



LAKEFRONT HEIGHTS INC.
**Official Plan and Zoning By-Law
Amendments**

Natural Features Inventory & Preservation Study



June 17, 2024



SENT BY ELECTRONIC MAIL ONLY

350 City Hall Square, Suite 210
Windsor, Ontario
N9A 6S1

Attention: Yemi Adeyeye, City Forester/Manager Forests & Natural Areas

Natural Features Inventory & Preservation Study for the property known as Lakefront Heights

Please find enclosed the results of a Tree Inventory completed to identify existing trees for a proposed development at 0 Wyandotte Street East (south of 10835 Riverside Drive), in the City of Windsor. This report outlines the results of the inventory which occurred on April 10, 2024. These results were used to prepare a Preservation Study report to support an Official Plan and Zoning By-law Amendment. The report summarizes the results of the tree inventory conducted for areas potentially impacted by the proposed development and provides recommendations for trees to be removed or retained.

Sincerely,

DILLON CONSULTING LIMITED

Handwritten signature of Brad McLeod in black ink.

Brad McLeod, M.Sc.
Biologist

Handwritten signature of Steve Greidanus in black ink.

Steve Greidanus
ISA Certified Arborist – ON-2992

Our file: 21-2104

Encls. Natural Features Inventory & Preservation Study

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1.0 Introduction

Dillon Consulting Limited (“Dillon”) was retained by Lakefront Heights Inc. (the “proponent”), to conduct a Natural Features Inventory & Preservation Study to support an Official Plan and Zoning By-law Amendment for a proposed development in the City of Windsor (the “City”). The need for this report was identified during the Stage 1 Planning Consultation letter received from the City on March 25, 2024.

The proposed development will be located at 0 Wyandotte Street East (south of 10835 Riverside Drive); Appendix A; Figure 1). Dillon’s services included documentation of existing trees within the property in addition to a 6 m buffer onto adjacent lands (the “Project Location”). The report and figures summarize the tree inventory conducted by Dillon for lands within and adjacent to the Project Location and provide recommendations regarding tree removals and preservation, as well as information related to applicable tree protection policies.

This report has been written to support the proposed development and will be submitted to the City. It contains a detailed inventory of trees within the Project Location that may be potentially impacted by construction. Additionally, it describes the development and anticipated construction impact to trees.

1.1 Development Description

The proponent is proposing to develop the Project Location into multi-unit residential buildings, above and ground level parking, and associated landscaping.

1.2 Applicable Policy

1.2.1 City of Windsor

The requirement for this report is based on the Stage 1 Planning Consultation letter received from the City. Further to this requirement, Volume I (Procedures), Chapter 10, Section 10.2.14 of the City’s Official Plan has additional, specific requirements. The City By-law 135-2004 (Trees on Highways) applies to this project, as the By-law regulates the planting of trees and prohibits the destruction or injuring of trees on highways in the City or on any lands owned by the City.

1.2.2 Migratory Birds Convention Act

Environment and Climate Change Canada implements the Migratory Birds Convention Act (MBCA; 1994) to protect migratory birds and their nests. A person shall not harm a migratory bird or nest without authorization under the regulations. In order to mitigate potential affects to migratory birds, vegetation removals shall occur outside of the breeding bird season (April 1 to August 31) to avoid the core period of bird nesting. If vegetation removal is required within this period, an avian survey is recommended to be conducted by a qualified biologist within the planned vegetation removal area before the removal

activities to determine the presence or absence of nesting birds. If no active bird nest is observed during the survey, vegetation removal may proceed if conducted within 48 hours of completing the survey. Avian survey results shall be valid for 48 hours from the completion of the survey. Should an active bird nest be observed during the survey, vegetation removal that may harm a migratory bird or nest shall be avoided until a subsequent survey confirms the nest is no longer active and/or until authorization is obtained.

2.0 Methods

A tree inventory was conducted on April 10, 2024, by a qualified Dillon Biologist within the Project Location and a 6 m buffer. Trees subject to the inventory were those with a diameter-at-breast-height (DBH) of 10 centimetres (cm) or greater, as well as any City-owned tree with a DBH of less than 10 cm. The collected data pertained to trees that require removal to facilitate development or trees anticipated to be retained and protected during construction operations. The information recorded consisted of the following:

- Identification of species or genus where determinable using reasonable assumptions based on location, leaves, bark, bud, branches, and growth habit;
- Measurement of DBH at 1.4 metres (m) from the ground;
- Assignment of a unique identification number for trees, where applicable. Note: Trees with multiple stems split below breast height were given one unique identification number;
- A Level 2 (basic) qualitative visual assessment to determine tree or tree grouping condition, following the condition health rating system detailed in Table 1;
- Marking coordinates using a handheld Global Positioning System (GPS) unit with an accuracy of approximately 2 m; and
- If determinable and/or applicable, providing recommendations regarding preservation, protection, or removal.

The Level 2 basic assessment that was completed for trees within the Project Location is a detailed visual inspection of the trees and surrounding area to obtain an opinion of the health condition of each tree. It includes a non-invasive inspection of each tree (i.e., looking at the site conditions, buttress roots, trunk, and branches). This basic assessment is the standard basic assessment that is performed by arborists, though only includes conditions that are detected from the ground. The results from a basic assessment should not be relied on for internal, below-ground, and/or upper-crown condition or defects as these areas may be impossible to see or difficult to assess from ground-level.

