RON KOUDYS LANDSCAPE ARCHITECTS INC

ARBORIST REPORT FOR ZONING BY-LAW AMENDMENT

105 AVONDALE COURT, BURLINGTON

Report prepared by
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RKLA Project #24-194

CERTIFIED ARBORIST ISA™

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ON-3009A

CONTENTS

1.0 Introduction and Executive Summary 1
1.1 Introduction 1
1.2 Executive Summary 1
1.2.1 Tree Species Composition Chart 1
1.2.2 Tree Removal and Preservation Recommendations 2
2.0 Subject Site and Scope of Work 2
3.0 Methodology 3
3.1 Health Assessment 3
3.2 Critical Root Zones 4
4.0 Tree Inventory and Preservation/Removal Recommendations 4
4.1 Tree Data Table 4
5.0 Potential Construction Impacts on Trees 21
5.1 Soil Compaction 21
5.2 Root Loss 21
5.3 Grade Changes 22
5.4 Mechanical Damage 22
5.5 Changes to Exposure - Sun and Wind 22
5.6 Soil Contamination 22
5.7 Water Availability 22
6.0 Construction Impact Mitigation Recommendations 23
6.1 Pre-construction recommendations 23
6.2 Recommendations related to the construction process 23
6.3 Post-construction recommendations 23
7.0 Disclaimer 24
8.0 Contact Information 24
9.0 Appendix A - Tree Preservation Drawings 25

1.0 Introduction and Executive Summary

1.1 Introduction

Ron Koudys Landscape Architects Inc. (RKLA) was retained by the client to prepare a tree assessment report in conjunction with the proposed development at 105 Avondale Court, Burlington. The intent of this report is to summarize the findings of the tree assessment and make recommendations regarding tree preservation and removal based on tree health, the current site plan, and anticipated grading for the purpose of application for rezoning.

1.2 Executive Summary

The overall inventory captured 193 individual trees. Trees were identified within the subject site, and within 3 meters of the legal property boundary.

Five trees (IDs #502, 503, D, and F) are classified as 'endangered' under O. Reg. 230/08: Species at Risk in Ontario, in accordance with the Endangered Species Act, 2007, S.O. 2007, c. 6. In 2019, the Ministry of Natural Resources and Forestry (MNRF) engaged in correspondence with Natural Resource Solutions Inc. (NRSI) to conduct genetic testing on these trees and to proceed with the proposed development at that time. Currently, two of these trees are recommended for removal due to conflicts with the proposed site plan. These two trees are classified as Category 2 butternuts, which are exempt from the provisions of the Endangered Species Act. The Ministry of the Environment, Conservation, and Parks (MECP) has been notified of the removal of the Category 2 butternuts. All necessary procedures will be followed prior to the removal of any butternuts. Notice of impact to Butternut signage will be posted on the property.

The credit value for Butternut compensation has been calculated using the formula provided by the MECP. This compensation credit will be directed to the Species at Risk Conservation Fund.

1.2.1 Tree Species Composition Chart

The following chart summarizes the number of each tree species observed in the tree inventory.

%	Qty.	Botanical Name	Common Name
14%	27	*Picea abies*	Norway Spruce
12%	24	*Acer platanoides*	Norway Maple
11%	22	*Picea pungens*	Colorado Spruce
5%	9	*Pinus nigra*	Austrian Pine
4%	8	*Pinus strobus*	White Pine
4%	8	*Tilia americana*	Basswood
4%	7	*Tsuga canadensis*	Canadian Hemlock
3%	6	*Populus deltoides*	Cottonwood
3%	6	*Taxus baccata*	English Yew
3%	5	*Acer rubrum*	Red Maple
3%	5	*Thuja occidentalis*	White Cedar
2%	4	*Juglans cinerea*	Butternut

%	Qty.	Botanical Name	Common Name
1%	2	*Fagus sylvatica*	European Beech
1%	2	*Fraxinus americana*	White Ash
1%	2	*Morus spp.*	Mulberry
1%	2	*Quercus rubra*	Red Oak
1%	2	*Syringa spp.*	Lilac
1%	2	*Juglans nigra*	Black Walnut
1%	1	*Acer freemanii*	Freeman Maple
1%	1	*Acer negundo*	Manitoba Maple
1%	1	*Acer saccharinum*	Silver Maple
1%	1	*Celtis occidentalis*	Hackberry
1%	1	*Crataegus*	Hawthorne
1%	1	*Acer sacharum*	Sugar Maple

%	Qty.	Botanical Name	Common Name
2%	4	*Fagus americana*	American Beech
2%	4	*Juglans X*	Butternut Hybrid
2%	4	*Morus alba*	White Mulberry
2%	4	*Betula papyrifera*	Paper Birch
2%	3	*Ginkgo biloba*	Ginkgo
2%	3	*Picea glauca*	White Spruce
2%	3	*Pseudotsuga menziesii*	Douglas Fir
1%	2	*Aesculus hippocastanum*	Horse Chestnut
1%	2	*Amelanchier spp.*	Serviceberry
1%	2	*Betula alleghaniensis*	Yellow Birch
1%	2	*Castanea mollissima*	Chinese Chestnut
1%	1	*Cupressus nootkatensis*	Yellow Cedar
1%	1	*Fraxinus pennsylvanica*	Green Ash
1%	1	*Gleditsia triacanthos*	Honey Locust
1%	1	*Larix decidua*	European Larch
1%	1	*Pinus sylvestris*	Scots Pine
1%	1	*Platanus occidentalis*	Sycamore
1%	1	*Populus balsamifera*	Balsam Poplar
1%	1	*Prunus serotinia*	Black Cherry
1%	1	*Prunus spp.*	Cherry
1%	1	*Tilia cordata*	Little Leaf Linden
1%	1	*Ulmus americana*	American Elm
100%	193		

1.2.2 Tree Removal and Preservation Recommendations

- Recommended preservation of 87 trees located within the subject site.
- Recommended removal of 106 trees located within the subject site. Many of these trees are over 20 cm DBH and are protected under the City of Burlington private tree by-law. See tree inventory chart in section 4.0 for compensation requirements.
- Pre, during, and post construction recommendations are outlined in the Construction Impact Mitigation Recommendations of this report.

2.0 Subject Site and Scope of Work

Refer to Figure 1 for scope of tree inventory. The subject site located



Figure 1 – City of Burlington 2024. NTS

Red dashed line – Limit of inventory

3.0 METHODOLOGY

Fieldwork was completed on October 30th, 2024 by Kathleen Garrett, ISA certified arborist ON 3009A, Luke Koudys, ISA certified arborist, and Ron Koudys, Landscape Architect. RKLA utilized data from NRSI to confirm tree locations and species. The trees were previously tagged by NRSI, and RKLA conducted a tree assessment using the same tags. Several tag numbers are deleted, as some trees have died and were removed. Others were located on the adjacent property at 143 Lakeshore Road, and therefore were not included in this application. been previously removed or were located on the adjacent property at 143 Lakeshore Road, and therefore were not included in this inventory. Trees with a minimum DBH of 10cm within the given scope were identified and assessed. Since the previous inventory some trees have grown larger than 10cm DBH and were added to the inventory. DBH measurements for all trees were adjusted as well as canopy size.

