

Fotenn Consultants Inc.

Tree Conservation Report

**Carlingwood Shopping Centre Parking Renovation –
2085 Carling Avenue**

December 2025



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Tree Conservation Report

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December 2025

Prepared By:

Arcadis Canada Inc.
333 Preston Street, Suite 500
Ottawa, Ontario K1S 5N4
Canada

Prepared For:

Doug Fountain
Fotenn Consultants Inc.
420 O'Connor Street
Ottawa, ON K2P 1W4



Brittney Semmler
Ecologist



Casey Little
Senior Ecologist, ISA Certified Arborist ON-3105A

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1 Introduction

Arcadis Canada Inc. (Arcadis) has been retained by Fotenn Consultants Inc. (the 'Client') to prepare a Tree Conservation Report (TCR) for the proposed parking lot renovation at Carlingwood Shopping Centre located at 2085 Carling Avenue, on Part Lot 26, Concession 1, in Ottawa, ON – within the Urban boundary of the City of Ottawa (the 'Site').

1.1 Project Location and Site Description

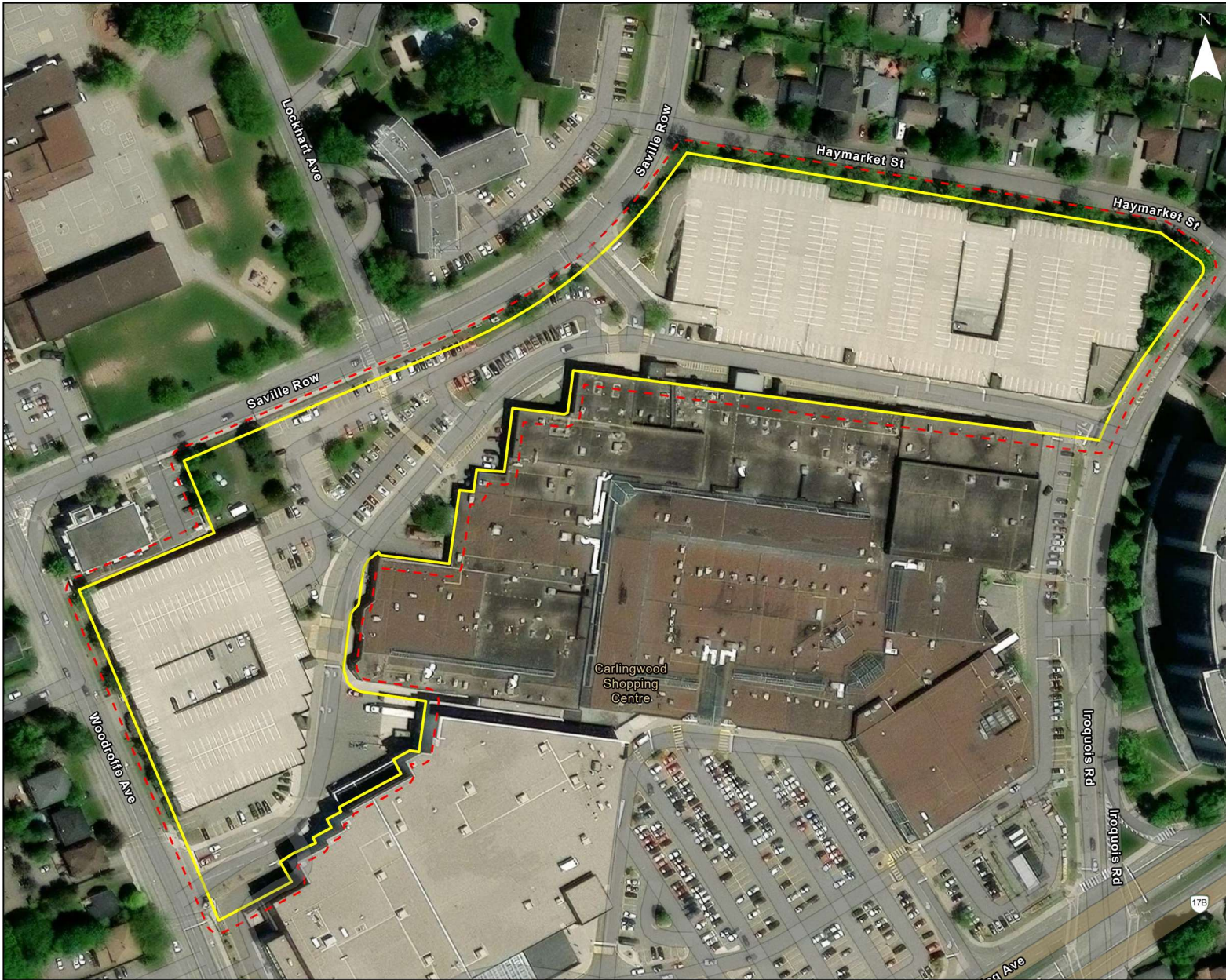
The subject property occupies approximately 6.9 hectares comprised of several retail buildings, roadways and parking areas associated with Carlingwood Shopping Centre, considered a community hub for many in the Ottawa area. The Site is bounded by Carling Avenue to the south, Woodroffe Avenue to the west, Saville Row to the south, Haymarket Street to the east, and Iroquois Road to the southeast. Exterior features include extensive asphalt-surfaced parking areas, narrow bands of landscaped grassy margins, and several planted trees and shrubs. The subject property is fully serviced by the City of Ottawa's municipal water, sanitary sewer, stormwater, hydro, and telecommunications infrastructure.

The project involves the demolition of the existing parking structure located on the north-east portion of the Site, with frontage along Haymarket Street, Saville Row, and Iroquois Road, to construct a new interim surface parking lot.

Refer to **Figure 1** on the following page to view the Site Location.

1.2 Objective

This Tree Conservation Report (TCR) follows the *City of Ottawa Tree Conservation Report Guidelines* (City of Ottawa, 2021), which required a site visit to identify trees larger than 10 cm in diameter that could be impacted by the project. Information on the individual trees and tree groupings, their species, size (diameter-at-breast height, dbh) and health were recorded. The TCR summarizes the results, identifies the ownership of the trees, and based on the current design plans provides commentary on which trees could be retained and those that are recommended to be pruned or removed. This information is depicted on the mandatory Map 1 and Map 2 of the TCR, as per the guidelines. In the paragraphs below, we have outlined the field methodology and findings of the tree inventory. This report will help determine the project's potential impact on existing trees and provide general recommendations to avoid and/or mitigate tree loss and injury.



Legend

- Site
- - - Tree Search Area (5m)



Project:
**Carlingwood Shopping Centre
 Parking Renovation TCR**

Site and Study Area

Prepared By:
ARCADIS

Date: 12/3/2025
 Project: 103109569

Figure: 1

2 City of Ottawa Tree Protection By-Law

The Site is located within the City of Ottawa's Tree Protection By-law No. 2020-340 (January 1, 2021) limits. The intent of this By-Law is to respect the protection of municipal trees and municipal natural areas in the City of Ottawa and trees on private property in the urban area of the City of Ottawa.

Under the Tree Protection By-law, the following protected trees cannot be injured or removed without a tree permit from the city:

- *All City-owned trees throughout the urban and rural area.*
- *All trees 10 cm or more in diameter at breast height on private properties within the urban area that are subject to a Planning Act application for Site Plan, Plan of Subdivision, or Plan of Condominium.*
- *All trees 10 cm or more in diameter at breast height on private properties within the urban area that are over 1 hectare in size.*
- *All distinctive trees on private properties 1 hectare or less in size, where distinctive trees are defined as:*
 - *Trees measuring 30 cm or more in diameter at breast height within the City's inner urban area.*
 - *Trees measuring 50 cm or more in diameter at breast height within the City's suburban area.*

The Tree Protection By-law requires permits to be obtained before City-owned trees or protected privately owned trees are removed. It also sets out requirements for compensation to be provided when trees are removed, so that they can be replaced.

