Tree Inventory and Preservation Plan Report
Lakeshore Road West (Mississauga Road to Birch Hill Lane)
Oakville, Ontario

prepared for

The Town of Oakville
Transportation and Engineering
1225 Trafalgar Road
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prepared by

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1.0 Introduction

Kuntz Forestry Consulting Inc. was retained by the Town of Oakville to complete a scoped Tree Inventory and Preservation Plan in support of a proposed development application for Lakeshore Road East (from Mississauga Road to Birch Hill Lane).

The work plan for the tree preservation study included the following:

- Prepare an inventory of the tree resources specified for assessment by the Town of Oakville;
- Evaluate potential tree saving opportunities based on proposed development plans;
- Provide a tree valuation for all trees identified for preservation;
- Conduct a structural hazard assessment for trees in poor health / condition;
- Document the findings in a Tree Inventory and Preservation Plan Report.

The results of the evaluation are provided below.

2.0 Methodology

2.1 Tree Inventory and Preservation Plan

Field assessments for the tree inventory were conducted on 19 May 2021. Trees specified for assessment by the Town of Oakville were included in the inventory. Trees were located using the topographic survey provided. Trees were identified with the numbers 1 – 51, 53 – 73, 75 – 92, and 94 – 104.

Tree resources included in the inventory were visually assessed for condition utilizing the following parameters:

Tree # - number assigned to tree that corresponds to Figure 1 – Figure 7.
Species - common and botanical names provided in the inventory table.
DBH - diameter (centimetres) at breast height, measured at 1.4 metres above the ground.
Condition - condition of tree considering trunk integrity, crown structure, crown vigour, and root zone environment. Condition ratings include poor (P), fair (F), and good (G).
Drip Line – Crown radius (metres); and
Comments - additional relevant detail.

2.2 Tree Valuation

A tree valuation was calculated for all trees identified for preservation. The value was calculated using the Reproduction Cost Method – Trunk Formula Technique as described in the Guide for Plant Appraisal, 10th Edition (CTLA, 2019). The Ontario Supplement (2003) provides regionally relevant data pertaining to basic costs for trees.

Trunk Formula Technique

This method is used for trees that are larger than what is commonly available for transplant from a nursery. The Unit Tree Cost of the replacement tree is derived from a survey of nurseries or supplied by the Regional Plant Appraisal Council and published within the Ontario Supplement (2003). For Ontario, the unit tree cost has been set at $\$6.51/cm^2$ within the Supplement and this value has been used for the calculation. For trees that were small enough in size to be replaced with nursery stock, the price of the nursery stock was obtained through wholesale price quotes from multiple nurseries throughout southern Ontario.

The Basic Tree Cost is calculated by multiplying the unit tree cost by the cross-sectional area of the subject tree. For multi-stemmed trees, the appraised trunk area considers the cross-sectional area of all stems. The Appraised Value is calculated by multiplying the Basic Reproduction Cost by the three depreciation factors (Condition Rating, Functional Limitation Rating, and External Limitation Rating, as described in the Guide).

The appraised value of trees is therefore calculated using the following equation:

Basic Tree Cost = Appraised Tree Trunk Area X Unit Tree Cost

Appraised Value = Basic Tree Cost X Condition Rating X Functional Limitation Rating X External Limitation Rating

Functional Limitation Ratings and External Limitation Ratings are calculated according to the methods outlined in the guide. Condition ratings were calculated based on the assessed condition of the trees on the site and in accordance with the guide.

Only live trees were included in the tree valuation. For trees with multiple stems, the average basal area of the combined stems was used to calculate the appraisal value. For trees with appraisal values less than $744.00 (Town of Oakville's minimum value per tree), their values were set to $744.00.

2.3 Hazard Tree Assessment

A Level 2 hazard tree assessment was conducted for trees in poor health and / or condition. This assessment was conducted using the Level 2 Tree Risk Assessment Method as described in the Tree Risk Assessment Manual, 2nd Edition (International Society of Arboriculture, 2017).

Tree resources identified for removal were assessed using the following parameters:

Tree # - number assigned to tree that corresponds to Figure 1 – Figure 7.
Species - common and botanical names provided in the inventory table.
DBH - diameter (centimetres) at breast height, measured at 1.4 metres above the ground.
Tree Health – condition of tree considering trunk integrity, crown structure, and crown vigour.

Target Assessment – description, quantity, and occupancy rate of potential targets that could be injured or damaged due to failure of a tree and / or its parts.
Site Factors – site conditions including topography, site changes, soil condition, wind direction, and weather, which may influence the likelihood of tree failure.
Load Factors – factors such as gravity and wind exposure, which may influence the likelihood of tree failure.
Risk Categorization – the risk rating given based on the likelihood of failure, likelihood of impact, and consequences of failure. Risk ratings include low, moderate, high, and severe.

3.0 Existing Site Conditions

The subject area is located along Lakeshore Road West between Mississauga Road and Birch Hill Lane. There are existing pathways, sidewalks, and landscaped areas along Lakeshore Road West. Tree resources exist in the form of landscape trees and natural regeneration. Refer to Figure 1 – Figure 7 for the existing site conditions.

