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Construction Arborist Report: 0 Bernida Road, Mississauga, Ontario

Prepared on behalf of the property owner

Date: April 17th, 2020

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Introduction

Tree Doctors Inc. (TDI) was retained by the homeowner, to prepare a Construction Arborist Report and Tree Preservation Plan (TPP) in support of a development application for the property located at 0 Bernida Road, Mississauga, Ontario.

Assignment

An on-site inspection was undertaken by the arborist most recently on September 18, 2019 in order to:

- Prepare an inventory of relevant bylaw-protected trees. The inventory includes all relevant private trees measured 15 cm in diameter at breast height (DBH) or greater, as well as all relevant trees located on the City road allowance, on or within 6 meters of the subject site;
- Document each tree's condition, location, and minimum protection requirements;
- Evaluate potential site plan modifications in the interest of tree preservation;
- Establish and illustrate the required hoarding layout to be maintained for the duration of construction activities.

Summary

- There are 5 City-owned trees on the property and relevant to the proposed construction. 3 City trees will require removal in order to allow for proposed work.
- The proposed development conflicts with protected root zones of 28 City and Private trees (3 City trees and 25 Private trees). All 28 affected trees will require significant TPZ encroachments and therefore removal in order to allow for proposed construction. 3 trees out of 28 affected by the proposed development are dead or heavily infested with Emerald Ash Borer and should be considered for exemption from standard tree removal permits and fees.
- Additional 8 trees (3 Private and 5 Neighbouring) will require injuries in form of slight to moderate TPZ trespass in order to allow placing and grading of the slope. Slope will not interfere with root collar of the trees, nor will require physical alterations of the soil within the TPZs and will only include addition of the soil in some areas. Considering this, exemption from standard tree injury permit and fees should be considered.

Purpose and Use

This report is provided to homeowner(s), architect, and shall be used in whole and as provided to the Municipal's Urban Forestry Department and other stakeholders as it relates solely to this project. This report should be shared with all contractors responsible for site development.

Methodology

A Visual Tree Assessment (VTA) was undertaken on all relevant bylaw-protected trees. Bylaw-protected trees include all private trees measured with a diameter at breast height (DBH) of 15 cm or greater, as well as all trees located on the City road allowance, on or within 6 meters of the subject site. The VTA method is used to evaluate the health and structural condition of each tree and the site in which it grows. This method is recognized as a Limited Visual Inspection by the International Society of Arboriculture.

Tree resources were assessed based on the following parameters:

Tree #: identification number assigned to the tree, corresponding to the location plotted of the *Tree Protection Plan*.

Species: common and botanical names provided in the inventory table.
stems, the diameter of the largest stem is provided

Condition: condition of tree considering trunk integrity, crown structure, and crown vigour.
Condition ratings are defined as follows:

1. Good – trees in good overall health and condition with desirable structure
2. Fair – trees in moderate health and condition with less desirable structure
3. Poor – trees displaying prominent health issues such as decay and disease and/or poor form and structure

Inventoried trees have been assigned one of the following ownership categories:

1. Trees with diameters of 15 cm or more, situated on private property on the subject site.
2. Trees with diameters of 15 cm or more, situated on private property, within 6 m of the subject site.
3. Trees of all diameters situated on City-owned parkland within 6 m of the subject site.
4. Trees of all diameters situated within the City road allowance, on or within 6 m of the subject site.

Observations and Comments

The site was visited on week of September 18, 2019. The existing site is currently an empty lot with no existing structures or hard surfaces on it. Overall, 104 trees are located on the property and were inspected by Tree Doctors Inc. 29 trees will require removal in order to allow for construction with 14 additional trees requiring injury permit.

The trees requiring injury should be exempted from the permit and fees due to nature of work that includes slight to moderate TPZ trespass in order to allow placing and grading of the slope. **Slope will not interfere with root collar of the trees, nor will require physical alterations of the soil within the TPZs and will only include addition of the soil.** Trees that will require TPZ trespass for this work to occur are highlighted in inventory table in yellow and are shown on the Tree Protection Plan with prefix “I”.

Protection around trees that are 6 or more meters away from the borders of construction site should be waived.

Proposed Development

The proposed development, as illustrated on the Proposed Site Plan includes construction of the road leading to the property. Most trees will require removal to allow for proposed grading and securing of the slope related to the construction of the road. The accompanying Tree Protection Plan includes an overview of the construction impact on the trees.

Discussion

The following section of the report provides discussion and analysis of the construction-related impact on the existing trees on site, tree removal requirements, and tree preservation and pruning measures relative to the proposed development and existing conditions.

Tree 2: 21, 5cm Norway Maple- Request Permit to Remove City-owned Tree

Tree #2 is a young City tree in Good/Fair condition located on the road allowance to the property. The tree has a few insignificant flaws such as minor amount of small diameter deadwood in the crown, none of which are life threatening to the tree or potentially hazardous for its surroundings.

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 4: 13cm Norway Maple- Request Permit to Remove City-owned Tree

Tree #4 is a young City tree in Good/Fair condition located on the road allowance to the property. The tree has a few insignificant flaws such as minor amount of small diameter deadwood in the crown, none of which are life threatening to the tree or potentially hazardous for its surroundings.

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 5: 29, 30, 36cm Norway Maple- Request Permit to Remove City-owned Tree

Tree #1 is a semi-mature City tree in Fair condition located on the road allowance to the property. The tree has a few significant flaws such as oozing from a large seam on its main trunk, girdling roots, and included bark at the main stem union.

Although such tree is not in exceptional form and botanical condition, its condition is not life threatening to the tree or hazardous for its surroundings.

The tree will require removal in order to allow for construction of proposed 6.5m wide road and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed road and could not be retained.

