 17th DAY OF JANUARY, 2013.

JANUARY 24, 2013 — DATE

GUIDO V. CONSOLI
ONTARIO LAND SURVEYOR

ASHENHURST NOUWENS LIMITED
PROFESSIONAL ENGINEERS & ONTARIO LAND SURVEYORS
315 YORK BOULEVARD, SUITE 201, HAMILTON, ONTARIO L8R-3K5
TELEPHONE: (905) 529-6316
(905) 529-4314
FAX: (905) 529-6651
e-mail: anl@AshenhurstNouwens.com
ESTABLISHED 1956

DRAWN BY	CALC'D BY	CHK'D BY	FILE No.
B.K.	B.K.	G.V.C.	13006 TOPO+BLS

generally flat area that will continue to allow drainage to Shoreacres Creek whereas the drainage for the remainder of the lot will direct drainage runoff away from the flat area. Thus, the future drainage of the proposed development will be comparable to the existing drainage on-Site, and thereby maintain runoff to Shoreacres Creek while also directing runoff to existing infrastructure found along Upper Middle Road. This maintenance of drainage toward the creek will result in continued transport of water to the trees, and assist in maintaining these trees.

2.0 METHODS

This chapter reviews the methods followed for the preparation of the TIPS.

Trees found across the manicured lawn and in proximity to the top-of-bank on-Site were assessed initially by Ms. Lauren Cymbaly B.Sc. Ecologist at Premier. Ms. Cymbaly prepared an initial inventory of all live trees on-Site with a DBH > 10 cm (0.1 m). Then, these same trees were re-assessed by Dr. Fitzgerald and Mr. Jolly using varied criteria that quantify the size of the tree, total volume of wood, evidence of damage and disease, indication of pest infestation, presence of holes from wildlife, and an interpretation of overall health. This approach follows the guidance included in the CBOP. Plant names follow the Ontario list (Newmaster et al. 1998).

Trees on-Site were initially assessed and mapped by Ms. Cymbaly between April and October, 2013. It should be noted that most of the ornamental trees planted in close proximity to the former residence were not documented by Ms. Cymbaly, as they did not meet the 10 cm DBH criterion. The trees on-Site were then re-assessed by Dr. Fitzgerald and Mr. Jolly on September 8, 2014. This re-assessment was justified, due to the severe ice storm that was experienced in Burlington during December, 2013. Specifically, this ice storm was reported in the mass media as causing extensive damage to deciduous and coniferous trees across Burlington.

In this TIPS, only the live trees with DBH > 10 cm located on the manicured lawn and in proximity to the top-of-bank are reported in detail. A number of trees that were live in 2013 were observed to be dead in 2014, presumably due to damage from the ice storm. This inference that the ice storm resulted in the loss of some trees is also attributable to no other observed disturbance of these trees on-Site during this time period.

The documentation included in this TIPS quantifies the type, morphology, and health of each tree located on the manicured lawn and in proximity to the top-of-bank. This quantification includes the following criteria:

- Native or invasive (i.e., non-native) to Halton Region;
- DBH and Circumference;
- Single trunk or coppiced growth with multiple trunks from one root mass;
- Evidence of damage to trunk and/or branches from December 2013 ice storm;
- Observation of holes in trunk or branches from birds such as woodpeckers
- Indication of pest infestation;
- Indication of disease;
- Description of general health (represented as completeness of leaf canopy); and
- Overall assessment of tree health.

2.1 Species-At-Risk

Communications were completed between Ms. Cymbaly of Premier and staff from Ontario Ministry of Natural Resources (OMNR) Aurora District Office between April and July, 2013 regarding possible Species-At-Risk (SAR) on-Site. Initially, Ms. Cymbaly described the project to OMNR and they provided a screening letter, issued by Ms. Natosha Fortini, OMNR Aurora office. In this letter, OMNR that identified the Site needed to be screened using proper methods by qualified ecologists for one tree: Butternut (*Juglans cinerea*). This approach follows the requirements defined by Ontario's *Endangered Species Act* (Ontario, 2007).

It is important to identify that during the re-setting of the tree drip line on-Site during June 2015, Mr. Clark from RH asked if Premier had surveyed for bats, a group of mammals referred to generally as 'myotis', on-Site. Premier responded that the original residence had been surveyed for bats prior to demolition and none were found. Mr. Clark then reminded Premier that during November, 2013, OMNR elevated three myotis species to endangered status in Ontario and thereby these populations and habitats became protected under the Ontario's *Endangered Species Act*. These species that received protection at that time include: Little Brown Myotis *lucifugus*, Northern Myotis *septentrionalis*, and Tri-colored Bat *Perimyotis subflavus* (COSEWIC, 2013). Due to the elevation of these three myotis species to endangered, it became necessary to inspect the large trees on-site for possible habitat use by these species.

Ecological Land Classification

Information presented in the EIS identified that Ecological Land Classification (ELC) was used to classify environmental features on-Site. This ELC classification process followed standard methods (Bakowsky et al. 1998; Jalava et al. 1997; Lee et al. 1998; OMNR, 2007). The ELC ecosites are presented in conjunction with the tree inventory observations for the Site.

3.0 DATA COLLECTION AND RESULTS

This chapter reviews results from inspection of trees on-Site during 2014.

3.1 Field Studies

Surveys on-Site initially identified the presence of nine trees along Upper Middle Road with a DBH > 10 cm that included White Ash and Norway Maple (Table 3-1). The two Norway Maple were classified as in good health while the seven White Ash were all classified as in poor health due to evidence of infestation by Emerald Ash Borer (*Agrilus planipennis*) (Tabel 3-1).

Table 3-1: Features of the trees inspected along Upper Middle Road, adjacent to the Site.

Scientific Name	Common Name	DBH (m)	Circumference (m)	Origin (N/I)	Ice damage (Y/N)	Evidence of Disease (Y/N)	Evidence of Insect Pests (Y/N)	General Health
Acer platanoides	Norway Maple	0.14	0.45	Invasive	N	N	N	G
Two (2) specimens		0.12	0.37		N	N	N	G
*Fraxinus americana**	White Ash	0.16	0.50	Native	N	N	Y	P
Seven (7) specimens		0.17	0.52		N	N	Y	P
		0.13	0.40		N	N	Y	P
		0.15	0.48		N	N	Y	P
		0.16	0.49		N	N	Y	P
		0.22	0.69		N	N	Y	P

* - All *Fraxinus americana* trees had yellow leaves and dead branches, suggestive of presence of Ash beetle.

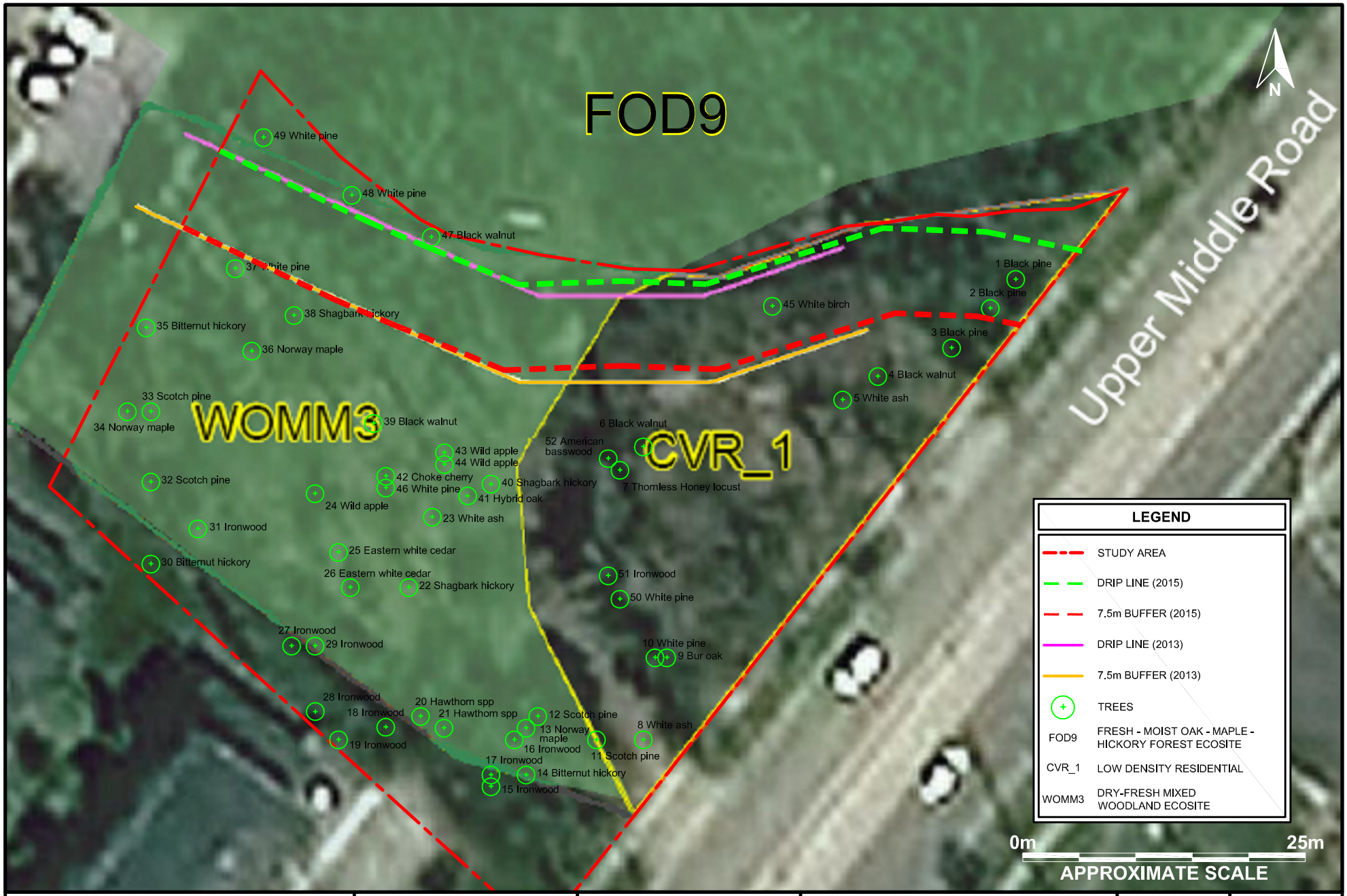
Inspections of the manicured lawn and area in proximity to the top-of-bank on-Site in 2014 identified the presence of 63 woody stems with DBH $\geq$ 10 cm representing 17 tree species (Figure 3, Table 3-2). Each tree on the lawn and near the top-of-bank is described relative to the criteria listed in **Section 2.0** in Table 3-2.

For the trees on the manicured lawn and in proximity to the top-of-bank, a total of 58 stems with a DBH $\geq$ 10 cm were live, and correspond to 52 numbered trees representing 17 species. Of these numbered trees, four (4) species are invasive to Halton Region, representing 12 stems or 21% of the total stems. The invasive species in this area are Thornless Honey Locust, Scotch Pine, Black Pine, and Norway Maple. All of these specimens were likely obtained from a greenhouse, as the specimens were planted within 20 m of the former residence on-Site.

In terms of the 58 live trees, they show the following attributes:

- average DBH of 25 cm (SD: 21.6 cm; range: 10 - 86 cm);
- average circumference of 80 cm (SD=51.1 cm; range: 30 - 270 cm);
- largest specimen is a Bitternut Hickory at 86 cm DBH and 270 cm circumference;
- 52% show broken branches attributable to the ice storm;
- 10% show evidence of disease (including yellow/dead leaves);
- 31% show evidence of damage from insect pests (e.g., holes on bark surface); and
- All White Ash on-Site show evidence of the presence of invasive Emerald Ash Borer.

A total of five (5) dead trees with a DBH $\geq$ 10 cm were also documented. These were as two Scotch Pine, two Ironwood, and one White Ash.



