

Tree Management Plan

5150 NINTH LINE

for:

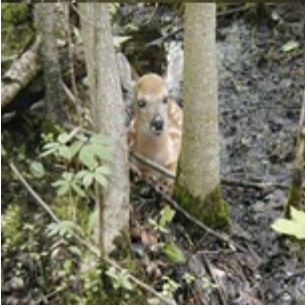
MATTAMY HOMES

by:

LGL Limited
environmental research associates

OCTOBER 2019

LGL FILE TA8851-01



5150 NINTH LINE

TREE MANAGEMENT PLAN

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LGL PROJECT TA8851-01

TABLE OF CONTENTS

1.0	Introduction	1
2.0	Background	1
3.0	Methodology	3
4.0	Results.....	4
4.1	Municipal Trees.....	4
4.2	Species at Risk	4
5.0	Proposed Draft Plan.....	4
6.0	Impact Assessment	4
6.1	Proposed Tree Removals.....	4
6.1.1	Proposed Municipal Tree Removals.....	7
6.1.2	Adjacent Lands Tree Removals	7
7.0	Discussion.....	7
7.1	Municipal Regulation	7
7.2	Boundary Trees	8
7.3	Tree Replacements.....	9
8.0	Mitigation.....	9
9.0	Wildlife Considerations.....	11
10.0	Conclusion	11
11.0	Disclaimer.....	12
11.1	Limitations of this Assessment.....	12
11.2	Restriction of Assessment	12
11.3	Professional Responsibility.....	12
11.4	General.....	13

LIST OF FIGURES

Figure 1 Key Map	2
Figure 2 Tree Resources	5
Figure 3 Tree Management Plan	6

LIST OF APPENDICES

Appendix A Tree Inventory
Appendix B Tree Protection Hoarding

1.0 INTRODUCTION

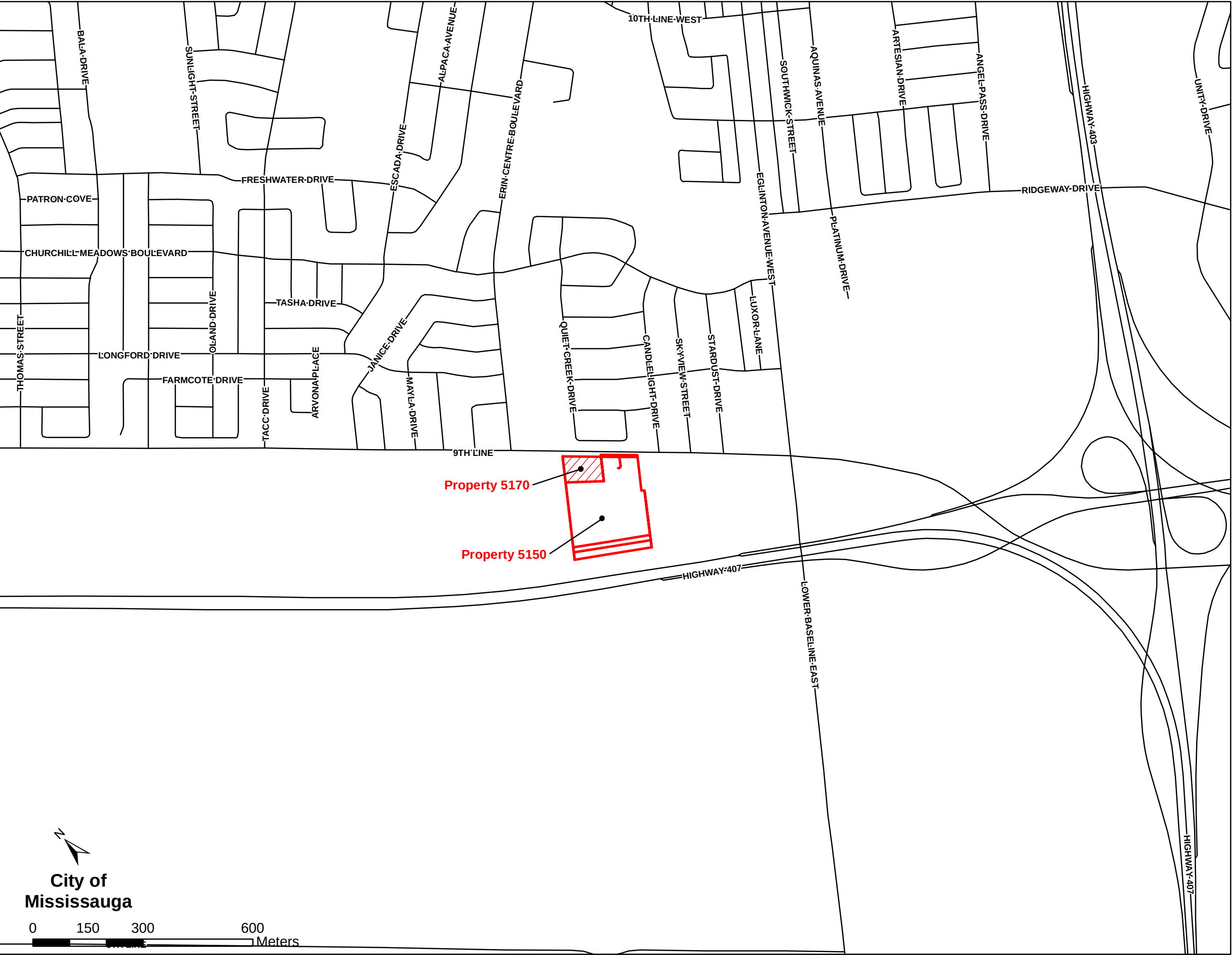
LGL Limited was retained by Mattamy Homes to prepare an Arborist Report for 5150 Ninth Line, in the City Mississauga. These properties, referred to as the Subject lands, are located generally east of Highway 407, north of Lower Base Line East, and on the west side of 9th Line (**Figure 1**). Current land use includes agricultural hobby farm (pasture, pond, and vegetable rows), cultural meadow, and single-family residential dwellings. Tree resources include hedgerows and amenity trees. The objectives of this report are to:

- Describe tree resources in relation to the proposed draft plan through a detailed survey and map;
- Identify whether trees are located on private or municipal property;
- Identify whether trees are part of shared ownership;
- Identify trees that may pose a constraint to development;
- Identify trees that require removal to facilitate development;
- Assess the potential for impacts to trees;
- Minimize impacts to trees and wildlife, to the extent possible;
- Specify the type and locations of tree protection zones; and,
- Comply with City of Mississauga Terms of Reference for Arborist Reports, Tree Inventory/Survey and Tree Preservation Plans (April 2019).

2.0 BACKGROUND

The City of Mississauga has enacted a Terms of Reference for Arborist Reports (April 2019), which regulates the injury and removal of trees on private and municipal property. The City regulates the removal of trees greater than 10 centimetres in diameter on private property, 6 centimetres in diameter on municipal property within 6m of the subject property, and requires landowners to obtain a City permit to remove trees for land development. Permits may be subject to various conditions including, but not limited to, replacement planting requirements, tree preservation planning, and adequate tree protection hoarding.

This report identifies tree resources and respective health characteristics for each tree found within the Subject lands. The information, interpretation and analysis contained within this Assessment are to be used solely for the purposes outlined within this Assessment. This Assessment is for the exclusive use of Mattamy Homes.



LEGEND

Study Area

5150/5170 Ninth Line
Key Map



Project	TA8851-01	Figure	1
Date	December 2018	Prepared By:	VLG
Scale	1:10,000	Verified By:	MJO

3.0 METHODOLOGY

Investigations of the Subject lands were conducted by LGL's ISA Certified Arborist on September 27, 2018, and re-surveyed August 7, 2019 to comply with recent City revisions to tree data collection requirements. Trees on the Subject lands and shared boundaries with adjacent landowners were surveyed using the following methodology for tree inventory and impact assessment:

- Species: each tree was identified to species level using common and scientific names;
- Size: diameter at breast height (DBH) was recorded in centimetres and measured 1.4 metres above ground level, which is consistent with International Society of Arboriculture standards. All trees measuring 10cm DBH or greater within the subject property were assessed. Trees measuring 6cm on municipal property and within 6m of the subject property were also assessed;
- Health: each tree surveyed was assigned a ranking of poor, fair or good health, based on trunk integrity, crown structure, apparent vigour and visible defects;
- On-site identification: each tree was affixed with an aluminum tag showing a unique identification number. In this case, the tag number set 1707-1872 was used;
- All species were screened to determine whether regulations of Ontario's Endangered Species Act (2007) apply; and,
- Geographical location: the location and respective tag identification number of each tree was recorded using a GPS unit with each point being plotted against the proposed draft plan to conduct an impact assessment.