Pre-emptive removal of the tree is recommended.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access. The tree is located directly within the footprints of the proposed road access and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 9: 20cm White Pine - Request Permit to Remove Private Tree

Tree #9 is a young Private tree in Good condition located on the road allowance to the property. The tree is in exceptional condition with no botanical or structural flaws.

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 10: 31cm Balsam Fir- Request Permit to Remove Private Tree

Tree #10 is a semi-mature Private tree in Fair condition located on the road allowance to the property. The tree has a significant flaw- it is in health decline and has significant amount of

small to m such as minor amount of small diameter deadwood in the crown, none of which are life threatening to the tree or potentially hazardous for its surroundings.

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 11: 19.5, 15cm Ash- Request Permit to Remove Private Tree

Tree #11 is a young multistem Private tree in Good/Fair condition located on the road allowance to the property. **The tree has a good appearance however, it is infected with Emerald Ash Borer (EAB) and represents immediate danger to the surrounding environment.**

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Pre-emptive removal of the tree would remain recommended even in cases when the road access location or size are adjusted to preserve some of the trees on the property.

Tree 12: 21cm Ash- Request Permit to Remove Private Tree

Tree #12 is a semi-mature Private tree in Poor condition located on the road allowance to the property. The tree is in advanced health decline and over 30% of its crown is dead.

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 13: 13cm Red Oak- Request Permit to Remove Private Tree

Tree #13 is a young Private tree in Good condition located on the road allowance to the property. The tree is in exceptional condition and has no obvious botanical or structural flaws.

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 14: 18.5cm Ash- Request Permit to Remove Private Tree

Tree #14 is a young Private tree in Fair/Poor condition located on the road allowance to the property. The tree is in overall health decline and is probably infected with Emerald Ash Borer (EAB).

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 16: 16cm Norway Spruce- Request Permit to Remove Private Tree

Tree #16 is a young Private tree in Good condition located on the road allowance to the property. The tree has a few insignificant flaws such minor amount of small diameter deadwood in the crown, which is not life threatening to the tree or potentially hazardous for its surroundings.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access. The tree is located directly within the footprints of the proposed road access and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 17: 17cm Norway Spruce- Request Permit to Remove Private Tree

Tree #17 is a young Private tree in Fair/Poor condition located on the road allowance to the property.

The tree has a few structural and botanical flaws such as moderate to significant amount of small diameter deadwood in the crown, and significantly leaned trunk none of which are life threatening to the tree or potentially hazardous for its surroundings however do affect trees longevity and its likelihood for limb failure.

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access. The tree is located directly within the footprints of the proposed road access and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 18: 19cm Ash- Request Permit to Remove Private Tree

Tree #18 is a young Private tree in Fair/Poor condition located on the road allowance to the property. **The tree it is infected with Emerald Ash Borer (EAB) and represents immediate danger to the surrounding environment.**

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Pre-emptive removal of the tree would remain recommended even in cases when the road access location or size are adjusted to preserve some of the trees on the property.

Tree 19: 21cm Ash- Request Permit to Remove Private Tree

Tree #18 is a young Private tree in Fair/Poor condition located on the road allowance to the property. **The tree it is infected with Emerald Ash Borer (EAB) and represents immediate danger to the surrounding environment.**

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Pre-emptive removal of the tree would remain recommended even in cases when the road access location or size are adjusted to preserve some of the trees on the property.

Tree 33: 32, 34cm multi-stem Cottonwood- Request Permit to Remove Private Tree

Tree #33 is a semi-mature Private tree in Fair condition located on the road allowance to the property. The tree is showing minor signs of decline such as presence of moderate amount of small diameter deadwood, moderate trunk lean and asymmetrical crown due to shading of adjacent trees.

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 52: 41cm Cottonwood- Request Permit to Remove Private Tree

Tree #52 is a semi-mature Private tree in Fair condition located on the road allowance to the property. The tree is showing minor signs of decline such as presence of moderate amount of small diameter deadwood, moderate trunk lean and asymmetrical crown due to shading of adjacent trees.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 65: 26cm Black Walnut- Request Permit to Remove Private Tree

Tree #65 is a young Private tree in Fair condition located on the road allowance to the property. The tree is showing signs of decline such as vine covered trunk, and recently torn limb.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 66: 16cm White Birch- Request Permit to Remove Private Tree

Tree #66 is a young Private tree in Good condition located on the road allowance to the property. The tree is in exceptional condition with no signs of obvious structural or botanical flaws.

The tree will however, require removal in order to allow for construction of proposed 6.5m wide road access. The tree is located directly within the footprints of the proposed road access and could not be retained. Pre-emptive removal of the tree is recommended.

Tree 67: 25.5cm Ash- Request Permit to Remove Private Tree

Tree #67 is a young Private tree in Good/Fair condition located on the road allowance to the property. The tree has a few insignificant flaws such as minor amount of small diameter deadwood in the crown however, no structural or significant botanical decline signs were noted during the site visit.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access and proposed dwelling. The tree is located directly within the footprints of the proposed dwelling and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 74: 23cm White Birch- Request Permit to Remove Private Tree

Tree #74 is a young Private tree in Good/Fair condition located on the road allowance to the property. The tree has a few insignificant flaws such as minor amount of small diameter deadwood in the crown however, no structural or significant botanical decline signs were noted during the site visit.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access and proposed dwelling. The tree is located directly within the footprints of the proposed dwelling and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 75: 21cm White Oak- Request Permit to Remove Private Tree

Tree #75 is a young Private tree in Good/Fair condition located on the road allowance to the property. The tree has a few insignificant flaws such as minor amount of small diameter deadwood in the crown however, no structural or significant botanical decline signs were noted during the site visit.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access and proposed dwelling. The tree is located directly within the footprints of the proposed dwelling and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 93: 40cm Cottonwood- Request Permit to Remove Private Tree

Tree #93 is a semi-mature Private tree in Fair condition located on the road allowance to the property.

