

# Tree Conservation Report

2625 Sheffield Road, Ottawa, Ontario

60648725

January 2023

## Statement of Qualifications and Limitations

The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("AECOM") for the benefit of the Client in accordance with the agreement between AECOM and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations and conclusions contained in the Report (collectively, the "Information"):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations");
- represents AECOM's professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to AECOM which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

AECOM shall be entitled to rely upon the accuracy and completeness of information that was provided to it and has no obligation to update such information. AECOM accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

AECOM agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but AECOM makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

Without in any way limiting the generality of the foregoing, any estimates or opinions regarding probable construction costs or construction schedule provided by AECOM represent AECOM's professional judgement in light of its experience and the knowledge and information available to it at the time of preparation. Since AECOM has no control over market or economic conditions, prices for construction labour, equipment or materials or bidding procedures, AECOM, its directors, officers and employees are not able to, nor do they, make any representations, warranties or guarantees whatsoever, whether express or implied, with respect to such estimates or opinions, or their variance from actual construction costs or schedules, and accept no responsibility for any loss or damage arising therefrom or in any way related thereto. Persons relying on such estimates or opinions do so at their own risk.

Except (1) as agreed to in writing by AECOM and Client; (2) as required by-law; or (3) to the extent used by governmental reviewing agencies for the purpose of obtaining permits or approvals, the Report and the Information may be used and relied upon only by Client.

AECOM accepts no responsibility, and denies any liability whatsoever, to parties other than Client who may obtain access to the Report or the Information for any injury, loss or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Report or any of the Information ("improper use of the Report"), except to the extent those parties have obtained the prior written consent of AECOM to use and rely upon the Report and the Information. Any injury, loss or damages arising from improper use of the Report shall be borne by the party making such use.

This Statement of Qualifications and Limitations is attached to and forms part of the Report and any use of the Report is subject to the terms hereof.

AECOM: 2015-04-13  
© 2009-2015 AECOM Canada Ltd. All Rights Reserved.

## Quality Information

### Prepared by

---



---

Alex Bryski, BES.  
ISA Certified Arborist ON-2811A  
*Alex.Bryski@aecom.com*

### Checked by

---



---

Maria O'Sullivan, M.Sc.  
ISA Certified Arborist ON-2829A  
*Maria.OSullivan@aecom.com*

### Verified by

---



---

Olga Hropach, B.Sc. (Hons).  
Senior Ecologist  
*Olga.Hropach@aecom.com*

### Approved by

---



---

Joseph Abela, Arch. Tech., B.A. Tech.  
Project Manager  
*Joseph.Abela@aecom.com*

## Revision History

Rev #	Revision Date	Revised By:	Revision Description
01	October 4, 2022	Alex Bryski	Update Tree Conservation Report based on updated designs and project footprint
02	January 27, 2023	Alex Bryski	Update Tree Conservation Report based on updated designs and project footprint

# Table of Contents

<b>1.</b>	<b>Introduction .....</b>	<b>1</b>
<b>2.</b>	<b>Applicable By-laws &amp; Regulations.....</b>	<b>3</b>
2.1	City of Ottawa Official Plan .....	3
2.2	City of Ottawa Tree Protection By-law No. 2020-340.....	3
2.2.1	Municipal Tree Compensation Requirements .....	3
2.2.2	Private Tree Compensation Requirement .....	3
2.3	Tree Valuation .....	4
2.4	Endangered Species Act, 2007 .....	4
<b>3.</b>	<b>Methods.....</b>	<b>5</b>
3.1	Tree Inventory .....	5
3.2	Tree Assessment.....	5
3.3	Tree Impact Analysis .....	6
<b>4.</b>	<b>Results .....</b>	<b>7</b>
4.1	Tree Inventory .....	7
4.2	Tree Assessment.....	7
4.3	Tree Impact Analysis .....	7
4.4	Permits .....	8
4.5	Compensation .....	8
4.6	Tree Valuation .....	8
4.7	Species at Risk.....	8
<b>5.</b>	<b>Tree Removal, Preservation and Maintenance Recommendations .....</b>	<b>9</b>
5.1	Tree Removal.....	9
5.2	Tree Preservation .....	9
5.3	Tree Protection Recommendations .....	9
5.3.1	Tree Protection Fencing and Ground Compaction Mitigation .....	9
5.3.2	Vegetation Clearing and Management.....	10
5.3.3	Branch Pruning .....	10
5.3.4	Roots.....	10
5.3.5	Excavation .....	11
<b>6.</b>	<b>Summary and Recommendations .....</b>	<b>12</b>
<b>7.</b>	<b>Certification .....</b>	<b>13</b>
<b>8.</b>	<b>References .....</b>	<b>14</b>

## Figures

Figure 1: Tree Inventory Study Area .....2

## Tables

Table 1: Private Tree Compensation Table (City of Ottawa) ..... 3  
Table 2: Summary of Tree Locations Within the Tree Inventory Limits ..... 7  
Table 3: Summary of Tree Condition ..... 7  
Table 4: Summary of Tree Removal and Preservation Recommendations ..... 8  
Table 5: Summary of Tree Permit Acquisition Requirements ..... 8

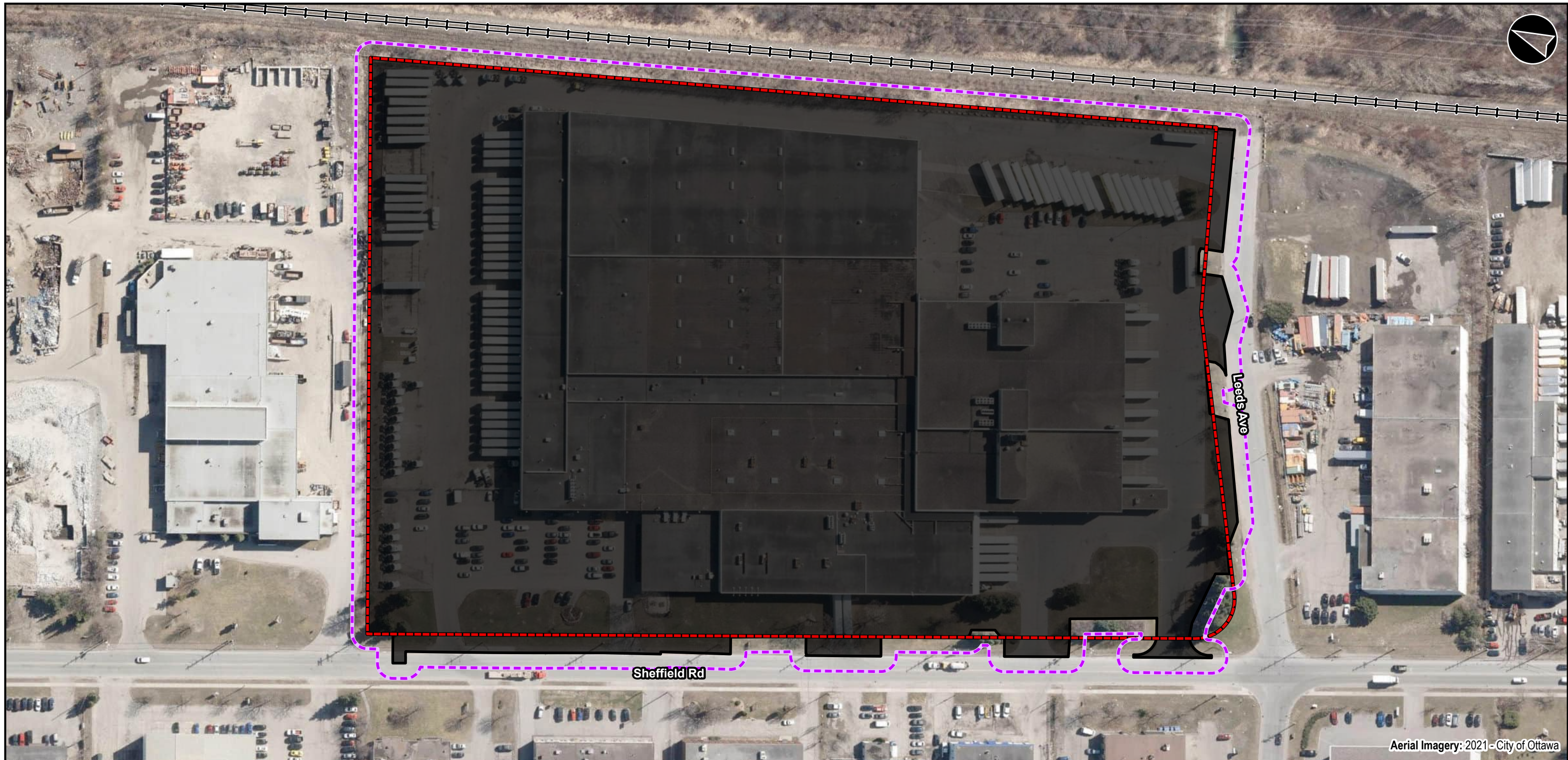
## Appendices

Appendix A. Tree Assessment Results  
Appendix B. Tree Inventory and Preservation Plan  
Appendix C. Tree Valuation  
Appendix D. Tree Inventory Abbreviations

# 1. Introduction




AECOM Canada Ltd. (AECOM) has been retained by the Client to provide a Tree Conservation Report (TCR) in support of the proposed renovation of an existing site and building to function as a new distribution centre for a large, multi-national retail company at 2625 Sheffield Road (the Project) in the City of Ottawa (the City). The purpose of the assignment is to complete a tree inventory in order to assess the general health and structure of onsite trees and determine potential developmental impacts to trees within the Tree Inventory Study Area. The Tree Inventory Study Area for this TCR is defined as the Project's Impact Area plus a Buffer Area (6.0 m), as illustrated in **Figure 1**. The City requires that a TCR be prepared for all projects with applications associated to the *Planning Act* (1990). As such, this report has been prepared in accordance with the City's tree protection by-laws and guidelines.