PREMIER ENVIRONMENTAL SERVICES INC
244 Montrose St. N
Unit 1 Upper
Cambridge, ON
N3H 2H7
Bus: (519)-653-7140
Fax: (519)-653-8907

NOTE: LOCATIONS OF BUILDINGS, UNDERGROUND UTILITIES, ETC. ARE FOR REFERENCE ONLY AND SHOULD NOT BE RELIED UPON FOR DETAILED DESIGN, EXCAVATION, OR CONSTRUCTION PURPOSES

Client: SPRINGFIELD CONSTRUCTION

Site: 4063 UPPER MIDDLE ROAD BURLINGTON, ONTARIO

Title: TREE INVENTORY & PRESERVATION STUDY

Date: AUG 2015

Scale: AS SHOWN

Project: 613015.CE

Figure: 3

FILE EXTENSION: P:\2013 Projects\Cambridge\613015.CE - Ashenhurst Nouwens Limited- 4063 Upper Middle Road, Burlington, ON\AUTO-CAD\4063 Upper Middle Road Aug 2015.dwg

	Table 3-2: List of trees inspected at 4063 Upper Middle Road, Burlington												
	Scientific Name	**Common Name**	**Number**	**DBH (m)**	**Circumference (m)**	**Origin (I/N)**	**Ice damage (Y/N)**	**Evidence of Disease (Y/N)**	**Evidence of Insect Pests (Y/N)**	**General Health (G, F, P)**	**Remove (R) or Preserve (P)**	**Evidence of cavities?**
	Juglans nigra	Black Walnut	4	0.37	1.17	Native	Y	N	N	G	R	N
			39	0.49	1.55		N	N	N	G	R	N
			47	0.38	1.18		N	N	N	G	**P**	N
			6	0.25	0.78		N	N	N	G	R	N
	Thuja occidentalis	Eastern White Cedar	25	0.10	0.32	Native	N	N	N	G	R	N
	Carya ovata	Shagbark Hickory	22	0.28	0.87	Native	Y	N	Y	G	R	N
			37	0.42	1.31		N	Y	Y	G	R	N
			39	0.32	1.02		Y	N	Y	G	R	N
	Carya cordiformis	Bitternut Hickory	14	0.25	0.77	Native	Y	N	N	G	R	N
			29	0.86	2.70		Y	N	N	G	R	N
			34	0.31	0.97		Y	N	N	G	R	N
	Gleditsia triacanthos var. inermis	Thornless Honey Locust	7	0.52	1.63	Native	N	N	N	G	R	N
			52	0.12	0.38		N	N	N	G	R	N
	Pinus strobus	Eastern White Pine	47	0.22	0.69	Native	N	N	N	G	R	N
			10	0.25	0.80		N	N	N	G	R	N
			36	0.38	1.19		Y	N	N	G	R	N
			45	0.70	2.21		Y	N	N	P	R	N
			48	0.67	2.11		Y	N	N	P	R	N
			49	0.33	1.04		Y	N	N	P	R	N
	Pinus nigra	Black Pine	2	0.18	0.58	Invasive	N	N	N	G	R	N
			1	0.21	0.65		N	N	N	G	R	N
			3	0.19	0.60		N	N	N	G	R	N
	Pinus sylvestris	Scotch Pine	11	0.32	1.02	Invasive	Y	N	Y	P	R	N
			12	0.22	0.69		Y	N	Y	P	R	N
			31	0.22	0.69		Y	Y	Y	P	R	N
			32	0.32	0.99		Y	Y	Y	P	R	N
	Ostrya virginiana	Ironwood	17	0.16	0.49	Native	N	N	N	G	R	N
			15	0.13	0.40		N	N	N	G	R	N
			16	0.13	0.42		Y	N	N	G	R	N
			26	0.10	0.30		Y	N	N	G	R	N
			18	0.14	0.45		N	N	N	G	R	N
			27	0.11	0.33		Y	N	N	G	R	N
			28	0.15	0.47		Y	N	N	P	R	N
			19	0.10	0.31		Y	N	N	G	R	N
			30	0.14	0.43		N	N	N	G	R	N
			50	0.28	0.87		Y	N	N	G	R	N

	Crataegus sp.	Hawthorn spp.	20	0.11	0.35	Native	N	Y	N	F	R	N
			21	0.10	0.32		N	Y	N	F	R	N
	*Fraxinus americana**	White Ash	5	0.42	1.32	Native	Y	N	Y	P	R	N
			8	0.10	0.30		Y	N	Y	P	R	N
			23	0.18	0.57		Y	N	Y	P	R	N
	Malus syvestris	Wild Apple	42	0.18	0.57	Native	N	N	Y	F	R	N
			43	0.21	0.66		N	N	Y	F	R	N
			24	0.27	0.86		Y	N	Y	F	R	N
	Prunus virginiana	Choke Cherry	41	0.18	0.57	Native	N	N	N	G	R	N
	Tilia americana	American Basswood	51	0.60	1.88	Native	Y	N	Y	G	R	N
	Quercus macrocarpa	Bur Oak	9	0.20	0.64	Native	N	N	N	G	R	N
	Quercus rubra X Quercus shumardii	Red Oak * Shumard Oak	40	0.27	0.84	Native	Y	Y	Y	P	R	N
	Acer plananoides	Norway Maple	13	0.10	0.30	Invasive	N	N	N	G	R	N
			33	0.19	0.59		N	N	N	G	R	N
			35	0.20	0.63		Y	N	N	G	R	N
	Betula papyrifera	multi-stem	44	0.24	0.76	Native	N	N	Y	P	R	N
		multi-stem		0.21	0.66		N	N	Y	P	R	N
		multi-stem		0.20	0.64		Y	N	Y	P	R	N
		multi-stem		0.15	0.46		N	N	N	P	R	N
		multi-stem		0.14	0.43		Y	N	N	P	R	N
		multi-stem		0.13	0.41		N	N	N	P	R	N
		multi-stem		0.10	0.32		Y	N	N	P	R	N

3.2 Comparison of Trees among Lawn, Top-of-Bank, and Flood Plain

For the live trees on the manicured lawn and in proximity to the top-of-bank, the most common species in terms of total stems are White Birch with seven (7) stems from one root mass, six (6) separate Eastern White Pine trees, six (6) separate Ironwood trees. The DBH of these four common species are as follows:

- White Birch range from 10 to 24 cm;
- Eastern White Pine range from 22 to 70 cm; and
- Ironwood range from 10 to 28 cm.

Other species that include at least three stems on the lawn or near the top-of-bank include: Black Walnut (4 stems), Scotch Pine (4 stems), Norway Maple (3 stems), Shagbark Hickory (3 stems), Bitternut Hickory (3 stems), and Wild Apple (3 stems).

When the flood plain forest in proximity to the top-of-bank was inspected, it was observed to contain a mixture of the following dominant species: Shagbark Hickory, Bitternut Hickory, Eastern White Pine, Black Walnut, and a few Swamp White Oak (*Quercus bicolor*). On the well-drained slopes of the flood plain, species such as American Elm, Black Walnut, Bur Oak, Manitoba Maple, Red Oak, and Sugar Maple were evident. In close proximity to the top-of-bank, trees included Black Walnut, Common Buckthorn, Manitoba Maple Red Oak, and White Ash. As noted in **Section 4.0** of the EIS, the classification of the flood plain forest using ELC results in the designation of this hickory-oak-pine area as a FOD9-1 - fresh-moist oak-maple-hickory deciduous forest ecosite. In contrast, the trees found across the manicured lawn and areas in proximity to the top-of-bank is classified as cultural woodland CVR-1 - low density residential and mixed woodlands WOMM-3 that include American Elm, Black Walnut, Manitoba Maple, Sugar Maple, White Ash, and Eastern White Pine.

When these tree of the flood plain are compared with the cultural woodland, in terms of species composition, DBH and density, differences are readily evident. For example, the dominant species are hickory and oak in the flood plain compared with other species such as White Birch, Ironwood, and Eastern White Pine in the cultural woodland. Although a full inventory was not completed in the flood plain, the DBH is inferred to be much higher, as the dominant flood plain trees are taller than the trees that exist in the cultural woodland. Further, the density of trees in the flood plain forest was also interpreted to be higher compared with the cultural woodland. For these reasons, the trees found in the cultural woodland do not represent an extension of the flood plain forest along Shoreacres Creek. It is probable that individual trees, such as the large Eastern White Pine and one Bitternut Hickory were retained in the cultural woodland during the past development. However, other tree species have been planted in this area and it now represents a different plant community, indicative of past disturbance.

The total number of live stems on-site was 58 arising from 52 numbered trees. In addition, another five (5) trees (DBH $\leq$ 20 cm) were documented as dead in the cultural woodland. Due to this total number of live and dead stems, along with 12 stems representing invasive species, this area does not represent a significant woodland based on the requirements in the RHOP.

3.3 Evaluation of Health of Live Trees

An assessment of the health of live trees based on inspections in September 2014 is as follows:

- A majority of the trees show evidence of disease, insect infestation, and broken branches attributable to the ice storm, as noted;
- Despite these factors, the general health of most trees on the lawn and the top-of-bank were in good health with a minority classified as fair or poor. The breakdown is:
    - Good health designation for 36 stems or 62.2%;
    - Fair health designation for 5 stems or 8.6%; and,
    - Poor health designation for 19 stems or 29.2%.

In summary, the health of about 38% of the trees on-Site were classified as in Poor or Fair with about 62% as Good. Inspections of these same trees during June and July of 2015 confirmed these general patterns of health designations for the stems on-Site as well.

3.4 Screening for Species-At-Risk

This inventory of the Site identified no Butternut specimens. Hence, this SAR is interpreted to be absent from the Site. This interpretation on-Site was confirmed as correct following an inspection on July 4, 2013 by Bohdan Kowalyk R.P.F., OMNR *Aurora District Forester*.

On July 29, 2015, Staff from Premier identified no trees on the manicured lawn or within 120 m of the top-of-bank that demonstrated the presence of cavities large enough that could be used by myotis. It is noteworthy to state that a very large Weeping Willow (*Salix babylonica*) and Swamp White Oak, were observed > 150 m from the top-of-bank with cavities but these trees were sufficiently far away from the proposed development that they were considered isolated. A summary of the trees assessed for cavities in FOD9-1 is included in Appendix E of the EIS.

3.5 Removal and Preservation of Trees On-Site Trees

A total of 57 stems or 98.2% are proposed for removal with retention of one (1) stem. For the stem to be retained, it is a mature Black Walnut (tree #47, DBH=38 cm, Good health) located in close proximity to the top-of-bank. It is inferred the entire root system of this tree will be included in the 7.5 m buffer area. Since most roots of this tree are interpreted to exist in the buffer area, this Black Walnut has a very high chance of survival following completion of the development.

A total of five stems proposed to be removed are located within the tree drip line offset from the top-of-bank. These five trees proposed for removal are classified as in Poor health or are invasive species. These trees include two Eastern White Pine and a White Birch in Poor health, and two Black Pine. The two Eastern White Pine (stems #57 and #59) are large trees but suffered extensive damage during the ice storm. Both of these native pine trees would likely be classified as hazard trees, due to the presence of numerous dead branches and die back of the crown caused in part by the ice storm damage. In contrast, the White Birch (stem #44) tree is designated as Poor health due to ice storm damage of branches along with exposure of the root mass due to the excavation of the former residence. We also recommend the removal of the invasive Black Pine (stems #1 and #2) on-Site, to avoid future seed production.

3.6 Proposed Compensation for Trees Removed from Site

A total of 57 stems are proposed for removal from the Site. Under the guidance from the ROH and consultation with CH, it is appropriate to recommend a minimum of 57 stems to be planted on-Site, with compensation matching a 1:1 ratio. This recommendation is to be also consistent with the ROH and CH guidance to only plant native species in the future. This study recommends that these future plantings be concentrated in the area to the north and east of the proposed development, to achieve a greater density of trees near the top-of-bank. This approach will also act to enhance the stability of the slope, through greater density of tree roots.

Given the nature of the soils, light regime, and drainage, the following tree species are well adapted from an ecological perspective for planting in this area near the top-of-bank:

Red Oak	Burr Oak
Shagbark Hickory	Bitternut Hickory
Sugar Maple	Black Walnut
Eastern White Pine	Red Cedar

A second candidate area recommended for planting trees is the area at the base of the top-of-bank. In this lower area, additional trees would help maintain the slope stability. It is prudent to note the moisture regime is wetter in this area and the trees need to like wet soils. Species well adapted from an ecological perspective for planting is this area include:

Swamp White Oak	Burr Oak
Eastern White Cedar	Red Cedar
Red Maple	Basswood

These tree species match planting guidance from CH for habitats in proximity to water courses and are consistent with the current composition of trees in FOD9-1 near the top-of-bank. It is recommended that varying portions of the species noted represent the compensation planting.