4.0 Individual Tree Resources

The tree inventory documented 101 trees within the scope of the assessment. Tree resources are composed of Manitoba Maple (*Acer negundo*), Norway Maple (*Acer platanoides*), Red Maple (*Acer rubrum*), Silver Maple (*Acer saccharinum*), Sugar Maple (*Acer saccharum*), Freeman Maple (*Acer* x *freemanii*), Serviceberry species (*Amelanchier* sp.), White Birch (*Betula papyrifera*), White Ash (*Fraxinus americana*), Green Ash (*Fraxinus pennsylvanica*), Ginkgo (*Ginkgo biloba*), Honey Locust (*Gleditsia triacanthos*), Black Walnut (*Juglans nigra*), Crabapple (*Malus* 'Profusion'), White Mulberry (*Morus alba*), Norway Spruce (*Picea abies*), White Pine (*Pinus strobus*), Scots Pine (*Pinus sylvestris*), London Planetree (*Platanus* x *acerifolia*), Chokecherry (*Prunus virginiana*), Swamp White Oak (*Quercus bicolor*), Bur Oak (*Quercus macrocarpa*), Red Oak (*Quercus rubra*), Black Locust (*Robinia pseudoacacia*), Ivory Silk Lilac (*Syringa reticulata* 'Ivory Silk'), Common Lilac (*Syrgina vulgaris*), Eastern White Cedar (*Thuja occidentalis*), Little-Leaf Linden (*Tilia cordata*), White Elm (*Ulmus americana*), Accolade Elm (*Ulmus* 'Morton'), and Siberian Elm (*Ulmus pumila*). Refer to Table 1 for the detailed tree inventory and Figure 1 – Figure 7 for the location of trees reported in the tree inventory.

5.0 Proposed Works

The proposed development includes the construction of sidewalks, a multi-use pathway, and roadway widening upgrades. Refer to Figure 1 – Figure 7 for the existing conditions and proposed site plan.

6.0 Discussion

The following sections provide a discussion and analysis of impacts, tree removal requirements, and tree preservation relative to the proposed development and existing conditions.

6.1 Development Impacts/Tree Removals

The removal of Trees 1 – 6, 20, 26, 29, 31 – 41, 43 – 47, 49 – 58, 60 – 73, 75, 77, 79 – 83, 86, 89 – 92, and 94 – 104 will be required to accommodate the proposed development. Trees 20, 35 – 37, 49, 60 – 71, 83, 92, 94, and 98 – 104 have trunks that conflict with the proposed sidewalk. Trees 56, 57, and 95 – 97 have trunks that conflict with the proposed road. Trees 26, 29, 31 – 34, 38 – 41, 43 – 47, 50 – 55, 58, 72, 77, 79 – 82, 86, 89, and 91 are located close to the proposed sidewalk such that their roots would be impacted by sidewalk construction. Trees 21, 73, 75, and 90 are located close to the proposed road such that their roots would be impacted by construction. Trees 35 – 39, 41, 43, 45, 54, 77, and 99 are in poor condition and their removal is advised regardless of the site plan.

All trees proposed for removal are located within the Town right-of-way and a permit will be required prior to their removal. Refer to Figure 1 – Figure 7 for the location of the proposed tree removals.

6.2 Hazard Tree Assessment (Tree Removals)

A Hazard Tree Assessment was conducted for trees in poor health and / or condition. Refer to Table 1 for the results of the hazard tree assessment. Risk assessments were based on the likelihood of tree failure causing damage to people or property within a 3-year period. Trees 37 and 77 were identified as high risk and their imminent removal is advised regardless of the site plan.

6.3 Tree Preservation

Preservation of the remaining 30 trees will be possible with the use of appropriate tree protection measures as indicated on Figure 1 – Figure 7. Tree protection measures must be implemented prior to the proposed work to ensure tree resources designated for retention are not impacted by the proposed development. Refer to Figure 1 – Figure 7 for the location of required tree preservation fencing and general Tree Protection Plan Notes. Refer to Appendix A for tree protection fencing details.

Crown pruning has been recommended for Trees 7 – 19, 59, 87, and 88 to meet vertical clearance requirements set by the Town of Oakville. Special mitigation measures have been prescribed for trees with minimum Tree Protection Zones (mTPZs) that conflict with the proposed pathway, as described below.

Scenario A: Proposed Pathway Alteration (to Existing Pathway) to Preserve Trees

Encroachment into the mTPZs of Trees 27, 28, 30, 59, and 85 will be required to accommodate the proposed pathway construction. Given the current proposed pathway location, these trees would require removal due to their proximity to the development. If the proposed pathway location can be altered minimally whereby the edge of the existing pathway can be utilized in the installation of the new pathway, these trees could be retained. If the design can be accomplished to accommodate these trees, the following mitigation measures are prescribed to ensure long-term adverse effects do not occur to these trees.

1. Vertical tree protection fencing should be installed along the existing pathway edges within the mTPZs of the trees in question, as shown in Figure 1.
2. The aggregate substrate material underneath the existing pathway must be left in place during the pathway upgrades.
3. The removal of the existing concrete pathway should be conducted with minimal impact by hand. Debris should be removed by pulling away radially from the trunk of retained trees. Any roots damaged through the process of removing the pathways may need to be hand pruned by a Certified Arborist in accordance with Good Arboricultural Standards.
4. All works should be supervised by a Certified Arborist in accordance with Good Arboricultural Standards.

Scenario B: Path Construction around Existing Tree Pits

Encroachment into the mTPZs of Trees 7 – 19, and 21 – 25 will be required to accommodate the proposed sidewalk and roadway upgrades. These trees are currently growing in below-grade tree pits and are surrounded by existing hardscape (i.e. sidewalk, road). These trees can be retained if the existing root systems, tree pits, and aggregate substrate material can be left in place undisturbed during sidewalk and road upgrades.

Scenario C: Proposed Pathway Alteration (Outside mTPZs) to Preserve Trees

Encroachment into the mTPZs of Trees 42, 48, and 76 will be required to accommodate the proposed pathway construction. Given the current proposed pathway location, these trees would require removal due to their proximity to the development. If the proposed pathway location can be altered minimally whereby the edge of the proposed pathway is moved outside the mTPZs of these trees, they can be retained. If this pathway alteration is possible, no further mitigation measures are required.

