Tree Inventory and Preservation Plan Report 42 Lakeshore Road West Oakville, Ontario

prepared for

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prepared by



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KUNTZ FORESTRY CONSULTING INC Project P3684

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1.0 Introduction

Kuntz Forestry Consulting Inc. was retained by Format Group to complete a Tree Inventory and Preservation Plan as part of a proposed development application for the property located at 42 Lakeshore Road West in the Town of Oakville. The property is located at the southern corner of Lakeshore Road West and Chisholm Street, within a mixed-use area.

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

- Prepare an inventory of tree resources 10cm diameter at breast height (DBH) and greater on and within six metres of the subject property and trees of all sizes within the road right-of-way;
- Evaluate potential tree saving opportunities based on proposed development plans; and
- 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

Trees measuring 10cm DBH and greater on and within six metres of the subject property and trees of all sizes within the road right-of-way were identified in the tree inventory. Trees were located using the topographic survey provided, aerial imagery, and estimations made from known points in the field. Trees included in the inventory on the subject property and within the road right of way on Lakeshore Road West were tagged using numbers 58-76. Trees situated on neighbouring property and within the road right of way on Chisholm Street were not tagged and were identified as Trees A-K. Refer to Table 1 for the results of the tree inventory, Figure 1 for the location of the trees, and Appendix A for photographs of the trees.

Tree resources were visually assessed utilizing the following parameters:

Tree # – Number assigned to trees that corresponds to Figure 1.
Species – Common and botanical names provided in the inventory table.
DBH – Diameter (cm) at breast height, measured at 1.4m above the ground.
Condition – Condition of tree considering trunk integrity (TI), crown structure (CS) and crown vigor (CV). Condition ratings include poor (P), fair (F), and good (G).
Crown Dieback – Percentage of dead branches within the crown.
Dripline – Crown diameter (m).
Comments – Any other relevant tree condition information.

2.2 Tree Valuation

A valuation was calculated for Town-owned trees. The value was calculated using the Trunk Formula Technique. This method is described in the Guide for Plant Appraisal, 10th Edition (CTLA 2018). 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/cm² within the Supplement and this value has been used for the calculation.

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 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. The final values were rounded to the nearest \$100 for values greater than \$2000, and to the nearest \$5 for values less than \$2000.

For trees with appraisal values less than \$744.00 (Town of Oakville's minimum value per tree), their values were set to \$744.00.

Refer to Table 2 for the individual tree value computation.

2.3 Tree Compensation

The Town of Oakville requires compensation plantings for healthy private tree removals. The ratio of required compensation plantings per tree is below:

DBH of Tree to be Removed	Number of Compensation Plantings
First Tree 15cm – 24cm DBH	1
Second and more trees 15-24cm DBH	2
25cm – 34cm DBH	3
35cm – 44cm DBH	4
45cm – 54cm DBH	5
55cm – 64cm DBH	6
65cm – 74cm DBH	7
75cm – 84cm DBH	8
85cm – 94cm DBH	9
95cm – 104cm DBH	10
105cm – 114cm DBH	11
>115cm DBH	12

Refer to Table 1 for the compensation plantings required for each individual private tree removal.

3.0 Existing Site Conditions

The subject property is currently occupied by a two-storey stucco heritage house with associated amenity areas. Tree resources exist in the form of landscape trees and natural regeneration. Refer to Figure 1 for the existing site conditions.

4.0 Individual Tree Resources

Field assessments for the tree inventory were conducted on 14 March 2023. The tree inventory documented 30 trees on and within six metres of the subject property and within the road right-of-way.