4.0 DISCUSSION

This chapter describes the findings from the study and recommendations going forward.

4.1 Tree Compensation Strategy

For the proposed development, a total of 57 stems are identified for removal. This TIPS recommends planting 57 stems as replacements. The species recommended for planting all currently exist in the FOD9-1 forest that includes the top-of-bank area. Since these same trees exist in the area at this time, it is probable they will have a high chance of long-term survival, as they are ecologically-adapted to the soils, moisture, and light regime. Also, all of these trees produce seeds / nuts used by wildlife and this will benefit these habitats in the future. It is also prudent to note the planting of native trees currently in the FOD9-1 area increases the chance of long-term survival. If the density of trees is increased in the area of the top-of-bank, these plants will increase the separation between the proposed development and adjacent creek valley.

4.2 Tree Protection Strategy

A strategy is provided to protect the trees found on-Site, especially in proximity to the top-of-bank. In general, given that White-tailed Deer *Odocoileus virginianus* are evident in the area of the Site, and this herbivore readily consumes young trees, it is prudent to recommend that all trees planted on-Site as compensation be protected with wire fences at the time of planting.

The protection approach recommended in this report for trees that are not removed is presented with a similar explanation in **Section 9.0** of the EIS. The general recommendation identifies that Best Management Practices (BMPs) are to be followed to avoid the negative effects on trees that may occur on habitats adjacent to the proposed development, as a result expected activities associated disturbing soil etc. This process of 'effect avoidance' is preferable to the implementation of mitigation measures 'after' the effects have already been created. Where possible, avoidance measures should be implemented before resorting to mitigation and lastly rehabilitation to minimize negative effects on natural features. As such, the following BMPs are identified as available for implementation for this proposed development. If the BMPs are implemented, they will likely reduce the possible effects from the proposed development. The identification of these BMPs represents an opportunity to avoid the negative effects of the proposed development on the environment. The use of these mitigation measures is expected to reduce the extent and duration of the negative effects of the proposed development. In addition, prescribed mitigation measures with respect to natural heritage features observed at or adjacent to the Site are presented that follow the recommendations included in the Erosion and Sediment Control Guidelines for Urban Construction (2006), as reviewed in Table 4-1. After these BMPs are implemented, the timing of development activities at the Site should be considered, to ensure optimal use and efficiency of the measures used.

Table 4-1: Examples of BMPs for sediment and erosion control for construction sites lacking significant surface waters or wetlands

BMP	Advantage	Limitation
Silt Fence	• Effective way to prevent off-site transport • Relatively inexpensive • Reduces runoff and sediment transport • Mitigates erosion	• Must be installed properly to prove effective • Not suitable in areas with concentrated runoff volumes • Not suitable on rock or hard surfaces • Not suitable in areas exposed to high wind • Regular inspection required
Vegetative Buffer	• Retains existing vegetation for use by wildlife • Reduces erosion, especially during precipitation events • Reduces runoff, especially following snow melt • Filters air	• May require maintenance • Ensure protective measures are taken • Space consuming depending on size • Can be costly if buffer covers large area of land
Straw Bales	• Mitigates erosion • Relatively inexpensive • Reduces runoff	• Must be installed properly to prove effective • Not suitable in areas with concentrated runoff volumes • Require some maintenance
Dust Mitigation	• Reduces the amount of airborne dust particles • Reduces the amount of sedimentation and by association water pollution to nearby water bodies. • Reduces the impact on respiratory systems	• Can be costly • May increase muddy conditions on-Site
Spill Prevention	• Reduces the amount of pollution • Reduce total clean up costs if spill response is fast	• Requires Site preparation • Space consuming depending on size • Time consuming

It is important to recognize the difference in BMPs, as they are designed to achieve distinct but related goals. One example is that different methods and designs address erosion control and sediment control. The difference between erosion and sediment control methods is defined and summarized as follows:

- Erosion control is the process whereby the potential for erosion is minimized; and,
- Sedimentation control is the process whereby the potential for eroded soil to be transported and/or deposited beyond the limits of the construction site is minimized.

Measures to address both erosion control and sedimentation control are required. By extension, the design of erosion and sedimentation control measures is expected to be flexible and evolve throughout the construction process. Various BMPs can be applied to limit the effects of erosion and sedimentation associated with the proposed development.

All BMPs installed on-Site should be regularly inspected to ensure functionality. For example, inspections should occur after rain events to ensure they are functioning as designed. It is also important that construction staff pay attention to weather forecasts. To prepare for upcoming rain events, staff should walk around the construction site to ensure that BMPs are operating properly. This preparation should verify that dumpsters are covered, paint and other chemicals are covered, and no oil spills are present or possible. Operators of equipment should also visually inspect all BMPs when the Site will be inactive, such as during weekends or holidays. This will help to prepare for rain events that may occur when workers are off-Site. These planned preparation procedures with help minimize the risk of on- or off-Site property damage.

The establishment of the tree drip line in proximity to the top-of-bank was intended to protect the roots of the trees found in this area. Based on inspections completed with staff from CH, it was identified a tree drip line needs to extend 7.5 m to protect the trees in this area. In addition, this area also includes to the distance required to ensure slope stability, based on communications provided by staff from CH. If the tree drip line is established on-Site plus a buffer of 7.5 m, it can be expected to protect the health of the roots of all trees in this area. With the protection of the roots of the trees, the natural ground vegetation will also be retained. In combination, the maintenance of ground vegetation and tree cover in this area can be expected to provide protection to the top-of-bank and adjacent flood plain forest. The edge of the 7.5 m buffer on the tree drip line should be protected with the placement of erosion and sediment control fencing.

As an added measure, it is appropriate to use standard tree hoarding fences around the Black Walnut (tree # 47) proposed for preservation in addition to installation of sediment and erosion control fences along the entire length of the buffer on the tree drip line. When the erosion control fences are installed, it will not only reduce the risk of sediment transport but also reduce the risk of compaction of the tree roots located in the vicinity of the buffer on the tree drip line.

5.0 CLOSURE AND LIMITATIONS OF THIS STUDY

Thank you for providing Premier the opportunity to complete this TIPS for the Site.

The findings reported in this TIPS were based on observations on plants and other environmental features collected from 2013 to 2015. As such, the use of this report is subject to the Statement of Limitations presented in Appendix I of the EIS. The reader's attention is specifically drawn to the Statement of Limitations as it is considered essential that they be followed for the proper use and interpretation of this report.

If you have any questions concerning the above, please contact the undersigned at your earliest convenience.

Sincerely,

Premier Environmental Services

Dean Fitzgerald, M.Sc., Ph.D.
Senior Ecologist

Dave Jolly, B.Sc.
Senior Ecologist

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APPENDIX A

Photographs of Trees in FOD-9

TIPS PHOTOGRAPHIC LOG

Client Name: Springfield Construction Ltd.	**Site Location:** 4063 Upper Middle Road, Burlington, Ontario	**Project No.:** 613015.CE

Photo No.	**Date:** 29-Jul-15

Direction Photo Taken:

Description:

View of American Beech with a DBH of about 31 cm located about 20 m from the top-of-bank. It was possible to look in to the cavity but it was not large enough for use by myotis.



Photo No.	**Date:** 29-Jul-15

Direction Photo Taken:

Description:

View of Shagback Hickory. This relatively large tree with a DBH of 43 cm did not appear to have any cavities. This tree was located about 20 m from the top-of-bank.



TIPS PHOTOGRAPHIC LOG

Client Name: Springfield Construction Ltd.	**Site Location:** 4063 Upper Middle Road, Burlington, Ontario	**Project No.:** 613015.CE

Photo No.	**Date:** 29-Jul-15
Direction Photo Taken:	
Description: View of Black Walnut with a DBH of 35 cm located about 75 m from the top-of-bank. There were no cavities visible that could be used by myotis.	



Photo No.	**Date:** 29-Jul-15
Direction Photo Taken:	
Description: View of Black Walnut with a DBH of about 35 cm located about 75 m from the top-of-bank. There were no cavities visible on this tree that could be used by myotis.	



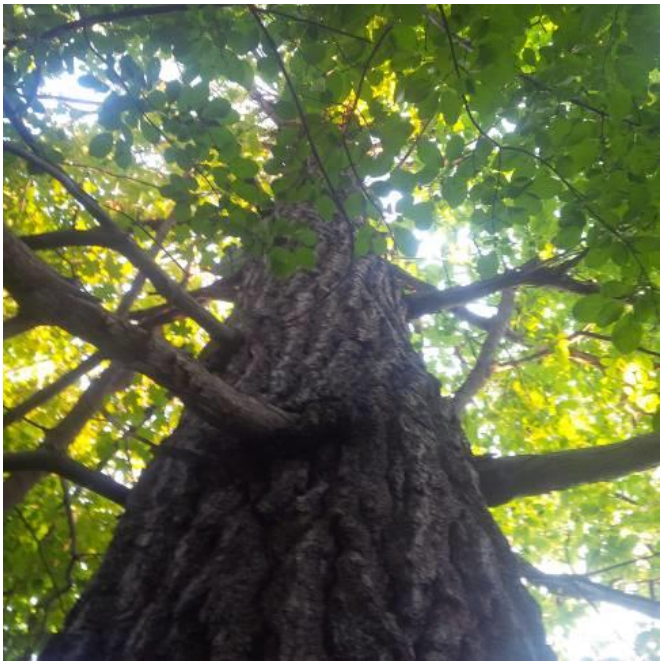
TIPS PHOTOGRAPHIC LOG

Client Name: Springfield Construction Ltd.	**Site Location:** 4063 Upper Middle Road, Burlington, Ontario	**Project No.:** 613015.CE

Photo No.	**Date:** 29-Jul-15
Direction Photo Taken:	
Description: View of Bitternut Hickory with a DBH of 41 cm located about 100 m from the top-of-bank. There were no cavities visible on the tree that could be used by myotis.	



Photo No.	**Date:** 29-Jul-15
Direction Photo Taken:	
Description: View of Eastern White Pine with a DBH of 41 cm. This tree did not appear to have any cavities that could be used by myotis. This tree was located about 90 m from the top-of-bank. .	



TIPS PHOTOGRAPHIC LOG

Client Name: Springfield Construction Ltd.	**Site Location:** 4063 Upper Middle Road, Burlington, Ontario	**Project No.:** 613015.CE

Photo No.	**Date:** 29-Jul-15
Direction Photo Taken:	
Description: View of coppiced Weeping Willow with a DBH of 104 cm located > 150 m from the top-of-bank. There appeared to be cavities on the tree that could be used by myotis. This tree is far from the site and is also possibly on the adjacent property.	



Photo No.	**Date:** 29-Jul-15
Direction Photo Taken:	
Description: View of coppiced Weeping Willow with a DBH of 104 cm located > 150 m from the top-of-bank. There appeared to be cavities on the tree that could be used by myotis. This tree is far from the site and would not be influenced by any activity on-site. .	



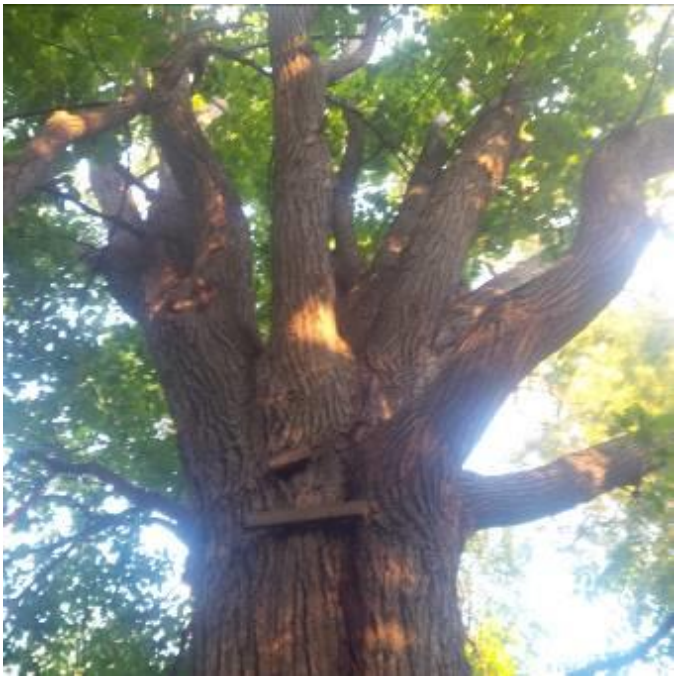
TIPS PHOTOGRAPHIC LOG

Client Name: Springfield Construction Ltd.	**Site Location:** 4063 Upper Middle Road, Burlington, Ontario	**Project No.:** 613015.CE

Photo No.	**Date:** 29-Jul-15
Direction Photo Taken:	
Description: View of single stem Swamp White Oak with a DBH of 92 cm located > 150 m from the top-of-bank. There appeared to be cavities on the tree that could be used by myotis. This tree is far from the site and would not be influenced by any activity on-site.	