A Tree Conservation Report (TCR) is required as a part of the application package for all Plans of Subdivision, Site Plan Control Applications, Common Elements Condominium Applications, and Vacant Land Condominium Applications where there is a tree of 10 centimeters in diameter or greater on the site and/or if there is a tree on an adjacent site that has a Critical Root Zone (CRZ) extending onto the development site. The purpose of the TCR is to demonstrate how tree cover will be retained and protected on the Site, including mature trees, stands of trees, and hedgerows, using a design with nature approach. A design with nature approach incorporates the natural features of a site into the design and engineering of a proposed development. The TCR also shows which trees must be removed on the site to accommodate the proposed development.

3 Limitations

The assessment presented in this report has been made using accepted standard arboriculture techniques as outlined in Chapter 4 (Data Collection) of the *Council of Tree and Landscape Appraisers Guide for Plant Appraisal, 10th Edition, Second Printing (2020)*. The trees observed were not climbed, cored, or dissected, and excavation for detailed root crown inspection was not performed. Since some symptoms may only be present seasonally, the extent of observations that can be made may be limited by the time of year the inspection took place.

As trees are living organisms, their health and vigor continually change over time due to seasonal variations, changes in site conditions, and other factors. 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 are deemed to be in good condition. It is recommended that the trees be reassessed periodically to identify changes in condition. While every standing tree has the potential for failure and therefore poses some risk, a tree assessment is a good indication of present health and potential problems that could arise in the future.

4 Methodology

One site visit was completed on October 3, 2025, to assess the trees within the proposed impact areas. Tree locations and associated unique identification numbers were provided in the topographic survey completed by a certified Ontario Land Surveyor on (July 25, 2024), and all trees on Site were identified, measured, and assessed for condition. Information collected on the individual trees included:

- Species
- Diameter at breast height (DBH)
- Approximate crown spread
- Condition

The Tree Inventory and Assessment Table containing this information is included in **Appendix A**. Mandatory Map 1 as per City of Ottawa, 2021, is displayed below and depicts the locations of the numbered trees assessed. The assessment methodology is outlined in the sections below.

4.1 Tree Size

Size refers to trunk diameter at breast height (DBH or caliper) measured in centimeters (cm) at 1.4 meters (m) above the ground. Where trees had more than one trunk from the base, the size of each trunk was recorded. Where trees forked into codominant trunks the diameter was measured at the narrowest point below the fork.

4.2 Tree Assessment

The assessment involved a visual examination of the above-ground parts of each tree. The crown, trunk, and root structure of each tree were observed and assessed noting any abiotic and/or biotic disorders as well as structural defects present. Several structural defects and health problems were observed and are included in the Tree Inventory and Assessment Table (**Appendix A**). The following list provides an explanation of the short forms used in the table of the deficiencies observed on Site:

- SMD - Small dead branches are an indicator of crown dieback and can be an early sign of stress.
- UC - Unbalanced Crown is a tree's crown that is much more extensive in one direction than another, often due to competition from the crown of a nearby tree or exposure.
- FC - Frost cracking is a winter injury caused by temperature fluctuations on bark and inner wood when the sun warms a tree trunk and then temperatures drop quickly, causing splitting of the bark that can extend into the wood below. Frost cracking can be associated with snow reflection and southwest-facing trunk exposures and particularly affects young trees and species with thin bark.
- BNL - Broken / No Leader occurs if the central leader is broken, damaged or very weak, or has a dead terminal bud.
- DB - Dieback refers to the ends of branches dying, which is often associated with root problems.
- ADV – Adventitious shoots refer to vigorous growth of shoots from pruning cuts, inner branches, or along the trunk that usually occur in response to stress.
- LE – A tree with a lean can be more susceptible to windthrow and soil failure. Self-correcting lean refers to a natural correction of the lean by development of new growth that counteracts the lean of the trunk to provide a more balanced form.

- CA - Cavity are often the result of an injury followed by decay. Decay can begin by injury to the trunk, the loss of a large limb, topping or improper pruning. The inner dead wood begins to decay but living wood is protected by a barrier zone that compartmentalizes damage.
- EXR - Exposed surface roots can be a result of erosion and soil compaction combined with increasing root diameter. It is important to protect exposed roots from pedestrian and vehicular traffic, and lawn mowers. Damage to roots can cause stress and can result in canopy dieback.
- W - Woundwood is the thickened tissue growing around the edges of a wound. The rate of its development can be a sign of the tree's vigour.
- GR - Girdling roots are roots that cross over each other or around the trunk of the tree. As these roots grow larger, they can restrict the uptake of nutrients and water and inhibit structural anchorage.

4.3 Tree Condition

Each tree was given an overall health condition rating of: Very Good, Good, Fair, Poor, or Dead. The following is a summary of how the ratings are determined:

- EXCELLENT: No apparent health problems; excellent structural form.
- VERY GOOD: No apparent health problems; good structural form.
- GOOD: Minor problems with health and/or structural form.
- FAIR: Significant problems with health and/or structural form.
- POOR: Major problems with health and structural form.
- DEAD: Dead.

4.4 Tree Ownership

Majority of the trees inventoried are located on private property owned by Anthem Properties and Streamliner Properties, apart from 33 trees which are situated on adjacent lands. No impact is expected to any of the trees not located within the subject property.

4.5 Tree Protection and Impact Analysis

The Critical Root Zone (CRZ) was determined using the *City of Ottawa Tree Conservation Report Guidelines* (City of Ottawa, 2021). The CRZ is established as 10 cm from the trunk of a tree for every cm of trunk DBH.

Using data collected during the tree inventory and assessment, drawings showing the tree locations (collected through topographic survey), and the proposed development footprint and anticipated area of impact, a tree impact analysis was completed, resulting in recommendations to Retain, Prune and Protect, or Remove trees. The proposed project involves the demolition of the existing parking structure located on the north-east portion of the Site, with frontage along Haymarket Street, Saville Row, and Iroquois Road, to construct a new interim surface parking lot. Our understanding is that the at-grade parking area sits approximately one metre below the surrounding elevation, and the intent is to maintain the existing retaining walls along Haymarket Street and Iroquois Road to preserve this grade and support tree retention. We also understand that Landscape Plans being developed for the Site will minimize the requirement for tree removals, with efforts to integrate landscape improvements without impact to existing trees on the Site. The proposed limit of impact is shown on Map 2 (**Figure 3**).

The minimum CRZ of each tree canopy is also illustrated on Map 2 as per City of Ottawa, 2021 (displayed in **Figure 3** below) to help determine possible injury and branch pruning that may be required.

Tree Impact and associated recommendations (Retain, Prune and Protect, or Remove) have been determined and is described in Section 7, as well as included in the Tree Inventory and Assessment Table (**Appendix A**) and displayed on Map 2 (Figure 3).

For all trees to be retained, tree protection fencing must be installed to separate trees from the work area. Tree protection fencing must be installed no closer to the trunk than the Critical Root Zone but should be placed as far as possible from the tree.

5 Existing Conditions

The dates, timing, and environmental conditions at the time of the assessments are presented below in **Table 1**.

Table 1: Site Investigations Details

Date	Start/End Time	Survey Intent	Weather Conditions
2025/10/03	0930-1530	Visual assessment of all trees ≥10 cm dbh on-site	Temperature: 7°C Cloud cover / Precipitation: Mixed sun/clouds, Light wind.