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 International Society of Arboriculture publication *A Photographic Guide to the Evaluation of Hazard Trees in Urban Area - 2nd Edition* (Matthey and Clark, 1994). Using this guide, an overall condition rating (i.e., dead, hazard, poor, fair, good, or excellent) was given to each tree included in the inventory. These condition ratings are useful when evaluating the retention and/or replacement value of individual trees. Trees were identified using all reasonable means available at the time of survey, such as leaf, bud, and bark characteristics, tree form, and branch orientations.

For those species of tree where the foliage characteristics is the primary distinguishing feature, the positive identification of tree species may have been hindered due to timing of the surveys occurring

just into the leaf-off period (i.e., early April). Trees were identified using reasonable assumptions based on form, bark, and branch orientations to determine species.

Table 1: Tree Condition Rating Categories

Condition	Description
Dead	A specimen tree is considered dead when it has no living tissue.
Hazard	The specimen tree could either be alive or dead but the tree in its part could pose an imminent hazard to people or property during normal weather conditions. These trees have the potential for splitting, breaking, and/or falling over during inclement weather, and because of their proximity to various targets (i.e. people or property), could cause personal injury and/or severe damage to municipal infrastructure and/or private property.
Poor	Trees in poor condition show major symptoms of decline. At least 50% of main scaffold branches are dead, missing, or in a diseased state. The trunk shows evidence of advanced rot, deadwood, or is hollow throughout. Twig development on the main branches 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.
Excellent	The specimen tree shows no symptoms of decline in trunk, scaffold, or secondary branches. Trees in this condition have an excellent growth habit and should typically survive to maturity without major arboricultural maintenance.

2.1 Analysis Methods

Tree information collected during the inventory was analyzed to develop recommendations for tree removals and preservations, which are outlined in subsequent sections of this report. The analysis included the methods outlined in the following subsections.

2.1.1 DBH of Multi-stemmed Trees

For trees with multiple stems ≥ 10 cm DBH, the DBH values for each stem were recorded and inputted into the formula below to calculate a derived DBH value for the purpose of estimating the tree's Critical Root Zone (CRZ) radius. The formula is:

$$DBHD = \sqrt{[DBH1]^2 + [DBH2]^2 + [DBH\dots\text{etc.}]^2}$$

Where DBHD is the derived DBH and DBH1...etc. are the measured DBH values of each stem. This method is adapted from Tree Preservation & Protection Standards (The Urban Tree Management Group, 2019) as a best practice in effectively estimating the CRZ.

2.1.2 Determination of the Critical Root Zone

A tree's CRZ is the below-ground area containing the primary roots that are most critical to its survival and which are most susceptible to disturbance and impacts. The CRZ is generally proportional to a tree's stem diameter. As such, it can be approximated as a circular area around the tree's stem with a radius estimated based on the tree's derived DBH. The CRZ also generally aligns with the extent of the tree's above-ground canopy, though canopies may extend beyond the CRZ. The approximated CRZ for each tree in the inventory was determined based on the derived DBH value ranges outlined in Table 2, as adapted from other various tree protection standards.

Table 2: Determination of the Critical Root Zone

Derived DBH (cm)	CRZ Distances Required (m)
<10	1.8
11-40	4.0
41-50	5.0
51-60	6.0
61-70	7.0
71-80	8.0
81-90	9.0
91-100+	10.0

2.1.3 Analysis for Tree Remove/Retain Recommendations

To develop recommendations for trees to be removed or retained, the inventoried tree locations were analyzed compared to the proposed limit of disturbance, which includes the proposed development areas (Appendix A). Construction activities in these areas are expected to result in disturbance to trees. The analysis compared the location of each tree and its CRZ to the limit of development in order to identify where tree impacts are expected to occur and categorized each tree to be removed or retained:

Removed

- Tree within the limit of disturbance: Trees located within the limit of development are required for removal to facilitate construction of the project.
- >35% CRZ within the limit of disturbance: Trees located within or near the limit of development and having >35% of their CRZ within the limit are likely to be heavily impacted, causing death or poor health conditions. These trees are recommended for removal.
- Condition: Dead trees or trees in poor condition have the potential to be hazardous if they fall on a person, vehicle, equipment, or sensitive property. Due to the proximity of the future development activities, these trees are recommended for removal.

Retain

- Tree not within the limit of disturbance: Trees (including their CRZ) that are located entirely outside of the limit of development are identified to be retained.
- <35% CRZ within the limit of disturbance: Trees with <35% of their CRZ within the limit of development are expected to sustain only a low level of impact and injury to their roots and/or canopy. Provided appropriate protection measures are applied, they are expected to maintain their condition; therefore, recommended to be retained.

3.0 Results

The inventory documented 85 trees (66 client-owned trees and 19 City-owned trees) within the Study Area including City-owned trees with DBH under 10 cm. The locations of the inventoried trees are presented in Appendix A with photographs of the assessed trees included in Appendix B. Detailed tree inventory results including species, DBH, condition, and other relevant information recorded during the tree inventory are provided in Appendix C.

A total of 10 species of trees were documented, with 8 species identified to the species level and 2 species identified to the genus level. Manitoba Maple (*Acer negundo*) was the dominant species, accounting for 51% of the trees inventoried, followed by Silver Maple (*Acer saccharinum*) at 15%. A summary of inventoried trees can be found in Table 3 below.