The following information was recorded for each individual tree:

Genus + specific epithet (Species)
Diameter at breast height (DBH) (centimetres)
Crown radius (metres)
Crown Condition (overall general vigour of crown)
Structural Form (excellent, good, fair, poor)
Structural Integrity (good, fair, poor, hazard)
General Comments

3.1 HEALTH ASSESSMENT

Trees were assessed following accepted arboricultural techniques and best practices using a limited visual inspection. The inspection included a 360-degree visual examination of the above-ground parts of each tree for structural defects including cavities, wounds, scars, external indicators of internal decay, evidence of insect presence, discoloured or deformed foliage, canopy and root distribution, and the overall condition of the tree. Evaluation of tree health was based on visible tree health indicators including live buds, foliage condition, deadwood, structural defects, form, and signs of disease or insect infestation. If needed, field observations were reviewed against available online imagery of the site to assist in determining tree canopy health. Quantified health assessments included in the inventory are explained here:

Crown Condition Assessment

5 Healthy: less than 10% crown decline
4 Slight decline: 11% - 30% crown decline
3 Moderate decline: 31% - 60% crown decline
2 Severe decline: 61% - 90% crown decline
1 Dead - No visible indication of living foliage or buds in crown

Structural Form Assessment

Excellent: An ideal expression of a specific tree species, true to form, balanced canopy, good flare, typical internode length, full crown, etc.
Good: A satisfactory and generally expected expression of a specific tree species, with only minor or typical variances from an ideal form.

Fair: Nearly satisfactory, with defects or a combination of defects such as codominant leaders, unbalanced crown, poor/no flare, shortened internodes, has been poorly pruned, etc.
Poor: Significantly flawed expression of a specific tree species

Structural Integrity Assessment
Good: Defects if present are minor (e.g. twig dieback, small wounds); defective tree part is small (e.g. 5-8 cm diameter limb) providing little if any risk.
Fair: Defects are numerous or significant (e.g. dead scaffold limbs); defective parts are moderate in size (e.g. limb greater than 5-8 cm in diameter).
Poor: Defects are severe (trunk cavity in excess of 50%); defective parts are large (e.g. majority of crown).
Hazard: Defects are severe and acute; defective part or collective defective parts render the tree a high risk threat to potential targets.

3.2 Critical Root Zones

The critical root zone of a tree is the portion of the root system that is the minimum necessary to maintain tree vitality and stability. Critical root zones are commonly prescribed by municipal bylaws based solely on DBH and/or drip line, and are typically expressed as a circular shape around the tree. There are a number of other factors, however, that are considered when establishing a critical root zone. These include species, soil type, adjacent hardscape features, recent construction, ect.

Factors that inform location and extent of a tree preservation barriers to protect the critical root zone include: species tolerance to root loss and other construction impacts (as established by authoritative resources and professional experience), tree trunk size (DBH), tree health and vigour, structural condition, landscape context, soil type, moisture availability, topography, ground cover, crown size (drip line) and balance, current physical root restrictions, visible root arrangement, relationship to neighbouring trees, relationship between tree and proposed construction, type of proposed construction, etc.

4.0 Tree Inventory and Preservation/Removal Recommendations

4.1 Tree Data Table

The following recommendations are based on requirements of the current site plan.

Grey indicates recommended removal.

GENERAL INFORMATION			SIZE		HEALTH & CONDITION				RECOMMENDATIONS			
ID #	BOTANICAL NAME	COMMON NAME	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS/ IMPACT MITIGATION	PRESERVE OR REMOVE	Permit Requirements under City of Burlington Private Tree by-law	Compensation Trees Required
501	*Juglans X*	Butternut Hybrid	34	5	4	Fair	Good	slightly supressed, minor dieback	conflict with proposed construction	remove	X	2

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502	*Juglans cinerea*	Butternut	63	8	5	Good	Good	Minor girdling root, soot present	conflict with proposed construction	remove	X	3
503	*Juglans cinerea*	Butternut	57	10	5	Good	Fair	Sooty patches, canker and rot on buttress root, fress evident	conflict with proposed construction	remove	X	3
505	*Acer platanoides*	Norway Maple	29	5	5	Good	Good	Growing on top of bank, exposed surface roots	tree protection barrier	preserve		
510	*Tilia americana*	American Basswood	34	5	~5	Good/Fair	Good	Lean west, multiple ~5cm suckers	tree protection barrier	preserve		
511	*Acer platanoides*	Norway Maple	25	5	5	Good/Fair	Good	Significant trunk curve to the west before straightening, grown top of ravine undermined by erosion	tree protection barrier	preserve		
512	*Tilia americana*	American Basswood	18	4	~5	Poor/Fair	Poor/Fair	major lean west, suckering, edge of bank	tree protection barrier	preserve		
513	*Tilia americana*	American Basswood	21	5	5	Fair	Fair	Trunk growing into tree 515	tree protection barrier	preserve		
514	*Acer platanoides*	Norway Maple	12	3	5	Fair	Good	Tag not found, growing into 515	tree protection barrier	preserve		
515	*Acer saccharinum*	Silver Maple	90,66,60	10	5	Fair/Good	Fair	bank eroding from under it, largest stem leaning west, bark inclusion	tree protection barrier	preserve		
516	*Fraxinus americana*	White Ash	12	1	1	Poor	Hazard	Basal rot, fallen north into trees	tree protection barrier	preserve		
517	*Fraxinus americana*	White Ash	18	4	1	Good	Poor	Boreholes, dead suckers	tree protection barrier	preserve		

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518	*Acer platanoides*	Norway Maple	64	6	5	Good/Fair	Good	Basal cavity, many large nails in trunk, leaning east	tree protection barrier	preserve		
519	*Crataegus*	Hawthorn	19	3	5	Fair	Good	Large eyebolt in trunk, leaning west, epicormic grown, broken branches	conflict with proposed construction	remove		
520	*Picea pungens*	Colorado Spruce	14	1	1			dead	conflict with proposed construction	remove		
521	*Juglans nigra*	Black Walnut	28	5	~5	Good	Good	no tag found	conflict with proposed construction	remove	X	2
522	*Picea pungens*	Colorado Spruce	24	3	2	Fair	Fair	suckers, bark inclusion, no tag found	conflict with proposed construction	remove	X	2
523	*Amelanchier spp.*	Serviceberry	12	1	1			Dead, not a serviceberry	conflict with proposed construction	remove		
524	*Picea pungens*	Colorado Spruce	14	2	4	Good	Good		conflict with proposed construction	remove		
526	*Acer platanoides*	Norway Spruce	55	6	5	Good	Good		conflict with proposed construction	remove	X	3
527	*Picea pungens*	Norway Spruce	48	5	5	Good	Good		conflict with proposed construction	remove	X	3
528	*Tilia americana*	American Basswood	19	4	~5	Poor	Good	Crooked leader, large bark split on west side of trunk	tree protection barrier	preserve		
530	*Juglans X*	Butternut Hybrid	46	6	~5	Good	Good	Soot all around trunk flair	tree protection barrier	preserve		
531	*Tsuga canadensis*	Eastern Hemlock	20	4	5	Good	Good		tree protection barrier	preserve		

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533	*Picea abies*	Norway Spruce	55	5	5	Good	Good		tree protection barrier	preserve		
534	*Picea abies*	Norway Spruce	14	2	5	Good	Good	Canopy just a top fringe, int.	tree protection barrier	preserve		
535	*Populus balsamifera*	Balsam Poplar	43					Big wound on trunk	tree protection barrier	preserve		
536	*Tilia cordata*	Little Leaf Linden	19	4	5	Good	Good	Growing into adjacent gabions	tree protection barrier	preserve		
537	*Picea glauca*	White Spruce	47	4	5	Good	Good	canopy high, f.e.	tree protection barrier	preserve		
538	*Picea abies*	Norway Spruce	46	6	5	Good	Good	Lower branches self-pruned	tree protection barrier	preserve		
539	*Picea pungens*	Colorado Spruce	16	2	2	Good	Poor	Mostly dead	conflict with propsoed construction	remove		
540	*Picea pungens*	Colorado Spruce	24	4	1				tree protection barrier	preserve		
542	*Betula papyrifera*	White Birch	18,14	4	~5	Fair	Fair	14cm stem has large split, slight lean west, large pruning wounds	tree protection barrier	remove		
543	*Ginkgo biloba*	Ginkgo	38	3	5	Good	Good		conflict with proposed construction	remove	X	3
544	*Picea pungens*	Colorado Spruce	15	1	1	-	-	moribund	tree protection barrier	preserve		
545	*Betula papyrifera*	White Birch	28	2	5	Good	Good	Small multistems, one snapped off, slight lean south	tree protection barrier	preserve		
546	*Picea pungens*	Colorado Spruce	27	3	1	Fair	Good	lean west	tree protection barrier	preserve		