The Site is flat with no presence of steep slopes, valleylands or escarpments. There are no valued woodlands designated as Urban Natural Features or Natural Environment Areas, or significant woodlands on or adjacent the Site. There are no riparian woodlots, rare communities, or other unique ecological features (i.e., Provincially Significant Wetlands, unevaluated wetlands). There are no surface water features, wetlands or watercourses on Site or in adjacent areas.

Majority of the subject lands where the parking renovation is planned consist of paved parking areas surrounded by commercial retail or raised parking buildings. The adjacent lands to the north, east and west are surrounded by residential homes, and the lands to the south are comprised of commercial retail businesses and residential homes.

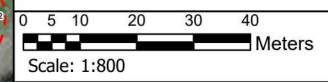
A total of 139 individual trees were assessed as part of this inventory. The condition of the trees on Site ranged from Excellent to Dead, approximately 83% of which were in Excellent - Good condition. The most common species are Red Pine (19%), Norway Spruce (16%), Norway Maple (13%), and Apple species (13%).

There are 40 trees that meet the definition of a 'Distinctive Tree' as per Tree Protection By-law No. 2020-340 (any tree located on private property with a DBH of 30 cm or greater, within the inner urban area). Trees 91, 131, and 132 are Distinctive trees that require removal based on the current design plans.



Legend

- Site
 - - - Tree Search Area (5m)
- Tree Inventory General Condition**
- Excellent
 - Fair
 - Good
 - Poor
 - Very Good
 - Dead
 - Critical Root Zone



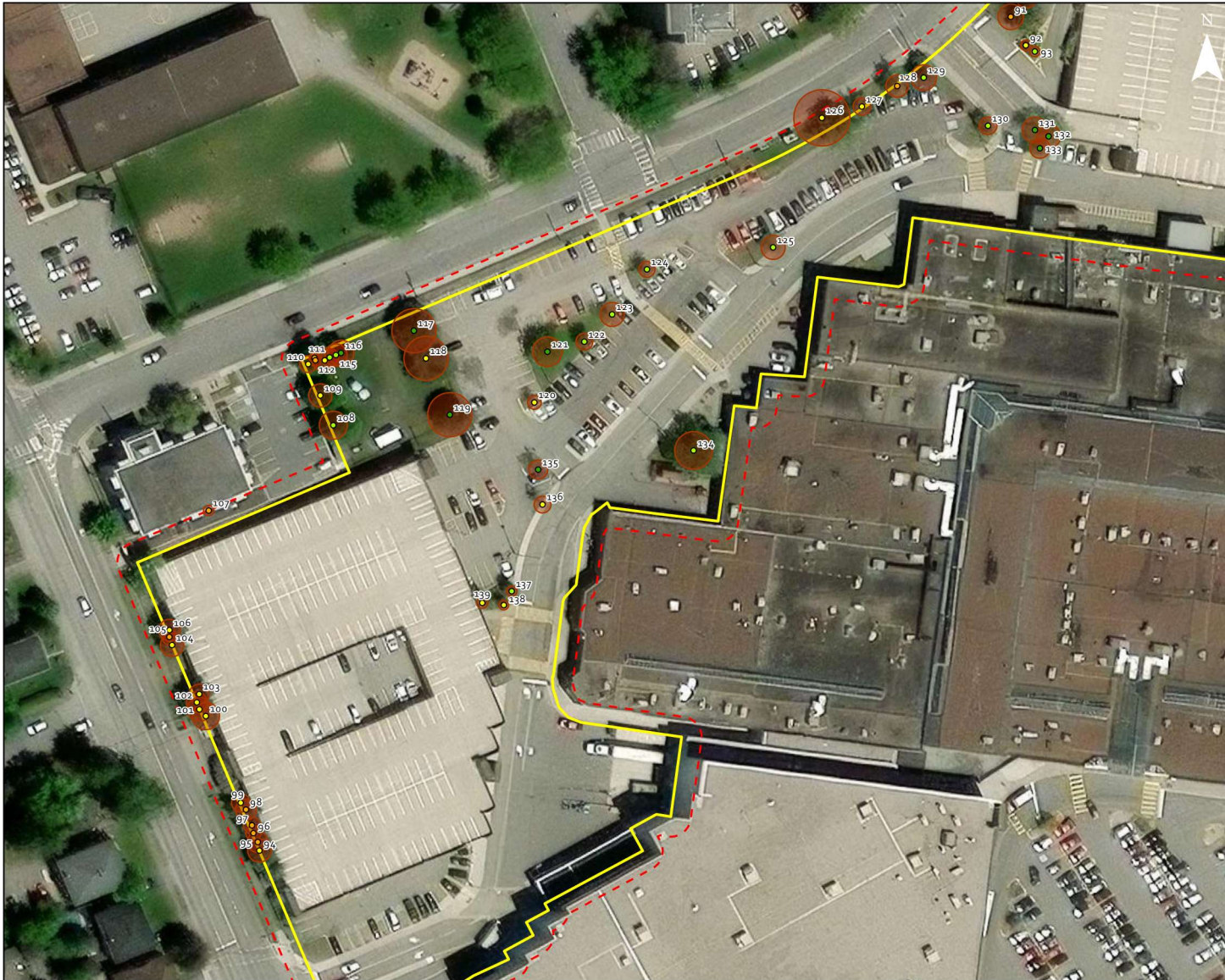
Project:
**Carlingwood Shopping Centre
 Parking Renovation TCR**

**Current Vegetation
 (Map 2 As per City Guidelines)**

Prepared By:
ARCADIS

Date: 12/3/2025
 Project: 103109569

Figure: 2a



<h3>Legend</h3> <ul style="list-style-type: none"> — Site --- Tree Search Area (5m) <h4>Tree Inventory General Condition</h4> <ul style="list-style-type: none"> ● Excellent ● Fair ● Good ● Poor ● Very Good ● Dead Critical Root Zone 	
<p>Scale: 1:957</p>	
<p>Project:</p> <p style="text-align: center;">Carlingwood Shopping Centre Parking Renovation TCR</p>	
<p>Current Vegetation (Map 2 As per City Guidelines)</p>	
<p>Prepared By:</p> <p style="text-align: center;"> ARCADIS</p>	
<p>Date: 12/3/2025</p>	<p>Figure: 2b</p>
<p>Project: 103109569</p>	

6 Proposed Project Description

The project involves the demolition of the existing parking structure located on the north-east portion of the Site, with frontage along Haymarket Street, Saville Row, and Iroquois Road, to construct a new interim surface parking lot (**Figure 3**). This work will require both a Demolition Permit and a Site Plan Control (SPC) Application. The at-grade parking area sits approximately one metre below the surrounding elevation, and the intent is to maintain the existing retaining walls along Haymarket Street and Iroquois Road to preserve this grade and support tree retention.

7 Impact Assessment and Recommendations

7.1 Impacts on Trees

A review of the Site conditions indicates that most existing trees can be retained, except where the existing ramp will be demolished and drive lanes adjusted. All trees within and slightly beyond the footprint of the existing structure have been surveyed, as additional inventory information may help inform future development options. Based on the conditions of the trees and extent of the proposed construction limits, **Table 2** summarizes the impact and recommended actions of the 139 trees assessed within the Site.

It is anticipated that nine (9) trees >10 cm diameter at breast height (DBH) will need to be removed. These details are depicted on Mandatory Map 2 below, as per the City of Ottawa, 2021 (**Figure 3**), and outlined in the Tree Inventory and Assessment Table included in **Appendix A**.

Table 2: Impact Assessment and Recommendations for Trees on Site

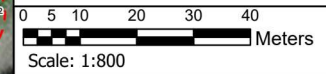
Trees to be Removed	Trees to be Retained
9	130

Refer to **Section 8.2** below for information on measures recommended to protect all remaining trees within the Site prior to and during construction.



