

February 7, 2023

Michael Delli-Benedetti  
President  
Kings Development Inc.  
145 Royal Crest Court, Unit 20  
Markham, ON, L3R 9Z4

Dear Michael Delli-Benedetti:

**Re: Updated – Arborist Report and Tree Protection Plan for the Redevelopment of 10037 Keele Street, Vaughan: City File Number DA.21.034 (Palmer #1901611)**

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## **1. Introduction**

Palmer is pleased to provide this updated Arborist Report and Tree Protection Plan (TPP) for the proposed redevelopment of 10037 Keele Street in Vaughan, Ontario (the Subject Property – **Figure 1**). This updated report reflects first submission review comments of September 2021. The proposed works include the development of a 3-storey commercial and residential mixed-use building. The Site Plan will be roughly the same footprint as the existing 1-storey building and companion parking lot. The Subject Property is approximately 0.17 hectares (ha), and is surrounded by commercial buildings to the north, east, and south.

This report includes a review of relevant tree preservation policies, the tree inventory methods and results, a tree protection plan identifying trees proposed to be retained and recommended tree protection measures, as well as the tree replacement recommendations for trees proposed to be removed. Recommendations for construction methods are also detailed, as they pertain to trees.

## **2. Relevant Policy**

### **2.1 City of Vaughan**

#### *2.1.1 The Consolidated Tree Protection By-law 052-2018*

The *Tree Protection By-law* (052-2016) is intended to conserve and protect trees within the City of Vaughan (City of Vaughan, 2020). This by-law applies to all inventoried trees that have a Diameter at Breast Height (DBH) of 20 cm or more that are proposed to be injured or destroyed. Under section 6 of the by-law, a tree removal permit can be issued to the landowner with an arborist report and a tree management plan. This Arborist Report and Tree Protection Plan has been prepared in accordance with this policy in support of a building permit application.

#### *2.1.2 Tree Protection Protocol (2018)*

The purpose of the City's *Tree Protection Protocol* is to identify the procedures and standards required by the City to protect public and private tree through the development review process (City of Vaughan, 2018).

The protocol provides direction on technical report contents required for staff to assess how a proposed development will impact existing trees and recommended preservation and compensation methods.

### 2.1.3 *City-wide Urban Design Guidelines Volume 2 (2018)*

The *City-wide Urban Design Guidelines Volume 2* provides standard details for tree protection and planting that should be included when submitting a TPP (City of Vaughan, 2018). Specifications from this guideline are used in this Arborist Report and TPP.

## 2.2 **Street Tree and Forest Preservation Guidelines (2022)**

The York Region *Street Tree and Forest Preservation Guidelines* document provides direction for the successful preservation of existing Region-owned street trees and natural vegetation within the road allowance (York Region, 2022). As Keele Street is a regional road, this Arborist Report and TPP follows the standards, directions, and recommendations from these guidelines for the right of way area.

## 2.3 **Migratory Bird Convention Act**



The *Migratory Birds Convention Act* (MBCA), 1994 and *Migratory Birds Regulations* (MBR), 2014 protect most species of migratory birds and their nests and eggs anywhere they are found in Canada. General prohibitions under the MBCA and MBR protect migratory birds, their nests, and eggs, and prohibit the deposition of harmful substances in waters/areas frequented by them. The MBR includes an additional prohibition against incidental take, which is the inadvertent harming or destruction of birds, nests, or eggs.

## 3. **Methods**


This Arborist Report was directed by an International Society of Arboriculture (ISA) Certified Arborist. A tree inventory was completed on November 12, 2020 and November 26, 2021 for all trees within the Subject Property and 6 metres (m) beyond the property boundary adjacent to proposed disturbances. Information collected during the inventory included species name, tree tag number, geo-location, DBH, percentage of dead branches, a general health assessment (structure and vigour), dripline, ownership, and notes on tree trunk and canopy conditions.



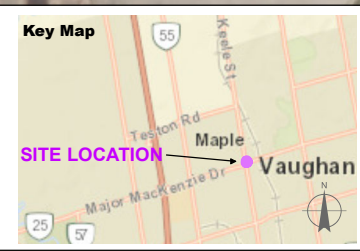
CUENT:	Blackthorn Development	
PROJECT:	10037 Keele Street	
PREPARED BY:		

			
PROJECT NO.	1901611		REVISION:
DATE:	Feb 09, 2021	SCALE:	1:500
DRAWN:	BE	DATUM:	NAD 1983
CHECKED:	MV	PROJECTION:	UTM zone 17

LEGEND:

 Subject Property

Imagery (2019) provided by Regional Municipality of York.



TITLE:

**Site Location**

**Figure 1**

## 4. Results

### 4.1 Tree Inventory

The tree inventory included a total of 20 individual trees (**Figure 2**). Most of the inventoried trees were non-native but common landscaping species (85%). Among the trees, Manitoba Maple (*Acer negundo*), followed by Little-leaf Linden (*Tilia cordata*) were the most common tree species (**Table 1**). There were no Species at Risk (SAR) trees observed. Six trees are on the Subject Property and are considered privately-owned, while one is co-owned with 10049 Keele Street (Tree #424); Tree #426 is within the Keele Street Regional right of way, and the remaining 12 are private trees owned by 18 Richmond Street. The full tree inventory is provided in **Appendix A**.

