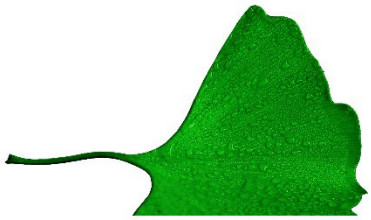
Arborist Report

Waterloo Hyatt Hotel
380 Hagey Boulevard,
Waterloo, ON



adesso design inc
landscape architecture

April 11, 2025

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BACKGROUND

The Subject Site is located within R+T Park in Waterloo, ON, north of Columbia Street West and south of Beringer Road. The site is an undeveloped parcel within a business park with open space/parkland nearby. Other surrounding land uses include institutional, low-density residential, and commercial.

The proposed work includes excavation, grading, and construction of a nine (9) storey mixed use building, surface parking, and associated utility connections.

This report, along with the accompanying Tree Protection Plan (by adesso design inc.), intends to satisfy the City of Waterloo requirements for an Arborist Report and any necessary tree-related permit applications.

METHODS

Trunk size was measured as diameter at breast height (DBH, measured 1.37 m above grade), in accordance with protocols set by the International Society of Arboriculture and adopted by the City of Waterloo. All trees with a trunk diameter equal to or greater than 10cm for each category below have been included in this report. The trunk diameter of trees with more than one stem is the sum of all stems measured at 1.37m above grade.

City of Waterloo Tree Ownership Categories:

1. "Subject Site Tree": Trees situated on private property on the subject site, with a diameter at breast height of ten centimeters or greater
2. "Neighbouring Tree": Trees situated on a neighbouring private property, within 6m of the subject site, with a diameter at breast height of ten centimeters or greater
3. "City Tree": Tree with its trunk located wholly or partially on City owned property that will reach at least 4.5m at maturity;
4. "Boundary Tree": Trees, any part of whose trunk is growing across one or more property lines.

This report documents the following:

- Biological data (i.e., species, size, condition, notable observations) for all trees,
- Interpretation of the potential impact of the proposed works on the inventoried trees,
- Recommendations for preservation or removal of individual trees based on the nature of the proposed work, the current health of the tree, and the susceptibility/tolerance of the tree species to various stresses/insults related to construction and other sources,
- Recommendations for protective actions to be taken to mitigate construction-related damage to existing trees to be preserved, and
- Compensation for Trees to be removed as required.

This report has been prepared in accordance with the following applicable municipal standards, policies, and by-laws of the City of Waterloo:

- City of Waterloo Protection of Trees on City Property By-law 2014-078, July 2014

INVENTORY DATA

Date/Time: March 28, 2025 8:30 a.m.
Relative Part of Growing Season: Budding
Weather Conditions: Overcast 3ºC

TABLE 1. SUMMARY OF TREES INVENTORIED

Tree Ownership Category	Quantity & Species		Count
1. Subject Site Trees	4 Russian Olive 1 Balsam Poplar	subtotal	5
2. Neighbouring Trees	7 Autumn Blaze Maple 1 Sugar Maple 1 Basswood 1 Littleleaf Linden 1 Colorado Spruce 5 White Spruce 2 Eastern Hackberry 3 Eastern Redcedar 1 Red Oak 1 Thornless Honeylocust	subtotal	23
3. City Trees	1 Thornless Honeylocust 1 Canadian Serviceberry 1 Red Oak	subtotal	3
4. Boundary Trees	none	subtotal	0
		total	31



Tree 1 - Neighbouring



Tree 2 - Neighbouring



Tree 3 - Neighbouring



Tree 4 – Subject Site
Tree 5 - Neighbouring



Tree 7 – Neighbouring



Tree 8 – Neighbouring



Tree 9 – Neighbouring



Tree 10 – Neighbouring



Tree 11 – Neighbouring



Tree 12 – Subject Site



Trees 13,14,15 - Neighbouring



Trees 16,17,18 - Neighbouring



Tree 19 – Public (ROW)



Tree 20 – Public (ROW)



Tree 21 – (Public ROW)



Tree 22 – Subject Site



Tree 23 – Neighbouring



Trees 24,25,26 – Neighbouring



Tree 24 – Stem Damage



Tree 25 – Stem Damage



Trees 27,28,29 - Neighbouring



Tree 31 – Neighbouring

OVERALL FINDINGS

A total of fourteen (31) individual trees were recorded at the time of inventory.