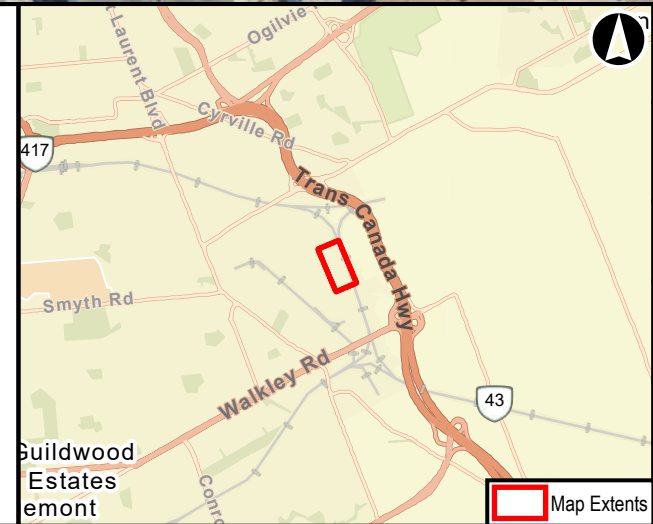


Aerial Imagery: 2021 - City of Ottawa

**LEGEND**  
Project Components

-  Impact Area
-  Tree Inventory Study Area
-  Property Limit

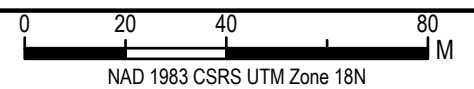
- General Features**
-  Main Railway
  -  Spur Railway



 Map Extents

**2625 Sheffield Road  
Tree Conservation Report**

Tree Inventory Study Area



**Data Sources:**  
Contains information licensed under the Open Government License Ontario and the City of Ottawa.

**AECOM**

Jan, 2023	1:1,500
P:60634622	Rev:00

**Figure 1**

Project Location: E:\PR\60634622\_DVT\Design\01\_Report\Tree\TreeInventory\01\_TreeInventory\01\_TreeInventory\_SiteArea.mxd  
Date Saved: 1/24/2023 10:47 AM User: oravs



## 2. Applicable By-laws & Regulations

### 2.1 City of Ottawa Official Plan

As identified on Schedule B of the City of Ottawa’s *Official Plan* (2003), the Tree Inventory Study Area is located within an Urban Employment Area and adjacent to General Urban Areas and Mixed-Use Areas. The Tree Inventory Study Area is also regulated by the Rideau Valley Conservation Authority (RVCA). Based on the Ministry of Natural Resources and Forestry’s (MNRF) Make-a-Map online natural heritage tool, there are no significant natural features (i.e., Significant Woodlands or Provincially Significant Wetlands) located within 120 m of the Tree Inventory Study Area. It should be noted that the City has a new Official Plan in draft form for public consultation.

### 2.2 City of Ottawa Tree Protection By-law No. 2020-340

The City of Ottawa’s newly published *Tree Protection By-law* (2020) replaces the previous *Municipal Trees and Natural Areas Protection By-Law* (No. 2006-279) and *the Urban Tree Conservation By-Law* (No. 2009-200). The changes in this by-law promote a “landscape first” focus to developmental projects and streamlines requirements, enforcement and processes to make the City’s tree regulations clearer. Permits to injure or remove trees are required for all City-owned trees throughout urban and rural areas, as well as trees that are ≥10 cm diameter at breast height (DBH) on private properties within urban areas. Additionally, trees that are considered distinctive trees in this by-law (i.e., trees that are ≥30 cm DBH within urban lands that are located within the Greenbelt and trees that are ≥50 cm DBH within urban lands that are located outside of the Greenbelt) will also require permitting. Lastly, Schedule B (Tree Compensation Requirements) of this by-law provides detailed tree compensation requirements for Municipal trees and private trees.

#### 2.2.1 Municipal Tree Compensation Requirements

All City-owned tree removals require a compensation value payment using the Council of Tree and Landscape Appraisers (CTLA) Trunk Formula method, as well as the replacement ratio of 1:1 for all tree removals within the right-of-way (ROW). If a replacement tree cannot be planted on site, a cash-in-lieu of \$400 is required to be paid to the City, as well as the CTLA tree appraisal.

#### 2.2.2 Private Tree Compensation Requirement

Compensation requirements for tree removals on private property are based on a few factors including application type, property size and whether a tree is classed as a distinctive tree. Tree replacement ratios vary dependent on these factors and in some cases cash-in-lieu is required. **Table 1** below outlines the various compensation requirements for private tree removals within the City’s urban areas.

**Table 1: Private Tree Compensation Table (City of Ottawa)**

Tree Removal Application Type	Private Property Size	Tree Replacement Ratio	Tree Removal Criteria	Cash-in-Lieu (per replacement tree)
Not Associated with a Planning Act Application	≤1 ha	1:1	Distinctive tree (>30 cm DBH) within urban lands <b>within</b> the Greenbelt	N/A
Not Associated with a Planning Act Application	≤1 ha	1:1	Distinctive tree (>50 cm DBH) within urban lands <b>outside</b> the Greenbelt	N/A



**Table 1: Private Tree Compensation Table (City of Ottawa)**

Tree Removal Application Type	Private Property Size	Tree Replacement Ratio	Tree Removal Criteria	Cash-in-Lieu (per replacement tree)
Infill Development Application	<1 ha	2:1	Distinctive tree (30 cm – 49 cm DBH) within <b>inner urban area</b> only	\$400
Infill Development Application	<1 ha	3:1	Distinctive tree (>50 cm DBH) within <b>inner and suburban areas</b>	\$400
Application Not Associated with a Planning Act Application	>1 ha	1:1	All protected trees (>10 cm DBH)	N/A
Planning Act Application (Site Plan, Plan of Subdivision)	No size requirement	TBD through development review process	All trees within the <b>urban area</b>	TBD through development review process
Private Property in an Urban Area	No size requirement	1:1	All trees considered dead or hazardous, or ash trees	N/A

It should be noted that the Project falls under Site Plan Application category of the *Planning Act* (1990) in regard to the above tree compensation requirements, therefore, the compensation requirements will be determined through the development review process.

## 2.3 Tree Valuation

As outlined in Schedule B (Tree Compensation Requirements) from the City’s *Tree Protection By-law* (2020), a tree appraisal using the Trunk Formula Method for City-owned trees recommended for removal is a requirement for a TCR. The Council for Tree & Landscape Appraisers’ (CTLA) provides guidance on using the Trunk Formula Method to appraise the monetary value of trees that are considered too large to be replaced with nursery or field-grown stock. There are several factors to be considered when appraising a tree recommended for removal, including (but not limited to) its condition rating, functional and external limitation as well as installation cost and replacement cost. These factors are based on the *Guide for Plant Appraisal* (2020) and basic costs for trees and/or current industry tree replacement costs. As such, each City-owned tree that is recommended for removal within the Tree Inventory Study Area shall be appraised using the Trunk Formula Method by the City Forestry Department.

## 2.4 Endangered Species Act, 2007

The *Endangered Species Act, 2007* (ESA) provides protection for provincial Species at Risk (SAR) and their habitats. Species are classified into one of four levels of risk: Extirpated, Endangered, Threatened or Special Concern. These risk levels are determined through science-based assessment via the Committee on the Status of Species at Risk in Ontario (COSSARO); classification is based on best-available science and Indigenous traditional knowledge. Species classified as Threatened or Endangered on the Species at Risk in Ontario (SARO) list are afforded both individual and habitat protection under the ESA. This includes protection from “killing, harming, harassing, possessing, buying, selling, trading, leasing or transporting” of protected species and/or “damaging or destroying” their habitats.

Where a proposed activity may negatively affect protected species or habitat, changes to timing, location and methods of the proposed activity should be considered, where feasible, to avoid impacts to SAR. Where impacts cannot be avoided or mitigated, an authorization process may be pursued. The Ministry of the Environment, Conservation and Parks (MECP) may grant a permit or other authorization for activities that would otherwise contravene the ESA. Generally, several permit types are available, depending on the nature of the proposed work and may include conditions to provide an overall benefit to the targeted SAR.

## 3. Methods

The tree inventory and assessment were completed by one of AECOM’s International Society of Arboriculture (ISA) Certified Arborist on January 8, 2021. Data were collected using the accepted standard arboriculture techniques as outlined in the Council of Tree & Landscape Appraisers’ *Guide for Plant Appraisal, 10th Edition (2020)* as well as the City’s *Tree Protection By-law (2020)*.

### 3.1 Tree Inventory

All private and City-owned trees that will be affected by the proposed work within the Tree Inventory Study Area were inventoried in accordance with the City’s guidelines. The locations of all identified trees were recorded using an SX Blue II GPS unit and a MediaTek tablet.

### 3.2 Tree Assessment

The assessment included a visual examination of above-ground parts for each measurable tree. These trees were not climbed, probed, cored, or dissected, and excavation for detailed root crown inspection was not completed. Since some symptoms may only be present seasonally, the extent of observation that can be made may be limited by the time of year in which the assessment took place. As this tree inventory was conducted during the winter months, each tree underwent a full crown assessment through assessing the proportion of live buds in the crown, and its overall vigour. It is understood that trees are living organisms and their health and vigour are continually changing over time due to factors such as seasonal variations and changes in site conditions. For this reason, the assessment presented in this report is valid at the time of inspection and no guarantee is made about the continued health of trees that were deemed to be in good, fair or poor condition.

In accordance with the aforementioned guidelines, all City-owned trees were identified, sized and assessed for condition. The visual inspection included recording abiotic and biotic disorders as well as structural defects. These defects and disorders are listed within the Observations/Comment’s column of **Appendix A**. The condition rating designated to each tree was based on the results of the basic assessment. The hazard potential of trees was assessed using the method outlined in the ISA publication *A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas – 2<sup>nd</sup> Edition* (Matheny and Clark, 1994). Using this guide, an overall condition rating (i.e., dead, hazard, poor, fair, or good was given to each tree included in the inventory).

- Dead** ..... A specimen tree is considered dead when it has no living tissue.
  
- Poor** ..... Trees in poor condition show major symptoms of decline. At least 50% of main scaffold branches are dead, missing or in diseased state. The trunk shows evidence of advanced rot, deadwood or is hollow throughout. Twig development on the main branched or throughout the canopy is poor and may have limited sucker growth. Callus growth around wounds is minimal. A tree in poor condition could decline further to become a safety hazard. Removal prior to development should be considered if it is considered a hazard tree.
  
- Fair**..... Trees in fair condition show moderate symptoms of decline in lower canopy or scaffold branches, but more than 50% of scaffold branches are present and viable. The trunk shows limited evidence of rot or insect damage. Good callus growth is present near wound areas. Trees that have scaffold branches that are healthy, but are in a “Y” formation may also be included in this category, if “included-bark” is evident as the risk of splitting or breakage increases as the tree matures. Removal or preservation of these trees depends on the location of the specimen and associated target potential, and would depend on the species,

and its tolerance to grading, trenching and surviving in an urban environment. Some major arboricultural maintenance may be required and may include major scaffold or secondary branch removal, bracing and/or cabling.