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547	*Morus alba*	White Mulberry	33,18	4	5	Good	Good	Open wound on trunk with rot forming	tree protection barrier	preserve		
548	*Larix decidua*	European Larch	29	3	~5/4	Good	Good	Thin and high canopy	tree protection barrier	preserve		
549	*Fagus americana*	American Beech	16	3	5	Good	Good	minor trunk cavity, slight lean north	conflict with proposed construction	remove		
550	*Fagus americana*	American Beech	18	3	5	Good	Good	Basal wound healing	conflict with proposed construction	remove		
551	*Betula papyrifera*	White Birch	30,29,27	8	5	Good	Good	Primary union at grade	conflict with proposed construction	remove	X	2
552	*Populus deltoides*	Eastern Cottonwood	60	4	5	Fair	Fair	lopsided canopy, trunk lean	conflict with proposed construction	remove	X	3
553	*Populus deltoides*	Eastern Cottonwood	52	4	5	Fair	Good	minor trunk lean	conflict with proposed construction	remove	X	3
554	*Populus deltoides*	Eastern Cottonwood	53	4	5	Fair	Good	minor trunk lean, supressed	conflict with proposed construction	remove	X	3
555	*Acer negundo*	Manitoba Maple	22	6	5	Poor	Good	canopy leaning, supressed	conflict with proposed construction	remove	X	2
556	*Thuja occidentalis*	Eastern White Cedar	19	1	1	Fair	Fair	moribund	conflict with proposed construction	remove		
557	*Picea abies*	Norway Spruce	37	3	4	Fair	Good		conflict with proposed construction	remove	X	3
558	*Picea abies*	Norway Spruce	32	3	5	Good	Good		conflict with proposed construction	remove	X	2
559	*Tilia americana*	American Basswood	28, 64	3	4	Poor	Fair	codominant stems, included bark, leaning	conflict with proposed construction	remove	X	3

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560	*Celtis occidentalis*	Redbud	25, 24	2	4	Fair	Good	codominant stems, primary union at grade	conflict with proposed construction	remove	X	2
561	*Fagus americana*	European Beech	40	4	5	Good	Good		conflict with proposed construction	remove	X	3
562	*Fagus americana*	European Beech	39	4	5	Good	Good		conflict with proposed construction	remove	X	3
564	*Acer platanoides*	Norway Maple	14	2	5	Fair	Good	trunk wound, healing	conflict with proposed construction	remove		
565	*Pinus strobus*	Eastern White Pine	67	6	4	Fair	Good	only canopy present at top	conflict with proposed construction	remove	X	3
566	*Taxus baccata*	English Yew	19	2	4	Good	Good	sparse	conflict with proposed construction	remove		
567	*Acer sacharum*	Sugar Maple	61	8	5	Good	Good	full form	conflict with proposed construction	remove	X	3
568	*Tsuga canadensis*	Eastern Hemlock	12	2	4	Good	Good	sparse	conflict with proposed construction	remove		
569	*Taxus baccata*	English Yew	22	3	4	Good	Good	sparse	conflict with proposed construction	remove	X	2
570	*Acer platanoides*	Norway Maple	26	4	5	Good	Good		conflict with proposed construction	remove	X	2
571	*Tilia americana*	American Basswood	36	3	4	fair	Fair	straggly, only 1 stem present	conflict with proposed construction	remove	X	3
572	*Tsuga canadensis*	Eastern Hemlock	15	2	5	Good	Good		conflict with proposed construction	remove		

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573	*Quercus rubra*	Red Oak	98	9	5	Good	Good		conflict with proposed construction	remove	X	4
575	*Thuja occidentalis*	Eastern White Cedar	33	3	4	Good	Good		conflict with proposed construction	remove	X	2
576	*Pinus nigra*	Austrian Pine	30	3	2	Fair	Fair	moribund	conflict with proposed construction	remove	X	2
577	*Pinus nigra*	Austrian Pine	35	3	2	Poor	Poor	covered in vines, moribund	conflict with proposed construction	remove	X	3
578	*Acer rubrum*	Red Maple	33, 31	4	4	Fair	Fair	codominant stems, primary union at grade	conflict with proposed construction	remove	X	2
579	*Pinus nigra*	Austrian Pine	36	4	4	Fair	Good	sparse	conflict with proposed construction	remove	X	3
580	*Aesculus hippocastanum*	Horsechestnut	18	3	4	Fair	Good	minor deadwood	conflict with proposed construction	remove		
581	*Gleditsia triacanthos*	Honey Locust	51	6	4	Good	Good		conflict with proposed construction	remove	X	3
582	*Pinus strobus*	Eastern White Pine	55	4	3	Poor	Poor	topped	conflict with proposed construction	remove		
583	*Thuja occidentalis*	Eastern White Cedar	19	2	4	Fair	Good	minor weeping trunk wounds	conflict with proposed construction	remove		
584	*Thuja occidentalis*	Eastern White Cedar	22	2	3	-	-	dead	conflict with proposed construction	remove	X	2
585	*Picea glauca*	White Spruce	22		1	-	-	Dead	tree protection barrier	preserve		
586	*Picea glauca*	White Spruce	29	4	4	Good	Good	Windrow, high crown	tree protection barrier	preserve		

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595	*Acer platanoides*	Norway Maple	105	9	4	Fair	Good		conflict with proposed construction	remove	X	4
596	*Pinus nigra*	Austrian Pine	44	4	4	Fair	Good	limbed up, canopy only present at top	conflict with proposed construction	remove	X	3
597	*Pinus nigra*	Austrian Pine	61	5	4	Fair	Good	limbed up, canopy only present at top	conflict with proposed construction	remove	X	3
598	*Pinus nigra*	Austrian Pine	49	4	3	Fair	Good	limbed up, canopy only present at top	conflict with proposed construction	remove	X	3
599	*Ginkgo biloba*	Ginkgo	44	5	5	Good	Good		conflict with proposed construction	remove	X	3
600	*Platanus occidentalis*	Sycamore	52	5	5	Fair	Good	large burls on trunk	conflict with proposed construction	remove	X	3
663	*Picea pungens*	Colorado Spruce	27	2	3	Poor	Fair	covered in grapevine, canopy dieback	tree protection barrier	preserve		
664	*Picea pungens*	Colorado Spruce	24	2	3	Poor	Fair	covered in grapevine, canopy dieback	tree protection barrier	preserve		
665	*Picea pungens*	Colorado Spruce	16	1	3	Poor	Fair	extensive canopy dieback	tree protection barrier	preserve		
666	*Picea pungens*	Colorado Spruce	34	2	3	Poor	Fair	extensive canopy dieback	tree protection barrier	preserve		
667	*Picea pungens*	Colorado Spruce	34	2	4	Fair	Fair	canopy dieback	tree protection barrier	preserve		
668	*Picea pungens*	Colorado Spruce	30	2	4	Fair	Fair	canopy dieback	tree protection barrier	preserve		
669	*Picea pungens*	Colorado Spruce	39	2	4	Fair	Fair	canopy dieback,larger branches dead	tree protection barrier	preserve		

