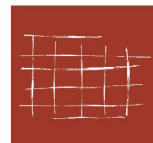


310-316 Erb Street West
Vegetation Management Report
City of Waterloo

Prepared for:
Urban Legend Developments Ltd.

Project Number:
AA19-202A

Date:
February 4, 2020





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EXPERT OPINION
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February 4, 2020

Our File No.: AA19-202A

Sent by email: jvoss@urbanlegendgroup.com

Urban Legend Developments Ltd.
22 King Street South, Suite 300
Waterloo, ON N2J 1N8
Attn: Jennifer Voss

**Re: 310-316 Erb Street West, Waterloo
Vegetation Management Report and Plan**

Dear Ms. Voss:

We have completed our study of the above referenced project. This Vegetation Management Report has been prepared in fulfilment of the conditions outlined in the City of Waterloo's Vegetation Management and Landscape Plan Checklist for Site Plan Review, provided to you on December 12, 2019.

The following attached documents are part of this investigation.

- *Appendix 1. Tree Inventory and Assessment Definitions*
- *Appendix 2. Detailed Tree Data*
- *Appendix 3. Limitations of this Tree Assessment*
- *Appendix 4. Protection of Migratory Birds and Development*
- *Drawing VMP-1-3 Vegetation Management Plan and Details*
- *Drawing LP-1-2 Landscape Plan and Details*

1. Introduction

1.1 Proposed Development and Existing Conditions

Urban Legend Developments Ltd. is proposing to build a multi-unit residential building on the properties at 310-316 Erb Street West in the City of Waterloo. The properties combined measure approximately 45.7 metres deep x 52.5 metres wide with a total measured area just over 2,400 m². There are existing single detached units on the properties, which are proposed to be demolished. The properties have open-grown landscape trees as well as volunteers along some of the property lines.

1.2 Legislative Context

In cases where developments will impact existing trees, The City of Waterloo has outlined tree protection requirements through their Urban Design Manual (Appendix O – Protective Measures for Trees During Construction). In addition, City of Waterloo By-law No. 99-10 ('Street Tree By-law') also outlines the protection given to trees located in the City's right of way and other municipally owned spaces.

In addition to the municipal by-laws, it is required by law in the province of Ontario to obtain the consent of any boundary tree's owned prior to injuring or removing that tree. Paragraph 10 of the Forestry Act, R.S.O. 1990, c. F.26 states that:

10. (2) Every tree whose trunk is growing on the boundary between adjoining lands is the common property of the owners of the adjoining lands. 1998, c. 18, Sched. I, s. 21.
- (3) Every person who injures or destroys a tree growing on the boundary between adjoining lands without the consent of the land owners is guilty of an offence under this Act. 1998, c. 18, Sched. I, s. 21.

1.3 Study Terms

Due to the presence of trees on private property and municipally-owned property within the vicinity of the proposed development, a Vegetation Management Plan and Report is required prior to work commencing. Aboud & Associates Inc. has been retained to complete the Vegetation Management Plan and Report for this project.

2. Methodology

2.1 Site Context

The Site is an urban residential property with many trees of varying ages. The tree inventory and assessment was conducted by Dan Bechard, ISA Certified Arborist on January 14, 2020. The Existing Conditions Plan by MTE (November 29, 2019) was used in the field to locate and inventory surveyed trees. The base plan for *Drawing TPP1* is from the Architectural Drawings by Edge Architects Ltd., dated January 10, 2020.

2.2 Tree Inventory Requirements

Data for several categories of information must be collected for each tree in the study area as part of the Vegetation Management Plan. As such, the following data were collected for each tree:

- Species (botanical and common names)
- Diameter at breast height - DBH (cm)
- Crown Reserve (dripline) (m)
- Tree number
- Location
- Condition
- Recommendation based on Condition
- Recommendation based on Development Impacts
- Observations / comments

Appendix 1 provides a description of assessment methods and definitions of codes used in the Observations/Comments category. Recommendations to preserve or remove individual trees were assigned based on a tree's current condition and the expected impact from the construction. The final recommendation for each tree and other data listed above are provided in *Appendix 2*. Detailed rationale for the recommendations of select trees is given in Section 3.

We provide *Appendix 3 – Limitations of this Tree Assessment* to clarify what is reasonable and possible in our assessment of trees. *Appendix 4 – Protection of Migratory Birds and Development* is provided for reducing impacts to breeding birds.