Overall, out of the 85 documented trees, 75 (88%) are native to Ontario, while 4 (5%) are non-native species. The remaining 6 trees (7%) could not be classified as non-native or native due to their condition or because identification only to genus level was possible.

Table 3: Summary of Inventoried Trees by Species

Family	Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Invasive Priority for Control ⁴	Count
Tiliaceae	<i>Tilia cordata</i>	Little-leaf Linden	---	---	SNA	C3	2
Tiliaceae	<i>Tilia sp.</i>	Linden species	---	---	---	---	2
Salicaceae	<i>Populus deltoides ssp. deltoides</i>	Eastern Cottonwood	---	---	S5	---	6
Salicaceae	<i>Salix sp.</i>	Willow species	---	---	---	---	4
Aceraceae	<i>Acer negundo</i>	Manitoba Maple	---	---	S5	C2	43
Aceraceae	<i>Acer rubrum</i>	Red Maple	---	---	S5	---	1
Aceraceae	<i>Acer saccharinum</i>	Silver Maple	---	---	S5	---	13
Aceraceae	<i>Acer x freemanii</i>	Freeman's Maple	---	---	SNA	---	11
Moraceae	<i>Morus alba</i>	White Mulberry	---	---	SNA	C1	2
Ulmaceae	<i>Ulmus americana</i>	American Elm	---	---	S5	---	1
Total							85

¹Status identified under the federal Species at Risk Act; ²Status identified under the provincial Endangered Species Act; ³SRank is an indicator of commonness in the Province of Ontario. A scale between 1 and 5: S5 = widespread and secure, SNA = not applicable; ⁴Invasive Exotic Plant Species Rankings for Southern Ontario (Draft - Urban Forest Associates/MNRF 2014). Category 1 (C1) - Top Priority: Widespread invasive species that exclude most other species and dominate sites indefinitely. Some are an imminent threat to human health. They are the top priority for control, but control may be difficult, and some are beyond control at present. Biocontrols may be the only affective long-term control option. Plants in this category are a threat to a natural area wherever they occur because they disperse widely and benefit from human disturbances. Control where possible and do not plant; --- denotes no information or not applicable.

4.0 Tree Preservation and Removals

This section provides preliminary recommendations for tree removal and preservation. A summary of the analysis used to determine tree retention or removal is also provided. Based on the current site plan (including building envelopes, hard surfaces, etc.), of the 85 trees identified within the Study Area, 58 are observed to be preserved (39 client-owned trees and 19 City-owned trees). Refer to Appendix A; Figure 2 for the locations of identified trees in relation to the site plan. It should be noted that during detailed design, effort will be made to retain as many other trees as possible as landscaping trees. Tree preservation and removals will occur at the Site Plan Control Approval phase of the development.

4.1 Tree Removals

Of the inventoried trees, 27 trees are required to be removed (27 client-owned trees).

Trees recommended for removal are symbolized in red on the Tree Inventory figures (Appendix A; Figure 2) and are identified in the tree inventory table (Appendix C). Of the 27 trees identified for removal, 24 are in good condition, 2 are in poor condition, and 1 is dead.

Tree removals should be conducted by qualified and International Society of Arboriculture (ISA)-certified arborist following best arboricultural practices. Removal activities should avoid or minimize impacts to adjacent trees to be preserved (as identified below), and timing of removals should consider the project schedule of other construction activities (e.g., conduct removals following the installation of site fencing and/or tree protection fencing).

4.2 Tree Preservation

Of the inventoried trees, 58 are recommended to be preserved (39 client-owned trees and 19 City-owned trees).

During the detailed design stage, if any trees are to be retained, it is important to consider the potential impacts of construction activities on preserved trees. These impacts may include changes to soil conditions due to alterations in grade, as well as physical damage. Compaction of the soil, either by design or due to using heavy machinery within root zones, can affect root systems during construction. Similarly, the placement or removal of fill material within a root zone can cause root system impairments (e.g. lack of oxygen). Trees require a loosely compact soil medium for root growth, oxygen uptake, and absorption of water and nutrients. Soil compaction and grading changes within the root zone can inhibit root growth and function, and these impacts have the potential to result in a decline in the overall condition of a tree. In addition, accidental contact between construction equipment and trees can cause physical damage to the trunk and crown.

The following recommendations are provided regarding the trees to be preserved.

4.2.1 Pre-construction Maintenance

Prior to construction activities, overhanging limbs of trees to be preserved should be pruned in a manner that minimizes physical damage and promotes quick wound closure and regeneration. Maintenance of limbs should be carried out by a qualified arborist.

Trees recommended for preservation which have declined in condition or become hazardous since the writing of this report should be reassessed by an arborist upon commencement and/or completion of construction and removed.

4.2.2 Tree Protection Measures

A tree's CRZ is the below-ground area containing the primary roots that are most critical to its survival and which are most susceptible to disturbance impacts. The size of the CRZ is typically proportional to the tree's age and stem diameter and can be estimated as a circular area around the tree's stem, with a radius calculated based on the tree's DBH (Appendix A; Figure 2).