The tree has a few notable flaws such as moderate amount of small diameter deadwood in the crown, sparse crown and asymmetrical crown, none of which are life threatening to the tree or potentially hazardous for its surroundings, however these factors do affect tree's expected longevity.

The tree will however require removal in order to allow for construction of proposed 6.5m wide road access and 4.5m wide grade adjustments. It is located directly within the footprints of the proposed slope and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 95: 43cm White Elm- Request Permit to Remove Private Tree

Tree #95 is a semi-mature Private tree in Good/Fair condition located on the road allowance to the property. The tree has a few insignificant flaws such as minor/moderate amount of small diameter deadwood in the crown and raised crown, none of which are life threatening to the tree or potentially hazardous for its surroundings.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access. The tree is located directly within the footprints of the proposed road access and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 96: 23cm Norway Maple - Request Permit to Remove Private Tree

Tree #95 is a young Private tree in Good/Fair condition located on the road allowance to the property. The tree has a few insignificant flaws such as minor/moderate amount of small diameter deadwood in the crown and raised crown, none of which are life threatening to the tree or potentially hazardous for its surroundings.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access. The tree is located directly within the footprints of the proposed road access and could not be retained.

Pre-emptive removal of the tree is recommended.

Tree 98: 22, 40cm White Elm- Request Permit to Remove Private Tree

Tree #98 is a semi-mature Private tree in Good/Fair condition located on the road allowance to the property.

The tree has a few insignificant flaws such as minor/moderate amount of small diameter deadwood in the crown and raised crown, none of which are life threatening to the tree or potentially hazardous for its surroundings.

It is, overall, in exceptional condition for its species and age.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access. It is located directly within the footprints of the proposed road access and could not be retained. Pre-emptive removal of the tree is recommended.

Tree 99: 32cm Norway Maple- Request Permit to Remove Private Tree

Tree #99 is a semi-mature Private tree in Good condition located on the road allowance to the property.

It has a few insignificant flaws such as minor/moderate amount of small diameter deadwood in the crown which is not a condition considered life threatening to the tree or potentially hazardous for its surroundings.

It is, overall, in exceptional condition for its species and age.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access. It is located directly within the footprints of the proposed road access and could not be retained. Pre-emptive removal of the tree is recommended.

Tree 100: 35cm Ash- Request Permit to Remove Private Tree

Tree #100 is a semi-mature Private tree in Fair condition located on the road allowance to the property. **The tree it is infected with Emerald Ash Borer (EAB) and represents immediate danger to the surrounding environment.**

The tree will require removal in order to allow for construction of proposed 6.5m wide road access. It is located directly within the footprints of the proposed road access and could not be retained. Pre-emptive removal of the tree is recommended.

Pre-emptive removal of the tree would remain recommended even in cases when the road access location or size are adjusted to preserve some of the trees on the property.

Tree 101: 18cm Unrecognizable - Request Permit to Remove Private Tree

Tree #101 is a small Private tree located on the road allowance to the property. It is completely dead, with no alive tissue.

The tree will require removal due to its condition and in order to allow for construction of proposed 6.5m wide road access. It is located directly within the footprints of the proposed road access and could not be retained. Its removal is recommended.

The tree in question is subject to exemption from standard tree removal permit and fee.

Tree 102: 15cm Norway Maple- Request Permit to Remove Private Tree

Tree #102 is a semi-mature Private tree in Good condition located on the road allowance to the property.

It has a few insignificant flaws due to being shaded by adjacent trees, however that is not a condition considered life threatening to the tree or potentially hazardous for its surroundings. It is, overall, in exceptional condition for its species and age.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access. It is located directly within the footprints of the proposed road access and could not be retained. Pre-emptive removal of the tree is recommended.

Tree 103: 76cm Cottonwood - Request Permit to Remove Private Tree

Tree #103 is a mature Private tree in Fair condition located on the road allowance to the property. It has a few flaws such as moderate amount of small diameter deadwood in the crown which is not a condition considered life threatening to the tree or potentially hazardous for its surroundings.

The tree will require removal in order to allow for construction of proposed 6.5m wide road access. It is located directly within the footprints of the proposed road access and could not be retained. Pre-emptive removal of the tree is recommended.

Heavy machinery should be operated at the maximum distance from the trees consistent with the timely completion of construction. The driveways are to be used for material storage. No trimming of crowns is necessary for the work.

Addendum 1: Replanting Plan

Following the removal of 22 trees under 50cm (25 in total, however three trees should be considered for exemption and therefore replacement trees as compensation for their removal will not be required) and 4 trees greater than 50cm in diameter (trees with single stem being larger than 50cm or, for multi-stem trees- sum of three largest stem being 50cm or above), compensation in form of 30 replacement trees should be provided.

Replacement trees shouldn't be planted in the back yard of the 0 Berinda Road even though there is enough planting space, since the lot will be used for additional construction in the future. Compensation for removed trees is to be paid as cash in lieu payments.

Mississauga replanting requirements: 1:1 for removed trees under 50cm DBH

1:2 for removed trees greater than 50cm DBH

Inventory and Protection Requirements

For further details on tree protection measures required on site, please see the section titled, **Tree Protection Specifications** and **Appendix 2** Details regarding individual tree removals and injuries (including requirements for root sensitive excavation and arborist supervision if applicable) can be found in the “Discussion” section above.