3. Observations and Recommendations

3.1 Tree Inventory Data Summary

A total of 89 trees were recorded in the study area. Specific data for each individual tree are provided in *Appendix 2*. The locations, identification numbers, approximate crown reserves, and preservation recommendations of trees are shown on *Drawing TPP1*. The locations, identification numbers and preservation recommendations of trees are shown on *Drawing TPP1*. Tree locations were surveyed by MTE and provided in digital format on Month XX, 2020.

The inventoried trees are a mix of 14 coniferous and deciduous species, which are generally either common landscape species or opportunistic species. The two most abundant species inventoried on site were Manitoba Maple (*Acer negundo*) and Norway Spruce (*Picea abies*) with 20 and 18 individual trees respectively accounting for nearly 40% of the trees inventoried. The next most abundant tree species inventoried were Trembling Aspen (*Populus tremuloides*) with 11 trees, Eastern White Cedar (*Thuja occidentalis*) with eight individuals inventoried and Black Walnut (*Juglans nigra*) with six individuals. All other tree species inventoried had five or fewer individuals within the study area. All of the Black Locust (*Robinia pseudoacacia*) and White Pine (*Pinus strobus*) present in the inventory were located offsite.

3.2 Recommendations for Preservation and Removal

3.2.1 Trees Recommended for Preservation

It is recommended that 24 of the trees inventoried be preserved. These trees are in fair to good condition, and should be minimally impacted by the proposed development. Table A provides a summary of recommended action assigned to all inventoried trees.

Nineteen (19) of these trees are located offsite on the surrounding properties adjacent to the subject lands. Trees 1-4, 6, 7, 9-13, 43, 83-86 will require permission by the neighbouring land

owners to injure the trees, as their roots will likely be within the development area. In addition to the basic tree preservation requirements outlined in Section 3.3 of this report, root exploration at the limit of construction will need to be performed by dry-vac/hydro-vac/hand tools. This can occur at any time prior to excavation required for construction, and will help determine whether preservation is actually reasonable. Trees, 46, 47, 50, 81, 82 are also recommended for preservation. They are located along the front of the property on the subject lands and should be minimally impacted by the development, but appear to be subject to acquisition by the Region of Waterloo for road widening. Impacts to trees at that point are beyond the scope of this assignment.

Trees 87-89 are far enough from the development site that they will not be affected. For all of these trees, the proposed impact can be mitigated by careful treatment of the roots within the crown reserve as detailed in Section 3.3 of this report.

3.2.2 Trees Recommended for Removal

Sixty-five (65) trees are recommended for removal due to their condition or the proposed development. Table A provides a summary of recommended action assigned to all inventoried trees.

Table A. Summary of Recommended Action Assigned to Trees

Recommended Action	Based on Condition	Based on Development Impacts	Based on Condition AND Development Impacts
Preserve	77	24	77
Remove	12	65	12
Totals	89	89	89

Twelve (12) of the 89 trees recommended for removal are either in poor condition or dead and these trees are also in conflict with the current development. The main reason for recommending trees be removed due to the proposed development is that the development is proposing excavation within most of the subject site.

3.3 Protection of Trees Recommended for Preservation

In order to preserve the identified onsite trees during and after construction, the following tree protection measures must be taken:

- Where space permits on site, tree protection fencing (TPF) must be installed at least 1 m outside of the dripline as specified in the TPF detail shown in *Drawing TPP1*. Where space is limited, TPF will be installed at the minimum tree protection zone defined in Section C item 10 of the Vegetation Management and Landscape Plan Checklist for Site Plan Review;
- Where the development limit falls within the crown reserves of trees to be preserved, root pruning is recommended prior to earthworks by pre-staking the development limit, exposing roots (by air-spading/hand-digging with spades/hydro-vacuuming) along the development limit, cutting roots with appropriate tools (pruners, pole saws, or chainsaws as required), and covering cut roots and maintaining their moisture until backfilling with clean topsoil takes place;

- Root pruning within the crown reserves should be conducted or supervised by a Certified Arborist where the development encroaches within the driplines of trees recommended for preservation; and
- For trees that are at risk of being damaged due to the movement of machinery onsite, crown clearance pruning to arboricultural standards by a Certified Arborist is recommended prior to the beginning of construction.