Tree locations were captured using a TopCon GRS1 GPS unit and were uniquely numerically identified. This particular GPS is generally accurate to within 1-2 metres horizontal distance, but due to the inherent difficulties with GPS/satellites please anticipate minor error in point locations (generally less than 5% of the data set). The specifics of the GPS are as follows:

Model:

TopCon GRS-1 RTK GPS

Dual-frequency, 72 channel GPS+GLONASS receiver with Microsoft Windows Mobile 6.1 Classic Operating System, 100Hz receiver

Device Specifications:

Tracked Signals: GPS, GLONASS, L1 C/A Code and Carrier, GPS L2C, WASS/EGNOS/MSAS\

Internal Antenna: Single Frequency, L1 (GPS and GLONASS)

Differential GPS Post Processing: Typically less than 0.5m (RMS)

Data Collection:

Data Collection Parameters: Precision = 2 m HRMS, 5m VRMS

Satellite System: GPS+GLONASS Multipath Reduction

Solution Type: Real Time DGPS with SBAS Corrections

SBAS Setup: Best Available

Elevation Mask: 8 degrees

Antenna: GRS/GSM Series

4.0 RESULTS

A total of 17 species were documented, with DBH values ranging in size from 10 to 123 centimetres. There were several instances of plantation-like groupings/hedges of conifer trees to include White Spruce (*Pinus glauca*), Eastern White Cedar (*Thuja occidentalis*), Eastern Red Cedar (*Juniperus virginiana*), as well as a hedgerow dominated by Silver Maple. Red Ash (*Fraxinus pennsylvanica*) were infrequently observed, but have been impacted by Emerald Ash Borer (*Agrilus planipennis*) to an extent which tree mortality is almost certain. Amenity Bur Oak (*Quercus macrocarpa*) are found fronting Ninth Line and are associated with an existing residence. Additional species such as White Elm (*Ulmus americana*), Corkscrew and hybrid Willow (*Salix matsudana*, *S. x sepulcralis*) are found in the hobby farm pasture. Detailed information pertaining to each individual tree is found in **Appendix A - Tree Inventory**. Identification numbers found in **Appendix A** correspond with those found on **Figure 2**.

4.1 MUNICIPAL TREES

A total of 5 trees are thought to be municipally owned to include 1707 (shared), 1715, 1724 (shared), 1730, and 1811.

4.2 SPECIES AT RISK

Species regulated by the Ontario *Endangered Species Act* (2007) were not observed on the Subject lands.

5.0 PROPOSED DRAFT PLAN

The proposed draft plan (October 8, 2019) includes rear lane towns, towns, back to backs, half back to backs, and rear lane duplex (**Figure 3**). The draft plan provides a 10m buffer to a woodland abutting the northwest property boundary, and a 14m MTO setback from the transitway corridor abutting the southwest property boundary. A potential park has been proposed along the south boundary, as is a 4.14m landscape buffer abutting a heritage home to the south.

6.0 IMPACT ASSESSMENT

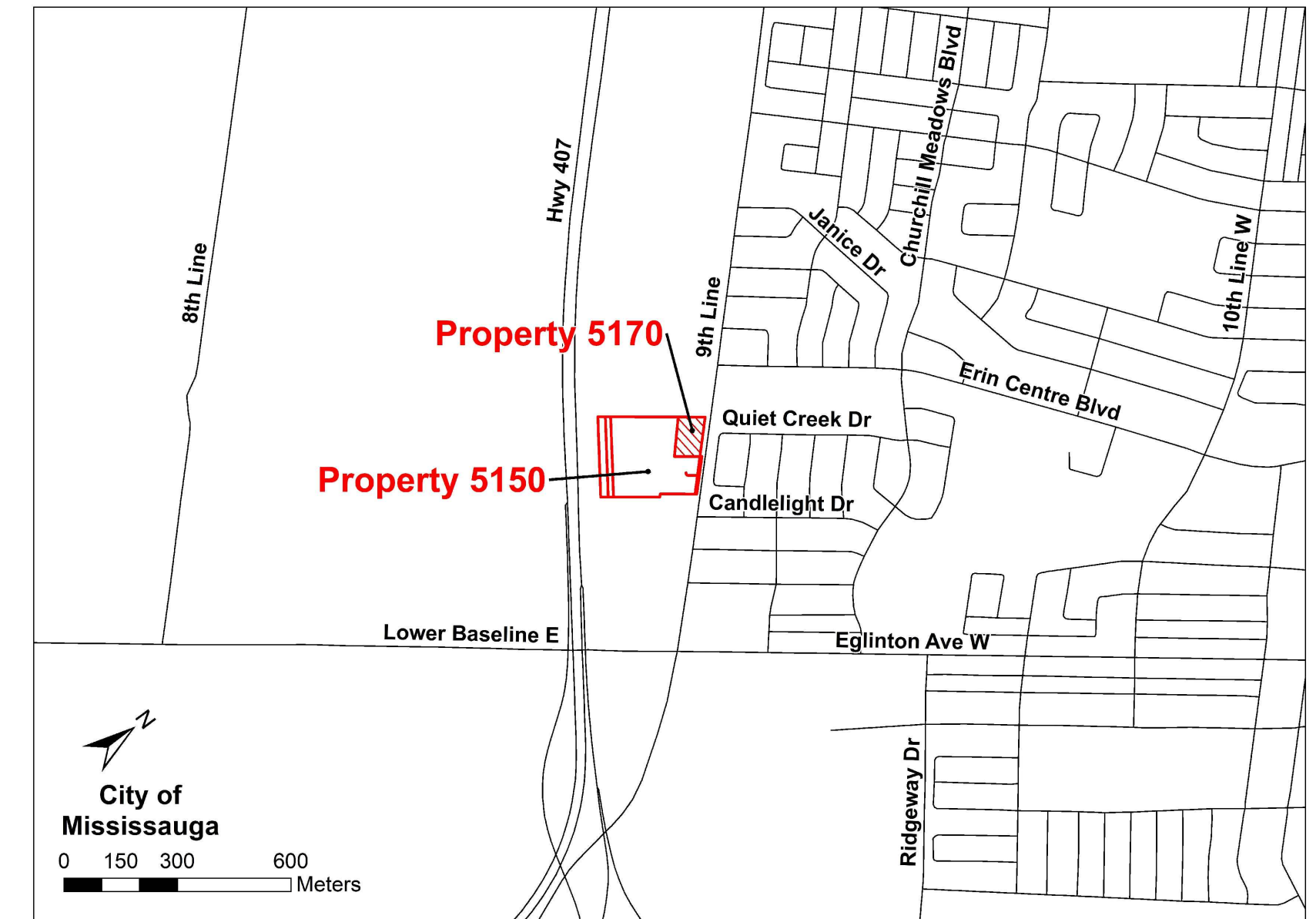
An impact analysis has been prepared by overlaying the proposed draft plan onto the GIS tree data. Tree removal has been recommended for instances where grading, lotting, servicing, etc., conflict with tree locations and result in an anticipated impact of approximately 25% of a tree's dripline. Trees located outside of the draft plan areas, and thus, beyond proponent ownership, have been identified for preservation.

6.1 PROPOSED TREE REMOVALS

All of the trees on the Subject lands will require removal to facilitate the proposed draft plan. A total of 162 tree removals are proposed.