Scenario D: Path Construction within Existing Path / Mineral Soil

Encroachment into the mTPZs of Trees 78, 84, 87, and 88 will be required to accommodate the proposed asphalt path construction. There are existing pathways and roadways within the mTPZs of these trees. If the following protection and mitigation measures are employed before, during, and after construction, long-term adverse effects are not anticipated to these trees.

1. Vertical tree protection fencing should be installed along the existing softscape edges within the mTPZs of the trees in question, as shown in Figure 1.
2. Prior to construction, air-spading technology should be used to excavate trenches (~20cm in depth) at the western limit of the existing pathway within the mTPZs of Trees 84, 87, and 88.
3. The roots of Trees 84, 87, and 88 are to be pruned at the outside limit of the proposed grade changes inside the trenches by a Certified Arborist in accordance with Good Arboricultural Standards.
4. The trenches are to be backfilled with clean topsoil.

5. The aggregate substrate material underneath the existing pathway must be left in place during the pathway upgrades.
6. The removal of the existing concrete pathway should be conducted with minimal impact by hand. Debris should be removed by pulling away radially from the trunk of retained trees. Any roots damaged through the process of removing the pathways should be hand pruned by a Certified Arborist in accordance with Good Arboricultural Standards.
7. All works should be supervised by a Certified Arborist in accordance with Good Arboricultural Standards.

6.4 Tree Valuation

Refer to Table 2 for the results of the tree valuation. The total value of all trees proposed for retention is $58,730.04.

7.0 Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by the Town of Oakville to complete a Tree Inventory and Preservation Plan in support of a development application for Lakeshore Road West (from Mississauga Road to Birch Hill Lane). A tree inventory was conducted and reviewed in the context of the proposed site plan.

The findings of the study indicate a total of 101 trees within the scope of assessment. Seventy-one (71) are recommended for removal to accommodate the proposed pathway upgrades and / or due to poor condition. All other trees can be saved provided appropriate tree protection measures are installed prior to development.

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 – Figure 7 for the location of the required tree protection fencing and general Tree Protection Plan Notes. Refer to Appendix A for tree preservation fencing details.

- Tree protection barriers and fencing should be erected at locations as prescribed on Figure 1 – Figure 7. All tree protection measures should follow the guidelines as set out in the tree preservation plan notes and the tree preservation fencing detail.

- No construction activity including surface treatments, excavations of any kind, storage of materials or vehicles, unless specifically outlined above, is permitted within the area identified on Figure 1 – Figure 7 as a tree protection zone (TPZ) at any time during or after construction.

- Branches and roots that extend beyond prescribed tree protection zones that require pruning must be pruned by a qualified Arborist or other tree professional. All pruning of tree roots and branches must be in accordance with Good Arboricultural Standards.

- Site visits, pre, during and post construction is recommended by either a certified consulting arborist (I.S.A.) or registered professional forester (R.P.F.) to ensure proper

utilization of tree protection barriers. Trees should also be inspected for damage incurred during construction to ensure appropriate pruning or other measures are implemented.

- All mitigation measures should follow the guidelines as set out in Tree Inventory and Preservation Plan and should be supervised by a Certified Arborist in accordance with Good Arboricultural Standards.

Respectfully Submitted,

Kuntz Forestry Consulting Inc.

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8.0 References

Guide for Plant Appraisal – 10th Edition, 2019. Council of Tree & Landscape Appraisers. International Society of Arboriculture, Atlanta, Georgia. 181 pp.

Ontario Supplement to the Guide for Plant Appraisal – 8th Edition, 2003. ISA Ontario. International Society of Arboriculture, Champaign, Illinois. 26 pp. Updated 2003.

Tree Risk Assessment Manual – 2nd Edition, 2017. International Society of Arboriculture. International Society of Arboriculture, Champaign, Illinois. 194 pp.

Limitations of Assessment

Only the tree(s) identified in this report were included in the inventory. The assessment of the trees presented in this report has been made using accepted arboricultural techniques. These may include a visual examination taken from the ground of all the above-ground parts of the tree for structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of attack by insects, discoloured foliage, the condition of any visible root structures, the degree of lean (if any), the general condition of the trees and the identification of potentially hazardous trees or recommendations for removal (if applicable). Where trees could not be directly accessed (i.e. due to obstructions, and/or on neighbouring properties), trees were assessed as accurately as possible from nearby vantage points.

Locations of trees provided in the report are determined as accurately as possible based on the best information available. If official survey information is not provided, tree location in the report may not be exact. In this case, if trees occur on or near property boundaries, an official site survey may be required to determine ownership utilizing specialized survey protocol to gain precise location.

Furthermore, recommendations made in this report are based on the site plans that have been provided at the time of reporting. These recommendations may no longer be applicable should changes be made to the site plan and/or grading, servicing, or landscaping plans following report submission.

Notwithstanding the recommendations and conclusions made in this report, it must be recognized that trees are living organisms, and their health and vigor constantly change over time. They are not immune to changes in site conditions or seasonal variations in the weather conditions. Any tree will fail if the forces applied to the tree exceed the strength of the tree or its parts.

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 inspection.