4. Compensation

As stated in Section F item 5 of the Vegetation Management and Landscape Plan Checklist, the City of Waterloo recommends compensation for all trees removed to be replaced at a ratio of at least 1:1. Also, any trees to be protected that are impacted by development will be replaced by the same species or an approved alternate, to the satisfaction of the City of Waterloo at a minimum of 70mm caliper for deciduous trees and a minimum 250cm height for coniferous trees. The details regarding species and locations of compensation plantings are provided in the Landscape Plan (*Drawing LP-1*).

If all compensation trees cannot be planted on the property, cash-in-lieu payment is considered as a potential option at a rate of \$450 for a large-canopy tree species and \$350 for a small-canopy tree species. This option, as with the final tree compensation total, is to be determined with the formal submission to the City of Waterloo.

5. Conclusion

The proposed development at 310-316 Erb Street West requires a Vegetation Management Plan and Report to be submitted to, and approved by, the City of Waterloo as part of the Site Plan Application process. Through field study of the onsite vegetation and analysis of the proposed development, 24 of the 89 trees inventoried are recommended for preservation. Trees recommended for removal will require compensation tree plantings, the total of which will be determined through the Site Plan Agreement process. Species and location information for potential compensation plantings are detailed in the Landscape Plan.

Report Prepared By:

ABOUD & ASSOCIATES INC.



Dan Bechard, Consulting Arborist, R.P.F. in Training
ISA Certified Arborist No. ON-1698A
ISA TRAQ Certified
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APPENDIX 1. TREE INVENTORY AND ASSESSMENT DEFINITIONS

Note: Not all definitions may apply.

DBH (cm): Diameter at breast height, 1.4 m above ground, measured in centimeters.

Numbers in square brackets [xx, xx, ...] denotes the DBH's of each stem of tree with multiple stems.

Crown Reserve (meters): Diameter of tree canopy estimated in meters (dripline).

Minimum Tree Protection Zone (MTPZ): The minimum setback required to maintain the structural integrity of the tree's anchor roots, based on generally accepted arboricultural principles. If trees are protected to the TPZ then the tree's anchor root structure is expected to be maintained. Protection zone distances from: Vegetation Management and Landscape Plan Checklist for Site Plan Review, (Section C – item 10) City of Waterloo, December 11, 2019. The Tree Protection Zone is a distance in metres measured from the outside edge of the tree base.

Biological Health: Related to presence and extent of disease/disease symptoms and the vigour of the tree.

H (High) - No diseases/disease symptoms present, and moderate to high vigour.

M (Moderate) - Presence of minor diseases/disease symptoms, and/or moderate vigour.

L (Low) - Presence of major diseases/disease symptoms, (i.e., extensive crown dieback), and/or poor vigour.

A further rating may be assigned of ML = Low side of Moderate, HM = Moderate side of High.

Structural Condition: Related to defects in a tree's structure, (i.e., lean, co-dominant trunks).

H (High) - No structural defects, well-developed crown.

M (Moderate) - Presence of minor structural defects.

L (Low) - Presence of major structural defects.

A further rating may be assigned of M(L) = Low side of Moderate, H(M) = Moderate side of High.

Overall Condition: Related to defects in a tree's structure, (i.e., lean, co-dominant trunks).

E (Excellent) - Balanced, full crown; limbs and branches well-spaced; moderate to high vigour. No structural defects; biologically healthy with no diseases / disease symptoms; no crown dieback

G (Good) - Full crown with small, incomplete sections; limbs and branches mostly well-spaced; moderate vigour. Presence of very minor structural defects and/or very minor diseases / disease symptoms; very minor dieback (<10%)

F (Fair) - Crown not full or with large incomplete sections; some limbs and branches missing and/or not well spaced; moderate to poor vigour. Presence of minor structural defects and/or minor diseases / disease symptoms; moderate dieback (10-30%)

P (Poor) - Crown severely unbalanced or with very reduced (<30%) live crown; many limbs and branches missing; severely poor vigour. Presence of major structural defects and/or presence of major diseases / disease symptoms; severe dieback (>30%)

D (Dead) - No leaves or no buds, fine branchlets/twigs missing or dried out and brittle, bark peeling off, limbs or branches fallen off, decay present and may be extensive

Ownership:

Private (On-site) Tree: Tree trunk located completely within the boundary of the subject property.

Off-site Tree: Tree trunk located on private property completely outside of the property boundary of the subject property.

Municipal Tree: Tree is located on the property of the municipality/region, e.g., within Right-of-Way.