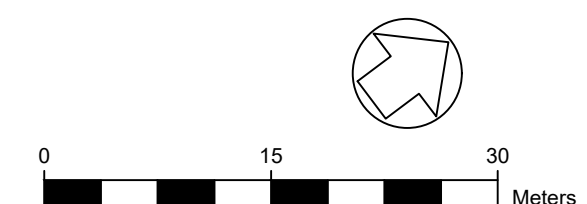
5150 Ninth Line Tree Resources Mattamy Homes

5150 Ninth Line, Mississauga

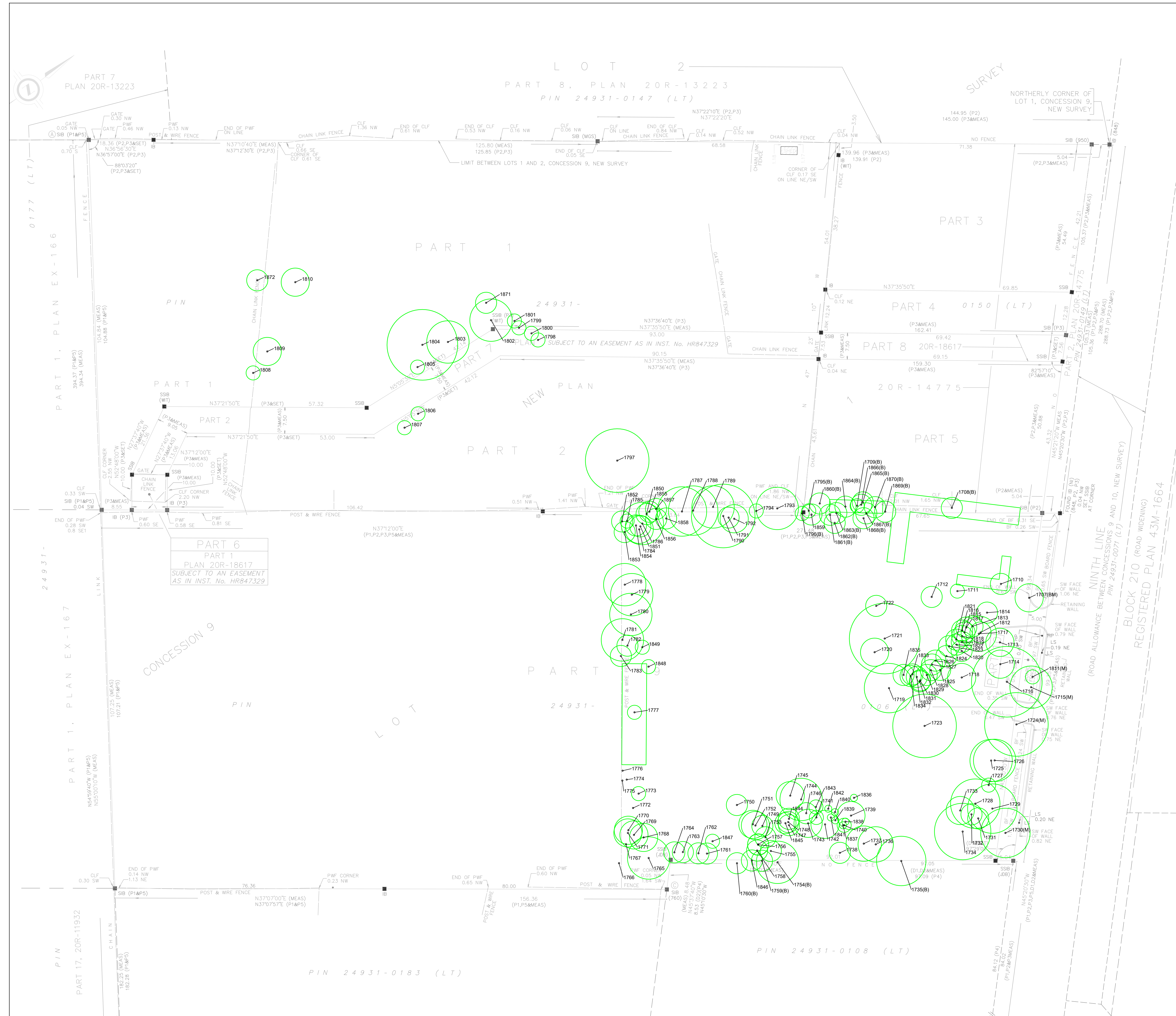


LEGEND

- (B) Boundary Tree
- (M) Municipal Tree
- 37 Tree Location
- Dripline
- Hedge

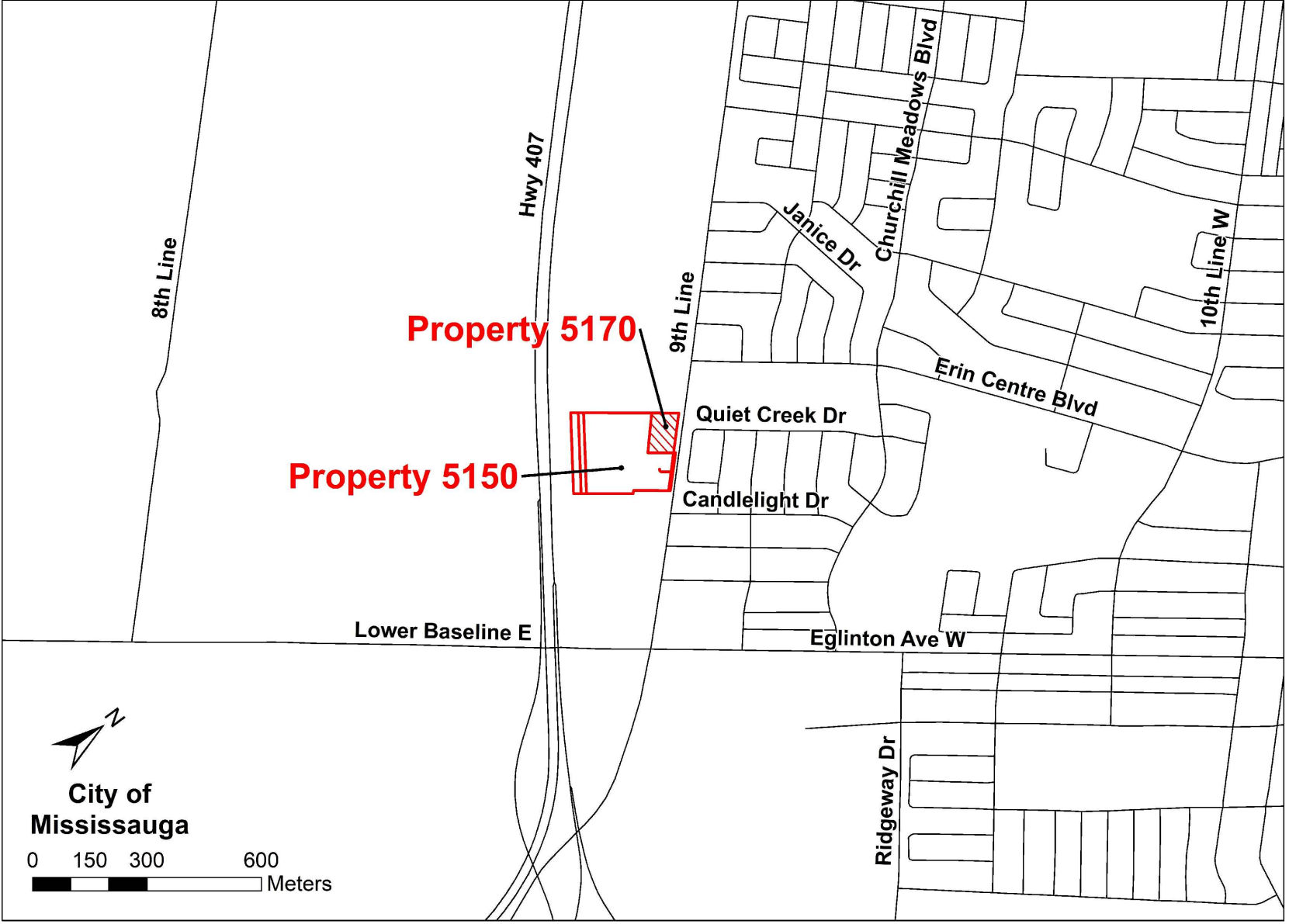


Concept Plan vers:		
Project: TA8851-01	Figure: 2	Scale: 1:500
Prepared by: KC	Verified by: MJO	Date: August 2019



5150 Ninth Line Tree Management Plan Mattamy Homes

5150 Ninth Line, Mississauga



LEGEND			
(B)	Boundary Tree		Dripline and Tree Protection Zone
(M)	Municipal Tree		Dripline - Removal
	Tree Identified for Protection		Portion of Hedge Identified for Removal
	Tree Identified for Removal		Tree Protection Fence

RECOMMENDATIONS:
Trees outside of the subject lands shall be protected from the impacts of grading, manoeuvring of machinery, material laydown, and other construction related activities. The following recommendations are intended to isolate trees from the impacts of construction:

- Delineation of the disturbance limits within work areas should be clearly defined on construction drawings and on site prior to construction;
- No trees shall be pruned or removed or impacted without prior approval from the City;
- It is the responsibility of the project team to become directly acquainted with the site, to carefully examine the location of the proposed work, and to notify the City of any discrepancies in the site conditions;
- The Site Supervisor shall be familiar with these recommendations and be cognizant of the purpose and function of Tree Protection Zones (TPZ);
- Trees on neighbouring non-participating properties or on the property boundary shall be left in place until such time that the ownership is confirmed or upon written authorization for removal;
- Tree protection hoarding/barrier shall be installed as detailed in Appendix B of this report and City specification, or a suitable alternative as approved by the City (i.e. Erosion and Sediment Control fence);
- Tree protection hoarding/barrier must be erect prior to commencement of work;
- Any area inside a TPZ must be left undisturbed (including overhead);
- Heavy machinery is not to be operated within the TPZ (including overhead swinging of machine arms);
- Construction materials or equipment are not to be stored within the TPZ or dripline of the trees;
- No signs or objects should be displayed or affixed to any retained trees;
- Disposal of any liquids shall not occur within the TPZ;
- For project planning and scheduling purposes, removal of vegetation should occur:
 - outside of the bird nesting season to comply with the Migratory Birds Convention Act (MBCA), and the Fish and Wildlife Conservation Act (FWCA). Together, these Acts protect birds, nests, and eggs of regulated species (game birds, raptors, owls, migratory song birds). The nesting season is generally considered to be late March to late August (<https://www.ec.gc.ca>); and,
 - outside of the bat summer roosting period considered April 1-September 30 to avoid impacts to bats protected by the FWCA and the Endangered Species Act;
- Vegetation removals are preferred during November to March to minimize impacts on wildlife;
- This report is intended to satisfy the municipal requirements for arborist reports and tree removals only. The proponent should be aware that additional studies may be required in relation to natural heritage significance;
- Should any additional, incidental or accidental tree injuries occur during construction, a qualified professional should be consulted to determine if additional mitigation measures should be employed; and,
- Ash tree removals are subject to CFIA Regulation D-03-08, which details the phytosanitary requirements to prevent the entry into, and spread of the Emerald Ash Borer (EAB), *Agnilus planipennis Fairmaire*. The tree removal contractor shall comply with the conditions set by D-03-08 when conducting Ash tree removal.



Concept Plan vers: Oct 8, 2019		
Project: TA8851-01	Figure: 3	Scale: 1:500
Prepared by: KC	Verified by: MJO	Date: Oct 17, 2019

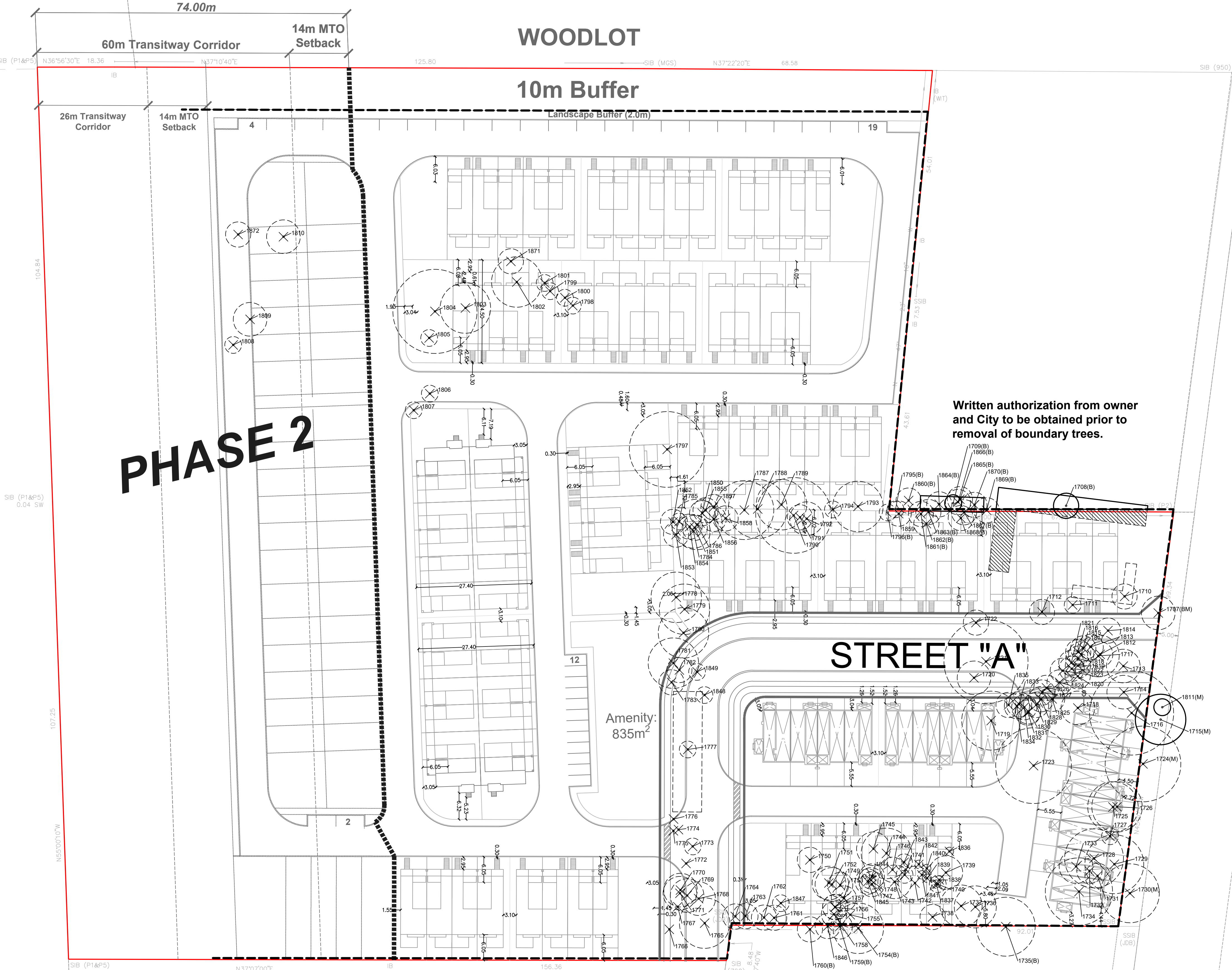
HIGHWAY 407

SIB (P1&P5)
0.04 SW

104.84
107.25

N45°00'10"W

SIB (P1&P5)



6.1.1 Proposed Municipal Tree Removals

Trees 1707, 1724, 1730 and will likely require removal as a result of significant (minimum 25%) impact to the critical root zone of these trees.

6.1.2 Adjacent Lands Tree Removals

Written authorization/permission from the applicable owner must be obtained prior to removal of trees along the north(east) boundary, adjacent to the current veterinary clinic. This includes part of a White Spruce hedgerow (Polygon #1708 and 1709, 1860-1870), and White Cedar (1795, 1796).

7.0 DISCUSSION

7.1 MUNICIPAL REGULATION

The proposed draft plan will result in the removal of trees. As the City of Mississauga regulates removal of trees greater than 15cm DBH, review and acceptance of this Tree Management Plan is required prior to site alteration. Specific conditions on the Issuance of a Tree Permit/Permission as stated at www.mississauga.ca are as follows:

- a) Hoarding (a protection fence around a tree) may be required to protect trees identified for preservation during site alteration.
- b) A replacement tree may be required to be planted on the property for every healthy or non-hazard tree removed. The replacement tree shall be balled and burlapped, and have a minimum diameter of 6 cm (2.4 inches). The location on the lot, number and species of the replacement tree(s) shall be to the satisfaction of Forestry. The requirement for a replacement tree may be restricted and vary depending on the size and proposed development of the property. The owner will have to provide four (4) copies of a replanting plan and a written undertaking to ensure that the replacement planning is carried out to City standards.
- c) If replacement tree(s) are required, monies or a letter of credit in a form satisfactory to the City of Mississauga may be required to cover the costs of the replacement trees and the maintenance of the trees for a period of up to two (2) years at which time an inspection will be performed and the monies returned.
- d) For every replacement tree not provided on site, a payment shall be required to the City's replacement tree planting fund. The cost for each tree shall be the same as a street tree outlined in the City's Fees and Charges By-law.