Table 1. Tree Inventory

Location: Lakeshore Road West (Mississauga Road to Birch Hill Lane) Date: 19 May 2021 Surveyors: KD

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	RZE	CDB	DL	mTPZ	A. mTPZ	Oakville Tree No.	Pruning Required	Comments	Ownership	Action	Risk Rating	Mitigation
1	Norway Spruce	*Picea abies*	~30	G	G	G	G		2	2.4	-	28044			Town	Remove	-	-
2	Common Lilac	*Syringa vulgaris*	1 - 8	F-G	G	F-G	G	20	1	1.8	-	87245		Multi-stem at base, epicormic branching (L), suppressed	Town	Remove	-	-
3	Eastern White Cedar	*Thuja occidentalis*	1 - 3	F	F	F	G		0.5	1.8	-	464705		Browning needles (M)	Town	Remove	-	-
4	Ginkgo	*Ginkgo biloba*	21	F	F-G	F-G	F-G		0.5	2.4	-	469737		Sweep (L), stem wound (H) at 1 metre, epicormic branching (M)	Town	Remove	-	-
5	Accolade Elm	*Ulmus* 'Morton'	17	G	G	G	F-G		1.5	2.4	-	500955		Pruning wounds (L)	Town	Remove	-	-
6	Green Ash	*Fraxinus pennsylvanica*	31	F	F	P-F	F-G		3	3	-	931		Treated for EAB, epicormic branching (H), pruning wounds (L)	Town	Remove	-	-
7	Red Maple	*Acer rubrum*	7	F-G	G	F-G	F		0.25	1.8		559288	Yes	Pruning wounds (M), stem wound (L) at base	Town	Retain	-	Scenario B
8	Honey Locust	*Gleditsia triacanthos*	7	F	F-G	P-F	P-F	10	0.25	1.8		559287	Yes	Epicormic branching (H), stem wound (H) from base to 0.5 metres, pruning wounds (M), crooks (L)	Town	Retain	-	Scenario B
9	Honey Locust	*Gleditsia triacanthos*	6	F-G	F-G	F	P-F		0.5	1.8		559286	Yes	Stem wound (L) at base, pruning wounds (L), epicormic branching (L), crooks (L)	Town	Retain	-	Scenario B
10	Red Maple	*Acer rubrum*	6	G	G	G	P-F		0.5	1.8		559285	Yes	Pruning wounds (L)	Town	Retain	-	Scenario B
11	Little-leaf Linden	*Tilia cordata*	22	F-G	G	G	P-F		1.5	2.4		471057	Yes	Pruning wounds (M), stem wound (L) at 2 metres	Town	Retain	-	Scenario B
12	Little-leaf Linden	*Tilia cordata*	24	F	F-G	G	P-F		1.5	2.4		471058	Yes	Co-dominant stems at 2.25 metres, pruning wounds 9M), seam (L) from 0.5 metres to 1 metre	Town	Retain	-	Scenario B
13	Honey Locust	*Gleditsia triacanthos*	20	F-G	F	F-G	P-F		3	2.4		471059	Yes	Pruning wounds (M), asymmetrical crown (L), crooks (M), stem wound (L) at base	Town	Retain	-	Scenario B
14	Honey Locust	*Gleditsia triacanthos*	23.5	F-G	F-G	F	P-F		3	2.4		471060	Yes	Epicormic branching (M), roots lifting concrete, pruning wounds (M), included electrical wire	Town	Retain	-	Scenario B
15	Honey Locust	*Gleditsia triacanthos*	7	F-G	F	F	P-F		1	1.8		559282	Yes	Swollen bole (L), bow (L), epicormic branching (M), pruning wounds (L)	Shared	Retain	-	Scenario B
16	Honey Locust	*Gleditsia triacanthos*	20.5	G	F-G	F-G	P-F		3	2.4		471062	Yes	Pruning wounds (L)	Shared	Retain	-	Scenario B
17	Honey Locust	*Gleditsia triacanthos*	22	G	F-G	F-G	P-F		3	2.4		471063	Yes	Epicormic branching (M), pruning wounds (L)	Shared	Retain	-	Scenario B
18	Honey Locust	*Gleditsia triacanthos*	19	F-G	F	F	P-F		3	2.4		471065	Yes	Bow (M), asymmetrical crown (M), epicormic branching (M)	Town	Retain	-	Scenario B
19	Honey Locust	*Gleditsia triacanthos*	8	F-G	F-G	F-G	P-F		1	1.8		559281	Yes	Epicormic branching (M), swollen bole (L)	Town	Retain	-	Scenario B
20	Honey Locust	*Gleditsia triacanthos*	8	F-G	F-G	F	P-F		1	1.8	-	559278		Epicormic branching (M), pruning wounds (L)	Town	Remove	-	-
21	Honey Locust	*Gleditsia triacanthos*	8	F-G	F-G	F	P-F		1	1.8		559277	Yes	Epicormic branching (M)	Town	Retain	-	Scenario B
22	Honey Locust	*Gleditsia triacanthos*	17	F-G	F-G	G	P-F		2.5	2.4		471081		Crack (L) from base to 4 metres, pruning wounds (L)	Town	Retain	-	Scenario B
23	Honey Locust	*Gleditsia triacanthos*	21	G	F-G	G	P-F		3.5	2.4		471082		Diverging stems (L)	Town	Retain	-	Scenario B
24	Honey Locust	*Gleditsia triacanthos*	24	F-G	F	F	P-F	15	3	2.4		471084		Bow (M), pruning wounds (M), epicormic branching (M), asymmetrical crown (M)	Town	Retain	-	Scenario B
25	Honey Locust	*Gleditsia triacanthos*	19	F-G	F-G	F-G	P-F		3	2.4	-	471087		Pruning wounds (L), co-dominant stems at 3.5 metres, diverging stems (L), asymmetrical crown (M)	Town	Retain	-	Scenario B
26	Norway Spruce	*Picea abies*	24	F-G	F-G	F-G	F-G		2.5	2.4		475780		Asymmetrical crown (M), suppressed	Town	Remove	-	-
27	Norway Maple	*Acer platanoides*	18, 11	F	P-F	F	F		2.5	2.4		471089		Pruning wounds (M), union at 1 metre, asymmetrical crown (M), epicormic branching (L), sparse crown (M)	Town	Retain	-	Scenario A
28	Norway Maple	*Acer platanoides*	23	F	F	P-F	F	15	2	2.4		471090		Sparse crown (M), epicormic branching (M)	Town	Retain	-	Scenario A
29	White Mulberry	*Morus alba*	~12, ~9	F-G	F-G	G	G		2	2.4	-	475431		Co-dominant stems at 0.25 metres, wetwood (M), pruning wounds (L)	Town	Remove	-	-
30	Manitoba Maple	*Acer negundo*	21, 20	F	P-F	F-G	F-G		3.5	2.4		471108		Co-dominant stems at base, sweep (H), epicormic branching (M)	Town	Retain	-	Scenario A
31	Green Ash	*Fraxinus pennsylvanica*	50	P-F	F	P-F	F	30	4.5	3	-	74525		Treated for EAB, asymmetrical crown (M), pruning wounds (M), epicormic branching (H)	Town	Remove	-	-
32	Silver Maple	*Acer saccharinum*	53	F	P-F	P-F	F		5	3.6	-	95796		Epicormic branching (H), broken branches (M), co-dominant stems in crown, asymmetrical crown (M)	Town	Remove	-	-
33	Silver Maple	*Acer saccharinum*	102	F	P-F	F	F	15	9	6.2	-	40720		Epicormic branching (M), sparse crown (L), asymmetrical crown (M)	Town	Remove	-	-
34	Silver Maple	*Acer saccharinum*	92	F	P-F	P-F	F	25	9	6	-	103873		Epicormic branching (M), asymmetrical crown (M), sweep (M), broken branches (M), cavity (L) at base	Town	Remove	-	-
35	Chokecherry	*Prunus virginiana*	27	P	F	F-G	F		2.5	2.4	-	471188		Insect frass at base, swollen base (M), co-dominant stems at 1.75 metres, likely internal decay	Town	Remove (Condition)	Low	-

