



Sixth Street Reconstruction North Boulevard

COLLINGWOOD, ONTARIO

Arborist Report

prepared by: Envision-Tatham Inc. 115 Sandford Fleming Drive, Suite 200 Collingwood, ON L9Y 5A6 prepared for: Town of Collingwood July 4, 2024 ETi File ET124018

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1 Introduction

The Town of Collingwood intends to replace ageing municipal infrastructure along Sixth Street, between Hurontario and High Streets (**Figure 1**). This reconstruction offers an opportunity to improve cycling facilities along Sixth Street and various road cross-sections have been explored by Tatham Engineering and Town staff. One of these options would require removal of trees along the length of the north boulevard and the Town has requested an assessment of the condition of these trees to inform decision-making.

Envision-Tatham is retained to review the municipally-owned trees along the north boulevard and the privately-owned trees whose canopies overhang the road allowance to assess their condition prior to construction.



Figure 1 Key Plan (Image from Simcoe County Maps)

2 Methodology

Along the north side of the Sixth Street project area, Envision-Tatham inventoried a total of 66 boulevard trees, boundary trees, and private trees whose canopies overhang the road allowance on June 26 and June 30, 2024. Data collected included species, trunk diameterat-breast-height (dbh), canopy size, and a limited visual assessment of the general health and condition of the trees.

2.1 Tree Health and Condition

Tree health and condition were rated as follows:

Rating Criteria

Good	 Full, well-balanced canopy, with less than 10% dieback Vigorous growth on current/previous year's twigs No significant diseases or insect pests No signs or symptoms of decay Minor wounds with vigorous woundwood Strong branch structure No observable root defects
Fair	 10-40% canopy dieback Bark splitting/other trunk wounds with good woundwood development, but injuries not closed and may show preliminary symptoms of decay Poor branch structure that could be addressed through pruning/training Self-corrected lean or bow
Poor	 In severe decline (>40% canopy dieback) Signs or symptoms of significant insect pests, disease, or decay Lean associated with soil upheaval or other signs of instability Girdling roots or damage to roots that are larger than 75mm diameter Actively splitting trunks Anticipated likely or imminent structural failure of parts (>75mm dia.) or whole tree

Dead

3 Observations

The location and conditions of trees are identified in Appendix A. Detailed results of our tree inventory and assessment may be found in Appendix B and a summary is provided below.

3.1 Tree Species

We inventoried and assessed a total of 66 individual trees consisting of the following species:

Species	Common Name	Qty	% (rounded)
Acer platanoides	Norway Maple	22	33%
Acer saccharinum	Silver Maple	15	23%
Acer saccharum	Sugar Maple	3	5%
Aesculus hippocastanum	Horsechestnut	3	5%
Fraxinus sp.	Ash	3	5%
Robina pseudoacacia	Black Locust	3	5%
Betula papyrifera	White Birch	2	3%
Gleditsia triacanthos var. inermis	Thornless Honeylocust	2	3%
<i>Malus</i> sp.	Crabapple	2	3%
Picea abies	Norway Spruce	2	3%
Picea pungens var. 'glauca'	Colorado Blue Spruce	2	3%
Tsuga canadensis	Hemlock	2	3%
Acer rubrum	Red Maple	1	2%
Celtis occidentalis	Hackberry	1	2%
Picea glauca	White Spruce	1	2%
Picea sp.	Spruce	1	2%
Tilia americana	Basswood	1	2%
	Total	66	

It is noted that, not only do Norway Maple and Silver Maple dominate this streetscape, the Maple genus (*Acer*) accounts for 63% of the trees inventoried. If only considering the 39 trees that are Town-owned (including potential boundary trees¹), the percentage jumps to 77%. This over-representation of Maple is problematic when considered in context of the often-cited 30:20:10 proportions proposed by Santamoor (1990)² which suggest a limit of 30% for one plant family, 20% of any genus, and 10% of any species within an urban forest. The objective of these targets is to diversify the urban forest so that impacts from disease or insects are minimized.

In addition to lack of species diversity, we offer the following comments regarding the two dominant species in this streetscape:

Norway Maples were historically favoured as street trees due to their tolerance to compacted/urban soils and road salt (associated with winter road maintenance) and their resistance to fungal diseases and insects. They are, however, shallow-rooted trees and have a tendency to form girdling roots, reducing their potential for longevity in the urban landscape. Ecologically, they are non-native and considered invasive because of their prolific seed production, tolerance to a variety of soils, and ability to invade intact forests and outcompete native Sugar Maples³. In forests, their dense, early canopy and shallow root systems also reduce the density and diversity of spring ephemerals (e.g., Trillium). As a result, Norway Maples are no longer recommended as street trees. We note, however, that since there are no naturalized areas in close proximity to this section of Sixth Street (with the exception of the Oak Street drain), we would not recommend this as the primary reason for removal.

