ARBORIST REPORT AND TREE PRESERVATION PLAN

LOCATION:

2169 and 2175 Ghent Avenue
Burlington, ON

OWNER/APPLICANT:

Ryan Small
c/o
Corbett Land Strategies
5045 South Service Road, Suite 301
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28 August 2024

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INTRODUCTION

This Arborist Report and Tree Preservation Plan was completed for 2169 and 2175 Ghent Avenue in Burlington, Ontario. The subject properties are located southeast of Fairview Street and Brant Street. Removal, retention, and protection of trees within the subject area will be discussed in accordance to City of Burlington's by-laws and guidelines. The following by-laws and policies are applicable to the subject area:

- Public Tree By-law 68-2013
- Private Tree By-law 040-2020
- Specifications Index for Tree Protection and Preservation (SPEC NO. SS12A)

Existing Conditions and Proposed Works

The subject properties are comprised of two single residential lots. The existing tree resources are comprised of landscape trees and naturally regenerated trees. The proposed works include the construction of two 3-storey multi-residential buildings with associated parking area and amenity areas. Refer to the Tree Preservation Plan (Figure 1) for the existing conditions, the location of the trees, and the site, grading, and servicing plans.

METHODOLOGY

Tree Inventory

Field assessments to collect tree inventory data were completed on 13 December 2023. Trees of any size within the City road allowance, and greater than 10 cm on the subject property, and within 6m on neighbouring property were included in this inventory.

Trees were numbered 1 to 31. Groups of trees (tree polygons) that could not be individually located were labelled with the prefix 'P'. Trees were located using the topographic survey provided or aerial photo interpretation and estimations made in the field. Species, diameter at breast height (DBH), health, condition, dripline, and relevant comments were recorded for each of the trees. Trees located on neighbouring properties were assessed to the greatest extent possible from the subject property. All assessments were limited to ground survey.

RESULTS

Tree Inventory

A total of 21 individual trees and ten tree polygons were included in the tree inventory. Trees 1, 3, 31 and a portion of tree polygons P29 and P30 are located within the City road allowance. Trees 2, 5, 8, 10 to 14, 16 to 18, 21, 24 to 27, tree polygons P4, P15, P22, P23, and a portion of tree polygon P30 are located on the subject property. All remaining trees are boundary or neighbouring trees.

Species found include: White Birch (*Betula papyrifera*), White Spruce (*Picea glauca*), Basswood (*Tilia americana*), Red Pine (*Pinus resinosa*), Tamarack (*Larix laricina*), Eastern White Cedar (*Thuja occidentalis*), Norway Spruce (*Picea abies*), Cherry species (*Prunus* sp.), Butternut Hybrid (*Julgans cinerea* x *Juglans ailantifolia*), Blue Spruce (*Picea pungens*), Manitoba Maple (*Acer negundo*),

Japanese Walnut (*Juglans ailantifolia*), Apple species (*Malus* sp.), Green Ash (*Fraxinus pennsylvanica*), White Cedar cultivar (*Thuja occidentalis* var.), White Pine (*Pinus strobus*), Yew (*Taxus* sp.), White Mulberry (*Morus alba*), Eastern Red Cedar (*Juniperus virginiana*), and Ohio Buckeye (*Aesculus glabra*).

Refer to Table 1 for the detailed tree inventory, Appendix A for photos of the trees and the Tree Preservation Plan (Figure 1) for the locations of the trees.

ANALYSIS AND DISCUSSION

Tree Removal

The removal of 16 trees and 9 tree polygons will require removal to accommodate the proposed development. The removal of Trees 2, 5, 10, 11, 16, 17, tree polygon P4 will be required to accommodate the proposed buildings. The removal of Trees 8 and 18 will be required to accommodate a proposed walkway. The removal of Trees 21 and tree polygons P9, P20, P28, P29 will be required to accommodate the proposed fence. The removal of Trees 12 to 14, 16, 24 to 27, tree polygon P15, P22, P23, P30, will be required to accommodate the proposed parking area, driveway and/or servicing. The removal of any boundary or neighbouring trees will require written permission from the neighbouring property owners.

