

ARBORIST REPORT & TREE PROTECTION PLAN

Official Plan Amendment and Rezoning Applications

1134 & 1167 Plains Road East, City of Burlington

May 2021

TERRASTORY
environmental consulting inc.

ARBORIST REPORT

Development Application
1134 & 1167 Plains Road East, City of Burlington

Prepared for:

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This report has been prepared by Terrastory Environmental Consulting Inc. (hereinafter "Terrastory") for the client. All information, conclusions, and recommendations contained in this report are subject to the scope and limitations set out in the agreement between Terrastory and the client and qualifications contained in this report. This report shall not be relied upon by any third parties without the prior written consent of Terrastory. Terrastory is not responsible for any injury, loss, or damages arising from improper use of this report by third parties. Excerpts of this report or alterations to this report taken without the authorization of Terrastory invalidates the report and any conclusions therein.

Notwithstanding the determinations of tree health and structural integrity made herein (e.g., good, fair, poor), it must be recognized that all trees (in good health or otherwise) have the potential for failure given adverse weather, damage due to mechanical injury, or other factors that cause stress.

Notwithstanding any recommendations concerning tree preservation or removal made herein, this report does not supersede or expunge any civil or common law property rights as they pertain to shared/boundary trees or trees occurring on adjacent properties. This report does not confirm tree ownership nor authorize the client to encroach or enter onto adjacent properties to destroy or injure trees situated on adjacent properties without the owner's consent.

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1 INTRODUCTION

Terrastory Environmental Consulting Inc. (hereinafter "Terrastory") was retained by Seferian Design Group to prepare this Arborist Report and Tree Protection Plan (TPP) in support of a development application on Plains Road East in Burlington. The Study Area consists of two development phases corresponding with two separate parcels. Phase 1 (1167 Plains Road East) proposes the construction of a 35-storey and 30-storey residential buildings connected by a 3-5 storey podium. This parcel is currently vacant. Phase 2 (1134 Plains Road East) proposes the construction of a 25-storey and 20-storey residential buildings connected by a 3-6 storey podium, which will require demolition of an existing commercial building relocation of a heritage building. Both development phases will be supported by underground parking, landscaping, and amenity space. It is understood that the development application requires an Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA).

Several private and public trees occur within or adjacent to the proposed development area. The purpose of this study is to inventory and characterize trees with the potential to be adversely affected by the proposed development plan (over the short- or long-term), and to provide mitigation measures and other recommendations to address relevant tree protection requirements. The scope and approach of this study are considerate of the City's private tree (By-law No. 02-2020), public tree (By-law 68-2013), and related tree protection policies (Specification No.: SS12A). It is understood that this report will form part of the development application package to be submitted for consideration by the City.

This report has been prepared in the absence of reviewing detailed grading/servicing plans. Minor updates to the recommendations and conclusions of this report and TPP may be required at detailed design.

2 APPROACH AND METHODS

This Arborist Report is composed of three discrete components which are outlined briefly below and further described in the following sections.

- **Conduct a tree inventory and health assessment** capturing trees that may be impacted by the proposed development plan (see **Section 2.1**).
- **Predict the effects** of the application on the assessed trees and ascertain the net effects once mitigation measures and other technical recommendations are implemented (see **Section 2.2**).
- **Determine whether the application considered herein addresses applicable tree protection and related policies** (see **Section 2.3**).

2.1 Tree Inventory

A tree inventory and health assessment was carried out by Terrastory's ISA-certified Arborist and ISA-qualified Tree Risk Assessor (T. Knight) on 20 July 2020. All private trees 10 cm diameter at breast height (DBH) or greater and all municipal trees regardless of size, located within or immediately adjacent to the proposed area of disturbance (e.g., building envelopes, servicing, grading, etc.), were inventoried and assessed from the ground. Trees situated on adjacent private properties near the proposed areas of disturbance were reviewed as necessary and to the extent possible from areas in which access was granted. All assessed trees were: (1) labeled using metal number-stamped tags, (2) identified to species, (3) measured at breast-height (approximately 1.37

metres above ground) with calipers and/or DBH tape, (4) assessed for crown diameter, and (5) assessed for risk features, indicators of decline, and growth constraints (e.g., open wounds, live crown ratio, disease, etc.). None of the assessed trees were cored, probed, or climbed, nor were their roots exposed for detailed assessment.

Based on the information collected an overall visual assessment of tree health and structural integrity as viewed from the ground are provided, supported by preservation/removal direction based on each tree's characteristics (e.g., health, location, ecological value, cultural value, etc.) and the nature of the proposed development plan. Locations of the assessed trees were recorded on-site with a high-accuracy GPS (Mesa II) supported by representative photographs.