Silver Maples are native to the area and may be found along riverbanks and wetlands. They are fast-growing and tolerant of compacted and seasonally flooded soils. They grow to be large trees and provide many ecosystem and microclimatic benefits, however they require adequate room to thrive. Similar to Norway Maples, they have shallow root systems. This streetscape (with narrow boulevards and sidewalks in close proximity to trees) is not an appropriate location for Silver Maples. The constrained location leads to conflicts between infrastructure and tree roots/canopies, as is demonstrated by the large pruning cuts and heaving sidewalks discussed in the following section. Additionally, they often have poor

¹ Boundary trees (the trunk straddles/crosses a property boundary) are jointly owned by both landowners, as per the Ontario Forestry Act. Confirmation of ownership should be determined in the field with legal boundaries staked.

² Santamour, F.S. 1990. Trees for urban planting: diversity, uniformity, and common sense. Proceedings of the 7th Conference of the Metropolitan Tree Improvement Alliance. 7:57-65.

³ Simkovic, V., Ontario Invasive Plant Council, Regional Municipality of York, & City of Toronto. (2020). Best management practices in Ontario (1.0-December 2020) [Best Management Practices]. Ontario Invasive Plant Council.https://www.ontarioinvasiveplants.ca/wp-content/uploads/2021/05/BMP_NorwayMaple_April2021_WEB.pdf

branch structure and are weak-wooded, so that larger trees tend to shed twigs and branches during storms. Further to being a nuisance this can create conflicts where overhead hydro is near the canopy. Finally, similar to Willows, Silver Maples are aggressive with respect to water and have a tendency to take advantage of cracks in water/sanitary pipes, leading to blockages.

3.2 Tree Health and Condition

Among the 66 inventoried trees, 23 appeared to be in good condition, with 20 in good-fair or fair condition, and 23 in fair-poor or poor condition at the time of review.

Among the 39 trees that are municipally-owned or located near the road allowance (potentially boundary trees), the conditions were less evenly distributed:

Rating	Qty	%
Good	6	15%
Good-Fair & Fair	14	36%
Fair-Poor & Poor	19	49%

Among those trees in the "Fair-Poor" & "Poor" categories, there were some common concerns. The bases of several mature trees, most notably the Silver Maples, were mounded above existing grade and as a result, many had scalped or cut surface roots which may have opened a route for decay (**Figure 2**). It was also noted that several sidewalk panels had been replaced near these trees, likely due to sidewalk heaving. Several of the inventoried trees also had large pruning cuts which had not healed over, with decay often present (**Figure 3**). Further to this, all three Ash were suffering significant decline due to the Emerald Ash Borer and should be removed.



Figure 2 Base of mature trees mounded above adjacent grade (often with damaged surface roots and potential decay).



Figure 3 Pruning cuts that have not healed over, with various degrees of decay.

Among the privately owned trees, we recommend immediately addressing a potential branch failure in a Sugar Maple located at 77 Sixth Street (**Figure 4**) as the branch is adjacent to the house and fence.



Figure 4 Potential branch failure at 77 Sixth Street.

Our assessment of trees was mapped (see Appendix A) to provide the Town with a simplified view of current tree condition. It is noted that this assessment is not intended to predict the longevity of the tree in absence of construction or to make recommendations for removal (unless the tree is in significant decline.) In most cases, there were only a few trees requiring immediate attention.

This limited visual assessment may be used to gauge the overall health of trees prior to construction, recognizing that road reconstruction will impact most trees through loss of roots, canopy pruning to provide clearance for construction, and altered soil moisture levels. Typically, trees that are already in decline will have fewer resources to address injuries and reduction in rooting mass, and as a result, will be less resilient. Ultimately, should the design be adjusted to accommodate the retention of Town trees, recommendations for retention or removal will also need to consider the engineering design (location of services, grading, etc.) Further to this, if decay is suspected and a tree is identified for retention, a higher level of assessment may be required to understand the extent of decay and evaluate whether this is still recommended.