Photo No.	**Date:** 29-Jul-15
Direction Photo Taken:	
Description: View of single stem Swamp White Oak with a DBH of 92 cm located > 150 m from the top-of-bank. There appeared to be cavities on the tree that could be used by myotis. This tree is far from the site and would not be influenced by any activity on-site.	



APPENDIX H

LANDSCAPE PLANS PREPARED BY REYNOLDS AND ASSOCIATES

TREE PROTECTION BARRIER

1. THE REQUIRED BARRIER IS A 1.2METRE (4 FT.) HIGH ORANGE PLASTIC WEB SNOW FENCING ON 2" X 4" FRAME. WHERE ORANGE PLASTIC WEB SNOW FENCING CREATES A RESTRICTION OF SIGHTLINES, PAGE WIRE FENCING WITH REFLECTIVE TAPE CAN BE USED.
2. TREE PROTECTION BARRIERS ARE TO BE ERECTED PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION OR GRADING ACTIVITIES ON THE SITE AND ARE TO REMAIN IN PLACE THROUGHOUT THE ENTIRE DURATION OF THE PROJECT. THE BARRIERS SHALL BE MAINTAINED ERECT AND IN GOOD REPAIR THROUGHOUT HTE ENTIRE DURATION OF CONSTRUCTION OPERATIONS WITH BREAKS AND UNSUPPORTED SECTIONS REPAIRED IMMEDIATELY. TREE PROTECTION MAY NOT BE REMOVED PRIOR TO THE COMPLETION OF CONSTRUCTION WITHOUT WRITTEN AUTHORIZATION FROM THE CITY ARBORIST.
3. ALL SUPPORTS AND BRACING USED TO SAFELY SECURE THE BARRIER SHOULD BE LOCATED NEAR A MTPZ. ALL SUPPORTS AND BRACING SHOULD BE MINIMIZE DAMAGE TO ROOTS.
4. WHERE SOME FILL OR EXCAVATION MATERIAL MUST BE TEMPORARILY LOCATED NEAR MTPZ, A WOODEN BARRIER WITH SILT FENCING MUST BE USED TO ENSURE NO MATERIAL ENTERS THE MTPZ.
5. NO MATERIALS OR FILL MAY BE STORED WITHIN THE MTPZ.
6. EQUIPMENT OR VEHICLES SHALL NOT BE OPERATED, PARKED, REPAIRED, OR REFUELED WITHIN THE MTPZ.
7. NO CONSTRUCTION ACTIVITY, GRADE CHANGES, SURFACE TREATMENT OF EXCAVATIONS OF ANY KIND IS PERMITTED WITHIN THE MTPZ WITHOUT WRITTEN AUTHORIZATION FROM THE CITY ARBORIST.
8. A LAMINATED MINIMUM TREE PROTECTION ZONE SIGN (SEE DETAIL TP–3– MINIMUM TREE PROTECTION ZONE SIGN) MUST BE ATTACHED TO THE SIDE OF THE TREE PROTECTION WHERE IT WILL BE VISIBLE BY PERSONS ENTERING THE SITE. MINIMUM SIZE MUST BE 250mm X 350mm (10" X 14").

TREE IDENTIFICATION NAME

NO.	COMMON NAME	BOTANICAL NAME	ORIGIN
1	NORWAY MAPLE	ACER PLATINOIDES	INVASIVE
2	PAPER BIRCH	BETULA PAPYRIFERA	NATIVE
3	SHAGBARK HICKORY	CARYA OVATA	NATIVE
4	BITTERNUT HICKORY	CARYA CORDIFORMIS	NATIVE
5	HONEY LOCUST	GLEDITSIA TRICANTHOS	NATIVE
6	BLACK WALNUT	JUGLANS NIGRA	NATIVE
7	IRONWOOD	OSTRYA VIRGINIANA	NATIVE
8	HAWTHORN	CRATAEGUS	NATIVE
9	WHITE ASH	FRAXINUS AMERICANA	NATIVE
10	AMERICAN BEECH	FAGUS GRANDIFOLIA	NATIVE
11	WILD APPLE	MALUS SYVESTRIS	NATIVE
12	CHOKE CHERRY	PRUNUS VIRGINIANA	NATIVE
13	AMERICAN BASSWOOD	TILIA AMERICANA	NATIVE
14	LITTLE LEAF LINDEN	TILIA CORDATA	NATIVE
15	BUR OAK	QUERCUS MACROCARPA	NATIVE
16	RED OAK	QUERCUS RUBRA	NATIVE
17	WHITE PINE	PINUS STROBUS	NATIVE
18	BLACK PINE	PINUS NIGRA	NATIVE
19	SCOTCH PINE	PINUS SYLVESTRIS	INVASIVE
20	WHITE CEDAR	THUJA OCCIDENTALIS	NATIVE

TREE PROTECTION SIGN TP-3

4

350 mm

250 mm

City of Burlington

TREE PROTECTION ZONE (TPZ)

No equipment or vehicle shall be operated, parked, repaired or refueled within the tree Protection Zone.

No construction activity, grade changes, surface treatment or excavations of any kind is permitted within the Tree Protection Zone.

No materials or fill may be stored within the Tree Protection Zone.

This tree protection barrier must not be removed prior to the completion of construction without written authorization from the City of Burlinton, Urban Forestry Department.

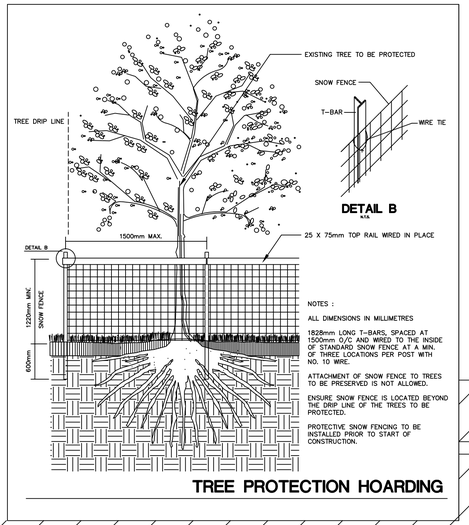
For information, contact:
City of Burlington, Development and Infrastructure Division,
905–335–7642

TREE PROTECTION DETAIL TP-1

4

TRUNK DIAMETER (DBH) [3]	MINIMUM TREE PROTECTION ZONE (MTPZ) DISTANCES REQUIRED [3]	CRITICAL ROOT ZONE (CRZ) DISTANCES REQUIRED [3 & 4]
< 10 cm	1.8 m	1.8 m
11 – 40 cm	2.4 m	4.0 m
41 – 50 cm	3.0 m	5.0 m
51 – 60 cm	3.6 m	6.0 m
61 – 70 cm	4.2 m	7.0 m
71 – 80 cm	4.8 m	8.0 m
81 – 90 cm	5.4 m	9.0 m
91 – 100+ cm	6.0 m	10.0 m

NOTES:
1. THE ROOTS OF A TREE CAN EXTEND FROM THE TRUNK TO APPROXIMATEIY 2–3 TIMES THE DISTANCE OF THE DRIP LINE.
2. DIAMETER AT BREAST HEIGHT (DBH) IS THE MEASUREMENT OF THE TREE TRUNK TAKEN AT 1.4 METRES ABOVE GROUND.
3. MINIMUM TREE PROTECTION ZONE AND CRITICAL ROOT ZONE DISTANCES ARE TO BE MEASURED FROM THE OUTSIDE EDGE OF THE TREE BASE TOWARDS THE DRIP LINE AND MAY BE LIMITED BY AN EXISTING PAVED SURFACE, PROVIDED THE EXISTING PAVED SURFACE REMAINS INTACT THROUGHOUT THE CONSTRUCTION WORK AND IS SUBJECT TO SECTION 6 OF THE TREE PROTECTION BARRIER.
4. WHERE WORK IS BEING PERFORMED BEYOND THE MINIMUM TREE PROTECTION ZONE THE WORKS ARE SUBJECT TO THE TREE PROTECTION ZONE SIGN. (DETAIL TP–3)



TREE PROTECTION HOARDING

LEGEND

- 6 — EXISTING HIGH BRANCHING DECIDUOUS TREE
- 9 — EXISTING HIGH BRANCHING DECIDUOUS TREE (TO BE PROTECTED)
- 3 — EXISTING CONIFEROUS TREE
- 2 — EXISTING CONIFEROUS TREE (TO BE PROTECTED)
- EXISTING CONIFEROUS HEDGE ROW
- EXISTINGTREE MASS
- PROPOSED TREE PROTECTION HOARDING