To minimize the impact of adjacent construction work, a Tree Protection Zone (TPZ) should be established for each tree to be retained. The intent of a TPZ is to protect a tree's roots and soil to ensure impacts on overall health and stability are minimized. The TPZ would align with the CRZ. An example of tree protection fencing is provided in Appendix D.

The TPZ calculated for trees to be preserved was made using a standard calculation from the ISA, but modified by the City. The TPZ is calculated by multiplying the DBH by 12 and dividing by 100 to provide the TPZ in metres (Appendix C). Protection fencing should be installed at the edge of the TPZ, where possible. The fenced TPZ should be clear of building materials, waste, soil stockpiles, and construction equipment. Subject to finalization of construction plans, the following activities should not occur within the TPZ:

- Construction;
- Altering of grade by adding fill, excavating, trenching, scraping, dumping, or disturbance of any kind;
- Storage of construction materials, equipment, soil, construction waste, or debris;
- Disposal of any liquids (e.g. concrete slurry, gas, oil, paint);
- Movement of vehicles, equipment, or pedestrians; and
- Parking of vehicles or machinery.

If the above recommendations are followed, potential impacts to root zones from compaction are expected to be minor and localized. There should be no excavation (e.g., stripping or trenching) within the TPZ though in some instances, a TPZ which extends into the construction zone may require minor adjustments to facilitate access for construction personnel, equipment and may require excavation.

Directional micro-tunneling, track boring, and other sub-surface drilling can generally be undertaken within the limits of a TPZ without impacts on the respective tree, depending on the depth of drilling. Open-face cuts that require root pruning within a TPZ should be completed under the supervision of an ISA Certified Arborist or approved tree professional. An exploratory dig to expose the roots that may be impacted can be completed either by hand, using an air pressure dry-vac method (low air pressure has less impact on roots); air spade or other suitable alternative should be completed prior to commencing with open face cuts within the TPZ.

4.2.3 Post-construction Tree Maintenance and Monitoring

Post-construction tree maintenance methods will be used as required to repair any damage caused to trees by construction activities. These include, but are not limited to the following:

- Treating trunk and crown injuries (e.g. pruning, cabling, bracing, repairing wounds to damaged bark and trunks, etc.);
- Irrigation and drainage;
- Mulching; and
- Aeration of the root zone for compacted areas.

Within 12 months of the completion of construction, an assessment of preserved trees, if available, within the Project Location should be conducted. Trees which are dead, in poor health, or hazardous should be removed or pruned, as determined by a qualified arborist. Tree removal should occur prior to home occupancy to avoid foreseeable risk of trees falling and causing damage or harm to people and/or property.

Compensation plantings should be monitored periodically after construction to ensure survival. Should tree condition decline, necessary steps should be taken to ensure that the impacted trees are restored or replaced.

Post-construction maintenance and monitoring are to be carried out by a qualified arborist skilled in the above-listed methods.

4.3 Compensation for Tree Removals

A Landscape and Planting Plan, detailing where tree compensation will occur and what species are recommended for planting will be submitted to the City after exact development extents are known and therefore, the number of trees to be preserved is also known, and following Official Plan and Zoning By-law Amendment Approval. Tree preservation and removals will occur at the Site Plan Control Approval phase of the development.

Upon finalization of the Landscape and Planting Plan, and subject to discussion with the City, compensation in the form of landscape trees (e.g. within parks, lots, or boulevards) and/or restoration plantings on-site or off-site may be required.

Species, condition, size/DBH, and other characteristics of existing trees should be considered in discussions regarding fair compensation for removals. For compensation on the client-owned trees, we recommend that DBH replacement for excellent (0), good (24), and fair (0) trees (24 total trees) may be appropriate to determine the number of plantings required or equal monetary compensation.

5.0 Conclusion

Dillon Consulting Limited was retained by Lakefront Heights Inc., to undertake a Natural Features Inventory & Preservation Study to support a proposed development located at 0 Wyandotte Street East (south of 10835 Riverside Drive) in the City of Windsor. An inventory of trees was completed on April 10, 2024, and 85 trees were documented. To facilitate construction of the proposed development, 27 client-owned, private trees and no City-owned tree are required to be removed. A total of 58 trees (39 client-owned trees and 19 City-owned trees) are recommended for preservation during construction, however it should be noted that during detailed design, effort will be made to retain as many other trees as possible as landscaping trees. Detailed recommendations for tree removals, maintenance, and preservation were provided.

References

- Farrar, J.L. 1995. Trees in Canada. Seventh Impression 2000. Fitzhenry & Whiteside Limited, Markham, Ontario and the Canadian Forestry Service, Natural Resources Canada, Ottawa, in cooperation with Public Works and Government Services Canada.
- Matheny, N.P. and J.R. Clark. 1994. A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas - 2nd Edition. International Society of Arboriculture.
- Migratory Birds Convention Act, 1994. (S.C. 1994, C-22). <http://laws-lois.justice.gc.ca/eng/acts/m-7.01/>. Accessed 2023.
- Smiley, E.T., N.P. Matheny, and S. Lilly. 2012. Tree Risk Assessment: Levels of Assessment. ISA News, April 2012 Issue. pp. 12-20.
- Urban Tree Management Group, The. 2019. Tree Preservation & Protection Standards. pp. 1-14.