3.3 **Opportunities for Replanting**

The Sixth Street road allowance is narrow for a collector road and it may not be able to adequately accommodate both separate pedestrian/cycling facilities and trees. We understand that the Town has considered replanting on private property as a potential solution. Unfortunately there are several conflicts (e.g., buildings, parking, landscaping) and opportunities are limited. We have identified properties where trees may be accommodated, but this would be subject to homeowner approval and an assessment of underground services. Alternative planting locations could include parkland and road allowances where dead Ash have been removed due to the Emerald Ash Borer.

4 Summary & Recommendations

We inventoried and assessed 66 trees along the north side of Sixth Street and approximately half of the 39 Town-owned (or potentially jointly owned) trees are rated as in fair-poor or poor condition. Species diversity is low and the streetscape is dominated by Silver and Norway Maples, neither of which is recommended for this location. While most trees do not appear to have critical reasons for removal, those that are in poor health will have less resilience to construction impacts, which may accelerate their decline.

If the Town wishes to retain boulevard trees, construction mitigation measures could be considered for trees that are in reasonably good health. In general, many of these mitigation measures carry additional cost and this should be weighed against the condition of the trees.

If the Town chooses to plant new trees on Sixth Street or elsewhere within the municipality, to maximize tree longevity we recommend increasing species diversity and siting trees to

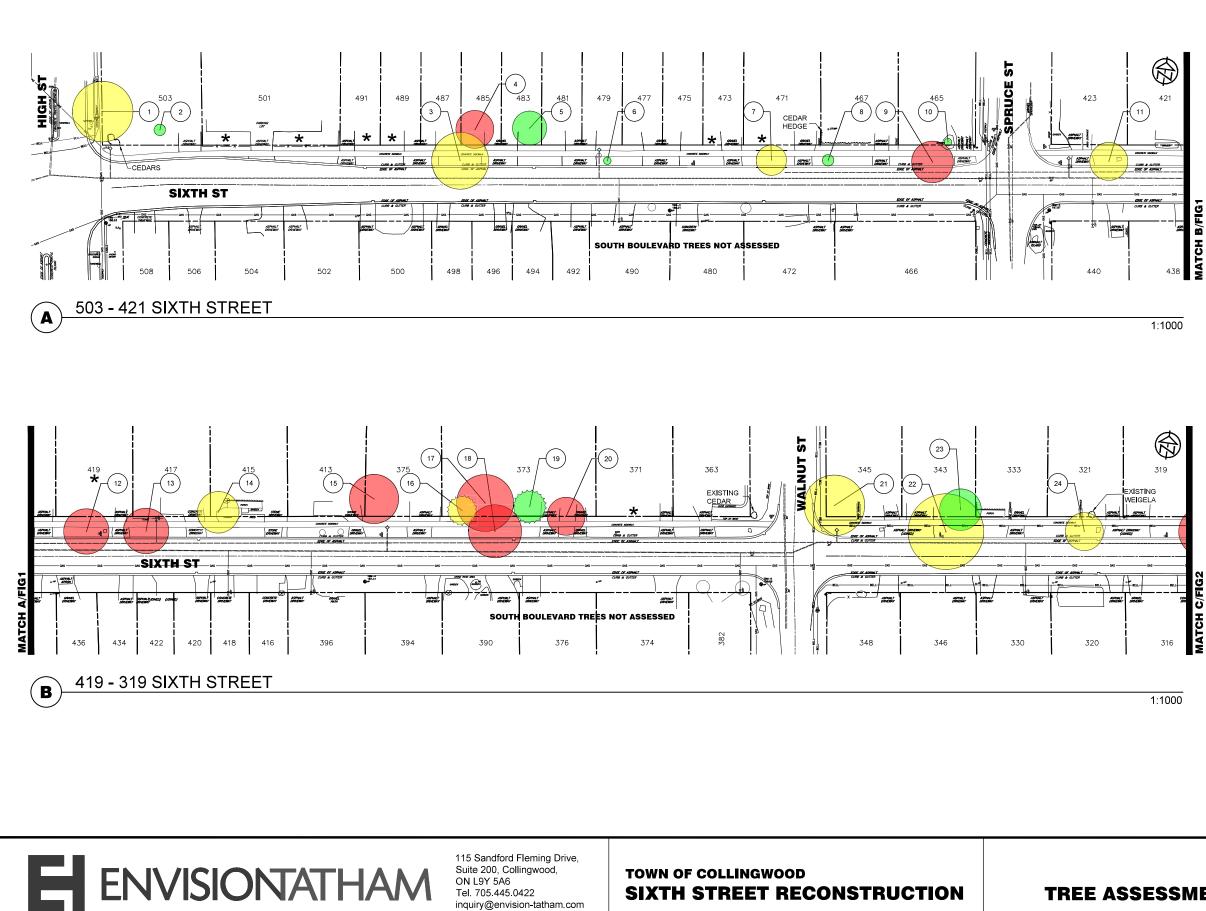
minimize potential conflicts with infrastructure. For trees planted within 3.0m of paved surfaces, consideration should be given to installing root barriers to direct roots lower into the soil profile to reduce the potential for pavement heaving. Finally, we recommend that the Town allocate appropriate budgets for frequent pruning and maintenance of new trees to minimize the need for large pruning cuts which can reduce the life expectancy of trees.