Tree resources are composed of Norway Maple (*Acer platanoides*), Honey Locust 'Shademaster' (*Gleditsia triacanthos inermis*), White Birch (*Betula papyrifera*), Tree-of-heaven (*Ailanthus altissima*), Manitoba Maple (*Acer negundo*), Black Walnut (*Juglans nigra*), White Mulberry (*Morus alba*), Catalpa (*Catalpa spp.*), Blue Spruce (*Picea pungens*), Sugar Maple (*Acer saccharum*), Eastern White Cedar (*Thuja occidentalis*), Magnolia (*Magnolia spp.*), Serviceberry (*Amelanchier spp.*), Red Maple (*Acer rubrum*), Balsam Fir (*Abies balsamea*), and Red Oak (*Quercus rubra*).

Refer to Table 1 for the detailed tree inventory and Figure 1 for the location of trees reported in the tree inventory.

5.0 Proposed Works

The proposed development includes the relocation of the existing heritage house and the construction of a 10-storey mixed use building with a four-level underground parking garage, entranceway access to Chisholm Street, and related landscaping works. Additionally, a new storm sewer extension is proposed from the southeastern corner of the subject property and will extend along the southern perimeter of Chisholm Street to Burnett Street. Refer to Figure 1 for the existing site conditions and the 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 12 trees will be required to accommodate the proposed development. Trees identified for removal include Trees 62, 64-71, 73, 74, and 76. The removal of one additional tree, Tree 72, is recommended due to its hazardous condition. Tree 63 has been removed since the initial inventory further to an emergency order issued by the Town of Oakville. Refer to Figure 1 for locations of trees identified for removal.

Trees 62 and 64-74 are greater than 15cm DBH and located on private property, therefore a permit is required prior to their removal.

6.2 Tree Preservation

Preservation of Trees 58-61, 75, and A-K will be possible with the use of appropriate tree protection measures as indicated on Figure 1. 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 for the location of required tree preservation fencing, general Tree Protection Plan Notes, and tree preservation fence details.

Tree protection fencing has not been prescribed for Tree A, as its minimum Tree Protection Zone (mTPZ) does not intersect with the subject property.

The section below discuss special mitigation measures for trees whose minimum tree protection zones (mTPZ's) cannot be fully protected. Where work is proposed within the mTPZ's of trees, the work will constitute tree injury. The following by-law protected trees will be injured and will require permits to injure:

Trees 75, H, I, and K.

Trees 75, H, I, and K

Encroachment into a portion of the minimum tree protection zones (mTPZ's) of Trees 75, H, I, and K is required to accommodate excavation for the proposed storm sewer extension along Chisholm Street. If the following mitigation measures are employed, longterm adverse effects are not anticipated for these trees:

- Prior to the commencement of the proposed works, vertical tree protection fencing should be installed at the locations indicated on Figure 1.
- Air-spading or hydro-vac technology should be used, under the supervision of a Certified Arborist, to excavate a trench on the northeast side of the tree protection fencing within the mTPZ's of Trees 75, H, I, and K.
- The roots of Trees 75, H, I, and K are to be pruned inside the trenches by a Certified Arborist in accordance with Good Arboricultural Standards.
- The trenches are to be backfilled with clean topsoil.

All work to occur within the mTPZ's of these trees is to be supervised by a Certified Arborist in accordance with Good Arboricultural Standards.

6.3 Tree Valuation

Refer to Table 2 for the results of the tree valuation. The total value of all Town-owned trees is \$72,320.00.

6.4 Tree Compensation

A total of 49 compensation plantings will be required as a result of the removal of healthy private trees. Refer to Table 1 for the compensation plantings required for each individual private tree removal.

7.0 Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by Format Group to complete a Tree Inventory and Preservation Plan as part of a development application for the property located at 42 Lakeshore Road West in Oakville. A tree inventory was conducted and reviewed in the context of the proposed site plan.

The findings of the study indicate a total of 30 trees on and within six metres of the subject property and within the right-of-way. The removal of 12 trees is required to accommodate the proposed development. The removal of one additional tree is recommended due to its hazardous condition. The remaining 16 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 for the location of the required tree protection fencing, general Tree Protection Plan Notes, and tree preservation detail.

- Tree protection barriers and fencing should be erected at locations as prescribed on Figure 1. 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 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.