Table 1. Detailed Tree Inventory Table

TREE #	Species	DBH (cm)	Direction	TPZ (m)	Condition Rating	Crown (Mississauga)	Ownership Category	Comments *denotes approximate location
1	Norway Maple	17.5, 15	Protect	2.4	Good-Fair	6	5	Minor amount of small diameter deadwood present.
2	Norway Maple	21.5	Remove	N/A	Good-Fair	7	5	Minor amount of small diameter deadwood present.
3	Norway Maple	17	Protect	2.4	Good-Fair	6	5	Minor amount of small diameter deadwood present. Frost cracks on trunk.
4	Norway Maple	13	Remove	N/A	Good-Fair	5.5	5	Minor amount of small diameter deadwood present. Frost cracks on trunk.
5	Norway Maple	29, 30, 36	Remove	N/A	Fair	9	5	Included bark at stem union. Previously pruned. Girdled roots. Minor amount of small diameter deadwood present. Large seam on main trunk, oozing.
6	Canada Yew	14, 14	Protect	N/A	Fair	4	1	Heavily pruned. Minor amount of small diameter deadwood present. Rot at base of trunk.
7	Crabapple	17	Injury	N/A	Fair	5	2	Epicormic growth present. Moderate-significant deadwood.
8	Norway Spruce	60.5	Injury	4.2	Good-Fair	12	2	Raised crown. Minor amount of small diameter deadwood present.
9	White Pine	20	Remove	N/A	Good	6	1	Botanically in good condition.
10	Balsam Fir	31	Remove	N/A	Fair	8	1	Moderate-significant deadwood present.
11	Ash	19.5, 15	Remove	N/A	Good-Fair	7	1	EAB present.
12	Ash	21	Remove	N/A	Poor	7	1	In decline.

13	Red Oak	13	Remove	N/A	Good	4	1	Botanically in good condition.
14	Ash	18.5	Remove	N/A	Fair-Poor	7	1	In decline.
15	Black Walnut	61	Injury	4.2	Good-Fair	12	2	Minor amount of small diameter deadwood present. Botanically in good condition.
16	Norway Spruce	16	Remove	N/A	Good	5	1	Botanically in good condition.
17	Norway Spruce	17	Remove	N/A	Fair-Poor	5	1	Significant curve in trunk. Moderate amount of small diameter deadwood present.
18	Ash	19	Remove	N/A	Fair-Poor	6	1	EAB present.
19	Ash	21	Remove	N/A	Fair-Poor	7	1	EAB present.
20	Cottonwood	38	Protect	N/A	Good-Fair	8	1	Moderate amount of small diameter deadwood present. Moderate trunk lean. Asymmetrical crown due to shading of adjacent trees. Large vertical seam on trunk.
21	Cottonwood	36	Protect	N/A	Good-Fair	8	1	Minor-moderate amount of small diameter deadwood present. Minor trunk lean. Asymmetrical crown due to shading of adjacent trees.
22	Cottonwood	52, 54	Protect	3.6	Good-Fair	9	1	Included bark at stem union. Moderate amount of small diameter deadwood present.
23	Cottonwood	30.5	Protect	2.4	Fair	8	1	Moderate trunk lean. Moderate amount of small diameter deadwood present.
24	Cottonwood	43	Protect	3	Fair-Poor	8	1	Hollow trunk. Moderate to significant amount of small diameter deadwood present.
25	Cottonwood	42	Protect	3	Good-Fair	8	1	Minor to moderate amount of small diameter deadwood present.
26	Cottonwood	33.5	Protect	2.4	Good-Fair	8	1	Minor to moderate amount of small diameter deadwood present.
27	Cottonwood	24.5	Protect	2.4	Good-Fair	5	1	Minor to moderate amount of small diameter deadwood present.

28	Cottonwood	27, 43.5	Protect	3	Good-Fair	8	1	One stem has moderate trunk lean. Minor to moderate amount of small diameter deadwood present.
29	Cottonwood	25	Injury	2.4	Good-Fair	5	1	Moderate trunk lean. Minor-moderate deadwood present.
30	Cottonwood	27	Protect	2.4	Good-Fair	6	1	Upper crown lean. Minor to moderate amount of small diameter deadwood present.
31	Cottonwood	24.5	Protect	2.4	Good-Fair	5.5	1	Upper crown lean. Minor to moderate amount of small diameter deadwood present.
32	Ash	25.5	Protect	2.4	Fair	6	1	Moderate amount of small diameter deadwood present. EAB present.
33	Cottonwood	32, 34	Remove	N/A	Fair	7	1	Moderate amount of small diameter deadwood present. Moderate trunk lean. Asymmetrical crown.
34	Cottonwood	39	Protect	2.4	Good-Fair		1	Minor amount of small diameter deadwood present.
35	Cottonwood	35	Protect	2.4	Good-Fair	7	1	Minor amount of small diameter deadwood present.
36	Cottonwood	22.5	Protect	2.4	Good-Fair	5	1	Minor amount of small diameter deadwood present.
37	Cottonwood	42.5	Protect	3	Good-Fair	8	1	Minor amount of small diameter deadwood present.
38	Ash	30.5	Protect	2.4	Poor	7	1	EAB present.
39	Cottonwood	41.5	Protect	3	Good-Fair	7	1	Botanically in good condition. Minor amount of small diameter deadwood present.
40	Red Maple	28	Protect	2.4	Good	6	1	Botanically in good condition. Previously pruned. Minor amount of small diameter deadwood present.
41	Cottonwood	35	Protect	2.4	Good-Fair	6	1	Crown lean. Minor amount of small diameter deadwood present.
42	Weeping Willow	74.5	Protect	4.8	Fair-Poor	14	1	Large stem previously failed. Moderate amount of small diameter deadwood present. Epicormic growth present.
43	Manitoba Maple	37, 41	Protect	3	Fair	9	1	Several torn limbs. Significant trunk lean. Minor-moderate amount of small diameter deadwood present.