Tree 14 and one tree within tree polygon P22 have been DNA tested for hybridity and have been confirmed to not be pure Butternut trees. Documentation is available upon request.

Tree Compensation

A total of 93 replacement trees will be required to compensate for the proposed tree removals, at a rate of one (1) 50mm caliper tree per every 15 cm DBH of tree removed. Dead trees were not included in the calculations. Any trees that cannot be planted should be compensated through cash-in-lieu.

Tree Retention and Injury

All remaining trees may be preserved given the appropriate tree preservation measures discussed in this report and plan are implemented.

Tree Preservation Recommendations

Trees 1, 3, 6, 7, 31, and tree polygon P19 will be protected by tree protection barriers consisting of an orange plastic web snow fencing on a 1.2m high wood frame of 2” x 4”s, supported on metal “T” bars, a maximum of 2.0m on centre. A Modu-Loc fence (or approved equivalent) staked to the ground and sections zip-tied together is an acceptable alternative to the above if there are issues with underground utilities.

Minor to moderate injury of four (4) trees and one tree polygon, including Trees 1, 6, 7, 31, and tree polygon P19, will be required to accommodate the proposed development.

The existing asphalt driveway within the mTPZ and CRZ of Tree 1 to be removed gently using light equipment under supervision of a Certified Arborist. Area to be restored with healthy topsoil and stabilized (seeded or sodded) immediately and tree protection to be expanded. There will be two

stages for the tree protection barrier for Tree 1, Stage 1 (prior to removal of existing driveway), and Stage 2 (following removal and restoration of the existing driveway).

Tree protection barriers for Trees 6, 7, and P19 to remain in place during main construction phase (building construction) and removed towards end of construction (landscaping phase) to install pergola and proposed fence and to complete minor grading. Post-holes should be hand-dug and relocated as necessary to avoid major roots. Any grading to be completed by hand or light equipment under supervision of a Certified Arborist.

It is the Owners' responsibility to discuss potential impacts to trees located near or wholly on adjacent properties or on shared boundary lines with the property owners. Should such trees be injured to the point of instability or death, the Owners may be held responsible through civil action.

Prior to site disturbance, the Applicant/Contractor must confirm that no migratory birds are making use of the site for nesting. The Applicant/Contractor must ensure that the works are in conformance with the Migratory Bird Convention Act and that no migratory bird nests will be impacted by the proposed works.

Refer to Table 1 for the mTPZ and dripline distances for each tree, and percentage encroachment, and the Tree Preservation Plan (Figure 1) for additional tree protection notes and the City of Burlington's Tree Protection Detail (TP-1) and signage.

CONCLUSION

A total of 21 individual trees and ten tree polygons were included in the tree inventory. The removal of 16 trees and 9 tree polygons will require removal to accommodate the proposed development. The injury of four (4) trees and one tree polygon will be required to accommodate the proposed development. Preservation of all trees to be retained will be possible with the use of appropriate tree preservation measures, as described in this report.

Tree protection barriers should be implemented at distances noted in Table 1 and/or shown in the Tree Preservation Plan (Figure 1) prior to construction and maintained throughout the construction process. Refer to Detail TP-1, tree protection notes, and signage on the Tree Preservation Plan (Figure 1) for further information regarding tree protection as outlined by the City of Burlington.

Sincerely,

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REFERENCES

Corporation of the City of Burlington. September 2020. Specifications Index for Tree Protection and Preservation (SPEC NO. SS12A).

Corporation of the City of Burlington. July 2013. Public Tree By-law 68-2013.

Corporation of the City of Burlington. April 2022. Private Tree By-law 40-2022.