Appendix A

Figures



LAKEFRONT HEIGHTS INC.
LAKEFRONT HEIGHTS
CONDOMINIUM DEVELOPMENT
ENVIRONMENTAL EVALUATION
REPORT

PROJECT LOCATION
FIGURE 1

-  Project Location (1.66 ha)
-  Major Road



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, THE CITY OF WINDSOR

MAP CREATED BY: -DU
MAP CHECKED BY: -BM
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 21-2104
STATUS: DRAFT
DATE: 2024-06-16

LAKEFRONT HEIGHTS INC.

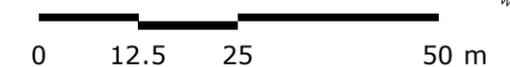
LAKEFRONT HEIGHTS
CODOMINIUM DEVELOPMENT
ENVIRONMENTAL EVALUATION
REPORT

PROPOSED DEVELOPMENT AND POTENTIAL IMPACTS FIGURE 2

-  Project Location (1.66 ha)
-  Major Road
-  Proposed Development
-  Tree to be Retained
-  Tree to be Removed



SCALE 1:900



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, THE CITY OF WINDSOR

MAP CREATED BY: -DU
MAP CHECKED BY: -BM
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 21-2104
STATUS: DRAFT
DATE: 2024-06-16