Shared (Boundary) Tree: Tree located on property boundary of the subject property and adjacent private or public property.

Recommended Action: A recommendation of the following three categories is assigned to preserve or remove a tree:

i) The tree's current biological health and structural condition

ii) The anticipated impacts from proposed development

iii) The summary of the previous two categories. Note: Only trees having a recommendation of preserve for both health and structure, and impacts from the proposed development are assigned a final recommendation of preserve.

P (Preserve) - Tree typically has a Biological Health rating of Moderate Low or higher AND a Structural Condition rating of Moderate Low or higher, AND is likely to survive impact from the proposed development (if present). The tree is likely to survive for at least 5 to 10 years.

R (Remove) - Tree typically has a Biological Health rating of Low, AND/OR a Structural Condition rating of Low, AND/OR will not survive the proposed development impacts (if present). The tree is not likely to survive more than 3 to 5 years.

T (Transplant) - The following conditions must be met for a tree to be transplantable as determined by the Project Arborist: 1) tree is of a size, condition and type suitable for transplant, 2) adequate equipment access, 3) recipient planting site available, 4) seasonality and weather conditions are suitable, 5) commitment to provide on-going post-transplant care and maintenance.

Comments: Quantified Conditions (defects, diseases)

L: low, minor, **M:** moderate, **H:** high, severe

e.g. Crooked trunk (H) = severe crooked trunk

Trunk decay (L) = minor trunk decay

Crown dieback (M) = Moderate crown dieback

See Appendix 1 for data collection methodology. Data collected January 14, 2020.

Tree No.	Tree Species	DBH (cm) ^{1,2}	Minimum Tree Protection Zone (m) (from outer trunk of tree) ³	Crown Reserve est. (m)	Overall Condition (E, G, F, P, D)	Ownership: Private, Offsite, Municipal, Shared	Rec. Action - Condition: Preserve, Remove	Rec. Action - Development: Preserve, Remove	Final Recommendation: Preserve, Remove	Compensation Required: Yes, No	Comments / Observations
1	<i>Acer negundo</i> Manitoba Maple	15	2.4	6	Fair	O	P	P	P	N	Lean moderate
2	<i>Acer negundo</i> Manitoba Maple	14	2.4	5	Fair	O	P	P	P	N	Minor lean
3	<i>Acer negundo</i> Manitoba Maple	12 [10,6]	2.4	6	Fair	O	P	P	P	N	Lean minor
4	<i>Acer negundo</i> Manitoba Maple	12	2.4	7	Fair	O	P	P	P	N	Lean minor
5	<i>Acer negundo</i> Manitoba Maple	13	2.4	12	Fair	S	P	R	RD	Y	Lean moderate
6	<i>Robinia pseudoacacia</i> Black Locust	14	2.4	5	Good	O	P	P	P	N	
7	<i>Robinia pseudoacacia</i> Black Locust	20	2.4	8	Good	O	P	P	P	N	
8	<i>Rhamnus cathartica</i> European Buckthorn	12	2.4	5	Fair	P	P	R	RD	Y	Invasive species
9	<i>Robinia pseudoacacia</i> Black Locust	20	2.4	6	Good	O	P	P	P	N	Trunk wound minor
10	<i>Robinia pseudoacacia</i> Black Locust	18	2.4	8	Good	O	P	P	P	N	
11	<i>Rhamnus cathartica</i> European Buckthorn	16 [9,9,7,6,5]	2.4	5	Fair	O	P	P	P	N	Invasive species
12	<i>Robinia pseudoacacia</i> Black Locust	39 [31,24]	2.4	14	Good	O	P	P	P	N	Codominant stems
13	<i>Acer negundo</i> Manitoba Maple	40 [32,24]	2.4	12	Fair	O	P	P	P	N	
14	<i>Populus tremuloides</i> Trembling Aspen	13	2.4	4	Good	P	P	R	RD	Y	
15	<i>Populus tremuloides</i> Trembling Aspen	11	2.4	3	Fair	P	P	R	RD	Y	
16	<i>Populus tremuloides</i> Trembling Aspen	9	1.2	3	Fair	P	P	R	RD	Y	Unbalanced crown, minor lean
17	<i>Populus tremuloides</i> Trembling Aspen	13	2.4	6	Fair	P	P	R	RD	Y	Minor lean, unbalanced crown
18	<i>Populus tremuloides</i> Trembling Aspen	31 [24,19]	2.4	9	Fair	P	P	R	RD	Y	Codominant stems, included bark
19	<i>Populus tremuloides</i> Trembling Aspen	23	2.4	8	Good	P	P	R	RD	Y	Unbalanced crown
20	<i>Populus tremuloides</i> Trembling Aspen	9	1.2	1	Dead	P	R	R	RCD	N	
21	<i>Populus tremuloides</i> Trembling Aspen	10	2.4	3	Good	P	P	R	RD	Y	
22	<i>Rhamnus cathartica</i> European Buckthorn	13	2.4	3	Fair	P	P	R	RD	Y	Invasive species
23	<i>Picea abies</i> Norway Spruce	63	4.2	16	Good	P	P	R	RD	Y	
24	<i>Picea abies</i> Norway Spruce	56	3.6	12	Good	P	P	R	RD	Y	

