Tree Inventory & Preservation Plan Report
2105 Headon Road
Burlington, Ontario

prepared for

JEC Developments Inc.
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prepared by

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KUNTZ FORESTRY CONSULTING INC. Project P3411

Introduction

Kuntz Forestry Consulting Inc. (KFCI) was retained by JEC Developments Inc. to complete a Tree Inventory and Preservation Plan report as part of a development application for the property located at 2105 Headon Road in the City of Burlington, Ontario. The subject site is located northwest of the intersection of Headon Road and Upper Middle Road, south of CH Norton Public School and bordered on the northeast and southeast by Cleaver Park. The surrounding area is residential.

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

- Prepare an inventory of tree resources on and within six metres of the subject property with the potential to be impacted;
- Evaluate potential tree saving opportunities based on proposed development plans;
- Document the findings in a Tree Inventory and Preservation Plan report.

The results of the evaluation are provided below.

Policy Framework

The City of Burlington By-law 02-2020 (Private Tree By-law) applies to trees with a diameter at breast height (1.37m above grade) greater than 20cm growing on private property within the Urban Planning Boundary of the City of Burlington. The subject site occurs within the Urban Planning Boundary and as such, the trees located on private lands on and adjacent to the subject site are subject to the provisions of this by-law.

Additionally, the City of Burlington By-law 68-2013 (Public Tree By-law) applies to trees of all sizes located on public property, including within the road right-of-way.

Methodology

The tree inventory was conducted on 14 September 2022 and 23 August 2023. During the 2022 tree inventory, trees interior the site (within the disturbance limit), had been identified by 100% tally to inform compensation requirement. During the 2023 site visit, all trees were assessed individually, following discussions and reporting regarding woodland status and dripline location (prepared under separate cover).

Trees greater than 10cm DBH on the subject and those of all sizes within six metres of the subject property with the potential to be impacted have been included in the tree inventory. Trees were identified using the topographic survey provided and KFCI's Trimble GPS unit, accurate to ±40cm. Trees that could be tagged were numbered 201, 202, 389, 560-601, 606, 608-633, and 692-697. Trees occurring on neighbouring lands/those that could not be tagged are identified as Trees A-Z and AA-AP. Two polygons (groups of trees) were identified as P1 and P2.

P1 was identified by 100% tally. This polygon is located below the top-of-bank, southwest of the proposed development. This tally recorded species, general condition (acceptable growing stock [AGS] or unacceptable growing stock [UGS]), and size class, which was based off the size class distribution that the City of Burlington uses to calculate compensation tree requirements.

Refer to Figure 1 for tree locations, Table 1 for the results of the individual tree inventory, and Table 2 for the results of the 100% tally of P1.

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

Tree # – Number or letter 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 1.37 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 in the crown.
Dripline – Crown radius (metres).
Comments – Any other relevant tree condition information. Defects are rated light (L), moderate (M), or heavy (H).

Existing Site Conditions

The subject site is currently comprised of a single-storey brick house, detached brick garage, and associated gravel driveway. Two (2) small, metal-sided sheds are situated on the northwest and southeast sides of the backyard, and tree resources exist primarily in the form of remnant mature hardwoods that would have regenerated naturally at the time of the establishment of Cleaver Park Forest, which abuts the property to the northeast, east, and south. Additionally, several landscape trees and beds of ornamental shrubs are planted near the existing dwelling. Refer to Figure 1 for existing site conditions.

Individual Tree Resources

The individual tree inventory documented 118 individual trees and two tree polygons. Refer to Table 1 for full results of the individual tree inventory, Table 2 for full results of the 100% tally, and Figure 1 for the location of trees recorded in this study. See Appendix A for photos of trees.

Tree resources were comprised of Shagbark Hickory (*Carya ovata*), Sugar Maple (*Acer saccharum*), White Oak (*Quercus alba*), Red Oak (*Quercus rubra*), White Elm (*Ulmus americana*), Ironwood (*Ostrya virginiana*), Manitoba Maple (*Acer negundo*), Black Cherry (*Prunus serotina*), Red Maple (*Acer rubrum*), Bur Oak (*Quercus macrocarpa*), White Birch (*Betula papyrifera*), White Pine (*Pinus strobus*), and Apple species (*Malus spp*.).

Proposed Development

The proposed development involves the demolition of all existing structures and the construction of one row of townhomes containing eight units total. The existing asphalt driveway will be removed and a new asphalt driveway providing access to Headon Road will be constructed. Refer to Figure 1 for the proposed site plan.

Discussion

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

Development Impacts/Tree Removal

The removal of Trees 201, 577, 578, 597-599, 601, 608-632, 697, C-E, G, K-W, and P2 will be required to accommodate the proposed development. These trees are either in direct conflict with the locations of proposed structures or hardscape or are situated in such proximity that their survival or recovery cannot be reasonably expected. Refer to Table 1 for the removal details for each specific tree.

Trees 578, C-E, G, M-W, and P2 are located partially or fully within Cleaver Park. These trees are identified for removal as there is a servicing connection and retaining wall proposed along the northern boundary, well into the minimum tree protection zones (mTPZ's) of these trees. We would not expect them to tolerate this level of intrusion.