Legend

- Site
 - - - Tree Search Area (5m)
- Recommended Action**
- Retain
 - ✕ Remove
 - Critical Root Zone



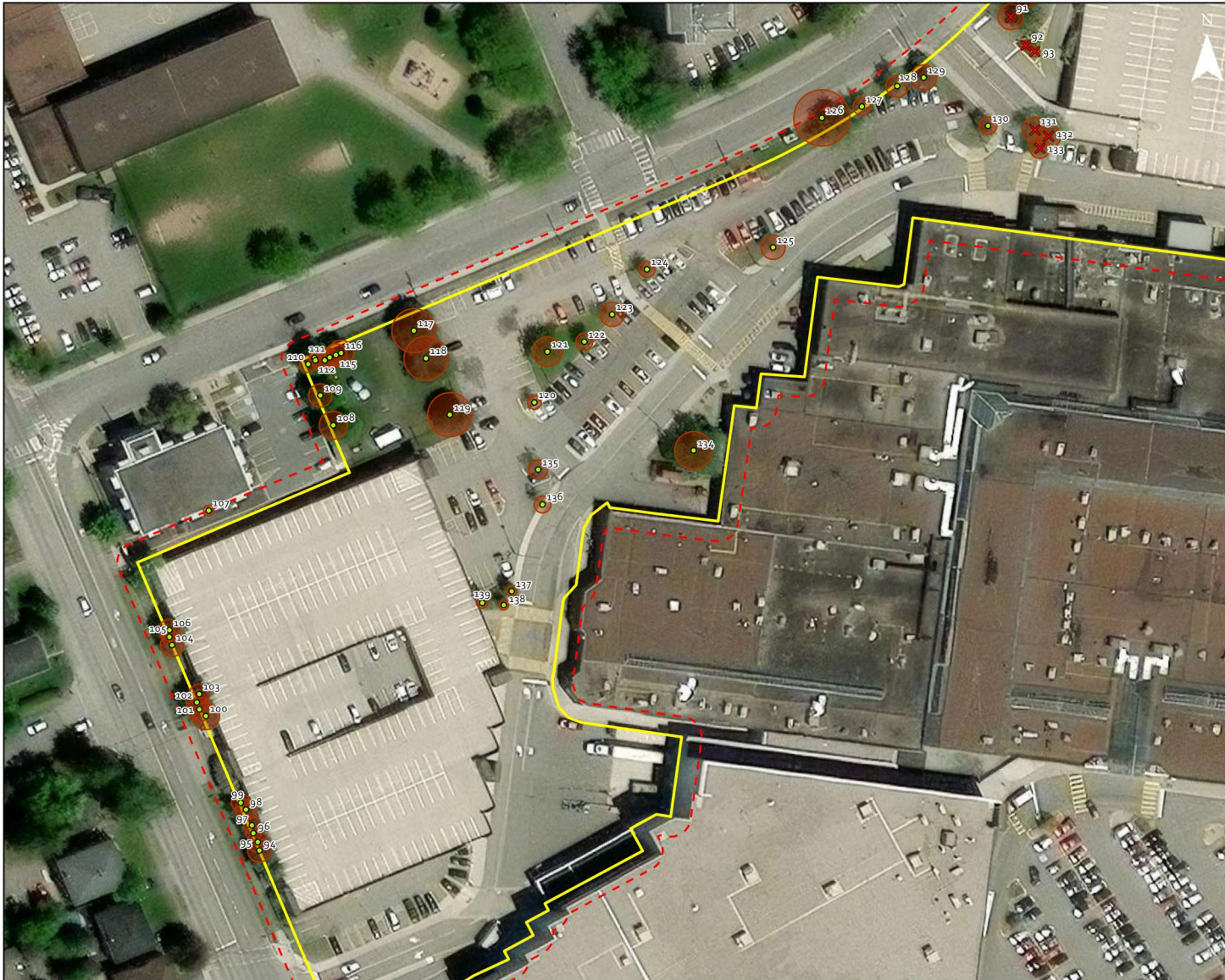
Project:
**Carlingwood Shopping Centre
 Parking Renovation TCR**


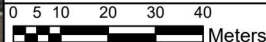


Tree Impact Assessment and
 Recommendations
 (Map 2 As per City Guidelines)

Prepared By:
ARCADIS

Date: 12/3/2025
 Project: 103109569

Figure: 3a



<h3>Legend</h3> <ul style="list-style-type: none"> — Site --- Tree Search Area (5m) <h4>Recommended Action</h4> <ul style="list-style-type: none"> ● Retain ✕ Remove Critical Root Zone 	
	
 <p>Scale: 1:957</p>	
	
<p>Project:</p> <h2 style="text-align: center;">Carlingwood Shopping Centre Parking Renovation TCR</h2>	
<p>Tree Impact Assessment and Recommendations (Map 2 As per City Guidelines)</p>	
<p>Prepared By:</p> <div style="display: flex; align-items: center;">  </div>	
<p>Date: 12/3/2025</p> <p>Project: 103109569</p>	<p>Figure: 3b</p>

8 Mitigation Measures and Construction Management

8.1 Tree Removal

Based on the proposed project design and existing conditions of the trees on site, 9 trees have been recommended for removal. The following recommendations are provided:

- Retain a Certified Arborist during site layout operations to confirm recommended tree removals, pruning, and tree protection fencing in proximity to the construction limits.

8.2 Tree Protection Measures

The most typical construction damage to trees is root damage from compaction and severance. While the drip line of a tree's canopy is typically thought to be associated with the root area, the root zones can extend significantly beyond the drip line of the tree, sometimes up to 2 or 3 times the height of the tree. Some of the trees inventoried are growing close to the edge of proposed construction and will be at risk of contact with, and damage from, heavy equipment. To protect trees, grade changes and construction activities that could cause soil compaction should generally be kept away from trees as much as possible.

To successfully preserve trees that are recommended for on-site retention, the following series of mitigation measures is recommended. These recommended measures largely center on the minimum CRZ of trees (The CRZ is calculated as DBH x 10 cm), as defined by the City's *Tree Conservation Report Guidelines*. The following measures are recommended to protect the CRZ of all trees slated for retention and/or impact:

- Delineation of the disturbance limits within work areas will be clearly defined in drawings and on the site prior to construction.
- Install Tree Protection Fencing prior to commencement of construction activities, and retain fencing until construction activities have been completed, as per City of Ottawa's Tree Protection (By-law No. 2020-340), Part VI:
 - Tree protection fencing shall be at least 1.2 m in height and installed in such a way that the fence cannot be altered.
 - Refer to **Appendix B** for the City of Ottawa's Tree Protection Fencing Specification.
- Ensure that site clearing is carried out only in areas where it is specifically required, and that the areas to be cleared are carefully and clearly delineated.
- Do not place any material or equipment within the CRZ of a tree.
- Do not raise or lower the existing grade within the CRZ of a tree.
- Do not extend any hard surface or significantly change landscaping.
- If the construction will have to encroach into a tree's minimum CRZ, installing a temporary layer of 150 mm deep partially composed wood chips, or mulch over the root zone can help to protect roots from compaction damage, and conserve soil moisture levels.
- Equipment and materials should not be stored near trees.
- Ensure that exhaust fumes from all equipment are not directed towards any tree's canopy.
- Do not attach any signs, notices, or posters to trees.