*Table 1. Summary of Tree Inventory Results*

Scientific Name	Common Name	Number of Trees
<i>Acer x freemanii</i> *	Freeman's Maple	2
<i>Acer negundo</i> *	Manitoba Maple	9
<i>Acer platanoides</i> *	Norway Maple	1
<i>Gleditsia triacanthos</i> (cultivar)	Honey Locust (cultivar)	2
<i>Picea pungens</i> *	Blue Spruce	2
<i>Thuja occidentalis</i>	White Cedar	1
<i>Tilia cordata</i> *	Little-leaf Linden	3
<b>Total</b>		<b>20</b>

\*Non-native species

### 4.2 Trees to be Retained

A total of eight trees are proposed to be retained without potential for interactions with the development (**Table 2**). These trees are in good to fair condition. With proper installation and adherence to tree protection methods (Section 5), no impacts are anticipated for these trees.

*Table 2. Trees Proposed to be Retained*

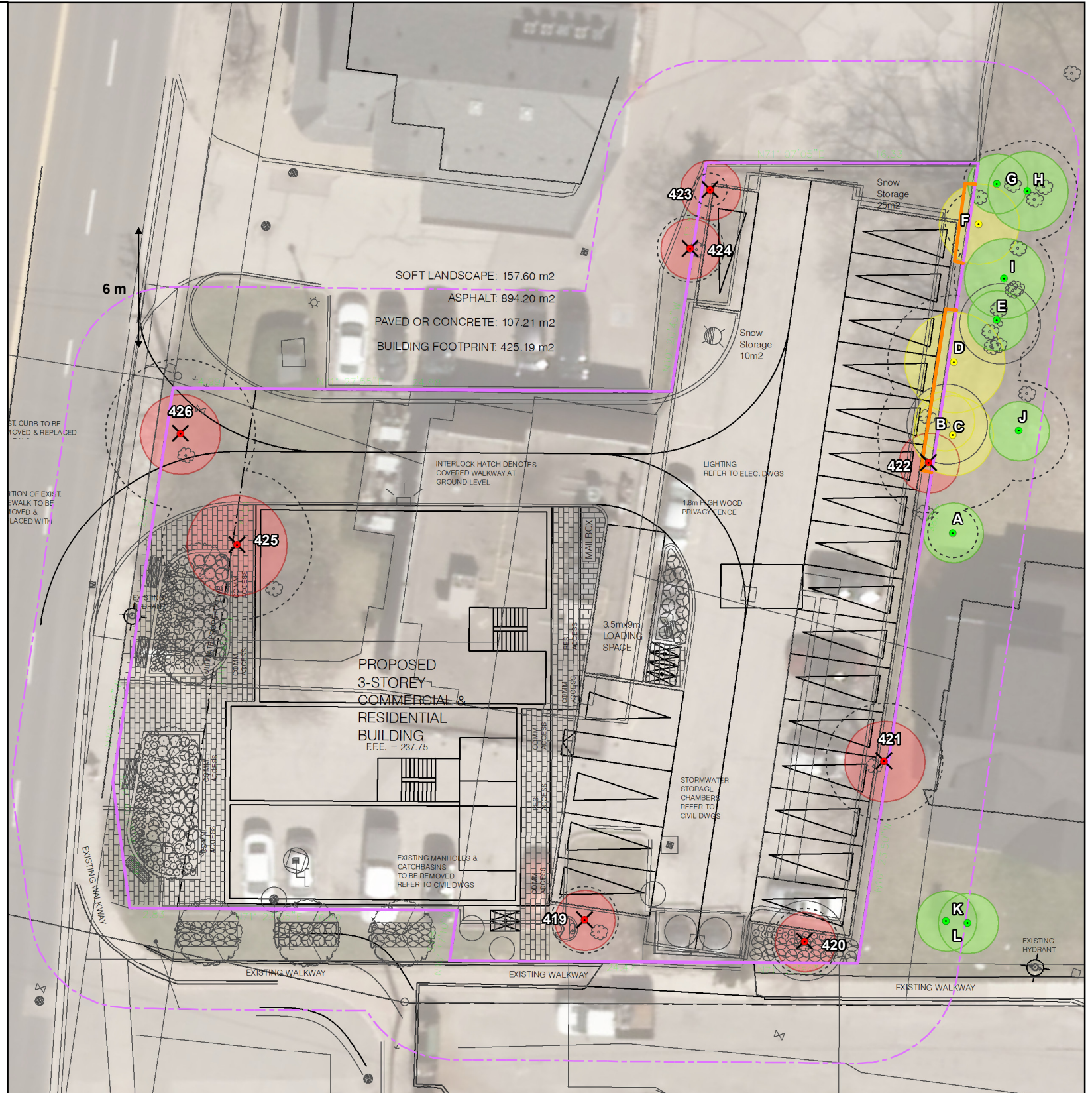
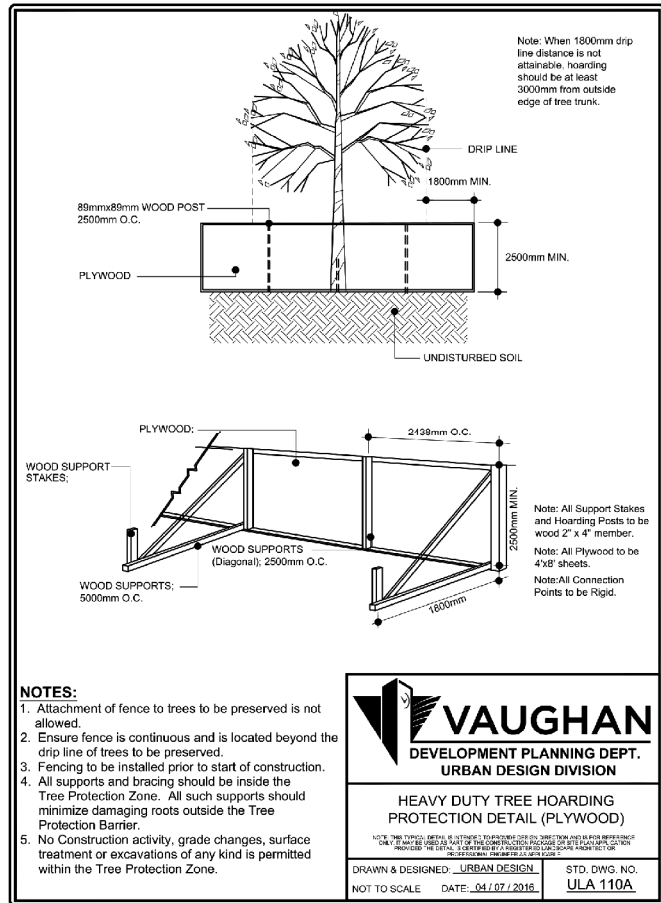
Scientific Name	Common Name	Good to Fair Health	Poor Health	Total Count
<i>Acer negundo</i>	Manitoba Maple	5	0	5
<i>Picea pungens</i>	Blue Spruce	2	0	2
<i>Tilia cordata</i>	Little-leaf Linden	1	0	1
<b>Total to be Retained</b>		<b>8</b>	<b>0</b>	<b>8</b>