Trees 577, K, and L are located partially or fully within the City road right-of-way. Tree L is identified for removal as it conflicts with the entrance/servicing connection. Trees K and 577 are identified for removal as disturbance for the armourstone retaining wall extension through this area is too far into their mTPZ's.

Refer to Figure 1 for the locations of trees identified for removal.

Tree Preservation

The preservation of Trees 202, 389, 560-576, 579-596, 600, 606, 633, 692-695, A, B, F, H-J, X-Z, AA-AP, and P1 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 commencement of the proposed works 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.

Where the minimum tree protection zone (mTPZ) and / or critical root zone (CRZ) of a tree cannot be fully respected, special mitigation measures have been prescribed and are outlined below.

<u>mTPZ or CRZ Intrusion</u>

Encroachment into the mTPZ's and/or CRZ's of Trees 202, 571, 572, 574, 575, 579, 592, 593, 600, 692, 693, and A is required to accommodate excavation for servicing connections, the driveway, catchbasins/manholes, grading, and the retaining wall extension in the road right-of-way. If the following mitigation measures are followed, long-term adverse effects are not anticipated for these trees.

1. Prior to the commencement of the proposed work, tree preservation fencing should be installed as show on Figure 1.
2. Air-spading technology or a low-pressure hydro-vacuum unit should be used to excavate trenches at the locations shown on Figure 1 with solid cyan.
3. The depth of the trenches should be a minimum of 90cm.
4. Any roots found inside the trenches are to be pruned by a Certified Arborist in accordance with Good Arboricultural Standards.
5. The trenches are 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.

In the northwest corner of the site, there is an existing retaining wall that will remain. Trees 560-577, A, B, and K are located above this retaining wall. We would not expect substantial roots to be growing beyond this retaining wall; as such, the preservation fencing is specified at the retaining wall limit, and any work occurring south of here does not constitute tree injury. There is work occurring east of the retaining wall (for a new catchbasin/manhole), and there is an armourstone extension proposed northwest of the retaining wall (along Headon Road). Installation of these features does constitute injury as they are proposed in areas where there is no existing retaining wall. Calculation of mTPZ and CRZ encroachment as specified in Table 1 does not include the portions of the mTPZ and CRZ that are south of the existing retaining wall.

Tree Compensation

The City of Burlington requires replacement trees for any by-law protected tree removal. The ratio of required replacement plantings per tree is presented below:

Trunk Diameter (DBH) of Removed Tree	Compensation Ratio
20 - 35 cm	2:1
36 - 74 cm	3:1
≥ 75 cm	4:1

Therefore, a total of 83 replacement trees are required on the subject property. If the required replacement trees cannot be planted on the subject property, cash-in-lieu payments may be accepted at the City's discretion. Refer to Table 1 for the number of replacement trees required per individual tree removal.

Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by JEC Developments Inc. to complete a Tree Inventory and Preservation Plan report as part of a development application for the property located at 2105 Headon Road in the City of 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 118 trees and two tree polygons on and adjacent to the subject property. The removal of 50 trees and one tree polygon will be required to accommodate the proposed development. The remaining trees can be saved with the use of appropriate tree protection measures, as specified on Figure 1.

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 for tree preservation fencing locations, 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, as 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,

Kuntz Forestry Consulting Inc.

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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 locations in the report may not be exact. Where KFCI's in-house GPS unit is used (if applicable), tree locations are accurate only to the extent that the technology allows, which can be variable based on satellite available, RTK network / cell coverage, canopy coverage, and/or projection transformation limitations. 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. Inventory