44	White Birch	28.5	Protect	2.4	Good-Fair	6	1	Minor amount of small diameter deadwood present. Trunk curve.
45	White Birch	15	Protect	2.4	Good	5	1	Botanically in good condition.
46	Black Willow	40, 42	Protect	3	Good-Fair	8	1	Minor amount of small diameter deadwood present. Included bark at stem union. Trunks fused together.
47	White Spruce	17	Protect	2.4	Good	6	1	Botanically in good condition.
48	White Spruce	17	Protect	2.4	Good	5	1	Botanically in good condition.
49	Cottonwood	16.5, 41	Protect	3	Fair	8	1	Moderate amount of small diameter deadwood present.
50	Cottonwood	32.5	Protect	2.4	Fair	7	1	Moderate amount of small diameter deadwood present.
51	White Pine	29.5	Protect	2.4	Good	7	1	Botanically in good condition.
52	Cottonwood	41	Remove	N/A	Fair	8	1	Moderate to significant amount of small diameter deadwood present.
53	Apple	17, 20.5	Injury	2.4	Fair	6	1	Epicormic growth present. Moderate to significant deadwood present.
54	Cottonwood	42.5	Injury	3	Good-Fair	9	1	Minor to moderate amount of small diameter deadwood present. Codominant stems.
55	Black Willow	48	Injury	3	Fair	9	1	Moderate amount of small diameter deadwood present. Poor form. Epicormic growth.
56	Manitoba Maple	16	Protect	2.4	Fair	5	1	Moderate amount of small diameter deadwood present. Codominant stems.
57	Manitoba Maple	26, 20.5, 17, 21.5	Protect	2.4	Fair-Poor	6	1	In decline. Significant deadwood present. Rotten stem.
58	Siberian Elm	27	Protect	2.4	Fair-Poor	6	1	In decline. Included bark at stem union. Codominant stems. Moderate-significant deadwood present.
59	Ash	17	Protect	2.4	Good-Fair	5	1	Minor to moderate amount of small diameter deadwood present.
60	Eastern Red Cedar	24	Protect	2.4	Good-Fair	6	1	Moderate amount of small diameter deadwood present.

61	Cottonwood	18	Protect	2.4	Good-Fair	6	1	Moderate amount of small diameter deadwood present. Sparse crown.
62	Ash	16	Injury	2.4	Good-Fair	6	1	Minor amount of small diameter deadwood present. Vine covered trunk.
63	Black Willow	34, 41	Injury	3	Fair	8	1	Vine covered trunk. Poor form. Significant trunk lean on one stem.
64	Cottonwood	35, 42	Injury	3	Good-Fair	8	1	Codominant stems. Minor amount of small diameter deadwood present. Vine covered trunk.
65	Black Walnut	26	Remove	N/A	Fair	7	1	Vine covered trunk. Recently torn leader.
66	White Birch	16	Remove	N/A	Good	6	1	Botanically in good condition.
67	Ash	25.5	Remove	N/A	Good-Fair	7.5	1	Minor amount of small diameter deadwood present.
68	White Pine	18	Protect	2.4	Good-Fair	7	1	Yellowing needles. Botanically in good condition.
69	White Pine	19.5	Protect	2.4	Good-Fair	7	1	Yellowing needles. Botanically in good condition.
70	Manitoba Maple	37	Protect	2.4	Good-Fair	7	1	Trunk lean. Included bark at stem union.
71	Black Willow	78	Protect	4.8	Fair	14	1	Moderate amount of small diameter deadwood present. Several large diameter dead stems in crown.
72	Cottonwood	54	Protect	3.6	Good-Fair	12	1	Minor-moderate amount of small diameter deadwood present. Trunk lean.
73	White Birch	30	Protect	2.4	Good	8	1	Botanically in good condition. Vine covered.
74	White Birch	23	Remove	N/A	Good	7	1	Botanically in good condition.
75	White Oak	21	Remove	N/A	Fair	6	1	Moderate to significant amount of small diameter deadwood present.
76	Cottonwood	38	Injury	2.4	Good-Fair	8	1	Minor-moderate amount of small diameter deadwood present. Trunk lean.
77	White Birch	21	Protect	2.4	Good	6	1	Botanically in good condition.
78	Cottonwood	45	Protect	3	Good-Fair	9	1	Vine covered trunk. Minor-moderate amount of small diameter deadwood present.

79	Black Willow	53	Protect	3.6	Good-Fair	10	1	Vine covered trunk. Minor-moderate amount of small diameter deadwood present.
80	Cottonwood	51	Protect	3.6	Good-Fair	10	1	Vine covered trunk. Minor-moderate amount of small diameter deadwood present.
81	White Birch	19.5	Protect	2.4	Good-Fair	6	1	Botanically in good condition. Trunk lean.
82	Ash	15.5, 17	Protect	2.4	Good-Fair	6	1	Minor amount of small diameter deadwood present. Vine covered trunk. Included bark at stem union.
83	Black Willow	59	Protect	3.6	Fair	10	1	Several torn limbs in crown. Minor-moderate amount of small diameter deadwood present. Vine covered.
84	Norway Maple	17	Protect	2.4	Good-Fair	6	1	Minor amount of small diameter deadwood present. Vine covered trunk.
85	Norway Maple	20	Protect	2.4	Good	6	1	Botanically in good condition.
86	Ash	24	Protect	2.4	Dead		1	
87	Ash	23.5	Protect	2.4	Fair	6	1	EAB present.
88	Ash	23	Protect	2.4	Fair	6	1	EAB present.
89	Weeping Willow	68	Protect	4.2	Fair	12	2	One stem torn and cavity forming. Minor amount of small diameter deadwood present.
90	Weeping Willow	53	Protect	3.6	Fair	10		Minor-moderate amount of small diameter deadwood present.
91	Weeping Willow	49	Protect	3	Fair-Poor	10	2	Moderate amount of small diameter deadwood present. Torn stem in crown. Significant woodpecker damage.
92	Weeping Willow	52	Injury	3.6	Fair	10	2	Several small cavities. Moderate amount of small diameter deadwood present.
93	Cottonwood	40	Remove	N/A	Fair	9	1	Sparse crown. Asymmetrical crown. Moderate amount of small diameter deadwood present.
94	Cottonwood	71	Protect	4.8	Good-Fair	14	1	Minor-moderate amount of small diameter deadwood present.

