Tree Inventory & Preservation Plan Report
1396 Guelph Line
Burlington, Ontario

prepared for

Infinity Development Group
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Oakville, Ontario L6H 0C3

prepared by

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KUNTZ FORESTRY CONSULTING Inc. Project P3170

Introduction

Kuntz Forestry Consulting Inc. was retained by Infinity Development Group to complete a Tree Inventory and Preservation Plan report in support of a proposed development for the property located at 1396 Guelph Line in the City of Burlington, Ontario. The subject property is located on the south side of Guelph Line, east of St. Frances Drive, and west of Mt. Forest Drive, within a mixed-use area.

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

- Prepare inventory of the tree resources greater than 10cm diameter at breast height (DBH) 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 plans; and,
- Document the findings in a Tree Inventory and Preservation Plan report.

The results of the evaluation are provided below.

Methodology

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 included in the tree inventory. Tree were located using the topographic survey provided and estimations made from known points in the field. Trees located on the subject property and within the road right-of-way were identified as Trees 353 – 373, and 375 – 377. Trees greater than 10cm DBH were tagged with their identification numbers. Trees smaller than 10cm DBH were not tagged and were denoted with "NT" before their identification number. Trees located on neighbouring properties were not tagged and were identified as Trees A – J.

Tree resources were visually assessed for condition 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 (centimeters) at breast height, measured at 1.4 m 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.
Comments – Any other relevant tree condition information.

One tree polygon (group of trees), P374, was also identified. Trees within a tree polygon were inventoried using a 100% tally analysis by species, size class, and quality. Trees with a DBH of 10cm or greater were included in the stand tally analysis. Trees were assessed utilizing the following parameters:

Species – Common and botanical names provided in the inventory table.
Size Class (DBH) – 10 – 25 cm, 26 – 37 cm, 38 – 49 cm, and 50 cm and above
Quality Class: Acceptable Growing Stock (AGS), Unacceptable Growing Stock (UGS)

Trees classified as AGS are trees with no major defects in the bole and a relatively good crown structure and vigour. Trees classified as UGS are trees with a major defect in the bole and / or those exhibiting a relatively poor crown structure or vigour.

Refer to Table 1 and Table 2 for the detailed tree inventory. See Figure 1 for tree locations.

Existing Site Conditions

The subject property is currently occupied by a one-storey brick building and an asphalt parking area. A treed area exists on the south side of the property. Tree resources exist in the form of landscape trees and natural regeneration. Refer to Figure 1 for the existing site conditions.

Individual Tree Resources

The tree inventory was conducted on 24 February 2022. The inventory documented 34 individual trees and one tree polygon on and within six metres of the subject property.

Tree resource was comprised of Basswood (*Tilia americana*), Bur Oak (*Quercus macrocarpa*), Eastern Red Cedar (Juniper) (*Juniperus virginiana*), Eastern White Cedar (*Thuja occidentalis*), Japanese Flowering Lilac (*Syringa reticulata*), Little-leaf Linden (*Tilia cordata*), Norway Maple (*Acer platanoides*), Red Maple (*Acer rubrum*), Red Oak (*Quercus rubra*), Shagbark Hickory (*Carya ovata*), Silver Maple (*Acer saccharinum*), White Elm (*Ulmus americana*), and White Mulberry (*Morus alba*).

Refer to Table 1 and Table 2 for the complete tree inventory and Figure 1 for the location of trees reported in the tree inventory.

Proposed Development

The proposed development includes the demolition of the existing building and parking area, and the construction of a 19-storey mixed-use building with an associated subsurface parking garage. Refer to Figure 1 for the proposed development.

Discussion

The following sections provide a discussion and analysis of tree impacts and tree preservation relative to the proposed work and existing conditions.