Location: 2105 Headon Road, Burlington

Date: 14 September 2022 and 23 August 2023

Surveyor: KB, IB

Tree #	Common Name	Scientific Name	DBH	Multistem DBH	TI	CS	CV	S/H Rating	DL	CDB	mTPZ	Encr. mTPZ	CRZ	Encr. CRZ	Comments	Owner	Action	Reason for Removal or Injury	Comp.
201	Ironwood	*Ostrya virginiana*	17	-	G	G	G	90%	4	-	2.4		4.0		Sweep (L), Epicormic branching (L)	Subject Property	Remove	Significant mTPZ intrusion for driveway	0
202	Shagbark Hickory	*Carya ovata*	29	-	G	G	G	90%	5	-	2.4	5%	4.0	17%	Crook (L)	Subject Property	Retain (injure)	mTPZ intrusion for driveway	
389	Sugar Maple	*Acer saccharum*	21	-	G	G	G	90%	4		2.4	0%	4.0	0%		Cleaver Park	Retain		
560	Shagbark Hickory	*Carya ovata*	34.5	-	G	G	G	90%	3.5		2.4	0%	4.0	0%		Subject Property	Retain		
561	Shagbark Hickory	*Carya ovata*	18	-	G	G	G	90%	2		2.4	0%	4.0	0%		Subject Property	Retain		
562	Sugar Maple	*Acer saccharum*	13	-	G	G	G	90%	3		2.4	0%	4.0	0%		Subject Property	Retain		
563	Sugar Maple	*Acer saccharum*	16.5	-	G	F-G	G	73%	2		2.4	0%	4.0	0%	Asymmetrical crown (L)	Subject Property	Retain		
564	Sugar Maple	*Acer saccharum*	15	-	F	F	F-G	55%	2		2.4	0%	4.0	0%	Trunk injury (M), Asymmetrical crown (M), Crook (M)	Subject Property	Retain		
565	Sugar Maple	*Acer saccharum*	20	-	G	F-G	G	73%	3.5		2.4	0%	4.0	0%	Poor form (L)	Subject Property	Retain		
566	Sugar Maple	*Acer saccharum*	15.5	-	G	F	F	55%	3		2.4	0%	4.0	0%	Poor form (M), Asymmetrical crown (M)	Subject Property	Retain		
567	Sugar Maple	*Acer saccharum*	13	-	G	G	G	90%	2		2.4	0%	4.0	0%		Subject Property	Retain		
568	Ironwood	*Ostrya virginiana*	11.5	-	G	F-G	G	73%	2		2.4	0%	4.0	0%	Asymmetrical crown (L)	Subject Property	Retain		
569	Ironwood	*Ostrya virginiana*	10, 5	11.2	G	F	G	55%	1		2.4	0%	4.0	0%	Co-dominant 1m, Asymmetrical crown (M)	Subject Property	Retain		
570	Serviceberry	*Amelanchier sp.*	6.5, 4	7.6	F	F	F	55%	1		1.8	0%	1.8	0%	Co-dominant base, Lean (M), Poor form (M)	Subject Property	Retain		
571	Sugar Maple	*Acer saccharum*	19, 18.5, 11	28.7	F-G	F-G	F-G	73%	3.5		2.4	1%	4.0	13%	Co-dominant base	Subject Property	Retain (injure)	mTPZ intrusion for retaining wall extension	
572	Ironwood	*Ostrya virginiana*	12	-	F-G	P-F	F-G	38%	2		2.4	10%	4.0	26%	Bowed (M), Lean (M), Union at 2.2m	Subject Property	Retain (injure)	mTPZ intrusion for retaining wall extension	

Tree #	Common Name	Scientific Name	DBH	Multistem DBH	TI	CS	CV	S/H Rating	DL	CDB	mTPZ	Encr. mTPZ	CRZ	Encr. CRZ	Comments	Owner	Action	Reason for Removal or Injury	Comp.
573	Sugar Maple	*Acer saccharum*	8.5	-	F-G	F	G	55%	1.5		1.8	0%	1.8	0%	Lean (L), Poor form (M)	Subject Property	Retain		
574	Ironwood	*Ostrya virginiana*	12.5	-	F	F	F-G	55%	2.5		2.4	2%	4.0	18%	Exposed roots (M), union at 2m, Poor form (M)	Subject Property	Retain (injure)	mTPZ intrusion for retaining wall extension	
575	Shagbark Hickory	*Carya ovata*	16.5	-	G	F-G	G	73%	3		2.4	11%	4.0	23%	Asymmetrical crown (M)	Subject Property	Retain (injure)	mTPZ intrusion for retaining wall extension	
576	Ironwood	*Ostrya virginiana*	6	-	G	F	G	55%	1		1.8	0%	1.8	0%	Asymmetrical crown (M), Union at 2.2m	Subject Property	Retain		
577	Bur Oak	*Quercus macrocarpa*	20	-	F-G	P-F	F-G	38%	4		2.4		4.0		Bowed (H), Exposed roots (L)	Shared (subject property/ROW)	Remove	significant mTPZ intrusion for retaining wall extension	2
578	White Elm	*Ulmus americana*	4, 4, 4	28.7	P	P	F-G	20%	1		2.4		4.0		Co-dominant base, ingrown fence, Poor form (H), growing from stump on adjacent property	Shared (subject property/Cleaver Park)	Remove	significant mTPZ intrusion for swale/grading	2
579	Shagbark Hickory	*Carya ovata*	24	-	G	F-G	G	73%	3		2.4	6%	4.0	12%	Bowed (L)	Shared (subject property/Cleaver Park)	Retain (injure)	mTPZ intrusion for swale/grading	
580	American Beech	*Fagus grandifolia*	21	-	F	F	F	55%	2.5		2.4	0%	4.0	0%	Lean (L), Poor form (M)	Cleaver Park	Retain		
581	Sugar Maple	*Acer saccharum*	14	-	G	G	G	90%	1.5		2.4	0%	4.0	0%		Cleaver Park	Retain		
582	Sugar Maple	*Acer saccharum*	18	-	G	G	G	90%	4		2.4	0%	4.0	0%		Cleaver Park	Retain		
583	Red Oak	*Quercus rubra*	31	-	G	F	G	55%	5		2.4	0%	4.0	0%	Asymmetrical crown (L), Crook (M)	Cleaver Park	Retain		
584	Sugar Maple	*Acer saccharum*	19	-	F-G	G	G	73%	2		2.4	0%	4.0	0%	Exposed roots (L)	Cleaver Park	Retain		
585	Sugar Maple	*Acer saccharum*	18	-	G	G	G	90%	2.5		2.4	0%	4.0	0%		Cleaver Park	Retain		
586	Sugar Maple	*Acer saccharum*	18	-	G	F-G	G	73%	2.5		2.4	0%	4.0	0%	Asymmetrical crown (L)	Cleaver Park	Retain		
587	Sugar Maple	*Acer saccharum*	27	-	G	F-G	G	73%	4		2.4	0%	4.0	0%	Asymmetrical crown (L)	Cleaver Park	Retain		
588	Shagbark Hickory	*Carya ovata*	34.5	-	G	G	G	90%	3.5		2.4	0%	4.0	0%		Cleaver Park	Retain		
590	Norway Maple	*Acer platanoides*	3	-	F-G	F	G	55%	0.5		1.8	0%	1.8	0%	Lean (L), bowed (M)	Cleaver Park	Retain		
591	Sugar Maple	*Acer saccharum*	12.5	-	G	G	G	90%	1.5		2.4	0%	4.0	0%		Cleaver Park	Retain		