**GENERAL NOTES**

- TREE PROTECTION BARRIERS SHALL BE INSTALLED TO STANDARDS AS DETAILED IN THIS DOCUMENT AND TO THE SATISFACTION OF THE CITY OF VAUGHAN FORESTRY AND HORTICULTURAL DEPARTMENT.
- AS PER ULA 110A, TREE PROTECTION BARRIERS MUST BE INSTALLED USING PLYWOOD CLAD HOARDING OR AN EQUIVALENT APPROVED BY THE CITY OF VAUGHAN FORESTRY AND HORTICULTURAL DEPARTMENT.
- PRIOR TO THE COMMENCEMENT OF ANY SITE ACTIVITY SUCH AS SITE ALTERATION, DEMOLITION OR CONSTRUCTION, THE TREE PROTECTION MEASURES SPECIFIED ON THIS PLAN MUST BE INSTALLED TO THE SATISFACTION OF THE CITY OF VAUGHAN FORESTRY AND HORTICULTURAL DEPARTMENT.
- THE APPLICANT OR CONTRACTOR SHALL INFORM VAUGHAN FORESTRY OR DEVELOPMENT PLANNING DEPARTMENT ONCE TREE PROTECTION HAS BEEN INSTALLED, FOR VAUGHAN FORESTRY TO INSPECT AND APPROVE ACCORDING TO SPECIFICATIONS.
- ONCE ALL TREE/SITE PROTECTION MEASURES HAVE BEEN INSTALLED, THE CITY OF VAUGHAN FORESTRY AND HORTICULTURAL DEPARTMENT STAFF MUST BE CONTACTED TO ARRANGE FOR AN INSPECTION OF THE SITE AND APPROVAL OF THE TREE/SITE PROTECTION REQUIREMENTS.
- WHERE CHANGES TO THE LOCATION OF THE APPROVED TPZ OR SEDIMENT CONTROL OR WHERE TEMPORARY ACCESS TO THE TPZ IS PROPOSED, THE CITY OF VAUGHAN FORESTRY AND HORTICULTURAL DEPARTMENT MUST BE CONTACTED TO OBTAIN APPROVAL PRIOR TO ALTERATION.
- TREE PROTECTION BARRIERS MUST REMAIN IN PLACE AND IN GOOD CONDITION DURING DEMOLITION, CONSTRUCTION AND/OR SITE DISTURBANCE, INCLUDING LANDSCAPING, AND MUST NOT BE ALTERED, MOVED OR REMOVED UNTIL AUTHORIZED BY THE CITY OF VAUGHAN FORESTRY AND HORTICULTURAL DEPARTMENT.
- THE AREA(S) IDENTIFIED AS A TREE PROTECTION ZONE (TPZ) MUST BE PROTECTED AND REMAIN UNDISTURBED AT ALL TIMES. WITHIN THE AREA IDENTIFIED ON THE TREE PROTECTION PLAN OR SITE PLAN AS A MINIMUM TPZ:
  - NO CONSTRUCTION ACTIVITIES INCLUDING GRADE CHANGES, SURFACE TREATMENTS OR EXCAVATION OF ANY KIND ARE PERMITTED
  - NO ROOT CUTTING IS PERMITTED.
  - NO STORAGE OF MATERIALS OR FILL IS PERMITTED.
  - NO MOVEMENT OR STORAGE OF VEHICLES OR EQUIPMENT IS PERMITTED.
- FOR TREES A TO J, CARE SHOULD BE TAKEN TO LIMIT DISTURBING THE UNDERLYING SOILS AND SURFACES DURING REMOVAL OF THE PARKING LOT PAVEMENT. AFTER THE REMOVAL OF PAVEMENT AND OTHER MATERIALS, SHOULD THE UNDERLYING SOILS REQUIRE DECOMPACTION, THIS SHOULD BE ACCOMPLISHED USING A LOW PRESSURE AIRSPADE OR SIMILAR. CARE IS TO BE TAKEN TO PRESERVE ANY ROOT SYSTEMS THAT MAY BE REVEALED.
- ALL ADDITIONAL TREE PROTECTION OR PRESERVATION REQUIREMENTS, ABOVE AND BEYOND THE INSTALLATION OF TREE PROTECTION BARRIERS, MUST BE UNDERTAKEN OR IMPLEMENTED AS DETAILED IN THE ARBORIST REPORT AND TO THE SATISFACTION OF THE CITY OF VAUGHAN FORESTRY AND HORTICULTURAL DEPARTMENT.
- IF THE MINIMUM TREE PROTECTION ZONE (TPZ) MUST BE REDUCED TO FACILITATE CONSTRUCTION ACCESS, THE TREE PROTECTION BARRIERS MUST BE MAINTAINED AT A LESSER DISTANCE AND THE EXPOSED PORTION OF TPZ MUST BE PROTECTED USING A HORIZONTAL ROOT PROTECTION METHOD APPROVED BY THE CITY OF VAUGHAN FORESTRY AND HORTICULTURAL DEPARTMENT.