See Appendix 1 for data collection methodology. Data collected January 14, 2020.

Tree No.	Tree Species	DBH (cm) ^{1,2}	Minimum Tree Protection Zone (m) (from outer trunk of tree) ³	Crown Reserve est. (m)	Overall Condition (E, G, F, P, D)	Ownership: Private, Offsite, Municipal, Shared	Rec. Action - Preserve, Remove	Rec. Action - Development: Preserve, Remove	Final Recommendation: Preserve, Remove	Compensation Required: Yes, No	Comments / Observations
25	<i>Picea abies</i> Norway Spruce	37	2.4	8	Good	P	P	R	RD	Y	
26	<i>Picea abies</i> Norway Spruce	46	3.0	10	Good	P	P	R	RD	Y	
27	<i>Picea abies</i> Norway Spruce	41	3.0	8	Good	P	P	R	RD	Y	
28	<i>Picea abies</i> Norway Spruce	29	2.4	5	Good	P	P	R	RD	Y	
29	<i>Picea abies</i> Norway Spruce	47	3.0	12	Good	P	P	R	RD	Y	
30	<i>Picea abies</i> Norway Spruce	24	2.4	2	Dead	P	R	R	RCD	N	
31	<i>Picea abies</i> Norway Spruce	15	2.4	2	Dead	P	R	R	RCD	N	
32	<i>Picea abies</i> Norway Spruce	33	2.4	2	Dead	P	R	R	RCD	N	
33	<i>Picea abies</i> Norway Spruce	34	2.4	3	Dead	P	R	R	RCD	N	
34	<i>Picea abies</i> Norway Spruce	44	3.0	12	Good	P	P	R	RD	Y	
35	<i>Picea abies</i> Norway Spruce	35	2.4	8	Fair	P	P	R	RD	Y	Trunk wound moderate (lightning strike)
36	<i>Picea abies</i> Norway Spruce	39	2.4	8	Fair	P	P	R	RD	Y	Lightning strike
37	<i>Picea abies</i> Norway Spruce	35	2.4	8	Fair	P	P	R	RD	Y	Dieback minor
38	<i>Picea abies</i> Norway Spruce	60	3.6	14	Fair	P	P	R	RD	Y	Deadwood moderate
39	<i>Rhamnus cathartica</i> European Buckthorn	10 [7,6,5]	2.4	4	Fair	P	P	R	RD	Y	
40	<i>Acer platanoides</i> Norway Maple	43	3.0	9	Fair	P	P	R	RD	Y	Lean minor, codominant stems
41	<i>Acer negundo</i> Manitoba Maple	21	2.4	6	Fair	P	P	R	RD	Y	Unbalanced crown
42	<i>Acer negundo</i> Manitoba Maple	40	2.4	18	Fair	P	P	R	RD	Y	Dieback moderate, cavity at base of trunk
43	<i>Acer platanoides</i> Norway Maple	35	2.4	14	Good	O	P	P	P	N	Chain wrapped tight around trunk
44	<i>Populus tremuloides</i> Trembling Aspen	28	2.4	14	Good	P	P	R	RD	Y	Deadwood minor, wire wrapped around trunk 3m up
45	<i>Tilia americana</i> Basswood	67 [53,41]	4.2	12	Good	P	P	R	RD	Y	Codominant stems
46	<i>Sorbus intermedia</i> Swedish Whitebeam	42	3.0	10	Fair	P	P	P	P	N	Dieback moderate
47	<i>Sorbus intermedia</i> Swedish Whitebeam	29	2.4	8	Good	P	P	P	P	N	
48	<i>Picea glauca</i> White Spruce	19	2.4	4	Good	P	P	R	RD	Y	

See Appendix 1 for data collection methodology. Data collected January 14, 2020.