7.2 BOUNDARY TREES

The *Forestry Act* regulates harm to trees but also provides governance of boundary or shared property trees. In these instances, removal of boundary trees must be negotiated with neighbouring owners. Acquiring written consent from the adjacent land owner is also a condition for the permit application under the Mississauga applications for site alteration. The following excerpt from the *Forestry Act* has particular relevance to this application:

Boundary trees

10. (1) *An owner of land may, with the consent of the owner of adjoining land, plant trees on the boundary between the two lands. 1998, c. 18, Sched. I, s. 21.*

Trees common property

(2) *Every tree whose trunk is growing on the boundary between adjoining lands is the common property of the owners of the adjoining lands. 1998, c. 18, Sched. I, s. 21.*

Offence

(3) *Every person who injures or destroys a tree growing on the boundary between adjoining lands without the consent of the land owners is guilty of an offence under this Act. 1998, c. 18, Sched. I, s. 21.*

A land surveyor may be required to confirm property boundaries and collect boundary tree locations for trees where ownership is of concern. Survey areas should include any boundaries with non-participating owners. Trees that may be considered boundary trees include:

- Polygon 1708;
- Polygon 1709;
- Tree 1735;
- Tree 1754;
- Tree 1759;
- Tree 1760;
- Tree 1795;
- 1796; and,
- 1860-1870

Tree 1735, 1754, 1758, 1759, 1760-1763 are currently proposed for preservation within the proposed Landscape Buffer (**Figure 3**).

7.3 TREE REPLACEMENTS

Municipal tree removals will require the following replacement ratios:

- Trees that are 0-49cm require 1 replacement tree for each removal; and,
- Trees that are greater than 49cm diameter will require 2 replacements for each removal.

Therefore, municipal trees identified for removal will require the following compensation:

Tree #	DBH (cm)	Compensation Required (# trees)
1707	43	1
1724	98	2
1730	55	2
Total:		5

Private tree removals (limited to trees in good condition) will require compensation as follows:

Tree Replacement Category	Proposed Tree Removals Meeting City Criteria for Compensation	Required Tree Compensation
Trees in good condition between 15 and 49 cm DBH	95	95
Conifer hedgerow trees (same criteria as above)	108	108
Trees in good condition 50 cm DBH+	5	10
Total:		213

8.0 MITIGATION

Mitigation measures shall be implemented to minimize impacts to trees adjacent to the construction zone. The following recommendations conform to City protection specifications and good arboricultural practices and are designed to ensure impacts to trees surrounding the work zone and those identified for preservation are avoided or minimized.

Trees outside of the subject lands shall be protected from the impacts of grading, manoeuvring of machinery, material laydown, and other construction related activities. The following recommendations are intended to isolate trees from the impacts of construction:

- Delineation of the disturbance limits within work areas should be clearly defined on construction drawings and on site prior to construction;
- No trees shall be pruned or removed or impacted without prior approval from the City;
- It is the responsibility of the project team to become directly acquainted with the site, to carefully examine the location of the proposed work, and to notify the City of any discrepancies in the site conditions;
- The Site Supervisor shall be familiar with these recommendations and be cognizant of the purpose and function of Tree Protection Zones (TPZ);

- Trees on neighbouring non-participating properties or on the property boundary shall be left in place until such time that the ownership is confirmed or upon written authorization for removal;
- Tree protection hoarding/barrier shall be installed as detailed in **Appendix B** of this report and City specification, or a suitable alternative as approved by the City (i.e. Erosion and Sediment Control fence);
- Tree protection hoarding/barrier must be erect prior to commencement of work;
- Any area inside a TPZ must be left undisturbed (including overhead);
- Heavy machinery is not to be operated within the TPZ (including overhead swinging of machine arms);
- Construction materials or equipment are not to be stored within the TPZ or dripline of the trees;
- No signs or objects should be displayed or affixed to any retained trees;
- Disposal of any liquids shall not occur within the TPZ;
- For project planning and scheduling purposes, removal of vegetation should occur:
 - outside of the bird nesting season to comply with the Migratory Birds Convention Act (MBCA), and the Fish and Wildlife Conservation Act (FWCA). Together, these Acts protect birds, nests, and eggs of regulated species (game birds, raptors, owls, migratory song birds). The nesting season is generally considered to be late March to late August (<https://www.ec.gc.ca>); and,
 - outside of the bat summer roosting period considered April 1-September 30 to avoid impacts to bats protected by the FWCA and the Endangered Species Act;
- Vegetation removals are preferred during November to March to minimize impacts on wildlife;
- This report is intended to satisfy the municipal requirements for arborist reports and tree removals only. The proponent should be aware that additional studies may be required in relation to natural heritage significance;
- Should any additional, incidental or accidental tree injuries occur during construction, a qualified professional should be consulted to determine if additional mitigation measures should be employed; and,
- Ash tree removals are subject to CFIA Regulation D-03-08, which details the phytosanitary requirements to prevent the entry into, and spread of the Emerald Ash Borer (EAB), *Agrilus planipennis* Fairmaire. The tree removal contractor shall comply with the conditions set by D-03-08 when conducting Ash tree removal.

9.0 WILDLIFE CONSIDERATIONS

Tree removals may be subject to the requirements and provisions of other legislation, regulations or bylaws, such as the *Migratory Birds Convention Act* (MBCA), *Conservation Authorities Act*, *Endangered Species Act*, or the *Fisheries Act*. With respect to the MBCA, it is strongly recommended that vegetation removals be avoided during the breeding bird season (late-March to late August) and the bat roosting season (April 1 to September 30). Other approvals or due diligence with respect to tree removals are outside of the scope of this assessment. Vegetation removal are preferred to occur during November to March; a time when bats and most birds are not utilizing trees for roosting or nesting.

10.0 CONCLUSION

Mattamy Homes has proposed a draft plan of subdivision for 5150 Ninth Line in the City of Mississauga. LGL Limited has prepared an arborist report, tree inventory and management plan as a result of the draft plan. Trees were surveyed trees on the Subject lands on September 27, 2018 and August 7, 2019. The survey confirmed that there are no tree species at risk within the Subject lands. A total of 162 trees will require removal to facilitate the proposed draft plan. As a result and based on the City's replacement tree criteria, a total of 213 replacement trees are required. Additional mitigation includes strategically timing the removals to avoid sensitive periods of wildlife activity and isolating construction zone activities from trees outside of the subject lands. A landscape plan under separate cover (by others) has been submitted as part of the draft plan of subdivision application.

11.0 DISCLAIMER

11.1 LIMITATIONS OF THIS ASSESSMENT

This Assessment is based on the circumstances and observations as they existed at the time of the site inspection of the Client's Property and the trees situate thereon and upon information provided by the Client to LGL Limited. The opinions in this Assessment are given based on observations made and using generally accepted professional judgment, however, because trees and plants are living organisms and subject to change, damage and disease, the results, observations, recommendations, and analysis as set out in this Assessment are valid only as at the date any such testing, observations and analysis took place and no guarantee, warranty, representation or opinion is offered or made as to the length of the validity of the results, observations, recommendations and analysis contained within this Assessment. As a result the Client shall not rely upon this Assessment, save and except for representing the circumstances and observations, analysis and recommendations that were made as at the date of such inspections. It is recommended that the trees discussed in this Assessment should be re-assessed periodically.

11.2 RESTRICTION OF ASSESSMENT

The Assessment carried out was restricted to the Property. No assessment of any other trees or plants has been undertaken by LGL. LGL is not legally liable for any other trees or plants on the Property except those expressly discussed herein. The conclusions of this Assessment do not apply to any areas, trees, plants or any other property not covered or referenced in this Assessment.

11.3 PROFESSIONAL RESPONSIBILITY

In carrying out this Assessment, LGL Limited and any Assessor appointed for and on behalf of LGL Limited to perform and carry out the Assessment has exercised a reasonable standard of care, skill and diligence as would be customarily and normally provided in carrying out this Assessment. The Assessment has been made using accepted arboricultural techniques. These include a visual examination of each tree for structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of insect attack, discolored foliage, the condition of any visible root structures, the degree and direction of lean (if any), the general condition of the tree(s) and the surrounding site, and the current or planned proximity of property and people. Except where specifically noted in the Assessment, none of the trees examined on the property were dissected, cored, probed, or climbed and detailed root crown examinations involving excavation were not undertaken.

While reasonable efforts have been made to ensure that the trees recommended for retention are healthy, no guarantees are offered, or implied, that these trees, or all parts of them will remain standing. It is professionally impossible to predict with absolute certainty the behaviour of any single tree or group of trees, or all their component parts, in all given circumstances. Inevitably, a standing tree will always pose some risk. Most trees have the potential to fall, lean, or otherwise pose a danger to property and persons in the event of adverse weather conditions, and this risk can only be eliminated if the tree is removed.