Inventoried trees were a mix of native and non-native species, some of which exhibited signs of declining vigor and poor form. No imminently hazardous trees were found during inventory.

due to grapevine competition and conflicts with existing site features (i.e., chain link fence).

Most of the inventoried trees appear to landscape trees (i.e., intentionally planted). Inventoried trees are young to maturing in age.

Refer to appendix a for individual tree data.

TREES RECOMMENDED FOR PRESERVATION

Trees recommended for preservation have been assessed using one or more of the following criteria:

- Location sufficiently distanced from proposed site works and/or construction related stresses;
- Current health condition is acceptable;
- Tree poses a low hazard level to person or property; and
- General species tolerance to construction-related and other anticipated stressors

TABLE 2. SUMMARY OF TREES RECOMMENDED FOR PRESERVATION

Tree Ownership Category	Quantity & Species	Count	
1. Subject Site Trees	none	subtotal	0
2. Neighbouring Trees	7 Autumn Blaze Maple 1 Sugar Maple 1 Basswood 1 Littleleaf Linden 1 Colorado Spruce 5 White Spruce 2 Eastern Hackberry 3 Eastern Redcedar 1 Red Oak 1 Thornless Honeylocust	subtotal	23
3. City Trees	1 Thornless Honeylocust 1 Canadian Serviceberry 1 Red Oak	subtotal	3
4. Boundary Trees	none	subtotal	0
		total	26

Twenty-six (26) trees are recommended for preservation, some with minor to moderate degrees of encroachment due to proximity to the proposed work. All Neighbouring Trees and City Trees are recommended for preservation.

Refer to Tree Protection Plan (prepared by adesso design inc.) for location and extent of proposed Tree Protection Fence.

TREES RECOMMENDED FOR REMOVAL

Trees recommended for removal have been assessed using one or more of the following criteria:

- Location is in conflict with proposed works to a degree that would compromise the long term structural and/or health integrity
- Current health condition suggests tree is undergoing significant decline and/or death
- Potential impacts from proposed works will cause the tree to become a hazard to person or property
- General species intolerance of construction-related and other anticipated stressors

TABLE 3 SUMMARY OF TREES RECOMMENDED FOR REMOVAL

Tree Ownership Category	Quantity & Species	Count	
1. Subject Site Trees	4 Russian Olive 1 Balsam Poplar	subtotal	5
2. Neighbouring Trees	none	subtotal	0
3. City Trees	none	subtotal	0
4. Boundary Trees	none	subtotal	0
		total	5

Five (5) trees are recommended for removal due to direct conflict with the proposed work (i.e., full root zone encroachment). All trees recommended for removal are Subject Site trees.

Trees #3, #4, and #6 (Russian Olive) are recommended for removal due to a significant degree of encroachment into their respective Tree Protection Zones by proposed grading and parking lot construction. These three trees were found to have moderate to significant structural concerns including leans, included bark, and overall poor form. In the context of the proposed work, it is unlikely that trees #3, #4, and #6 would be able to recover from sustained injuries.

Tree #12 (Balsam Poplar) is in direct conflict with the proposed parking lot. It is likely that the root system of Tree #12 extends far beyond the tree's minimum Tree Protection Zone given the Subject Site is currently an undeveloped parcel (i.e. no pavement is restricting root growth). For this reason, the impact of grading and installation of the parking lot will likely cause severe damage to the tree's root system. Tree #12 is therefore recommended for removal due to direct conflict with the proposed parking lot.

Tree #22 (Russian Olive) is recommended for removal due to direct conflict with the proposed building footprint.

TREE PROTECTION AND MITIGATION MEASURES

The impacts to trees from the construction process can be severe and are often latent. Mechanical damage to tree structures (i.e., trunk, roots, and branches) as well as soil compaction from equipment, staging, material storage, and altered drainage patterns can

cause potentially fatal impacts that may not become apparent until long-after construction is completed.

All trees to be preserved are to be protected to the satisfaction of the City of Waterloo Urban Forestry prior to the commencement of construction. All tree protection measures are to remain in place during all stages of construction.

The location of temporary tree protection hoarding is depicted graphically on the Tree Protection Plan (by adesso design inc.) accompanying this report.