Notwithstanding the determinations of tree health and structural integrity made herein (e.g., good, fair, poor), it must be recognized that all trees (in good health or otherwise) have the potential for failure given adverse weather, damage due to mechanical injury, or other factors that cause stress.

2.2 Effects Assessment and Mitigation

Trees may be negatively impacted during construction, grading, and other activities associated with implementation of the proposed development plan via the following pathways:

- Direct tree removal in areas where trees conflict with the development envelopes or areas of site alteration (e.g., grading, etc.).
- Mechanical injury to the trunk, roots, branches, and/or foliage during construction activities.
- Soil compaction within the rooting zone.
- Smothering or exposure of roots due to changes in grade.
- Alterations to any biophysical condition or parameter (e.g., light regime, soil moisture regime, etc.) in which a tree was previously accustomed.

An assessment of the potential for tree impacts associated with implementation of the proposed development plan is provided in **Section 4.2**.

2.3 Tree Protection Policy Context

This Arborist Report has been prepared to demonstrate conformity of the proposed works with the City of Burlington's tree protection requirements. It is recognized that *Planning Act* applications are not expressly subject to the City's private tree protection by-law.

- **By-law 02-2020** – subject to certain exemptions, this By-law prohibits the injury, destruction, or removal of a tree ≥20 cm diameter at breast height (DBH) without authorization via a Tree Permit secured from the Manager of Urban Forestry. This By-law also prohibits the injury, destruction, or removal of more than five (5) trees between 10-20 cm DBH in any one calendar year without a Tree Permit.
- **By-law 68-2013** – this By-law prohibits the injury, destruction, or removal of public trees without authorization via a Tree Permit secured from the City Arborist. The deposition or placement of materials which may impede the free passage of water, air, or nutrients to the roots of a public tree are also prohibited without authorization.
- **Specification No.: SS12A** – this policy supports the implementation of By-law 68-2013 by directing activities adjacent to trees within the City's right-of-way.

Provincial/federal legislative requirements related to the protection of breeding birds and bird nests apply to on-site trees (and vegetation of any size) pursuant to the *Migratory Birds Convention Act* (for designated migratory birds) and *Fish and Wildlife Conservation Act* (for some Corvids and other designated non-migratory birds). Several bat species may roost in cracks/crevices and/or foliage of the larger-diameter on-site trees, some of which (particularly Myotis species and Tri-colored Bat) are afforded protection under the provincial *Endangered Species Act*.

Subsection 10(3) of the provincial *Forestry Act* prohibits the injury or destruction of a tree growing on the boundary of an adjoining property without the neighbouring landowners' consent. Per case law in Ontario a tree is considered shared if any portion of its trunk (i.e., area between the root collar and lowest canopy branch) extends across a property line.

The mitigation measures and technical recommendations offered herein are aimed at demonstrating consistency of the application with the aforementioned municipal, provincial, and federal requirements.

3 TREE INVENTORY AND HEALTH ASSESSMENT

A total of 36 trees within or adjacent to the proposed area of disturbance were inventoried and assessed. The full results of the tree inventory and health assessment are provided in **Appendix 1**. The locations of all trees assessed are shown in **Figure 1**. Select photographs of the assessed trees and Study Area are provided in **Appendix 2**. A brief description of the overall tree composition and conditions observed is provided below and in **Table 1**.

Table 1. Composition and Abundance of Trees within and/or adjacent to the proposed Areas of Development and Disturbance.

Species	Total Assessed	Percentage of Total (%)
American Elm (*Ulmus americana*)	4	11.1
Black Locust (*Robinia pseudoacacia*)	2	5.6
Black Walnut (*Juglans nigra*)	5	13.9
Common Lilac (*Syringa vulgaris*)	1	2.8
Honey Locust (*Gleditsia triacanthos*)	6	16.7
Norway Maple (*Acer platanoides*)	15	41.7
Siberian Elm (*Ulmus pumila*)	2	5.6
White Birch (*Betula papyrifera*)	1	2.8
TOTAL	**36**	**~100**

The Phase 1 (1167 Plains Road East) Study Area is devoid of trees ≥10 cm DBH. A few large Siberian Elm occur just west of the parcel boundary within the Queen Elizabeth Way (QEW) road allowance. Smaller diameter (<10 cm DBH) Staghorn Sumac (*Rhus typhina*), Manitoba Maple (*Acer negundo*), and Siberian Elm were also documented. As no trees are present, this portion of the Study Area is not shown on the TPP.

The Phase 2 (1134 Plains Road East) Study Area contains all 36 trees inventoried and assessed. Norway Maple (*Acer platanoides*) was the most abundant tree assessed and forms nearly a monotypic stand within the road allowance of Fairview Street and QEW on-ramp. Many of the Norway Maple are in good to fair health but display extensive root damage as a result of mower injuries (due to their shallow root systems). Most also showed signs of Tar Spot (*Rhytisma* spp.), which is a common and generally non-fatal fungal pathogen on maples. A few large Black Locust (*Robinia pseudoacacia*), Black Walnut, and Honey Locust (*Gleditsia triacanthos*) occur within an amenity space behind the heritage and commercial buildings.