8.3 Branch and Root Pruning

- If branches are likely to hang in the way of passing equipment, the branches should be pruned by a Certified Arborist or Registered Forester to avoid tearing and undue injury to the tree.
- All pruning work must be performed under the supervision and guidance of a qualified tree professional in accordance with the latest ANSI A300 Pruning Standards and best management practices identified by the International Society of Arboriculture.
- Do not damage the root system, trunk, or branches of any tree; if any roots are encountered during excavation while working outside the CRZ, they should be cut off cleanly with sharp pruning tools rather than allow them to be torn by large equipment; clean cuts will help to minimize decay and entry points for disease.
- All exposed roots of trees to be retained should be covered in a minimum of 5 cm of firm soil within 24 hours of exposure.
- If root pruning is implemented, the crown of the tree should be reduced proportionately under the direction of a Certified Arborist or Registered Forester, to decrease wind sail. Pruning should be kept to thinning cuts (no major limb removal), and crowns should be monitored, and maintenance carried out for two (2) years after root pruning to remove any dieback under the direction of a Certified Arborist or Registered Forester.

8.4 Tree Planting Recommendations

For new tree planting(s) the Landscape Plan considerations may include:

- Prioritizing the use of native species, where appropriate.
- Where post-development growing conditions and landscape management requirements are not favorable for native species, the use of known invasive species shall be restricted.
- The species and health of existing tree as an indicator of appropriateness.
- The age of existing trees and potential for succession planting.
- Seek to mitigate any loss of canopy cover.
- Diversity of species in newly planted and existing trees.
- Micro-climatic conditions.

9 Permits and Approvals

The City of Ottawa's Tree Protection By-law No. 2020-340 describes the rules that govern tree ownership in Ottawa and the responsibility of tree maintenance, including administration and enforcement. As per Part IV: Sections 42 – 44 Prohibition: *No person shall injure or destroy a tree without a permit.* Sections 45 to 48 - Application for tree permit stipulates the process of applying for a permit under this by-law.

Therefore, it is recommended that consultation should be undertaken with the city prior to construction to confirm the requirements for tree removal permits associated with the municipal tree protection by-law. Where required, tree removal permits must be obtained from the city prior to the start of construction.

10 Summary

One hundred and thirty-nine (139) trees were inventoried within the proposed development area located at 2085 Carling Avenue, in Ottawa, Ontario. Based on the proposed design, the inventory resulted in one hundred and thirty (130) trees to be retained, and nine (9) trees proposed for removal. A list of proposed avoidance and mitigation measures have been included in Section 8 of this report in relation to tree removals, tree protection, and tree preservation.

Landscape plans have been developed separately as part of the development application.

11 Certification and Closure

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

Appendix A

Tree Inventory and Assessment Table

Appendix A: Carlingwood Shopping Centre Parking Renovation - Tree Inventory and Recommendations

Tree #	Common Name	Scientific Name	No. Stems	DBH (cm) * approx.	Crown Spread (m)	Structural Defects ¹											Condition ²	CRZ (m from trunk)	Boundary Tree	Ownership	Impact / Recommendation
						SMD	UC	FC	BNL	DB	AVD	LE	CA	EXR	W	GR					
1	Unknown	Unknown	1	0	0												Dead	0.0	No	Adjacent Land Owner	Retain
2	Norway Maple	Acer platanoides	1	30	2								√	√			Very Good	3.0	Yes	Adjacent Land Owner	Retain
3	Norway Maple	Acer platanoides	1	30	4		√						√	√			Very Good	3.0	Yes	Adjacent Land Owner	Retain
4	Norway Spruce	Picea abies	1	19	5									√			Excellent	1.9	No	Client	Retain
5	Norway Spruce	Picea abies	1	18	3									√			Very Good	1.8	No	Client	Retain
6	Norway Maple	Acer platanoides	1	41	5	√		√					√	√			Good	4.1	No	Client	Retain
7	Norway Spruce	Picea abies	1	10	1												Very Good	1.0	No	Client	Retain
8	Norway Spruce	Picea abies	1	30	5	√								√			Good	3.0	No	Client	Retain
9	Norway Spruce	Picea abies	1	16	2	√								√			Very Good	1.6	No	Client	Retain
10	Norway Spruce	Picea abies	1	20	4	√								√			Very Good	2.0	No	Client	Retain
11	White Pine	Pinus strobus	1	25	8											√	Very Good	2.5	No	Client	Retain
12	Norway Maple	Acer platanoides	1	12	1									√			Good	1.2	No	Adjacent Land Owner	Retain
13	Norway Maple	Acer platanoides	1	17	1	√	√			√				√			Fair	1.7	Yes	Adjacent Land Owner	Retain
14	Norway Maple	Acer platanoides	1	10	1									√			Good	1.0	No	Adjacent Land Owner	Retain
15	Norway Maple	Acer platanoides	1	10	1									√			Very Good	1.0	No	Adjacent Land Owner	Retain
16	Norway Maple	Acer platanoides	1	12	2						√			√			Very Good	1.2	Yes	Adjacent Land Owner	Retain
17	Norway Maple	Acer platanoides	1	11	2												Very Good	1.1	No	Client	Retain
18	Norway Maple	Acer platanoides	3	10	2									√			Very Good	1.0	No	Adjacent Land Owner	Retain
19	Norway Maple	Acer platanoides	1	11	2									√			Very Good	1.1	No	Adjacent Land Owner	Retain
20	Norway Maple	Acer platanoides	1	10	2									√			Very Good	1.0	No	Adjacent Land Owner	Retain
21	Norway Maple	Acer platanoides	1	16	3	√								√			Good	1.6	Yes	Adjacent Land Owner	Retain
22	Norway Maple	Acer platanoides	1	20	3											√	Very Good	2.0	Yes	Adjacent Land Owner	Retain
23	Eastern White Cedar	Thuja occidentalis	4	42	6	√	√							√			Good	4.2	Yes	Client	Retain
24	Eastern White Pine	Pinus strobus	1	40	8					√							Very Good	4.0	Yes	Client	Retain
25	Eastern White Pine	Pinus strobus	1	36	6	√	√							√			Good	3.6	No	Client	Retain
26	Norway Spruce	Picea abies	1	14	2									√			Very Good	1.4	No	Client	Retain
27	Norway Spruce	Picea abies	1	21	2									√			Very Good	2.1	No	Client	Retain
28	Norway Maple	Acer platanoides	1	14	2	√								√			Good	1.4	No	Client	Retain
29	American Basswood	Tilia americana	2	29	4									√			Very Good	2.9	No	Client	Retain
30	Norway Maple	Acer platanoides	1	30	4									√			Very Good	3.0	No	Client	Retain
31	Norway Spruce	Picea abies	1	29	3									√			Very Good	2.9	Yes	Client	Retain
32	Norway Spruce	Picea abies	1	16	2		√							√			Good	1.6	No	Client	Retain
33	Norway Spruce	Picea abies	1	25	3		√							√			Very Good	2.5	Yes	Client	Retain
34	Siberian Elm	Ulmus pumila	1	15	2									√			Good	1.5	No	Client	Retain
35	Norway Spruce	Picea abies	1	15	1		√			√							Fair	1.5	Yes	Client	Retain
36	Common Buckthorn	Rhamnus cathartica	4	10	2									√			Very Good	1.0	No	Client	Retain
37	Apple Spp.	Malus spp.	1	21	21	√								√		√	Good	2.1	Yes	Client	Retain
38	Apple Spp.	Malus spp.	1	11	2	√								√		√	Fair	1.1	No	Client	Retain
39	Norway Maple	Acer platanoides	1	28	4	√	√							√		√	Fair	2.8	No	Adjacent Land Owner	Retain
40	Norway Spruce	Picea abies	1	23	2	√				√							Good	2.3	Yes	Adjacent Land Owner	Retain
41	Northern Red Oak	Quercus rubra	1	39	6												Very Good	3.9	No	Adjacent Land Owner	Retain
42	Apple Spp.	Malus spp.	2	20	3		√			√				√			Fair	2.0	Yes	Client	Retain
43	Norway Maple	Acer platanoides	1	31	3												Very Good	3.1	Yes	Client	Retain
44	Norway Spruce	Picea abies	1	16	3	√									√		Fair	1.6	Yes	Adjacent Land Owner	Retain
45	Norway Spruce	Picea abies	1	19	3	√											Good	1.9	Yes	Client	Retain
46	Apple Spp.	Malus spp.	1	26	3	√											Good	2.6	Yes	Client	Retain
47	Apple Spp.	Malus spp.	2	22	2									√			Good	2.2	Yes	Client	Retain
48	Apple Spp.	Malus spp.	2	21	3									√			Very Good	2.1	No	Client	Retain
49	Apple Spp.	Malus spp.	2	19	3	√								√			Fair	1.9	No	Client	Remove
50	Apple Spp.	Malus spp.	3	19	2									√			Very Good	1.9	No	Client	Retain
51	Apple Spp.	Malus spp.	1	15	2									√		√	Good	1.5	No	Client	Retain
52	Red Spruce	Picea rubens	1	38	4												Very Good	3.8	Yes	Client	Retain
53	Red Pine	Pinus resinosa	1	23	4												Very Good	2.3	Yes	Client	Retain
54	Red Pine	Pinus resinosa	1	30	3												Very Good	3.0	Yes	Client	Retain
55	Siberian Elm	Ulmus pumila	1	50	5									√			Very Good	5.0	No	Adjacent Land Owner	Retain
56	Apple Spp.	Malus spp.	3	15	2					√						√	Good	1.5	Yes	Client	Retain
57	Apple Spp.	Malus spp.	3	15	1	√				√						√	Poor	1.5	Yes	Client	Retain
58	Red Pine	Pinus resinosa	1	27	2												Very Good	2.7	Yes	Client	Retain
59	Red Pine	Pinus resinosa	1	27	2	√				√							Good	2.7	Yes	Client	Retain
60	Red Pine	Pinus resinosa	1	26	3	√											Good	2.6	Yes	Client	Retain