- ANY ROOTS OR BRANCHES INDICATED ON THIS PLAN WHICH REQUIRE PRUNING, AS APPROVED BY THE FORESTRY AND HORTICULTURAL DEPARTMENT, MUST BE PRUNED BY AN ARBORIST. ALL PRUNING OF TREE ROOTS AND BRANCHES MUST BE IN ACCORDANCE WITH GOOD ARBORICULTURAL PRACTICE. ROOTS THAT HAVE RECEIVED APPROVAL FROM THE CITY OF VAUGHAN FORESTRY AND HORTICULTURAL DEPARTMENT TO BE PRUNED MUST FIRST BE EXPOSED USING PNEUMATIC (AIR) EXCAVATION, BY HAND DIGGING, OR BY A USING LOW PRESSURE HYDRAULIC (WATER) EXCAVATION. THE WATER PRESSURE FOR HYDRAULIC EXCAVATION MUST BE LOW ENOUGH THAT ROOT BARK IS NOT DAMAGED OR REMOVED. THIS WILL ALLOW A PROPER PRUNING CUT AND MINIMIZE TEARING OF THE ROOTS. THE ARBORIST RETAINED TO CARRY OUT CROWN OR ROOT PRUNING MUST CONTACT THE CITY OF VAUGHAN FORESTRY AND HORTICULTURAL DEPARTMENT NO LESS THAN THREE WORKING DAYS PRIOR TO CONDUCTING ANY SPECIFIED WORK.
- THE APPLICANT/OWNER SHALL PROTECT ALL BY-LAW REGULATED TREES IN THE AREA OF CONSIDERATION THAT HAVE NOT BEEN APPROVED FOR REMOVAL THROUGHOUT DEVELOPMENT WORKS TO THE SATISFACTION OF THE CITY OF VAUGHAN FORESTRY AND HORTICULTURAL DEPARTMENT.
- PRIOR TO SITE DISTURBANCE THE OWNER MUST CONFIRM THAT NO MIGRATORY BIRDS ARE MAKING USE OF THE SITE FOR NESTING. THE OWNER MUST ENSURE THAT THE WORKS ARE IN CONFORMANCE WITH THE MIGRATORY BIRD CONVENTION ACT AND THAT NO MIGRATORY BIRD NESTS WILL BE IMPACTED BY THE PROPOSED WORK.



LEGEND:

Inventory Tree and Tree Protection Zone		Retain		Tree Protection Fencing		Subject Property		
		Potential Injury				Dripline		6 m Property Buffer
		Remove						

METRE SCALE: 0 2 4 6 8		CLIENT: Blackthorn Development	
PRINT SCALE: 1:300	PRINT SIZE: 11 x 17"	PROJECT: 10037 Keele Street	
DATUM: NAD 1983	PROJECTION: UTM Zone 17	TITLE: Tree Protection Plan	
DATE: Feb 27, 2023	DRAWN: BE    CHECKED: MV	PROJECT NO. 1901611	
NOTES: 1. Imagery (2019) provided by Regional Municipality of York.		REVISION: 5	
		FIGURE 2	



### 4.3 Trees with Potential Injury

An additional four trees can be retained but have the potential to be injured (**Table 3**). These trees are all Manitoba Maples found on the neighbouring property to the east (**Figure 2**). As per the Site Plan and Landscape Plan for the project, the parking lot is to be expanded slightly east and riverstone placed between the parking lot and the property line. The required earthworks have the potential to disturb the root systems of these trees. With appropriate mitigation measures outlined in Section 5, these trees are anticipated to survive as the majority of the root systems are found on the neighbouring property. A letter of consent will be required for the potential injury of these trees.

*Table 3. Trees with Potential Injury*

Scientific Name	Common Name	Good to Fair Health	Poor Health	Total Count
<i>Acer negundo</i>	Manitoba Maple	1	3	4
<b>Total with Potential Injury</b>		<b>1</b>	<b>3</b>	<b>4</b>

### 4.4 Trees to be Removed

A total of eight trees are proposed to be removed (**Table 4**), all of which are in good to fair condition. The development of the building, planting boxes, and walkways requires the removal of trees 425 and 426, which would also screen the store fronts. Trees 419 to 424 are adjacent to the parking area, where expansions require their removal, as the grubbing and removal of adjacent and underlying soils is predicted to impact these trees. Tree #424 is a co-owned tree, and a letter of consent will be required for the removal of this tree. Tree #426 is within the Keele Street right of way and is considered a Regional asset; compensation for its removal is calculated separately from the other private trees.