Without limiting the foregoing, no liability is assumed by LGL or its directors, officers, employers, contractors, agents or Assessors for:

- a) any legal description provided with respect to the Property;
- b) issues of title and or ownership respect to the Property;
- c) the accuracy of the Property line locations or boundaries with respect to the Property;
- d) the accuracy of any other information provided to LGL by the Client or third parties;
- e) any consequential loss, injury or damages suffered by the Client or any third parties, including but not limited to replacement costs, loss of use, earnings and business interruption; and,
- f) the unauthorized distribution of the Assessment.

11.4 GENERAL

Any plans and/or illustrations in this Assessment are included only to help the Client visualize the issues in this Assessment and shall not be relied upon for any other purpose.

Appendix A

Tree Inventory

Appendix A Table 1 Tree Inventory

Project: Mattamy 9th Line 5150/5170
Client: Mattamy
Collectors: MJO, VLG, LC

Date: Sept 27 2018, August 7, 2019

Area: 9th Line, Mississauga



TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																				Location			Meets City Compensation Criteria	Remove	Protect	Impacted	Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Suppressed	PFW	Hazard	Boundary Tree	Municipal Ownership	GPS corrected					Rationale	TPZ, if applicable	ESA/SARA	
1,707	<i>Pinus sylvestris</i>	Scots Pine	43.0			g	g	g	4														x	x		x	x			conflict with draft plan (street/lot layout)			acquire permit from City for removal			
1,708	<i>Picea glauca</i>	White Spruce polygon	23, 22, 19, 23, 16, 16, 24, 19, 20, 15, 21, 16, 23, 31, 30, 24, 19, 15, 18, 19, 17, 22, 15, 17, 23, 14, 18, 20, 17, 21, 19, 21, 27, 19, 14, 16, 20, 22, 18, 21, 17, 10			g	g	g	3														x			x		x		conflict with draft plan (street/lot layout)	3		remove portion of hedgerow within subject lands. Acquire written authorization for removal of boundary trees.			
1,709	<i>Thuja occidentalis</i>	Eastern White Cedar polygon	22, 20, 20, 24, 25, 15, 16, 28, 20, 19, 14, 14, 14, 13, 12, 10, 14, 14, 12, 14, 13, 10, 14, 12, 12, 13			g	g	g	2														x			x		x		preserve in landscape buffer	2					
1,710	<i>Picea glauca</i>	White Spruce polygon	22, 22, 20, 20, 24, 25, 15, 16, 28, 20, 19			g	g	g	3																	x	x			conflict with draft plan (street/lot layout)						
1,711	<i>Thuja occidentalis</i>	Eastern White Cedar	15.0	13.0		g	g	g	2																	x	x			conflict with draft plan (street/lot layout)						
1,712	<i>Picea glauca</i>	White Spruce	32.0			g	g	g	3																	x	x			conflict with draft plan (street/lot layout)						
1,713	<i>Picea abies</i>	Norway Spruce	34.0			g	g	g	4																	x	x			conflict with draft plan (street/lot layout)						
1,714	<i>Picea abies</i>	Norway Spruce	32.0			g	g	g	4																	x	x			conflict with draft plan (street/lot layout)						
1,715	<i>Tilia cordata</i>	Little Leaf Linden	35.0			g	f	f	6	10														x			x		preserve in landscape buffer	6						
1,716	<i>Quercus macrocarpa</i>	Bur Oak	123.0			g	g	g	10																	x	x			conflict with draft plan (street/lot layout)						
1,717	<i>Picea glauca</i>	White Spruce polygon	15, 15, 16, 19, 18, 20, 26, 19, 27, 17, 15			g	g	g	5																	x	x			conflict with draft plan (street/lot layout)						
1,718	<i>Pinus strobus</i>	White Pine	31.0			g	g	g	4																	x	x			conflict with draft plan (street/lot layout)						
1,719	<i>Acer saccharinum</i>	Silver Maple	39.0			g	f	g	7		x	x														x	x			conflict with draft plan (street/lot layout)						
1,720	<i>Tilia cordata</i>	Little Leaf Linden	32.0			g	g	g	4																	x	x			conflict with draft plan (street/lot layout)						
1,721	<i>Acer saccharinum</i>	Silver Maple	77.0			g	g	g	10																	x	x			conflict with draft plan (street/lot layout)						
1,722	<i>Quercus macrocarpa</i>	Bur Oak	24.0	9.0		g	f	g	3		x	x														x	x			conflict with draft plan (street/lot layout)						
1,723	<i>Quercus macrocarpa</i>	Bur Oak	37.0			g	g	g	9																	x	x			conflict with draft plan (street/lot layout)						
1,724	<i>Quercus macrocarpa</i>	Bur Oak	98.0			f	f	g	9								x	x						x				x		conflict with draft plan (street/lot layout)			painted orange dot, pruned dead leader, callused wound at base			
1,725	<i>Quercus macrocarpa</i>	Bur Oak	25.0	23.0		g	g	g	6																	x	x			conflict with draft plan (street/lot layout)						
1,726	<i>Quercus macrocarpa</i>	Bur Oak	45.0			g	g	g	6																	x	x			conflict with draft plan (street/lot layout)						
1,727	<i>Quercus macrocarpa</i>	Bur Oak	23.0	16.0		f	p	p	2	30	x	x															x			conflict with draft plan (street/lot layout)						
1,728	<i>Quercus macrocarpa</i>	Bur Oak	27.0			g	g	g	7																	x	x			conflict with draft plan (street/lot layout)						
1,729	<i>Quercus macrocarpa</i>	Bur Oak	47.0			g	g	g	7		x	x														x	x			conflict with draft plan (street/lot layout)						
1,730	<i>Quercus macrocarpa</i>	Bur Oak	55.0	49.0		g	g	g	7															x			x	x		conflict with draft plan (street/lot layout)			painted orange dot, acquire permit from City for removal			
1,731	<i>Morus alba</i>	White Mulberry	18.0	17.0		g	f	f	3	20			s													x	x			conflict with draft plan (street/lot layout)						
1,732	<i>Quercus macrocarpa</i>	Bur Oak	25.0			f	f	f	3	20	x	x															x			conflict with draft plan (street/lot layout)						
1,733	<i>Quercus macrocarpa</i>	Bur Oak	30.0			g	g	f	4	15																x	x			conflict with draft plan (street/lot layout)						
1,734	<i>Quercus rubra</i>	Red Oak	65.0			g	g	g	8																	x	x			conflict with draft plan (street/lot layout)						
1,735	<i>Acer negundo</i>	Manitoba Maple	37.0	17,17,31,18		f	f	g	7															x				x		conflict with draft plan (street/lot layout)			acquire written permission from owner and City prior to removal			
1,736	<i>Juglans nigra</i>	Black Walnut	39.0			g	g	g	5																	x	x			conflict with draft plan (street/lot layout)						
1,737	<i>Juglans nigra</i>	Black Walnut	40.0			g	g	g	5																	x	x			conflict with draft plan (street/lot layout)						
1,738	<i>Quercus macrocarpa</i>	Bur Oak	29.0			g	g	f	3	20																x	x			conflict with draft plan (street/lot layout)						
1,739	<i>Pinus strobus</i>	White Pine	25.0			g	g	g	4	10																x	x			conflict with draft plan (street/lot layout)						
1,740	<i>Juniperus virginiana</i>	Eastern Red Cedar	15.0			g	g	g	2																	x	x			conflict with draft plan (street/lot layout)						
1,741	<i>Pinus strobus</i>	White Pine	15.0			g	g	g	2																	x	x			conflict with draft plan (street/lot layout)						
1,742	<i>Morus alba</i>	White Mulberry	45.0			f	f	g	4		x	x															x			conflict with draft plan (street/lot layout)						
1,743	<i>Quercus macrocarpa</i>	Bur Oak	34.0			g	g	g	4																	x	x			conflict with draft plan (street/lot layout)						
1,744	<i>Morus alba</i>	White Mulberry	31.0	17,19		f	f	g	6		x	x															x			conflict with draft plan (street/lot layout)						
1,745	<i>Morus alba</i>	White Mulberry	35.0			p	p	g	4																		x			conflict with draft plan (street/lot layout)			split at 2 metres			
1,746	<i>Morus alba</i>	White Mulberry	22.0	12.0		g	g	g	3																	x	x			conflict with draft plan (street/lot layout)						
1,747	<i>Morus alba</i>	White Mulberry	15.0	13.0		g	f	g	3																	x	x			conflict with draft plan (street/lot layout)						
1,748	<i>Morus alba</i>	White Mulberry	17.0			g	g	g	3																	x	x			conflict with draft plan (street/lot layout)						
1,749	<i>Morus alba</i>	White Mulberry	26.0	18,19		f	g	f	3	20																										