Tree #	Common Name	Scientific Name	DBH	Multistem DBH	TI	CS	CV	S/H Rating	DL	CDB	mTPZ	Encr. mTPZ	CRZ	Encr. CRZ	Comments	Owner	Action	Reason for Removal or Injury	Comp.
592	Sugar Maple	*Acer saccharum*	22	-	F-G	F	G	55%	4		2.4	0%	4.0	1%	Exposed roots (L), Poor form (M)	Subject Property	Retain (injure)	CRZ intrusion for grading	
593	Red Oak	*Quercus rubra*	54	-	F-G	F-G	G	73%	8		3.6	3%	6.0	10%	Exposed roots (L), RI(L), Lean (L)	Subject Property	Retain (injure)	mTPZ intrusion for grading	
594	Sugar Maple	*Acer saccharum*	10	-	G	F-G	G	73%	1.5		2.4	0%	4.0	0%	Asymmetrical crown (L)	Cleaver Park	Retain		
595	Sugar Maple	*Acer saccharum*	12	-	F	G	G	55%	3.5		2.4	0%	4.0	0%	Exposed roots (H)	Subject Property	Retain		
596	Basswood	*Tilia americana*	9, 6	10.8	F-G	P-F	G	38%	1.5		2.4	0%	4.0	0%	Co-dominant 1.2m, Poor form (H), Crook (M)	Subject Property	Retain		
597	Shagbark Hickory	*Carya ovata*	57	-	G	F-G	G	73%	8.5		3.6		6.0		Co-dominant 5m	Subject Property	Remove	direct conflict with proposed laneway	3
598	Sugar Maple	*Acer saccharum*	29.5	-	F-G	G	G	73%	4		2.4		4.0		Exposed roots (L)	Subject Property	Remove	direct conflict with proposed grading	2
599	Sugar Maple	*Acer saccharum*	30	-	G	G	G	90%	4.5		2.4		4.0			Subject Property	Remove	direct conflict with proposed house/grading	2
600	Sugar Maple	*Acer saccharum*	48	-	F-G	F-G	G	73%	4.5		3.0	0%	5.0	13%	Lean (L), Co-dominant 4m	Subject Property	Retain (injure)	CRZ intrusion for grading	
601	Shagbark Hickory	*Carya ovata*	33.5	-	G	G	G	90%	4		2.4		4.0			Subject Property	Remove	direct conflict with proposed house	2
606	Red Oak	*Quercus rubra*	27	-	G	F-G	G	73%	3.5		2.4	0%	4.0	0%	Asymmetrical crown (L), anthracnose (L)	Subject Property	Retain		
608	Shagbark Hickory	*Carya ovata*	31	-	G	G	G	90%	4.5		2.4		4.0			Subject Property	Remove	significant mTPZ intrusion for proposed laneway	2
609	Bur Oak	*Quercus macrocarpa*	71	-	G	F-G	G	73%	6.5		4.8		8.0			Subject Property	Remove	significant mTPZ intrusion for proposed laneway	3