Development Impacts/Tree Removal

The removal of 22 trees and one tree polygon, including Trees 355 – 373 and 375 – 377, and Polygon P374 will be required to accommodate the proposed site plan. Tree 357 is located within the road right-of way. All other trees identified for removal are located within the boundaries of the subject property. Refer to Figure 1 for the location of the proposed tree removals.

Tree Preservation

The preservation of the remaining 12 trees, including Trees 353, 354, and A – J, 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 demolition to ensure tree resources designated for retention are not impacted by the proposed work. Refer to Figure 1 for the location

of required tree preservation fencing and general Tree Protection Plan Notes and tree preservation fence details.

Where the minimum tree protection zones (mTPZs) and critical root zones (CRZs) of tree cannot be fully respected, special mitigation measures have been prescribed, including for Tree F, and are described below.

Tree F

Minor encroachment (~10%) into the critical root zone (CRZ) of Tree F is required to accommodate the excavation for the proposed subsurface parking garage. If the following protection and mitigation measures are employed before, during and after construction, long-term adverse effects are not anticipated for this tree.

1. Prior to the commencement of the proposed work, tree protection fencing should be installed as show on Figure 1.
2. Airspading technology or a hydro vacuum unit should be used to excavate a trench at the limit of excavation of the proposed subsurface parking garage within the CRZ of Tree F, as shown in Figure 1 with solid cyan.
3. The depth of the trench shall be at least 300mm.
4. The roots of Tree F are to be pruned inside the trench by a Certified Arborist in accordance with Good Arboricultural Standards.
5. The trench is to be backfilled with clean topsoil.
6. All works should be supervised by a Certified Arborist in accordance with Good Arboricultural Standards.
7. Branches that extend into the proposed development and require pruning must be pruned by a Certified Arborist or other tree professional in accordance with Good Arboricultural Standards.

Tree Compensation

The City of Burlington requires compensation for the removal of healthy private trees at a rate of one tree for every 10cm of diameter being removed, while healthy public trees are compensated at a rate of one tree for every 5cm of diameter being removed. Trees categorized as acceptable growing stock (AGS) within Polygon P374 were accounted for in the compensation calculation. As such, a total of 60 compensation plantings is required. If compensations cannot be accommodated, cash-in-lieu at a rate of $400 per replacement tree is required. Refer to Table 1 for the number of compensation trees required for each tree / tree polygon removal.

Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by Infinity Development Group to complete a Tree Inventory and Preservation Plan for the proposed development at 1396 Guelph Line in Burlington, Ontario. A tree inventory was conducted and reviewed in the context of the proposed site plan.

The findings of the study indicate a total of 34 trees and one tree polygon on and within six metres of the subject property. The removal of 22 trees and one tree polygon is required to accommodate the proposed development. All other trees can be saved provided proper tree protection fencing is installed as shown on Figure 1.

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 for tree protection fencing locations and general Tree Protection Plan Notes and tree preservation fence details.

- 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.

- Special mitigation measures have been prescribed for select trees and are outlined in the *Tree Preservation* section of this report.

- 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 are 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,

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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 (ie. 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: 1396 Guelph Line, Burlington