36	Silver Maple	*Acer saccharinum*	64	P-F	P-F	P	F	20	7	4.2	-	471191		Co-dominant stems at 2.5 metres, epicormic branching (H), divergent stems (M), cavities (M)	Town	Remove (Condition)	Moderate	-
37	Silver Maple	*Acer saccharinum*	87	P	F	P	F	15	10	5.4	-	471195		Epicormic branching (H), burls (H), insect frass at base, cavities (M), likely internal decay	Town	Remove (Condition)	High	-
38	Silver Maple	*Acer saccharinum*	93	P-F	P-F	F	F		8	6	-	471196		Co-dominant stems at 1.75 metres, epicormic branching (M), asymmetrical crown (M), cavity (H)	Town	Remove (Condition)	Low	-
39	Silver Maple	*Acer saccharinum*	77	P-F	F	P-F	F-G	30	7	4.8	-	470940		Multi-stem at 3 metres, broken branches (M), cavity (M) at union, epicormic branching (M)	Town	Remove (Condition)	Moderate	-
40	Silver Maple	*Acer saccharinum*	64	F	P-F	P-F	F		7	4.2	-	471679		Asymmetrical crown (H), co-dominant stems at 2.75 metres, epicormic branching (H)	Town	Remove	-	-
41	Silver Maple	*Acer saccharinum*	96	P-F	P-F	F	F		8	6	-	471681		Multi-stem at 1.5 metres, cavities (H) from previous pruning wounds, epicormic branching (M), diverging stems (H)	Town	Remove (Condition)	Moderate	-
42	Swamp White Oak	*Quercus bicolor*	7	G	G	G	F		0.5	1.8		575020		Crook (L)	Town	Retain	-	Scenario C
43	Silver Maple	*Acer saccharinum*	71	P-F	P-F	P-F	F	25	8	4.8	-	434690		Co-dominant stems at 2.25 metres, fused bark, asymmetrical crown (M), cavity (H) on one stem, pruning wounds (M), sparse crown (H)	Town	Remove (Condition)	Moderate	-
44	Chokecherry	*Prunus virginiana*	14	G	G	G	F		1.5	2.4	-	471687			Town	Remove	-	-
45	Silver Maple	*Acer saccharinum*	98	P	P-F	F	F	15	9	6	-	471688		Cavity (H) at 2 metres, co-dominant stems at 2 metres, epicormic branching (M), diverging stems (M), asymmetrical crown (M), insect frass at base	Town	Remove (Condition)	Moderate	-
46	Ivory Silk Lilac	*Syringa reticulata* 'Ivory Silk'	6	F-G	G	G	F		0.5	1.8	-	574986			Town	Remove	-	-
47	Scots Pine	*Pinus sylvestris*	36	F-G	F	G	F		3	3	-	470918		Diverging stems (M)	Town	Remove	-	-
48	Swamp White Oak	*Quercus bicolor*	6.5	G	G	G	F		0.5	1.8		569616			Town	Retain	-	Scenario C
49	White Ash	*Fraxinus americana*	35	F	F-G	F-G	F		2	3	-	15583		Treated for EAB, asymmetrical crown (L), epicormic branching (L)	Town	Remove	-	-
50	Red Maple	*Acer rubrum*	68	P-F	F	F	F-G	15	6	4.2	-	471699		Cavities (H) at 1.75 metres, asymmetrical crown (H)	Town	Remove	-	-
51	Red Maple	*Acer rubrum*	49	P-F	F	F	F-G	10	5	3	-	59500		Nectria canker (H), asymmetrical crown (H)	Town	Remove	-	-
53	Chokecherry	*Prunus virginiana*	25	P-F	G	F-G	F		2.5	2.4	-	471700		Stem wound (H) at 2 metres, swollen base (M), coppice growth, black knot present	Town	Remove	-	-
54	Green Ash	*Fraxinus pennsylvanica*	60	P-F	F	P	F	25	4	3.6	-	93680		Treated for EAB, epicormic branching (H), top-down dieback, asymmetrical crown (M)	Town	Remove (Condition)	Low	-
55	Norway Maple	*Acer platanoides*	49	F-G	F-G	G	F-G		4	3	-	470863		Co-dominant stems at 1.5 metres	Town	Remove	-	-
56	Honey Locust	*Gleditsia triacanthos*	71	F-G	F	F-G	F		7	4.8	-	476696		Co-dominant stems at 2 metres, epicormic branching (M), crooks (M), asymmetrical crown (H), bow (M)	Town	Remove	-	-
57	Honey Locust	*Gleditsia triacanthos*	52	F-G	F-G	F	F-G		4	3.6	-	472490		Epicormic branching (M)	Town	Remove	-	-
58	White Ash	*Fraxinus americana*	65	F	F	F	F-G	10	4	4.2	-	435863		Fused stems, co-dominant stems at 5 metres, included bark (M), epicormic branching (H)	Town	Remove	-	-
59	Crabapple 'Profusion'	*Malus* 'Profusion'	17	F-G	F-G	G	F	5	1.5	2.4		472437	Yes	Cavity (L) at base	Town	Retain	-	Scenario A
60	Serviceberry species	*Amelanchier* sp.	5	G	G	G	F-G		0.25	1.8	-	594781			Town	Remove	-	-
61	Honey Locust	*Gleditsia triacanthos*	5	G	G	G	F-G		0.75	1.8	-	594782		Epicormic branching (L)	Town	Remove	-	-
62	Honey Locust	*Gleditsia triacanthos*	5	G	G	F-G	F-G		0.75	1.8	-	594783		Epicormic branching (M)	Town	Remove	-	-
63	Freeman Maple	*Acer x freemanii*	5	G	G	F-G	F-G	20	1	1.8	-	594784		Deadwood (L), sparse crown (L)	Town	Remove	-	-
64	Freeman Maple	*Acer x freemanii*	6	G	G	G	F-G		1	1.8	-	594785			Town	Remove	-	-
65	Honey Locust	*Gleditsia triacanthos*	5.5	G	G	G	F-G		1	1.8	-	594786		Epicormic branching (L)	Town	Remove	-	-
66	Honey Locust	*Gleditsia triacanthos*	6	G	G	G	F-G		1	1.8	-	594787		Epicormic branching (L)	Town	Remove	-	-
67	Little-leaf Linden	*Tilia cordata*	6	G	G	G	F-G		0.75	1.8	-	594788			Town	Remove	-	-
68	Bur Oak	*Quercus macrocarpa*	6	F-G	G	F-G	F-G		0.25	1.8	-	594789			Town	Remove	-	-
69	Freeman Maple	*Acer x freemanii*	5	G	G	F	F-G	20	0.75	1.8	-	594790			Town	Remove	-	-
70	Freeman Maple	*Acer x freemanii*	6	G	G	F-G	F-G	10	1	1.8	-	594791			Town	Remove	-	-
71	Freeman Maple	*Acer x freemanii*	5	F-G	G	P-F	F-G	50	0.5	1.8	-	594792			Town	Remove	-	-
72	Norway Maple	*Acer platanoides*	35.5	F	F-G	F	F-G	25	3	3	-	62364		Girdling roots (M), top-down dieback	Town	Remove	-	-
73	Silver Maple	*Acer saccharinum*	~55	F	P-F	F	F	15	10	3.6	-	477093		Sweep (M), co-dominant stems at 3 metres, diverging stems (M), epicormic branching (M), asymmetrical crown (H), pruning wounds (M)	Town	Remove	-	-
75	London Planetree	*Platanus x acerifolia*	50, 46	F-G	F-G	G	F		7	4.2	-	477091		Co-dominant stems at 0.75 metres	Town	Remove	-	-
76	Green Ash	*Fraxinus pennsylvanica*	38, 35, 33	F	F	F	F-G		7	4.2		435952		Treated for EAB, multi-stem at 0.25 metres --> Treat for EAB and monitor	Town	Retain	-	Scenario C
77	Sugar Maple	*Acer saccharum*	84	P	F	F	F	25	4	5.4	-	100019		Insect frass at base, fungal fruiting bodies at base, likely internal decay	Town	Remove (Condition)	High	-
78	Black Walnut	*Juglans nigra*	101	F-G	F-G	F-G	F-G		8	6.1		475786		Epicormic branching (L), co-dominant stems in crown, pruning wounds (L)	Town	Retain	-	Scenario D
79	Honey Locust	*Gleditsia triacanthos*	35	G	G	G	F-G		5	3	-	414652			Town	Remove	-	-
80	Honey Locust	*Gleditsia triacanthos*	33	G	G	G	F-G		5	3	-	414653		Pruning wounds (L), asymmetrical crown (L)	Town	Remove	-	-
81	White Pine	*Pinus strobus*	58	G	F-G	F-G	F	15	6	3.6	-	414654		Asymmetrical crown (M), deadwood (L)	Town	Remove	-	-