**Good**..... The specimen tree shows no symptoms of decline in the trunk, and all scaffold branches are present and are in good condition. Most scaffold branches are at right angles to the trunk, and show good vigour. Small amounts of dead wood may be present in secondary branches, but account for less than 25% of the canopy. Depending on the grading in the immediate area, a tree in good condition would be recommended for preservation. Such a tree would typically survive to maturity without major arboricultural maintenance.

### 3.3 Tree Impact Analysis

Using data collected during the tree inventory and assessment, a tree impact analysis was performed using ArcGIS software. Determination of each tree's recommended action (i.e., remove, minor injury and protect, injure and protect, protect or retain) were based on several factors including each tree's current condition and its location in relation to the impact area. As outlined in the City's *Tree Preservation By-law (2020)*, a Critical Root Zone (CRZ) was applied around each tree. The CRZ is defined as an area around each tree and is typically established based on the species and size of the tree and are intended to provide a buffer protecting the tree from potential impacts, including root and soil compaction and mechanical damage of above-ground parts. Based on the City's guidelines, the CRZ is established as being 10 cm from the trunk of a tree for every centimeter of trunk diameter. The CRZ of multi-stemmed trees was based on the DBH of the largest stem.

Generally, the following guidelines are followed in obtaining a tree's recommended action:

- Trees with equal to or greater than 40% of its CRZ affected by proposed work activities are recommended for **removal** as there would likely be negative impacts to the tree.
- Trees with 25-39% of its CRZ affected by proposed work activities are recommended for **injury and protection** in order to mitigate further damage to the tree's below-ground parts and above-ground parts.
- Trees with 0-24% of its CRZ affected by proposed work activities are recommended for **minor injury and protection** in order to mitigate further damage to the tree's below-ground parts and above-ground parts.
- Trees with CRZs that are not impacted by the proposed work activities that are found within the Buffer Area or within 2 m of the Buffer Area are recommended for **protection** with no injury, in order to mitigate the chances of accidental injury from adjacent work activities.
- Trees with CRZs found greater than 2 m from the outside of the Buffer Area are recommended for **retention** with no protection as it is unlikely that there would be negative impacts to the tree.

## 4. Results

### 4.1 Tree Inventory

All trees surveyed as part of the tree inventory and assessment were found within an urban environment and consisted of small, medium and large trees with DBH measurements ranging from 2 cm to 71 cm; the average DBH was 26 cm. The majority of the defects observed were caused by either human interference or natural occurrences including mechanical damage, insects, weather and natural environmental conditions. Biotic and abiotic disorders and structural defects observed are included in **Appendix A**. **Table 3** provides a summary of the overall condition of the trees ranging from a rating of good to dead.

**Table 2: Summary of Tree Locations Within the Tree Inventory Limits**

Ownership	Trees Within the Impact Area	Trees Within the 6 m Buffer Area*	Total
Private – On Subject Site	37	20	57
City Owned	1	7	8
Private – On Adjoining Site	0	7	7
<b>Total</b>	<b>38</b>	<b>34</b>	<b>72</b>

Note: \*6 m from Impact Area, as required by standard arboricultural practices.

### 4.2 Tree Assessment

All trees surveyed as part of the tree inventory and assessment were found within an urban environment and consisted of small, medium and large trees with DBH measurements ranging from 2 cm to 71 cm; the average DBH was 26 cm. The majority of the defects observed were caused by either human interference or natural occurrences including mechanical damage, insects, weather and natural environmental conditions. Biotic and abiotic disorders and structural defects observed are included in **Appendix A**. **Table 3** provides a summary of the overall condition of the trees ranging from a rating of good to dead.

**Table 3: Summary of Tree Condition**

Tree Condition	Total Number of Trees
Good	24
Fair	46
Poor	0
Dead	2
<b>Total</b>	<b>72</b>

### 4.3 Tree Impact Analysis

Based on the results of the tree impact analysis, a total of 39 trees within the Tree Inventory Study Area are recommended for removal, including 38 trees located within the Impact Area and one (1) located within the Buffer Area (6 m). Although Tree 69 is located on a neighbouring property, given its condition and proximity to the Project, it is nonetheless recommended that permission from the neighbouring property owners be obtained and that the tree is removed prior to the commencement of construction activities on site.

A total of 11 trees are recommended for minor injury with protection and the remaining 22 trees are recommended for retention and protection with no anticipated impact to their CRZ.

Encroachment into the CRZ of five (5) trees located on neighbouring properties is anticipated, all resulting in minor injury. It is recommended that permission from the neighbouring properties is obtained prior to construction



commencing and that all recommendations included in this report are adhered to throughout the project, with all work to be conducted as per the latest arboricultural practices.

**Table 4** summarizes the removal and preservation recommendations for trees within and outside the Tree Inventory Study Area; **Appendix B** indicates each tree’s recommended action and illustrates the CRZs for all trees that are recommended for protection and retention.

**Table 4: Summary of Tree Removal and Preservation Recommendations**

Ownership	Trees Requiring Removal	Trees Requiring Protection - Minor Injury	Trees Requiring Protection & Retention - No Injury	Total
Private On-Site	37	6	14	57
City Owned	1	0	7	8
Private on Adjoining Site	1	5	1	7
<b>Total</b>	<b>39</b>	<b>11</b>	<b>22</b>	<b>72</b>

## 4.4 Permits

The City requires a tree permit be issued by the General Manager authorizing the injury or destruction of City-owned trees or protected privately-owned trees (≥10 cm DBH) prior to the commencement of project work. **Table 5** below summarizes the tree permit acquisitions required for the proposed work. Additionally, detailed permitting requirements are outlined in **Appendix B**.

**Table 5: Summary of Tree Permit Acquisition Requirements**

Ownership	Tree Removal Permit	Tree Injury Permits	Total Permits Required
Private Onsite	31	6	37
City Owned	1	0	1
Private on Adjoining Site	0	5	5
<b>Total</b>	<b>32</b>	<b>11</b>	<b>43</b>

## 4.5 Compensation

As described in **Section 2.3**, Schedule B (Tree Compensation Requirements) of the City’s *Tree Protection By-law* (2020) provides detailed tree compensation requirements for City-owned trees and private trees. It is understood that upon the review of this TCR the City will provide the number of compensation trees required to account for privately-owned tree removals needed to facilitate the Project.

## 4.6 Tree Valuation

As stated in **Section 2.4**, all City-owned trees that are recommended for removal are subject to appraisal using the CTLA Trunk Formula Method, as described in **Section 2.3**. Based on the Trunk Formula Method and the individual value of the one (1) City-owned tree that is being recommended for removal to facilitate the Project, a monetary value of \$3,526.67 is required for its compensation. Further detailed information per can be found in **Appendix C**.

## 4.7 Species at Risk

During the time of field investigations, no SAR trees were identified within the Tree Inventory Study Area.

## 5. Tree Removal, Preservation and Maintenance Recommendations

There are many social, economic and environmental benefits of trees including aesthetics, increased property values, improved air quality, as well as food and shelter for resident wildlife. As a priority, damage should be minimized to existing trees within development limits wherever feasible. The assessment results and recommendations for each tree are summarized in **Appendix A**.

### 5.1 Tree Removal

It is recommended that a Certified Arborist be retained during tree removal operations in order to ensure that standardized arboricultural techniques are employed, prior to and during the proposed work activities, and to confirm the need to remove or protect additional trees in proximity to the Tree Inventory Study Area. Additionally, it is recommended that a Certified Arborist return at the conclusion of construction to assess the health of trees that were protected during construction and identify opportunities for mitigation should any trees display signs of stress (i.e., falling limbs, declining health, etc.).

### 5.2 Tree Preservation

It is recommended that a Certified Arborist be retained to regularly monitor the Project's construction activities in order to ensure that all trees that are recommended for protection and retention are being maintained adequately, in relation to standard arboricultural practices. Additionally, no grading, excavation or restoration related activities are to occur within the CRZ of any protected or retained trees, if it cannot be avoided, without the supervision of a Certified Arborist. Should the limits of the proposed excavation areas change, a Certified Arborist will be retained to review trees with CRZs intersecting new excavation area limits in order to determine whether trees shall be recommended for removal, injury and protection or retention. These recommendations are critical along the large proposed retaining wall on site.

### 5.3 Tree Protection Recommendations

The following sections outline tree protection measures recommendations that will further reduce the potential for negative impacts to preserved trees. Furthermore, the following subsections provide standard protection recommendations that apply to trees that require tree protection fencing for protection during construction activities. Notwithstanding this, recommendations for the timing of vegetation clearing apply to the site in general.

#### 5.3.1 Tree Protection Fencing and Ground Compaction Mitigation

Tree protection fencing shall be installed around trees recommended for protection and retention, where retained trees are in close proximity to the Impact Area (i.e., where a retained tree's CRZ is within the Tree Inventory Study Area but is not touching or intersecting the Impact Area), prior to the any work activities taking place within the Tree Inventory Study Area. The tree protection fencing shall be installed in accordance with the City's *Tree Protection Specification Standard* (2019). The tree protection fencing around the CRZ shall be installed with 1.2 m high rigid or framed materials (e.g., moduloc-steel, plywood hoarding or snow fence on a 5 cm x 10 cm (2"x4") wood frame) with posts 2.4 m apart. All supports and bracing must be installed outside the CRZ with focus on minimizing root damage. All tree protection fencing shall remain in place prior to any construction activity and in good repair until construction is complete.

It is recommended that the following activities are not prohibited within the CRZ:

- Grade change, storage of materials or equipment;
- The attachments of signs, notices or posters to any tree;
- Exhaust fumes from all equipment are not directed toward any tree canopy;
- No tunneling or boring when digging

For any trees recommended for preservation there shall be no storage or movement of equipment or hoarding of materials within the CRZ. If work must be completed within the CRZ, 10 to 15 cm (4" to 6") of mulch shall be spread over the area which is to be worked upon. Additionally, sheets of 2 cm (0.75") thick plywood (minimum) or steel plating shall be applied on the mulch in order to help distribute the weight of the heavy equipment to avoid soil compaction. After construction, these measures shall be removed to allow proper aeration and water infiltration to the soil. This shall include removing the bulk of mulch so that only 5 to 10 cm (2" to 4") remain. It is recommended that a Certified Arborist be on-site when work that could impact trees is required within the CRZ of trees identified for preservation. These recommendations are critical along the large proposed retaining wall on site.

### 5.3.2 Vegetation Clearing and Management

Vegetation removal, including tree removal will be limited to the specified activity areas and shall not commence until required permits and approvals are obtained.