Tree No.	Tree Species	DBH (cm) ^{1,2}	Minimum Tree Protection Zone (m) (from outer trunk of tree) ³	Crown Reserve est. (m)	Overall Condition (E, G, F, P, D)	Ownership: Private, Offsite, Municipal, Shared	Rec. Action - Condition: Preserve, Remove	Rec. Action - Development: Preserve, Remove	Final Recommendation: Preserve, Remove	Compensation Required: Yes, No	Comments / Observations
49	<i>Picea glauca</i> White Spruce	21	2.4	4	Good	P	P	R	RD	Y	
50	<i>Malus baccata</i> Siberian Crab-Apple	29	2.4	10	Good	P	P	P	P	N	
51	<i>Quercus robur</i> 'Fastigiata' Pyramidal English Oak	38	2.4	4	Good	P	P	R	RD	Y	Deadwood minor
52	<i>Quercus robur</i> 'Fastigiata' Pyramidal English Oak	28	2.4	4	Poor	P	R	R	RCD	N	Deadwood high
53	<i>Juglans nigra</i> Black Walnut	42	3.0	12	Good	P	P	R	RD	Y	
54	<i>Thuja occidentalis</i> Eastern White Cedar	15	2.4	4	Fair	P	P	R	RD	Y	Unbalanced crown
55	<i>Thuja occidentalis</i> Eastern White Cedar	14 [12,8]	2.4	3	Good	P	P	R	RD	Y	
56	<i>Thuja occidentalis</i> Eastern White Cedar	14	2.4	4	Good	P	P	R	RD	Y	
57	<i>Thuja occidentalis</i> Eastern White Cedar	16	2.4	4	Good	P	P	R	RD	Y	
58	<i>Thuja occidentalis</i> Eastern White Cedar	10	2.4	3	Good	P	P	R	RD	Y	
59	<i>Acer negundo</i> Manitoba Maple	28	2.4	12	Dead	P	R	R	RCD	N	Lean moderate
60	<i>Thuja occidentalis</i> Eastern White Cedar	32	2.4	6	Good	P	P	R	RD	Y	Codominant stems
61	<i>Thuja occidentalis</i> Eastern White Cedar	16	2.4	5	Good	P	P	R	RD	Y	
62	<i>Thuja occidentalis</i> Eastern White Cedar	16	2.4	5	Good	P	P	R	RD	Y	
63	<i>Acer saccharum</i> ssp. <i>saccharum</i> Sugar Maple	23	2.4	7	Good	P	P	R	RD	Y	Clothes line real 4m up trunk
64	<i>Juglans nigra</i> Black Walnut	47	3.0	19	Good	P	P	R	RD	Y	
65	<i>Populus tremuloides</i> Trembling Aspen	18	2.4	6	Poor	P	R	R	RCD	N	Dieback severe
66	<i>Populus tremuloides</i> Trembling Aspen	19	2.4	4	Good	P	P	R	RD	Y	
67	<i>Acer negundo</i> Manitoba Maple	12	2.4	3	Poor	P	R	R	RCD	N	Deadwood significant, basal sprouts
68	<i>Juglans nigra</i> Black Walnut	70	4.2	18	Good	P	P	R	RD	Y	Wire in trunk 3m up, trunk wound moderate
69	<i>Acer negundo</i> Manitoba Maple	10 [9,5]	2.4	5	Fair	P	P	R	RD	Y	Deadwood minor
70	<i>Acer negundo</i> Manitoba Maple	16 [12,10]	2.4	6	Fair	P	P	R	RD	Y	Codominant stems
71	<i>Juglans nigra</i> Black Walnut	14	2.4	6	Good	P	P	R	RD	Y	
72	<i>Acer negundo</i> Manitoba Maple	10	2.4	4	Poor	P	R	R	RCD	N	Deadwood moderate

See Appendix 1 for data collection methodology. Data collected January 14, 2020.

