

Tree Management and Inventory Report

405 Myers Road

City of Cambridge

December 24, 2019



MHBC
P L A N N I N G
U R B A N D E S I G N
& L A N D S C A P E
A R C H I T E C T U R E

405 Myers Road

Residential Development

Tree Management and Inventory Plan

Report date: December 23, 2019 (Issued for Client Review)

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1.0 Introduction

MacNaughton, Hermsen, Britton and Clarkson Planning (MHBC) was retained in 2019 to undertake a site review and analysis of the existing on-site vegetation (trees only) and from that prepare a tree management plan that incorporates existing conditions with the proposed development for the 405 Myers Road works.

The site is 0.87ha in size and borders on Myers Road to the north, a storm water pond the west, Franklin Boulevard to the east and Bloomington Drive and residential to the south.

The site is fairly well vegetated with a large White and Norway Spruce in the core of the site along with some mature White Cedar. The western side of the site is naturalized with Manitoba maple, Buckthorn and Black Locust and has been a dumping area for vegetated material and wood.

Some of the other tree types found on site are Black Walnut, Silver Maple, Norway Maple and a large Red Oak. The understory for the western portion of the site was a mix of Manitoba Maple and Black Locust saplings and Buckthorn.

2.0 Purpose of Report

The subject lands are proposed to be developed as a residential Plan of Condominium with direct linkages to the adjacent residential area off of Bloomington Drive and Myers Road.

The purpose of this report is to illustrate the impact of the proposed development on the existing site and the vegetative community and discuss any mitigation measures where possible.

3.0 Scope of Work

The scope of work for the Tree Inventory and Saving Plan is based on the requirements by the City of Cambridge and incorporates the proposed site use and the proposed site servicing and grading.

Trees were located and reviewed in the field with that information transferred onto the proposed Concept Plan drawing for identification and location. This information, along with the proposed servicing and grading, will further determine potential tree retention and removals which will in turn aid in calculating any required compensation values.

Compensation values will be determined using the City of Cambridge Tree Inventory Calculator 2019, attached as an appendix to this document.

4.0 Methodology

All trees with a dbh of 10cm or greater were inventoried on site. Buckthorn and any tree less than 10cm were not included in the inventory.

Field work consists of the following:

- Tree location using EOS Positioning System

- Collector mapping for ARC GIS
- Tree canopy spread measurement using a laser measuring device.
- Tree trunk diameter measurement (dbh) using measuring caliper at breast height
- Aluminum numbering tags stapled to the tree trunk (only in open areas).
- Visual assessment for tree health and structure while looking at crown dieback, crown growth percentage, decay, caverns and wounds, insect infestations and growth anomalies.

Another method of evaluation was anecdotal information supplied by the owner who has been present on site and knows the history of the property and surrounding area.

The following information was recorded on site by an International Society of Arboriculture (ISA) Certified Arborist and entered into a data spreadsheet as part of this report and the Tree Management Plan:

- Tree tag or tree letter – for single specimen trees
- Tree species – Botanical and Common Names
- DBH of trunk (Diameter at Breast Height) in cm.
- Crown Radius in m
- Health
 - Good – typically a full canopy and vigorous growth no dieback
 - Fair – mostly full canopy with minimal dieback (up to 20%)
 - Poor – limited or declining canopy growth (up to 80%), caverns in trunk, signs of rot
 - Dead
- Structure
 - Good – specimen quality tree with good canopy shape and straight trunk
 - Fair – some variation in trunk form and slight lean
 - Poor – uneven canopy form, caverns in trunk, signs of rot, leaning

Tree location – existing tree location

- Impacts of development on tree species - Some trees are better adapted to disturbance in the root zone than others along with changes in site hydrology and exposure

5.0 Tree Inventory and Saving Plan

From the collected data and tree Inventory drawing and spreadsheet were developed giving specific tree information and what the impacts of the development will be on that particular tree. From this data we will be able to determine the preservation limitations or requirements for that tree as it pertains to the proposed site works. From the proposed site works and tree condition we will determine what measures need to be taken to preserve the tree if possible and any mitigation measures that might be required due to the removal of the tree.