4 TREE EFFECTS ASSESSMENT AND MITIGATION

4.1 Proposed Application and Development Plan

The following tree effects assessment provides an evaluation of the potential for the proposed development plan to result in negative effects to regulated trees and offers several technical recommendations to mitigate such effects. The effects assessment herein is based on the site plan and related drawings which are overlaid with the assessed tree locations in **Figure 1**. The proposed development plan consists of the following elements:

- Demolition of a commercial building and relocation of a heritage building.
- Construction of 4 condominium towers.
- Municipal servicing from Plains Road East.
- New driveway entrances from Plains Road East.
- Above-grade and underground parking.
- Outdoor amenity areas including workout areas, seating and shade structures, playgrounds, and a public art exhibit.
- Restoration/buffer plantings and native pollinator gardens.

The major project phases for which effects on trees are assessed include demolition, site preparation (e.g., clearing/grubbing, grading, etc.), construction, and servicing.

4.2 Tree Effects Assessment and Technical Recommendations

It is understood that additional project details and plans will be available for review at Site Plan Approval. In the absence of a grading plan and other detailed designs, both the tree effects assessment described in this section and TPP (**Figure 1**) should be considered preliminary and subject to future refinement.

Based on the proposed site plan shown in **Figure 1**, a total of 20 assessed trees ≥10 cm DBH require removal to implement the proposed development plan. One tree is municipal (#148) while the remaining 19 are privately owned by the Applicant. All of these trees overlap with the proposed development envelope (e.g., footprint of the proposed building, parking, etc.). There is limited opportunity to retain these trees given the proposed intensification of the site. This determination of tree preservation potential is based on overlaying the site plan upon the assessed tree locations as determined by Terrastory staff in the field via GPS.

All necessary tree removals should be undertaken in a way that minimizes potential impacts to nesting birds or roosting bats during their activity periods, as recommended below:

- **All necessary tree removals will be completed outside the primary bird nesting and bat activity periods (i.e., to be completed between October 1 and March 31). If limited tree removal is required during this period, a survey will be conducted by a qualified Ecologist within two (2) days of the commencement of tree removal activities to determine habitat suitability and/or confirm the presence/absence of nesting birds and roosting bats. Should a nesting bird or roosting bat be identified, a mitigation plan must be developed (which may include discussions with relevant agencies) to address regulatory requirements.**

Replacement of trees approved for removal is to be undertaken consistent with City policies. A Landscape Plan has been prepared by Seferian Design Group (SDG), which incorporates native restoration/buffer plantings and other ecological enhancements (e.g., native pollinator garden, etc.). The City typically requires one (1) replacement tree for every 10 cm of DBH removed, or (where insufficient room for replacement trees is available) $400 per tree removed.

Protection of the remaining 16 assessed trees may be possible subject to the limit of on-site grading and review of additional project information at detailed design. All of these trees are municipal and occur in the adjacent road allowance of Plains Road East, Fairview Street, or QEW on-ramp. Tree protection opportunities are to be confirmed at Site Plan Approval. If retention is deemed feasible, it is anticipated that root disturbance to the adjacent municipal trees will occur given grading to the property limits, which may necessitate root sensitive excavation measures. While it is recognized that the City's "Private Tree Inventory and Compensation Form" is typically submitted to assist City review of Arborist Reports, the extent of tree impacts cannot be accurately ascertained for this project without detailed grading/servicing plans.

The most effective approach to protecting retainable trees situated in proximity to development and/or site alteration activities is the installation of tree protection (i.e., hoarding) fence consistent with the City's Specification No. SS12A. Should the adjacent municipal trees be considered retainable at detailed design, the following measures (minimum) would be required:

- **Construction activities within the Study Area will treat all trees recommended for retention on Figure 1 as constraints.**

- **Tree protection fence will be installed per Figure 1 prior to the commencement of site preparation and other construction activities. No development, site alteration (e.g., grading, excavation, soil stockpiling, etc.), machinery movement, or storage of equipment or materials will occur within any area isolated by tree protection fence.**

- **A qualified Arborist will inspect the tree protection fence following installation and prior to the commencement of site preparation or other construction activities.**

- **Tree protection fence will remain in place and be in good condition during implementation of the proposed development plan. Tree protection fence will not be removed until all site disturbances associated with the proposed development plan have concluded.**

Root-sensitive excavation measures may also be required depending on the proposed grade changes and limit of disturbance.