Tree #	Common Name	Scientific Name	DBH	Multistem DBH	TI	CS	CV	S/H Rating	DL	CDB	mTPZ	Encr. mTPZ	CRZ	Encr. CRZ	Comments	Owner	Action	Reason for Removal or Injury	Comp.
610	Red Oak	*Quercus rubra*	29	-	G	F-G	G	73%	5		2.4		4.0		Asymmetrical crown (L)	Subject Property	Remove	significant mTPZ intrusion for proposed laneway	2
611	Shagbark Hickory	*Carya ovata*	37.5	-	G	F	G	55%	4.5		2.4		4.0		Asymmetrical crown (M)	Subject Property	Remove	direct conflict with proposed laneway	3
612	Bur Oak	*Quercus macrocarpa*	38.5	-	G	F	G	55%	5		2.4		4.0		Asymmetrical crown (M) bowed (L)	Subject Property	Remove	direct conflict with proposed laneway/walkway	3
613	Shagbark Hickory	*Carya ovata*	32	-	G	F	G	55%	4		2.4		4.0		Poor form (M)	Subject Property	Remove	direct conflict with proposed laneway	2
614	Shagbark Hickory	*Carya ovata*	44	-	G	F-G	G	73%	6		3.0		5.0		Co-dominant 5m	Subject Property	Remove	direct conflict with proposed house	3
615	Shagbark Hickory	*Carya ovata*	31.5	-	G	G	G	90%	5		2.4		4.0			Subject Property	Remove	direct conflict with proposed house	2
616	Shagbark Hickory	*Carya ovata*	30.5	-	G	G	G	90%	4.5		2.4		4.0			Subject Property	Remove	direct conflict with proposed house	2
617	Shagbark Hickory	*Carya ovata*	24	-	G	G	G	90%	2.5		2.4		4.0			Subject Property	Remove	direct conflict with proposed house	2
618	Shagbark Hickory	*Carya ovata*	29	-	G	G	G	90%	2.5		2.4		4.0			Subject Property	Remove	direct conflict with proposed house	2
619	Bur Oak	*Quercus macrocarpa*	40	-	G	F-G	F	55%	5		2.4		4.0		Epicormic branching (M)Leaf scorch (M)	Subject Property	Remove	direct conflict with proposed house	3

Tree #	Common Name	Scientific Name	DBH	Multistem DBH	TI	CS	CV	S/H Rating	DL	CDB	mTPZ	Encr. mTPZ	CRZ	Encr. CRZ	Comments	Owner	Action	Reason for Removal or Injury	Comp.
620	Shagbark Hickory	*Carya ovata*	34	-	G	G	G	90%	5		2.4		4.0			Subject Property	Remove	direct conflict with proposed laneway	2
621	Shagbark Hickory	*Carya ovata*	22	-	G	G	G	90%	2		2.4		4.0			Subject Property	Remove	direct conflict with proposed laneway	2
622	Bur Oak	*Quercus macrocarpa*	48	-	F	F	P-F	38%	4.5		3.0		5.0		Lean (M), bowed (M)	Subject Property	Remove	direct conflict with proposed laneway	3
623	White Pine	*Pinus strobus*	24	-	F-G	F	F	55%	2.5		2.4		4.0		Asymmetrical crown (M), Lean (L), poor vigor (M)	Subject Property	Remove	direct conflict with proposed house	2
624	Sugar Maple	*Acer saccharum*	35.5, 31	47.1	F-G	F-G	F-G	73%	5		3.0		5.0		Co-dominant base, anthracnose (M)	Subject Property	Remove	direct conflict with proposed house	3
625	White Birch	*Betula papyrifera*	31	-	F	F	F-G	55%	2		2.4		4.0		Lean (M), Asymmetrical crown (M)	Subject Property	Remove	direct conflict with proposed house	2
626	Shagbark Hickory	*Carya ovata*	33	-	G	F	G	55%	2.5		2.4		4.0		Asymmetrical crown (M)	Subject Property	Remove	direct conflict with proposed house	2
627	Shagbark Hickory	*Carya ovata*	33.5	-	G	G	G	90%	4		2.4		4.0			Subject Property	Remove	direct conflict with proposed house	2
628	Bur Oak	*Quercus macrocarpa*	53.5	-	G	F	G	55%	6		3.6		6.0		Asymmetrical crown (M)	Subject Property	Remove	direct conflict with proposed laneway	3
629	Shagbark Hickory	*Carya ovata*	28	-	G	G	G	90%	3		2.4		4.0			Subject Property	Remove	direct conflict with proposed laneway	2
630	Sugar Maple	*Acer saccharum*	27.5	-	G	G	G	90%	2.5		2.4		4.0			Subject Property	Remove	direct conflict with proposed house	2