82	Siberian Elm	*Ulmus pumila*	66	F-G	F-G	F	F	20	5	4.2	-	414593		Pruning wounds (M), epicormic branching (M), top-down dieback	Town	Remove	-	-
83	Red Oak	*Quercus rubra*	106	G	F-G	F-G	F	10	7	6.6	-	167		Epicormic branching (L), pruning wounds (M)	Town	Remove	-	-
84	Norway Maple	*Acer platanoides*	29, 19	F-G	F-G	G	F-G		4	3		103065		Co-dominant stems at base, included bark (M)	Town	Retain	-	Scenario D
85	Norway Maple	*Acer platanoides*	~50	F	F	G	F-G		3	3	-	475757		Pruning wounds (H), co-dominant stems at 1.5 metres	Town	Retain	-	Scenario A
86	Freeman Maple	*Acer x freemanii*	27	G	G	G	F-G		2.5	2.4	-	475444		Co-dominant stems at 2.5 metres	Town	Remove	-	-
87	Red Maple	*Acer rubrum*	5	G	G	G	F-G		0.5	1.8		687932	Yes		Town	Retain	-	Scenario D
88	White Mulberry	*Morus alba*	26	F	F-G	G	F		2.5	2.4	-	475374	Yes		Town	Retain	-	Scenario D
89	Norway Spruce	*Picea abies*	~55	F	G	F	F	20	3	3.6	-	475373		Deadwood (M), lost leader, top-down dieback	Town	Remove	-	-
90	White Birch	*Betula papyrifera*	37, ~36, 20, ~15	F-G	F-G	F	F-G	15	3.5	3.6	-	476227		Multi-stem at 0.5 metres, epicormic branching (M), top-down dieback	Town	Remove	-	-
91	Black Walnut	*Juglans nigra*	71, 68	G	F-G	G	F-G		6	6	-	93003		Epicormic branching (L)	Town	Remove	-	-
92	Silver Maple	*Acer saccharinum*	~45	F-G	F-G	F-G	F-G		6	3	-	494986		Pruning wounds (M)	Town	Remove	-	-
94	Black Locust	*Robinia pseudoacacia*	21	G	F-G	G	F-G		3	2.4	-	481588		Asymmetrical crown (M), bow (L)	Town	Remove	-	-
95	White Elm	*Ulmus americana*	15	F-G	F-G	G	F-G		1.5	2.4		481587			Town	Remove	-	-
96	White Elm	*Ulmus americana*	14	G	G	G	F-G		1.5	2.4		481580			Town	Remove	-	-
97	White Elm	*Ulmus americana*	25	G	F-G	G	F-G	10	2	2.4		481568		Asymmetrical crown (L)	Town	Remove		-
98	Norway Maple	*Acer platanoides*	43	F	F	F	F-G	25	4	3	-	-		Asymmetrical crown (M), sweep (L), deadwood (M)	Town	Remove	-	-
99	Norway Maple	*Acer platanoides*	~30	-	-	-	-	-	-	2.4	-	481441		Dead	Town	Remove (Condition)		Low
100	Black Walnut	*Juglans nigra*	53	F-G	F	F	F-G	25	6	3.6	-	481436		Pruning wounds (L), epicormic branching (M), deadwood (M)	Town	Remove	-	-
101	Eastern White Cedar	*Thuja occidentalis*	~20, ~15	F	F	F	F-G		2	2.4	-	481428		Stem wound (M) at base, co-dominant stems at 0.5 metres, browning needles (M)	Town	Remove	-	-
102	Eastern White Cedar	*Thuja occidentalis*	~18, ~8	P-F	P-F	P-F	F-G		1.5	2.4	-	481427		Co-dominant stems at base	Town	Remove	-	-
103	Eastern White Cedar	*Thuja occidentalis*	30, 21, 20	F	P-F	F	F-G		2	3	-	481426		Multi-stem at 1 metre, sweep (H)	Town	Remove	-	-
104	Eastern White Cedar	*Thuja occidentalis*	22	F	P-F	F	F-G		2	2.4	-	481425		Sweep (H)	Town	Remove	-	-