TABLE 1. DETAILED TREE INVENTORY

Location: 2169 and 2175 Ghent Avenue, Burlington Date: 13 December 2023 Surveyors: AC

Tree #	Common Name	Scientific Name	Diameter at Breast Height (DBH)[1]	Health	Structure	Crown Dieback	Dripline (radius)	minimum Tree Protection Zone (mTPZ)	Critical root zone (CRZ) (radius)[2]	Comments	Proposed Action	Preservation Comments[3]	Ownership
			(cm)	*%*		*%*	*(m)*	*(m)*	*(m)*				
1	White Birch	*Betula papyrifera*	9,26,24.5 [37]	75	75		4	2.4	4.0	Union at base with moderate included bark, minor stem wounds with decay, moderate asymmetrical crown due to utility line pruning, minor broken branches, minor deadwood with decay	Preserve - injure	Minor to moderate encroachment into mTPZ (12.5%) and CRZ (26%) to accommodate proposed walkway. Existing asphalt drivway to be carefully removed and area restored.	City ROW
2	White Birch	*Betula papyrifera*	15,16,17, 19.5 [34]	75	85		4	2.4	4.0	Union near base with moderate included bark, hanger	Remove		Subject
3	White Spruce	*Picea glauca*	33	70	70		2	2.4	4.0	Moderate vine competition, small root flare, minor lean towards road, moderate asymmetrical crown due to utility line pruning, heavy seed crop	Preserve		City ROW

Tree #	Common Name	Scientific Name	Diameter at Breast Height (DBH)[1]	Health	Structure	Crown Dieback	Dripline (radius)	minimum Tree Protection Zone (mTPZ)	Critical root zone (CRZ) (radius)[2]	Comments	Proposed Action	Preservation Comments[3]	Ownership
			(cm)	*%*		*%*	*(m)*	*(m)*	*(m)*				
P4	White Spruce	*Picea glauca*	37.5	90	85		2	2.4	4.0	Small root flare, minor pruning wounds due to raised crown, sweep	Remove		Subject
	White Spruce	*Picea glauca*	35.5	90	90		3	2.4	4.0	Small root flare, minor pruning wounds due to raised crown			
	White Spruce	*Picea glauca*	34	60	80		2	2.4	4.0	Small root flare, minor pruning wounds due to raised crown, moderate sweep towards road, sparse, minor deadwood			
	White Spruce	*Picea glauca*	22.5	85	85		2	2.4	4.0	Small root flare, minor pruning wounds due to raised crown, double leader			
	White Spruce	*Picea glauca*	24.5	70	85		2	2.4	4.0	Small root flare, minor pruning wounds due to raised crown, minor sweep, sparse			
	White Spruce	*Picea glauca*	23	DEAD				2.4	4.0				
	White Spruce	*Picea glauca*	31	80	75		2.5	2.4	4.0	Curved, behind retaining wall, minor pruning wounds due to raised crown			
	White Spruce	*Picea glauca*	16	60	70		1	2.4	4.0	Small root flare, minor pruning wounds due to raised crown, sparse, moderate asymmetrical crown due to competition			
	White Spruce	*Picea glauca*	21	75	70		2	2.4	4.0	Small root flare, minor pruning wounds due to raised crown, sweep/curved, moderate asymmetrical crown due to competition			
	White Spruce	*Picea glauca*	21.5	80	80		2	2.4	4.0	Small root flare, minor pruning wounds due to raised crown, sweep/curved, moderate asymmetrical crown due to competition			
	White Spruce	*Picea glauca*	21	80	80		2	2.4	4.0	Small root flare, minor pruning wounds due to raised crown, sweep/curved, moderate asymmetrical crown due to competition, vine competition			
	White Spruce	*Picea glauca*	35	75	75		2.5	2.4	4.0	Small root flare, minor pruning wounds due to raised crown, moderate vine competition, sweep/curved, missing leader resulting in multiple leaders near top of crown			
5	Basswood	*Tilia americana*	69.5	70	70		4	4.2	7.0	Minor girdling root, moderate stem wound/cavity at base, seams/stem wounds/cavities, moderate epicormic branching, minor lean towards the east, shear crack, minor deadwood	Remove		Subject