Tree #	Common Name	Scientific Name	DBH	Multistem DBH	TI	CS	CV	S/H Rating	DL	CDB	mTPZ	Encr. mTPZ	CRZ	Encr. CRZ	Comments	Owner	Action	Reason for Removal or Injury	Comp.
631	Shagbark Hickory	*Carya ovata*	22	-	G	G	G	90%	2		2.4		4.0			Subject Property	Remove	direct conflict with proposed laneway	2
632	Shagbark Hickory	*Carya ovata*	36.5	-	G	G	G	90%	3		2.4		4.0			Subject Property	Remove	direct conflict with proposed house	3
633	Black Walnut	*Juglans nigra*	34	-	G	F-G	G	73%	6		2.4	0%	4.0	0%		ROW	Retain		
692	Bur Oak	*Quercus macrocarpa*	72	-	G	F-G	F-G	73%	6		4.8	12%	8.0	32%	Co-dominant 5m, Leaf scorch (M)	Subject Property	Retain (injure)	mTPZ/CRZ intrusion for laneway and demolition	
693	Shagbark Hickory	*Carya ovata*	27.5	-	G	G	G	90%	3.5		2.4	14%	4.0	14%		Subject Property	Retain (injure)	mTPZ/CRZ intrusion for laneway and demolition	
694	Shagbark Hickory	*Carya ovata*	33	-	G	G	G	90%	4		2.4	0%	4.0	0%		Subject Property	Retain		
695	Red Oak	*Quercus rubra*	25	-	G	F-G	G	73%	4.5		2.4	0%	4.0	0%	Asymmetrical crown (L)	Subject Property	Retain		
697	Sugar Maple	*Acer saccharum*	28	-	G	G	G	90%	4		2.4		4.0			Subject Property	Remove	direct conflict with proposed laneway	2
A	Red Oak	*Quercus rubra*	~30	-	G	F-G	G	73%	6	-	2.4	0%	4.0	1%		Neighbour (2109 Headon Rd)	Retain (injure)	CRZ intrusion for retaining wall extension	
B	Red Oak	*Quercus rubra*	~50	-	G	F	G	55%	8	-	3.0	0%	5.0	0%	Branch union @ ~4.0m, Pruning wounds (M)	Neighbour (2109 Headon Rd)	Retain		
C	Manitoba Maple	*Acer negundo*	~35	-	F	P-F	F-G	38%	3	-	2.4		4.0		Included fence (H), Asymmetrical crown (M), Lean (L), Epicormic branching (L), Codominant @ ~5.0m, U-union	Shared (subject property/Cleaver Park)	Remove	significant mTPZ intrusion for swale/grading	2
D	White Elm	*Ulmus americana*	~20, ~25	32.0	F	P-F	F-G	38%	4	-	2.4		4.0		Growing in fence line, Codominant @ base	Shared (subject property/Cleaver Park)	Remove	significant mTPZ intrusion for retaining wall	2

Tree #	Common Name	Scientific Name	DBH	Multistem DBH	TI	CS	CV	S/H Rating	DL	CDB	mTPZ	Encr. mTPZ	CRZ	Encr. CRZ	Comments	Owner	Action	Reason for Removal or Injury	Comp.
E	White Elm	*Ulmus americana*	~10, ~12	15.6	F	P	P-F	20%	3	-	2.4		4.0		1 stem is dead	Shared (subject property/Cleaver Park)	Remove	significant mTPZ intrusion for retaining wall	2
F	Red Maple	*Acer rubrum*	~52	-	G	G	F	55%	7	15	3.6	0%	6.0	0%	Deadwood (L)	Cleaver Park	Retain		
G	Norway Maple	*Acer platanoides*	~5	-	G	G	G	90%	0.5		1.8		1.8			Shared (subject property/Cleaver Park)	Remove	significant mTPZ intrusion for retaining wall	0
H	Ironwood	*Ostrya virginiana*	~18	-	G	F	G	55%	2		2.4	0%	4.0	0%	Asymmetrical crown (M)	Cleaver Park	Retain		
I	Sugar Maple	*Acer saccharum*	~20	-	G	G	G	90%	3	-	2.4	0%	4.0	0%		Cleaver Park	Retain		
J	White Oak	*Quercus alba*	~46	-	G	G	G	90%	4	-	3.0	0%	5.0	0%		Cleaver Park	Retain		
K	Apple species	*Malus spp.*	16, 8	17.9	F	F	F-G	55%	5	-	2.4		4.0		Sweep (M), V-union @ ground	ROW	Remove	significant mTPZ intrusion for retaining wall extension	0
L	Manitoba Maple	*Acer negundo*	26, 28	38.2	F	P-F	F	38%	8	-	2.4		6.0		1 stem is leaning (M), V-union @ ground	ROW	Remove	direct conflict with laneway	3
M	Manitoba Maple	*Acer negundo*	~11, 5, 5	13.1	P-F	P-F	F-G	38%	2		2.4		4.0		Co-dominant base, Poor form (M)	Shared (subject property/Cleaver Park)	Remove	significant mTPZ intrusion for swale/grading	0
N	Manitoba Maple	*Acer negundo*	~5	-	F	F	F	55%	1		1.8		1.8		Lean (M)	Cleaver Park	Remove	significant mTPZ intrusion for swale/grading	0
O	Chokecherry		~4	-	G	G	G	90%	0.5		1.8		1.8			Cleaver Park	Remove	significant mTPZ intrusion for swale/grading	0

