Tree Inventory and Preservation Plan Report
130 Cornwall Road
Oakville, Ontario

prepared for

Support House
165 Cross Avenue, Suite 201
Oakville, ON L6J 0A9

prepared by

KUNTZ
FORESTRY
CONSULTING Inc.
146 Lakeshore Road West
PO Box 1267 Lakeshore W PO
Oakville ON L6K 0B3
t: 289.837.1871
e: consult@kuntzforestry.ca

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KUNTZ FORESTRY CONSULTING INC Project P2750

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1.0 Introduction

Kuntz Forestry Consulting Inc. was retained by Support House to complete a Tree Inventory and Preservation Plan as part of a proposed development application for the property located at 130 Cornwall Road in the Town of Oakville. The property is located south of Cornwall Road and west of Trafalgar Road, within a mixed-use area.

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

- Prepare an inventory of tree resources over 10cm DBH occurring 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

Field assessments for the tree inventory were conducted on 22 April 2021 and updated on 17 January 2023. Trees measuring over 10cm DBH 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 and estimates made in the field. Trees on the subject property were identified with the numbers 1 – 11, while trees located on neighbouring properties were labeled N1 – N17. During the 2023 site visit, Tree N1 was noted as having been removed.

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.
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, and crown vigour. Condition ratings include poor (P), fair (F), and good (G).
Drip Line – Crown radius (metres); and
Comments - additional relevant detail.

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 trees.

2.2 Tree Valuation

A tree valuation was calculated for Town-owned trees based on the information obtained by the tree inventory and stand tally analysis conducted in the field. 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 appraisal values less than $744.00 (Town of Oakville's minimum value per tree), their values were set to $744.00.

3.0 Existing Site Conditions

The subject property is currently occupied by a 2-storey building with an associated parking lot, amenity areas, walkways, and landscaped 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

The tree inventory documented 27 trees on and within six metres of the subject property and within the road right-of-way. Tree resources are composed of Sugar Maple (*Acer saccharum*), Green Ash (*Fraxinus pennsylvanica*), Black Walnut (*Juglans nigra*), Red Maple (*Acer rubrum*) Norway Spruce (*Picea abies*), White Spruce (*Picea glauca*), Serbian Spruce (*Picea omorika*), and Blue Spruce (*Picea pungens*). 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 demolition of the existing structures and the construction of a 5-storey building with an associated parking lot. Refer to Figure 1 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 1-11 will be required to accommodate the proposed development. Trees 1-4 directly conflict with the proposed parking lot construction. Tree 5 has a trunk that conflicts with the proposed walkway. Tree 7 conflicts with the proposed building's upper floors. Tree 11 directly conflicts with the proposed building location. Trees 6 and 8-10 require removal to accommodate the road widening and associated landscaping. Trees 6 and 8 would have been recommended for removal due to their condition, regardless of the site plan.

Trees 1, 3 – 5, and 7 are greater than 15cm DBH, therefore a permit is required prior to their removal.

6.2 Tree Preservation

Preservation of Trees N2 – N17 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 Trees N4 and N5, as their minimum Tree Protection Zones (mTPZs) do not intersect with the subject property. Special mitigation measures have been prescribed for Trees N2, N6 – N10 and N12 – N14, as described below.

Trees N6 – N10 and N12 – N14

Encroachment into the mTPZs of Tree N2, N6 – N10 and N12 – N14 will be required to accommodate the construction and grading of the proposed parking lot and the demolition of the existing fence. 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. The existing fence should be removed with minimal impact by hand within the mTPZs of Trees N2, N6 – N10 and N12 – N14. Any roots damaged through fence removal should be hand pruned by a Certified Arborist in accordance with Good Arboricultural Standards.
2. Vertical tree protection fencing should be installed around the mTPZs of Trees N2, N6 – N10 and N12 – N14, as shown in Figure 1.
3. Excavation occurring within the mTPZ's of Trees N2, N3, and N6 should occur by hand or using air spading technology, and be supervised by a certified Arborist. Exposed roots must be pruned 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 $39,888.97.

7.0 Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by Support House to complete a Tree Inventory and Preservation Plan as part of a development application for the property located at 130 Cornwall Road 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 27 trees on and within six metres of the subject property and within the right-of-way. Eleven (11) trees are recommended for removal to accommodate the site plan and / or due to 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 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.