Date: 24 February 2022 Surveyors: KNH

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	CDB	S/H Rating	mTPZ	Encr. mTPZ	CRZ	Encr. CRZ	Comments	Owner	Action	Comp.
NT353	Basswood	*Tilia americana*	<5	G	G	G		90	1.8	0	1.8	0		City	Preserve	-
NT354	Red Maple	*Acer rubrum*	<5	FG	G	G		72.5	1.8	0	1.8	0	Bow (L)	City	Preserve	-
355	Lilac, Japanese Flowering	*Syringa reticulata*	~5 - 10	PF	F	F		37.5	1.8	-	1.8	-	Average DBH = 10cm, union at 0.1m with decay (H), v-unions at 1m and 2m, pruning wounds (M)	Private	Remove	0
356	Norway Maple	*Acer platanoides*	32	P	P	P	50	20	2.4	-	4	-	Stem wounds (H), lean (L), v-union at 1.5m with included bark, decay (H) below union, deadwood (M), sweep (M), broken branches (M)	Private	Remove	0
357	Bur Oak	*Quercus macrocarpa*	35	G	F	F	30	55	2.4	-	4	-	Asymmetrical crown (L), deadwood (M)	City	Remove	7
358	Bur Oak	*Quercus macrocarpa*	44	G	G	FG		72.5	3	-	5	-	Epicormic branching (L)	Private	Remove	4
359	Bur Oak	*Quercus macrocarpa*	44	G	FG	FG		72.5	3	-	5	-	Asymmetrical crown (L), epicormic branching (L)	Private	Remove	4
360	Shagbark Hickory	*Carya ovata*	19, 18, 15	F	F	G		55	2.4	-	4	-	V-union at base (codominance)	Private	Remove	3
361	Bur Oak	*Quercus macrocarpa*	35	G	FG	FG		72.5	2.4	-	4	-	Asymmetrical crown (L), epicormic branching (L)	Private	Remove	3
362	Bur Oak	*Quercus macrocarpa*	15	F	PF	P		20	2.4	-	4	-	V-union at 2m with one lost leader, epicormic branching (M)	Private	Remove	0
363	Shagbark Hickory	*Carya ovata*	35	G	F	F	15	55	2.4	-	4	-	Broken branches (L), deadwood (L)	Private	Remove	3
364	Bur Oak	*Quercus macrocarpa*	52	G	G	G		90	3.6	-	6	-		Private	Remove	5
365	Bur Oak	*Quercus macrocarpa*	60	G	F	PF	20	37.5	3.6	-	6	-	Epicormic branching (M), deadwood (L)	Private	Remove	0
366	White Elm	*Ulmus americana*	26	FG	PF	PF	30	37.5	2.4	-	4	-	Bow (L), asymmetrical crown (L), deadwood (M), broken branches (L)	Private	Remove	0
367	Eastern White Cedar	*Thuja occidentalis*	~22	FG	F	F	20	55	2.4	-	4	-	Dead top, deadwood (L), lean (L)	Private	Remove	2
368	Silver Maple	*Acer saccharinum*	37	PF	F	F	15	37.5	2.4	-	4	-	Lean (H), epicormic branching (L), broken branches (L), deadwood (L)	Private	Remove	0
369	White Mulberry	*Morus alba*	18.5, 16	F	F	F	20	55	2.4	-	4	-	V-union at 1m with included bark, poor form (L), broken branches (L), deadwood (L)	Private	Remove	2
370	White Mulberry	*Morus alba*	11	F	F	FG		55	2.4	-	4	-	Bow (L), poor form (L), crook (M)	Private	Remove	1
371	Eastern Red Cedar (Juniper)	*Juniperus virginiana*	~15	F	F	F		55	2.4	-	4	-	Lean (L), stem wounds (L), asymmetrical crown (M)	Private	Remove	1
372	Shagbark Hickory	*Carya ovata*	28	G	G	G		90	2.4	-	4	-		Private	Remove	3
373	Shagbark Hickory	*Carya ovata*	17, 15, 15	F	FG	G		55	2.4	-	4	-	V-union at base (codominance) with included bark, asymmetrical crown (L)	Private	Remove	3
P374	See Table 2													Private	Remove	7
375	Shagbark Hickory	*Carya ovata*	32, 22.5	F	FG	G		55	2.4	-	4	-	V-union at 0.2m (codominance) with included bark	Private	Remove	4
376	Red Oak	*Quercus rubra*	84	F	FG	G		55	5.4	-	9	-	V-union at 0.5m (codominance) with included bark	Private	Remove	8
377	Norway Maple	*Acer platanoides*	12, 12, 12	PF	PF	PF	55	37.5	2.4	-	4	-	V-union at base with included bark, one dead leader, union at 1m, deadwood (M), included chain (H) at base	Private	Remove	0
A	Silver Maple	*Acer saccharinum*	28, 25, 20	F	F	F	10	55	2.4	0	4	0	V-union at 0.1m (codominance), deadwood (L), broken branches (L)	Neighbour (Hydro Corridor)	Preserve	-
B	Little-leaf Linden	*Tilia cordata*	18	PF	F	PF		37.5	2.4	0	4	0	Stem wounds (H) with decay (H), poor unions, pruning wounds (L)	Neighbour (1380 Guelph Line)	Preserve	-