Note that while Tree 420, a Freeman's Maple, is proposed to be removed, it is recommended to be transplanted to roughly the same location after construction of the adjacent parking lot and curb (Section 6.1).

*Table 4. Trees Proposed to be Removed*

Scientific Name	Common Name	Good to Fair Health	Poor Health	Total Count
<i>Acer platanoides</i>	Norway Maple	1	0	1
<i>Acer x freemanii</i>	Freeman's Maple	8	0	8
<i>Gleditsia triacanthos</i>	Honey Locust (cultivar)	2	0	2
<i>Thuja occidentalis</i>	Eastern White Cedar	1	0	1
<i>Tilia cordata</i>	Little Leaf Linden	2	0	2
<b>Total to be Removed</b>		<b>8</b>	<b>0</b>	<b>8</b>

## 5. Tree Protection Plan

The specifications for tree protection are detailed on the Tree Protection Plan (**Figure 2**), including the locations of required tree protection fencing. The Tree Protection Plan is intended to act in concert with this Arborist Report; it is expected that the recommendations of both instruments be implemented for the Subject Property.

### 5.1 Tree Protection Zone

Most trees proposed to be retained and trees with potential to be injured will be primarily protected by tree protection fencing, which is to be placed at minimum beyond their Tree Protection Zone (TPZ). No construction, grade changes, surface treatment or excavations of any kind are permitted within the TPZ. The following **Table 5** outlines the required minimum TPZ for public and private trees according to the *Tree Protection Protocol* (City of Vaughan, 2018). Note that the Regional definitions for TPZ were not applied, as Tree #426 must be removed for the project (York Region, 2022).

**Table 5. Tree Protection Zones for Private and Public Trees**

DBH*	Minimum TPZ Distance**
<10 cm	1.2
10-29 cm	1.8
30-40 cm	2.4
41-50 cm	3.0
51-60 cm	3.6
61-70 cm	4.2
71-80 cm	4.8
81-90 cm	5.4
91-100 cm	6.0
>100 cm	6 cm protection for each 1 cm diameter

\*DBH measurement of tree is taken at 1.4 metres above the ground

\*\*TPZ distances are to be measured from the outside edge of the tree base

### 5.2 Tree Protection Fencing

Fencing provides protection from potential damage during construction activities. Tree protection fencing is to be installed as per the City’s Standard ULA 110A (**Appendix B**). Fencing should be installed at the outer limit of the minimum TPZ for each tree. Material for fencing should be plywood on a 1.2 m x 2.4 m framing, braced outside the TPZ.

#### 5.2.1 Specific Fencing Locations

For trees B, D, and F, it is predicted that these trees can be retained, but have the potential for injury. The proposed activities adjacent to these trees is solely a resurfacing of the existing parking. As such, tree protection fencing is recommended to be installed between the curb and the fenceline to protect the

available soils adjacent to these trees (**Figure 2**). The TPZ of other neighbouring trees are beyond those of B, D, and F, and would be protected by the fencing installed.

### **5.3 Construction Practices**

For **Trees A to J**, care should be taken to limit disturbing the underlying soils and surfaces during removal of the parking lot pavement. After the removal of pavement and other materials, should the underlying soils require decompaction (to 800 mm in depth), this should be accomplished using a low pressure airspade or similar. Care is to be taken to preserve any root systems that may be revealed. Exposed roots are to be pruned by a qualified arborist in accordance with good arboricultural practices. No roots greater than 6 cm (2.5") in diameter shall be pruned without the authorization of the City and in consultation with the Project arborist.

Roots should be pruned in a similar fashion as branches, taking care to maintain the integrity of the root bark ridge, where present. Roots should be pruned back to a lateral root at least one third the diameter. Root stubs are not to be left upon completion of root pruning.

Prolonged exposure of tree roots should be avoided. If not surfaced immediately, the area should be temporarily back filled with mulch or appropriate native material to maintain moisture/prevent desiccation.

### **5.4 Felling and Grinding**

Trees to be removed will be felled and grubbed by a certified arborist using good arboricultural practices to limit potential damage to the trees being retained and adjacent development.

### **5.5 Pruning**

Roots and branches of existing trees that are inadvertently disturbed by construction activity should be pruned to ensure the long-term health of the tree. Pruning should be conducted by a Certified Arborist using good arboricultural practices. In general, pruning is to be done by hand making clean cuts. Rotary tools and torque motions should not be employed. All pruning cuts will be made to a growing point such as a bud, twig or branch; no stubs should be left. Efforts should be made to keep exposed roots moist and soils replaced as soon as feasible.

## **6. Compensation Plantings**

The compensation plan for trees to be removed as part of the proposed development is detailed in the following sections. The information regarding the tree removal compensation ratios, tree species planting selection, and plantings locations provided below follows the *Tree Protection Protocol* (City of Vaughan, 2018).