Clearing of vegetation outside of the breeding bird season is recommended to reduce potential impacts to migratory birds and avoid contravention of the *Migratory Birds Convention Act* (1994). Searching for nests is not recommended within complex habitats, as the ability to detect nests is low while the risk of disturbance to active nests is high. This disturbance increases the risk of nest predation or abandonment by adults. Nests searches may be completed during the nesting period (April 1<sup>st</sup> to August 31<sup>st</sup>) by a qualified biologist (Government of Canada, 2021) in simple habitats, which refer to habitats that contain few likely nesting spots or a small community of migratory birds. Clearing in simple habitats during the nesting season can only occur if a qualified biologist has confirmed it would not affect the nest or young of a protected species.

Where works are proposed within a CRZ of a tree proposed for preservation, clearing of vegetation shall be performed manually to reduce soil compaction and mechanical damage to the tree. These recommendations are critical along the large proposed retaining wall on site.

### 5.3.3 Branch Pruning

Where branches are likely to be damaged during construction, they shall be pruned accordingly, prior to construction activities, in order to avoid unnecessary damage to the tree. Pruning should be conducted by a qualified arborist as per the latest arboricultural practices for canopy pruning utilizing clean tools (Tree Care Industry Association, 2008). Any branches damaged during construction should be examined and pruned accordingly to limit further damage.

### 5.3.4 Roots

Root damage shall be minimized by restricting equipment in the vicinity of the existing CRZ and limiting equipment within the construction limits. This will help minimize damage if there is any excavation in the areas of a preserved tree. It is critical to avoid damage to the structural root plate in order to prevent affecting tree stability and thus creating a hazard tree. In general, most of the fibrous roots of the tree are contained in the top 30 cm (11.75") of the soil and may easily be severed during excavation, whilst structural roots are located deeper. Hand digging, low

pressure hydro-vac or air spade exploratory digging will aid in determining the damage of the tree root system. As mentioned earlier, all opportunities to avoid root and grade damage within the CRZ shall be taken – this shall include limiting machinery within the CRZ as much as possible and the employment of horizontal hoarding where work is proposed within the CRZ of a tree recommended for preservation.

Any roots that are severed during construction shall be cut cleanly to minimize decay and entry points for disease. If roots will be exposed for more than a few hours, mulch, wet burlap or soil shall be applied as soon as possible and watered regularly to prevent roots from drying-out, under the supervision of a Certified Arborist.

### **5.3.5 Excavation**

- ◆ Methods of excavation within CRZ of trees proposed for protection or retention shall include those which cause the least harm to the tree, such as pneumatic or hydraulic excavation. These methods include tools which use high-pressure air or water to remove the soil around the roots without damaging the larger roots.
- ◆ Fill within the CRZ shall not be permitted unless it is mitigated in a way that maintains air and water availability for roots.
- ◆ All grade changes within and adjacent to CRZs shall be undertaken in accordance with the previously specified tree protection guidelines.
- ◆ Access routes shall be established away from the CRZ. The existing grades within the CRZ shall not be disturbed to avoid damage to trees and soil compaction.
- ◆ Where works are proposed within a CRZ of a tree proposed for preservation, excavation shall be performed manually to reduce soil compaction and mechanical damage to the tree under the supervision of a Certified Arborist. These recommendations are critical along the large proposed retaining wall on site.



## 6. Summary and Recommendations

Seventy-two (72) trees were inventoried and assessed within the Tree Inventory Study Area. Of these 72 trees, 38 were located directly within the Impact Area and 34 trees were located within the 6 m Buffer Area. Furthermore, based on the results of the tree impact analysis, it is recommended that 39 trees be removed in order to accommodate the construction of the Project. The remaining 33 trees are to be preserved; with 11 trees recommended for minor injury and protection, and 22 for protection and retention without injury. The number of trees that will require permits for removal is 32 whilst an additional 11 trees will require permits for injury, with a total of 43 permits required prior to construction. Overall, a monetary value of \$3,526.67 is required in compensation for one (1) of the 39 trees being recommended for removal to facilitate the Project, as it is a City-owned tree. Lastly, no species at risk were identified within the Tree Inventory Study Area.

In regard to the trees identified for removal prior to construction operations commencing, it is recommended that a Certified Arborist be retained during tree removal operations to ensure proper arboricultural techniques are employed prior to and during proposed activities and to confirm the need to remove or preserve trees within close proximity to the impact area. Additionally, it is recommended that a Certified Arborist return at the conclusion of construction to assess the health of preserved trees after construction is complete and to mitigate risk associated with falling limbs and declining health from potentially stressful conditions.

Tree protection fencing must be installed prior to initiation of the work. Tree protection fencing shall be installed to protect trees recommended for protection with injury, protection with minor injury, or protection (i.e., where trees that are being retained are within or 2 m outside the Buffer Area). The installation of tree protection fencing will reduce the potential for negative impacts including soil and root compaction as well as the potential for mechanical damage to trunks or branches. Lastly, it is recommended that any necessary pruning be conducted prior to construction by a Certified Arborist or trained professional with adequate arboricultural experience, in order to ensure that trees marked for preservation do not experience unnecessary stress or damage.

## 7. Certification

I certify that all the statements of fact in this assessment are true, complete, and correct to the best of my knowledge and belief, and that they are made in good faith.

**AECOM Canada Ltd.**



**Report Certified By:**

---

Alex Bryski, BES.  
ISA Certified Arborist ON-2811A  
*Alex.Bryski@aecom.com*

## 8. References

- City of Ottawa, 2003:  
Official Plan Schedule B – Urban Policy Plan  
[https://documents.ottawa.ca/sites/documents/files/scheduleb\\_officialplan\\_en.pdf](https://documents.ottawa.ca/sites/documents/files/scheduleb_officialplan_en.pdf)
- City of Ottawa, 2021:  
Tree Protection Specification  
[https://documents.ottawa.ca/sites/documents/files/tree\\_protection\\_specification\\_en.pdf](https://documents.ottawa.ca/sites/documents/files/tree_protection_specification_en.pdf)
- City of Ottawa, 2020:  
Tree Protection By-law (2020-340)  
<https://ottawa.ca/en/living-ottawa/laws-licences-and-permits/laws/laws-z/tree-protection-law-no-2020-340>
- City of Ottawa, 2020:  
Tree Protection By-law Bulletin
- Council of Tree and Landscape Appraisers, 2020:  
*Guide for Plant Appraisal*, International Society of Arboriculture. Tenth Edition (Revised).
- Environment and Climate Change (ECCC) Canada, 2018:  
Avoidance of Detrimental Effects to Migratory Birds (Incidental Take): Technical Information. Accessed December 2019 from: <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/reduce-risk-migratory-birds.html>
- Government of Canada, 1994:  
Migratory Birds Convention Act, S.C. 1994, c. 22.
- Government of Canada, 2021:  
Environment and Natural Resources. *Guidelines to reduce risk to migratory birds*. Retrieved from <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/reduce-risk-migratory-birds.html#shr-pg0>
- Government of Ontario , 1900:  
Forestry Act, R.S.O. 1990 c.F.26
- Government of Ontario, 1990:  
Planning Act, R.S.O. 1990 c. P.13
- Government of Ontario, 2007:  
Endangered Species Act, S.O. 2007, c. 6
- Lilly, S.J., 2010:  
The Arborists' Certification Study Guide. International Society of Arboriculture. Third Edition.
- Matheny, N.P. and Clarke, J.R., 1994:  
*A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas*. Second Edition. International Society of Arboriculture.
- Tree Care Industry Association, 2008:  
*American National Standard for Tree Care Operations: Tree, Shrub and Other Woody Plant Maintenance – Standard Practices (Pruning). A300, Part 1*. TCIA.