5 CONCLUSIONS

A total of 36 trees were inventoried and assessed at 1134/1167 Plains Road East in Burlington. Of these, a total of 20 assessed trees require removal to support the proposed development plan, which involves the construction of four apartment buildings, above-grade and underground parking, and related uses. Several additional trees occurring in the adjacent municipal road allowances have the potential for root injury given their close proximity to areas in which development or site alteration are proposed. Any approved tree removals must be addressed through replacements (typically one replacement tree for every 10 cm diameter removed) and/or cash-in-lieu ($400) consistent with City requirements.

Approval of proposed tree impacts/removals will be required from the City as part of the OPA/ZBA submission. The extent of tree impacts/removals is to be confirmed at Site Plan Approval once grading, servicing, and other detailed plans are available for review. As part of the application review process, all technical recommendations offered herein should be incorporated into any necessary planning approvals that facilitate implementation of the development plan.



TREE REMOVAL, PRESERVATION, AND REPLACEMENT NOTES:

GENERAL:

1. CONSTRUCTION ACTIVITIES WILL TREAT ALL TREES RECOMMENDED FOR RETENTION SHOWN HEREIN AS CONSTRAINTS.

TREE REMOVAL:

2. ALL NECESSARY TREE REMOVALS WILL BE COMPLETED OUTSIDE THE PRIMARY BIRD NESTING AND BAT ACTIVITY PERIODS (I.E., TO BE COMPLETED BETWEEN OCTOBER 1 AND MARCH 31). IF LIMITED TREE REMOVAL IS REQUIRED DURING THIS PERIOD, A SURVEY WILL BE CONDUCTED BY A QUALIFIED ECOLOGIST WITHIN TWO (2) DAYS OF THE COMMENCEMENT OF TREE REMOVAL ACTIVITIES TO DETERMINE HABITAT SUITABILITY AND/OR CONFIRM THE PRESENCE/ABSENCE OF NESTING BIRDS AND ROOSTING BATS. SHOULD A NESTING BIRD OR ROOSTING BAT BE IDENTIFIED, A MITIGATION PLAN MUST BE DEVELOPED (WHICH MAY INCLUDE DISCUSSIONS WITH RELEVANT AGENCIES) TO ADDRESS REGULATORY REQUIREMENTS.

TREE PROTECTION FENCE:

3. TREE PROTECTION FENCE (SEE SPEC. NO. SS12A BELOW) WILL BE INSTALLED PRIOR TO THE COMMENCEMENT OF SITE PREPARATION AND OTHER CONSTRUCTION ACTIVITIES. NO DEVELOPMENT, SITE ALTERATION (E.G., GRADING, EXCAVATION, SOIL STOCKPILING, ETC.), MACHINERY MOVEMENT, OR STORAGE OF EQUIPMENT OR MATERIALS WILL OCCUR WITHIN ANY AREA ISOLATED BY TREE PROTECTION FENCE.

4. A QUALIFIED ARBORIST WILL INSPECT THE TREE PROTECTION FENCE FOLLOWING INSTALLATION AND PRIOR TO THE COMMENCEMENT OF SITE PREPARATION OR OTHER CONSTRUCTION ACTIVITIES.

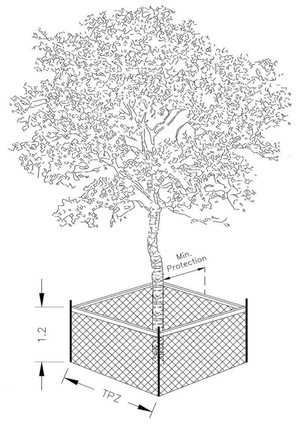
5. TREE PROTECTION FENCE WILL REMAIN IN PLACE AND BE IN GOOD CONDITION DURING IMPLEMENTATION OF THE PROPOSED DEVELOPMENT PLAN. TREE PROTECTION FENCE WILL NOT BE REMOVED UNTIL ALL SITE DISTURBANCES ASSOCIATED WITH THE PROPOSED DEVELOPMENT PLAN HAVE CONCLUDED.

TREE REPLACEMENT:

6. TREES ARE TO BE REPLACED CONSISTENT WITH THE LANDSCAPE PLAN BY SEFERIAN DESIGN GROUP.

Tree Protection and Preservation
Specification No.: SS12A

Detail TP-1 – Tree Protection Detail.