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670	*Picea pungens*	Colorado Spruce	38	2	4	Fair	Fair	slightly supressed, canopy dieback	tree protection barrier	preserve		
671	*Fr*	European Beech	102	8	5	Good/Fair	Good	Narrow primary union, weeping bark inclusion	tree protection barrier	preserve		
672	*Taxus baccata*	English Yew	14	3	5	Good/Fair	Good	Understorey	tree protection barrier	preserve		
673	*Pinus nigra*	Austrian Pine	57	4	3	Poor	Fair	Major canopy dieback, multiple limbs dead	conflict with proposed construction	remove	X	3
674	*Picea pungens*	Colorado Spruce	21	3	4	Poor	Fair	Canopy dieback	tree protection barrier	preserve		
675	*Pinus nigra*	Austrian Pine	33	2	4	Poor	Fair	Canopy dieback, trunk damage	tree protection barrier	preserve		
676	*Picea pungens*	Colorado Spruce	25	2	4	Fair	Fair	Canopy dieback, supressed	tree protection barrier	preserve		
677	*Picea pungens*	Colorado Spruce	31	2	4	Fair	Fair	Canopy dieback, supressed	tree protection barrier	preserve		
678	*Prunus serotinia*	Black Cherry	23	3	4	Fair	Good	Supressed	tree protection barrier	preserve		
679	*Picea pungens*	Colorado Spruce	24	2	3	Poor	Fair	Supressed, narrow crown	tree protection barrier	preserve		
680	*Picea pungens*	Colorado Spruce	31	2	4	Fair	Fair	Canopy dieback, one sided canopy	tree protection barrier	preserve		
681	*Acer platanoides*	Norway Maple	104	8	5	Good	Good	Bark inclusion, dead stem, canopy biased west	tree protection barrier	preserve		

GENERAL INFORMATION			SIZE		HEALTH & CONDITION				RECOMMENDATIONS			
ID #	BOTANICAL NAME	COMMON NAME	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS/ IMPACT MITIGATION	PRESERVE OR REMOVE	Permit Requirements under City of Burlington Private Tree by-law	Compensation Trees Required
682	*Acer platanoides*	Norway Maple	108	8	5	Fair	Good	Stem on south snapped with ragged wound, bark inclusion weeping, epicormic growth, vertical trunk fissure	tree protection barrier	preserve		
683	*Taxus baccata*	English Yew	35	3	5	Good	Good	Multiple ~2cm stems	tree protection barrier	preserve		
684	*Pinus strobus*	Eastern White Pine	33	4	5	Good	Good	High crown	tree protection barrier	preserve		
685	*Pinus strobus*	Eastern White Pine	51	5	5	Good	Good	Canopy north	tree protection barrier	preserve		
686	*Pinus strobus*	Eastern White Pine	34	5	5	Good	Good	Canopy north	tree protection barrier	preserve		
687	*Pinus strobus*	Eastern White Pine	28	5	4	Good	Good	Canopy north, lost leader reestablishing	tree protection barrier	preserve		
688	*Pinus strobus*	Eastern White Pine	66	5	4	Good	Good	Canopy north	tree protection barrier	preserve		
689	*Acer platanoides*	Norway Maple	106	6	5	Fair	Fair	Broken stem, weeping bark inclusion, rotting cavity at primary union, vertical bark split	tree protection barrier	preserve		
690	*Picea abies*	Norway Spruce	62	5	4	Good	Good	Formerly-sheltered SE portion of trunk now exposed	conflict with proposed construction	remove	X	3
691	*Syringa spp.*	Dwarf Lilac	12	2	5	Fair	Good	epicormic growth	conflict with proposed construction	remove		

GENERAL INFORMATION			SIZE		HEALTH & CONDITION				RECOMMENDATIONS			
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692	*Acer rubrum*	Red Maple	42	5	5	Fair	Good	sloughing bark	conflict with proposed construction		X	3
693	*Pseudotsuga menziesii*	Douglas Fir	57	6	5	Good	Good		conflict with proposed construction	remove	X	3
694	*Pseudotsuga menziesii*	Douglas Fir	51	5	4	Fair	Good	canopy one sided	conflict with proposed construction	remove	X	3
696	*Amelanchier spp.*	Serviceberry	13	1	5	Fair	Good	low branch unions	tree protection barrier	preserve		
697	*Syringa spp.*	Common Lilac	12	2	2	Poor	Poor	grown into manitoba maple, rotting	tree protection barrier	preserve		
698	*Acer platanoides*	Norway Maple	25, 16	4	5	Poor	Poor	low union	tree protection barrier	preserve		
701	*Taxus baccata*	English Yew	5-14	3	5	Fair	Good	typical form, multi-stem	tree protection barrier	preserve		
702	*Picea pungens*	Colorado Spruce	27	2	4	Fair	Good	slightly sparse	tree protection barrier	preserve		
703	*f*	Yellow Cedar	16	2	5	Good	Good		tree protection barrier	preserve		
704	*Aesculus hippocastanum*	Horsechestnut	60	4	5	Good	Good		tree protection barrier	preserve		
707	*Picea abies*	Norway Spruce	25	2	3	Fair	Good	sparse	conflict with proposed construction	remove		
708	*Picea abies*	Norway Spruce	39	3	4	Good	Good		conflict with proposed construction	remove		
709	*Acer rubrum*	Red Maple	45	3	5	Good	Good		conflict with proposed construction	remove	X	3

GENERAL INFORMATION			SIZE		HEALTH & CONDITION				RECOMMENDATIONS			
ID #	BOTANICAL NAME	COMMON NAME	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS/ IMPACT MITIGATION	PRESERVE OR REMOVE	Permit Requirements under City of Burlington Private Tree by-law	Compensation Trees Required
710	*Picea abies*	Norway Spruce	41	2	4	Fair	Good	sparse	conflict with proposed construction	remove	X	3
711	*Picea abies*	Norway Spruce	41	3	5	Good	Good		conflict with proposed construction	remove	X	3
712	*Picea abies*	Norway Spruce	56	4	5	Fair	Good	canopy one sided	conflict with proposed construction	remove	X	3
713	*Picea abies*	Norway Spruce	49	3	5	Good	Good		conflict with proposed construction	remove	X	3
714	*Picea abies*	Norway Spruce	43	3	5	Fair	Good	canopy one sided	conflict with proposed construction	remove	X	3
719	*Ulmus americana*	White Elm	22	3	3	Poor	Poor	Moribund, trunk leaning	conflict with proposed construction	remove	X	2
720	*Acer platanoides*	Norway Maple	24	4	5	Good	Good	slight trunk lean	conflict with proposed construction	remove	X	2
721	*Acer platanoides*	Norway Maple	26, 25	4	5	Poor	Fair	codominant stems, primary union, included bark	conflict with proposed construction	remove	X	2
723	*Fagus sylvatica*	European Beech	18	2	4	Fair	Good	trunk burls	conflict with proposed construction	remove		
724	*Acer platanoides*	Norway Maple	18	2	5	Good	Good		conflict with proposed construction	remove		
725	*Tilia americana*	American Basswood	54	5	2	Fair	Fair	dying, major cavity	conflict with proposed construction	remove	X	3
728	*Acer platanoides*	Norway Maple	23	3	5	Fair	Fair	significant lean	conflict with proposed construction	remove	X	2

GENERAL INFORMATION			SIZE		HEALTH & CONDITION				RECOMMENDATIONS			
ID #	BOTANICAL NAME	COMMON NAME	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS/ IMPACT MITIGATION	PRESERVE OR REMOVE	Permit Requirements under City of Burlington Private Tree by-law	Compensation Trees Required
729	*Tsuga canadensis*	Eastern Hemlock	13	2	5	Good	Good		conflict with proposed construction	remove		
730	*Betula alleghaniensis*	Yellow Birch	85	8	2	Poor	Poor	moribund	conflict with proposed construction	remove	X	4
731	*Tsuga canadensis*	Eastern Hemlock	13	2	4	Fair	Good	Supressed	conflict with proposed construction	remove		
732	*Tsuga canadensis*	Eastern Hemlock	16	1	5	Good	Good		conflict with proposed construction	remove		
733	*Tsuga canadensis*	Eastern Hemlock	16	2	5	Fair	Fair	supressed	conflict with proposed construction	remove		
734	*Picea abies*	Norway Spruce	63	7	5	Good	Good		conflict with proposed construction	remove	X	3
735	*Picea abies*	Norway Spruce	39	4	5	Good	Good		conflict with proposed construction	remove	X	3
736	*Picea abies*	Norway Spruce	38	4	4	Good	Good	sparse	conflict with proposed construction	remove	X	3
738	*Picea abies*	Norway Spruce	61	5	4	Fair	Fair	significant lean	conflict with proposed construction	remove	X	3
742	*Pinus strobus*	Eastern White Pine	47	3	4	Good	Good	sparse	conflict with proposed construction	remove	X	3
743	*Picea abies*	Norway Spruce	34	3	4	Fair	Good	limbed up, only present at top	conflict with proposed construction	remove	X	3
744	*Picea abies*	Norway Spruce	52	4	4	Fair	Good	limbed up, only present at top	conflict with proposed construction	remove	X	3
745	*Picea abies*	Norway Spruce	51	4	4	Fair	Good	limbed up, only present at top	conflict with proposed construction	remove	X	3