Tree #	Common Name	Scientific Name	Diameter at Breast Height (DBH)[1]	Health	Structure	Crown Dieback	Dripline (radius)	minimum Tree Protection Zone (mTPZ)	Critical root zone (CRZ) (radius)[2]	Comments	Proposed Action	Preservation Comments[3]	Ownership
			(cm)	*%*		*%*	*(m)*	*(m)*	*(m)*				
6	Norway Maple	*Acer platanoides*	~40	70	85		4	2.4	4.0	Moderately included T-bar at base, minor lean to the east, overextended branch	Preserve - injure	Moderate encroachment into mTPZ (23%) and CRZ (24%) to accommodate proposed fence and pergola.	2172 Prospect Street
7	Red Pine	*Pinus resinosa*	~14	95	85		2	2.4	4.0	Moderate crook, minor lean	Preserve - injure	Minor to moderate encroachment into mTPZ (5%) and CRZ (11%) to accommodate proposed fence and pergola.	735 Pearson Street
8	Tamarack	*Larix laricina*	16	90	70		2	2.4	4.0	Moderate pruning wounds due to a raised crown, small live crown ratio, missing leader resulting in multiple leaders	Remove		Subject
P9	Eastern White Cedar	*Thuja occidentalis*	~5-20, avg. 10	85	65		1.5	2.4	4.0	Approximately 26 trees, several multi-stemmed at base, several previously topped	Remove		2 trees on 2169 Ghent Avenue/ 24 trees on 2172 Prospect Street
10	White Birch	*Betula papyrifera*	27.5	80	90		4	2.4	4.0	Minor broken branches, minor asymmetrical crwon due to competition, minor pruning wounds	Remove		Subject
11	Eastern White Cedar	*Thuja occidentalis*	22	95	65		2	2.4	4.0	Conflict with root of shed resulting in moderate stem wound	Remove		Subject
12	Norway Spruce	*Picea abies*	60	95	90		5.5	3.6	6.0	Minor crook	Remove		Subject
13	Cherry species	*Prunus sp.*	3,6,7 [10]	90	85		2	2.4	4.0	Minor lean, small root flare	Remove		Subject
14	Butternut Hybrid	*Juglans cinerea x Juglans ailantifolia*	8,8 [11]	90	80		3	2.4	4.0	Co-dominant at 0.5m, major vine competition	Remove	Confirmed through DNA testing	Subject
P15	Eastern White Cedar	*Thuja occidentalis*	~15, <4m height	60	40		1.5	2.4	4.0	Approximately 9 trees, previously toppped at 1-2m resulting in poor form, moderate lean	Remove		Subject
16	Norway Spruce	*Picea abies*	61	90	85		6.5	4.2	7.0	Moderate exposed roots, minor pruning wounds due to raised crown, potential missing leader	Remove		Subject
17	Blue Spruce	*Picea pungens*	~37	85	95		3	2.4	4.0	Minor asymmetrical crown due to competition	Remove		Subject
18	Blue Spruce	*Picea pungens*	26	70	80		2	2.4	4.0	Sparse, moderate asymmetrical crown due to competition, crooks	Remove		Subject