Celine Batterink

Celine Batterink, H.B.Sc. Ecology
Associate Ecologist, ISA Certified Arborist #ON1546-A
Tree Appraisal Qualified
Phone: 289-837-1871 ext 18
Email: cbatterink@kuntzforestry.ca

Marek Toporowski

Marek Toporowski, B.A. Env. Sust., CERPIT
Restoration Ecologist, Arborist in Training
Phone: 647-688-5439
Email: mtoporowski@kuntzforestry.ca

8.0 References

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

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

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: 130 Cornwall Road, Oakville

Date: 22 April 2021, 17 January 2023 Surveyors: KD/MT

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	CDB	DL	mTPZ	A. mTPZ	Oakville Tree No.	Comments	Ownership	Action
1	Serbian Spruce	*Picea omorika*	19	F-G	F-G	F	5	2	2.4		-	Asymmetrical crown (L), deadwood (L), drooping leader	Private	Remove
2	Serbian Spruce	*Picea omorika*	22.5	F-G	F	G		2	2.4		-	Pruning wounds (L), sweep (M), drooping leader	Private	Remove
3	White Spruce	*Picea glauca*	22	F-G	G	G		2	2.4		-	Pruning wounds (M), deadwood (L)	Private	Remove
4	White Spruce	*Picea glauca*	21	F-G	G	G		2	2.4		-	Pruning wounds (M)	Private	Remove
5	White Spruce	*Picea glauca*	26.5	F-G	G	G		2.5	2.4		-	Lean (L), pruning wounds (M)	Private	Remove
6	Green Ash	*Fraxinus pennsylvanica*	8.5, 8.5, 9	F	F	G		2	2.4		-	Coppice growth from previous tree removal, multi-stem at base, three stems, pruning wounds (L), epicormic branching (M)	Private	Remove
7	Blue Spruce	*Picea pungens*	28.5	G	G	F-G	5	2	2.4		-	Pruning wounds (L), cone production (H)	Private	Remove
8	Green Ash	*Fraxinus pennsylvanica*	7-12.5	F	F	G		2.5	2.4		-	Coppice growth from previous tree removal, co-dominant stems at 0.5metres, seven stems	Private	Remove
9	Black Walnut	*Juglans nigra*	15	G	G	G		2.5	2.4		-	Co-dominant stems at 1.5 metres, epicormic branching (M)	Private	Remove
10	Green Ash	*Fraxinus pennsylvanica*	1-7	F	P-F	G		1.5	1.8		-	Coppice growth from previous tree removal	Private	Remove
11	Red Maple	*Acer rubrum*	11.5	G	G	F-G		2	2.4		-	Coppice growth (L), girdling root (L)	Private	Remove
N1	~~Sugar Maple~~	~~*Acer saccharum*~~	~~21~~	~~P-F~~	~~F-G~~	~~P~~	~~75~~	~~2.5~~	~~2.4~~		-	Tree removed	Neighbouring	Tree has been removed
N2	Sugar Maple	*Acer saccharum*	34.5	G	G	G		4	3.0	2.8	-		Neighbouring	Retain
N3	Sugar Maple	*Acer saccharum*	23.5	G	F-G	G		2.5	2.4	2.4	62244	V-shaped union at 2 metres, included bark (M)	Town	Retain
N4	Sugar Maple	*Acer saccharum*	24.5	G	G	G		3	2.4	3.4	34259	Co-dominant stems in crown	Town	Retain
N5	Sugar Maple	*Acer saccharum*	23	F-G	G	G		4	2.4	4.4	66622	Co-dominant stems in crown, divergent stems (L), broken branches (L)	Town	Retain
N6	Black Walnut	*Juglans nigra*	54.5	G	F-G	G		5	3.6	2.4	91409	Deadwood (L)	Town	Retain
N7	Sugar Maple	*Acer saccharum*	14.5, 6.5	F	F	F	20	1.5	2.4	2.5	52489	Union at 0.2 metres, included bark (L), small stem declining, cavity at base (M)	Town	Retain
N8	Sugar Maple	*Acer saccharum*	18	F-G	F-G	F-G		2	2.4	2.4	487475	Epicormic branching (L)	Town	Retain
N9	Sugar Maple	*Acer saccharum*	18	F-G	F-G	F-G		2	2.4	2.4	487476	Seam (L) from base to 0.25 metres	Town	Retain
N10	Sugar Maple	*Acer saccharum*	28.5	G	F-G	G		3.5	2.4	2.8	487477	Asymmetrical crown (L)	Town	Retain
N11	Blue Spruce	*Picea pungens*	~25	G	G	G		2	2.4	2.6	82217		Town	Retain
N12	Blue Spruce	*Picea pungens*	~21	F-G	G	F-G	10	1.5	2.4	2.4	19041	Sparse crown (L)	Town	Retain
N13	Blue Spruce	*Picea pungens*	~24	G	G	G		2	2.4	2.9	26459		Town	Retain
N14	Norway Spruce	*Picea abies*	~23	F-G	G	F-G	10	2	2.4	2.4	9968	Branch tip dieback (L)	Town	Retain
N15	Blue Spruce	*Picea pungens*	~22.5	G	G	G		2	2.4	5.4	104309		Town	Retain
N16	Norway Spruce	*Picea abies*	~18.5	F	F-G	F	15	2	2.4	5.8	110779	Sparse crown (M), chlorosis (L)	Town	Retain
N17	Norway Spruce	*Picea abies*	~24	G	G	F-G		3	2.4	4.4	78174	Chlorosis (L)	Town	Retain