Appendix B

Tree Photographs



Tree 1-39



Tree 40: Little-leaved Linden



Tree 41: White Mulberry



Tree 42: Manitoba Maple



Tree 43: Manitoba Maple



Tree 44 (left) and 45 (right): Eastern Cottonwood



Tree 46: Manitoba Maple



Tree 47: White Mulberry



Tree 48: Manitoba Maple



Tree 49: Manitoba Maple



Tree 50: Manitoba Maple



Tree 51: Manitoba Maple



Tree 52: Manitoba Maple



Tree 53: Manitoba Maple



Tree 54: Manitoba Maple



Tree 55: Eastern Cottonwood



Tree 56: Red Maple



Tree 57: Manitoba Maple



Tree 58: Manitoba Maple



Tree 59: Manitoba Maple



Tree 60: Manitoba Maple



Tree 61: Manitoba Maple



Tree 62: Manitoba Maple



Tree 63: Manitoba Maple



Tree 64: Little-leaved Linden



Tree 65: Manitoba Maple



Tree 66 (left): Silver Maple
Tree 67 (right): Manitoba Maple



Tree 68-82



Tree 83: Linden species



Tree 84: Linden species



Tree 85: Freeman's Maple

Appendix C

Detailed Tree Inventory

Appendix C - Detailed Tree Inventory

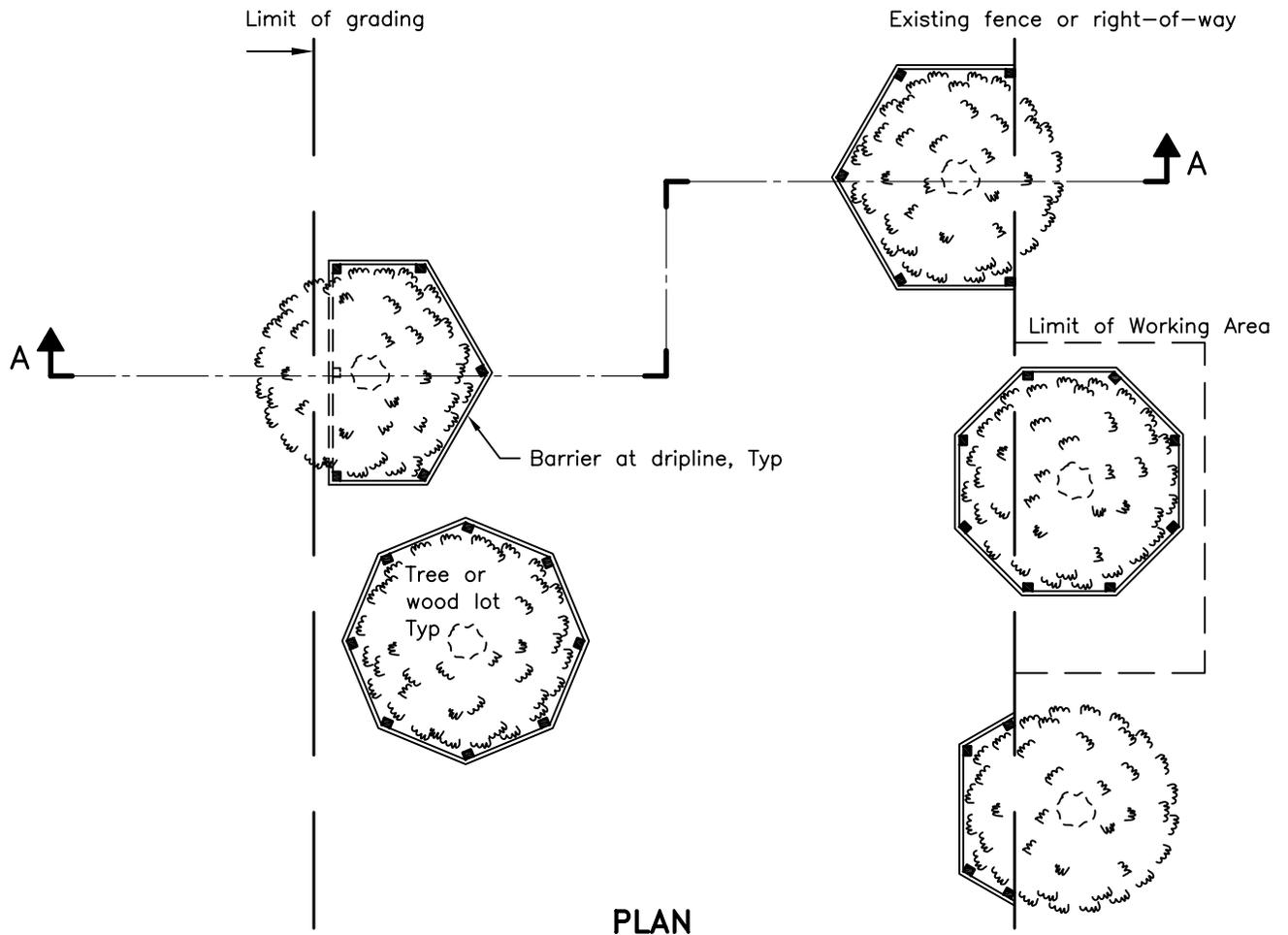
Figure ID	Scientific Name	Common Name	DBH (cm)	Critical Root Zone/Tree Protection Zone (m)	Condition	Level 2 Assessment Notes	Action	Rationale for Removal or Preservation
1	<i>Acer x freemanii</i>	(<i>Acer rubrum</i> X <i>Acer saccharinum</i>)	90.7, 52.7, 51.9, 42.7, 40.1	10.88	Good		Retain	Not within construction footprint
2	<i>Acer negundo</i>	Manitoba Maple	36.8, 22.5	4.42	Good		Retain	Not within construction footprint
3	<i>Acer negundo</i>	Manitoba Maple	30.2, 29.5, 13.6	3.62	Good		Retain	Not within construction footprint
4	<i>Acer negundo</i>	Manitoba Maple	18.8, 12.0	2.26	Good		Retain	Not within construction footprint
5	<i>Acer negundo</i>	Manitoba Maple	21.7, 18.5	2.60	Good		Retain	Not within construction footprint
6	<i>Acer negundo</i>	Manitoba Maple	12.9	1.55	Good		Retain	Not within construction footprint
7	<i>Acer x freemanii</i>	(<i>Acer rubrum</i> X <i>Acer saccharinum</i>)	37.2	4.46	Good		Retain	Not within construction footprint
8	<i>Acer x freemanii</i>	(<i>Acer rubrum</i> X <i>Acer saccharinum</i>)	55.3, 51.8	6.64	Good		Retain	Not within construction footprint
9	<i>Acer negundo</i>	Manitoba Maple	32.0, 16.1	3.84	Good		Retain	Not within construction footprint
10	<i>Acer negundo</i>	Manitoba Maple	23.5, 19.5	2.82	Dead		Remove	Within construction footprint
11	<i>Salix sp.</i>	Willow species	29.1	3.49	Good		Retain	Not within construction footprint
12	<i>Acer x freemanii</i>	(<i>Acer rubrum</i> X <i>Acer saccharinum</i>)	85.7	10.28	Poor		Retain	Not within construction footprint
13	<i>Acer negundo</i>	Manitoba Maple	35.5, 29.2	4.26	Good		Remove	Within construction footprint
14	<i>Acer x freemanii</i>	(<i>Acer rubrum</i> X <i>Acer saccharinum</i>)	29.8, 27.4	3.58	Poor	Cavity in 29.8 DBH	Remove	Within construction footprint
15	<i>Salix sp.</i>	Willow species	28.2	3.38	Good		Retain	Not within construction footprint
16	<i>Salix sp.</i>	Willow species	29.4	3.53	Good		Retain	Not within construction footprint
17	<i>Populus deltoides ssp. Deltoides</i>	Eastern Cottonwood	10.5, 10.3	1.26	Good		Retain	Not within construction footprint
18	<i>Acer negundo</i>	Manitoba Maple	39.9, 22.7, 20.2, 16.7	4.79	Dead		Retain	Not within construction footprint
19	<i>Salix sp.</i>	Willow species	23.3, 20.3	2.80	Good		Retain	Not within construction footprint
20	<i>Populus deltoides ssp. Deltoides</i>	Eastern Cottonwood	10.1	1.21	Good		Retain	Not within construction footprint
21	<i>Populus deltoides ssp. Deltoides</i>	Eastern Cottonwood	15.4	1.85	Good		Retain	Not within construction footprint
22	<i>Acer negundo</i>	Manitoba Maple	26	3.12	Good		Retain	Not within construction footprint
23	<i>Acer negundo</i>	Manitoba Maple	32.8, 31.4, 30.7	3.94	Good		Retain	Not within construction footprint
24	<i>Acer negundo</i>	Manitoba Maple	12.6	1.51	Good		Retain	Not within construction footprint
25	<i>Acer negundo</i>	Manitoba Maple	34.3	4.12	Good		Remove	Within construction footprint
26	<i>Acer negundo</i>	Manitoba Maple	32.8	3.94	Good		Retain	Not within construction footprint
27	<i>Acer negundo</i>	Manitoba Maple	12.2	1.46	Good		Retain	Not within construction footprint
28	<i>Acer x freemanii</i>	(<i>Acer rubrum</i> X <i>Acer saccharinum</i>)	21.2, 20.0	2.54	Poor	Four cavities in 20.0 DBH	Retain	Not within construction footprint
29	<i>Acer negundo</i>	Manitoba Maple	12.4	1.49	Good		Retain	Not within construction footprint

