

521-525 ESSA ROAD RESIDENTIAL DEVELOPMENT

TREE INVENTORY, ANALYSIS AND PRESERVATION REPORT



LOTS 10, 11 & 12 REGISTERED PLAN 1080 in the,
GEOGRAPHIC TOWNSHIP of INNISFIL, now
CITY OF BARRIE, ONTARIO

COUNTY OF SIMCOE

AUGUST, 2017

OUR FILE: LA 265.10-17

PREPARED BY:



LANDSCAPE ARCHITECTURE & CONSULTING ARBORISTS
112 COMMERCE PARK ROAD, UNIT L,
BARRIE, ONTARIO L4N 6Y8

TEL: 705-796-1122 CELL: 705-717-8484

Email: info@LEGroupLtd.com Website: www.LEGroupLtd.com

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1.0 Scope/Assignment:

The Landmark Environmental Group Ltd. (LEGGroup) (Jim Hosick, OALA, ISA Arborist # 1098A) was retained by Mr. Sam Reitano and Mr. Bryan Totoda to provide Consulting Arboricultural services to lands generally in the area north of Essa Road and Mapleton Avenue in the City of Barrie.

The assignment is to prepare a Tree Inventory, Analysis and Preservation Plan & Report to support the application to the City of Barrie of a Zoning amendment for a proposed Townhouse development as described below. LEGGroup was requested to create a tree inventory, assessment and preservation report to assess the existing trees on the subject site and indicate those trees that can be preserved and the methods for protecting the same. Further, those trees that cannot be preserved either by poor or declining health, structural deficiencies or to facilitate the proposed development on the site, are indicated to be removed.

Specifically, LEG was assigned to provide the following services:

- Review site data including survey and concept drawings, to provide for a site visit and correspond with City staff as applicable;
- Provide a Tree Inventory Report visually assessing and identifying the type, location, size and quality of any trees on site within the developable area and area conditions;
- Indicate on an Arborist Plan, those trees that are suitable for preservation or removal and providing the methods of protecting the same;

It is the intent in the undertaking of this Report, to comply with the City of Barrie Private Tree By-law 2014-115 and City tree preservation policies.

2.0 Proposed Development:

The subject site is located at 521 & 525 Essa Road, legally described as Lots 10, 11 & 12 on Registered Plan 1080 in the, geographic Township of Innisfil, now in the City of Barrie, Ontario. The site is over .45 ha in area and the proposed development at the site is for a 48 unit residential development in 3 buildings (see **Appendix A-Concept Site Plan**).

The subject lots are currently being used as single-family residences. The adjacent land uses existing at the site boundaries are as follows: bounded on the west by residential lands (Leslie Ave), bounded on the north by a senior's residence parking area (Roberta Place); bounded on the east by Essa Road and residential development beyond and bounded on the south by a commercial development (Holly Auto Service).

The limits of the Arborist study was confined to the area within the lot boundaries and those trees immediately adjacent to the subject site that may be affected as a result of the proposed development.

This Tree Inventory, Analysis and Preservation Report is submitted in support of and intended to accompany a zoning amendment application for the redevelopment of the site as noted above.

Below, is an air photo showing the location of the subject site (lines delineate the site boundaries):



Figure 1 Airphoto of Subject Site (Boundary Highlighted) and Surrounding Area (City of Barrie GIS)

3.0 Method:

A summary of inventory, observations and assessments that were determined in the field can be found in **Appendix C** at the end of this Report.

The tree assessments were identified in accordance with the detailed typical criteria used in best arboricultural practices to indicate the merits of tree preservation including the species (Latin and common names), size diameter at breast height (dbh), maturity, biological health, structural concerns (if any), condition rating and recommendations for preservation or removal of existing specimen trees.

Condition ratings applied to overall tree assessments using the above-noted criteria range from 1 (poor) to 5 (excellent). Typically, those trees being assessed a condition rating of 1-3 are recommended for removal while those trees being assessed a condition rating of 4-5 are recommended for preservation unless there are extenuating circumstances regarding the development of the site. The criterion is also applied to assist in assessment of their potential for survival in-situ post construction.

For the purposes of this Report, only those trees over 10cm dbh were captured. No shrubs or low understory perennials were captured in the data.

Each tree was assigned a key number (1-49) and observations relating to each tree were tabulated in the Tree Inventory (**Appendix C**). Each tree was also located on a Tree Inventory and Preservation Map corresponding to the number assigned and can be seen in the Tree Inventory, Assessment and Preservation Plan as shown in **Appendix B**.