## 6.1 Tree Removal Compensation

### 6.1.1 Private Trees

Compensation for healthy trees  $\geq 20$  cm DBH is required for development plans (City of Vaughan, 2018). The compensation ratios for trees  $\geq 20$  cm DBH are outlined in the *Tree Protection Protocol*. The following ratios must apply:

- 1:1 for trees 20 to 30 cm DBH
- 2:1 for trees 31 to 40 cm DBH
- 3:1 for trees 41 to 50 cm DBH
- 4:1 for trees greater than 50 cm DBH

Of the eight trees to be removed (Section 4.4), three (3) are private trees  $\geq 20$  cm DBH, therefore requiring compensation as per the *Protocol*. Based on the above ratios, a total of six (6) native trees are recommended to be planted within the Subject Property in compensation of the trees proposed to be removed (**Table 6**). The landscape planting plan L-2 for the project indicates that seven native trees (four Kentucky Coffeetree (cultivars) (*Gymnocladus dioicus*) and three Little Leaf Linden) of a 60 mm caliper size are to be planted on-site (Landscape Planning Landscape Architects, 2023). Trees are to be of good quality, number one (1) grade, nursery-grown stock (City of Vaughan, 2018).

In addition, Tree 420 is proposed to be transplanted into roughly the same location, shifted slightly to allow curb construction and provide adequate soil volumes. This tree is a Freeman’s Maple in Good condition, with a DBH of 18 cm, and is predicted to transplant well. This should be accomplished via tree spade, using best arboricultural practices.

**Table 6. Private Tree Removal Compensation**

Compensation per Tree Size Category	20-30 cm DBH 1:1	31-40 cm DBH 2:1	41-50 cm DBH 3:1	> 50 cm DBH 4:1	Total
<b>Total Trees to be Removed</b>	1	1	1	0	<b>3</b>
<b>Total Compensation Trees Required</b>	1	2	3	0	<b>6</b>

### Cash in Lieu

Replacement trees should be planted on-site whenever feasible, and adequate compensation is provided on-site to meet City of Vaughan replacement requirements for private trees. However, should the required trees not be able to be planted on-site, cash in lieu options should be discussed with the City of Vaughan. In 2018, the cash in lieu payment for privately-owned trees was \$550/tree (City of Vaughan, 2018).

### 6.1.2 Regional Tree

Tree #426 is a Norway Maple (*Acer platanoides*) within the Keele Street Right of Way (**Photo 1**). Compensation is required for the removal of trees in the Project Area in order to preserve canopy cover and to realize no net loss of trees (York Region, 2022). Compensation may be provided in the form of

replacement plantings or through payment of equivalent compensation value. The compensation value of York Region-owned trees to be removed has been calculated in accordance with the York Region *Street Tree and Forest Preservation Guidelines*. Following the Regional comments on the first submission, compensation value was calculated with a \$880.07 deciduous replacement cost, and a 50 mm caliper replacement size (provided by the Region).



**Photo 1: Regional Tree #426**

Eight compensation trees are required for the loss of this tree or a compensation value of \$7,040.56 (**Table 7**). However, as eight trees are to be planted or transplanted on-site (six for private tree compensation), two of those can be considered in replacement for the loss of Tree #426. The balance is an additional six trees, or a compensation value of \$5,280.42.

**Table 7. Regional Tree Removal Compensation**

Tag #	Species	Common Name	DBH (cm)	Condition		Replacement Trees (calculated)	Replacement Trees (rounded)	Compensation Value (\$)
				Rating	%			
426	<i>Acer platanoides</i>	Norway Maple	39	Good	1	7.8	8	\$7,040.56

## **7. Management and Monitoring**

### **7.1 Pre-Construction Phase**

To avoid a MBCA offence by the inadvertent injury or destruction of active nests and/or eggs during bird nesting periods, it is recommended that all vegetation (including tree) removal works are conducted between September 1 and April 14 of any given year. Should tree removal during the bird nesting season be unavoidable, a qualified biologist should conduct a nesting survey immediately before any vegetation removal is conducted. No branches or brush from clearing is to be stored on the Subject Property. Cutting, brush, and chipping cleanup are to be completed outside of the migratory bird nesting season.

Trees permitted for removal shall only be destroyed following issuance of a building permit. All tree to be removed be felled into the proposed development area as to avoid damage to the adjacent treed areas. The tree removal permit shall be posted in a conspicuous location visible from the street, for a period of one day prior to the commencement of the approved tree injury and remain in place until the approved tree removal/injury has been completed in accordance with the permit.

The tree protection fencing should be installed before the commencement of any earth works or construction. The applicant or contractor shall inform Vaughan Forestry or Development Planning Department once tree protection has been installed, for Vaughan Forestry to inspect and approve according to specifications.

Appropriate preparatory tree pruning would also be completed at this point. Any pruning of tree roots and branches of tree necessary to accommodate construction work should be completed by a Certified Arborist using best arboricultural practices.

### **7.2 Construction Phase**

Contractors are responsible for all protection measures, to the satisfaction of a certified arborist. Tree protection fencing should remain in place throughout the duration of construction and works should not allow construction activity, grade changes, surface treatment, excavations of any kind or material storage or equipment to compact soil within the tree protection fencing area. Any pruning of tree roots and branches of trees necessary to accommodate the fencing or nearby construction work should be completed by a Certified Arborist using best arboricultural practices.

### **7.3 Post-Construction Phase**

The removal of tree protection fencing, and additional tree care measures should only be completed when all construction activities have been completed and landscaping has been initiated. Planting of replacement trees as per Section 6.1 will be initiated as part of landscaping and be completed by nursery professionals or a Certified Arborist. To promote successful establishment, plantings will occur solely during the spring or fall planting seasons; being April 15 – July 1, and September 15 – November 15, respectively.

Monitoring of tree establishment will be completed for a minimum of one growing season post-planting, following preliminary acceptance by the City. Monitoring should be designed to assess the growth and establishment of the planted trees, ensuring that the conditions of any nursery guarantees are met.