Tree #	Common Name	Scientific Name	Diameter at Breast Height (DBH)[1]	Health	Structure	Crown Dieback	Dripline (radius)	minimum Tree Protection Zone (mTPZ)	Critical root zone (CRZ) (radius)[2]	Comments	Proposed Action	Preservation Comments[3]	Ownership
			(cm)	*%*		*%*	*(m)*	*(m)*	*(m)*				
P19	Eastern White Cedar	*Thuja occidentalis*	~15-30, avg. 25	90	80		2	2.4	4.0	9 trees, some co-dominant near base, minor pruning wounds due to raised crown, utility line through crown	Preserve - injure	Moderate encroachment into mTPZ (28%) and CRZ (36%) to accommodate proposed fence, parking area, and grading.	2176 Prospect Street
P20	Eastern White Cedar	*Thuja occidentalis*	~5-15, avg. 8	65	65		1.5	2.4	4.0	Approximately 20 trees, previously topped at 1.5m resulting in poor form, moderate lean towards subject property	Remove		Subject/ 2179 Ghent Avenue
	Manitoba Maple	*Acer negundo*	10	70	70		2	1.8	1.8				Subject/ 2179 Ghent Avenue
21	Manitoba Maple	*Acer negundo*	13	65	65		2	2.4	4.0	Moderate lean, multiple branch attachments, minor epicormic branching	Remove		Subject
P22	Manitoba Maple	*Acer negundo*	13,18 [22]	65	65		3	2.4	4.0	Moderate lean towards the west, co-dominant at 1m with moderate included bark, moderate epicormic branching, ribbing at base	Remove		Subject
	Japanese Walnut	*Juglans ailantifolia*	23.5,23 [33]	80	70		3	2.4	4.0	Co-dominant at 0.2m with moderate included bark, minor dead branches, major vine competition		Confirmed through DNA testing	
P23	Manitoba Maple	*Acer negundo*	5,8.5 [10]	70	60		2	2.4	4.0	Crooks, moderate lean towards the west, co-dominant at base	Remove		Subject
	Apple species	*Malus sp.*	~5-12	50	50		3	2.4	4.0	Multi-stemmed at 0.5m, conflict with shed, major epicormic branching			
	Green Ash	*Fraxinus pennsylvanica*	13.5,10.5 [17]	90	80		2.5	2.4	4.0	Co-dominant at 1m with moderate included bark, moderate asymmetrical crown due to competition			
24	Eastern White Cedar	*Thuja occidentalis*	39	10	30		2.5	2.4	4.0	Top dead	Remove		Subject
25	Eastern White Cedar	*Thuja occidentalis*	28	10	30		2.5	2.4	4.0	Top dead	Remove		Subject
26	Eastern White Cedar	*Thuja occidentalis*	21,21 [30]	10	30		2.5	2.4	4.0	Top dead, union near base	Remove		Subject
27	White Pine	*Pinus strobus*	62	90	90		6	4.2	7.0		Remove		Subject
P28	Yew	*Taxus sp.*	~3-12, avg. 8	90	90		1.5	2.4	4.0	4 trees	Remove		2179 Ghent Avenue
	White Mulberry	*Morus alba*	10	90	75		2	1.8	1.8	Moderate lean/bow towards road			

Tree #	Common Name	Scientific Name	Diameter at Breast Height (DBH)[1]	Health	Structure	Crown Dieback	Dripline (radius)	minimum Tree Protection Zone (mTPZ)	Critical root zone (CRZ) (radius)[2]	Comments	Proposed Action	Preservation Comments[3]	Ownership
			(cm)	*%*		*%*	*(m)*	*(m)*	*(m)*				
P29	White Cedar cultivar	*Thuja occidentalis var.*	~5-10, avg. 6	90	95		1.5	1.8	1.8	Approximately 3-4 trees	Remove		2179 Ghent Avenue
	Eastern Red Cedar (Juniper)	*Juniperus virginiana*	~10	85	85		2	1.8	1.8				City ROW
P30	White Cedar cultivar	*Thuja occidentalis var.*	<3m height	90	90		1.5	1.8	1.8	Approximately 4 trees	Remove		3 trees on subject/ 1 tree City ROW
	White Mulberry	*Morus alba*	8,9,8 [14]	85	75		3	2.4	4.0	Minor lean/bow towards road, moderate epicormic branching			Subject
	White Mulberry	*Morus alba*	~10,12,20 [25]	80	80		3	2.4	4.0	Minor lean towards road			City ROW
	Eastern Red Cedar (Juniper)	*Juniperus virginiana*	~5	90	90		1.5	1.8	1.8				City ROW
31	Ohio Buckeye	*Aesculus glabra*	4	95	85		1	1.8	1.8	Minor stem wound	Preserve - injure	Minor encroachment into mTPZ (8%) and CRZ (8%) to accommodate proposed driveway entrance.	City ROW
END													

[1] The effective DBH of multi-stemmed trees was calculated by taking the square root of the sum of the squares of the DBH of each stem.

[2] MTPZ and CRZ distances are to be measured from the outside edge of the tree base towards the dripline and may be limited by an existing paved surface, provided the existing paved surface remains intact throughout the construction work.

[3] Percentage of encroachment within MTPZ or CRZ shown in brackets.