GENERAL INFORMATION			SIZE		HEALTH & CONDITION				RECOMMENDATIONS			
ID #	BOTANICAL NAME	COMMON NAME	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS/ IMPACT MITIGATION	PRESERVE OR REMOVE	Permit Requirements under City of Burlington Private Tree by-law	Compensation Trees Required
746	*Picea abies*	Norway Spruce	27	3	4	Fair	Good	limbed up, only present at top	conflict with proposed construction	remove	X	2
747	*Picea abies*	Norway Spruce	55	4	4	Good	Good	limbed up, only present at top	conflict with proposed construction	remove	X	3
748	*Picea abies*	Norway Spruce	53	4	4	Fair	Good	limbed up, only present at top	conflict with proposed construction	remove	X	3
749	*Picea abies*	Norway Spruce	51	4	4	Fair	Good	limbed up, only present at top	conflict with proposed construction	remove	X	3
750	*Picea abies*	Norway Spruce	52	4	4	Fair	Good	limbed up, only present at top	conflict with proposed construction	remove	X	3
751	*Taxus baccata*	English Yew	19	3	5	Good	Good	Growing in understory tree in nice condition	tree protection barrier	preserve		
771	*Pinus nigra*	Austrian Pine	50	4	4	Fair	Good	limbed up, only present at top	conflict with proposed construction	remove	X	3
774	*Acer rubrum*	Red Maple	52	5	5	Good	Good		conflict with proposed construction	remove	X	3
775	*Quercus rubra*	Red Oak	88	8	5	Good	Good		conflict with proposed construction	remove	X	4
776	*fa*	Chinese Chestnut	24	3	5	Fair	Good		conflict with proposed construction	remove	X	2
777	*Castanea mollissima*	Chinese Chestnut	38	4	5	Fair	Good		conflict with proposed construction	remove	X	3
778	*Betula alleghaniensis*	Yellow Birch	94	9	5	Poor	Fair	multiple cavities, girdling root	conflict with proposed construction	remove	X	4
780	*Pseudotsuga menziesii*	Douglas Fir	54	5	4	Fair	Good	canopy one sided	conflict with proposed construction	remove	X	3

GENERAL INFORMATION			SIZE		HEALTH & CONDITION				RECOMMENDATIONS			
ID #	BOTANICAL NAME	COMMON NAME	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS/ IMPACT MITIGATION	PRESERVE OR REMOVE	Permit Requirements under City of Burlington Private Tree by-law	Compensation Trees Required
781	*Picea abies*	Norway Spruce	3	3					conflict with proposed construction	remove		
782	*Pinus sylvestris*	Scots Pine	53	4	3	Fair	Fair	sparse canopy	tree protection barrier	preserve		
783	*Picea abies*	Norway Spruce	53	8	4	Fair	Good	minor dieback	tree protection barrier	preserve		
784	*Morus alba*	White Mulberry	21 20, 15, 11	4	5	Poor	Poor	stems twisting, primary union at grade	tree protection barrier	preserve		
785	*Thuja occidentalis*	Eastern White Cedar	18	3	4	Fair	Fair	approx. 4 stems, primary union at grade	tree protection barrier	preserve		
820	*Acer platanoides*	Norway Maple	16	4	5	Good	Good	Canopy east	tree protection barrier	preserve		
821	*Acer platanoides*	Norway Maple	14	4	5	Good	Good	Top of eroding bank, canopy west, leggy, growing into 515	tree protection barrier	preserve		
823	*Morus alba*	White Mulberry	13	2	5	Fair	Fair	low primary union, included bark at unions	conflict with proposed construction	remove		
824	*Acer platanoides*	Norway Maple	16	2	5	Fair	Fair	leaning, supressed	tree protection barrier	preserve		
825	*Acer platanoides*	Norway Maple	21	4	5	Good	Good		tree protection barrier	preserve		
D	*Juglans cinerea*	Butternut	81	6	-	Fair/poor	Fair	Heavy soot, vertical fissures, rot visible in large prune wounds, cavities	located at 143 Lakeshore Road - will not be impacted by development	preserve		

GENERAL INFORMATION			SIZE		HEALTH & CONDITION				RECOMMENDATIONS			
ID #	BOTANICAL NAME	COMMON NAME	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS/ IMPACT MITIGATION	PRESERVE OR REMOVE	Permit Requirements under City of Burlington Private Tree by-law	Compensation Trees Required
E	*Juglans X*	Butternut Hybrid	39	3	-	Fair/poor	Fair	Cankers all around trunk, sooty, lean	tree protection barrier	preserve		
F	*Juglans cinerea*	Butternut	26	4	-	Fair/poor	Fair	Soot at base, minor cankers, leader lost with new one establishing, big canker high on trunk	tree protection barrier	preserve		
G	*Acer platanoides*	Norway Maple	14	3	3	Fair	Good	trunk lean	tree protection barrier	preserve		
R	*Ginkgo biloba*	Ginkgo	69	8	5	Fair	Fair/Good	Tight branching, bark inclusion, measured below BH, stems abutting vertically	tree protection barrier	preserve		
S	*Acer rubrum*	Red Maple	45,40,21,15	5	4	Fair	God	15cm stem dead, 21cm stem likely dead, epicormic growth	tree protection barrier	preserve		
T	*Morus spp.*	Mulberry	25	3	~5	Fair	Fair	Growing into fence, wisteria in canopy, narrow primary union, bark inclusion, canopy east	tree protection barrier	preserve		
X	*Juglans X*	Butternut Hybrid	46	4	~3	Poor	Poor	Full of cavities, very sooty, location appears wrong and is on adjacent site	tree protection barrier	preserve		

GENERAL INFORMATION			SIZE		HEALTH & CONDITION				RECOMMENDATIONS			
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Y	*Acer platanoides*	Norway Maple	25	3	5	Good	Good		tree protection barrier	preserve		
Z	*Prunus spp.*	Cherry	30	2	4	Fair	Fair		tree protection barrier	preserve		
EE	*Morus alba*	White Mulberry	36	4	5	Fair	Fair	trunk lean	tree protection barrier	preserve		
FF	*Populus deltoides*	Eastern Cottonwood	27	6	5	Fair	Fair	leaning, supressed	conflict with proposed construction	remove	X	2
GG	*Fraxinus pennsylvanica*	Green Ash	34	2	4	Fair	Good	supressed	conflict with proposed construction	remove	X	2
HH	*Populus deltoides*	Eastern Cottonwood	85	2	5	Fair	Fair	leaning, supressed	conflict with proposed construction	remove	X	4
KK	*Betula payrifera*	White Birch	22	3	4	Fair	Fair	sparse crown, previous branch failure	conflict with proposed construction	remove	X	2
LL	*Acer freemanii*	Freeman's Maple	48	4	5	Fair	Good	supressed, covered in grapevine	conflict with proposed construction	remove	X	3
MM	*Populus deltoides*	Eastern Cottonwood	42	2	5	Fair	Fair	supressed	conflict with proposed construction	remove	X	3
R1	*Morus spp.*	Mulberry	13,8,7,6,6,+	4	5	Fair	Good	Grown in between stumps, epicormic growth	tree protection barrier	preserve		
R2	*Tilia americana*	American Basswood	19	3	5	Fair	Good	Lean north, suckering	tree protection barrier	preserve		
R3	*Acer platanoides*	Norway Maple	20	4	5	Good	Good/fair	basal cavity	tree protection barrier	preserve		
R4	*Acer platanoides*	Norway Maple	16	3	5	Good	Good		tree protection barrier	preserve		