Tree #	Common Name	Scientific Name	No. Stems	DBH (cm) * approx.	Crown Spread (m)	Structural Defects ¹											Condition ²	CRZ (m from trunk)	Boundary Tree	Ownership	Impact / Recommendation	
						SMD	UC	FC	BNL	DB	AVD	LE	CA	EXR	W	GR						
61	Red Pine	<i>Pinus resinosa</i>	1	31	3										√		√	Good	3.1	Yes	Client	Retain
62	Siberian Elm	<i>Ulmus pumila</i>	1	48	5										√			Very Good	4.8	No	Adjacent Land Owner	Retain
63	Apple Spp.	<i>Malus spp.</i>	1	14	2			√										Good	1.4	Yes	Client	Retain
64	Siberian Elm	<i>Ulmus pumila</i>	1	49	4													Very Good	4.9	No	Adjacent Land Owner	Retain
65	Siberian Elm	<i>Ulmus pumila</i>	1	52	5	√	√		√	√								Fair	5.2	Yes	Adjacent Land Owner	Retain
66	Apple Spp.	<i>Malus spp.</i>	1	11	2						√					√		Good	1.1	No	Client	Remove
67	Apple Spp.	<i>Malus spp.</i>	1	13	2	√					√					√		Good	1.3	No	Client	Remove
68	Apple Spp.	<i>Malus spp.</i>	2	21	2										√			Very Good	2.1	Yes	Client	Retain
69	Norway Spruce	<i>Picea abies</i>	1	21	3			√								√		Good	2.1	Yes	Adjacent Land Owner	Retain
70	White Spruce	<i>Picea glauca</i>	1	15	2	√												Very Good	1.5	Yes	Adjacent Land Owner	Retain
71	Siberian Elm	<i>Ulmus pumila</i>	1	64	6		√					√			√			Fair	6.4	Yes	Adjacent Land Owner	Retain
72	Apple Spp.	<i>Malus spp.</i>	2	14	2		√	√		√						√		Fair	1.4	No	Client	Retain
73	Apple Spp.	<i>Malus spp.</i>	3	16	3	√				√	√				√			Fair	1.6	No	Client	Retain
74	Siberian Elm	<i>Ulmus pumila</i>	1	57	5		√											Good	5.7	Yes	Adjacent Land Owner	Retain
75	Norway Spruce	<i>Picea abies</i>	1	14	2										√			Good	1.4	Yes	Client	Retain
76	White Spruce	<i>Picea glauca</i>	1	8	1													Very Good	0.8	Yes	Adjacent Land Owner	Retain
77	White Spruce	<i>Picea glauca</i>	1	24	4		√											Very Good	2.4	Yes	Client	Retain
78	American Basswood	<i>Tilia americana</i>	1	10	2													Excellent	1.0	Yes	Adjacent Land Owner	Retain
79	Apple Spp.	<i>Malus spp.</i>	1	18	2													Very Good	1.8	Yes	Client	Retain
80	Siberian Elm	<i>Ulmus pumila</i>	1	59	4													Very Good	5.9	Yes	Adjacent Land Owner	Retain
81	Norway Spruce	<i>Picea abies</i>	1	33	4			√							√			Good	3.3	Yes	Client	Retain
82	White Spruce	<i>Picea glauca</i>	1	22	4													Excellent	2.2	Yes	Client	Retain
83	Eastern White Cedar	<i>Thuja occidentalis</i>	3	27	3							√						Good	2.7	Yes	Adjacent Land Owner	Retain
84	Siberian Elm	<i>Ulmus pumila</i>	1	26	2	√	√				√	√						Fair	2.6	Yes	Adjacent Land Owner	Retain
85	Siberian Elm	<i>Ulmus pumila</i>	1	45	3													Excellent	4.5	Yes	Client	Retain
86	Siberian Elm	<i>Ulmus pumila</i>	1	29	3						√							Very Good	2.9	Yes	Client	Retain
87	Siberian Elm	<i>Ulmus pumila</i>	1	26	3						√							Good	2.6	Yes	Client	Retain
88	Little-leaf Linden	<i>Tilia cordata</i>	1	37	4										√			Very Good	3.7	No	Client	Retain
89	Red Pine	<i>Pinus resinosa</i>	1	24	3		√											Very Good	2.4	No	Client	Retain
90	Red Pine	<i>Pinus resinosa</i>	1	27	3											√		Good	2.7	No	Client	Retain
91	Little-leaf Linden	<i>Tilia cordata</i>	1	32	4	√	√	√		√	√		√					Fair	3.2	No	Client	Remove
92	Honey-locust	<i>Gleditsia triacanthos</i>	1	13	2		√		√									Good	1.3	No	Client	Remove
93	Honey-locust	<i>Gleditsia triacanthos</i>	1	13	3													Very Good	1.3	No	Client	Remove
94	Red Pine	<i>Pinus resinosa</i>	1	29	4	√									√			Good	2.9	Yes	Client	Retain
95	Red Pine	<i>Pinus resinosa</i>	1	26	3	√	√		√	√					√			Fair	2.6	Yes	Client	Retain
96	Red Pine	<i>Pinus resinosa</i>	1	19	3		√		√						√			Fair	1.9	Yes	Client	Retain
97	Red Pine	<i>Pinus resinosa</i>	1	21	3		√	√	√	√					√			Fair	2.1	Yes	Client	Retain
98	Red Pine	<i>Pinus resinosa</i>	1	26	3	√	√		√	√								Fair	2.6	Yes	Client	Retain
99	Red Pine	<i>Pinus resinosa</i>	1	23	3		√		√									Good	2.3	Yes	Client	Retain
100	Red Pine	<i>Pinus resinosa</i>	1	34	3				√									Good	3.4	Yes	Client	Retain
101	Red Pine	<i>Pinus resinosa</i>	1	30	3	√			√									Good	3.0	Yes	Client	Retain
102	Red Pine	<i>Pinus resinosa</i>	1	26	3	√			√									Good	2.6	Yes	Client	Retain
103	Red Pine	<i>Pinus resinosa</i>	1	25	3	√	√		√									Good	2.5	No	Client	Retain
104	Red Pine	<i>Pinus resinosa</i>	1	29	3	√			√									Good	2.9	Yes	Client	Retain
105	Red Pine	<i>Pinus resinosa</i>	1	19	1		√											Fair	1.9	Yes	Client	Retain
106	Red Pine	<i>Pinus resinosa</i>	1	27	3				√							√		Good	2.7	Yes	Client	Retain
107	Common Pear	<i>Pyrus communis</i>	2	13	2					√	√							Fair	1.3	No	Adjacent Land Owner	Retain
108	Red Maple	<i>Acer rubrum</i>	1	35	4				√						√			Very Good	3.5	Yes	Client	Retain
109	Red Maple	<i>Acer rubrum</i>	1	29	4			√							√			Good	2.9	Yes	Client	Retain
110	Red Maple	<i>Acer rubrum</i>	1	21	4			√										Good	2.1	Yes	Client	Retain
111	Little-leaf Linden	<i>Tilia cordata</i>	1	13	3							√			√			Fair	1.3	No	Client	Retain
112	Manitoba Maple	<i>Acer negundo</i>	3	15	4						√	√			√			Fair	1.5	No	Client	Retain
113	Norway Spruce	<i>Picea abies</i>	2	30	2											√		Good	3.0	No	Client	Retain
114	Norway Spruce	<i>Picea abies</i>	2	22	3													Very Good	2.2	No	Client	Retain
115	Norway Spruce	<i>Picea abies</i>	1	28	3													Very Good	2.8	No	Client	Retain
116	Norway Spruce	<i>Picea abies</i>	1	32	3													Excellent	3.2	No	Client	Retain
117	Red Pine	<i>Pinus resinosa</i>	1	55	6													Excellent	5.5	No	Client	Retain
118	Red Pine	<i>Pinus resinosa</i>	1	55	6	√	√											Good	5.5	No	Client	Retain
119	Red Pine	<i>Pinus resinosa</i>	1	55	6													Excellent	5.5	No	Client	Retain
120	Honey-locust	<i>Gleditsia triacanthos</i>	1	17	2											√		Good	1.7	No	Client	Retain