Native Species

There are several native species found throughout the site with *Juglans nigra* (Black walnut), *Picea glauca* (White spruce) and *Thuja occidentalis* (White cedar) being the dominant species.
Acer saccharin (Silver maple)

Prunus serotina (Black cherry)
Quercus rubra (red oak)
Thuja occidentalis (White cedar)
Understory species includes raspberry.

Non-Native Species

There are several non-native species found on site with Picea abies (Norway spruce), Acer negundo (Manitoba maple) and Robinia pseudoacacia (Black locust) being the dominant trees species.

Acer platanoides (Norway maple)

Malus spp. (Crab apple)

Picea abies (Norway spruce)

Pinus sylvestris (Scots pine)

Understory species include Buckthorn.

6.0 Impacts of Development

At present based on the proposed site works and the constraints and limitations of the site the majority of trees within the site will be scheduled for removal along with one municipal tree off of Myers Road.

7.0 Mitigation of Impacts

A robust replanting scheme, buffer enhancement planting and supplemental planting scheme will aid in replacing the loss of existing plan materials. It is recommended that native species be used in the buffer (edge areas) to help maintain some biodiversity for the site and reduce the return of non-native plant species.

8.0 Removals Restrictions (Bird Nesting)

As per the Canadian Wildlife Service (CWS 2017), the typical breeding period for migratory birds in southwestern Ontario is between the start of April and the end of July. The Migratory Birds Convention Act protects migratory birds, their eggs and nests from being tampered with, harmed or destroyed. During this period it is recommended that no clearing of vegetation occur within these habitats. Nest searches shall be required during the nesting period. Each nest search is typically valid for a period of 48 hours after which an additional nest search will be required. It is also noted that any disturbance of nesting migratory birds after this period is also prohibited under the migratory bird act. As such any site works from the end of July to the end of August have a nest sweep occur prior to any removals occurring.

9.0 Species at Risk

There were no tree species at risk found on the development site.

10.0 Tree removal summary and compensation

The tree removal summary and compensation will be discussed relative to the development schedule for the site. Trees that are less than 10cm dbh have not been included in the tree inventory. See attached summary in appendix.

11.0 Conclusion

It is recommended that a comprehensive landscape and planting plan be developed in conjunction with site servicing and grading that will help offset and site disturbance and mitigation requirements.

City of Cambridge Private Tree Bylaw Fee Calculator

Instructions: Fill in the white fields to calculate the fees for trees to be destroyed and trees to be planted

Trees to Be Destroyed: \$	24,470.76
Tree Planting Credit: \$	-
Permit fee \$	45.00
Tree Bylaw Fee Total: \$	24,515.76

Discounts applied:

Tree ID	Species	DBH (cm)	Crown Diameter (m)	*Condition ('E', 'G', 'F', 'P' or 'D')	Ownership	MTPZ (m)	Notes/Comments	Proposed Action	Species Rating	Condition rating	Location rating	**Appraised Value	***Compensation Fee
1806	Norway spruce	40	8.4 G	Private	2.4	part of driveway hedgerow	Remove	0.55	0.75	0.65	7,459.54	\$ 372.98	
1807	Norway spruce	44	9.2 G	Private	3	part of driveway hedgerow	Remove	0.55	0.75	0.65	9,026.04	\$ 451.30	
1808	Norway spruce	37	6.8 G	Private	2.4	part of driveway hedgerow	Remove	0.55	0.75	0.65	6,382.57	\$ 319.13	
1809	Black cherry	37	14.8 F	Private	2.4	Growth mostly on one side	Remove	0.55	0.5	0.65	4,255.05	\$ 212.75	
1810	Norway spruce	40	9.4 G	Private	2.4	part of driveway hedgerow	Remove	0.55	0.75	0.65	7,459.54	\$ 372.98	
1811	Norway spruce	58	11 G	Private	3.6	part of driveway hedgerow	Remove	0.55	0.75	0.65	15,683.68	\$ 784.18	
1812	Norway spruce	42	7.4 G	Private	3	part of driveway hedgerow	Remove	0.55	0.75	0.65	8,224.14	\$ 411.21	
1813	Norway spruce	36	11.6 G	Private	2.4	part of driveway hedgerow	Remove	0.55	0.75	0.65	6,042.23	\$ 302.11	
1814	Scots pine	28	6.6 F	Private	2.4	part of driveway hedgerow	Remove	0.55	0.5	0.65	2,436.78	\$ 121.84	
1815	White spruce	33	5.8 F	Private	2.4	part of driveway hedgerow	Remove	0.55	0.5	0.65	3,384.77	\$ 169.24	
1816	Norway spruce	26	9.2 F	Private	2.4	part of driveway hedgerow	Remove	0.55	0.5	0.65	2,101.10	\$ 105.06	
1817	Norway spruce	30	15.4 G	Private	2.4	part of driveway hedgerow	Remove	0.55	0.75	0.65	4,195.99	\$ 209.80	
1818	Black cherry	28	7.8 F	Private	2.4	Growth mostly on one side	Remove	0.55	0.5	0.65	2,436.78	\$ 121.84	
1819	Black cherry	35	9.4 F	Private	2.4	Co-dominant leader	Remove	0.55	0.5	0.65	3,807.47	\$ 190.37	
1820	Norway spruce	51	12.2 G	Private	3.6	part of driveway hedgerow	Remove	0.55	0.75	0.65	12,126.41	\$ 606.32	
1821	Norway spruce	44	14 G	Private	3	part of driveway hedgerow	Remove	0.55	0.75	0.65	9,026.04	\$ 451.30	
1822	Norway spruce	50	14 G	Private	3	part of driveway hedgerow	Remove	0.55	0.75	0.65	11,655.53	\$ 582.78	
1823	Norway spruce	38	9.4 F	Private	2.4	part of driveway hedgerow	Remove	0.55	0.5	0.65	4,488.16	\$ 224.41	
1824	Norway spruce	33	8.8 F	Private	2.4	part of driveway hedgerow	Remove	0.55	0.5	0.65	3,384.77	\$ 169.24	
1825	Norway spruce	44	9 G	Private	3	part of driveway hedgerow	Remove	0.55	0.75	0.65	9,026.04	\$ 451.30	
1826	Norway spruce	24	6.4 F	Private	2.4	part of driveway hedgerow	Remove	0.55	0.5	0.65	1,790.29	\$ 89.51	
1827	Elm spp.	20	4.6 F	Private	2.4	possible rot in trunk	Remove	0.55	0.5	0.65	1,243.26	\$ 62.16	
1828	Manitoba maple	40	9.8 P	Private	2.4	hollow trunk with rot	Remove	0.55	0.25	0.65	2,486.51	\$ 124.33	
1829	Manitoba maple	46	10.8 F	Private	3	part of driveway hedgerow	Remove	0.55	0.5	0.65	6,576.83	\$ 328.84	
1830	Norway spruce	47	10 F	Private	3	part of driveway hedgerow	Remove	0.55	0.5	0.65	6,865.88	\$ 343.29	
1831	White spruce	38	9 G	Private	2.4	part of driveway hedgerow	Remove	0.55	0.75	0.65	6,732.23	\$ 336.61	
1832	White spruce	27	8 F	Private	2.4	part of driveway hedgerow	Remove	0.55	0.5	0.65	2,265.83	\$ 113.29	
1833	White spruce	28	8.2 G	Private	2.4	part of driveway hedgerow	Remove	0.55	0.75	0.65	3,655.17	\$ 182.76	
1834	White spruce	31	8 F	Private	2.4	part of driveway hedgerow	Remove	0.55	0.5	0.65	2,986.92	\$ 149.35	
1835	White spruce	27	7.2 G	Private	2.4	part of driveway hedgerow	Remove	0.55	0.75	0.65	3,398.75	\$ 169.94	
1836	Norway spruce	38	8 P	Private	2.4	Lots of dieback	Remove	0.55	0.25	0.65	2,244.08	\$ 112.20	
1837	White spruce	19	5.4 F	Private	1.8	part of driveway hedgerow	Remove	0.55	0.5	0.65	1,122.04	\$ -	
1838	Norway spruce	32	7.8 G	Private	2.4	Moderate lean, Moderate deadwood	Remove	0.55	0.75	0.65	4,774.10	\$ 238.71	
1839	White cedar	51	8.8 G	Private	3.6	Mature tree	Remove	0.55	0.75	0.65	12,126.41	\$ 606.32	
1840	White cedar	46	6 P	Private	3	in decline	Remove	0.55	0.25	0.65	3,288.41	\$ 164.42	
1841	White cedar	48	6.8 F	Private	3	Mature tree	Remove	0.55	0.5	0.65	7,161.16	\$ 358.06	
1842	White cedar	45	6 G	Private	3	Mature tree	Remove	0.55	0.75	0.65	9,440.98	\$ 472.05	
1843	White cedar	52	9.8 F	Private	3.6	Tree has a lean	Remove	0.55	0.5	0.65	8,404.41	\$ 420.22	
1844	White cedar	50	9.8 G	Private	3	Mature tree	Remove	0.55	0.75	0.65	11,655.53	\$ 582.78	
1845	White cedar	51	9.8 G	Private	3.6	Mature tree	Remove	0.55	0.75	0.65	12,126.41	\$ 606.32	