95	White Elm	43	Remove	N/A	Good-Fair	10	1	Minor-moderate amount of small diameter deadwood present.
96	Norway Maple	23	Remove	N/A	Good-Fair	6	1	Minor amount of small diameter deadwood present.
97	Dead	21	Injury	2.4	Dead	6	2	Dead.
98	White Elm	22.5, 40	Remove	N/A	Good-Fair	9	1	Botanically in good condition. Minor amount of small diameter deadwood present.
99	Norway Maple	32	Remove	N/A	Good	8	1	Botanically in good condition. Minor amount of small diameter deadwood present. Exposed roots.
100	Ash	35	Remove	N/A	Fair	8	1	EAB present.
101	Dead	18	Remove	N/A	Fair	6		Trunk lean over pathway.
102	Norway Maple	15	Remove	N/A	Good	5	1	Botanically in good condition. Shaded by adjacent trees.
103	Cottonwood	76	Remove	N/A	Fair	14	1	Previously pruned. Moderate amount of small diameter deadwood present.
104	Red Oak	63	Injury	4.2	Good-Fair	12	2	Minor amount of small diameter deadwood present. Growing on slope. Previously pruned.

Tree Protection Specifications

A tree protection zone (TPZ) must be established around each tree not slated for removal, extending in all directions from the base of the tree to a minimum distance of approximately six times the diameter. TPZs shall be 1.2 meters (4 feet) high and consist of plywood or plastic web hoarding or equivalent (as approved by the City). Orange plastic web snow fencing may be used on 2"x4" wooden frames in the case of trees situated on the City road allowance. Metal T-bars are not an acceptable alternative to a 2"x4" wooden frame because these can injure critical tree roots or come into contact with energized underground conductors.

A sign that is similar to the illustration below is required to be mounted on all sides of a tree protection barrier for trees protected by the Street Tree By-law and the Private Tree By-law. The sign should be a minimum of 40cm x 60cm and made of white corrugated plastic board or equivalent material. The sign may also be acquired from Urban Forestry Tree Protection and Plan Review (TPPR) district service counters.

Urban Forestry must be notified once TPZ barriers are erected so that an inspection may be conducted. Photos of installed TPZ barriers taken from different angles with TPZ signs attached can be emailed to Urban Forestry for approval. **Urban Forestry must also be notified prior to removal of TPZ barriers**

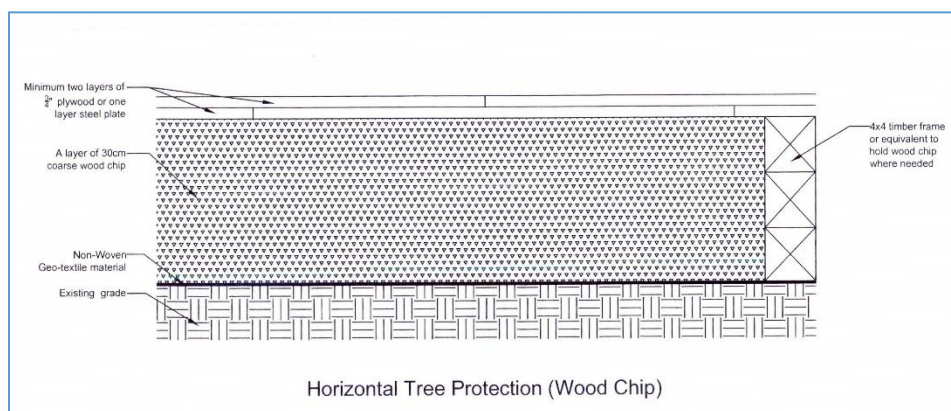
TPZs must remain in place for the duration of any construction or demolition occurring on the property. Inside the TPZ no construction, storage or disposal of material of any kind, adding of fill, or excavation may occur. For each TPZ that falls below the minimum size stipulated by City bylaws in order to accommodate construction, an Application to Injure or Destroy Trees will be made and the City appropriately compensated.

Establishing a TPZ is necessary to prevent physical harm to the stem and branches of the tree which may otherwise be incurred due to proximity of construction or demolition activities. The TPZ will encompass the tree's critical root area, protecting the roots from being damaged during excavation and from soil compaction which may occur due to the presence of heavy machinery.

The applicant/owner shall protect all bylaw regulated trees in the area of consideration that have not been approved for removal throughout development works to the satisfaction of Urban Forestry. Convictions of offences respecting the regulations in the Street Tree By-law and Private Tree By-law are subject to fines. A person convicted of an offence under these by-laws is liable to a minimum fine of \$500 and a maximum fine of \$100,000 per tree, and /or a Special Fine of \$100,000. The landowner may be ordered by the City to stop the contravening activity and/or ordered to undertake work to correct the contravention.