Tree No.	Tree Species	DBH (cm) ^{1,2}	Minimum Tree Protection Zone (m) (from outer trunk of tree) ³	Crown Reserve est. (m)	Overall Condition (E, G, F, P, D)	Ownership: Private, Offsite, Municipal, Shared	Rec. Action - Condition: Preserve, Remove	Rec. Action - Development: Preserve, Remove	Final Recommendation: Preserve, Remove	Compensation Required: Yes, No	Comments / Observations
73	<i>Acer negundo</i> Manitoba Maple	12	2.4	3	Dead	P	R	R	RCD	N	
74	<i>Juglans nigra</i> Black Walnut	10 [9,5]	2.4	5	Fair	P	P	R	RD	Y	Codominant stems
75	<i>Acer negundo</i> Manitoba Maple	16	2.4	4	Fair	P	P	R	RD	Y	Carpet wrapped around trunk
76	<i>Juglans nigra</i> Black Walnut	19	2.4	7	Good	P	P	R	RD	Y	
77	<i>Acer negundo</i> Manitoba Maple	21	2.4	7	Dead	P	R	R	RCD	N	
78	<i>Acer platanoides</i> Norway Maple	37	2.4	10	Good	P	P	R	RD	Y	
79	<i>Acer negundo</i> Manitoba Maple	16	2.4	6	Fair	P	P	R	RD	Y	Unbalanced crown
80	<i>Caragana arborescens</i> 'Pendula' Weeping Siberian Pea-Shrub	13	2.4	4	Fair	P	P	R	RD	Y	Trunk split,
81	<i>Acer platanoides</i> Norway Maple	57	3.6	10	Fair	P	P	P	P	N	Girdling roots, stem wounds moderate
82	<i>Tilia americana</i> Basswood	62 [37,36,34]	4.2	16	Good	P	P	P	P	N	Utility pruned
83	<i>Acer negundo</i> Manitoba Maple	23 [19,13]	2.4	14	Fair	O	P	P	P	N	Poor structure
84	<i>Acer negundo</i> Manitoba Maple	69 [50,48]	4.2	16	Fair	O	P	P	P	N	Deadwood minor
85	<i>Acer negundo</i> Manitoba Maple	41	3.0	12	Fair	O	P	P	P	N	Dieback moderate, deadwood moderate
86	<i>Tilia americana</i> Basswood	71	4.8	15	Good	O	P	P	P	N	
87	<i>Pinus strobus</i> Eastern White Pine	25	2.4	6	Fair	O	P	P	P	N	Deadwood minor
88	<i>Pinus strobus</i> Eastern White Pine	36	2.4	10	Good	O	P	P	P	N	
89	<i>Acer platanoides</i> 'Globosum' Globe Maple	28	2.4	7	Fair	O	P	P	P	N	

See Appendix 1 for data collection methodology. Data collected January 14, 2020.

Tree No.	Tree Species	DBH (cm) ^{1,2}	Minimum Tree Protection Zone (m) (from outer trunk of tree) ³	Crown Reserve est. (m)	Overall Condition (E, G, F, P, D)	Ownership: Private, Offsite, Municipal, Shared	Rec. Action - Condition: Preserve, Remove	Rec. Action - Development: Preserve, Remove	Final Recommendation: Preserve, Remove	Compensation Required: Yes, No	Comments / Observations
DATA SUMMARY											
Ownership											
Private (On Site) Trees						69					
Private (Off Site) Trees						19					
Municipal Trees						0					
Shared Trees						1					
Total						89					
Recommendation Based on Tree Condition											
Preserve Tree Based on Health & Structure							77				
Remove Tree Based on Health & Structure							12				
Total							89				
Recommendation Based on Development											
Preserve Tree Based on Development Impacts								24			
Remove Tree Based on Development Impacts								65			
Total								89			
Final Recommendations											
Final Recommendation: Preserve (P)									24		
Final Recommendation: Remove due to Development (RD)									53		
Final Recommendation: Remove due to Condition and Development (RCD)									12		
Total									89		
Compensation											
Compensation Required: Yes (Y)										53	
Compensation Required: No (N)										36	
Total										89	

1. DBH (Diameter at breast height): Measurement of tree stem diameter at 1.4 meters above ground.

2. [] Denotes DBH's of Each Stem of Tree with Multiple Stems

3. Minimum Tree Protection Zones, as per City of Waterloo VMP Requirements

Removal and injury of trees owned by others (e.g. private off-site, municipal or shared/boundary trees) require approval from the owner.