1846	White cedar	38	8.2	F	Private	2.4 Mature tree	Remove	0.55	0.5	0.65	\$	4,488.16	\$	224.41
1847	White cedar	31	7.4	F	Private	2.4 Co-dominant leader	Remove	0.55	0.5	0.65	\$	2,986.92	\$	149.35
1848	White cedar	38	7	F	Private	2.4 Mature tree	Remove	0.55	0.5	0.65	\$	4,488.16	\$	224.41
1849	White cedar	40	7	G	Private	2.4 Mature tree	Remove	0.55	0.75	0.65	\$	7,459.54	\$	372.98
1850	White cedar	36	6.2	F	Private	2.4 Tree has a lean	Remove	0.55	0.5	0.65	\$	4,028.15	\$	201.41
1851	White cedar	30	4.8	G	Private	2.4 n/c	Remove	0.55	0.75	0.65	\$	4,195.99	\$	209.80
1852	White cedar	20	3	P	Private	2.4 mostly dead	Remove	0.55	0.25	0.65	\$	621.63	\$	31.08
1853	White cedar	40	6	F	Private	2.4 Tree has a lean	Remove	0.55	0.5	0.65	\$	4,973.03	\$	248.65
1854	White cedar	28	3.6	G	Private	2.4 n/c	Remove	0.55	0.75	0.65	\$	3,655.17	\$	182.76
1855	White cedar	41	5.8	G	Private	3 n/c	Remove	0.55	0.75	0.65	\$	7,837.18	\$	391.86
1856	Red Oak	128	18.8	F	Private	FALSE signs of decline	Remove	0.55	0.5	0.65	\$	50,923.79	\$	2,546.19
A	Black walnut	47	13.4	G	Public	3 n/c	Remove	0.55	0.75	0.65	\$	10,298.83	\$	514.94
B	Black locust	50	10.8	G	Private	3 Invasive tree species	Remove	0.55	0.75	0.65	\$	11,655.53	\$	582.78
C	Manitoba maple	36	20	P	Private	2.4 future hazard tree	Remove	0.55	0.25	0.65	\$	2,014.08	\$	100.70
D	Norway spruce	52	11.4	G	Private	3.6 grape vines in canopy	Remove	0.55	0.75	0.65	\$	12,606.62	\$	630.33
E	Manitoba maple	23	8	P	Private	2.4 future hazard tree	Remove	0.55	0.25	0.65	\$	822.10	\$	41.11
F	Dead	20	1	D	Private	2.4 Dead	Remove	0.55	0	0.65	\$	-	\$	-
G	Black locust	24	11	F	Private	2.4 Invasive tree species	Remove	0.55	0.5	0.65	\$	1,790.29	\$	89.51
H	Black walnut	29	11.2	G	Private	2.4 n/c	Remove	0.55	0.75	0.65	\$	3,920.92	\$	196.05
I	White spruce	37	6	G	Private	2.4 n/c	Remove	0.55	0.75	0.65	\$	6,382.57	\$	319.13
J	Black locust	19	5	F	Private	1.8 Invasive tree species	Remove	0.55	0.5	0.65	\$	1,122.04	\$	-
K	Manitoba maple	22	7	F	Private	2.4 future hazard tree	Remove	0.55	0.5	0.65	\$	1,504.34	\$	75.22
L	Black locust	26	6	F	Private	2.4 Invasive tree species	Remove	0.55	0.5	0.65	\$	2,101.10	\$	105.06
M	Black locust	28	10	F	Private	2.4 Invasive tree species	Remove	0.55	0.5	0.65	\$	2,436.78	\$	121.84
N	Black locust	27	10	F	Private	2.4 Invasive tree species	Remove	0.55	0.5	0.65	\$	2,265.83	\$	113.29
O	Silver maple	29	20	P	Private	2.4 In decline	Remove	0.55	0.25	0.65	\$	1,306.97	\$	65.35
P	Manitoba maple	40	14	P	Private	2.4 future hazard tree	Remove	0.55	0.25	0.65	\$	2,486.51	\$	124.33