# Appendix **A**

## Tree Assessment Results





Tree #	Common Name	Scientific Name	DBH Analysis (cm)	Crown Reserve (m)	Crown Dieback (%)	Critical Root Zone (m)	Overall Condition	Observations/Comments	Ownership	Potential Impacts	Tree Location	Recommended Action	Permit Requirements	CRZ Area Lost (%)	Distance to Impact Area (m)
1	Spruce - Colorado	<i>Picea pungens</i>	36	5	15	3.6	Fair	LN(L), ST, DW, RP, PP, GR	Private - On subject site	Proposed sewer installation and grading	Impact Area	Remove	Permit to remove	100.0	0.0
2	Spruce - Colorado	<i>Picea pungens</i>	43	6	0	4.3	Good	DC, LN(L), DW, RP, PP, DL	Private - On subject site	Proposed sewer installation and grading	Impact Area	Remove	Permit to remove	100.0	0.0
3	Linden - Little-Leaf	<i>Tilia cordata</i>	37	8	10	3.7	Good	TK2, FB, DC, ST, IB, PP, RP	Private - On adjoining site	Proposed grading	Buffer Area	Protect - Minor Injury	Permit to injure	1.8	3.3
4	Spruce - Colorado	<i>Picea pungens</i>	27	4	5	2.7	Good	DC, DL, ST, RP	Private - On subject site	Proposed asphalt parking area and grading	Impact Area	Remove	Permit to remove	61.7	0.0
5	Spruce - Colorado	<i>Picea pungens</i>	42	6	10	4.2	Good	LN(L), GC, ST, DW, RP, PP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
6	Maple - Norway	<i>Acer platanoides</i>	3	1	5	0.3	Fair	BSD, FB, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	N/A - <10 cm	100.0	0.0
7	Maple - Sugar	<i>Acer saccharum</i>	3	2	0	0.3	Fair	ML, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	N/A - <10 cm	100.0	0.0
8	Maple - Sugar	<i>Acer saccharum</i>	3	1	0	0.3	Fair	ML, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	N/A - <10 cm	100.0	0.0
9	Maple - Sugar	<i>Acer saccharum</i>	2	1	10	0.2	Fair	BSD, ML, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	N/A - <10 cm	100.0	0.0
10	Maple - Norway	<i>Acer platanoides</i>	4	2	10	0.4	Fair	BSD, WC, FB, ML, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	N/A - <10 cm	100.0	0.0
11	Maple - Norway	<i>Acer platanoides</i>	51	13	15	5.1	Good	FK2@2M, PP, WC, WNC, RC1, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
12	Maple - Norway	<i>Acer platanoides</i>	52	13	10	5.2	Good	MBN, FK2@3M, PP, UW, RP, ER	Private - On subject site	Proposed asphalt parking area and grading	Impact Area	Remove	Permit to remove	100.0	0.0
13	Maple - Sugar	<i>Acer saccharum</i>	12	5	10	1.2	Fair	BSD, TW, WNC, FB, RP, DC	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
14	Maple - Norway	<i>Acer platanoides</i>	63	18	30	6.3	Fair	PP, PF, DW, RP, DE, PB, UW, ER, GR, 1SD	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
15	Maple - Norway	<i>Acer platanoides</i>	71	14	15	7.1	Good	MBN, FK3@2M, PP, WNC, GR, ER, DW, RP, CB	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
16	Apple sp.	<i>Malus sp.</i>	26	8	15	2.6	Fair	TK2, ST, SB, SC, SN, PP, PF, RP, FB	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
17	Spruce - Colorado	<i>Picea pungens</i>	21	5	0	2.1	Good	DC, DL, UW, RP	City owned	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	1.2
18	Spruce - Colorado	<i>Picea pungens</i>	25	5	10	2.5	Good	DC, DL, UW, RP	City owned	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	0.2
19	Spruce - Colorado	<i>Picea pungens</i>	21	5	0	2.1	Good	DC, DL, UW, RP	City owned	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	0.9
20	Spruce - Colorado	<i>Picea pungens</i>	27	4	5	2.7	Fair	DC, DL, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
21	Spruce - Colorado	<i>Picea pungens</i>	30		5	3	Good	DL, DC, GR, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
22	Spruce - Colorado	<i>Picea pungens</i>	18	3	15	1.8	Fair	LS, SL, DW, RP, DL	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
23	Spruce - Colorado	<i>Picea pungens</i>	23	4	15	2.3	Fair	LS, SL, RP, DW, CT	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
24	Spruce - Colorado	<i>Picea pungens</i>	23	4	15	2.3	Fair	LN(L), LS, SL, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
25	Spruce - Colorado	<i>Picea pungens</i>	27	4	10	2.7	Fair	LS, SL, DL, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
26	Spruce - Colorado	<i>Picea pungens</i>	21	4	35	2.1	Fair	LN(L), SL, LS, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
27	Spruce - Colorado	<i>Picea pungens</i>	30	30	10	3	Fair	LS, SL, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
28	Spruce - Colorado	<i>Picea pungens</i>	27	5	10	2.7	Good	LS, SL, DL, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
29	Pine - Austrian	<i>Pinus nigra</i>	42	8	35	4.2	Fair	DW, 1SD, LNL, ML, RP	Private - On subject site	Proposed building construction	Impact Area	Remove	Permit to remove	100.0	0.0
30	Maple - Norway	<i>Acer platanoides</i>	37	9	0	3.7	Good	DC, RP, ML, FC, WC, GR, ER	Private - On subject site	Proposed grading	Buffer Area	Protect - Minor Injury	Permit to injure	9.6	2.6
31	Spruce - Colorado	<i>Picea pungens</i>	35	5	0	3.5	Good	DL, DC, RP, SB, ER	Private - On subject site	Proposed grading	Buffer Area	Protect - Minor Injury	Permit to injure	9.6	2.4
32	Spruce - Colorado	<i>Picea pungens</i>	38	5	0	3.8	Good	DC, DL, SB, RP, ER	Private - On subject site	Proposed grading	Buffer Area	Protect - Minor Injury	Permit to injure	9.0	2.7
33	Spruce - Colorado	<i>Picea pungens</i>	21	4	0	2.1	Good	DL, RP	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	2.7
34	Maple - Norway	<i>Acer platanoides</i>	47	9	5	4.7	Good	PP, MBN, FK3@2M, DC, GR, RP	Private - On subject site	Proposed grading	Buffer Area	Protect - Minor Injury	Permit to injure	10.6	3.2
35	Spruce - Colorado	<i>Picea pungens</i>	38	5	15	3.8	Fair	LS, SL, UW, RP	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	4.3
36	Spruce - Colorado	<i>Picea pungens</i>	17	3	25	1.7	Fair	LS, SL, DW, RP, LNL	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	5.2
37	Spruce - Colorado	<i>Picea pungens</i>	35	5	15	3.5	Fair	SL, LS, RP, E, TOB, DL	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	5.3
38	Spruce - Colorado	<i>Picea pungens</i>	28	4	10	2.8	Fair	1SD, LS, SL, DW, RP, DL	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	4.8
39	Spruce - Colorado	<i>Picea pungens</i>	19	3	45	1.9	Fair	LS, SL, DW, RP	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	5.6
40	Spruce - Colorado	<i>Picea pungens</i>	19	3	45	1.9	Fair	SL, LS, DW, RP, DL	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	3.3
41	Spruce - Colorado	<i>Picea pungens</i>	18	3	20	1.8	Fair	SL, LS, DW, DL, RP	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	6.0
42	Spruce - Colorado	<i>Picea pungens</i>	27	5	20	2.7	Fair	LS, SL, DW, RP, DL	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	3.0
43	Spruce - Colorado	<i>Picea pungens</i>	26	4	15	2.6	Fair	LS, SL, DL, DW, RP	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	5.9
44	Spruce - Colorado	<i>Picea pungens</i>	17	3	10	1.7	Fair	SL, LS, DL, DW, RP	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	3.5
45	Spruce - Colorado	<i>Picea pungens</i>	22	4	25	2.2	Fair	LS, SL, DW, RP, DL	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	5.1
46	Spruce - Colorado	<i>Picea pungens</i>	16	3	10	1.6	Fair	DL, DW, RP, SL, LS	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	2.9
47	Spruce - Colorado	<i>Picea pungens</i>	21	3	15	2.1	Fair	DW, RP, SL, LS, PL	Private - On subject site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	3.9
48	Spruce - Colorado	<i>Picea pungens</i>	18	3	15	1.8	Fair	SL, LS, DW, RP, DL	Private - On subject site	Proposed grading	Buffer Area	Protect - Minor Injury	Permit to injure	1.1	1.7
49	Spruce - Colorado	<i>Picea pungens</i>	24	5	15	2.4	Fair	DL, SL, LS, RP, DL	Private - On subject site	Proposed grading	Buffer Area	Protect - Minor Injury	Permit to injure	0.7	2.3
50	Spruce - Colorado	<i>Picea pungens</i>	40	6	10	4	Good	DL, DC, DW, RP	Private - On subject site	Proposed asphalt parking area and grading	Impact Area	Remove	Permit to remove	99.4	0.0
51	Spruce - Colorado	<i>Picea pungens</i>	22	3	20	2.2	Fair	DW, DL, SL, LS, RP	Private - On subject site	Proposed grading	Impact Area	Remove	Permit to remove	100.0	0.0
52	Spruce - Colorado	<i>Picea pungens</i>	38	6	10	3.8	Good	LNL, DC, DL, DW, RP	Private - On subject site	Proposed asphalt parking area and grading	Impact Area	Remove	Permit to remove	100.0	0.0
53	Honey-Locust	<i>Gleditsia triacanthos</i>	23	7	10	2.3	Fair	SB, RP, DC, PTL, FB	City owned	Proposed grading	Impact Area	Remove	Permit to remove	100.0	0.0
54	Honey-Locust	<i>Gleditsia triacanthos</i>	19	6	15	1.9	Fair	PTL, SB, SC, ST, FS, DC, RP	City owned	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	0.3
55	Honey-Locust	<i>Gleditsia triacanthos</i>	18	7	15	1.8	Fair	SB, ST, SC, DC, FS, RP	City owned	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	0.6
56	Honey-Locust	<i>Gleditsia triacanthos</i>	20	7	20	2	Fair	RH, PTL, DW, RP, SB, SC, ST, LN(L)	City owned	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	0.4
57	Pine - Austrian	<i>Pinus nigra</i>	26	5	0	2.6	Good	LN(L), GR, ER, DW, RP, DC	Private - On subject site	Proposed asphalt parking area and grading	Impact Area	Remove	Permit to remove	76.4	0.0
58	Honey-Locust	<i>Gleditsia triacanthos</i>	23	7	15	2.3	Fair	PTL, SB, SC, ST, DC, DW, RP	City owned	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	0.1
59	Honey-Locust	<i>Gleditsia triacanthos</i>	18	5	15	1.8	Fair	PL, RH, PTL, DW, SB, ST, SC, RP	Private - On subject site	Proposed grading	Impact Area	Remove	Permit to remove	100.0	0.0
60	Honey-Locust	<i>Gleditsia triacanthos</i>	20	7	15	2	Fair	DC, SB, ST, SC, RP	Private - On subject site	Proposed grading	Impact Area	Remove	Permit to remove	100.0	0.0
61	Spruce - Colorado	<i>Picea pungens</i>	23	5	5	2.3	Fair	DL, DC, DW, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
62	Spruce - Colorado	<i>Picea pungens</i>	24	6	5	2.4	Good	RH, DC, DL, DW, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
63	Spruce - Colorado	<i>Picea pungens</i>	28	5	5	2.8	Good	DC, DL, DW, RP	Private - On subject site	Proposed asphalt parking area	Impact Area	Remove	Permit to remove	100.0	0.0
64	Maple - Norway	<i>Acer platanoides</i>	31	8	10	3.1	Good	TK2, MB, ST, SB, SC, DC, RP, DW	Private - On subject site	Proposed grading	Impact Area	Remove	Permit to remove	97.5	0.0