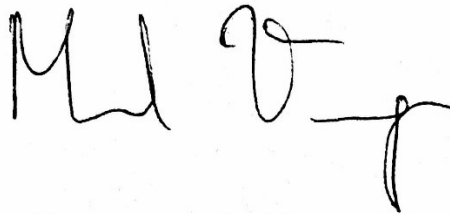
## 8. Conclusions

Of the 20 inventoried trees, eight are to be retained, four have the potential to be injured, and eight are proposed to be removed. The Tree Protection Plan described in this report is intended to be implemented to ensure the protection for trees being retained, suitable mitigation measures are followed for trees that may be injured, and appropriate replacements for trees proposed to be removed. The management and monitoring recommendations are provided as direction for the various phases of construction to ensure that impacts to trees are minimized to the greatest extent feasible.

Yours truly,

**Palmer™**

Prepared By:



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Manuela Vernaza, B.Sc.  
Jr. Ecologist

Reviewed By:



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Austin Adams, M.Sc., EP  
Sr. Ecologist, ISA Certified Arborist ON-2000A

## 9. References

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# **Appendix A**

## **Tree Inventory**



# Appendix A

## Tree Inventory

Tag #	Common Name	Scientific Name	DBH* (cm)	Effective DBH* (cm)	% Dead Branches	Condition (G/F/P/D)		Dripline (m)		Average Dripline	TPZ (m)	Ownership	Recommendation
						Structure	Vigour	1	2				
419	Freeman's Maple	<i>Acer x freemanii</i>	16.5	17	>10	G	G	2	2	2	1.8	Private	Remove
420	Freeman's Maple	<i>Acer x freemanii</i>	18	18	>10	G	G	2	2	2	1.8	Private	Remove
421	Little Leaf Linden	<i>Tilia cordata</i>	39	39	>10	F	G	3.5	3.5	3.5	2.4	Private	Remove
A	Little Leaf Linden	<i>Tilia cordata</i>	13,13,10,10,5	24	<10	F	G	1.5	1.5	1.5	1.8	Private - 18 Richmond Street	Retain
422	Little Leaf Linden	<i>Tilia cordata</i>	28	28	<10	F	G	3	3	3	1.8	Private	Remove
B	Manitoba Maple	<i>Acer negundo</i>	40,15	43	30	P	P	4.5	4.5	4.5	2.4	Private - 18 Richmond Street	Potential injury
C	Manitoba Maple	<i>Acer negundo</i>	23	23	35	P	P	4	1	2.5	1.8	Private - 18 Richmond Street	Potential injury
D	Manitoba Maple	<i>Acer negundo</i>	45, 18	48	15	G	F	4	4	4	3	Private - 18 Richmond Street	Potential injury
E	Manitoba Maple	<i>Acer negundo</i>	18	18	<10	G	G	3	2	2.5	1.8	Private - 18 Richmond Street	Retain
F	Manitoba Maple	<i>Acer negundo</i>	33	33	30	P	P	4	0	2	2.4	Private - 18 Richmond Street	Potential injury
423	White Cedar	<i>Thuja occidentalis</i>	11	11	<10	P	F	1	1	1	1.8	Private	Remove
424	Honey Locust (cultivar)	<i>Gleditsia triacanthos</i>	18	18	<10	G	G	2	2	2	1.8	Co-owned with 10049 Keele Street	Remove
425	Honey Locust (cultivar)	<i>Gleditsia triacanthos</i>	47	47	<10	G	G	4.5	4.5	4.5	3	Private	Remove
426	Norway Maple	<i>Acer platanoides</i>	39	39	<10	G	G	4.5	4.5	4.5	2.4	Regional	Remove

\*DBH: Diameter at Brest Height. For multi-stemmed trees, Effective DBH is calculated as the square root of the sum of squares.

Tag #	Common Name	Scientific Name	DBH* (cm)	Effective DBH* (cm)	% Dead Branches	Condition (G /F/P/D)		Dripline (m)		Average Dripline	TPZ (m)	Ownership	Recommendation
						Structure	Vigour	1	2				
G	Manitoba Maple	<i>Acer negundo</i>	20	20		F	F			2	1.8	Private - 18 Richmond Street	Retain
H	Manitoba Maple	<i>Acer negundo</i>	20,20,10,6	31		F	F			3	2.4	Private - 18 Richmond Street	Retain
I	Manitoba Maple	<i>Acer negundo</i>	35,20	40		F	F			3	2.4	Private - 18 Richmond Street	Retain
J	Manitoba Maple	<i>Acer negundo</i>	25	25		F	F			3	1.8	Private - 18 Richmond Street	Retain
K	Blue Spruce	<i>Picea pungens</i>	~3 m tall	10		G	F			1	1.8	Private - 18 Richmond Street	Retain
L	Blue Spruce	<i>Picea pungens</i>	~2 m tall	10		G	F			1	1.8	Private - 18 Richmond Street	Retain