Q	Black locust	18	5	P	Private	1.8 Invasive tree species	Remove	0.55	0.25	0.65	\$	503.52	\$	-
R	Norway maple	22	9	G	Private	2.4 n/c	Remove	0.55	0.75	0.65	\$	2,256.51	\$	112.83
S	Black locust	43	12.2	F	Private	3 Invasive tree species	Remove	0.55	0.5	0.65	\$	5,746.95	\$	287.35
T	Black locust	39	12.2	F	Private	2.4 Invasive tree species	Remove	0.55	0.5	0.65	\$	4,727.48	\$	236.37
U	Black locust	51	12.2	P	Private	3.6 Invasive tree species	Remove	0.55	0.25	0.65	\$	4,042.14	\$	202.11
V	Manitoba maple	40	14	P	Private	2.4 future hazard tree	Remove	0.55	0.25	0.65	\$	2,486.51	\$	124.33
W	Black locust	38	9.8	F	Private	2.4 Invasive tree species	Remove	0.55	0.5	0.65	\$	4,488.16	\$	224.41
X	Black locust	29	5.4	F	Private	2.4 Invasive tree species	Remove	0.55	0.5	0.65	\$	2,613.95	\$	130.70
Y	Black locust	29	8.6	F	Private	2.4 Invasive tree species	Remove	0.55	0.5	0.65	\$	2,613.95	\$	130.70
Z	Black locust	40	10.4	F	Private	2.4 Invasive tree species	Remove	0.55	0.5	0.65	\$	4,973.03	\$	248.65
AA	Black locust	51	12.2	F	Private	3.6 Invasive tree species	Remove	0.55	0.5	0.65	\$	8,064.28	\$	404.21
AB	Black locust	41	12.2	F	Private	3 Invasive tree species	Remove	0.55	0.5	0.65	\$	5,224.79	\$	261.24
AC	Black locust	50	12.2	F	Private	3 Invasive tree species	Remove	0.55	0.5	0.65	\$	7,770.35	\$	388.52
AD	Black locust	40	12.2	F	Private	2.4 Invasive tree species	Remove	0.55	0.5	0.65	\$	4,973.03	\$	248.65
AE	Manitoba maple	30	7	F	Private	2.4 future hazard tree	Remove	0.55	0.5	0.65	\$	2,797.33	\$	139.87
AF	Manitoba maple	28	9	P	Private	2.4 future hazard tree	Remove	0.55	0.25	0.65	\$	1,218.39	\$	60.92
AG	White cedar	39	6.3	G	Private	2.4 n/c	Remove	0.55	0.75	0.65	\$	7,091.22	\$	354.56
AH	Manitoba maple	31	9	F	Private	2.4 future hazard tree	Remove	0.55	0.5	0.65	\$	2,986.92	\$	149.35
AI	Manitoba maple	25	6	P	Private	2.4 future hazard tree	Remove	0.55	0.25	0.65	\$	971.29	\$	48.56
AJ	Manitoba maple	26	8	P	Private	2.4 future hazard tree	Remove	0.55	0.25	0.65	\$	1,050.55	\$	52.53
AK	Buckthorn	18	8	G	Private	1.8 Invasive tree species	Remove	0.55	0.75	0.65	\$	1,510.56	\$	-
AL	Black walnut	17	7	F	Private	1.8 n/c	Remove	0.55	0.5	0.65	\$	898.25	\$	-
AM	Crab apple	21	7	F	Private	2.4 n/c	Remove	0.55	0.5	0.65	\$	1,370.69	\$	68.53
AN	Manitoba maple	27	6	F	Private	2.4 future hazard tree	Remove	0.55	0.5	0.65	\$	2,265.83	\$	113.29
AO	Manitoba maple	38	7.4	F	Private	2.4 future hazard tree	Remove	0.55	0.5	0.65	\$	4,488.16	\$	224.41