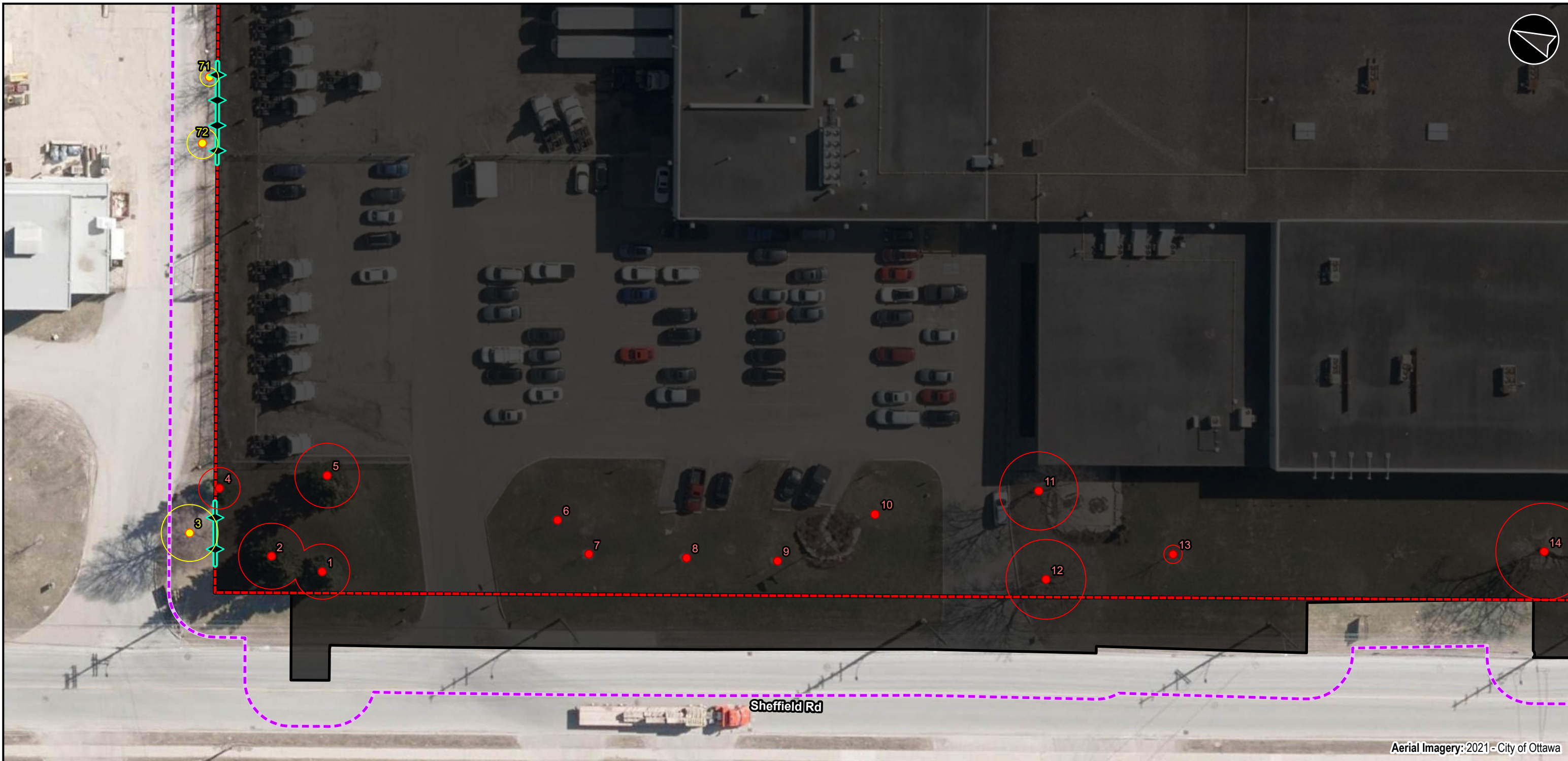
Tree #	Common Name	Scientific Name	DBH Analysis (cm)	Crown Reserve (m)	Crown Dieback (%)	Critical Root Zone (m)	Overall Condition	Observations/Comments	Ownership	Potential Impacts	Tree Location	Recommended Action	Permit Requirements	CRZ Area Lost (%)	Distance to Impact Area (m)
65	Elm - Siberian	<i>Ulmus pumila</i>	25	9	20	2.5	Fair	TK6, VC, GTF, RH, BN, DC, DW, RP	Private - On subject site	Proposed asphalt parking area and grading	Impact Area	Remove	Permit to remove	58.0	0.0
66	Elm - Siberian	<i>Ulmus pumila</i>	35	9	15	3.5	Good	DC, MBN, FK5@2M, DW, RP	Private - On adjoining site	Proposed grading	Buffer Area	Protect - Minor Injury	Permit to injure	21.4	1.6
67	Ash - White	<i>Fraxinus americana</i>	11	0	100	1.1	Dead	EAB, RFS, DW, RM	Private - On subject site	Proposed grading	Impact Area	Remove - Poor, Hazard, or Dead Tree	N/A - Dead Tree	100.0	0.0
68	Maple - Manitoba	<i>Acer negundo</i>	16	5	15	1.6	Fair	GTF, PP, SB, SC, ST, DE, RP	Private - On adjoining site	Proposed grading	Buffer Area	Protect - Minor Injury	Permit to injure	16.3	0.9
69	Maple - Norway	<i>Acer platanoides</i>	22	0	100	2.2	Dead	VC, GTF, CD	Private - On adjoining site	Proposed grading	Buffer Area	Remove - Poor, Hazard, or Dead Tree	N/A - Dead Tree	25.8	0.9
70	Maple - Manitoba	<i>Acer negundo</i>	15	7	15	1.5	Fair	GTF, FB, TK3, PF, SC, ST, SB, PP, 1SD, LN(L), RP	Private - On adjoining site	No anticipated impacts	Buffer Area	Protect	N/A - No Anticipated Impact	0.0	1.8
71	Maple - Manitoba	<i>Acer negundo</i>	12	5	15	1.2	Fair	GTF, PP, SB, ST, SC, TW, WNC, CT, RM	Private - On adjoining site	Proposed grading	Buffer Area	Protect - Minor Injury	Permit to injure	1.3	1.1
72	Maple - Manitoba	<i>Acer negundo</i>	20	5	5	2	Fair	GTF, PP, SB, ST, SC, FB, TK2, IB, RM	Private - On adjoining site	Proposed grading	Buffer Area	Protect - Minor Injury	Permit to injure	0.2	2.0

# Appendix **B**

## Tree Inventory and Preservation Plan







Aerial Imagery: 2021 - City of Ottawa

### LEGEND

#### Project Components

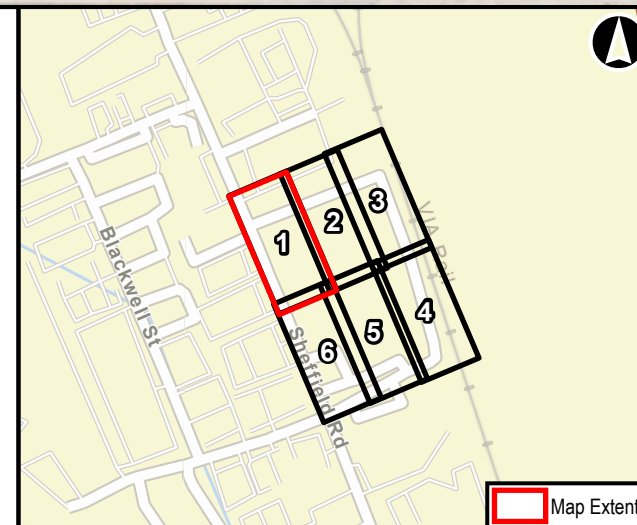
- Tree Inventory Study Area
- Impact Area
- Property Limit
- Tree Preservation Plan**
- Tree Protection Fencing

#### Tree by Recommended Action

- Remove
- Remove - Poor, Hazard, or Dead Tree
- Protect - Minor Injury
- Protect

#### Critical Root Zone by Recommended Action

- Remove
- Remove - Poor, Hazard, or Dead Tree
- Protect - Minor Injury
- Protect



### 2625 Sheffield Road Tree Conservation Report

#### Tree Inventory and Preservation Plan



**Data Sources:**  
Contains Information licensed under the Open Government License Ontario and the City of Ottawa.

# AECOM

Jan, 2023	1:500
P:60634622	Rev:00

### Appendix B-1



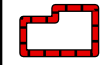

Project Location: E:\PR\60634622\_DYT\TreeInventory\01\_Report\TreeInventory\2023\18060634622-ANZ\DYT-TreeInventory-2023.aprx Layout: Tree Inventory and Preservation Plan  
Date Saved: 1/27/2023 12:24 PM User: cravis









**LEGEND**





**Project Components**

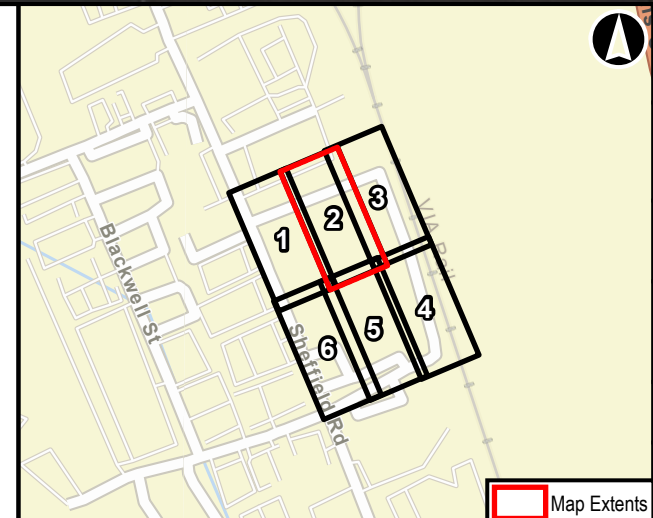
-  Tree Inventory Study Area
-  Impact Area
-  Property Limit
- Tree Preservation Plan**
-  Tree Protection Fencing

*Tree by Recommended Action*

-  Remove
-  Remove - Poor, Hazard, or Dead Tree
-  Protect - Minor Injury
-  Protect

*Critical Root Zone by Recommended Action*

-  Remove
-  Remove - Poor, Hazard, or Dead Tree
-  Protect - Minor Injury
-  Protect

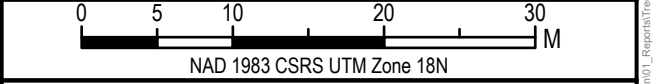


 Map Extents

Aerial Imagery: 2021 - City of Ottawa

**2625 Sheffield Road  
Tree Conservation Report**

Tree Inventory and Preservation Plan



**Data Sources:**  
Contains information licensed under the Open Government License Ontario and the City of Ottawa.

<b>AECOM</b>	
Jan, 2023	1:500
P:60634622	Rev:00

**Appendix B-2**

Project Location: E:\PR\60634622\_DY13\Design\01\_Report\Tree\Preservation\2023\1806034622\ANZL\_DY13\_TreeInventory-2023.aprx Layout: Tree Inventory and Preservation Plan  
Date Saved: 1/27/2023 1:24 PM User: cravis





Aerial Imagery: 2021 - City of Ottawa

**LEGEND**

**Project Components**

- Tree Inventory Study Area
- Impact Area
- Property Limit
- Tree Preservation Plan**
- Tree Protection Fencing

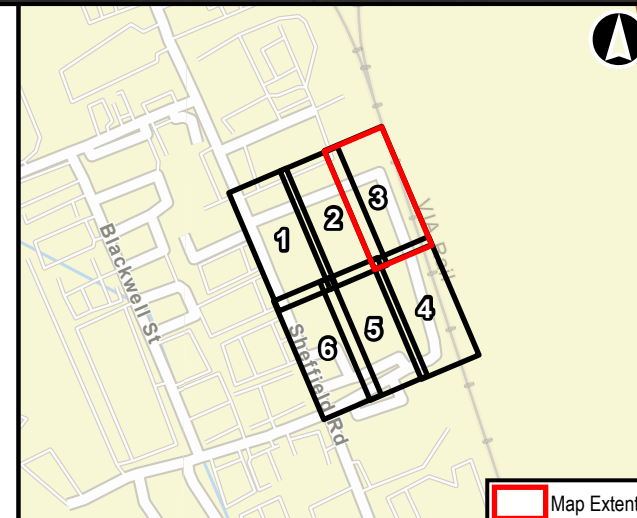
*Tree by Recommended Action*

- Remove
- Remove - Poor, Hazard, or Dead Tree
- Protect - Minor Injury
- Protect
- Critical Root Zone by Recommended Action**
- Remove