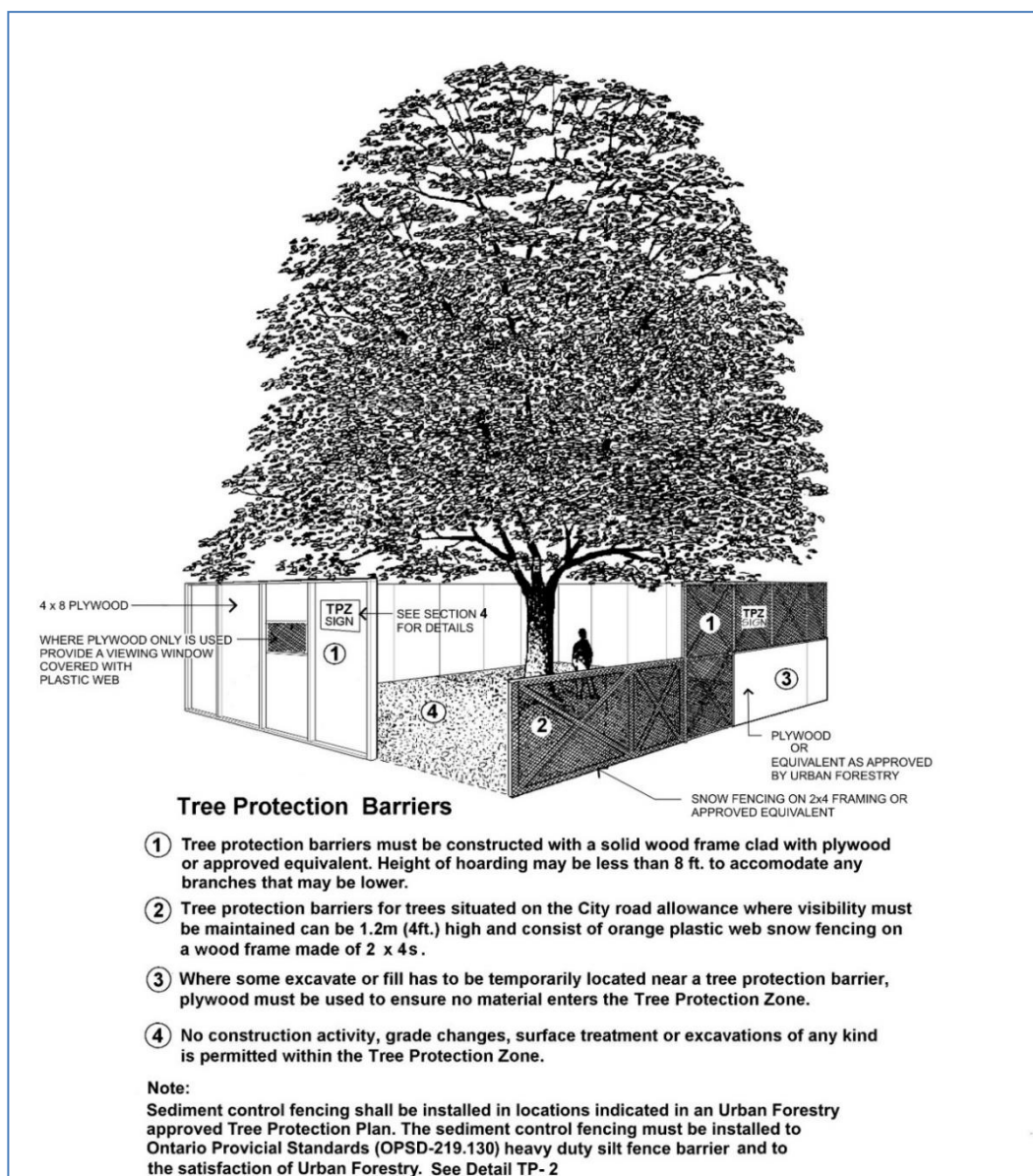
Horizontal Tree Protection

Where worker and machine access is required, horizontal tree protection is an acceptable alternative to vertical hoarding. Horizontal hoarding consists of a 30-cm. tall 4"x4" timber frame filled with 30 cm. of coarse wood chips. The deck shall consist of a double layer of $\frac{3}{4}$ " plywood or a single steel plate. All tree protection requires inspection and final approval by Urban Forestry prior to any construction activity on site.