Tree #	Common Name	Scientific Name	No. Stems	DBH (cm) * approx.	Crown Spread (m)	Structural Defects ¹											Condition ²	CRZ (m from trunk)	Boundary Tree	Ownership	Impact / Recommendation
						SMD	UC	FC	BNL	DB	AVD	LE	CA	EXR	W	GR					
121	Honey-locust	<i>Gleditsia triacanthos</i>	1	37	4												Excellent	3.7	No	Client	Retain
122	Honey-locust	<i>Gleditsia triacanthos</i>	1	21	2												Very Good	2.1	No	Client	Retain
123	Honey-locust	<i>Gleditsia triacanthos</i>	1	30	2		√										Very Good	3.0	No	Client	Retain
124	Honey-locust	<i>Gleditsia triacanthos</i>	1	20	2												Very Good	2.0	No	Client	Retain
125	Honey-locust	<i>Gleditsia triacanthos</i>	1	30	3			√									Very Good	3.0	No	Client	Retain
126	Siberian Elm	<i>Ulmus pumila</i>	1	70	8		√					√				√	Good	7.0	No	Adjacent Land Owner	Retain
127	Red Pine	<i>Pinus resinosa</i>	1	22	3		√										Good	2.2	Yes	Adjacent Land Owner	Retain
128	Siberian Elm	<i>Ulmus pumila</i>	4	28	4			√								√	Fair	2.8	Yes	Client	Retain
129	Red Pine	<i>Pinus resinosa</i>	1	32	3												Very Good	3.2	Yes	Client	Retain
130	Little-leaf Linden	<i>Tilia cordata</i>	1	22	4												Very Good	2.2	No	Client	Retain
131	Honey-locust	<i>Gleditsia triacanthos</i>	1	32	5												Excellent	3.2	No	Client	Remove
132	Honey-locust	<i>Gleditsia triacanthos</i>	1	30	4												Excellent	3.0	No	Client	Remove
133	Honey-locust	<i>Gleditsia triacanthos</i>	2	25	5												Excellent	2.5	No	Client	Remove
134	Honey-locust	<i>Gleditsia triacanthos</i>	1	47	10	√				√							Very Good	4.7	No	Client	Retain
135	Honey-locust	<i>Gleditsia triacanthos</i>	1	24	3												Excellent	2.4	No	Client	Retain
136	Honey-locust	<i>Gleditsia triacanthos</i>	1	21	3												Good	2.1	No	Client	Retain
137	Red Maple	<i>Acer rubrum</i>	1	13	3												Very Good	1.3	No	Client	Retain
138	Little-leaf Linden	<i>Tilia cordata</i>	1	12	3												Good	1.2	No	Client	Retain
139	Red Maple	<i>Acer rubrum</i>	1	14	3												Good	1.4	No	Client	Retain

¹Notes

UC - Unbalanced Crown is a tree's crown that is much more extensive in one direction than another, often due to competition from the crown of a nearby tree or exposure

FC - Frost cracking is a winter injury caused by temperature fluctuations on bark and inner wood when the sun warms a tree trunk and then temperatures drop quickly, causing splitting of the bark that can extend into the wood below. Frost cracking can be associated with snow reflection and southwest-facing trunk exposures and particularly affects young trees and species with thin bark.

SMD - Small dead branches are an indicator of crown dieback and can be an early sign of stress.

DB - Dieback refers to the ends of branches dying, which is often associated with root problems.

LE - A tree with a lean can be more susceptible to windthrow and soil failure. Self-correcting lean refers to a natural correction of the lean by development of new growth that counteracts the lean of the trunk to provide a more balanced form.

AVD - Adventitious shoots refer to vigorous growth of shoots from pruning cuts, inner branches, of along the trunk that usually occur in response to stress.

W - Woundwood is the thickened tissue growing around the edges of a wound. The rate of its development can be a sign of the tree's vigour.

BNL - Broken / No Leader occurs if the central leader is broken, damaged or very weak, or has a dead terminal bud

GR - Girdling roots are roots that cross over each other or around the trunk of the tree. As these roots grow larger, they can restrict the uptake of nutrients and water and inhibit structural anchorage.

EXR - Exposed surface roots can be a result of erosion and soil compaction combined with increasing root diameter. It is important to protect exposed roots from pedestrian and vehicular traffic, and lawn mowers. Damage to roots can cause stress and can result in canopy dieback.

CA - Cavity are often the result of an injury followed by decay. Decay can begin by injury to the trunk, the loss of a large limb, topping or improper pruning. The inner dead wood begins to decay but living wood is protected by a barrier zone that compartmentalizes damage

²Condition

Very Good: No apparent health problems; good structural form.

Good: Minor problems with health and/or structural form.

Fair: Significant problems with health and/or structural form.

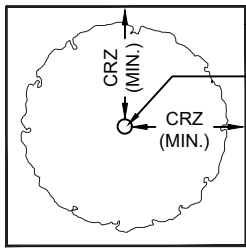
Poor: Major problems with health and structural form.

Snag: Standing dead or dying tree, often missing a top.

Dead: Dead.