APPENDIX 3. LIMITATIONS OF TREE ASSESSMENT

It is the policy of Aboud & Associates Inc. to attach the following clause regarding limitations. We do this to ensure that developers, agencies, municipalities and owners are clearly aware of what is technically and professionally realistic in retaining trees.

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

Notwithstanding the recommendations and conclusions made in this report, it must be realized that trees are living organisms, and their health and vigour constantly change over time. They are not immune to changes in site conditions, or seasonal variations in the weather conditions, including severe storms with high-speed winds.

While reasonable efforts have been made to ensure that the trees recommended for retention are healthy unless stated otherwise within the report, no guarantees are offered, or implied, that these trees, or any parts of them, will remain standing. It is both professionally and practically impossible to predict with absolute certainty the behaviour of any single tree or group of trees or their component parts in all circumstances. Inevitably, a standing tree will always pose some risk. Most trees have the potential for failure in the event of adverse weather conditions, and this risk can only be eliminated if the tree is removed.

Although every effort has been made to ensure that this assessment is reasonably accurate, the trees should be re-assessed periodically. The assessment presented in this report is valid at the time of the inspection.

APPENDIX 4. PROTECTION OF MIGRATORY BIRDS AND DEVELOPMENT

Most species of birds in Ontario are protected under the federal Migratory Birds Convention Act, 1994 (MBCA) or the provincial Fish and Wildlife Conservation Act, 1997. The “incidental take” of migratory bird nests or the disturbance, destruction or taking of the nest of a migratory bird are prohibited under section 6 of the *Migratory Bird Regulations* (MBRs), under the authority of the MBCA. “Incidental take” is defined as the harming of migratory bird nests due to actions such as construction activities. No permit can be issued for the incidental take of migratory birds or their nests as a result of economic activities.

The provincial Fish and Wildlife Conservation Act, 1997, provides protection for some species excluded from the MBCA, including raptors, gamebirds and specially protected birds. Under the Act (Section 7 (1)) a person shall not destroy, take or possess the nest or eggs of a bird that belongs to a species that is wild by nature. With the exception of the nest or eggs of an American crow, brown-headed cowbird, common grackle, house sparrow, red-winged blackbird or starling (Section 7(2)).

Project construction, operation or maintenance activities such as vegetation clearing, tree removal/harvesting, site grubbing, site access, excavation and stockpiling of soil/fill could result in the incidental take of migratory birds or their nests if conducted in migratory bird habitat. Construction activities could also disturb nearby breeding birds and disrupt breeding. It is the proponent’s responsibility to meet the requirements of the MBRs and should projects or activities result in the contravention of the MBRs, prosecution under the MBCA may be initiated.

In order to ensure compliance with the MBRs, Aboud & Associates recommends the following:

1. Activities resulting in the disturbance, destruction or removal of potential breeding bird habitat should, where possible, not take place during the General Nesting Period as outlined by Environment Canada (2014). The General Nesting Period is identified in ‘Environment Canada’s Avoidance Guidelines for Incidental Take’ (2014) as the period between the end of March and August 31 in Nesting Zones C1 and C2 in Ontario, located in the Lower Great Lakes/St. Lawrence Plain (Bird Conservation Region (BCR) 13).
2. When it is absolutely necessary that work must take place during the General Nesting Period, a qualified wildlife biologist must carry out a comprehensive survey to identify areas on the subject property where birds are building nests, incubating eggs, rearing young, etc. All disruptive activities in the nesting area should be halted and identified nests should be protected with a buffer (i.e. nest protection zone/no disturbance zone) appropriate for the species, the disturbance intensity level and the surrounding habitat. Disruptive activities can continue inside the buffered area once the biologist has deemed that fledglings have naturally left the vicinity of the nest.
3. Disruptive activities taking place outside of the General Nesting Period can be preceded by an assessment by a qualified wildlife biologist to ensure that the identification of stick nests of owls and raptors is undertaken in suitable habitat. Most raptor species, with the exception of species protected under the ESA are excluded from the MBCA; as a result, the nesting period for this group is not included under Environment Canada’s general nesting periods.

References:

Environment Canada. 2014. Incidental take of Migratory Birds in Canada.
<https://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=C51C415F-1>. Accessed: April 7, 2015.

Fish and Wildlife Conservation Act, 1997.

Migratory Birds Convention Act, 1994.

- Urban Forestry
- Ecological Restoration Design
- Environmental Impact Studies
- Landscape Architecture
- Expert Opinion