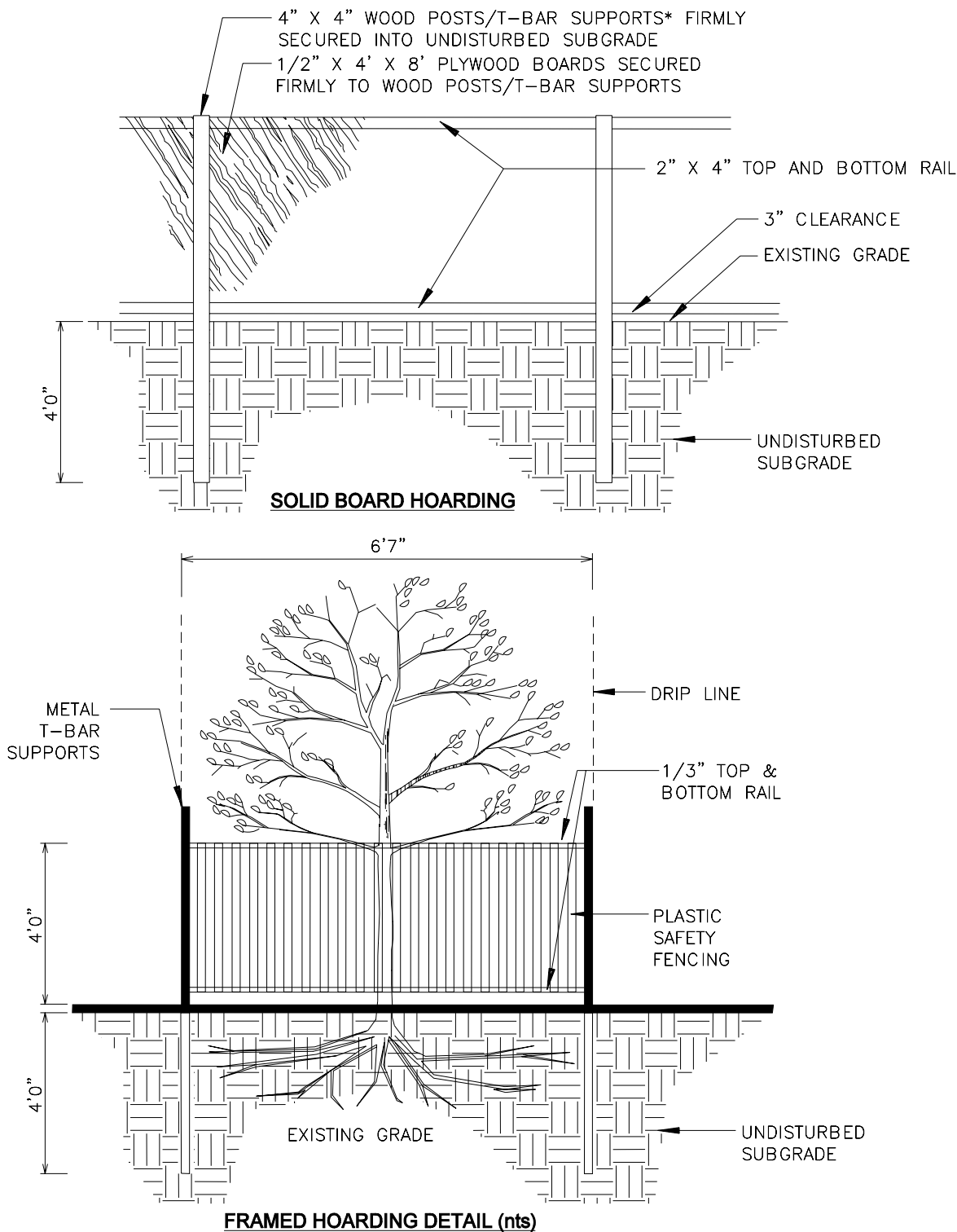
TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																				Location			Meets City Compensation Criteria	Remove	Protect	Impacted	Management Rationale	TPZ, if applicable	ESA/SARA	COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Suppressed	PEW	Hazard	Boundary Tree	Municipal Ownership	GPS corrected								
1,759	<i>Acer saccharinum</i>	Silver Maple	21.0			g	g	f	3	15															x				x	x		conflict with draft plan (street/lot layout)			acquire written permission from owner and City prior to removal	
1,760	<i>Acer saccharinum</i>	Silver Maple	27.0			g	g	g	3																	x				x	x		conflict with draft plan (street/lot layout)			acquire written permission from owner and City prior to removal
1,761	<i>Picea glauca</i>	White Spruce	22.0			g	g	g	3																					x	x		conflict with draft plan (street/lot layout)			
1,762	<i>Picea glauca</i>	White Spruce	31.0			g	g	g	3																					x	x		conflict with draft plan (street/lot layout)			
1,763	<i>Picea glauca</i>	White Spruce	27.0			g	g	g	3																					x	x		conflict with draft plan (street/lot layout)			
1,764	<i>Picea glauca</i>	White Spruce	15.0			g	g	g	3																					x	x		conflict with draft plan (street/lot layout)			
1,765	<i>Acer saccharinum</i>	Silver Maple	33.0			g	g	g	6																					x	x		conflict with draft plan (street/lot layout)			
1,766	<i>Fraxinus pennsylvanica</i>	Red Ash	21.0			d	d	d																							x		conflict with draft plan (street/lot layout)			
1,767	<i>Fraxinus pennsylvanica</i>	Red Ash	28.0			d	d	d																							x		conflict with draft plan (street/lot layout)			
1,768	<i>Picea glauca</i>	White Spruce	24.0			g	g	g	4																					x	x		conflict with draft plan (street/lot layout)			
1,769	<i>Picea glauca</i>	White Spruce	16.0			g	g	g	4																					x	x		conflict with draft plan (street/lot layout)			
1,770	<i>Picea glauca</i>	White Spruce	20.0			g	g	g	4																					x	x		conflict with draft plan (street/lot layout)			
1,771	<i>Picea glauca</i>	White Spruce	26.0			g	g	g	4																					x	x		conflict with draft plan (street/lot layout)			
1,772	<i>Fraxinus pennsylvanica</i>	Red Ash	25.0			d	d	d																							x		conflict with draft plan (street/lot layout)			
1,773	<i>Thuja occidentalis</i>	Eastern White Cedar	18.0			g	g	g	2																					x	x		conflict with draft plan (street/lot layout)			
1,774	<i>Fraxinus pennsylvanica</i>	Red Ash	27.0			d	d	d																							x		conflict with draft plan (street/lot layout)			
1,775	<i>Fraxinus pennsylvanica</i>	Red Ash	25.0			d	d	d																							x		conflict with draft plan (street/lot layout)			
1,776	<i>Fraxinus pennsylvanica</i>	Red Ash	23.0			d	d	d																							x		conflict with draft plan (street/lot layout)			
1,777	<i>Thuja occidentalis</i>	Eastern White Cedar polygon	20, 11, 15, 13, 17, 18, 12, 15, 15, 15			g	g	g	2																					x	x		conflict with draft plan (street/lot layout)			
1,778	<i>Acer saccharinum</i>	Silver Maple	27.0			g	g	g	6																					x	x		conflict with draft plan (street/lot layout)			
1,779	<i>Acer saccharinum</i>	Silver Maple	41.0			g	g	g	6																					x	x		conflict with draft plan (street/lot layout)			
1,780	<i>Acer saccharinum</i>	Silver Maple	32.0			g	g	g	6																					x	x		conflict with draft plan (street/lot layout)			
1,781	<i>Acer saccharinum</i>	Silver Maple	23.0	17.0		p	g	g	6									x	x												x		conflict with draft plan (street/lot layout)			
1,782	<i>Picea glauca</i>	White Spruce	15.0			g	g	g	3																					x	x		conflict with draft plan (street/lot layout)			
1,783	<i>Picea glauca</i>	White Spruce	16.0			p	g	g	3										x												x		conflict with draft plan (street/lot layout)			split
1,784	<i>Acer saccharinum</i>	Silver Maple	23.0			g	g	g	4																					x	x		conflict with draft plan (street/lot layout)			
1,785	#N/A	White Spruce polygon	22, 16, 16, 18, 18, 22, 18			g	g	g	2																					x	x		conflict with draft plan (street/lot layout)			
1,786	<i>Acer saccharinum</i>	Silver Maple	34.0			g	g	g	6																					x	x		conflict with draft plan (street/lot layout)			
1,787	<i>Acer saccharinum</i>	Silver Maple	34.0			g	g	g	7																					x	x		conflict with draft plan (street/lot layout)			
1,788	<i>Acer saccharinum</i>	Silver Maple	32.0			p	g	g	7																						x		conflict with draft plan (street/lot layout)			
1,789	<i>Acer saccharinum</i>	Silver Maple	21.0			g	g	g	6																					x	x		conflict with draft plan (street/lot layout)			
1,790	<i>Salix sp.</i>	Willow	61.0	39,33,23,42,55,50		f	f	g	9																						x		conflict with draft plan (street/lot layout)			sprawling
1,791	<i>Acer saccharinum</i>	Silver Maple	25.0			g	g	g	3																					x	x		conflict with draft plan (street/lot layout)			
1,792	<i>Acer saccharinum</i>	Silver Maple	25.0			g	g	g	4																					x	x		conflict with draft plan (street/lot layout)			
1,793	<i>Acer saccharinum</i>	Silver Maple	49.0			g	g	g	6																					x	x		conflict with draft plan (street/lot layout)			