Codes		
DBH	Diameter at Breast Height	*(cm)*
TI	Trunk Integrity	*(G, F, P)*
CS	Crown Structure	*(G, F, P)*
CV	Crown Vigour	*(G, F, P)*
RZE	Root Zone Environment	*(G, F, P)*
CDB	Crown Die Back	*(%)*
DL	Dripline (radius)	*(m)*
mTPZ	minimum Tree Protection Zone	*TPZ (m) based on Town of Oakville's Tree Protection During Construction (Prcedure EN-TRE-001-001) from base of tree*
A. mTPZ	Actual minimum Tree Protection Zone	*Actual TPZ (m) achievable during construction from base of tree*
~ = estimate; (L) = light; (M) = moderate; (H) = heavy		

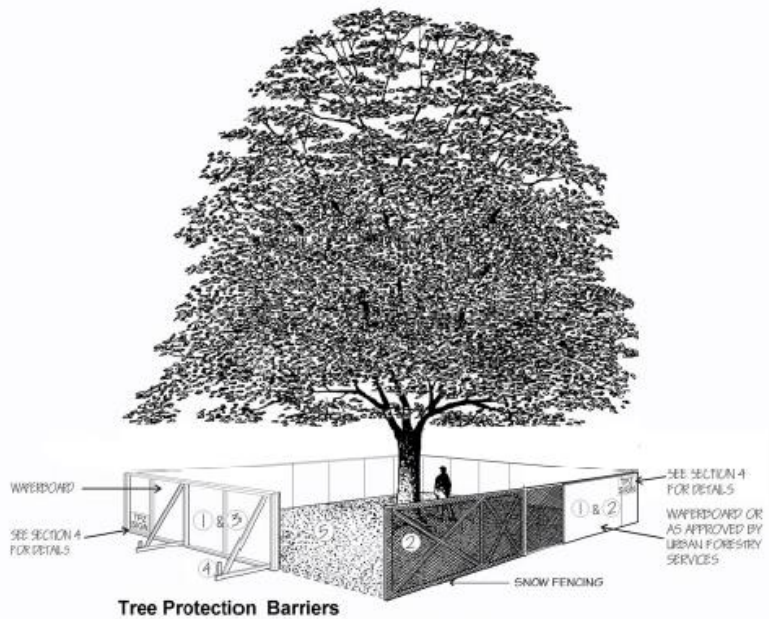
Table 2. Tree Valuation of Town-Owned Trees