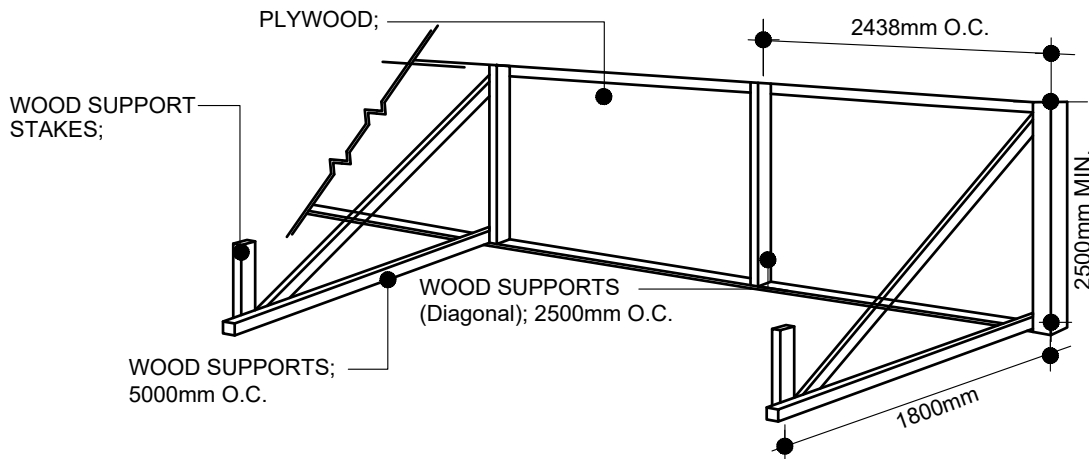
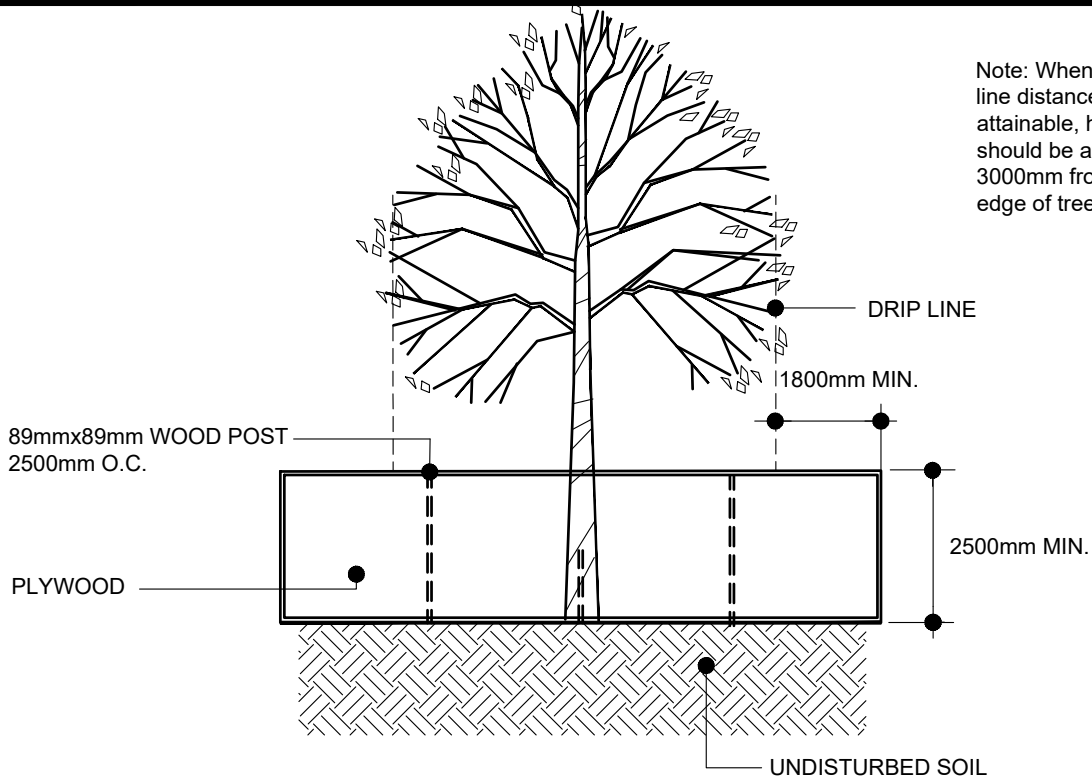
\*DBH: Diameter at Brest Height. For multi-stemmed trees, Effective DBH is calculated as the square root of the sum of squares.

# **Appendix B**

**Vaughan Tree Protection  
Standard ULA 110A**



Note: When 1800mm drip line distance is not attainable, hoarding should be at least 3000mm from outside edge of tree trunk.



Note: All Support Stakes and Hoarding Posts to be wood 2" x 4" member.

Note: All Plywood to be 4'x8' sheets.

Note: All Connection Points to be Rigid.

### NOTES:

1. Attachment of fence to trees to be preserved is not allowed.
2. Ensure fence is continuous and is located beyond the drip line of trees to be preserved.
3. Fencing to be installed prior to start of construction.
4. All supports and bracing should be inside the Tree Protection Zone. All such supports should minimize damaging roots outside the Tree Protection Barrier.
5. No Construction activity, grade changes, surface treatment or excavations of any kind is permitted within the Tree Protection Zone.



### HEAVY DUTY TREE HOARDING PROTECTION DETAIL (PLYWOOD)

NOTE: THIS TYPICAL DETAIL IS INTENDED TO PROVIDE DESIGN DIRECTION AND IS FOR REFERENCE ONLY. IT MAY BE USED AS PART OF THE CONSTRUCTION PACKAGE OR SITE PLAN APPLICATION PROVIDED THE DETAIL IS CERTIFIED BY A REGISTERED LANDSCAPE ARCHITECT OR PROFESSIONAL ENGINEER AS APPLICABLE.

DRAWN & DESIGNED: URBAN DESIGN

STD. DWG. NO.

NOT TO SCALE DATE: 04 / 07 / 2016

ULA 110A