GENERAL INFORMATION			SIZE		HEALTH & CONDITION				RECOMMENDATIONS			
ID #	BOTANICAL NAME	COMMON NAME	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS/ IMPACT MITIGATION	PRESERVE OR REMOVE	Permit Requirements under City of Burlington Private Tree by-law	Compensation Trees Required
R5	*Juglans nigra*	Black Walnut	26,24,17	4	~5	Good/fair	Good/fair	Fence grown, tight branching, epicormic	tree protection barrier	preserve		

Total Compensation	230

5.0 Potential Construction Impacts on Trees

Trees have been recommended for removal due to direct conflict with the proposed development. Some trees that have been recommended for preservation may be in proximity to the proposed construction. Trees to be preserved may be affected by the construction process, or by the construction itself. It is imperative that the design team and the construction crew understand the potential for, and the causes of tree damage. Trees recommended for preservation may experience some or all of the following potential construction impacts. Strategies and methods to avoid these impacts are outlined in the Construction Impact Mitigation Recommendations section of this report.

5.1 Soil Compaction

Soil compaction is caused by heavy or repeated compression or vibration of the soil around the tree. Soil compaction reduces the number and size of macro and micro pore space that is vital for subsurface movement of air and water. The harmful effects of soil compaction include, but are not limited to: slower water infiltration, poor aeration, reduced root growth and an overall increased susceptibility to biotic and abiotic stressors.

5.2 Root Loss

Root loss occurs when roots are severed or crushed. The majority of roots are typically located within the top 60cm of soil and can extend outward up to three times the extent of the tree drip line. Excavation of any kind within the critical root zone* can sever or crush roots. Two categories of roots need to be considered when evaluating impacts of root loss - small, fibrous absorbing roots, and large structural roots. Significant loss of either or both of these functions can cause stress and/or affect the structural stability of the tree. Note, however, that it is commonly accepted that healthy trees can typically tolerate and recover from the removal of approximately 33% (up to a maximum of 50%) of their root mass depending on a number of factors including soil type and tree species. Thorough consideration regarding extent of acceptable root removal is dependent on individual species characteristics, root loss distribution, and site specific conditions *(ref. Trees and Development: A Technical*

Guide to Preservation of Trees During Land Development by Nelda Matheny and James R. Clark, 1998. Pg 72).

* Refer to 'Critical Root Zones" in this report for definition.

5.3 Grade Changes

Lowering of the grade around trees has immediate and long term effects on trees. Lowering of grade results in immediate root loss from cutting the roots which contributes to water stress from the root removal and potential reduced structural stability.

Raising the grade around a tree can be equally damaging. The addition of fill over the root zone of a tree alters the roots' ability for normal water and gas exchange that is necessary for healthy root growth and stability. Fill essentially suffocates the roots and can lead to the slow and eventual decline of the tree.

5.4 Mechanical Damage

Mechanical damage is caused by physical contact that damages the tree to any degree. During land development and construction activities, there is an increased risk of both minor and fatal mechanical damage to trees from construction equipment. Minor damage can create entry points for insects and pathogens, and fatal damage can cause irreparable structural damage.

5.5 Changes to Exposure - Sun and Wind

Trees can be negatively affected by increased exposure to sun or wind when neighbouring trees are removed. This can be of particular concern when 'interior trees' (trees that have developed surrounded by other trees) are suddenly exposed. These trees may experience higher intensity of direct sunlight resulting in leaf scald, sun scald, frost crack and instability due to increased wind and snow loads.

Trees can be negatively affected by decreased exposure to sunlight. Proposed development that includes tall buildings located to the south and west of mature existing trees can greatly reduce the amount of daily direct sunlight. While this change in environment may not cause the immediate or eventual death of a tree, it can certainly slow development and alter growing habits and patterns, and must therefore be a consideration when evaluating trees for potential preservation.

5.6 Soil Contamination

Soil health around a tree can be compromised by contamination from spills or leaks of fuels, solvents, or other construction related fluids.

5.7 Water Availability

Grading and servicing requirements for development can affect water availability for trees. Trees may experience a loss of available water due to a lowered water table or the capture or redirection of subsurface and/or overland flow. Conversely, trees may experience an increase of available water due to changes in site grading and storm water retention efforts.

The successful survival of the trees to be preserved is largely dependent on adhering to the construction impact mitigation recommendations that follow.

6.0 Construction Impact Mitigation Recommendations

The following general recommendations are provided to guide the removal process, mitigate construction impacts, and ensure compliance with provincial, federal, and municipal regulatory requirements. Some of the recommendations listed below are noted to be undertaken by an ISA certified arborist.

6.1 Pre-construction recommendations

a) Prior to any construction activity, tree preservation fencing is to be installed as per the attached tree preservation drawings and detail.
b) It is recommended that the existing ground-layer vegetation at the base of trees to be preserved remain intact within the critical root zone so as not to disturb the soil around the base of the existing trees.
c) Final site grading plans should ensure that the existing soil moisture conditions are maintained where possible.

6.2 Recommendations related to the construction process

a) Tree preservation fencing is to be maintained in good condition and effective for the duration of construction until all construction activity is complete or as approved for removal by the project arborist or landscape architect.
b) Tree preservation fencing is to remain intact as per the tree preservation drawings, and can only be temporarily removed with the express written consent from the project arborist or landscape architect. Should tree preservation fencing be temporarily relocated or moved, it is to be reinstated as per the tree preservation plans as soon as possible.
c) No construction, excavation, adding of fill, stockpiling of construction material, or heavy equipment is permitted within the critical root zone/within the tree preservation fencing.
d) When excavation near a tree is required, and it is anticipated that roots will be severed and exposed, the duration of exposure is to be minimized to prevent root desiccation.
e) During the excavation process, roots 25mm or larger that are severed and exposed should be hand pruned to leave a clean-cut surface. This work is to be be undertaken by an ISA certified arborist. Exposed severed roots that cannot be covered in soil on the same day as the cuts are made are to be kept moist. Exposed roots are to be kept moist by covering them with water soaked burlap or any other means available to prevent them from drying out.
f) Avoid idling heavy equipment under or within close proximity to trees to be preserved to prevent canopy damage from exposure to the heat of the exhaust.
g) Broken branches on trees within the subject site to be preserved should be cleanly cut as soon as possible after the damage has occurred. This work is to be undertaken by an ISA certified arborist.

6.3 Post-construction recommendations

a) Avoid discharging rain water leaders adjacent to retained trees, as this may result in an overly moist environment which can cause root rot.
b) After all work is completed, tree preservation fences and any other impact mitigation materials must be removed.
c) A final review must be undertaken by the project arborist or landscape architect to ensure that all mitigation measures as described above have been met.

7.0 DISCLAIMER

The assessment of the trees presented within this report has been made using accepted arboricultural techniques. These include a visual examination of the above-ground parts of each tree for structural defects, scars, external indications of decay, evidence of insect presence, discoloured foliage, the general condition of the trees and the surrounding site, as well as the proximity of property and people. None of the trees examined were dissected, cored, probed, or climbed, and detailed root crown examinations involving excavation were not undertaken.

Notwithstanding the recommendations and conclusions made in this report, it must be realized that trees are living organisms and their health and vigour is constantly changing. They are not immune to changes in site conditions or seasonal variations in the weather.

While reasonable efforts have been made to ensure the trees recommended for retention are healthy, no guarantees are offered or implied, that these trees or any part of them will remain standing.