APPENDIX A. PHOTOS OF THE TREES



Photo 1. Trees 1 and 2 (right and centre), view looking northwest



Photo 2. Tree 3, and tree polygon P4 (left and rightwards), view looking west



Photo 3. Tree polygon P4, view looking northwest



Photo 4. Tree polygon P4, view looking south



Photo 5. Tree 5, view looking south

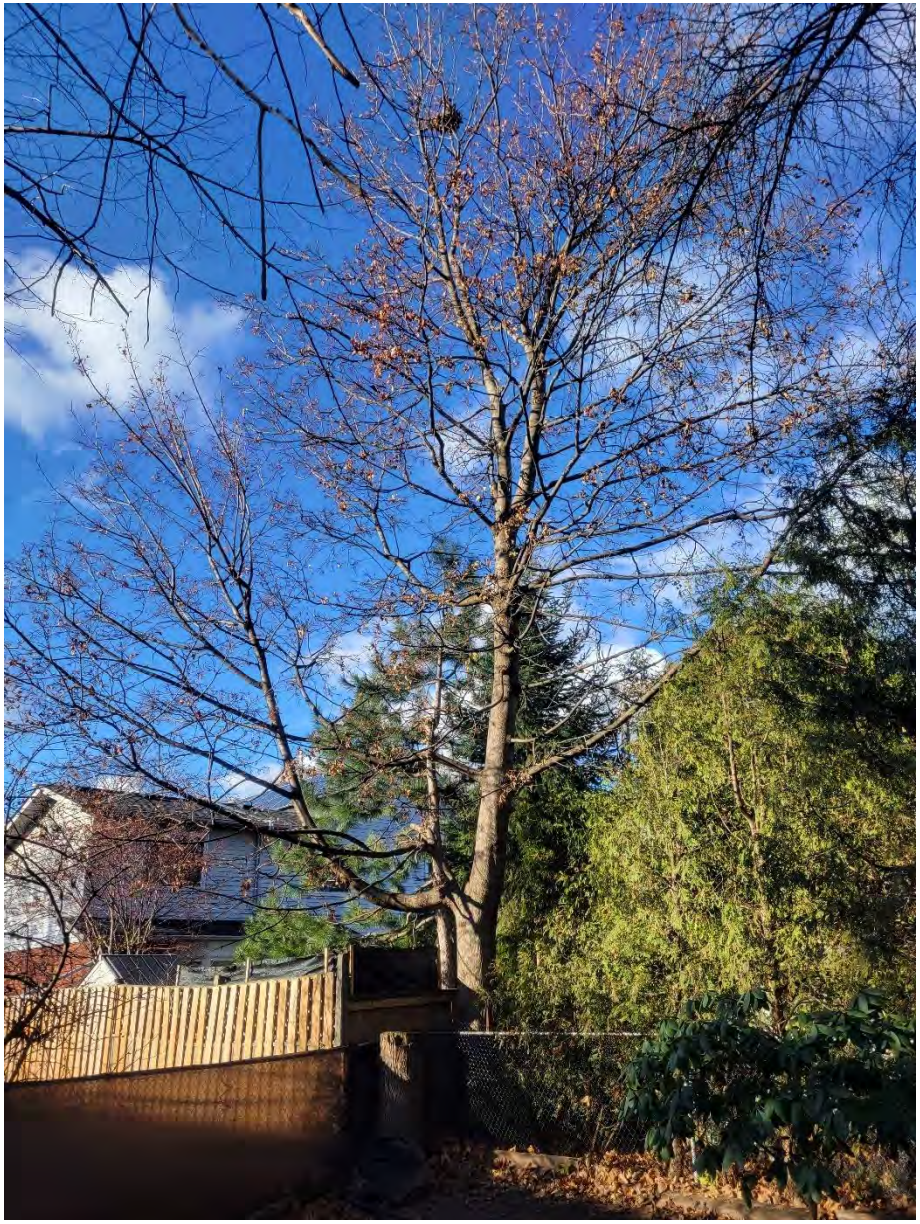


Photo 6. Trees 6 and 7 (foreground and background), view looking west



Photo 7. Tree 8 (centre, foreground), view looking north

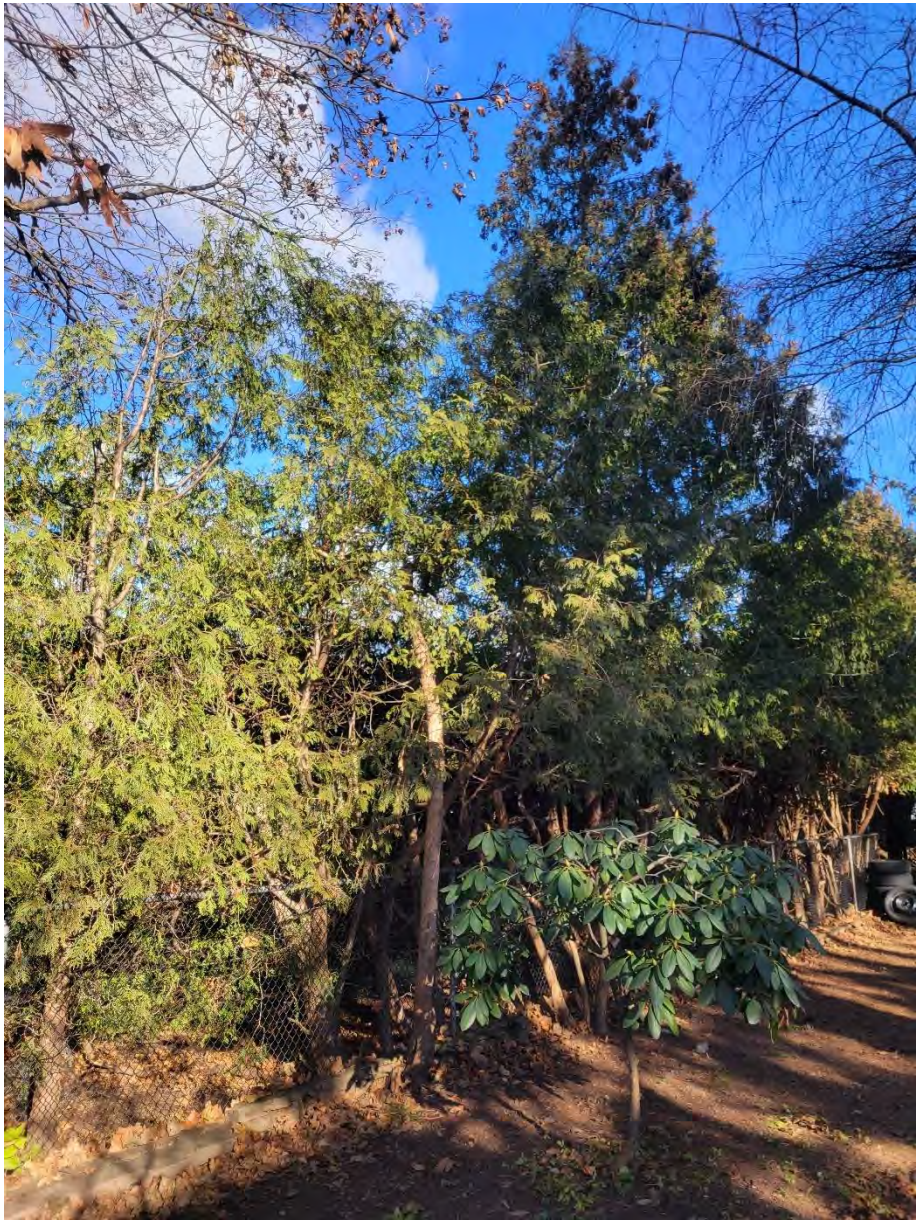


Photo 8. Tree polygon P9, view looking north