TREE INVENTORY AND ANALYSIS

NO.	SPECIES	4	D.B.H. (mm)	CROWN (mm)	QUALITY	SURVIVABILITY	RATING	RECOMMENDATION	OWNER
1	BLACK PINE		210	6000	GOOD	H	M	PROTECT	(M.)
2	BLACK PINE		180	4500	GOOD	H	M	PROTECT	(M.)
3	BLACK PINE	4	190	6000	GOOD	L	M–L	REMOVE (1.)	(M.)
4	BLACK WALNUT		370	7500	GOOD	NONE	L	REMOVE (1.)	(M.)
5	WHITE ASH		420	3650	FAIR	NONE	L	REMOVE (1.)	(M.)
6	BLACK WALNUT		250	3650	GOOD	NONE	L	REMOVE (1.)	(M.)
7	HONEY LOCUST		520	6000	GOOD	NONE	L	REMOVE (1.)	(P.)
8	WHITE ASH		100	2000	GOOD	NONE	L	REMOVE (1.)	(P.)
9	BUR OAK		200	2440	GOOD	M	M	PROTECT	(M.)
10	WHITE PINE		250	3650	GOOD	NONE	L	REMOVE (1.)	(P.)
11	SCOTCH PINE		320	6000	DEAD	NONE	L	REMOVED (3.)	(P.)
12	SCOTCH PINE		220	4650	POOR	NONE	L	REMOVE (1.)	(P.)
13	NORWAY MAPLE		100	2440	GOOD	NONE	L	REMOVE (1.)	(P.)
14	BITTERNUT HICKORY	6	250	7500	GOOD	L	M–L	REMOVE (1.)	(P.)
15	IRONWOOD		130	2000	GOOD	L	L	REMOVE (1.)	(P.)
16	IRONWOOD		130	2000	GOOD	NONE	L	REMOVE (1.)	(P.)
17	IRONWOOD		160	2000	GOOD	NONE	L	REMOVE (1.)	(P.)
18	IRONWOOD		140	2000	GOOD	NONE	L	REMOVE (1.)	(P.)
19	IRONWOOD		120	1800	GOOD	M	M	PROTECT	(P.)
20	HAWTHORN		120	1800	FAIR	NONE	L	REMOVE (1.)	(P.)
21	HAWTHORN		120	1800	GOOD	NONE	L	REMOVE (1.)	(P.)
22	SHAGBARK HICKORY		280	2440	GOOD	NONE	L	REMOVE (1.)	(P.)
23	WHITE ASH		180	2500	POOR	NONE	L	REMOVE (1.)	(P.)
24	WILD APPLE		250	7500	FAIR	NONE	L	REMOVE (1.)	(P.)
25	WHITE CEDAR		100	1800	GOOD	NONE	L	REMOVE (1.)	(P.)
26	IRONWOOD		100	1800	GOOD	NONE	L	REMOVE (1.)	(P.)
27	IRONWOOD		110	1800	GOOD	NONE	L	REMOVE (1.)	(P.)
28	IRONWOOD		150	1500	POOR	NONE	L	REMOVE (1.)	(P.)
29	IRONWOOD		140	1500	GOOD	NONE	L	REMOVE (1.)	(P.)
30	BITTERNUT HICKORY		860	10500	DEAD	NONE	L	REMOVED (3.)	(P.)
31	SCOTCH PINE		220	6000	POOR	NONE	L	REMOVE (1.)	(P.)
32	SCOTCH PINE		300	9000	POOR	NONE	L	REMOVE (1.)	(P.)
33	NORWAY MAPLE		200	3650	FAIR	NONE	L	REMOVE (1.)	(P.)
34	BITTERNUT HICKORY		310	6000	GOOD	NONE	L	REMOVE (1.)	(P.)
35	NORWAY MAPLE		200	3650	GOOD	NONE	L	REMOVE (1.)	(P.)
36	NORWAY MAPLE		380	7500	GOOD	NONE	L	REMOVE (1.)	(P.)
37	SHAGBARK HICKORY		420	9000	GOOD	NONE	L	REMOVE (1.)	(P.)
38	NORWAY MAPLE		250	6000	FAIR	NONE	L	REMOVE (1.)	(P.)
39	WHITE PINE		450	9000	FAIR	NONE	L	REMOVE (1.)	(P.)
40	RED OAK		270	4650	POOR	NONE	L	REMOVE (1.)	(P.)
41	CHOKE CHERRY		180	3650	GOOD	NONE	L	REMOVE (1.)	(P.)
42	WILD APPLE		180	3000	FAIR	NONE	L	REMOVE (1.)	(P.)
43	WILD APPLE		180	3000	FAIR	NONE	L	REMOVE (1.)	(P.)
44	WILD APPLE		150	2000	FAIR	NONE	L	REMOVE (1.)	(P.)
45	WHITE PINE		700	10500	POOR	NONE	L	REMOVE (1.)	(P.)
46	WHITE PINE		200	7500	GOOD	NONE	L	REMOVE (1.)	(P.)
47	AMERICAN BEECH		380	7500	GOOD	H	M	PROTECT	(P.)
48	WHITE PINE		670	9000	POOR	L	L	REMOVE (1.)	(P.)
49	WHITE PINE		330	7500	POOR	M–L	L	PROTECT	(P.)
50	WHITE PINE		250	7500	POOR	L	L	PROTECT	(P.)
51	WHITE PINE		250	9000	DEAD	L	L	REMOVED (3.)	(P.)
52	WHITE PINE		250	9000	FAIR	NONE	L	REMOVE (1.)	(P.)
53	PAPER BIRCH		CLUMP 900 300	9000	FAIR	M	M	PROTECT	(P.)
54	WHITE PINE		300	7500	FAIR	NONE	L	REMOVE (1.)	(P.)
55	WHITE PINE		300	7500	POOR	M	M–L	PROTECT	(M.)
56	HONEY LOCUST		280	9000	GOOD	M	M	PROTECT	(M.)
57	HONEY LOCUST		150	3650	FAIR	M	M	PROTECT	(M.)
58	NORWAY MAPLE		120	3650	GOOD	M	M	PROTECT	(M.)
59	NORWAY MAPLE		120	3650	POOR	M–L	M–L	PROTECT	(M.)
60	NORWAY MAPLE		120	3650	GOOD	M	M	PROTECT	(M.)
61	LITTLE LEAF LINDEN		120	3650	GOOD	M	M	PROTECT	(M.)
62	RED OAK		600	9000	GOOD	M	M	PROTECT	(M.)
63	X		X	X	X	X	X	X	
64	X		X	X	X	X	X	X	
65	X		X	X	X	X	X	X	

EXISTING TREES TO BE REMOVED AND DISPOSED OF.

TREE NO. ------ REFERS TO SITE PLAN FOR THE CORRELATION OF TREE NUMBER TO SITE LOCATION.

SPECIES ------- TYPE OF TREE (GENUS AND SPECIES)

D.B.H. -------- DIAMETER MEASURED AT BREAST HEIGHT IN MILLIMETRES

CROWN ------- SPREAD OF TREE MEASURED IN METRES

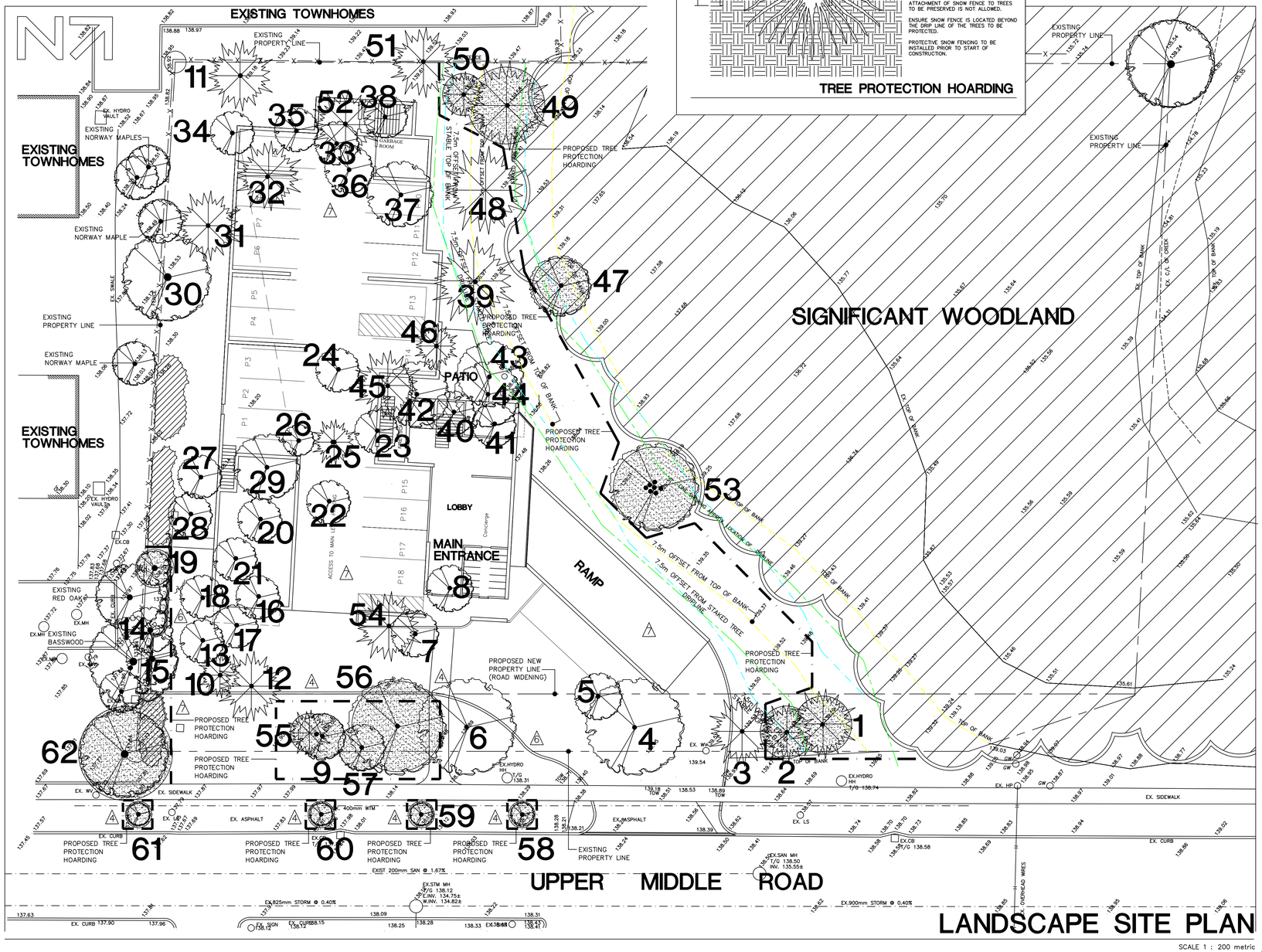
QUALITY ------- THE PRESENT CONDITION OF THE TREE, BIOLOGICAL CONDITION AND PHYSICAL APPEARANCE
- * GOOD: DEAD BRANCHES LESS THAN 10% SIGNS OF GOOD COMPARTMENTALIZATION ON ANY WOUNDS, NO STRUCTURAL DEFECTS.
- * FAIR: 10–30% DEAD BRANCHES, SIZE OR OCCURRENCE OF WOUNDS PRESENT SOME CONCERNS, MINOR STUCTURAL DEFECTS
- * POOR: MORE THAN 30% DEAD BRANCHES, WEAK COMPARTMENTALIZATION, EARLY LEAF DROP, PRESENCE OF INSECTS OR DISEASE, MAJOR STRUCTURAL DEFECTS
- * DEAD: TREE SHOWS NO SIGNS OF LIFE OR ALREADY REMOVED.

SURVIVABILITY -- ACCORDING TO THE SPECIES, ITS ABILITY TO SURVIVE THE PROPOSED SITE DEVELOPMENT RANKED H– HIGH (MOST TOLERANT), M– MEDIUM (PARTLY TOLERANT), L–LOW (VERY SENSITIVE).

RATING ------- RATING IN ORDER OF DECREASING PRIORITIES, WHICH TREE SHOULD BE GIVEN PRESERVATION PRIORITY OR WHICH TREES ARE LOCATED WITHIN THE PROPOSED SITE CONSTRUCTION AND

REMOVAL RATIONALE
- * (1.) GRADING: GRADING OR BUILDING CONFLICT WITH TREE, REQUIRES REMOVAL
- * (2.) SERVICING: SITE SERVICING CONFLICT WITH TREE, REQUIRES REMOVAL
- * (3.) DEAD: TREE DEADOR VERY POOR, HAZARD TO HEALTH OR PROPERTY, REMOVE.
- * (4.) SAFETY: DAYLIGHT TRIANGLE VISIBILITY CONFLICT WITH TREE, REQUIRES REMOVAL
- * (5.) ESA: ESA CONFLICT WITH TREE SPECIES, REQUIRES REMOVAL

TREE OWNERSHIP
- * (P.) TREE ON PRIVATE LANDS
- * (M.) TREE ON MUNICIPAL LANDS



LANDSCAPE SITE PLAN

SCALE 1 : 200 metric

no	revision	date	by
7	GENERAL REVISIONS AS PER CHANGES TO ARCH. + ENG. SITE PLANS + FINAL MUNICIPAL COMMENTS	04/29/20	RDR
6	GENERAL REVISIONS AS PER MUNICIPAL COMMENTS	01/09/20	RDR
5	ISSUED FOR MUNICIPAL REVIEW	08/31/19	RDR
4	GENERAL REVISIONS AS PER MUNICIPAL COMMENTS/CONCERNS	04/26/19	RDR
3	ISSUED FOR MUNICIPAL REVIEW	12/13/18	RDR
2	GENERAL REVISIONS AS PER MUNICIPAL COMMENTS/CONCERNS	09/17/18	RDR
1	ISSUED FOR CLIENT REVIEW (PRELIMINARY INVENTORY PLAN)	09/10/18	RDR

client
100 HAMILTON LTD.

designer
Think Giraffe ENVIRONMENTAL DESIGN

engineer
S. LLEWELLYN + ASSOCIATES LIMITED CONSULTING ENGINEERS

surveyor
GUIDO V. CONSOLI

ecologist / horticulturalist
DEAN FITZGERALD

reviewed by
R. REYNOLDS

drawn by
R.D.R.

date
AUGUST 2018

scale 1: 200 metric

4 0 4 8 12

drawing title
TREE INVENTORY + PRESERVATION PLAN

drawing number
L.1

project title
PROPOSED **RESIDENTIAL BUILDING**
4063 UPPER MIDDLE ROAD, BURLINGTON, ONTARIO.

project number
01705

ASSOCIATION OF LANDSCAPE ARCHITECTS ONTARIO — ROBERT DAWSON FORBES — OALA MEMBER

reynolds + associates
landscape architects
17 northlawn avenue,
waterdown, ontario.
l0r 2h1
(905) 689-0554

BUFFER STRIP PLANTING CALCULATIONS:

BUFFER STRIP AREA = 355 SQ.M.