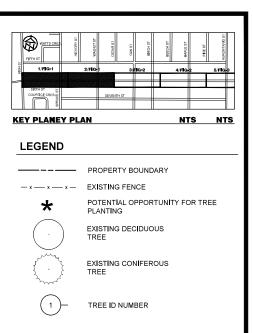
Should you require any elaboration or additional information, we are at your disposal.

Respectfully submitted, **ENVISION-TATHAM INC.**

Mor Br.

Alison Bond BSc MSc BLA OALA CSLA Certified Arborist ON-0942A Landscape Architect W:\Projects\2024 Projects\ET124018-1 Sixth Street Collingwood\ET124018-1_documents\Sixth St_ArbRep_2024.07.04.docx Appendix A: Tree Assessment Summary





ASSESSMENT



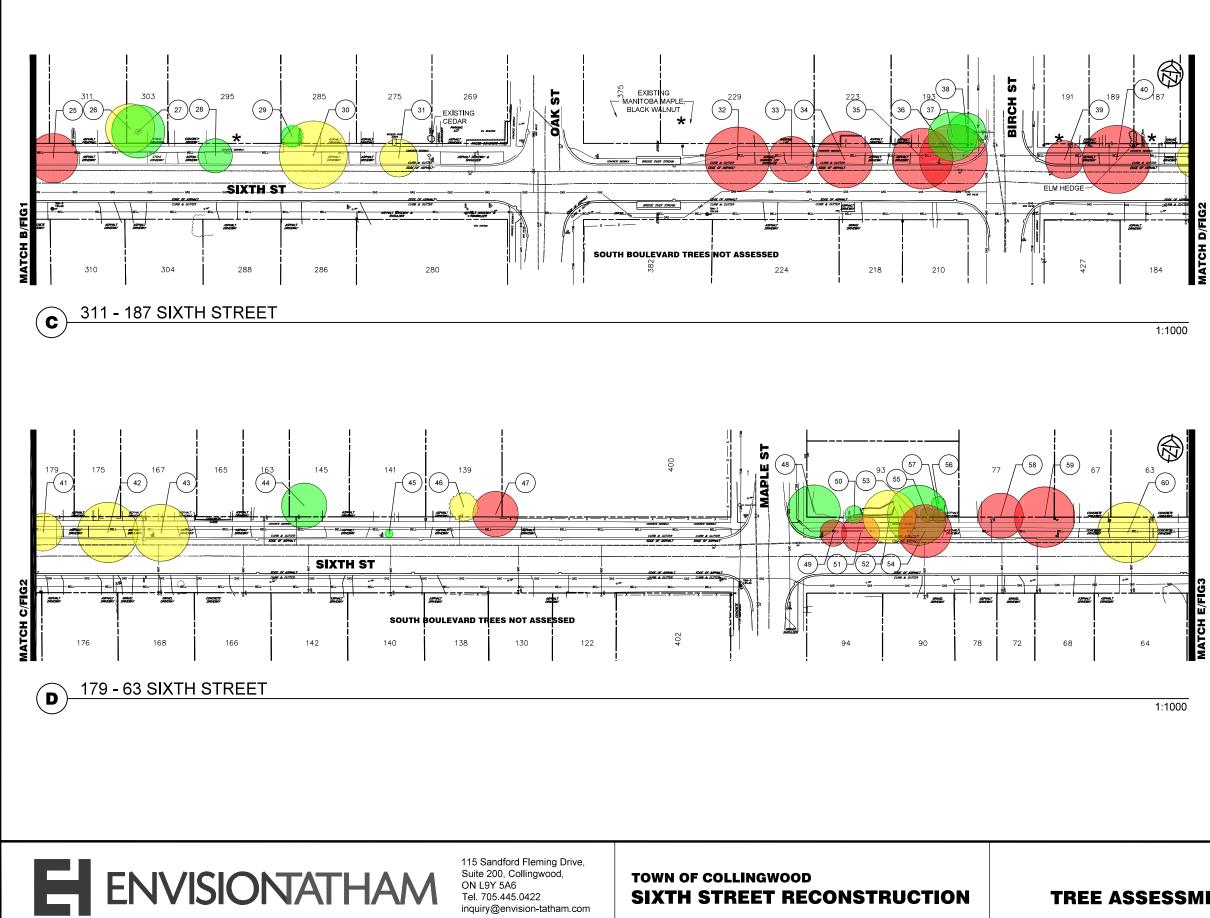
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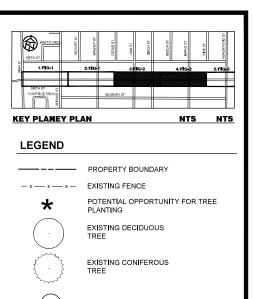
- 1. FOR DETAILED ASSESSMENTS REFER TO ARBORIST REPORT PREPARED BY ENVISION TATHAM INC.
- 2. TREES WERE INVENTORIED AND VISUALLY ASSESSED FOR GENERAL HEALTH ON JUNE 26 AND 30, 2024.
- 3. DIAMETER OF TREE SYMBOL REPRESENTS APPROXIMATE CANOPY SIZE.
- 4. THE RATING OF THE TREE DOES NOT CONSTITUTE A GUARANTEE OF THE LONGEVITY OF THE TREE.