Appendix B

Tree Protection Specification (City of Ottawa, 2021)



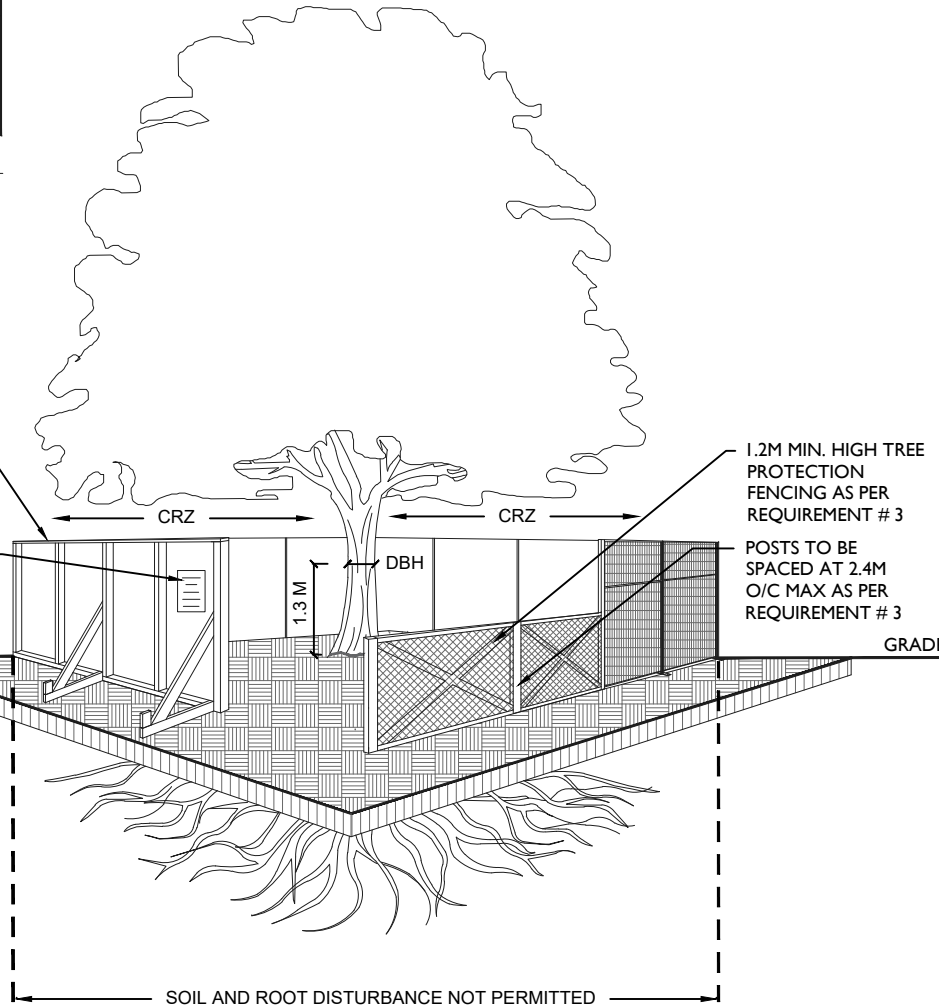
PLAN VIEW

TREE PROTECTION FENCING
TREE TRUNK

CRZ = DBH X 10CM.
CRZ IS TO BE MEASURED FROM THE OUTSIDE EDGE OF THE TREE BASE

TREE PROTECTION SIGNAGE AS PER CITY STANDARD

GRADE



1.2M MIN. HIGH TREE PROTECTION FENCING AS PER REQUIREMENT # 3

POSTS TO BE SPACED AT 2.4M O/C MAX AS PER REQUIREMENT # 3

SOIL AND ROOT DISTURBANCE NOT PERMITTED

TREE PROTECTION REQUIREMENTS:

1. PRIOR TO ANY WORK ACTIVITY WITHIN THE CRITICAL ROOT ZONE (CRZ = 10 X DIAMETER) OF A TREE, TREE PROTECTION FENCING MUST BE INSTALLED SURROUNDING THE CRITICAL ROOT ZONE, AND REMAIN IN PLACE UNTIL THE WORK IS COMPLETE.
2. UNLESS PLANS ARE APPROVED BY CITY FORESTRY STAFF, FOR WORK WITHIN THE CRZ:
 - DO NOT PLACE ANY MATERIAL OR EQUIPMENT - INCLUDING OUTHOUSES;
 - DO NOT ATTACH ANY SIGNS, NOTICES OR POSTERS TO ANY TREE;
 - DO NOT RAISE OR LOWER THE EXISTING GRADE;
 - TUNNEL OR BORE WHEN DIGGING;
 - DO NOT DAMAGE THE ROOT SYSTEM, TRUNK, OR BRANCHES OR ANY TREE;
 - ENSURE THAT EXHAUST FUMES FROM ALL EQUIPMENT ARE NOT DIRECTED TOWARD ANY TREE CANOPY.
 - DO NOT EXTEND HARD SURFACE OR SIGNIFICANTLY CHANGE LANDSCAPING
3. TREE PROTECTION FENCING MUST BE AT LEAST 1.2M IN HEIGHT, AND CONSTRUCTED OF RIGID OR FRAMED MATERIALS (E.G. MODULOC - STEEL, PLYWOOD HOARDING, OR SNOW FENCE ON A 2"X4" WOOD FRAME) WITH POSTS 2.4M APART, SUCH THAT THE FENCE LOCATION CANNOT BE ALTERED. ALL SUPPORTS AND BRACING MUST BE PLACED OUTSIDE OF THE CRZ, AND INSTALLATION MUST MINIMISE DAMAGE TO EXISTING ROOTS. (SEE DETAIL)
4. THE LOCATION OF THE TREE PROTECTION FENCING MUST BE DETERMINED BY AN ARBORIST AND DETAILED ON ANY ASSOCIATED PLANS FOR THE SITE (E.G. TREE CONSERVATION REPORT, TREE INFORMATION REPORT, ETC). THE PLAN AND CONSTRUCTED FENCING MUST BE APPROVED BY CITY FORESTRY STAFF PRIOR TO THE COMMENCEMENT OF WORK.
5. IF THE FENCED TREE PROTECTION AREA MUST BE REDUCED TO FACILITATE CONSTRUCTION, MITIGATION MEASURES MUST BE PRESCRIBED BY AN ARBORIST AND APPROVED BY CITY FORESTRY STAFF. THESE MAY INCLUDE THE PLACEMENT OF PLYWOOD, WOOD CHIPS, OR STEEL PLATING OVER THE ROOTS FOR PROTECTION OR THE PROPER PRUNING AND CARE OF ROOTS WHERE ENCOUNTERED.

THE CITY'S TREE PROTECTION BY-LAW, 2020-340 PROTECTS BOTH CITY-OWNED TREES, CITY-WIDE, AND PRIVATELY-OWNED TREES WITHIN THE URBAN AREA. PLEASE REFER TO WWW.OTTAWA.CA/TREEBYLAW FOR MORE INFORMATION ON HOW THE TREE BY-LAW APPLIES.

ACCESSIBLE FORMATS AND COMMUNICATION SUPPORTS ARE AVAILABLE, UPON REQUEST



TREE PROTECTION SPECIFICATION

TO BE IMPLEMENTED FOR RETAINED TREES, BOTH ON SITE AND ON ADJACENT SITES, PRIOR TO ANY TREE REMOVAL OR SITE WORKS AND MAINTAINED FOR THE DURATION OF WORK ACTIVITIES ON SITE.

SCALE: NTS

DATE: MARCH 2021

DRAWING NO.: 1 of 1

Arcadis Canada Inc.
333 Preston Street, Suite 500
Ottawa, Ontario K1S 5N4
Canada
Phone: 613 225 1311
Fax:
www.arcadis.com