Appendices - Supporting Material

Appendix 1 - Tree protection barriers detail



Pictures

Picture 1: Trees #1-4



Picture 2: Tree #5



Picture 3: Tree #6



Picture 4: Tree #7



Picture 5: Tree #8



Picture 6: Trees #9 and #10



Picture 7: Tree #11



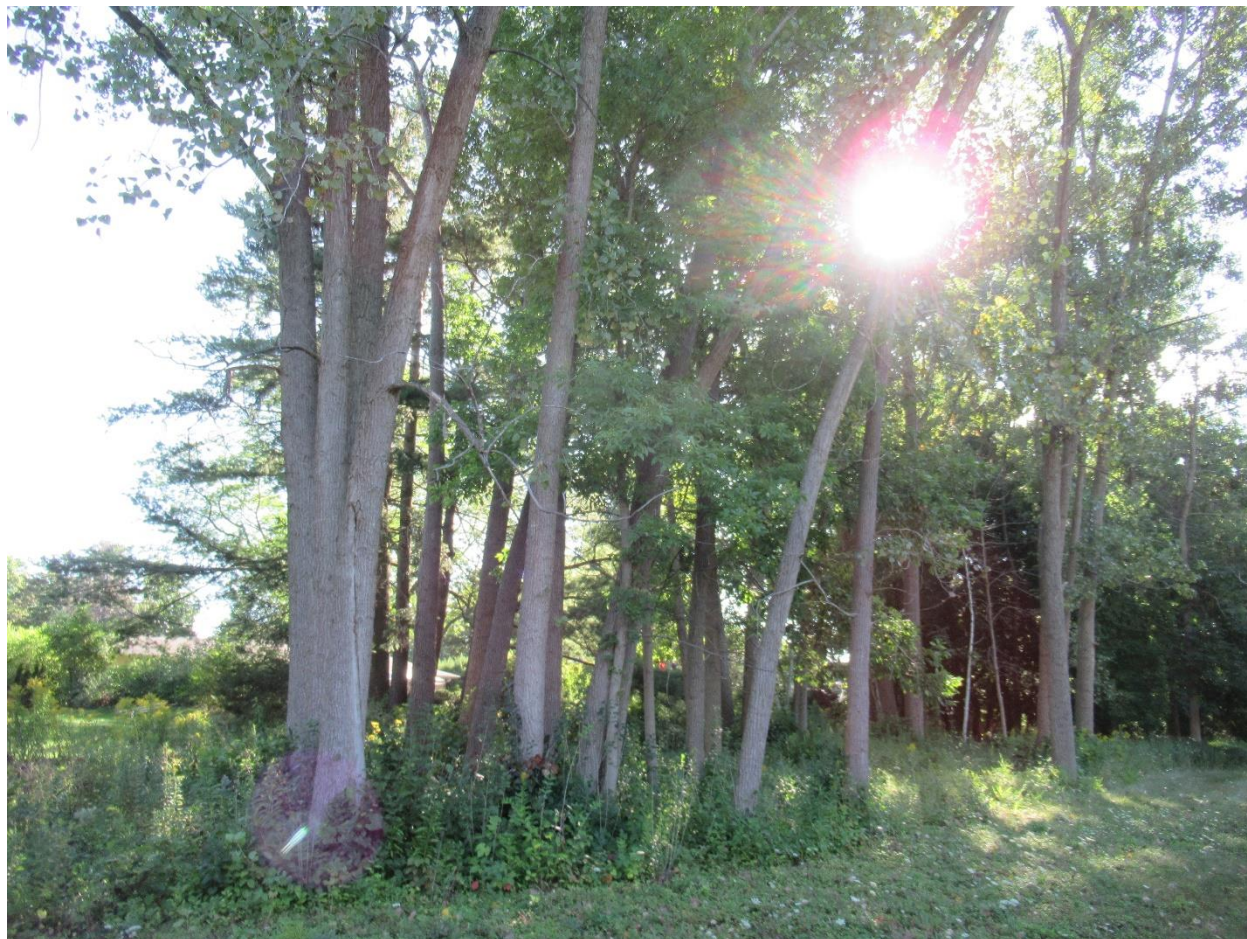
Picture 8: Trees #12-15



Picture 9: Trees #16-33



Picture 10: Trees #20-32



Picture 11: Tree #33



Picture 12: Trees #34-37



Picture 13: Tree #38



Picture 14: Trees #39-41



Picture 15: Trees #42 and #43



Picture 16: Tree #42



Picture 17: Tree #44



Picture 18: Trees #45-47



Picture 19: Trees #48-50



Picture 20: Tree #51



Picture 21: Trees #52-55



Picture 22: Tree #56



Picture 23: Trees #57 and #58



Picture 24: Tree #59



Picture 25: Tree #60



Picture 26: Tree #61



Picture 27: Tree #62-65



Picture 28: Tree #66



Picture 29: Tree #67



Picture 30: Trees #68 and #69



Picture 31: Trees #70-73



Picture 32: Trees #74 and #75



Picture 33: Tree #76



Picture 34: Trees #77-82



Picture 35: Trees #83-86



Picture 36: Trees #87 and #88



Picture 37: Trees #89-91



Picture 38: Trees #91-93



Picture 39: Trees #93, #95 and #96



Picture 40: Tree #93



Picture 41: Tree #94



Picture 42: Tree #95



Picture 43: Tree #97



Picture 44: Tree #98-102



Picture 45: Tree #103



Picture 46: Tree #104



Assumptions and Limiting Conditions

1. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the arborist can neither guarantee nor be responsible for the accuracy of the information provided by others.
2. Loss or alteration of any part of this report invalidates the entire report.
3. Possession of the report or copy of thereof does not imply right of publication or use for any purpose by anyone other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consulting arborist.
4. The consulting arborist shall not be required to give testimony or to attend court by reason of the report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract engagement.
5. Sketches, diagrams, graphs, and photographs in the report, are intended as visual aids, and are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
6. Unless expressed otherwise: 1) the information contained in this report covers only those items at the time of inspection; and 2) the inspection is limited to visual examination of the accessible items without dissection, excavation, probing or coring. There is no warranty of guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

Certificate of Performance

I Serg Litvinov, of Tree Doctors Inc., do certify:

That I have personally inspected the subject tree(s) and/or the property defined in the “Assignment” found within this report, and have stated my findings accurately. The extent of the evaluation and/or appraisal is stated in the attached report and Terms of Assignment.

That I have no current or prospective interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.

That the analysis, opinions and conclusions stated herein are my own.

That my analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted Arboricultural practices.

That no one provided significant professional assistance to the consultant, except as indicated within the report.

That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any other subsequent events

I further certify that I am an International Society of Arboriculture Certified Arborist® and that I acknowledge, accept and adhere to the ISA Code of Ethics.

Serg Litvinov,

B.Sc

ISA Certified Arborist® #2281A

Consulting Arborist – *Tree Doctors Inc.*

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