Trunk Diameter (DBH) [2]	Minimum Tree Protection Zone (MTPZ) Distances Required [3]	Critical Root Zone (CRZ) Distances Required [3&4]
< 10 cm	1.8 m	1.8 m
11 - 40 cm	2.4 m	4.0 m
41 - 50 cm	3.0 m	5.0 m
51 - 60 cm	3.6 m	6.0 m
61 - 70 cm	4.2 m	7.0 m
71 - 80 cm	4.8 m	8.0 m
81 - 90 cm	5.4 m	9.0 m
91 - 100+ cm	6.0 m	10.0 m

NOTES:

[1] The roots of a tree can extend from the trunk to approximately 2-3 times the distance of the drip line.
[2] Diameter at breast height (DBH) is the measurement of tree trunk taken at 1.4 metres above ground.
[3] Minimum Tree Protection Zone and Critical Root Zone distances are to be measured from the outside edge of the tree base towards the drip line and may be limited by an existing paved surface, provided the existing paved surface remains intact throughout the construction work and is subject to Section 6 of this specification.
[4] Where work is being performed beyond the Minimum Tree Protection Zone but within the Critical Root Zone the works are subject to Section 8 of this specification.

TREE PROTECTION BARRIER

1. The required barrier is a 1.2 metre (4 ft) high orange plastic web snow fencing on 2" x 4" frame. Where orange plastic web snow fencing creates a restriction to sightlines, page wire fencing with reflective tape can be used.
2. Tree protection barriers are to be erected prior to the commencement of any construction or grading activities on the site and are to remain in place throughout the entire duration of the project. The barriers shall be maintained erect and in good repair throughout the duration of construction operations with breaks and unsupported sections repaired immediately. Tree protection may be not be removed prior to the completion of construction without written authorization from the Manager of Urban Forestry or designate.
3. All supports and bracing used to safely secure the barrier should be located outside the MTPZ. All supports and bracing should minimize damage to roots.
4. Where some fill or excavated material must be temporarily located near a MTPZ, a wooden barrier with silt fencing must be used to ensure no material enters the MTPZ.
5. No materials or fill may be stored within the MTPZ.
6. Equipment or vehicles shall not be operated, parked, repaired, or refueled within the MTPZ.
7. No construction activity, grade changes, surface treatment or excavations of any kind is permitted within the MTPZ without written authorization from the Manager of Urban Forestry or designate.
8. A laminated Minimum Tree Protection Zone sign (See Detail TP-3 – Minimum Tree Protection Zone Sign) must be attached to the side of the Tree Protection where it will be visible by persons entering the site. Minimum size must be 10"x14".


Burlington

TREE PROTECTION ZONE (TPZ)

No equipment or vehicles shall be operated, parked, repaired or refueled within the Tree Protection Zone.

No construction activity, grade changes, surface treatment or excavations of any kind is permitted within the Tree Protection Zone.

No materials or fill may be stored within the Tree Protection Zone.

This tree protection barrier must not be removed prior to the completion of construction without written authorization from the City of Burlington, Urban Forestry Department.

For information, contact:
City of Burlington, Development and Infrastructure Division,
905-335-7642.

Tree Protection and Preservation Specification No.: SS12A

Detail TP-3 - Minimum Tree Protection Zone Sign

Source: City of Burlington

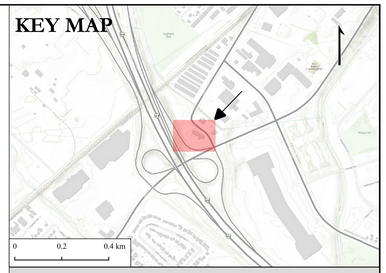
TREE INVENTORY SPREADSHEET:

Tag No.	Common Name	Scientific Name	Ownership[1]	DBH (cm)	Crown Radius (m)	Risk Features, Decline Indicators, and Growth Constraints	Health Condition[2]	Structural Condition[2]	Tree Preservation Direction
148	Common Lilac	*Syringa vulgaris*	Municipal	5	1	epicormic shoot on previous pruning cut, minor tip dieback	good	good	**Remove** - conflicts with proposed sidewalk.
149	Norway Maple	*Acer platanoides*	Municipal	35	5	mower damage on shallow root, tar spot	good	good	Potential for retention to be confirmed through review of future grading plan.
150	Norway Maple	*Acer platanoides*	Municipal	37	6	frost crack sealed, included bark at 2 m, pruned, mower damage, tar spot	fair/good	fair/good	Potential for retention to be confirmed through review of future grading plan.
151	American Elm	*Ulmus americana*	Municipal	8, 6, 6	4	poor stem attachment, overtopped	fair	fair	Potential for retention to be confirmed through review of future grading plan.
152	American Elm	*Ulmus americana*	Municipal	4 6	2	poor stem attachment, overtopped	fair	fair	Potential for retention to be confirmed through review of future grading plan.
153	Norway Maple	*Acer platanoides*	Municipal	40	6	tar spot, girdling root	good	good	Potential for retention to be confirmed through review of future grading plan.
154	American Elm	*Ulmus americana*	Municipal	7 6	4	poor stem attachment, overtopped	fair	fair	Potential for retention to be confirmed through review of future grading plan.
155	American Elm	*Ulmus americana*	Municipal	11, 8, 5	4	poor stem attachment, overtopped	fair	fair	Potential for retention to be confirmed through review of future grading plan.
156	Norway Maple	*Acer platanoides*	Municipal	39	5		good	good	Potential for retention to be confirmed through review of future grading plan.
157	Norway Maple	*Acer platanoides*	Municipal	38	6	mower damage at base, dead branches, pruned, tar spot	fair	fair	Potential for retention to be confirmed through review of future grading plan.
158	Norway Maple	*Acer platanoides*	Municipal	40	7	dead branches, large girdling root, pruned, tar spot	fair	fair	Potential for retention to be confirmed through review of future grading plan.
159	Norway Maple	*Acer platanoides*	Municipal	37	7	girdling root, minor deadwood, tar spot, pruned	fair/good	fair/good	Potential for retention to be confirmed through review of future grading plan.
160	Norway Maple	*Acer platanoides*	Municipal	44	7	damage on exposed roots, girdling root, included branches, tar spot, pruned	fair	fair	Potential for retention to be confirmed through review of future grading plan.
161	Norway Maple	*Acer platanoides*	Municipal	52	7	partially callused wound with rot and exposed heartwood, included bark, large girdling root, minor deadwood, pruned, tar spot	fair	fair	Potential for retention to be confirmed through review of future grading plan.
162	Norway Maple	*Acer platanoides*	Municipal	64	7	tar spot, large open wound, girdling root, pruned	poor	poor	Potential for retention to be confirmed through review of future grading plan.
163	Norway Maple	*Acer platanoides*	Municipal	38	7	minor dead branches mostly shaded, lions tailed, pruned	good	fair	Potential for retention to be confirmed through review of future grading plan.
164	Norway Maple	*Acer platanoides*	Municipal	54	7	girdling root, shaded inner branches dead, damage on exposed roots, tar spot, pruned	fair/good	fair/good	Potential for retention to be confirmed through review of future grading plan.
165	Norway Maple	*Acer platanoides*	Municipal	44	7	girdling root, pruned, tar spot	good	good	Potential for retention to be confirmed through review of future grading plan.
166	Norway Maple	*Acer platanoides*	Municipal	46	7	sealed cracks, girdling root, pruned, tar spot	good	good	Potential for retention to be confirmed through review of future grading plan.
167	Norway Maple	*Acer platanoides*	Municipal	50	7	girdling root, pruned, tar spot	good	good	Potential for retention to be confirmed through review of future grading plan.
168	Black Walnut	*Juglans nigra*	Municipal	30	5		good	good	Potential for retention to be confirmed through review of future grading plan.
169	Honey Locust	*Gleditsia triacanthos*	Applicant	67	10	portion of root zone beneath parking lot	good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
170	Black Walnut	*Juglans nigra*	Applicant	25, 30	8	severe included bark	good	poor	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
171	Black Walnut	*Juglans nigra*	Applicant	25	5		good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
172	Black Walnut	*Juglans nigra*	Applicant	28	5		good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
173	Black Walnut	*Juglans nigra*	Applicant	24	5		good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
174	Honey Locust	*Gleditsia triacanthos*	Applicant	61	10	portion of root zone beneath pavement	good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
175	Honey Locust	*Gleditsia triacanthos*	Applicant	52	10	portion of root zone beneath pavement	good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
176	Honey Locust	*Gleditsia triacanthos*	Applicant	60	9	epicormic shoots at pruned branch stubs	good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
177	White Birch	*Betula papyrifera*	Applicant	24, 24, 20, 15	5	poor stem attachment at base with included bark	good	fair/poor	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
178	Siberian Elm	*Ulmus pumila*	Applicant	82, 38, 31	11	included bark at 1 m, bacterial ooze, insect damage on foliage	fair	poor	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
179	Honey Locust	*Gleditsia triacanthos*	Applicant	54	9	epicormic shoots at pruned branch stubs	good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
180	Black Locust	*Robinia pseudoacacia*	Applicant	32, 27	5	included bark at base	good	poor	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
181	Honey Locust	*Gleditsia triacanthos*	Applicant	51	7	included bark at 3 m	good	fair/poor	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
182	Black Locust	*Robinia pseudoacacia*	Applicant	36, 44, 40, 42, 33	8	poor stem attachment (coppiced), 2 limbs braced	good	poor	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
183	Siberian Elm	*Ulmus pumila*	Municipal	45	6	included bark at 2 m, situated on opposite side of fence	good	fair/poor	Potential for retention to be confirmed through review of future grading plan.

[1] – All determinations of tree ownership are approximate and have been made in the absence of on-site direction from a licensed surveyor.

[2] - Notwithstanding the determinations of tree health and structural integrity made herein (e.g., good, fair, poor), it must be recognized that all trees (in good health or otherwise) have the potential for failure given adverse weather, damage due to mechanical injury, or other factors that cause stress.