Tree #	Common Name	Scientific Name	DBH	Multistem DBH	TI	CS	CV	S/H Rating	DL	CDB	mTPZ	Encr. mTPZ	CRZ	Encr. CRZ	Comments	Owner	Action	Reason for Removal or Injury	Comp.
P	White Elm	*Ulmus americana*	~8	-	F	F	G	55%	0.75		1.8		1.8		Lean (L), bowed (M), Asymmetrical crown (M)	Cleaver Park	Remove	significant mTPZ intrusion for retaining wall	0
Q	Norway Maple	*Acer platanoides*	~7	-	G	G	G	90%	1		1.8		1.8			Cleaver Park	Remove	significant mTPZ intrusion for retaining wall	0
R	Manitoba Maple	*Acer negundo*	~7	-	F	P-F	P-F	38%	0.75	40	1.8		1.8		On property line, Poor form (H) between two fences	Shared (subject property/Cleaver Park)	Remove	significant mTPZ intrusion for retaining wall	0
S	Norway Maple	*Acer platanoides*	~5	-	G	F-G	G	73%	0.5		1.8		1.8			Shared (subject property/Cleaver Park)	Remove	significant mTPZ intrusion for retaining wall	0
T	Green Ash	*Fraxinus pennsylvanica*	~4	-	G	G	G	90%	0.5		1.8		1.8			Shared (subject property/Cleaver Park)	Remove	significant mTPZ intrusion for retaining wall	0
U	Manitoba Maple	*Acer negundo*	~5, 5	7.1	P	P	F	20%	1.5		1.8		1.8		Co-dominant base, Poor form (H), Lean (H)	Shared (subject property/Cleaver Park)	Remove	significant mTPZ intrusion for retaining wall	0
V	Norway Maple	*Acer platanoides*	~5, 4	6.4	F	G	G	55%	1		1.8		1.8		Co-dominant base	Shared (subject property/Cleaver Park)	Remove	significant mTPZ intrusion for retaining wall	0
W	Norway Maple	*Acer platanoides*	~6	-	G	G	G	90%	0.5		1.8		1.8			Shared (subject property/Cleaver Park)	Remove	significant mTPZ intrusion for retaining wall	0
X	Sugar Maple	*Acer saccharum*	~9	-	F	F	G	55%	1	20	1.8	0%	1.8	0%	Exposed roots (M)	Cleaver Park	Retain		
Y	Norway Maple	*Acer platanoides*	~10	-	G	G	G	90%	1		2.4	0%	4.0	0%		Cleaver Park	Retain		

Tree #	Common Name	Scientific Name	DBH	Multistem DBH	TI	CS	CV	S/H Rating	DL	CDB	mTPZ	Encr. mTPZ	CRZ	Encr. CRZ	Comments	Owner	Action	Reason for Removal or Injury	Comp.
Z	Norway Maple	*Acer platanoides*	~9	-	G	G	G	90%	1		1.8	0%	1.8	0%		Cleaver Park	Retain		
AA	Ironwood	*Ostrya virginiana*	~15	-	G	G	G	90%	2		2.4	0%	4.0	0%		Cleaver Park	Retain		
AB	Sugar Maple	*Acer saccharum*	~10	-	G	G	G	90%	1.5		2.4	0%	4.0	0%		Cleaver Park	Retain		
AC	Sugar Maple	*Acer saccharum*	~9	-	G	F-G	G	73%	1.25		1.8	0%	1.8	0%	Asymmetrical crown (L)	Cleaver Park	Retain		
AD	Ironwood	*Ostrya virginiana*	~4	-	F	F-G	G	55%	1.5		1.8	0%	1.8	0%	Lost leader (H), Trunk injury (M)	Cleaver Park	Retain		
AE	Sugar Maple	*Acer saccharum*	~8	-	G	G	G	90%	1		1.8	0%	1.8	0%		Cleaver Park	Retain		
AF	Shagbark Hickory	*Carya ovata*	~25	-	G	G	G	90%	3		2.4	0%	4.0	0%		Cleaver Park	Retain		
AG	Ironwood	*Ostrya virginiana*	~12	-	G	G	G	90%	2		2.4	0%	4.0	0%		Cleaver Park	Retain		
AH	Sugar Maple	*Acer saccharum*	~38	-	F-G	F	F	55%	5	20	2.4	0%	4.0	0%	Exposed roots (M), Co-dominant 2.5m, Asymmetrical crown (M), Poor form (M), dead branches (M)	Cleaver Park	Retain		
AI	Shagbark Hickory	*Carya ovata*	~38	-	F-G	G	G	73%	5		2.4	0%	4.0	0%	Burl (M)	Cleaver Park	Retain		
AJ	Shagbark Hickory	*Carya ovata*	~30	-	G	G	G	90%	4		2.4	0%	4.0	0%		Cleaver Park	Retain		
AK	Ironwood	*Ostrya virginiana*	~15, 10	18.0	F	F-G	G	55%	2.5		2.4	0%	4.0	0%	Co-dominant base	Cleaver Park	Retain		
AL	Manitoba Maple	*Acer negundo*	~7	-	P-F	F	F-G	38%	1		1.8	0%	1.8	0%	Lean (M), bowed (M)	Cleaver Park	Retain		
AM	Norway Maple	*Acer platanoides*	~15	-	F-G	F-G	F-G	73%	3		2.4	0%	4.0	0%	Lean (L), Crook (L)	Cleaver Park	Retain		
AN	Green Ash	*Fraxinus pennsylvanica*	~5	-	F	F	P-F	38%	1	50	1.8	0%	1.8	0%	Lean (L), branch failure(M)	Cleaver Park	Retain		
AO	Ironwood	*Ostrya virginiana*	~13	-	G	G	G	90%	2		2.4	0%	4.0	0%		Cleaver Park	Retain		
AP	Sugar Maple	*Acer saccharum*	~20	-	F-G	F-G	G	73%	4		2.4	0%	4.0	0%	Shared base with shagbark Hickory	Cleaver Park	Retain		
P1	See table 2															Subject Property	Retain		
P2	White Elm, Manitoba Maple, Cherry	*Ulmus americana, Acer negundo, Prunus sp.*	~4-9	-	G	G	G	90%	3		1.8		1.8		13 trees, average DBH 7cm	Cleaver Park	Remove	significant mTPZ intrusion for retaining wall	0