If any disruption or injury occurs to a tree to be preserved, including planned injuries (e.g. "true injuries) and unplanned or accidental injuries (e.g. roots encountered unexpectedly, crown pruning required for construction access or equipment manoeuvring), it is recommended that a qualified tree care professional is consulted and performs all remedial work on the tree(s). General recommendations for mitigating damage trees include (but are not limited to):

- Excavation within TPZ is to be done by hand and all tree roots that require removal are to be cleanly pruned by a tree care professional and according to best management practices of arboriculture. All exposed tree roots to remain are to be covered immediately with native soil or imported good-quality planting soil using 150mm lifts and hand tamped to prevent air pockets. All areas of disturbed tree roots to remain are to be thoroughly watered immediately upon completion of excavation and backfilling with soil.
- Damaged branches/limbs are to be cleanly pruned by a tree care professional and according to best management practices of arboriculture.
- Damage to tree trunks is to be reported immediately to a tree care professional for consultation and possible action.

CONCLUSIONS

A total of thirty-one (31) individual trees have been inventoried and assessed for possible preservation in the context of the proposed work.

Five (5) trees are recommended for removal and 26 are recommended for preservation with adequate tree protection measures (refer to Tree Protection Plan for location and extent of Tree Protection Fence).

Tree Protection Measures are to remain in place and in good working condition for the duration of construction. Refer to appendix b for City of Waterloo Tree Protection Fencing Details (CW-701 and CW-702).

ASSUMPTIONS & LIMITATIONS

The data and assessment presented in this report are only valid at the time of inspection and inventory.

A reasonable effort has been made to assess the overall condition of trees included in this report.

Unless otherwise stated, all tree data and observations were collected from visual inspection of external tree features from the ground level.

This report is to be used only by the intended recipient for the purposes stated in the Background section. Use by any other person or for any other purpose must be authorized in writing by the consulting arborist or adesso design inc.

The data and its interpretation in this report are the sole opinion of adesso design inc. and were not influenced by any other party.



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APPENDIX A – TREE INVENTORY TABLE