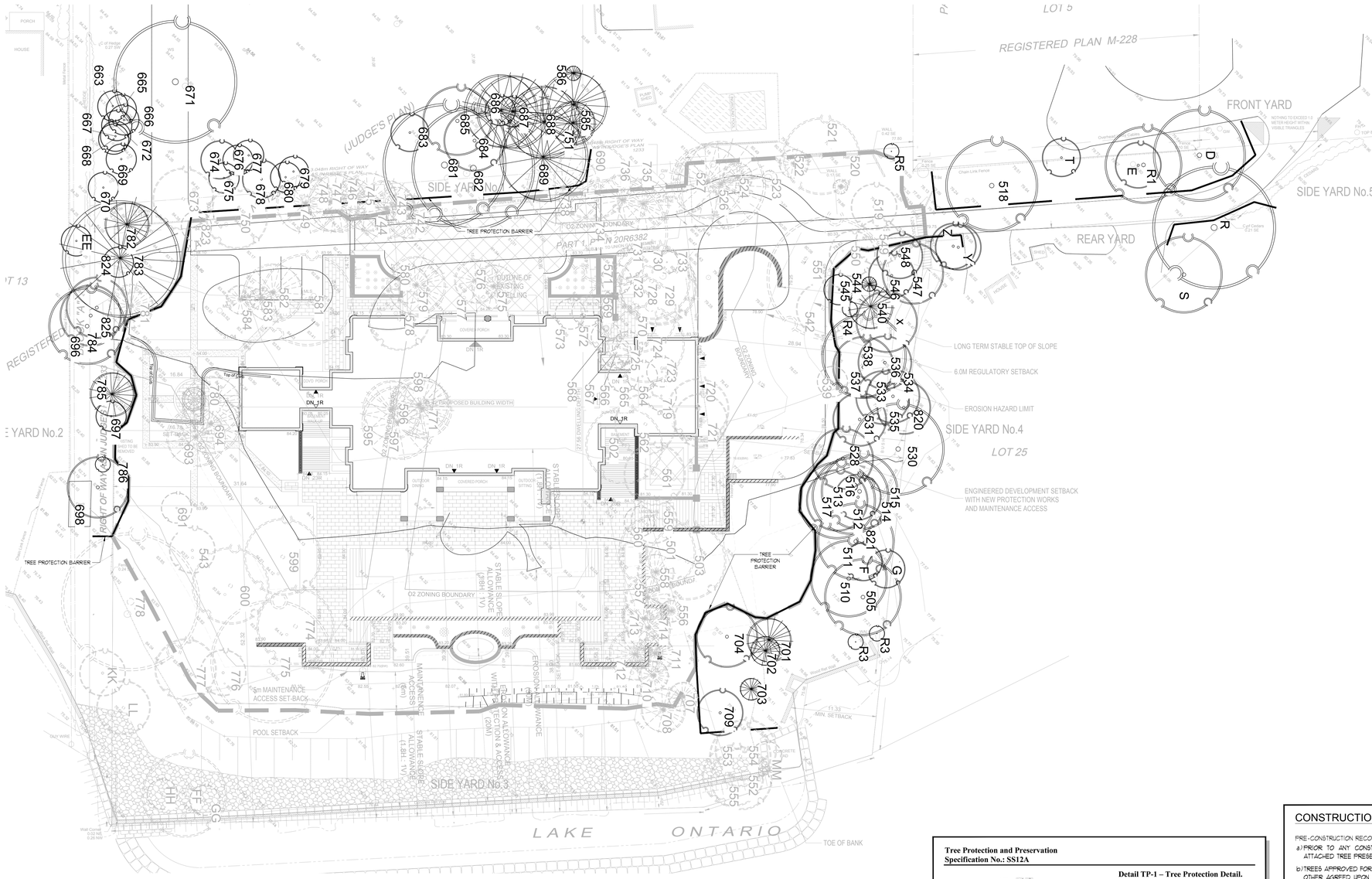
Note that this arborist report has been prepared using the latest drawings and information provided by the client. Any subsequent design or site plan changes affecting trees may require revisions to this report. Any new information or drawings are to be provided to RKLA prior to report submission to planning authorities.

8.0 CONTACT INFORMATION

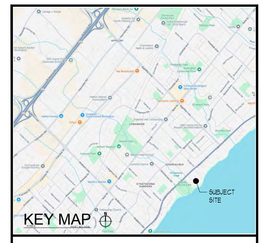
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9.0 Appendix A - Tree Preservation Drawings



TREE PRESERVATION PLAN
SCALE = 1:250



LEGEND

- EXISTING DECIDUOUS TREES TO REMAIN (TREE NUMBER)
- EXISTING DECIDUOUS TREES TO BE REMOVED (TREE NUMBER)
- EXISTING CONIFEROUS TREES TO REMAIN (TREE NUMBER)
- EXISTING CONIFEROUS TREES TO BE REMOVED (TREE NUMBER)
- EXISTING PLANTINGS TO REMAIN
- EXISTING PLANTINGS TO BE REMOVED
- TREE PROTECTION BARRIER

City of Burlington

TREE PROTECTION ZONE (TPZ)

No equipment or vehicles shall be operated, parked, repaired or refueled within the Tree Protection Zone.

No construction activity, grade changes, surface treatment or excavations of any kind is permitted within the Tree Protection Zone.

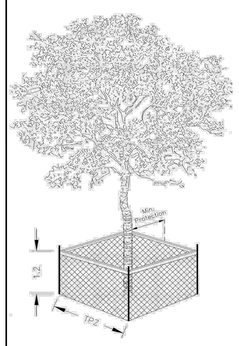
No materials or fill may be stored within the Tree Protection Zone.

This tree protection barrier must not be removed prior to the completion of construction without written authorization from the City of Burlington, Urban Forestry Department.

For information, contact:
City of Burlington, Development and Infrastructure Division,
905-335-7642.

Tree Protection and Preservation Specification No.: SS12A

Detail TP-1 – Tree Protection Detail.



Trunk Diameter (DBH) [2]	Minimum Tree Protection Zone (MTPZ) Distances Required [3]	Critical Root Zone (CRZ) Distances Required [3&4]
< 10 cm	1.8 m	1.8 m
11 - 40 cm	2.4 m	4.0 m
41 - 50 cm	3.0 m	5.0 m
51 - 60 cm	3.6 m	6.0 m
61 - 70 cm	4.2 m	7.0 m
71 - 80 cm	4.8 m	8.0 m
81 - 90 cm	5.4 m	9.0 m
91 - 100+ cm	6.0 m	10.0 m

NOTES:

[1] The roots of a tree can extend from the trunk to approximately 2-3 times the distance of the drip line.
[2] Diameter at breast height (DBH) is the measurement of tree trunk taken at 1.4 metres above ground.
[3] Minimum Tree Protection Zone and Critical Root Zone distances are to be measured from the outside edge of the tree base towards the drip line and may be limited by an existing paved surface, provided the existing paved surface remains intact throughout the construction work and is subject to Section 6 of this specification.
[4] Where work is being performed beyond the Minimum Tree Protection Zone but within the Critical Root Zone the works are subject to Section 8 of this specification.

TREE PROTECTION BARRIER

1. The required barrier is a 1.2 metre (4 ft) high orange plastic web snow fencing on 2" x 4" frame. Where orange plastic web snow fencing creates a restriction to sightlines, page wire fencing with reflective tape can be used.
2. Tree protection barriers are to be erected prior to the commencement of any construction or grading activities on the site and are to remain in place throughout the entire duration of the project. The barriers shall be maintained erect and in good repair throughout the duration of construction operations with breaks and unsupported sections repaired immediately. Tree protection may be not be removed prior to the completion of construction without written authorization from the Manager of Urban Forestry or designate.
3. All supports and bracing used to safely secure the barrier should be located outside the MTPZ. All supports and bracing should minimize damage to roots.
4. Where some fill or excavated material must be temporarily located near a MTPZ, a wooden barrier with silt fencing must be used to ensure no material enters the MTPZ.
5. No materials or fill may be stored within the MTPZ.
6. Equipment or vehicles shall not be operated, parked, repaired, or refueled within the MTPZ.
7. No construction activity, grade changes, surface treatment or excavations of any kind is permitted within the MTPZ without written authorization from the Manager of Urban Forestry or designate.
8. A laminated Minimum Tree Protection Zone sign (See Detail TP-3 – Minimum Tree Protection Zone Sign) must be attached to the side of the Tree Protection where it will be visible by persons entering the site. Minimum size must be 10"x14".