4.0 Observations

On July 24-25, 2017, LEGroup staff (J. Hosick) who is a licensed Landscape Architect (OALA), a qualified Arborist (ISA) and an approved MNR Butternut Assessor, visited the subject site with the intent to provide an inventory and assessment of individual tree species present within the subject site. LEGroup staff also made a cursory review of existing trees exterior to the subject property to visually assess the quality of the vegetation.

LEGroup staff noted that the site grade was relatively flat with the exception of a swale located on the west side of the common boundary line at 521 Essa Road which services the residential subdivision to the west. Some of the trees (#43-49) inventoried in this Report are located on the upslope of the swale on the subject property.

The following woody plant species were observed on the subject site during fieldwork:

Latin name	Common Name	% of Total Trees
<i>Acer platanoides</i>	Norway Maple	1/49= 2%
<i>Betula papyrifera</i>	Paper Birch	2/49=4.1%
<i>Picea glauca</i>	White Spruce	7/49=14.3%
<i>Picea pungens</i> 'Glauca'	Colorado Blue Spruce	33/49=67.3%
<i>Pinus nigra</i>	Austrian Pine	2/49=4.1%
<i>Rhamnus cathartica</i>	Common Buckthorn	2/49=4.1%
<i>Thuja occidentalis</i>	Eastern White Cedar	(1 + 1 group) 2/49= 4.1%

Table 1 List of Observed Woody Plant Species on the Subject Site

A total of 49 trees were observed at a DBH (diameter breast height) of equal to or greater than 10cm on the subject site and are recorded in **Appendix C**.

The majority of these trees are Colorado Blue Spruce (*Picea pungens* 'Glauca') and White Spruce (*Picea glauca*) which are located along the mid-section between the two parcels of the subject site and along the rear of both parcels (see **Photos A/B, Appendix D**). These trees appear to be over 40 years of age, are in marginal health and are considered to be at the end of their useful life. Many of the branches of the conifers along the mid-section have been pruned to a height of approximately six (6) feet and continue to discharge sap (suspected *Sirococcus*). The conifers at the rear of the site have extensive lower branch dieback (suspected needlecast disease) and provide minimal live branch buffering between the subject property and the homes along Leslie Avenue (see **Photo H, Appendix D**). Trees # 47-49 have been infected with Riverbank Grape (*Vitis riparia*) a vine that uses host trees to support its growth and has caused considerable weakening and branch dieback.

The remaining trees on the more southerly part of the property are ornamental landscape trees including Norway Maple (*Acer platanoides*), Paper Birch (*Betula papyrifera*) and Eastern White Cedar (*Thuja occidentalis*) the latter grouped as a hedge form. These trees are in fair condition. The Common Buckthorn (*Rhamnus cathartica*) is a nurtured fly-in shrub which has reached a tree form however, is not considered to be of intrinsic value. The Austrian Pine appears in poor condition due to insufficient light.

Boundary Trees

In addition to the assessment of the on-site trees noted above, LEGroup staff reviewed trees adjacent to the boundaries to see whether there would be potential impacts to the development lands or whether the development could potentially impact the boundary trees exterior to the site.

The following tree species were observed immediately adjacent to the subject lands:

Latin Name	Common Name
<i>Catalpa speciosa</i>	Northern Catalpa
<i>Picea glauca</i>	White Spruce
<i>Picea omorika</i>	Serbian Spruce
<i>Quercus rubra</i>	Red Oak
<i>Thuja occidentalis</i>	Eastern White Cedar

Table 2 List of Observed Woody Plant Species on Adjacent Lands.

Notably, most of the species observed and noted in the Table above, occur on the Roberta Place premises to the north as a result of site plan approval. No trees were observed in the rear yards of the Leslie Avenue that affected the subject site. Only the Northern Catalpa (*Catalpa speciosa*) which is in poor condition, was noted on the lands to the south (Holly Auto Service) and does not reach across the boundary into the subject property.

Of the species noted above on the Roberta Place site, only the Red Oak (*Quercus rubra*) has branching that reaches approximately two (2) metres over the boundary into the subject property (**see Photos F & G**).

No Butternut (*Juglans cinerea*) was observed on the subject parcels during the on-site review in accordance with the requirements of the *Endangered Species Act, 2007*.

5.0 Study Criteria

Tree observations were recorded individually, as set out in the Tree Inventory and Assessment Table (**Appendix C**), in accordance with the criteria established by common arboricultural practice including:

- ✓ Latin/Common Name of tree;
- ✓ Size (mm cal);
- ✓ Condition/Comments; and
- ✓ Recommendation for Preservation or Removal

Tree locations on the Tree Inventory and Preservation Plan were recorded and adjusted however, the locations are approximate as shown on Drawing ARB-1 and ARB-2 in **Appendix B**.