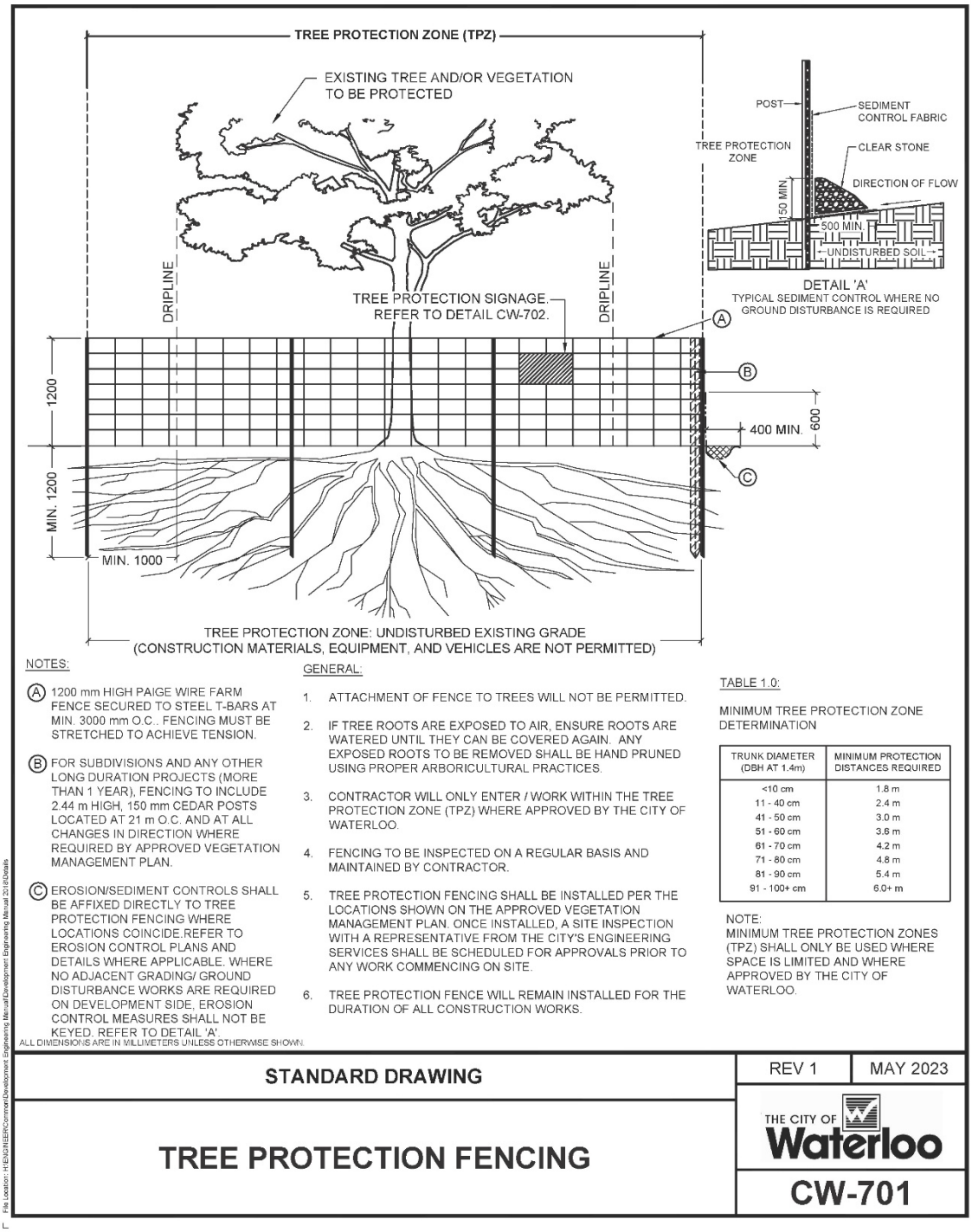
Tree #	Species (Common Name)	Species (Botanical Name)	DBH (cm)	Crown Class[1]	Condition	Crown Width (m)	Comments	Potential Impacts from Construction	Ownership	Recommendation
1	White Spruce	*Picea abies*	13	D	G-F	4	dead/broken branches in canopy	minor encroachment due to proposed grading and parking lot	Neighbouring	SAVE
2	Colorado Spruce	*Picea pungens*	20	D	G	5	leaning south (minor)	minor encroachment due to proposed grading and parking lot	Neighbouring	SAVE
3	Russian Olive	*Elaeagnus angustifolia*	11,14,12	D	P-F	6	leaning EAST (severe), co-dominant leaders @ 0.3m, included bark, heavily pruned, poor form	direct conflict with proposed grading and parking	Subject Site	REMOVE
4	Russian Olive	*Elaeagnus angustifolia*	11,12	C	F	6	poor form, leaning east, co-dominant leaders @ 0.3m, healed stem wound @ base, dead/broken branches in canopy	direct conflict with proposed grading and parking	Subject Site	REMOVE
5	Eastern Hackberry	*Celtis occidentalis*	14	C	G	3	epicormic branching, dead/broken branches in canopy	minor encroachment due to proposed grading and parking lot	Neighbouring	SAVE
6	Russian Olive	*Elaeagnus angustifolia*	14,10,9	D	F-G	7	union @ base	direct conflict with proposed grading and parking	Subject Site	REMOVE
7	White Spruce	*Picea abies*	10	D	P-F	3	dead/broken branches in canopy (severe), poor form, missing leader, asymmetrical crown	none	Neighbouring	SAVE
8	Eastern Hackberry	*Celtis occidentalis*	10	D	G	3	dead/broken branches in canopy (minor)	minor encroachment due to proposed grading and parking lot	Neighbouring	SAVE
9	Red Oak	*Quercus rubra*	14	D	G	5	healed stem wound, suspected girdling root, asymmetrical crown	moderate encroachment due to proposed grading and parking lot	Neighbouring	SAVE
10	Basswood	*Tilia americana*	18	D	F	5	leaning south (minor), co-dominant leaders @ 2.5m, poor form rubbing branches, poor branch structure, water sprouts (minor)	moderate encroachment due to proposed grading and parking lot	Neighbouring	SAVE
11	Sugar Maple	*Acer saccharum*	8	D	F	2	bark peeling, dead/broken branches in canopy, canker on leader	moderate encroachment due to proposed grading and parking lot	Neighbouring	SAVE
12	Balsam Poplar	*Populus balsamifera*	19	D	G	4	dead/broken branches in canopy. Vagabond aphid	direct conflict with proposed parking lot and grading	Subject Site	REMOVE
13	White Spruce	*Picea abies*	15	D	F	5	dead/broken branches in canopy (moderate)	moderate encroachment due to proposed grading and parking lot	Neighbouring	SAVE
14	White Spruce	*Picea abies*	11	D	G	5	dead/broken branches in canopy (minor), poor branch structure	moderate encroachment due to proposed grading and parking lot	Neighbouring	SAVE
15	White Spruce	*Picea abies*	9	D	F-G	4	sparse canopy, asymmetrical crown, dead/broken branches in canopy, poor branch structure	moderate encroachment due to proposed grading and parking lot	Neighbouring	SAVE
16	Eastern Redcedar	*Juniperus virginiana*	14	C	G	3	asymmetrical crown, dead/broken branches in canopy	minor encroachment due to proposed grading and parking lot	Neighbouring	SAVE
17	Eastern Redcedar	*Juniperus virginiana*	10	C	G	4	asymmetrical crown, dead/broken branches in canopy	none	Neighbouring	SAVE
18	Eastern Redcedar	*Juniperus virginiana*	10	C	F	2	sparse canopy, asymmetrical crown	none	Neighbouring	SAVE
19	Thornless Honeylocust	*Gleditsia triacanthos var. inermis*	11	D	G	5	asymmetrical crown, epicormic branching (minor)	none	Public - ROW	SAVE
20	Canadian Serviceberry	*Amelanchier canadensis*	10	D	F	2	leaning east, canker @ union (2.5m), rubbing branches	none	Public - ROW	SAVE
21	Red Oak	*Quercus rubra*	18	D	F-G	5	dead/broken branches in canopy (minor), asymmetrical crown, black growth on dead twigs/wood	none	Public - ROW	SAVE
22	Russian Olive	*Elaeagnus angustifolia*	11,7,4	D	F-P	3	canker @ base, poor form, rubbing branches, union @ base	direct conflict with proposed building footprint	Subject Site	REMOVE