- NUMBER OF TREES REQUIRED TO BE PLANTED
  10 TREE PER 100 SQ.M. = 35.5 TREES
  (40 TREES PROPOSED TO BE PLANTED)
- NUMBER OF SHRUBS REQUIRED TO BE PLANTED
  50 PER 100 SQ.M. = 177.5 SHRUBS
  (180 SHRUBS PROPOSED TO BE PLANTED)

"TERRASEED"

TERRASEEDING SPECIFICATION

BUFFER PLANTING AREA

5% WILD BERGAMONT (MONARDA FISTULOSA)
5% COMMON EVENING PRIMROSE (OENOTHERA BIENNIS)
10% NEW ENGLAND ASTER (SYMPHYOTRICHUM NOVAE-ANGLIAE)
10% COMMON SUNFLOWER (HELIANTHUS ANNUUS)
10% CREEPING BENT GRASS (AGROSTIS STOLONIFERA)
20% LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM)
20% BLACK-EYED SUSAN (RUDBECKIA HIRTA)
20% CANADIAN WILD RYEGRASS (ELYMUS CANADENSIS)

100% RATE OF APPLICATION 160 kg PER HECTARE

LANDSOURCE ORGANIX INC.
* 25mm THICK
* LANDSOURCE ORGANIX INC. MILTON (905) 875-1366

MAINTENANCE REQUIREMENTS
* ONE CUT ONCE A YEAR IN LATE FALL
* OVER SEEDING OF BARE OR LIGHT COVERED AREAS
* LANDSOURCE ORGANIX INC. MILTON (905) 875-1366

TRANSITION SOD SPEC:

USE PURE FINE FESCUE SOD FROM A SEED MIXTURE OF CULTIVARS OF CREEPING RED FESCUE, HARD FESCUE AND CHEWINGS FESCUE.

NURSERY GROWN SOD TO BE INSTALLED OVER 100mm. (4") OF CLEAN TOPSOIL AS SPECIFIED BY THE NURSERY SOD GROWERS ASSOCIATION OF ONTARIO. SOD SHALL NOT BE PERMITTED TO DRY OUT BEFORE PLACEMENT OR TO HEAT UP DUE TO STACKING OR TRANSPORT. BROKEN OR MANGLED SOD SHALL NOT BE LAID. SOD SHALL BE LAID WITHIN 24 HOURS OF CUTTING.

AVAILABLE AT GREENHORIZONS - HAMILTON SOD (905) 389-1315

NON NATIVE + INVASIVE SPECIES

AS PER A REQUEST FROM CONSERVATION HALTON WE WILL NOT PLANT THE NON LOCALLY NATIVE OR ANY INVASIVE SPECIES IDENTIFIED BY THE CONSERVATION AUTHORITY WITH IN 15M OF THE REGULATED LANDS.

LAWN SOD SPEC. :

USE NO. 1 KENTUCKY BLUEGRASS AND FESCUE SOD FROM A SEED MIXTURE OF CULTIVARS OF KENTUCKY BLUEGRASS AND CHEWING OR CREEPING RED FESCUE. THE TURF SHOULD NOT CONTAIN LESS THAN 50% CHEWING OR CREEPING RED FESCUE CULTIVAR(S) AND NOT LESS THAN 40% KENTUCKY BLUEGRASS CULTIVAR(S). NURSERY GROWN SOD TO BE INSTALLED OVER 100mm. (4") OF CLEAN TOPSOIL AS SPECIFIED BY THE NURSERY SOD GROWERS ASSOCIATION OF ONTARIO. SOD SHALL NOT BE PERMITTED TO DRY OUT BEFORE PLACEMENT OR TO HEAT UP DUE TO STACKING OR TRANSPORT. BROKEN OR MANGLED SOD SHALL NOT BE LAID. SOD SHALL BE LAID WITHIN 24 HOURS OF CUTTING.

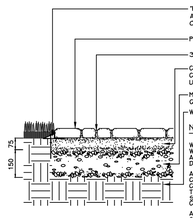
TOPSOIL NOTE :

ALL SOD AND SEED TO BE INSTALLED OVER +150mm. (+6") OF CLEAN TOPSOIL AS SPECIFIED BY THE NURSERY SOD GROWERS ASSOCIATION OF ONTARIO.

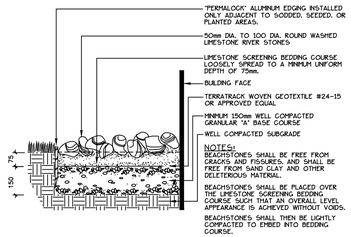
PLANTING NOTE :

ALL SHRUBS ARE TO BE PLANTED IN CONTINUOUS BEDS. ALL PLANTING BEDS ARE TO BE COVERED WITH A MINIMUM OF 50mm OF SHREDDED PINE BARK MULCH.

ALL DECIDUOUS TREE TO HAVE 600mm HIGH VINYL SPIRAL TREE GUARD INSTALLED FOR RODENT PROTECTION.



UNIT PAVING



ROUND WASHED BEACHSTONES

PLANT LIST (MATERIAL PLANTED WITHIN DEVELOPMENT AREA)

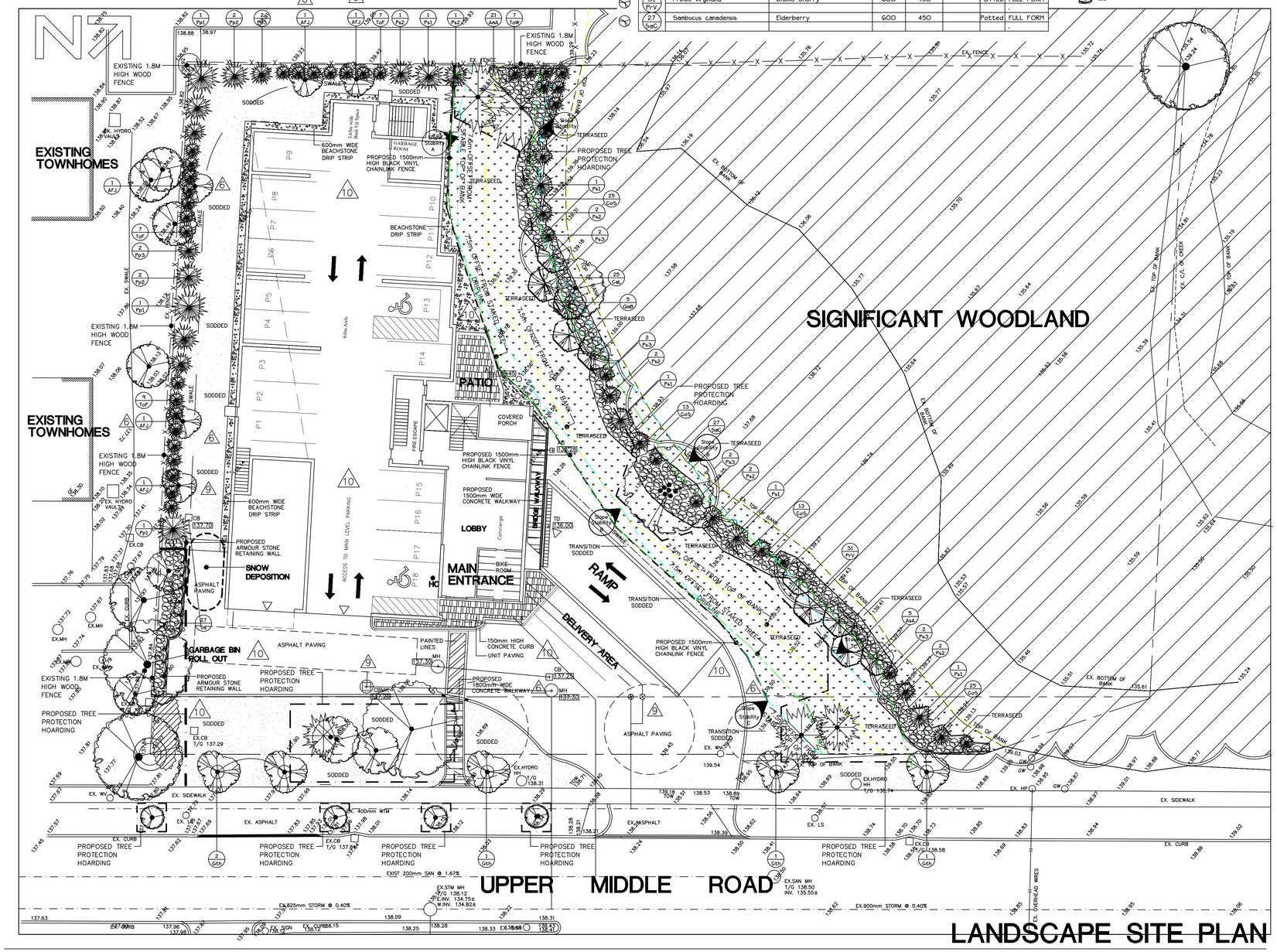
KEY	BOTANICAL NAME	COMMON NAME	HEIGHT	SPREAD	CALIPER	ROOT	REMARKS
5 AmJ	Acer freemanii ' Jeffersred '	Autumn Blaze Maple	4500		65	W.B.	FULL FORM
5 Gth	Gleditsia triacanthos inermis 'Shademaster'	Shademaster Honey-locust	4500		65	W.B.	FULL FORM
O Qr	Quercus robur	English Oak	4600		100	W.B.	FULL FORM
							FULL FORM
3 Pp1	Picea pungens	Colorado Spruce	3000			W.B.	FULL FORM
G Pp2	Picea pungens	Colorado Spruce	2440			W.B.	FULL FORM
G Pp3	Picea pungens	Colorado Spruce	1825			W.B.	FULL FORM
23 ToF	Thuja occidentalis ' Fastigiata '	Pyramid Cedar	3650			B.B.	FULL FORM
							FULL FORM
27 Sa	Sorbaria	False Spirea	600	450		Potted	FULL FORM

PLANT LIST (NATIVE MATERIAL PLANTED WITHIN BUFFER AREA OF CONSERVATION LANDS)

KEY	BOTANICAL NAME	COMMON NAME	HEIGHT	SPREAD	CALIPER	ROOT	REMARKS
5 AmA	Acer saccharinum	Silver Maple	3650		50	W.B.	FULL FORM
O CaO	Carya ovata	Shagbark Hickory	3650		50	W.B.	FULL FORM
5 QmB	Quercus macrocarpa	Bur Oak	3650		50	W.B.	FULL FORM
O TiA	Tilia Americana	American Basswood	3650		50	W.B.	FULL FORM
							FULL FORM
5 Ps1	Pinus strobus	White Pine	1825			W.B.	FULL FORM
10 Ps2	Pinus strobus	White Pine	1500			W.B.	FULL FORM
8 Ps3	Pinus strobus	White Pine	1220			W.B.	FULL FORM
7 ToW	Thuja occidentalis	Eastern White Cedar	1500			Potted	FULL FORM
							FULL FORM
21 AmA	Amelanchier arborea	Downy Serviceberry	600	450		Potted	FULL FORM
25 CoS	Cornus alternifolia	Alternate-Leaf Dogwood	600	450		Potted	FULL FORM
76 CoS	Cornus stolonifera	Red Osier Dogwood	600	450		Potted	FULL FORM
31 PrV	Prunus virginiana	Choke Cherry	600	450		POTTED	FULL FORM
27 SaC	Sambucus canadensis	Elderberry	600	450		Potted	FULL FORM

LEGEND

- EXISTING HIGH BRANCHING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- EXISTINGTREE MASS
- PROPOSED HIGH BRANCHING DECIDUOUS TREE
- PROPOSED HIGH BRANCHING DECIDUOUS TREE
- PROPOSED CONIFEROUS TREE
- PROPOSED CEDAR TREE
- PROPOSED DECIDUOUS SHRUB
- PROPOSED CONIFEROUS SHRUB
- PROPOSED ORNAMENTAL GRASS
- PROPOSED TREE PROTECTION HOARDING
- LOCATION OF REMOVED MUNICIPAL TREE
- PROPOSED SPECIMEN ARMOUR STONE



client
100 HAMILTON LTD.