6.0 Analysis and Recommendations

The following analysis criteria were generally applied to measure the merits of tree preservation:

- Species (including native & non-native)
- Size/Maturity
- Structure
- Health
- Location
- Areas of proposed development.

These criteria were applied to the tree assessments to determine the extent of preservation and removal. In addition, the criterion is applied to assist in assessment of their potential for survival in-situ post construction.

We note that there are thirty-three (33) Colorado Blue Spruce (*Picea pungens 'Glauca'*) (Tree Nos. 1, 3-22, 24-32, 47-49), that are recorded that are over 10cm dbh on the subject site. With the exception of Trees No. 1 and 3 which are located along the 525 Essa Road frontage, the remaining are deemed to be in marginal health and are recommended to be removed.

There are seven (7) White Spruce (*Picea glauca*) recorded that are over 10cm dbh on the site (2, 23, 35, 43-46) many of which are deemed to be in marginal to poor health and are recommended to be removed. However, Tree No. 2 appears to be in fair condition, there is opportunity to retain in-situ and is recommended for retention/protection as shown in **Appendix B**. Although recorded as being in marginal condition, Tree No. 35 as a boundary tree is recommended for retention and protection.

Two (2) Paper Birch trees (*Betula papyrifera*) are boundary trees along the west property line and are recorded to be in fair condition. We recommend that these trees be retained and protected.

A massing of trees and mature shrubs along the west boundary that are comprised of two (2) Austrian pines (*Pinus nigra*) (Trees No. 33 & 39), Eastern White Cedar (*Thuja occidentalis*) (Tree No. 34) and two Buckthorn (*Rhamnus cathartica*) (Trees No. 36 & 40) are deemed to be in marginal to poor condition and are recommended to be removed.

There is one Norway Maple (*Acer platanoides*) (Tree No. 41) in the rear centre of 525 Essa Road that is recorded to be in fair condition however, given its location on the site, is recommended for removal.

There is a hedge of Eastern White Cedar (*Thuja occidentalis*) along the south property line (No. 42) that was installed as a visual buffer between the commercial and residential use of the subject property. The hedge is recorded as being in fair condition and is recommended to be retained and protected.

In summary, as noted above, six trees and one hedge are recommended for retention. Due to the reasons stated above, it is recommended that all other remaining trees be removed. The trees to be protected are indicated on **Plans ARB-1** in **Appendix B** setting out the Tree Preservation Zone at the outer limits of the dripline of each tree using appropriate tree preservation fencing (hoarding) for protection (**see Dwg D-1, Appendix B**).

7.0 Arborist's Declaration

It is the policy of Landmark Environmental Group Ltd to attach the following clause regarding the limitations:

The Consulting Arborist's visual assessment and recommendations, made in this Report, have been completed based on accepted arboricultural practices and represents a fair and accurate assessment of the number, type, size and condition of trees on the subject property. Such visual assessments of all tree components could include scars, bark damage, external decay, insect infestations, discoloured foliage, crown dieback, an excessive degree of lean from the vertical and above-ground root defects. In addition, environmental conditions, which could affect overall health of the trees such as damaging maintenance practices, have also been taken into consideration where appropriate. However, no tree was dissected, cored or rooting systems assessed through excavation.

I hereby certify that I, James Hosick have:

- Personally performed a visual inspection of the trees and property referred to in this letter report and have stated my findings accurately in accordance with accepted arboricultural practices without personal interest or bias;

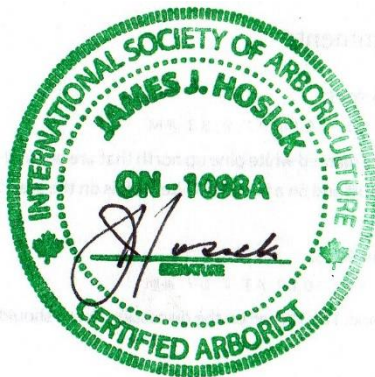
- No current or prospective interest in the property that is the subject of this Report and have no personal interest or bias with respect to the parties involved;
- That my analysis, opinions and conclusions stated are my own and based on commonly accepted arboricultural practices;
- That my compensation is not contingent on the reporting of a predetermined conclusion that favours the client; and
- That I am a member in good standing with the International Society of Arboriculture (ISA) and the Ontario Association of Landscape Architects (OALA).

I trust the above-noted recommendations are of assistance. If there are any questions regarding the 521-525 Essa Road Development Tree Inventory, Analysis and Preservation Report, please do not hesitate to contact our Firm at (705) 717-8484.