- Remove - Poor, Hazard, or Dead Tree
- Protect - Minor Injury
- Protect

**General Features**

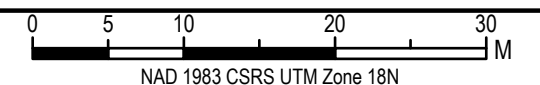
- Main Railway



Map Extents

**2625 Sheffield Road  
Tree Conservation Report**

Tree Inventory and Preservation Plan



**Data Sources:**  
Contains Information licensed under the Open Government License Ontario and the City of Ottawa.

**AECOM**

Jan, 2023 1:500  
P:60634622 Rev:00

**Appendix B-3**

Project Location: E:\PR\60634622\_DY13\Design\01\_Report\Tree\Preservation\2023\1806034622-ANZN\_DY13-TreePreservation-Jan2023.aprx Layout: Tree Inventory and Preservation Plan Date Saved: 1/27/2023 12:24 PM User: cravis




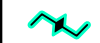









Aerial Imagery: 2021 - City of Ottawa

**LEGEND**

**Project Components**


-  Tree Inventory Study Area
-  Impact Area
-  Property Limit
- Tree Preservation Plan**
-  Tree Protection Fencing

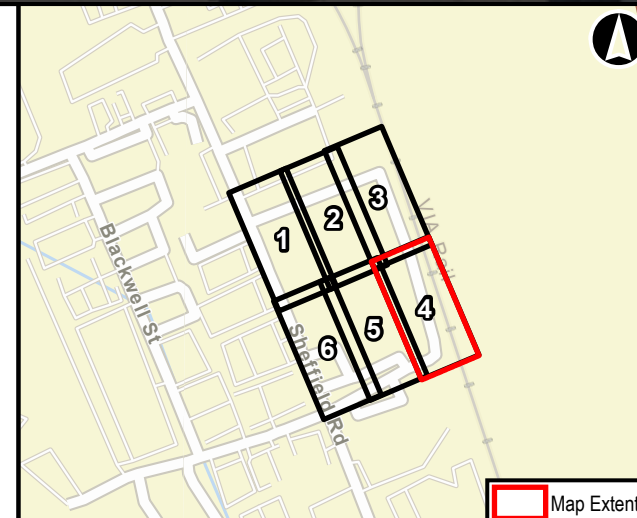
*Tree by Recommended Action*

-  Remove
-  Remove - Poor, Hazard, or Dead Tree
-  Protect - Minor Injury
-  Protect
- Critical Root Zone by Recommended Action*
-  Remove


-  Remove - Poor, Hazard, or Dead Tree
-  Protect - Minor Injury
-  Protect

**General Features**

-  Main Railway

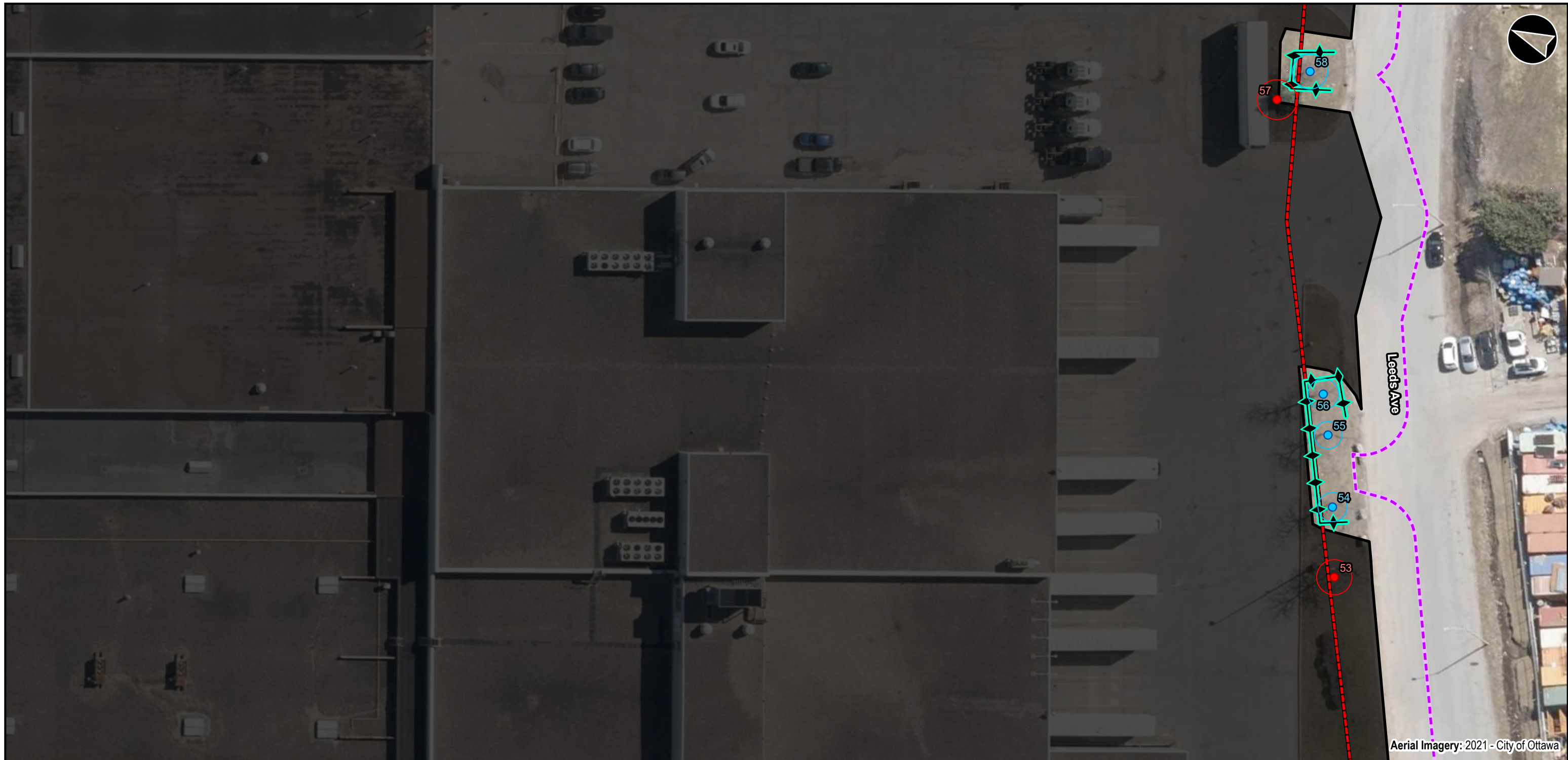


Map Extents

<b>2625 Sheffield Road</b>	
<b>Tree Conservation Report</b>	
Tree Inventory and Preservation Plan	
 0 5 10 20 30 M NAD 1983 CSRS UTM Zone 18N	
<small>Data Sources:          Contains information licensed under the Open Government License Ontario and the City of Ottawa.</small>	
<b>AECOM</b>	
Jan, 2023	1:500
P:60634622	Rev:00
<b>Appendix B-4</b>	

Project Location: E:\PR\60634622\_D\T\3D\Design\01\_Report\Tree\Preservation\2023\1806034622-ANZN\_D\T\3D\TreeProtection-ain2023.aprx Layout: Tree Inventory and Preservation Plan Date Saved: 1/27/2023 12:24 PM User: cravis





Aerial Imagery: 2021 - City of Ottawa

**LEGEND**

**Project Components**

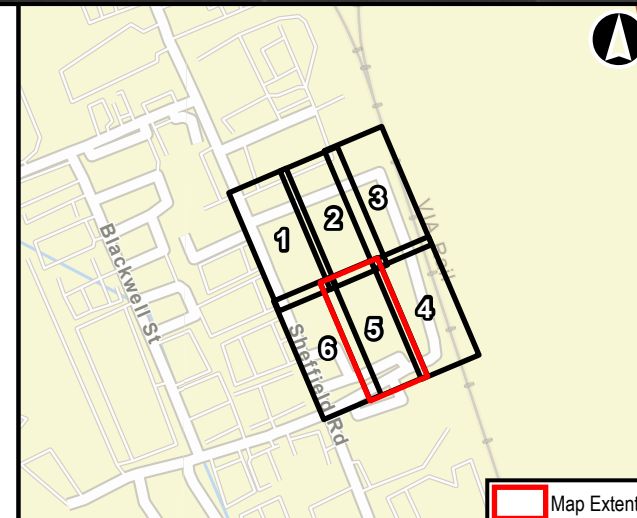
- Tree Inventory Study Area
- Impact Area
- Property Limit
- Tree Preservation Plan**
- Tree Protection Fencing

*Tree by Recommended Action*

- Remove
- Remove - Poor, Hazard, or Dead Tree
- Protect - Minor Injury
- Protect

*Critical Root Zone by Recommended Action*

- Remove
- Remove - Poor, Hazard, or Dead Tree
- Protect - Minor Injury
- Protect