Photo 9. Tree 10 (centre, foreground), view looking northeast



Photo 10. Tree 11 (centre, foreground), view looking northeast



Photo 11. Tree 12 (centre), view looking north



Photo 12. Tree 13, view looking north



Photo 13. Tree 14 (centre), view looking north



Photo 14. Tree polygon P15 (foreground), view looking southeast



Photo 15. Tree 16, view looking south



Photo 16. Tree 17 (background, centre), view looking west

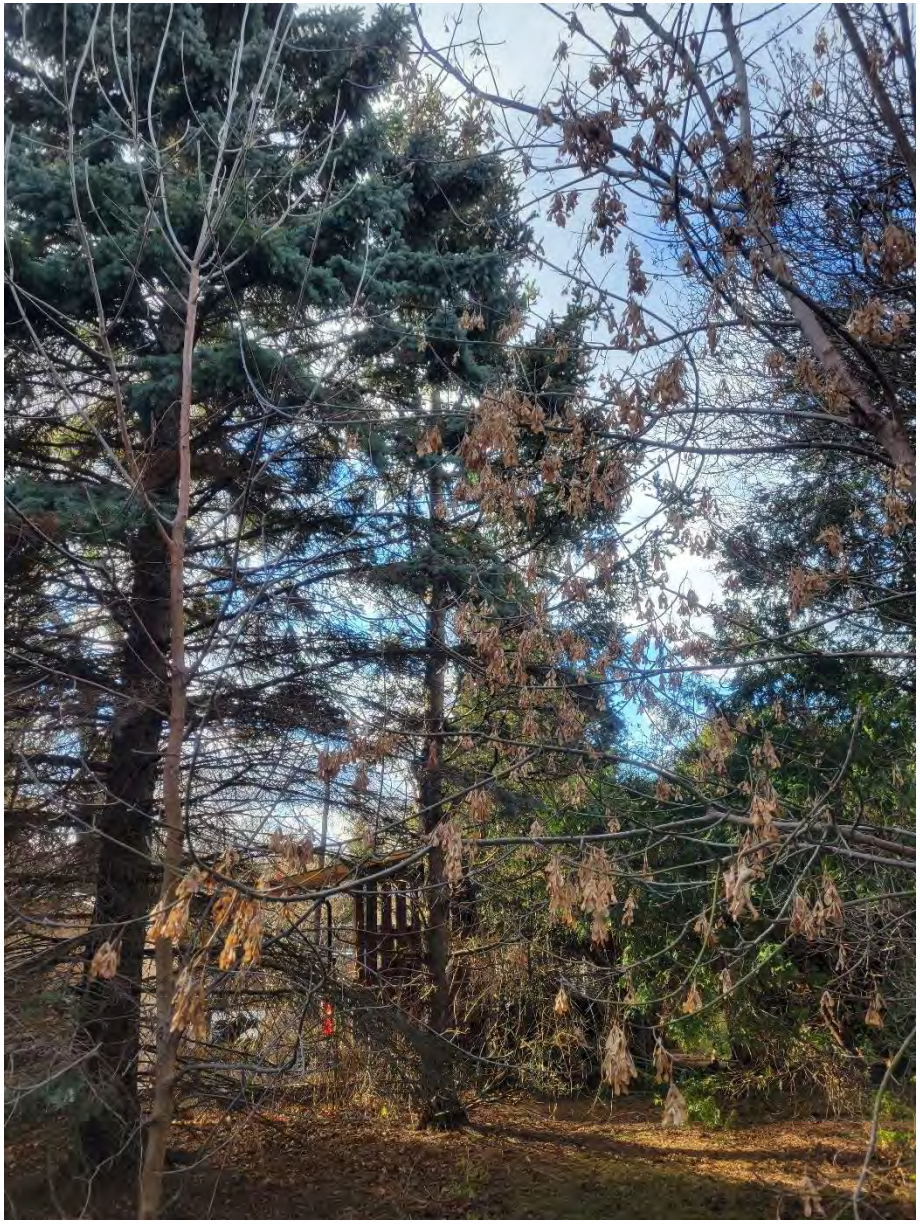


Photo 17. Tree 18 (centre), view looking northwest



Photo 18. Tree polygon P19, view looking northwest



Photo 19. Tree polygon P20 (background), and Tree 21 (centre, foreground), view looking north



Photo 20. Tree polygon P22, view looking northeast



Photo 21. Tree polygon P23 (foreground), view looking east



Photo 22. Trees 24 to 26 (centre, background to foreground), view looking northwest



Photo 23. Tree 27 (centre), view looking northwest



Photo 24. Tree polygon P28, view looking north



Photo 25. Tree polygon P29, view looking north



Photo 26. Tree polygon P30, view looking northeast



Photo 27. Tree 31 (centre, foreground), view looking northwest