Figure ID	Scientific Name	Common Name	DBH (cm)	Critical Root Zone/Tree Protection Zone (m)	Condition	Level 2 Assessment Notes	Action	Rationale for Removal or Preservation
30	<i>Acer negundo</i>	Manitoba Maple	21.3, 16.1	2.56	Good		Remove	Within construction footprint
31	<i>Acer negundo</i>	Manitoba Maple	14.7, 11.3	1.76	Good		Remove	Within construction footprint
32	<i>Acer negundo</i>	Manitoba Maple	21.1, 21.0, 19.0, 13.5	2.53	Good		Retain	Not within construction footprint
33	<i>Acer negundo</i>	Manitoba Maple	25.8, 23.4	3.10	Good		Retain	Not within construction footprint
34	<i>Acer x freemanii</i>	(<i>Acer rubrum</i> X <i>Acer saccharinum</i>)	41.7	5.00	Good		Retain	Not within construction footprint
35	<i>Acer x freemanii</i>	(<i>Acer rubrum</i> X <i>Acer saccharinum</i>)	98.2, 24.0	11.78	Good		Retain	Not within construction footprint
36	<i>Acer negundo</i>	Manitoba Maple	25.1, 15.8	3.01	Good		Retain	Not within construction footprint
37	<i>Acer negundo</i>	Manitoba Maple	17.3	2.08	Dead		Retain	Not within construction footprint
38	<i>Acer negundo</i>	Manitoba Maple	12.6	1.51	Good		Retain	Not within construction footprint
39	<i>Acer negundo</i>	Manitoba Maple	11.5	1.38	Good		Retain	Not within construction footprint
40	<i>Tilia cordata</i>	Little-leaved Linden	18	2.16	Poor	Main is dead	Retain	Not within construction footprint
41	<i>Morus alba</i>	White Mulberry	21.8	2.62	Good		Remove	Within construction footprint
42	<i>Acer negundo</i>	Manitoba Maple	41	4.92	Good		Remove	Within construction footprint
43	<i>Acer negundo</i>	Manitoba Maple	11.5	1.38	Good		Remove	Within construction footprint
44	<i>Populus deltoides ssp. Deltoides</i>	Eastern Cottonwood	54.5, 43.0	6.54	Good		Remove	Within construction footprint
45	<i>Populus deltoides ssp. Deltoides</i>	Eastern Cottonwood	105.8	12.70	Good		Remove	Within construction footprint
46	<i>Acer negundo</i>	Manitoba Maple	36.9, 35.3, 31.4, 30.0, 13.8	4.43	Good		Retain	Not within construction footprint
47	<i>Morus alba</i>	White Mulberry	34.5, 31.4	4.14	Poor	One stem is split	Retain	Not within construction footprint
48	<i>Acer negundo</i>	Manitoba Maple	32.7, 26.5, 12.6	3.92	Good		Remove	Within construction footprint
49	<i>Acer negundo</i>	Manitoba Maple	24	2.88	Good		Remove	Within construction footprint
50	<i>Acer negundo</i>	Manitoba Maple	28.6, 24.0	3.43	Good		Remove	Within construction footprint
51	<i>Acer negundo</i>	Manitoba Maple	34.0, 18.4	4.08	Good		Remove	Within construction footprint
52	<i>Acer negundo</i>	Manitoba Maple	23.5, 18.6	2.82	Good		Remove	Within construction footprint
53	<i>Acer negundo</i>	Manitoba Maple	26.4, 21.1, 16.2, 15.2	3.17	Good		Remove	Within construction footprint
54	<i>Acer negundo</i>	Manitoba Maple	12.1, 10.3	1.45	Good		Remove	Within construction footprint
55	<i>Populus deltoides ssp. Deltoides</i>	Eastern Cottonwood	59.9, 59.5	7.19	Good		Remove	Within construction footprint
56	<i>Acer rubrum</i>	Red Maple	9.4	1.13	Good		Retain	Not within construction footprint
57	<i>Acer negundo</i>	Manitoba Maple	16.2, 12.7, 10.7	1.94	Good		Remove	Within construction footprint
58	<i>Acer negundo</i>	Manitoba Maple	31.0, 27.2, 14.4	3.72	Good		Remove	Within construction footprint
59	<i>Acer negundo</i>	Manitoba Maple	36.9, 34.2, 24.0, 23.1	4.43	Good		Remove	Within construction footprint
60	<i>Acer negundo</i>	Manitoba Maple	37.7	4.52	Good		Retain	Not within construction footprint