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	(%)
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	(%)
Owner	Ownership of Tree	Public, Private, Neighbour
P = poor, F = fair, G = good, ~ = estimate, (VL) = very light, (L) = light, (M) = moderate, (H) = heavy		

Table 2. 100% Tally Analysis

Polygon: P1

Polygon Analysis Tally (by Species, Size Class and Quality Class)

Tree Size Class >>>>	10 - 20 cm		20 - 35 cm		36 - 74 cm		75 cm +		Total All Sizes		Total By Species
Species	***AGS***	***UGS***	***AGS***	***UGS***	***AGS***	***UGS***	***AGS***	***UGS***	***AGS***	***UGS***	
Shagbark Hickory (*Carya ovata*)		2	7			1			7	3	**10**
Sugar Maple (*Acer saccharum*)		1	1						1	1	**2**
White Oak (*Quercus alba*)	1								1	0	**1**
Manitoba Maple (*Acer negundo*)		1		3					0	4	**4**
Total Number of Trees	1	4	8	3	0	1	0	0	9	8	**17**

Appendix A. Photographs of Trees (2022)



Image 1. Area containing Trees 560-577, K


Image 2. Trees 560-564 (right-left)


Image 3. Area containing Trees C-G, 578 M-W

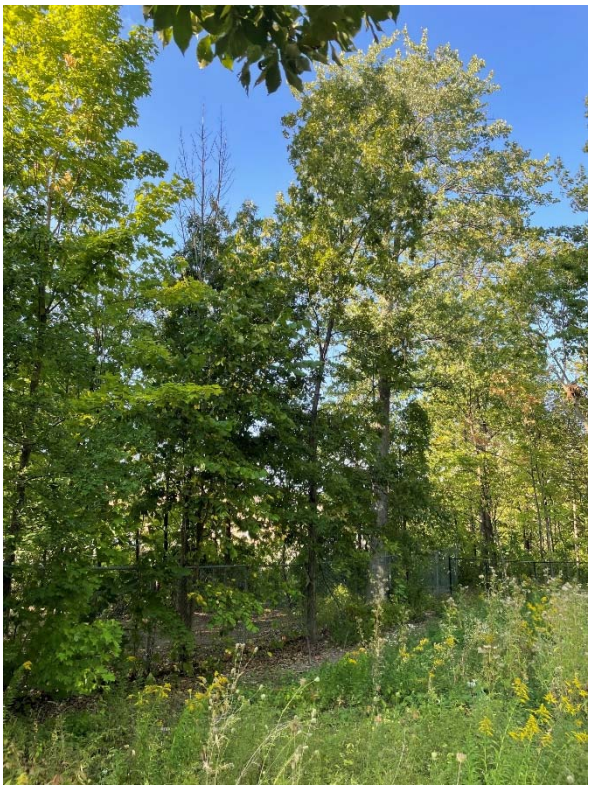

Image 4. Trees P2, 579 and F


Image 5. View from backyard, west to east


Image 6. View from backyard, south to northeast

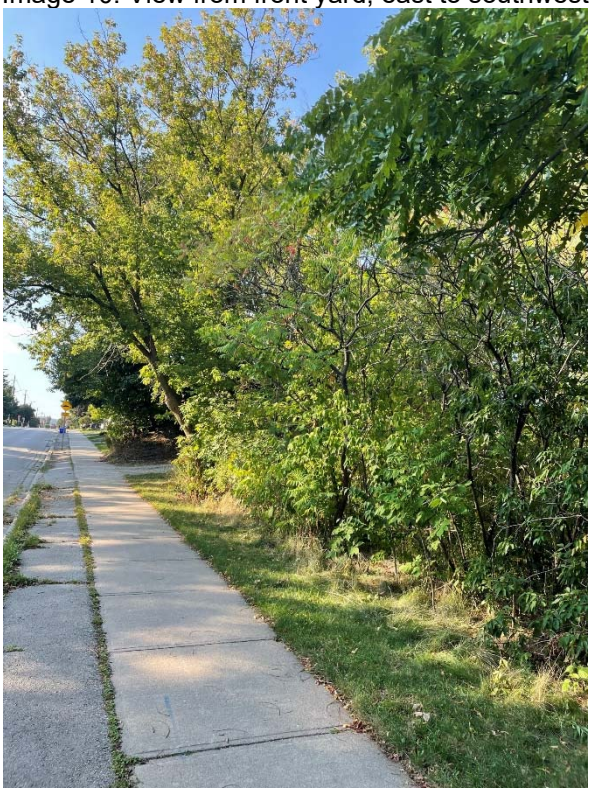

Image 7. View from backyard, northwest to east


Image 8. View from backyard, north to south


Image 9. View from front yard, south to northwest


Image 10. View from front yard, east to southwest


Image 11. P2, from east to southwest


Image 12. View from Headon Rd (Tree L in distance)