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																				Location			Meets City Compensation Criteria	Remove	Protect	Impacted	Management		COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Suppressed	PEW	Hazard	Boundary Tree	Municipal Ownership	GPS corrected					Rationale	TPZ, if applicable	
1,821	<i>Picea glauca</i>	White Spruce	18.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,822	<i>Picea glauca</i>	White Spruce	16.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,823	<i>Picea glauca</i>	White Spruce	26.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,824	<i>Picea glauca</i>	White Spruce	18.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,825	<i>Picea glauca</i>	White Spruce	28.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,826	<i>Picea glauca</i>	White Spruce	14.0			g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,827	<i>Picea glauca</i>	White Spruce	13.0			g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,828	<i>Picea glauca</i>	White Spruce	12.0			g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,829	<i>Picea glauca</i>	White Spruce	12.0			g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,830	<i>Picea glauca</i>	White Spruce	12.0			g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,831	<i>Picea glauca</i>	White Spruce	13.0			g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,832	<i>Picea glauca</i>	White Spruce	16.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,833	<i>Picea glauca</i>	White Spruce	17.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,834	<i>Picea glauca</i>	White Spruce	10.0			g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,835	<i>Picea glauca</i>	White Spruce	14.0			g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,836	<i>Juniperus virginiana</i>	Eastern Red Cedar	10.0			g	f	p	1	80																	x		conflict with draft plan (street/lot layout)						
1,837	<i>Juniperus virginiana</i>	Eastern Red Cedar	10.0			g	f	p	1	80																	x		conflict with draft plan (street/lot layout)						
1,838	<i>Juniperus virginiana</i>	Eastern Red Cedar	10.0			g	f	p	1	80																	x		conflict with draft plan (street/lot layout)						
1,839	<i>Juniperus virginiana</i>	Eastern Red Cedar	11.0			g	f	p	1	80																	x		conflict with draft plan (street/lot layout)						
1,840	<i>Juniperus virginiana</i>	Eastern Red Cedar	11.0			g	f	p	1	80																	x		conflict with draft plan (street/lot layout)						
1,841	<i>Juniperus virginiana</i>	Eastern Red Cedar	10.0			g	f	p	1	80																	x		conflict with draft plan (street/lot layout)						
1,842	<i>Juniperus virginiana</i>	Eastern Red Cedar	12.0			g	f	p	1	80																	x		conflict with draft plan (street/lot layout)						
1,843	<i>Fraxinus pennsylvanica</i>	Red Ash	10.0			d	d	d	2																		x		conflict with draft plan (street/lot layout)						
1,844	<i>Morus alba</i>	White Mulberry	11.0			g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,845	<i>Morus alba</i>	White Mulberry	14.0	12.0		g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,846	<i>Acer saccharinum</i>	Silver Maple	14.0			g	g	g	3														x				x		conflict with draft plan (street/lot layout)			obtain permission from owner and City prior to removal			
1,847	<i>Fraxinus pennsylvanica</i>	Red Ash	11.0	10,10		d	d	d	2																		x		conflict with draft plan (street/lot layout)						
1,848	<i>Fraxinus pennsylvanica</i>	Red Ash	18.0			d	d	d	2																		x		conflict with draft plan (street/lot layout)						
1,849	<i>Fraxinus pennsylvanica</i>	Red Ash	12.0			p	p	p	2	90																	x		conflict with draft plan (street/lot layout)						
1,850	<i>Picea glauca</i>	White Spruce	13.0			g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,851	<i>Picea glauca</i>	White Spruce	17.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,852	<i>Picea glauca</i>	White Spruce	15.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,853	<i>Picea glauca</i>	White Spruce	24.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,854	<i>Picea glauca</i>	White Spruce	14.0			g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,855	<i>Picea glauca</i>	White Spruce	19.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,856	<i>Picea glauca</i>	White Spruce	13.0			g	g	g	3																		x		conflict with draft plan (street/lot layout)						
1,857	<i>Picea glauca</i>	White Spruce	23.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,858	<i>Picea glauca</i>	White Spruce	18.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,859	<i>Picea glauca</i>	White Spruce	17.0			g	g	g	3																	x	x		conflict with draft plan (street/lot layout)						
1,860	<i>Picea glauca</i>	White Spruce	17.0			g	g	g	3																x	x	x		conflict with draft plan (street/lot layout)			obtain permission from owner and City prior to removal			
1,861	<i>Picea glauca</i>	White Spruce	18.0			g	g	g	3																x	x	x		conflict with draft plan (street/lot layout)			obtain permission from owner and City prior to removal			
1,862	<i>Picea glauca</i>	White Spruce	21.0			g	g	g	3																x	x	x		conflict with draft plan (street/lot layout)			obtain permission from owner and City prior to removal			
1,863	<i>Picea glauca</i>	White Spruce	13.0			g	g	g	3																x	x	x		conflict with draft plan (street/lot layout)			obtain permission from owner and City prior to removal			
1,864	<i>Picea glauca</i>	White Spruce	12.0			g	g	g	3																x	x	x		conflict with draft plan (street/lot layout)			obtain permission from owner and City prior to removal			
1,865	<i>Picea glauca</i>	White Spruce	21.0			g	g	g	3																x	x	x		conflict with draft plan (street/lot layout)			obtain permission from owner and City prior to removal			
1,866	<i>Picea glauca</i>	White Spruce	16.0			g	g	g	3																x	x	x		conflict with draft plan (street/lot layout)			obtain permission from owner and City prior to removal			
1,867	<i>Picea glauca</i>	White Spruce	19.0			g	g	g	3																x	x	x		conflict with draft plan (street/lot layout)			obtain permission from owner and City prior to removal			
1,868	<i>Picea glauca</i>	White Spruce	25.0			g	g	g	3																x	x	x		conflict with draft plan (street/lot layout)			obtain permission from owner and City prior to removal			
1,869	<i>Picea glauca</i>	White Spruce	16.0			g	g	g	3																										

Legend		Condition	
DBH (cm)	Diameter at breast height	G	Good
TI	Trunk Integrity	F	Fair
CS	Crown Structure	P	Poor
CV	Crown Vigour	D	Dead
DL (m)	Drip Line	L	Light
CDB	Crown Dieback	M	Moderate
EAB	Emerald Ash Borer	H	Heavy
ESA/SARA	Species at Risk	E	East
TPZ	Tree Protection Zone	W	West
Lean Dir.	Lean Direction	N	North
		S	South
		F	Frost
		C	Compression
		T	Tension
		S	Shear Plane

Appendix B

Tree Protection Hoarding



NOTES:

1. HOARDING DETAILS TO BE DETERMINED FOLLOWING INITIAL SITE INSPECTION.
 2. HOARDING TO BE APPROVED BY DEVELOPMENT AND DESIGN.
 3. HOARDING MUST BE SUPPLIED, INSTALLED AND MAINTAINED BY THE APPLICANT THROUGHOUT ALL PHASES OF CONSTRUCTION, UNTIL APPROVAL TO REMOVE HOARDING IS OBTAINED FROM DEVELOPMENT AND DESIGN.
 4. DO NOT ALLOW WATER TO COLLECT AND POND BEHIND OR WITHIN HOARDING.
- * T-BAR SUPPORTS FOR SOLID HOARDING WILL ONLY BE ALLOWED WITH PRE APPROVAL FROM DEVELOPMENT AND DESIGN.