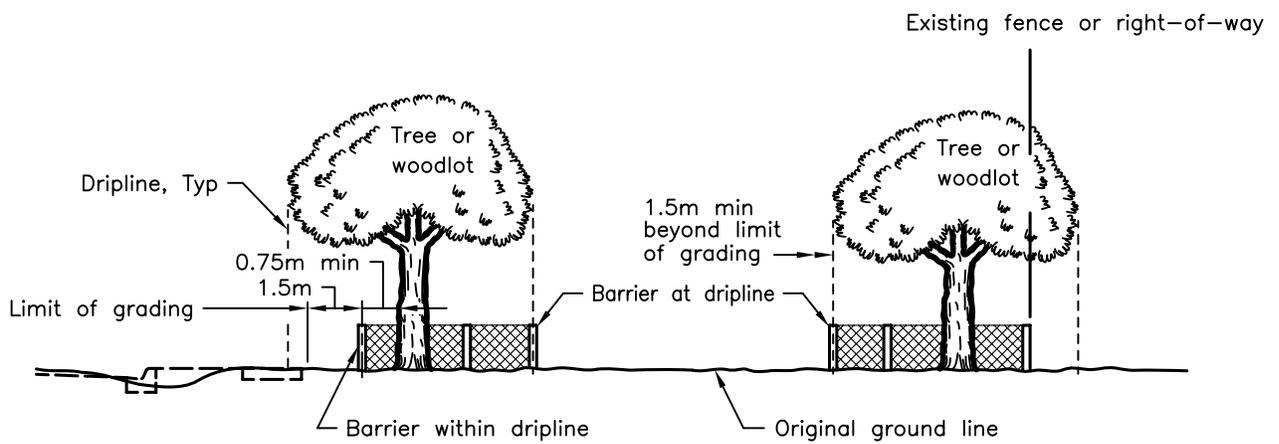
Figure ID	Scientific Name	Common Name	DBH (cm)	Critical Root Zone/Tree Protection Zone (m)	Condition	Level 2 Assessment Notes	Action	Rationale for Removal or Preservation
61	<i>Acer negundo</i>	Manitoba Maple	38.3, 33.3, 32.2	4.60	Good	One snag with cavity	Remove	Within construction footprint
62	<i>Acer negundo</i>	Manitoba Maple	33.0, 32.4, 29.7, 17.1, 12.0	3.96	Good	One snag with cavity	Remove	Within construction footprint
63	<i>Acer negundo</i>	Manitoba Maple	25.5, 15.3	3.06	Poor	Damaged roots, one dead stem	Remove	Within construction footprint
64	<i>Tilia cordata</i>	Little-leaved Linden	11.4	1.37	Good		Remove	Within construction footprint
65	<i>Acer negundo</i>	Manitoba Maple	17.3, 16.9, 16.5, 12.0	2.08	Good		Remove	Within construction footprint
66	<i>Acer saccharinum</i>	Silver Maple	71.0, 12.8, 10.7	8.52	Good		Retain	Not within construction footprint
67	<i>Acer negundo</i>	Manitoba Maple	13.4, 10.3	1.61	Good		Retain	Not within construction footprint
68	<i>Acer saccharinum</i>	Silver Maple	88	10.56	Good		Retain	Not within construction footprint
69	<i>Acer saccharinum</i>	Silver Maple	42.2, 31.3, 12.5	5.06	Good		Retain	Not within construction footprint
70	<i>Acer saccharinum</i>	Silver Maple	61.6	7.39	Good		Retain	Not within construction footprint
71	<i>Ulmus americana</i>	White Elm	12.8	1.54	Good		Retain	Not within construction footprint
72	<i>Acer saccharinum</i>	Silver Maple	91	10.92	Good		Retain	Not within construction footprint
73	<i>Acer saccharinum</i>	Silver Maple	68.9	8.27	Good		Retain	Not within construction footprint
74	<i>Acer saccharinum</i>	Silver Maple	60.5	7.26	Good		Retain	Not within construction footprint
75	<i>Acer saccharinum</i>	Silver Maple	70.9	8.51	Good		Retain	Not within construction footprint
76	<i>Acer saccharinum</i>	Silver Maple	72.2	8.66	Good		Retain	Not within construction footprint
77	<i>Acer saccharinum</i>	Silver Maple	65.1	7.81	Good		Retain	Not within construction footprint
78	<i>Acer x freemanii</i>	(<i>Acer rubrum</i> X <i>Acer saccharinum</i>)	63.5	7.62	Good		Retain	Not within construction footprint
79	<i>Acer saccharinum</i>	Silver Maple	68.6	8.23	Good		Retain	Not within construction footprint
80	<i>Acer saccharinum</i>	Silver Maple	70.9	8.51	Good		Retain	Not within construction footprint
81	<i>Acer saccharinum</i>	Silver Maple	55.3	6.64	Good		Retain	Not within construction footprint
82	<i>Acer x freemanii</i>	(<i>Acer rubrum</i> X <i>Acer saccharinum</i>)	72.6	8.71	Good		Retain	Not within construction footprint
83	<i>Tilia sp.</i>	Linden species	25	3.00	Good	Memorial tree	Retain	Not within construction footprint
84	<i>Tilia sp.</i>	Linden species	19.3	2.32	Good	Memorial tree	Retain	Not within construction footprint
85	<i>Acer x freemanii</i>	(<i>Acer rubrum</i> X <i>Acer saccharinum</i>)	19.0, 14.9, 14.6	2.28	Good	Memorial tree	Retain	Not within construction footprint

Appendix D

Ontario Standard Barrier for Tree Protection



PLAN



SECTION A-A

ONTARIO PROVINCIAL STANDARD DRAWING

Nov 2007

Rev 0

BARRIER FOR TREE PROTECTION



OPSD 220.010