CONSTRUCTION IMPACT MITIGATION RECOMMENDATIONS

PRE-CONSTRUCTION RECOMMENDATIONS

a) PRIOR TO ANY CONSTRUCTION ACTIVITY, TREE PRESERVATION FENCING IS TO BE INSTALLED AS PER THE ATTACHED TREE PRESERVATION DRAWINGS AND DETAIL.

b) TREES APPROVED FOR REMOVAL ARE TO BE CLEARLY INDICATED IN THE FIELD (MARKED WITH SPRAY PAINT OR OTHER AGREED UPON METHOD) BY THE PROJECT ARBORIST OR LANDSCAPE ARCHITECT PRIOR TO ANY TREE REMOVAL OPERATIONS. ALL REMOVALS TO BE UNDERTAKEN BY AN ISA CERTIFIED ARBORIST.

c) IN ACCORDANCE WITH THE MIGRATORY BIRDS CONVENTION ACT, 1994, ALL REMOVALS MUST TAKE PLACE BETWEEN SEPTEMBER 1ST AND MARCH 31ST TO AVOID DISTURBING NESTING MIGRATORY BIRDS. IF TREE REMOVAL OCCURS BETWEEN APRIL 1ST AND AUGUST 31ST, A BIOLOGIST IS REQUIRED TO COMPLETE A SEARCH FOR NESTS. ONCE CLEARED, THE CONTRACTOR HAS 48 HOURS TO REMOVE. IF REMOVAL DOES NOT OCCUR WITHIN 48 HOURS, ANOTHER SEARCH WILL BE REQUIRED.

d) CARE SHOULD BE TAKEN DURING THE FELLING OPERATION TO AVOID DAMAGING THE BRANCHES, STEMS, TRUNKS, AND ROOTS OF NEARBY TREES TO BE PRESERVED. WHERE POSSIBLE, ALL TREES ARE TO BE FELLED TOWARDS THE CONSTRUCTION ZONE TO MINIMIZE IMPACTS ON ADJACENT VEGETATION. ALL REMOVALS TO BE UNDERTAKEN BY AN ISA CERTIFIED ARBORIST.

e) IT IS RECOMMENDED THAT THE EXISTING GROUND-LAYER VEGETATION AT THE BASE OF TREES TO BE PRESERVED REMAIN INTACT WITHIN THE CRITICAL ROOT ZONE SO AS NOT TO DISTURB THE SOIL AROUND THE BASE OF THE EXISTING TREES.

f) FINAL SITE GRADING PLANS SHOULD ENSURE THAT THE EXISTING SOIL MOISTURE CONDITIONS ARE MAINTAINED.

RECOMMENDATIONS RELATED TO THE CONSTRUCTION PROCESS

a) TREE PRESERVATION FENCING IS TO BE MAINTAINED IN GOOD CONDITION AND EFFECTIVE FOR THE DURATION OF CONSTRUCTION UNTIL ALL CONSTRUCTION ACTIVITY IS COMPLETE OR AS PER THE PROJECT ARBORIST OR LANDSCAPE ARCHITECT.

b) TREE PRESERVATION FENCING IS TO REMAIN INTACT AS PER THE TREE PRESERVATION DRAWINGS, AND CAN ONLY BE TEMPORARILY REMOVED WITH THE EXPRESS WRITTEN CONSENT FROM THE PROJECT ARBORIST OR LANDSCAPE ARCHITECT. SHOULD TREE PRESERVATION FENCING BE TEMPORARILY RELOCATED OR MOVED, IT IS TO BE REINSTATED AS PER THE TREE PRESERVATION PLANS AS SOON AS POSSIBLE.

c) NO CONSTRUCTION, EXCAVATION, ADDING OF FILL, STOCKPILING OF CONSTRUCTION MATERIAL, OR HEAVY EQUIPMENT IS PERMITTED WITHIN THE CRITICAL ROOT ZONE/WITHIN THE TREE PRESERVATION FENCING.

d) WHEN EXCAVATION NEAR A TREE IS REQUIRED, AND IT IS ANTICIPATED THAT ROOTS WILL BE SEVERED AND EXPOSED, DURATION OF EXPOSURE IS TO BE MINIMIZED TO PREVENT ROOT DESICCATION.

e) DURING THE EXCAVATION PROCESS, ROOTS 25MM OR LARGER THAT ARE SEVERED AND EXPOSED SHOULD BE HAND PRUNED TO LEAVE A CLEAN-CUT SURFACE. TO BE UNDERTAKEN BY AN ISA CERTIFIED ARBORIST. EXPOSED SEVERED ROOTS THAT CANNOT BE COVERED IN SOIL ON THE SAME DAY AS THE CUTS ARE MADE ARE TO BE KEPT MOIST. EXPOSED ROOTS ARE TO BE KEPT MOIST BY COVERING THEM WITH WATER SOAKED BURLAP OR ANY OTHER MEANS AVAILABLE TO PREVENT THEM FROM DRYING OUT.

f) AVOID IDLING HEAVY EQUIPMENT UNDER OR WITHIN CLOSE PROXIMITY TO TREES TO BE PRESERVED TO PREVENT CANOPY DAMAGE FROM EXPOSURE TO THE HEAT OF THE EXHAUST.

g) BROKEN BRANCHES ON TREES WITHIN THE SUBJECT SITE TO BE PRESERVED SHOULD BE CLEANLY CUT AS SOON AS POSSIBLE AFTER THE DAMAGE HAS OCCURRED, TO BE UNDERTAKEN BY AN ISA CERTIFIED ARBORIST.

POST-CONSTRUCTION RECOMMENDATIONS

a) AVOID DISCHARGING RAIN WATER LEADERS ADJACENT TO RETAINED TREES, AS THIS MAY RESULT IN AN OVERLY MOIST ENVIRONMENT WHICH CAN CAUSE ROOT ROT.

b) AFTER ALL WORK IS COMPLETED, TREE PRESERVATION FENCES AND ANY OTHER IMPACT MITIGATION PARAPHERNALIA MUST BE REMOVED.

c) A FINAL REVIEW MUST BE UNDERTAKEN BY THE PROJECT ARBORIST OR LANDSCAPE ARCHITECT TO ENSURE THAT ALL MITIGATION MEASURES AS DESCRIBED ABOVE HAVE BEEN MET.

RON KOUDYS LANDSCAPE ARCHITECTS INC.

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THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION OR TENDER PURPOSES UNLESS SIGNED AND DATED BY RONALD H. KOUDYS, OALA, CSLA, LANDSCAPE ARCHITECT, LONDON, ONTARIO (519) 667-3322.

Ronald H. Koudys, O.A.L.A. C.S.L.A. DATE

2024-12-19	RE ISSUED FOR ZBA	3
2024-12-17	ISSUED FOR ZBA	2
2024-12-12	ISSUED FOR REVIEW	1
DATE	DESCRIPTION	No.

PLOTTING INFORMATION:
PLOTTED DATE = 2024-12-19
PLOTTED SCALE = 1:1

PROJECT TITLE:
PRIVATE RESIDENCE
105 AVONDALE COURT
BURLINGTON, ONTARIO

DRAWING TITLE:
TREE PRESERVATION PLAN

DATE: OCTOBER 2024	SCALE: AS NOTED	DRAWING No. T-1
DRAWN: RKLA Inc.	CHECKED BY: R.H.K.	
PROJECT No. 24-194Lg		