DATE July 4, 2024

TREE ASSESSMENT SUMMARY

APPENDIX A FIG.





TREE ID NUMBER

ASSESSMENT



NOTES

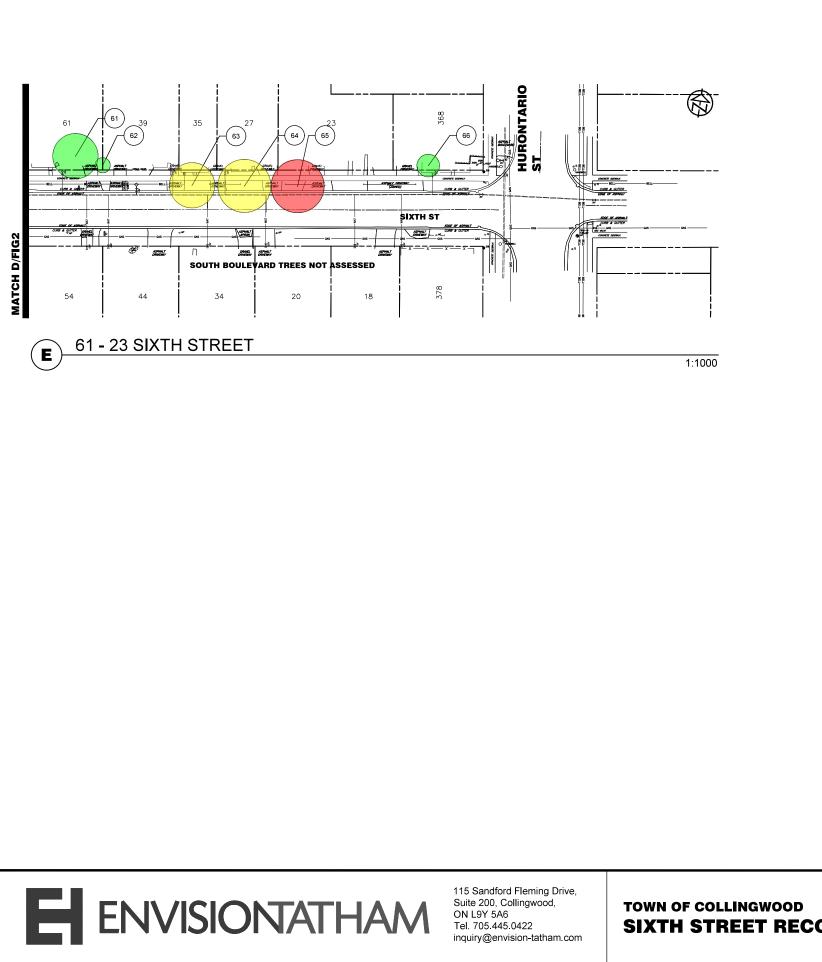
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DATE July 4, 2024

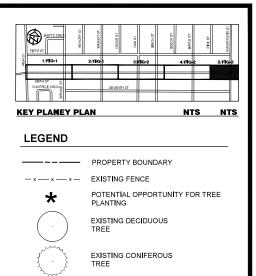
TREE ASSESSMENT SUMMARY

APPENDIX A FIG.