Tree #	Species (Common Name)	Species (Botanical Name)	DBH (cm)	Crown Class[1]	Condition	Crown Width (m)	Comments	Potential Impacts from Construction	Ownership	Recommendation
23	Thornless Honeylocust	*Gleditsia triacanthos var. inermis*	10	D	G	4	poor branch structure, damage @ base	none	Neighbouring	SAVE
24	Autumn Blaze Maple	*Acer x freemanii 'Jefersred'*	12	D	F	3	sap ooze from stem, included bark, frost crack, poor branch structure	none	Neighbouring	SAVE
25	Autumn Blaze Maple	*Acer x freemanii 'Jefersred'*	13	D	F	4	stem damage/wounds, included bark, frost crack	none	Neighbouring	SAVE
26	Autumn Blaze Maple	*Acer x freemanii 'Jefersred'*	10	D	F	4	damage on stem, poor branch structure, rubbing branches	none	Neighbouring	SAVE
27	Autumn Blaze Maple	*Acer x freemanii 'Jefersred'*	11	D	F	4	asymmetrical crown, poor branch structure, wet branch wound	none	Neighbouring	SAVE
28	Autumn Blaze Maple	*Acer x freemanii 'Jefersred'*	10	D	F	3	asymmetrical crown, bark peeling (minor)	none	Neighbouring	SAVE
29	Autumn Blaze Maple	*Acer x freemanii 'Jefersred'*	10	D	F-G	4	epicormic branching (minor), mechanical damage on stem	none	Neighbouring	SAVE
30	Autumn Blaze Maple	*Acer x freemanii 'Jefersred'*	11	D	F-G	4	poor branch structure, poor branch taper, included bark	none	Neighbouring	SAVE
31	Littleleaf Linden	*Tilia cordata*	11	D	F	3	poor branch structure, rubbing branches, included bark, epicormic branching	none	Neighbouring	SAVE

[1] ***Crown Class***

Dominant- (D) Emergent canopy (receives full sunlight)
Co-dominant - (C) Not fully emergent (top of canopy receives sunlight)
Intermediate – (I) Sub-canopy tree (receives partial sunlight

APPENDIX B – CITY OF WATERLOO TREE PROTECTION FENCING & SIGNAGE DETAILS



NOTES:

(A) 1200 mm HIGH PAIGE WIRE FARM FENCE SECURED TO STEEL T-BARS AT MIN. 3000 mm O.C.. FENCING MUST BE STRETCHED TO ACHIEVE TENSION.

(B) FOR SUBDIVISIONS AND ANY OTHER LONG DURATION PROJECTS (MORE THAN 1 YEAR), FENCING TO INCLUDE 2.44 m HIGH, 150 mm CEDAR POSTS LOCATED AT 21 m O.C. AND AT ALL CHANGES IN DIRECTION WHERE REQUIRED BY APPROVED VEGETATION MANAGEMENT PLAN.