KEY MAP



Legend

Tree Assessment

- Tree to be Retained (root injury anticipated due to grading)
- Tree to be Removed
- Crown of Tree to be Retained but Injured
- Crown of Tree to be Removed
- Tree Protection Fence

GENERAL NOTES:
-Tree inventory completed by ISA-certified Arborist T. Knight on 20 July 2020.
-The tree health and structural assessment was undertaken consistent with accepted arboricultural techniques. None of the assessed trees were cored, probed, or climbed, nor were their roots exposed for detailed assessment.
-Notwithstanding the determinations of tree health and structural integrity made herein (e.g., good, fair, poor), it must be recognized that all trees (in good health or otherwise) have the potential for failure given adverse weather, damage due to mechanical injury, or other factors that cause stress.
-Notwithstanding any recommendations concerning tree preservation or removal made herein, this plan does not supersede or expunge any civil or common law property rights as they pertain to shared/boundary trees or trees occurring on adjacent properties. This plan does not confirm tree ownership nor authorize the client to encroach or enter onto adjacent properties to destroy or injure trees situated on adjacent properties without the owner's consent.
-Verify all drawing dimensions.
-Numeric scale is for a 24x36 inch print. Do not scale.
-Contractor to report any discrepancies, errors, or omissions to the project Arborist before proceeding.
-This Tree Protection Plan may require updates following the preparation and review of additional designs/plans which form part of a future Site Plan Application (e.g., Grading Plan, etc.)

TERRASTORY
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Specialists in Natural Heritage, Tree Protection, and Environmental Policy

N

CERTIFIED ARBORIST ISA
Tristan Knight ™
#ON-1663A

1:400

0 10 20 30 m

Location:
1134/1167 Plains Road East,
City of Burlington

Project No.: 2065

Figure 1:
Tree Protection Plan

Date: 2021-04-29

By: TK **Checked:** n/a

Orthophotograph Date: n/a

Appendix 1. Tree Inventory and Health Assessment

Tag No.	Common Name	Scientific Name	Ownership[1]	DBH (cm)	Crown Radius (m)	Risk Features, Decline Indicators, and Growth Constraints	Health Condition[2]	Structural Condition[2]	Tree Preservation Direction
148	Common Lilac	*Syringa vulgaris*	Municipal	5	1	epicormic shoot on previous pruning cut, minor tip dieback	good	good	**Remove** - conflicts with proposed sidewalk.
149	Norway Maple	*Acer platanoides*	Municipal	35	5	mower damage on shallow root, tar spot	good	good	Potential for retention to be confirmed through review of future grading plan.
150	Norway Maple	*Acer platanoides*	Municipal	37	6	frost crack sealed, included bark at 2 m, pruned, mower damage, tar spot	fair/good	fair/good	Potential for retention to be confirmed through review of future grading plan.
151	American Elm	*Ulmus americana*	Municipal	8, 6, 6	4	poor stem attachment, overtopped	fair	fair	Potential for retention to be confirmed through review of future grading plan.
152	American Elm	*Ulmus americana*	Municipal	4 6	2	poor stem attachment, overtopped	fair	fair	Potential for retention to be confirmed through review of future grading plan.
153	Norway Maple	*Acer platanoides*	Municipal	40	6	tar spot, girdling root	good	good	Potential for retention to be confirmed through review of future grading plan.
154	American Elm	*Ulmus americana*	Municipal	7 6	4	poor stem attachment, overtopped	fair	fair	Potential for retention to be confirmed through review of future grading plan.
155	American Elm	*Ulmus americana*	Municipal	11, 8, 5	4	poor stem attachment, overtopped	fair	fair	Potential for retention to be confirmed through review of future grading plan.
156	Norway Maple	*Acer platanoides*	Municipal	39	5		good	good	Potential for retention to be confirmed through review of future grading plan.
157	Norway Maple	*Acer platanoides*	Municipal	38	6	mower damage at base, dead branches, pruned, tar spot	fair	fair	Potential for retention to be confirmed through review of future grading plan.
158	Norway Maple	*Acer platanoides*	Municipal	40	7	dead branches, large girdling root, pruned, tar spot	fair	fair	Potential for retention to be confirmed through review of future grading plan.
159	Norway Maple	*Acer platanoides*	Municipal	37	7	girdling root, minor deadwood, tar spot, pruned	fair/good	fair/good	Potential for retention to be confirmed through review of future grading plan.
160	Norway Maple	*Acer platanoides*	Municipal	44	7	damage on exposed roots, girdling root, included branches, tar spot, pruned	fair	fair	Potential for retention to be confirmed through review of future grading plan.
161	Norway Maple	*Acer platanoides*	Municipal	52	7	partially callused wound with rot and exposed heartwood, included bark, large girdling root, minor deadwood, pruned, tar spot	fair	fair	Potential for retention to be confirmed through review of future grading plan.
162	Norway Maple	*Acer platanoides*	Municipal	64	7	tar spot, large open wound, girdling root, pruned	poor	poor	Potential for retention to be confirmed through review of future grading plan.
163	Norway Maple	*Acer platanoides*	Municipal	38	7	minor dead branches mostly shaded, lions tailed, pruned	good	fair	Potential for retention to be confirmed through review of future grading plan.
164	Norway Maple	*Acer platanoides*	Municipal	54	7	girdling root, shaded inner branches dead, damage on exposed roots, tar spot, pruned	fair/good	fair/good	Potential for retention to be confirmed through review of future grading plan.