Codes		
DBH	Diameter at Breast Height	*(cm)*
TI	Trunk Integrity	*(G, F, P)*
CS	Crown Structure	*(G, F, P)*
CV	Crown Vigor	*(G, F, P)*
CDB	Crown Die Back	*(%)*
DL	Dripline	*(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

130 Cornwall Road, 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 (%)*			
N3	Sugar Maple	23.5	F-G	434	6.51	2823.63	0.75	0.9	1	$ 1,905.95	$ 744.00	$ 1,905.95
N4	Sugar Maple	24.5	G	471	6.51	3069.05	0.9	0.9	1	$ 2,485.93	$ 744.00	$ 2,485.93
N5	Sugar Maple	23	F-G	415	6.51	2704.75	0.75	0.9	1	$ 1,825.71	$ 744.00	$ 1,825.71
N6	Black Walnut	54.5	F-G	2333	6.51	15186.75	0.75	0.8	1	$ 9,112.05	$ 744.00	$ 9,112.05
N7	Sugar Maple	14.5, 6.5	F	1659	6.51	10800.09	0.5	0.9	1	$ 4,860.04	$ 744.00	$ 4,860.04
N8	Sugar Maple	18	F-G	254	6.51	1656.60	0.75	0.9	1	$ 1,118.20	$ 744.00	$ 1,118.20
N9	Sugar Maple	18	F-G	254	6.51	1656.60	0.75	0.9	1	$ 1,118.20	$ 744.00	$ 1,118.20
N10	Sugar Maple	28.5	F-G	638	6.51	4153.00	0.75	0.9	1	$ 2,803.27	$ 744.00	$ 2,803.27
N11	Blue Spruce	25	G	491	6.51	3195.60	0.9	1	1	$ 2,876.04	$ 744.00	$ 2,876.04
N12	Blue Spruce	21	F-G	346	6.51	2254.81	0.75	1	1	$ 1,691.11	$ 744.00	$ 1,691.11
N13	Blue Spruce	24	G	452	6.51	2945.06	0.9	1	1	$ 2,650.56	$ 744.00	$ 2,650.56
N14	Norway Spruce	23	F-G	415	6.51	2704.75	0.75	1	1	$ 2,028.56	$ 744.00	$ 2,028.56
N15	Blue Spruce	22.5	G	398	6.51	2588.43	0.9	1	1	$ 2,329.59	$ 744.00	$ 2,329.59
N16	Norway Spruce	18.5	F	269	6.51	1749.91	0.5	1	1	$ 874.95	$ 744.00	$ 874.95
N17	Norway Spruce	24	F-G	452	6.51	2945.06	0.75	1	1	$ 2,208.80	$ 744.00	$ 2,208.80
												$ 39,888.97

Appendix A. Photographs of Trees

Image 1. Trees 1 (left) and 3 (right)

Image 2. Tree 2 (centre)

Image 3. Trees 4 (left) and 5 (right)

Image 4. Tree 6

Image 5. Tree 7

Image 6. Tree 8


Image 7. Tree 9


Image 8. Tree 10

Image 9. Tree 11

Image 10. Stump of Tree N1

Image 11. Tree N2

Image 12. Tree N3


Image 13. Tree N4 (centre)


Image 14. Tree N5 (centre)

Image 15. Tree N6

Image 16. Trees N7-N10 (right to left)

Image 17. Trees N11 (left) and N12 (right)

Image 18. Trees N15 (centre right) and N16 (centre left)

Image 19. Trees N14 (left) and N17 (right)

(Note: view of Tree N13 obstructed by Trees N14-N17)