designer
Think Giraffe
ENVIRONMENTAL DESIGN

engineer
S. LLEWELLYN + ASSOCIATES LIMITED CONSULTING ENGINEERS

surveyor
GUIDO V. CONSOLI

ecologist / horticulturalist
DEAN FITZGERALD

no	revision	date	by
10	GENERAL REVISIONS AS PER CHANGES TO ARCH. + ENG. SITE PLANS + FINAL MUNICIPAL COMMENTS	04/29/20	RDR
9	GENERAL REVISIONS AS PER MUNICIPAL COMMENTS	01/09/20	RDR
8	ISSUED FOR MUNICIPAL REVIEW	08/31/19	RDR
7	GENERAL REVISIONS AS PER CONSULTANT COORDINATION	08/31/19	RDR
6	GENERAL REVISIONS AS PER MUNICIPAL COMMENTS	05/16/19	RDR
5	ISSUED FOR MUNICIPAL REVIEW	12/13/18	RDR
4	GENERAL REVISIONS AS PER MUNICIPAL COMMENTS	10/22/18	RDR
3	GENERAL REVISIONS AS PER CLIENT COMMENTS + CONCERNS	09/10/18	RDR
2	ISSUED FOR CLIENT REVIEW	09/10/18	RDR
1	ISSUED FOR CLIENT REVIEW (PRELIMINARY INVENTORY PLAN)	08/31/18	RDR

reviewed by
R. REYNOLDS

drawn by
R.D.R.

date
AUGUST 2018

scale **1 : 200 metric**

4 0 4 8 12

drawing title
LANDSCAPE MASTER PLAN

drawing number
L.2

project title
PROPOSED
RESIDENTIAL BUILDING
4063 UPPER MIDDLE ROAD, BURLINGTON, ONTARIO.

project number
01705

ASSOCIATION OF ONTARIO LANDSCAPE ARCHITECTS ROBERT DAWSON REYNOLDS OALA MEMBER

reynolds + associates
landscape architects
17 northlawn avenue,
waterdown, ontario.
l0r 2h1
(905) 689-0554

TERRASEEDING SPECIFICATION

TERRASEED

BUFFER PLANTING AREA SEED MIX

5% WILD BERGAMONT (MONARDA FISTULOSA)
5% COMMON EVENING PRIMROSE (OENOTHERA BIENNIS)
10% NEW ENGLAND ASTER (SYMPHYOTRICHUM NOVAE-ANGLIAE)
10% COMMON SUNFLOWER (HELIANTHUS ANNUUS)
10% CREEPING BENT GRASS (AGROSTIS STOLONIFERA)
20% LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM)
20% BLACK-EYED SUSAN (RUDBECKIA HIRTA)
20% CANADIAN WILD RYEGRASS (ELYMUS CANADENSIS)

100% RATE OF APPLICATION: 160 kg PER HECTARE

6 NURSE CROP SEED MIX
CANADIAN WILD RYEGRASS (ELYMUS CANADENSIS)
RATE OF APPLICATION: 60 kg PER HECTARE

LANDSOURCE ORGANIX INC.
* 25mm THICK
* LANDSOURCE ORGANIX INC. MILTON (905) 875-1366

MAINTENANCE REQUIREMENTS
* ONE CUT ONCE A YEAR IN LATE FALL
* OVER SEEDING OF BARE OR LIGHT COVERED AREAS
* LANDSOURCE ORGANIX INC. MILTON (905) 875-1366

TRANSITION SOD SPEC.:

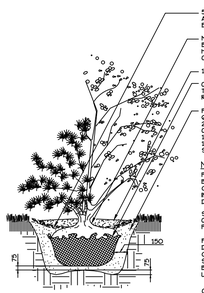
USE PURE FINE FESCUE SOD FROM A SEED MIXTURE OF CULTIVARS OF CREEPING RED FESCUE, HARD FESCUE AND CHEWINGS FESCUE.

NURSERY GROWN SOD TO BE INSTALLED OVER 100mm. (4") OF CLEAN TOPSOIL AS SPECIFIED BY THE NURSERY SOD GROWERS ASSOCIATION OF ONTARIO. SOD SHALL NOT BE PERMITTED TO DRY OUT BEFORE PLACEMENT OR TO HEAT UP DUE TO STACKING OR TRANSPORT. BROKEN OR MANGLED SOD SHALL NOT BE LAID. SOD SHALL BE LAID WITHIN 24 HOURS OF CUTTING.

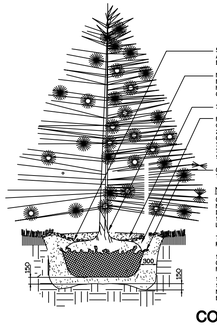
AVAILABLE AT GREENHORIZONS - HAMILTON SOD (905) 389-1315

TOPSOIL NOTE :

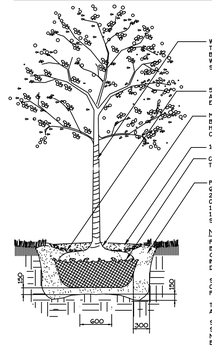
ALL SOD AND SEED TO BE INSTALLED OVER +150mm. (+6") OF CLEAN TOPSOIL AS SPECIFIED BY THE NURSERY SOD GROWERS ASSOCIATION OF ONTARIO.



DECIDUOUS / CONIFEROUS SHRUBS



CONIFEROUS TREE



DECIDUOUS TREE

NOTES:

INVASIVE SPECIES REMOVAL NOTE:

DEAN FITZGERALD OF ENVIRONMENTAL LIABILITY MANAGEMENT INC. WILL SUPERVISE THE LOCATION AND REMOVAL OF THE FOLLOWING NON NATIVE AND INVASIVE SPECIES

* 40 PCS. OF BUCKTHORN
* 20 PCS. OF MANITOBA MAPLE
* 30 SQ.M. OF PERIWINKLE
* 10 SQ.M. OF GARLIC MUSTARD

NON NATIVE + INVASIVE SPECIES

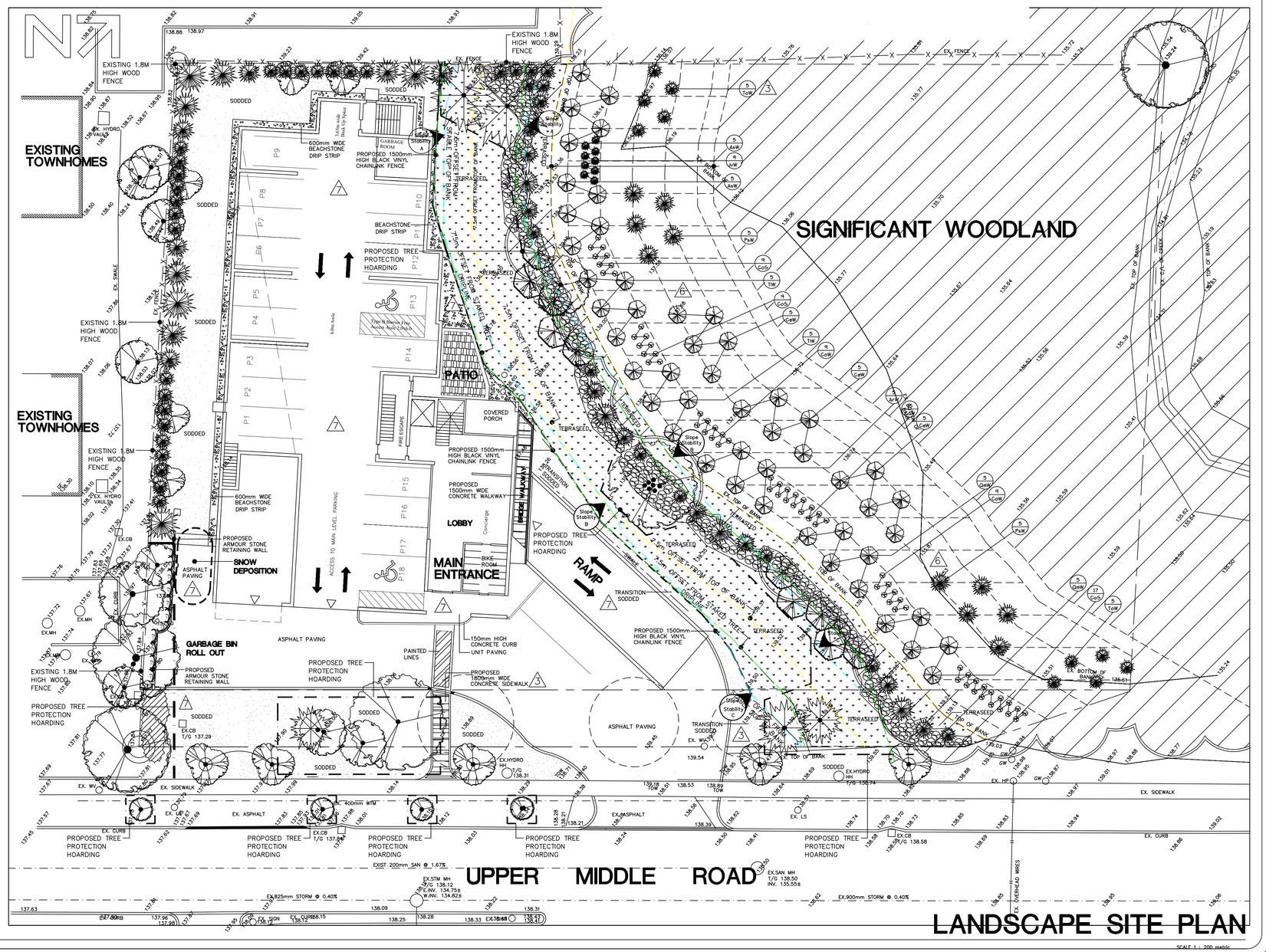
AS PER A REQUEST FROM CONSERVATION HALTON WE WILL NOT PLANT THE NON LOCALLY NATIVE OR ANY INVASIVE SPECIES IDENTIFIED BY THE CONSERVATION AUTHORITY WITH IN 15M OF THE REGULATED LANDS.

PLANT LIST (NATIVE MATERIAL PLANTED BY HAND WITHIN WOODLAND) 6

KEY	BOTANICAL NAME	COMMON NAME	HEIGHT	SPREAD	CALIPER	ROOT	REMARKS
5 AsW	Acer rubrum	Red Maple	1500		20	POT	FULL FORM
10 AsW	Acer saccharum	Sugar Maple	1500		20	POT	FULL FORM
15 CaW	Carya ovata	Shagbark Hickory	1500		20	POT	FULL FORM
10 QmW	Quercus macrocarpa	Bur Oak	1500		20	POT	FULL FORM
10 TiW	Tilia Americana	American Basswood	1500		20	POT	FULL FORM
							FULL FORM
10 PsW	Pinus strobus	White Pine	1220			POT	FULL FORM
9 JuW	Juniperus virginiana	Red cedar	800			POT	FULL FORM
10 ToW	Thuja occidentalis	Eastern White Cedar	1200			POT	FULL FORM
							FULL FORM
35 CoS	Cornus stolonifera	Red Osier Dogwood	400	300		POT	FULL FORM
34 CoW	Cephalanthus occidentalis	Button Bush	400	300		POT	FULL FORM
							FULL FORM

LEGEND

- PROPOSED HIGH BRANCHING DECIDUOUS TREE
- PROPOSED HIGH BRANCHING DECIDUOUS TREE
- PROPOSED CONIFEROUS TREE
- PROPOSED CEDAR TREE
- PROPOSED DECIDUOUS SHRUB
- PROPOSED CONIFEROUS SHRUB
- PROPOSED ORNAMENTAL GRASS
- PROPOSED TREE PROTECTION HOARDING
- LOCATION OF REMOVED MUNICIPAL TREE
- PROPOSED SPECIMEN ARMOUR STONE



SCALE 1 : 200 metric

LEGEND

- EXISTING HIGH BRANCHING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- EXISTINGTREE MASS

no	revision	date	by
7	GENERAL REVISIONS AS PER CHANGES TO ARCH.+ ENG. SITE PLANS + FINAL MUNICIPAL COMMENTS	04/29/20	RDR
6	GENERAL REVISIONS AS PER CH + MUNICIPAL COMMENTS	01/09/20	RDR
5	ISSUED FOR MUNICIPAL REVIEW	08/31/19	RDR
4	GENERAL REVISIONS AS PER CONSULTANT COORDINATION	06/13/19	RDR
3	GENERAL REVISIONS AS PER MUNICIPAL COMMENTS + CONCERNS	05/16/19	RDR
2	ISSUED FOR MUNICIPAL REVIEW	12/13/18	RDR
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DEAN FITZGERALD

reviewed by
R. REYNOLDS

drawn by
R.D.R.

date
OCTOBER 2018

scale **1 : 200 metric**

4 0 4 8 12

drawing title
WOODLOT PLANTING PLAN

drawing number
L.3

project title
PROPOSED
RESIDENTIAL BUILDING
4063 UPPER MIDDLE ROAD, BURLINGTON, ONTARIO.

project number
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ASSOCIATION OF LANDSCAPE ARCHITECTS ONTARIO ROBERT DAWSON REYNOLDS OALA MEMBER

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l0r 2h1
(905) 689-0554

APPENDIX I

R.J. BURNSIDE BREEDING BIRD SURVEY STUDY

R.J. Burnside & Associates Limited 292 Speedvale Avenue West Unit 20 Guelph ON N1H 1C4 Canada
telephone (519) 823-4995 **fax** (519) 836-5477 **web** www.rjburnside.com

BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]

July 4, 2013

Via: Email

Lauren Cymbaly
Biologist
Premier Environmental Services Inc.
244 Montrose Street North
Cambridge, Ontario N3H 2H7

Dear Lauren:

Re: 4063 Upper Middle Road, Burlington – Breeding Bird Surveys
Our File No.: 300033770

Attached is a record of the breeding bird survey results conducted for Premier Environmental Services Inc. on June 15th and June 29th, 2013 respectively. Please find below an overall description of the study area.