(C) EROSION/SEDIMENT CONTROLS SHALL BE AFFIXED DIRECTLY TO TREE PROTECTION FENCING WHERE LOCATIONS COINCIDE.REFER TO EROSION CONTROL PLANS AND DETAILS WHERE APPLICABLE. WHERE NO ADJACENT GRADING/ GROUND DISTURBANCE WORKS ARE REQUIRED ON DEVELOPMENT SIDE, EROSION CONTROL MEASURES SHALL NOT BE KEYED. REFER TO DETAIL 'A'.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

GENERAL:

1. ATTACHMENT OF FENCE TO TREES WILL NOT BE PERMITTED.
2. IF TREE ROOTS ARE EXPOSED TO AIR, ENSURE ROOTS ARE WATERED UNTIL THEY CAN BE COVERED AGAIN. ANY EXPOSED ROOTS TO BE REMOVED SHALL BE HAND PRUNED USING PROPER ARBORICULTURAL PRACTICES.
3. CONTRACTOR WILL ONLY ENTER / WORK WITHIN THE TREE PROTECTION ZONE (TPZ) WHERE APPROVED BY THE CITY OF WATERLOO.
4. FENCING TO BE INSPECTED ON A REGULAR BASIS AND MAINTAINED BY CONTRACTOR.
5. TREE PROTECTION FENCING SHALL BE INSTALLED PER THE LOCATIONS SHOWN ON THE APPROVED VEGETATION MANAGEMENT PLAN. ONCE INSTALLED, A SITE INSPECTION WITH A REPRESENTATIVE FROM THE CITY'S ENGINEERING SERVICES SHALL BE SCHEDULED FOR APPROVALS PRIOR TO ANY WORK COMMENCING ON SITE.
6. TREE PROTECTION FENCE WILL REMAIN INSTALLED FOR THE DURATION OF ALL CONSTRUCTION WORKS.

TABLE 1.0:

MINIMUM TREE PROTECTION ZONE DETERMINATION

TRUNK DIAMETER (DBH AT 1.4m)	MINIMUM PROTECTION DISTANCES REQUIRED
<10 cm	1.8 m
11 - 40 cm	2.4 m
41 - 50 cm	3.0 m
51 - 60 cm	3.6 m
61 - 70 cm	4.2 m
71 - 80 cm	4.8 m
81 - 90 cm	5.4 m
91 - 100+ cm	6.0+ m

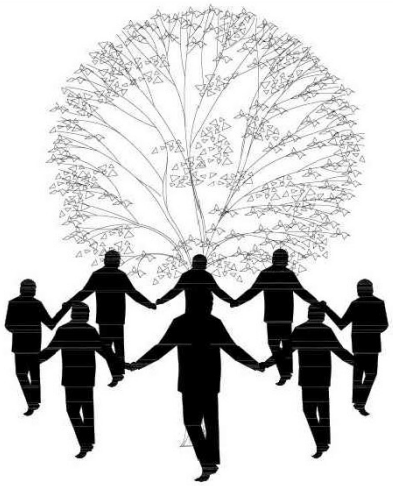
NOTE:
MINIMUM TREE PROTECTION ZONES (TPZ) SHALL ONLY BE USED WHERE SPACE IS LIMITED AND WHERE APPROVED BY THE CITY OF WATERLOO.

File Location: H:\ENGINEER\Common\Development Engineering Manual\Development Engineering Manual 2018\Details

STANDARD DRAWING	REV 1	MAY 2023
TREE PROTECTION FENCING	THE CITY OF Waterloo	CW-701

600 mm MINIMUM

300 mm MINIMUM



Tree Preservation Plan In Effect

NO
DUMPING
STORAGE OF MATERIALS
TREE REMOVAL
DISTURBANCE OF ANY KIND

BEYOND THIS POINT

Developers Name

Developers Telephone Number

Consultants Name

Consultants Telephone Number

City Contact:

NOTES:

1. SIGN TO BE MOUNTED ON GATOR BOARD.
2. SIGN TO BE PLACED A MAXIMUM OF 30 m O.C. ALONG FENCE AND SECURED WITH OUTDOOR PLASTIC LOCKING TIE-WRAPS.
3. AT LEAST ONE SIGN SHALL BE INSTALLED AT EACH SIDE OF THE TREE PROTECTION ZONE.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING	REV 1	MAY 2023
TREE PROTECTION ZONE SIGNAGE	THE CITY OF Waterloo	CW-702

File Location: H:\ENGINEER\Common Data\Updated Engineering Manual\Standard Engineering Manual 2019\Draw