AP	Manitoba maple	50	16P	Private	3 future hazard tree	Remove	0.55	0.25	0.65	\$	3,885.18	\$	194.26
AQ	Manitoba maple	15	8P	Private	1.8 future hazard tree	Remove	0.55	0.25	0.65	\$	349.67	\$	-
AR	Manitoba maple	32	8P	Private	2.4 future hazard tree	Remove	0.55	0.25	0.65	\$	1,591.37	\$	79.57
AS	Manitoba maple	20	8P	Private	2.4 future hazard tree	Remove	0.55	0.25	0.65	\$	621.63	\$	31.08

Trees to Be Planted as Replacements

ID	Species	DBH (cm)	Null	Ownership	Null	Notes/Comments	Null	Condition	Null	**Appraised Value	Replacement Credit
6		5		Private		New tree		1		\$	434.71
7		5		Private		New tree		1		\$	434.71
8		5		Private		New tree		1		\$	434.71

Excellent (1.00):

Full crown with no evidence of decline, disease or dieback. Healthy leaf colour or good set of winter buds. No visible structural defects.

Good (0.75):

Full crown or dieback of <10% of secondary branches. Crown with only minor deadwood or dieback with well-spaced branches. Minor structural or biological deficiency.

Fair (0.50):

Moderate crown with <30% incomplete sections or deadwood/dieback. Moderate structural or biological deficiency or presence of disease.

Poor (0.25):

<70% live crown. Poor vigor. One or more major structural or biological deficiencies or several moderate deficiencies and/or presence of major disease.

Dead (0.00):

Tree has <10% live crown or has completely succumbed to deficiencies, or tree is an immediate risk to surroundings.

****Appraised Value (based on Guide for Plant Appraisal 9th Ed.)**

Basic Tree Cost x Species Rating x Condition Rating x Location Rating

Note: Species Rating (0.55) and Location Rating (0.60) are set values, determined by the City of Cambridge. Please use these values in the evaluation.

*****Tree Removal Discounted Fee (calculated compensation requirement for tree removal, discounted by the City of Cambridge)**

0.05 x Appraised Value