Existing Features:

- The 1.4 acre study area features an uninhabited residential home, surrounded by mature landscaped deciduous and conifer trees.
- Directly behind (north and northeast) this residential property is Shore Acres Creek and surrounding woodland habitat.
- The property slopes gently down to the creek, which appears to be fairly shallow in nature at this location and slow moving.
- The woodland in this location features a mix of large mature trees in the canopy (dominated by deciduous with some conifer interspersed) such as willow, beech, hickory, basswood, and pine including sub canopy trees such as maple, with an understory of shrub, thickets, and ground cover.
- Some dead standing tree snags are present on the property and within the woodland along Shore Acres Creek, which provide suitable habitat for cavity nesters such as woodpeckers, House Wren, and nuthatches.

Species at Risk:

In summary, there were no Species at Risk (listed under the provincial *Endangered Species Act*, 2007) observed; 13 species were recorded from the study area, 12 of which are common and expected for the habitat present on the property and adjacent woodland habitat extending beyond the study limits (please see attached Summary Table). One other species, **Carolina Wren (***Thryothorus ludovicianus*), was observed - while this species is listed as S4 and its status is considered secure in Ontario, it is a relatively uncommon breeder in the province as it is mainly confined to the Carolinian

region. One species observed is considered "Area Sensitive" by MNR (*Significant Wildlife Habitat Technical Guide Appendix G*): **Hairy Woodpecker** (*Picoides villosus*).

According to the SWHTG, this species requires a number of tall trees and snags typically greater than 25 cm dbh. Their territories are approximately 4-8 ha in size. As an incidental observation, Green Frog (*Rana clamitans*) were heard calling from Shore Acres Creek. Other incidental wildlife noted in the study area include Eastern Chipmunk (*Tamias striatus*) and Black Squirrel (*Sciurus carolinensis*).

It was a pleasure working on this project with you and I look forward to potential opportunities in the future.

Please do not hesitate to contact me if you have any questions.

Yours truly,

R.J. Burnside & Associates Limited



Hannah Maciver
Terrestrial Ecologist

BURNSIDE

Breeding Bird Evidence Field Form

Project Name / #: 300033770 - 4063 Upper Middle Road, Burlington, ON

Unit Name or Number:

4063 Upper Middle Road (1.4 acres)
Residential home (uninhabitated); surrounding landscaped trees; creek and woodland north and northeast of home

Visit #1	Start Time: 0550	End Time: 0700	**Temperature °C:**	**Sky Code[2]:**	**Wind[1]:**
Date and Time (24hr):	15-Jun-13		Start: 15° C; End: 16° C	0	0
Observer Name(s):	Hannah Maciver		**Precipitation:** None		
Visit #2	Start Time: 0645	End Time: 0800	**Temperature °C:**	**Sky Code[2]:**	**Wind[1]:**
Date and Time (24hr):	29-Jun-13		Start: 21° C; End: 23° C	1	0-1
Observer Name(s):	Hannah Maciver		**Precipitation:** None		

Ontario Breeding Bird Atlas - Breeding Evidence Codes

OBSERVED

X Species observed in its breeding season (no breeding evidence).

POSSIBLE

H Species observed in its breeding season in suitable nesting habitat.
S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season.

PROBABLE

P Pair observed in suitable nesting habitat in nesting season.
T Permanent territory presumed through registration of territorial behaviour (song, etc.) on at least two days, a week or more apart, at the same place.
D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation.
V Visiting probable nest site
A Agitated behaviour or anxiety calls of an adult.
B Brood Patch on adult female or cloacal protuberance on adult male.
N Nest-building or excavation of nest hole.

CONFIRMED

DD Distraction display or injury feigning.
NU Used nest or egg shells found (occupied or laid within the period of the survey).
FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight.
AE Adult leaving or entering nest sites in circumstances indicating occupied nest.
FS Adult carying fecal sac.
CF Adult carying food for young.
NE Nest containing eggs.
NY Nest with young seen or heard.

Species Observed: Visit #1	Breeding Evidence	Tally Visit #1	Species Observed: Visit #2	Breeding Evidence	Tally Visit #2
NOCA	H, P	2	NOCA	S, P, FY	2
BHCO	H, S	1	REVI	S	1
AMRO	H, S, FY	3	AMRO	H, S	3
HOWR	H, S	1	HOWR	H, S, A, AE, CF	2
BLJA	H, S	2	BLJA	H	1
CAWR	H, S	1	CAWR	H, S, T	1
BCCH	H, S	3	BCCH	H, S, T	2
YWAR	H, S	1	SOSP	H, S, A	2
AMGO	H, S	2	AMGO	H, S, T	3
HAWO	H, CF	1	MODO	H	1

Wildlife Observations (Additional Space on Back)

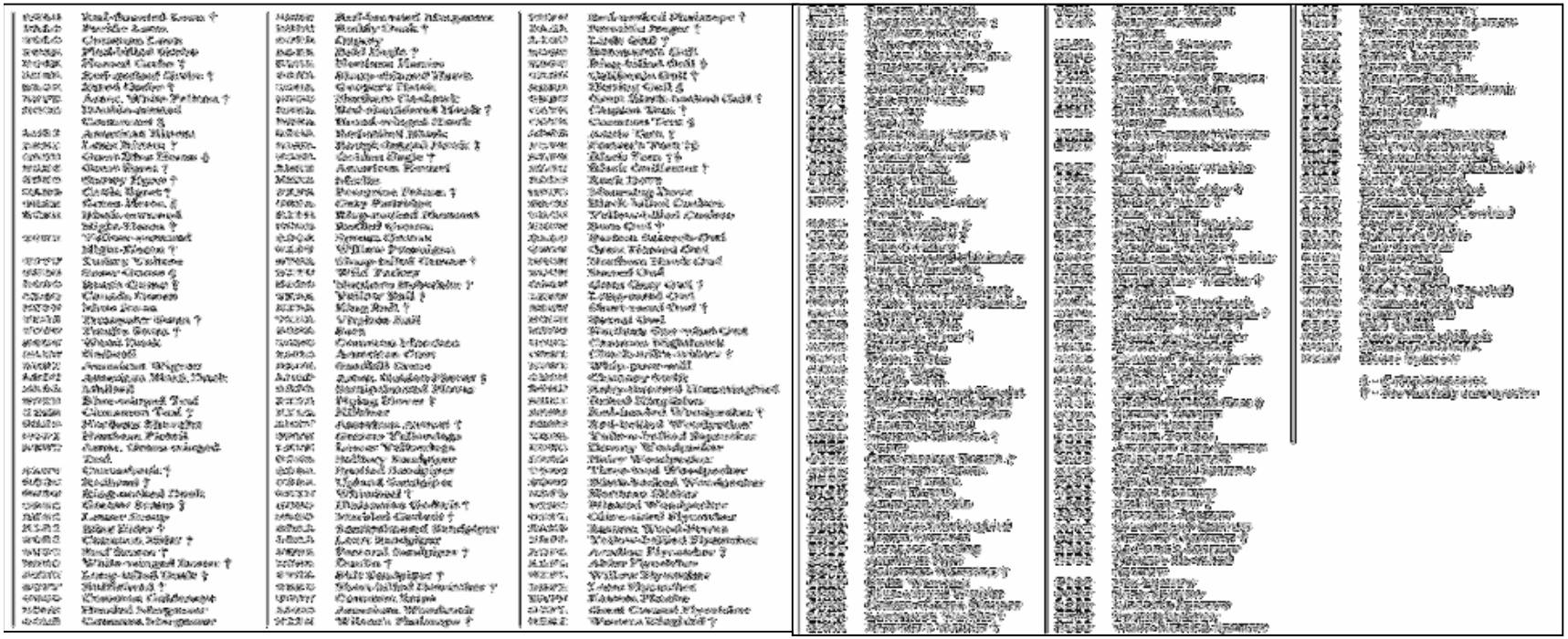
Eastern Chipmunk

Black Squirrel

SUMMARY OF OBSERVATIONS

Species	Highest Evidence Recorded	Highest Number Recorded
NOCA	FY	2
BHCO	S	1
AMRO	FY	3
HOWR	AE/CF	2
BLJA	T	2
CAWR	T	1
BCCH	T	3
YWAR	S	1
AMGO	T	3
HAWO	CF	1
REVI	S	1
SOSP	A	2
MODO	H	1

Species Codes



[1] Beaufort Wind Scale
0 = calm, smoke rises vertically (0-2km/hr)
1 = Light air movement, smoke drifts (3-5)
2 = Slight breeze, wind felt on face; leaves rustle (6-11)
3= Gentle breeze, leaves & twigs in constant motion (12-19)
4= Moderate breeze, small branches moving, raises dust & loose paper (20-30);
5= Fresh breeze, small trees begin to sway (31-38)
6= Strong breeze, large branches in motion (40-50)
[2] NAAMP/ Beaufort Sky Codes
0 = clear (no cloud cover)
1 = partly cloudy (scattered or broken) or variable
2 = cloudy or overcast
3 = sandstorm, duststorm or blowing snow
4 = fog, smoke, thick dust, or haze
5 = drizzle or light rain
6 = rain
7 = snow or snow/rain mix
8 = showers
9 = thunderstorms

Additional Observations

APPENDIX J

STATEMENT OF LIMITATIONS FOR THIS STUDY

STATMENT OF LIMITATIONS

The information, conclusions and recommendations given herein are specifically for Springfield Construction (the Client) only and for the scope of work described herein for the property located at 4063 Upper Middle Road, Burlington, ON. It may not be sufficient for other uses. Hence, ELM Inc. does not accept responsibility for use by third parties.

The data, conclusions and recommendations which are present in this report, and the quality thereof, are based on a scope authorized by the Client. Note however, that no scope of work, no matter how exhaustive, can identify all ecological features, contaminants and/or all conditions above and below ground that may be regarded as of importance. For example, survey results can differ from one day to the next, due to wildlife movements or variable weather. Similarly, conditions between test holes may differ from those encountered in the investigation and observed or measured conditions may change with time. This report therefore cannot warranty that all conditions on or off the Site are presented by those identified at specific locations.

Any recommendations and conclusions provided that are based on conditions or assumptions reported herein will inherently include any uncertainty associated with those conditions or assumptions. In fact many aspects involving professional judgment such as subsurface models and remediation criteria contain a degree of uncertainty which cannot be eliminated. This uncertainty should be managed by periodic review and refinement as additional information becomes available. Note also that standards, guidelines and practice related to environmental investigations may change with time. Those which are applied at the time of this study may be obsolete or unacceptable at a later date. Any topographic benchmarks and elevations documented in this report are primarily to establish relative elevation differences between test locations and should not be used for other purposes such as grading, excavation, planning, development, etc.

Any comments given in this report on potential remediation problems and possible methods are intended only for the guidance of the designer. The scope of work may not be sufficient to determine all of the factors that may affect construction or clean-up methods and costs. Contractors bidding on this project or undertaking clean-ups should, therefore, make their own interpretation of the factual information presented and draw their own conclusions as to how the conditions may affect their work. Any results from an analytical laboratory, title searcher or other subcontractors reported herein have been carried out by others, and ELM Inc. cannot warranty their accuracy. Similarly ELM Inc. cannot warranty the accuracy of information supplied by the Client. Finally, only Springfield Construction is legally allowed to use the findings reported herein this EIS. Any other individuals whom use this report do so at their own defined risk.