Prepared by,



Jim Hosick, OALA, ISA
Landscape Architect-Principal,
ISA Certified Arborist No. 1098-A
MNR Butternut Health Assessor # 451
Landmark Environmental Group Ltd.



Appendix B: Tree Inventory, Assessment and Preservation Plan (ARB-1, D-1)



Appendix C: Tree Inventory and Assessment Table

Key	Latin Name	Common Name	Size (dbh)	Rating	Comments	Recommendation
1	<i>Picea pungens glauca</i>	Colorado Blue Spruce	64	2 Marginal	lower branch dieback, great top growth, leans, girdling roots, sap bleed	Preserve
2	<i>Picea glauca</i>	White Spruce	37	3 Fair	surface roots, triple leader, interior branch dieback, some bleed,	Preserve
3	<i>Picea pungens glauca</i>	Colorado Blue Spruce	49.3	3 Fair	internal branch dieback, good vigor, some sap bleed	Preserve
4	<i>Picea pungens glauca</i>	Colorado Blue Spruce	40	2 Marginal	significant sap bleed, interior branch dieback	Remove
5	<i>Picea pungens glauca</i>	Colorado Blue Spruce	27.4	2 Marginal	interior branch dieback, small crown	Remove
6	<i>Picea pungens glauca</i>	Colorado Blue Spruce	41.9	2 Marginal	root flare, interior branch dieback	Remove
7	<i>Picea pungens glauca</i>	Colorado Blue Spruce	38.7	2 Marginal	root flare, interior branch dieback	Remove
8	<i>Picea pungens glauca</i>	Colorado Blue Spruce	30.3	2 Marginal	root flare, interior branch dieback	Remove
9	<i>Picea pungens glauca</i>	Colorado Blue Spruce	32.8	2 Marginal	fruiting body, sap bleed, interior branch dieback	Remove
10	<i>Picea pungens glauca</i>	Colorado Blue Spruce	36.5	2 Marginal	root flare, interior branch dieback	Remove
11	<i>Picea pungens glauca</i>	Colorado Blue Spruce	43.7	2 Marginal	trunk bulge-suspected interior decay, sap bleed, interior branch dieback	Remove
12	<i>Picea pungens glauca</i>	Colorado Blue Spruce	38.4	2 Marginal	root flare, interior branch dieback	Remove
13	<i>Picea pungens glauca</i>	Colorado Blue Spruce	29.5	2 Marginal	root flare, interior branch dieback	Remove
14	<i>Picea pungens glauca</i>	Colorado Blue Spruce	38.7	2 Marginal	root flare, interior branch dieback	Remove
15	<i>Picea pungens glauca</i>	Colorado Blue Spruce	32	2 Marginal	root flare, interior branch dieback	Remove
16	<i>Picea pungens glauca</i>	Colorado Blue Spruce	38.8	2 Marginal	suspected interior decay, sap bleed, post footing in trunk, lower branch dieback	Remove
17	<i>Picea pungens glauca</i>	Colorado Blue Spruce	41.1	2 Marginal	suspected interior decay, sap bleed, post footing in trunk, lower branch dieback	Remove
18	<i>Picea pungens glauca</i>	Colorado Blue Spruce	40	2 Marginal	multiple leader, sap bleed, interior branch dieback	Remove

Key	Latin Name	Common Name	Size (dbh)	Rating	Comments	Recommendation
19	<i>Picea pungens glauca</i>	Colorado Blue Spruce	25.4	2 Marginal	exposed root flares, interior branch dieback	Remove
20	<i>Picea pungens glauca</i>	Colorado Blue Spruce	33.3	2 Marginal	post in trunk flare, sap bleed, interior branch dieback	Remove
21	<i>Picea pungens glauca</i>	Colorado Blue Spruce	35.6	2 Marginal	sap bleed, exposed root flares, interior branch dieback	Remove
22	<i>Picea pungens glauca</i>	Colorado Blue Spruce	37.2	2 Marginal	post in trunk flare, sap bleed, interior branch dieback	Remove
23	<i>Picea glauca</i>	White Spruce	31.8	1 poor	sap bleed, root girdling, suspected interior decay, exposed root flares, interior branch dieback	Remove
24	<i>Picea pungens glauca</i>	Colorado Blue Spruce	30.3	2 Marginal	exposed root flares, sap bleed, branch dieback	Remove
25	<i>Picea pungens glauca</i>	Colorado Blue Spruce	35.7	2 Marginal	post in trunk, sap bleed	Remove
26	<i>Picea pungens glauca</i>	Colorado Blue Spruce	27.2	2 Marginal	exposed root flares, sap bleed, branch dieback	Remove
27	<i>Picea pungens glauca</i>	Colorado Blue Spruce	37.5	2 Marginal	sap bleed, post in trunk, surface roots, lower branch dieback	Remove
28	<i>Picea pungens glauca</i>	Colorado Blue Spruce	37.5	2 Marginal	root girdling	Remove
29	<i>Picea pungens glauca</i>	Colorado Blue Spruce	45.5	2 Marginal	sap bleed, exposed root flares, post footing in trunk, interior branch dieback	Remove
30	<i>Picea pungens glauca</i>	Colorado Blue Spruce	32.7	2 Marginal	sap bleed, suspected interior decay, post footing in trunk, interior branch dieback	Remove
31	<i>Picea pungens glauca</i>	Colorado Blue Spruce	30.5	2 Marginal	sap bleed, interior branching dieback	Remove
32	<i>Picea pungens glauca</i>	Colorado Blue Spruce	39.7	2 Marginal	sap bleed, interior branching dieback	Remove
33	<i>Pinus nigra</i>	Austrian Pine	12.5	1 poor	boundary tree, twisted trunk, mugo pine, no leader	Remove
34	<i>Thuja occidentalis</i>	Eastern White Cedar	28	2 Marginal	y-trunk, boundary tree, riverbank grape	Remove