Map Extents

**2625 Sheffield Road**  
**Tree Conservation Report**

Tree Inventory and Preservation Plan

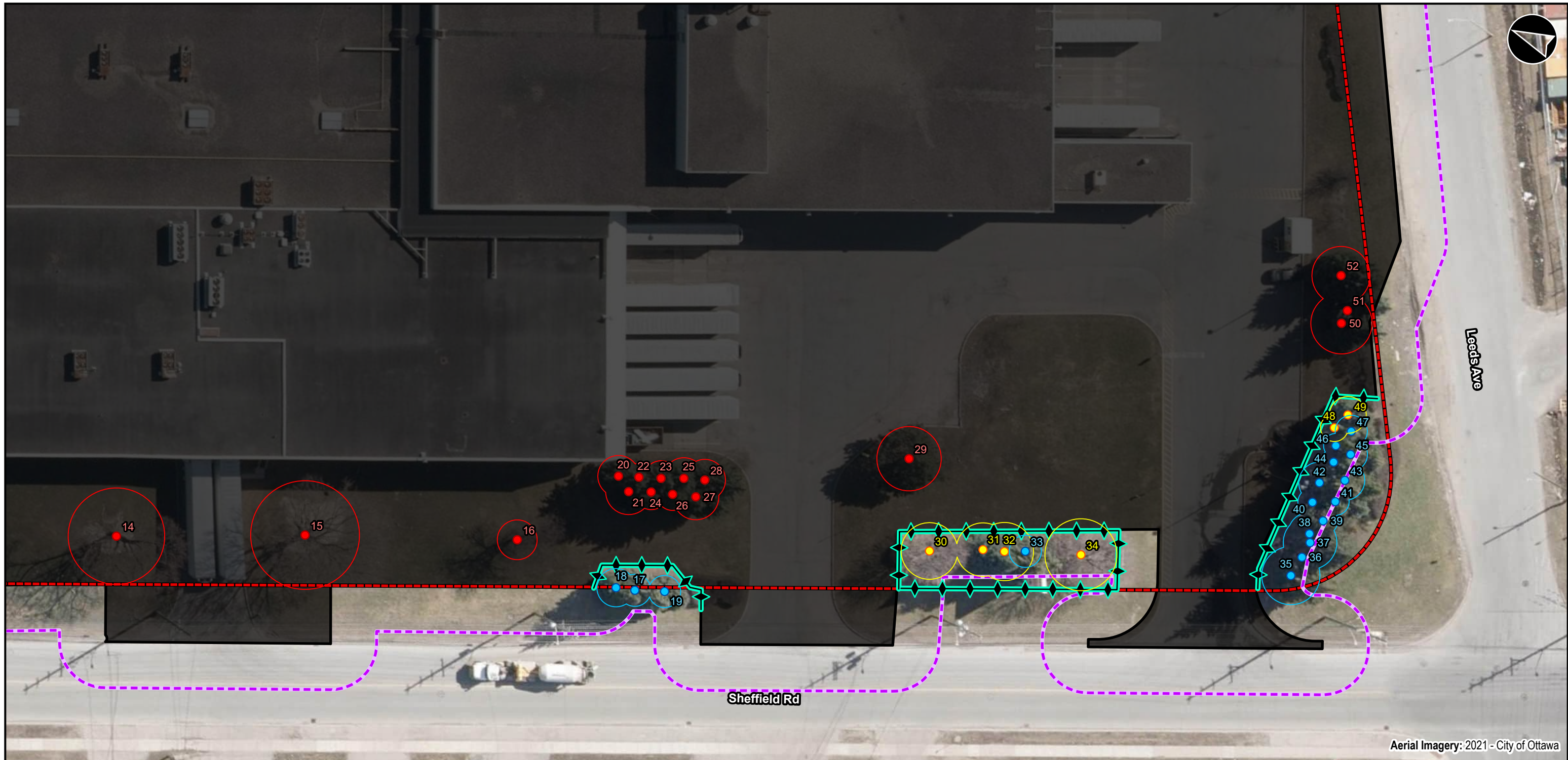
0 5 10 20 30 M  
NAD 1983 CSRS UTM Zone 18N

**Data Sources:**  
Contains Information licensed under the Open Government License Ontario and the City of Ottawa.

<b>AECOM</b>		<b>Appendix B-5</b>
Jan, 2023	1:500	
P:60634622	Rev:00	

Project Location: E:\PR\60634622\_DYT\3D\Design\01\_Report\Tree\Preservation\2023\1806034622-ANZN\_DYT3-TreeProtection-2023.aprx Layout: Tree Inventory and Preservation Plan Date Saved: 1/27/2023 12:24 PM User: cravis





Aerial Imagery: 2021 - City of Ottawa

**LEGEND**

**Project Components**

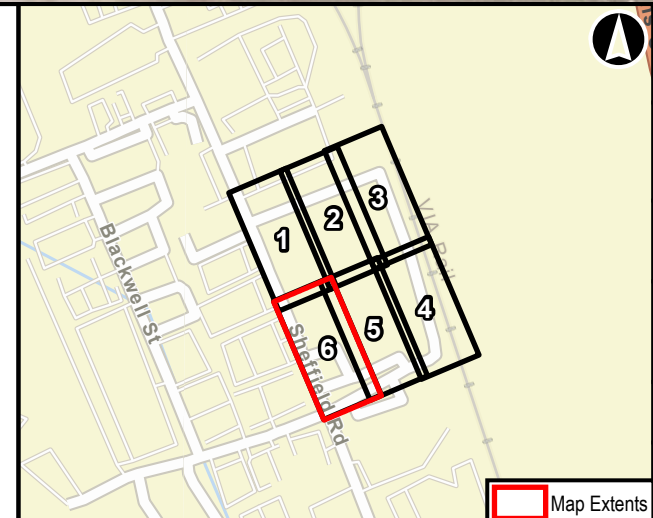
- Tree Inventory Study Area
- Impact Area
- Property Limit
- Tree Preservation Plan**
- Tree Protection Fencing

*Tree by Recommended Action*

- Remove
- Remove - Poor, Hazard, or Dead Tree
- Protect - Minor Injury
- Protect

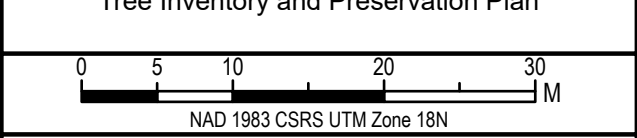
*Critical Root Zone by Recommended Action*

- Remove
- Remove - Poor, Hazard, or Dead Tree
- Protect - Minor Injury
- Protect



**2625 Sheffield Road  
Tree Conservation Report**

Tree Inventory and Preservation Plan



**Data Sources:**  
Contains information licensed under the Open Government License Ontario and the City of Ottawa.

<b>AECOM</b>		<b>Appendix B-6</b>
P:60634622	Rev:00	

Map Extents

Project Location: E:\PR\60634622\_DYT\3DDesign\01\_Report\Tree\Preservation\2023\1806034622-ANZL\_DYT3-TreeInventory-and-Preservation-Plan.aprx Layout: Tree Inventory and Preservation Plan Date Saved: 1/27/2023 12:24 PM User: cravis

# Appendix **C**

## Tree Valuation



# Appendix C. Tree Valuation Table

Tree Number	Common Name	Scientific Name	DBH Analysis (cm)	Cross Sectional Area (cm <sup>2</sup> )	Condition: Health (%)	Condition: Structure (%)	Condition: Form (%)	Condition Rating: Average (%)	CR Ratio	Functional Limitation (%)	FL Ratio	External Limitation (%)	EL Ratio	Replacement Tree Size (cm)	Cross Sectional Area (cm <sup>2</sup> )	Replacement Tree Cost (\$)	Unit Tree Cost (\$)	Basic Reproduction Cost Cost (\$)	Depreciated Reproduction Cost Cost (\$)	Notes
53	Honey-Locust	<i>Gleditsia triacanthos</i>	23	415.48	80	75	80	78	0.78	60	0.6	75	0.75	6	28.27	\$240.00	8.49	\$3,526.67	<b>\$1,243.15</b>	FL - adjacent parking lot; EL - adjacent property



# Appendix **D**

## Tree Inventory Abbreviations

# Tree Inventory Abbreviations

<b>1SD(x)</b>	One-Sided Crown (x= N, NE, E, SE, S, SW, W, NW)	<b>MB</b>	Multi-Branch Nodes on Trunk
<b>AD</b>	Animal / Insect Damage	<b>ML</b>	Multiple Leaders
<b>BC</b>	Broken Crown	<b>MOB</b>	Middle of Bank
<b>BH</b>	Bat Habitat	<b>NST</b>	Bird Nest in Tree
<b>BN</b>	Bark Necrosis	<b>PB</b>	Peeling Bark
<b>BOB</b>	Located at Bottom of Bank	<b>PC</b>	Pollarded Crown
<b>BR#</b>	# of Broken Branches	<b>PF</b>	Previous Failure
<b>BSD</b>	Basal Trunk Damage	<b>PL</b>	Poor Leader development
<b>CD</b>	Crown Dieback	<b>PP</b>	Past Pruning
<b>CL</b>	Chloronic Leaves	<b>PTH</b>	Planted Too High
<b>CN</b>	Crown Necrosis	<b>PTL</b>	Planted Too Low
<b>CS</b>	Close to Building	<b>RB</b>	Remove Basket / Burlap
<b>CT</b>	Crooked/ Bent Trunk	<b>RC(#)</b>	Requires Cabling (# of Cables)
<b>CV</b>	Cavity	<b>RFS</b>	Regeneration from Stump
<b>DC</b>	Developed Crown Form	<b>RH</b>	Remove Tree Hardware
<b>DE</b>	Diseased/ Decay	<b>RM</b>	Remove Plant
<b>DED</b>	Dutch Elm Disease	<b>RP</b>	Requires Pruning and/or Thinning
<b>DF</b>	Defoliated	<b>RPM</b>	Root Plate Movement
<b>DL</b>	Developed Leader	<b>RT</b>	Requires Under-Story Thinning
<b>DT</b>	Distinctive Tree	<b>SB</b>	Sprouts at Trunk Base
<b>DW</b>	Deadwood	<b>SC</b>	Sprouts in Crown
<b>EAB</b>	Emerald Ash Borer	<b>SL</b>	Slender Form
<b>ER</b>	Exposed Roots	<b>SN</b>	Squirrel Nest
<b>ETB</b>	Enlarged Trunk Base	<b>SF</b>	Superior Tree Form
<b>FK#@#M</b>	# of Trunks at # Metres Above Ground	<b>SP</b>	Sapling
<b>FC</b>	Frost Cracks	<b>ST</b>	Sprouts on Trunk
<b>FS</b>	Fused Branches/Limbs	<b>TK#</b>	# of Trunks at or Below 1.4 metre
<b>GC</b>	Grade Changed	<b>TOB</b>	Located at Top of Bank
<b>GR</b>	Girdling Root(s)	<b>TS</b>	Trunk Split
<b>GTF</b>	Growing Through Fence	<b>TT</b>	Twisted Trunk
<b>HP</b>	Hazard Potential of Tree	<b>TW</b>	Trunk Wound
<b>IB</b>	Included Bark	<b>UC(x)</b>	Unbalanced Crown (x= N, NE, E, SE, S, SW, W, NW)
<b>LG</b>	Laying On Ground	<b>UW</b>	Tree Under/ Over Power Wires
<b>LN(x)</b>	Lean: (x= L [Low, <5°], M [Moderate, 5-15°], [High, >15°])	<b>VC</b>	Vine Covered
<b>LS</b>	Light Suppressed	<b>WC</b>	Wound Compartmentalized
<b>LT</b>	Landscape Tree	<b>WNC</b>	Wound Not Compartmentalized

**Quantified Conditions (defects, diseases):** L (low/minor), M (moderate), H (high/severe) e.g. LN(L) = minor lean

**DBH** = Diameter at Breast Height (i.e. 1.4 metres)

*Last Updated: April 27, 2021*