Lakeshore Road West (Mississauga Road to Birch Hill Lane), Oakville				*Appraised Trunk Area (cm^2)*	*Unit Tree Cost (RPAC)*	*Basic Tree Cost ($)*	Depreciation			*Appraised Tree Value*	*Minimum Value Per Tree ($)*	*Final Appraised Tree Value*
Tree	**Common Name**	**DBH**	**OC**				*Condition Rating (%)*	*Functional Limitation Rating (%)*	*External Limitation Rating (%)*			
7	Red Maple	7	F-G	38	6.51	250.53	0.75	0.5	1	$ 93.95	$ 744.00	$ 744.00
8	Honey Locust	7	P-F	38	6.51	250.53	0.25	0.5	1	$ 31.32	$ 744.00	$ 744.00
9	Honey Locust	7	F	38	6.51	250.53	0.5	0.5	1	$ 62.63	$ 744.00	$ 744.00
10	Red Maple	6	G	28	6.51	184.07	0.9	0.5	1	$ 82.83	$ 744.00	$ 744.00
11	Little-Leaf Linden	22	F-G	380	6.51	2474.67	0.75	0.5	1	$ 928.00	$ 744.00	$ 928.00
12	Little-Leaf Linden	24	F	452	6.51	2945.06	0.5	0.5	1	$ 736.27	$ 744.00	$ 744.00
13	Honey Locust	20	F	314	6.51	2045.18	0.5	0.5	1	$ 511.30	$ 744.00	$ 744.00
14	Honey Locust	23.5	F	434	6.51	2823.63	0.5	0.5	1	$ 705.91	$ 744.00	$ 744.00
15	Honey Locust	7	F	38	6.51	250.53	0.5	0.5	1	$ 62.63	$ 744.00	$ 744.00
16	Honey Locust	20.5	F-G	330	6.51	2148.72	0.75	0.5	1	$ 805.77	$ 744.00	$ 805.77
17	Honey Locust	22	F-G	380	6.51	2474.67	0.75	0.5	1	$ 928.00	$ 744.00	$ 928.00
18	Honey Locust	19	F	284	6.51	1845.78	0.5	0.5	1	$ 461.44	$ 744.00	$ 744.00
19	Honey Locust	8	F-G	50	6.51	327.23	0.75	0.5	1	$ 122.71	$ 744.00	$ 744.00
21	Honey Locust	8	F	50	6.51	327.23	0.5	0.5	1	$ 81.81	$ 744.00	$ 744.00
22	Honey Locust	17	F-G	227	6.51	1477.64	0.75	0.5	1	$ 554.12	$ 744.00	$ 744.00
23	Honey Locust	21	F-G	346	6.51	2254.81	0.75	0.5	1	$ 845.55	$ 744.00	$ 845.55
24	Honey Locust	24	F	452	6.51	2945.06	0.5	0.5	1	$ 736.27	$ 744.00	$ 744.00
25	Honey Locust	19	F-G	284	6.51	1845.78	0.75	0.5	1	$ 692.17	$ 744.00	$ 744.00
27	Norway Maple	21	P-F	346	6.51	2254.81	0.25	0.75	1	$ 422.78	$ 744.00	$ 744.00
28	Norway Maple	23	P-F	415	6.51	2704.75	0.25	0.75	1	$ 507.14	$ 744.00	$ 744.00
30	Manitoba Maple	29	P-F	661	6.51	4299.99	0.25	0.9	1	$ 967.50	$ 744.00	$ 967.50
42	Swamp White Oak	7	G	38	6.51	250.53	0.9	0.9	1	$ 202.93	$ 744.00	$ 744.00
48	Swamp White Oak	6.5	G	33	6.51	216.02	0.9	0.9	1	$ 174.98	$ 744.00	$ 744.00
59	Crabapple 'Profusion'	17	F-G	227	6.51	1477.64	0.75	0.5	1	$ 554.12	$ 744.00	$ 744.00
76	Green Ash	61	F	2922	6.51	19025.30	0.5	0.9	0.1	$ 856.14	$ 744.00	$ 856.14
78	Black Walnut	101	F-G	8012	6.51	52157.24	0.75	0.75	1	$ 29,338.45	$ 744.00	$ 29,338.45
84	Norway Maple	35	F-G	962	6.51	6263.37	0.75	0.75	1	$ 3,523.14	$ 744.00	$ 3,523.14
85	Norway Maple	50	F	1964	6.51	12782.39	0.5	0.75	1	$ 4,793.39	$ 744.00	$ 4,793.39
87	Red Maple	5	G	20	6.51	127.82	0.9	0.5	1	$ 57.52	$ 744.00	$ 744.00
88	White Mulberry	26	F	531	6.51	3456.36	0.5	0.5	1	$ 864.09	$ 744.00	$ 864.09
												$ 58,730.04

Appendix A. Tree Preservation Fencing Details

SCHEDULE 1
TREE PROTECTION BARRIER

OAKVILLE



Tree Protection Barriers

PLYWOOD

1. Tree protection barriers must be 1.2m (4ft) high, waferboard hoarding or an equivalent approved by Urban Forestry Services.
2. Tree protection barriers for trees situated on the Town road allowance where visibility must be maintained can be 1.2m (4ft.) high and consist of plastic web snow fencing on a wood frame made of 2"x 4"s .
3. Where some excawate or fill has to be temporarily located near a tree protection barrier, plywood must be used to ensure no material enters the Tree Protection Zone.
4. All supports and bracing should be outside the Tree Protection Zone. All such supports should minimize damaging roots outside the Tree Protection Barrier.
5. No construction activity, grade changes, surface treatment or excavations of any kind is permitted within the Tree Protection Zone.

Tree Protection Zone

No grade change, storage of materials or equipment is permitted within this area.
This tree protection barrier must not be removed without the written authorization of the Town of Oakville.
Report any contraventions to
Contact Name _____ Tel No. _____
Unauthorized removal of the tree protection barrier or other contraventions may result in prosecution.