Respectfully Submitted, Kuntz Forestry Consulting Inc.

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8.0 References

Council of Tree & Landscape Appraisers, 2019. Guide for Plant Appraisal, 10th Edition.

Regional Plant Appraisal Committee (RPAC) 2021. Ontario Supplement to the Council of Tree and Landscape Appraisers (CTLA) Guide for Plant Appraisal – 10th Edition (third printing). December 2021

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: 42 Lakeshore Rd W. Oakville

Tree #	Common Name	Scientific Name	DBH	ті	cs	сv	CDB	DL	mTPZ	A. mTPZ	Oakville Tree No.	Comments	Ownership	Action	Comp.
58	Norway Maple	Acer platanoides	27.5	G	FG	FG		4.5	2.4	0.6	4952	Co-dominant at 2.5m with dead stem, cavity (L), epicormic branching (M), deadwood (L), asymmetrical crown (L)	City	Preserve	-
59	Norway Maple	Acer platanoides	29	G	G	FG		6.5	2.4	0.6	102486	Co-dominant at 1.7m with 3 stems, pruning wounds (L), growth deficit (L), epicormic branching (L)	City	Preserve	-
60	Honey Locust (shademaster)	Gleditsia triacanthos inermis	43	FG	G	G		13.5	3.0	0.6	26393	Co-dominant at 3m, basal flare, stem wound at base (L)	City	Preserve	-
61	Honey Locust (shademaster)	Gleditsia triacanthos inermis	13	G	FG	G		7.0	2.4	0.6	498600	Broken branches (L), pruning wounds (L)	City	Preserve	-
62	White Birch	Betula papyrifera	28, 25.5	FG	FG	FG		9.5	2.4	-	-	Co-dominant at 0.3m, grapevine competition (L), stem wound (L), bow (M) in crown, asymmetrical crown (L), epicormic branching (L)	Private	Remove	3
A	Tree-of-heaven	Ailanthus altissima	~48	G	F	G		10.0	3.0	5.3	-	Co-dominant in crown, grapevine competition (L), asymmetrical crown (M), poor form	Neighbour	Preserve	-
63	Manitoba Maple	Acer negundo	88	PF	PF	ŧ	20	14.0	-	-	-	Tree has been removed due to hazardous condition	Private	Removed	-
64	Norway Maple	Acer platanoides	46	FG	F	FG		12.0	3.0	-	-	Co-dominant at 2.5m, pruning wounds (M), broken branches (L), poor form, broken branch from Tree 63 in crown, crook (L), epicormic branching (L), powerlines through crown	Private	Remove	5
65	Norway Maple	Acer platanoides	27	FG	G	FG	5	9.5	2.4	-	-	Deadwood (L), growth deficit (L), crook (L)	Private	Remove	3
66	Manitoba Maple	Acer negundo	28.5, 19.5, 15	F	F	FG	5	10.0	2.4	-	-	Clump of 3, co-dominant at 4m, bow (M), grapevine competition (M), deadwood (M), poor form, lean (H) on one tree with cavity	Private	Remove	3