Key	Latin Name	Common Name	Size (dbh)	Rating	Comments	Recommendation
35	<i>Picea glauca</i>	White Spruce	18.8	2 Marginal	corrected lean, boundary tree, exposed root flares, interior branch dieback	Preserve
36	<i>Rhamnus cathartica</i>	Common Buckthorn	17.7	1 poor	buckthorn, bark split, bark abrasion, cavity, boundary tree	Remove
37	<i>Betula papyrifera</i>	Paper Birch	32.3	3 Fair	boundary tree, corrected lean	Preserve
38	<i>Betula papyrifera</i>	Paper Birch	28.5	3 Fair	boundary tree, corrected lean	Preserve
39	<i>Pinus nigra</i>	Austrian Pine	14.4	1 poor	adventitious trunk, dead dieback branches,	Remove
40	<i>Rhamnus cathartica</i>	Common Buckthorn	16.2	2 Marginal	Shrub that has been nurtured to tree form	Remove
41	<i>Acer platanoides</i>	Norway Maple	55.5	3 Fair	root girdling, suspected interior decay	Remove
42	<i>Thuja occidentalis</i>	Eastern White Cedar		3 Fair	6' cedar hedge, good condition	Preserve
43	<i>Picea glauca</i>	White Spruce	39.5	2 Marginal	weak needles, 2m radius TPZ, interior branch dieback, 2 fence posts + debris	Remove
44	<i>Picea glauca</i>	White Spruce	44.7	2 Marginal	root girdling, sap bleed, interior branch dieback, good top growth, boundary tree	Remove
45	<i>Picea glauca</i>	White Spruce	35.2	2 Marginal	sap bleed, significant root girdbranch dieback, black soot fungus, debris piled at roots, boundary tree	Remove
46	<i>Picea glauca</i>	White Spruce	35	2 Marginal	riverbank grape, sparse middle, interior branch dieback, weak needles, boundary tree	Remove
47	<i>Picea pungens glauca</i>	Colorado Blue Spruce	55.0 est	2 Marginal	significant bleed, no pruning, soot fungus, virginia creeper, boundary tree	Remove
48	<i>Picea pungens glauca</i>	Colorado Blue Spruce	33.3	2 Marginal	root girdling, bark blister, interior branch dieback, former riverbank grape, boundary tree	Remove
49	<i>Picea pungens glauca</i>	Colorado Blue Spruce	54	2 Marginal	root girdling, interior branch dieback, boundary tree	Remove

Appendix D: Selected Site Photos



Photo A-Tree Nos. 3-10 Colorado Blue Spruce (*Picea pungens* 'Glauca') recommended for removal.



Photo B-Trees Nos. 21-28 Colorado Blue Spruce/White Spruce recommended for removal.



Photo C-Boundary trees Nos. 33-36 at the rear of 525 Essa Road.



Photo D-Boundary trees Nos. 36-42 at the rear/west side of 525 Essa Road.



Photo E-Tree Nos. 43-46 White Spruce (*Picea glauca*) showing interior dieback



Photo F-No. 42 Eastern White Cedar (*Thuja occidentalis*) along the south property line.



Photo F-Looking east along the north fenceline showing boundary trees.



Photo G-Looking west-Tree Nos. 48-49 Colorado Blue Spruce (*Picea pungens* 'Glauca') and boundary trees/fence