C	Little-leaf Linden	*Tilia cordata*	19	PF	F	PF		37.5	2.4	0	4	0	Stem wounds (H) with decay (H), poor unions, pruning wounds (L)	Neighbour (1380 Guelph Line)	Preserve	-
D	Little-leaf Linden	*Tilia cordata*	20	F	PF	PF	30	37.5	2.4	0	4	0	Stem wounds (L) with decay (M), deadwood (M), pruning wounds (M)	Neighbour (1380 Guelph Line)	Preserve	-
E	Little-leaf Linden	*Tilia cordata*	20	PF	F	F		37.5	2.4	0	4	0	Stem wounds (M) with decay (L), pruning wounds (M), poor unions	Neighbour (1380 Guelph Line)	Preserve	-
F	Little-leaf Linden	*Tilia cordata*	21.5	FG	F	F		55	2.4	0	4	10	Pruning wounds (M), poor unions	Neighbour (1380 Guelph Line)	Injure	-
G	Little-leaf Linden	*Tilia cordata*	19	P	F	PF		37.5	2.4	0	4	0	Asymmetrical crown (L), poor unions, bow (L), stem wounds (H) with decay (H)	Neighbour (1380 Guelph Line)	Preserve	-
H	Little-leaf Linden	*Tilia cordata*	19	F	FG	F		55	2.4	0	4	0	Asymmetrical crown (L), poor unions, stem wounds (L)	Neighbour (1380 Guelph Line)	Preserve	-
I	Little-leaf Linden	*Tilia cordata*	21	F	F	F		55	2.4	0	4	0	Stem wounds (H), exposed roots (L), lean (L), poor unions	Neighbour (1380 Guelph Line)	Preserve	-
J	Little-leaf Linden	*Tilia cordata*	25	FG	F	F		55	2.4	0	4	0	Poor unions	Neighbour (1380 Guelph Line)	Preserve	-

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 Dieback	(%)
S/H Rating	Structural / Health Rating	(%)
Owner	Ownership of Tree	City, Private, Neighbour
mTPZ	Minimum Tree Protection Zone, as measured from edge of tree	(m)
Encr. mTPZ	Amount of Encroachment into the Minimum Tree Protection Zone	(%)
CRZ	Critical Root Zone	(m)
Encr. CRZ	Amount of Encroachment into the Critical Root Zone	(%)
Comp.	Compensation	# of trees
P = poor, F = fair, G = good, ~ = estimate, (VL) = very light, (L) = light, (M) = moderate, (H) = heavy		

Table 2. Stand Tally Analysis

P374 - Stand Tally Analysis

Tree Size Class >	Polewood (10 - 25cm)		Small (26 - 37cm)		Medium (38 - 49cm)		Large (50cm +)		Total All Sizes	
Species	***AGS***	***UGS***	***AGS***	***UGS***	***AGS***	***UGS***	***AGS***	***UGS***	***AGS***	***UGS***
Shagbark Hickory (*Carya ovata*)	0	1	0	0	0	0	0	0	***0***	***1***
Red Oak (*Quercus rubra*)	0	4	1	6	0	0	0	0	***1***	***10***
Bur Oak (*Quercus macrocarpa*)	0	2	0	0	1	0	0	0	***1***	***2***
Total Number of Trees	***0***	***7***	***1***	***6***	***1***	***0***	***0***	***0***	***2***	***13***