Date: 14 March<u>2023</u> Surveyors: MT

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67	Black Walnut	Juglans nigra	~38	FG	F	FG		11.5	3.0	-	-	Bow (L), asymmetrical crown (M), grapevine competition (M), included fence (L)	Private	Remove	4
68	Black Walnut	Juglans nigra	61	FG	FG	FG		20.0	4.2	-	-	Union at 2.5m, grapevine competition (M), cavity (L), epicormic branching (M), broken branches (L), pruning wounds (L)	Private	Remove	6
69	White Mulberry	Morus alba	54.5	F	F	PF	35	12.0	3.6	-	-	Epicormic branching (M), pruning wounds (M), bow (M), stem wounds (M), deadwood (M) with rot, poor form	Private	Remove	6
70	Catalpa	Catalpa spp.	63	F	FG	F	5	8.0	4.2	-	-	Cavity at base with rot (M), epicormic branching (M), pruning wounds (M), crook (L), co-dominant at 6m, deadwood (L)	Private	Remove	6
71	Manitoba Maple	Acer negundo	34	F	FG	F	10	7.5	3.0	-	-	Co-dominant at 3.5m, lean (M) north, pruning wounds (L), epicormic branching (L), stem wounds (L), deadwood (M), asymmetrical crown (H)	Private	Remove	3
72	Manitoba Maple	Acer negundo	32	Ρ	PF	PF	50	7.0	3.0	-	-	Stem wounds (H), bow (M), deadwood (H), fruiting body (L), asymmetrical crown ==> HAZARD	Private	Remove (condition)	-
73	Norway Maple	Acer platanoides	46, 27	FG	FG	G		11.0	3.0	-	-	Co-dominant at 1m, cavity (M), girdling root (M), powerlines through crown	Private	Remove	5
74	Blue Spruce	Picea pungens	42.5	G	G	G		7.0	3.0	-	-	Asymmetrical crown (L), ivy competition (L)	Private	Remove	4
75	Norway Maple	Acer platanoides	62.5	FG	FG	FG		14.0	4.2	1.5	109088	Co-dominant at 3m with 4 stems, union at 2.5m, Strangling root (M), exposed roots (M), pruning wounds (L), spiral stem, epicormic branching (M), powerlines through crown	City	Preserve (injure)	-
76	Catalpa	Catalpa sp.	11	FG	FG	G		3.0	2.4	-	-	Co-dominant at 1.9m with 3 stems, stem wound (L), asymmetrical crown (L), broken branches (L), deadwood (L)	Private	Remove	1
В	Norway Maple	Acer platanoides	~19	G	FG	G		6.0	2.4	1.4	699612	Co-dominant at 1.5m with included bark	City	Preserve	-
С	Sugar Maple	Acer saccharum	~28	G	G	G		7.5	2.4	2.4	699620	Co-dominant at 2.5m	Neighbour	Preserve	-

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D	White Birch	Betula papyrifera	~22, 14, 13, 10	FG	G	G	8.0	2.4	2.4	-	Co-dominant at base with 4 stems, deadwood (L)	Neighbour	Preserve	-
E	Sugar Maple	Acer saccharum	~25	G	G	G	5.0	2.4	2.4	699624	Co-dominant at 3m	Neighbour	Preserve	-
F	Eastern White Cedar	Thuja occidentalis	~32, 30	G	G	FG	7.0	3.0	2.7	79967	Co-dominant at 1.3m, chlorosis (L), powerlines through crown	City	Preserve	-
G	Magnolia	Magnolia spp.	~13	G	G	G	5.0	2.4	2.7	477935	Co-domiant at 1.7m, bow (L), pruning wounds (L)	City	Preserve	-
н	Serviceberry	Amelanchier spp.	15	G	FG	G	4.5	2.4	0.5	63698	Co-dominant at 2m, cavity (L), asymmetrical crown (L)	City	Preserve (injure)	-
I	Red Maple	Acer rubrum	28	G	G	G	7.5	2.4	1.0	44229	Pruning wounds (L)	City	Preserve (injure)	-
J	Balsam Fir	Abies balsamea	~15	G	FG	FG	3.0	2.4	2.7	477938	Sparse crown (M)	City	Preserve	-
к	Red Oak	Quercus rubra	143.5	F	FG	F	>20	8.6	0.7	80035	Stem wound (L), pruning wounds (M), co-dominant at 3.5m with included bark, 6 stems, bow (H), epicormic branching (H), powerlines through crown	City	Preserve (injure)	-

DBH	Diameter at Breast Height	(cm)
TI	Trunk Integrity	(G, F, P)
CS	Crown Structure	(G, F, P)
CV	Crown Vigour	(G, F, P)
CDB	Crown Dieback	(%)
DL	Dripline (Diameter)	(m)
mTPZ	minimum Tree Protection Zone	TPZ (m) based on Town of Oakville's Tree Protection During Construction (Procedure 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; G = good; F = fair; P = Poor