Tag No.	Common Name	Scientific Name	Ownership[1]	DBH (cm)	Crown Radius (m)	Risk Features, Decline Indicators, and Growth Constraints	Health Condition[2]	Structural Condition[2]	Tree Preservation Direction
165	Norway Maple	*Acer platanoides*	Municipal	44	7	girdling root, pruned, tar spot	good	good	Potential for retention to be confirmed through review of future grading plan.
166	Norway Maple	*Acer platanoides*	Municipal	46	7	sealed cracks, girdling root, pruned, tar spot	good	good	Potential for retention to be confirmed through review of future grading plan.
167	Norway Maple	*Acer platanoides*	Municipal	50	7	girdling root, pruned, tar spot	good	good	Potential for retention to be confirmed through review of future grading plan.
168	Black Walnut	*Juglans nigra*	Municipal	30	5		good	good	Potential for retention to be confirmed through review of future grading plan.
169	Honey Locust	*Gleditsia triacanthos*	Applicant	67	10	portion of root zone beneath parking lot	good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
170	Black Walnut	*Juglans nigra*	Applicant	25, 30	8	severe included bark	good	poor	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
171	Black Walnut	*Juglans nigra*	Applicant	25	5		good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
172	Black Walnut	*Juglans nigra*	Applicant	28	5		good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
173	Black Walnut	*Juglans nigra*	Applicant	24	5		good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
174	Honey Locust	*Gleditsia triacanthos*	Applicant	61	10	portion of root zone beneath pavement	good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
175	Honey Locust	*Gleditsia triacanthos*	Applicant	52	10	portion of root zone beneath pavement	good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
176	Honey Locust	*Gleditsia triacanthos*	Applicant	60	9	epicormic shoots at pruned branch stubs	good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
177	White Birch	*Betula papyrifera*	Applicant	24, 24, 20, 15	5	poor stem attachment at base with included bark	good	fair/poor	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
178	Siberian Elm	*Ulmus pumila*	Applicant	82, 38, 31	11	included bark at 1 m, bacterial ooze, insect damage on foliage	fair	poor	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
179	Honey Locust	*Gleditsia triacanthos*	Applicant	54	9	epicormic shoots at pruned branch stubs	good	good	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
180	Black Locust	*Robinia pseudoacacia*	Applicant	32, 27	5	included bark at base	good	poor	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
181	Honey Locust	*Gleditsia triacanthos*	Applicant	51	7	included bark at 3 m	good	fair/poor	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.

Tag No.	Common Name	Scientific Name	Ownership[1]	DBH (cm)	Crown Radius (m)	Risk Features, Decline Indicators, and Growth Constraints	Health Condition[2]	Structural Condition[2]	Tree Preservation Direction
182	Black Locust	*Robinia pseudoacacia*	Applicant	36, 44, 40, 42, 33	8	poor stem attachment (coppiced), 2 limbs braced	good	poor	**Remove** - conflicts with proposed development evnvelope, retention opportunities are low.
183	Siberian Elm	*Ulmus pumila*	Municipal	45	6	included bark at 2 m, situated on opposite side of fence	good	fair/poor	Potential for retention to be confirmed through review of future grading plan.

[1] - All determinations of tree ownership are approximate and have been made in the absence of on-site direction from a licensed surveyor.

[2] - Notwithstanding the determinations of tree health and structural integrity made herein (e.g., good, fair, poor), it must be recognized that all trees (in good health or otherwise) have the potential for failure given adverse weather, damage due to mechanical injury, or other factors that cause stress.

Appendix 2. Representative Photographs



Photo 1. Tree #148 looking towards Plains Road East (20 July 2020).



Photo 2. Municipal trees along the adjacent road allowance (20 July 2020).



Photo 3. Municipal trees along the adjacent road allowance (20 July 2020).



Photo 4. Tree #169 looking southwest (20 July 2020).



Photo 5. Trees #174-175 (20 July 2020).



Photo 6. Trees #171-173 (20 July 2020).



Photo 7. Tree #182 (20 July 2020).



Photo 8. 1167 Plains Road East, devoid of trees ≥10 cm DBH (20 July 2020).