Table 2. Tree Valuation of Town-Owned Trees

									Depreciation				
Location: <u>42 Lakeshore Rd W, Oakville</u>				Appraise d Trunk Area (cm²)	Unit Tree Cost (RPAC)	Basic Tree Cost (\$)	Conditio n Rating (%)	Functiona I Limitation Rating	External Limitatio n Rating	Appraised Tree Value	Minimum Value Per Tree (\$)	Final Appraised Tree Value	
Tre e	Common Name	Scientific Name	DBH	00				(70)	(%)	(%)			
58	Norway Maple	Acer platanoides	27.5	FG	594	\$ 4.77	2833.18	0.725	0.75	0.9	\$ 1,386.49	\$ 744.00	\$ 1,400.00
59	Norway Maple	Acer platanoides	29	FG	661	\$ 4.77	3150.69	0.725	0.75	0.9	\$ 1,541.87	\$ 744.00	\$ 1,500.00
60	Honey Locust (shademaster)	Gleditsia triacanthos inermis	43	FG	1452	\$ 7.13	10354.2 2	0.725	0.75	0.9	\$ 5,067.10	\$ 744.00	\$ 5,100.00
61	Honey Locust (shademaster)	Gleditsia triacanthos inermis	13	FG	133	\$ 7.13	946.38	0.725	0.75	0.9	\$ 463.14	\$ 744.00	\$ 744.00
75	Norway Maple	Acer platanoides	62.5	FG	3068	\$ 4.77	14634.2 1	0.725	0.75	0.9	\$ 7,161.62	\$ 744.00	\$ 7,200.00
В	Norway Maple	Acer platanoides	19.0	FG	284	\$ 4.77	1352.44	0.725	0.75	0.9	\$ 661.85	\$ 744.00	\$ 744.00
F	Eastern White Cedar	Thuja occidentalis	44.0	FG	1521	\$ 3.44	5230.64	0.725	0.75	0.9	\$ 2,559.74	\$ 744.00	\$ 2,600.00
G	Magnolia	Magnolia spp.	13.0	G	133	\$ 6.47	858.78	0.9	0.75	0.9	\$ 521.71	\$ 744.00	\$ 744.00
Н	Serviceberry	Amelanchier spp.	15	FG	177	\$ 7.55	1334.20	0.725	0.75	0.9	\$ 652.92	\$ 744.00	\$ 744.00
Ι	Red Maple	Acer rubrum	28	G	616	\$ 7.07	4353.38	0.9	0.75	0.9	\$ 2,644.68	\$ 744.00	\$ 2,600.00
J	Balsam Fir	Abies balsamea	15.0	FG	177	\$ 4.50	795.22	0.725	0.75	0.9	\$ 389.16	\$ 744.00	\$ 744.00
К	Red Oak	Quercus rubra	143. 5	F	16173	\$ 8.03	129870. 4	0.55	0.75	0.9	\$ 48,214.39	\$ 744.00	\$ 48,200.00
												TOTAL	\$ 72,320.00

Appendix A. Photographs of Trees



Image 1. Tree 58

Image 2. Tree 59

Image 3. Tree 60



Image 4. Tree 61

Image 5. Tree 62

Image 6. Tree A



Image 7. Trees 63 and 64 (right to left)

Image 8. Tree 65 (centre left)

Image 9. Trees 66-68 (right to left)



Image 10. Trees 69-71 (left to right)

Image 11. Trees 72 and 73 (right to left)

Image 12. Tree 74



Image 13. Tree 75

Image 14. Tree B

Image 15. Trees C and D (right to left)



Image 16. Tree E

Image 17. Tree F

Image 18. Trees G-I (right to left)



Image 19. Tree J

Image 20. Tree K