2



SIXTH STREET RECONSTRUCTION



TREE ID NUMBER

ASSESSMENT

1



<u>NOTES</u>

- 1. FOR DETAILED ASSESSMENTS REFER TO ARBORIST REPORT PREPARED BY ENVISION TATHAM INC.
- 2. TREES WERE INVENTORIED AND VISUALLY ASSESSED FOR GENERAL HEALTH ON JUNE 26 AND 30, 2024.
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TREE ASSESSMENT SUMMARY

DATE July 4, 2024

APPENDIX A

FIG.

3

Appendix B: Detailed Inventory and Assessment Table

Tree ID No.	Species	Common Name	dbh (cm)	Canopy (m radius)	Comments	Rating	Ownership *Boundary trees to be confirmed
1	Acer platanoides	Norway Maple	52.2	8.0	trunk flare approx. 20cm above grade, co-dominant, 2 broken branch stubs (not healed), overhead hydro through canopy, decay and fungus in one branch, dieback canopy east side	Fair	Boundary*
2	Acer rubrum	Red Maple	8.8	1.5	anthracnose, chlorosis	Good	Private
3	Acer saccharinum	Silver Maple	48.8	7.5	trunk approx. 40cm above grade, scalped roots east side, basal sprouts, epicormic branching, several pruning cuts (not healed and some decay), broken branch	Fair	Town
4	Acer platanoides	Norway Maple	39.7	5.0	epicormic shoots on trunk, 30% canopy dieback, 30cm pruning cut with decay	Poor	Private
5	Aesculus hippocastanum	Horse Chestnut	40.5	4.5	buried trunk flare (planter), lights in canopy, co-dominant	Good	Private
6	Acer saccharum	Sugar Maple	2.5	1.0	somewhat asymmetrical canopy, near hydrant	Good	Town
7	Acer platanoides	Norway Maple	21.3	4.0	buried trunk flare, dieback in upper canopy, unhealed pruning cuts, possibly with decay	Fair	Town
8	Celtis occidentalis	Hackberry	4.1	1.5	spiral trunk guard installed but also minor mechanical damage at base, buried trunk flare, very low branching (blocks driveway views)	Good	Town
9	Acer platanoides	Norway Maple	40.6	5.5	scalped roots, root flare 30cm above road grade, sunken areas above and below cut limb suggesting internal decay, pruning cuts not healed, dieback of upper canopy	Fair-Poor	Town
10	Acer platanoides	Norway Maple	3.7	1.0	co-dominant	Good	Private
11	Acer platanoides	Norway Maple	45.3	5.0	approx. 30cm above sidewalk grade, scalped roots, buried trunk flare, 50mm dia. girdling root, co-dominant, unhealed pruning cuts roadside, sidewalk panels replaced	Fair	Town
12	<i>Fraxinus</i> sp.	Ash	38.5	6.0	root flare 50cm above grade, signs/symptoms of emerald ash borer, 80% canopy dieback	Poor	Town
13	Acer platanoides	Norway Maple	34.5	6.0	2.5cm girdling root, lean towards road, significant decay in broken branch overhanging road, 25% canopy dieback	Poor	Town
14	Acer platanoides	Norway Maple	33	5.5	2m clearance over sidewalk (may require pruning), co-dominant with included bark, overhead hydro through canopy	Good-Fair	Private
15	Acer platanoides	Norway Maple	40.8	6.5	sprouts at base, 75mm girdling root, several pruning wounds on west side for overhead hydro (not healed), decay on west side	Poor	Private
16	Picea pungens 'glauca'	Colorado Blue Spruce	50	4.0	lower canopy pruned at edge of sidewalk, approx. top 2m of canopy dead (incl. leader), asymmetrical canopy due to shading, some needles have reverted to green	Fair	Private
17	Acer platanoides	Norway Maple	54.2	7.5	several unhealed pruning cuts, several limbs with splitting on underside suggesting decay	Fair-Poor	Private
18	Acer platanoides	Norway Maple	36.5	7.0	buried trunk flare, decay in top of canopy, pruned for overhead hydro	Poor	Town
19	Picea pungens 'glauca'	Colorado Blue Spruce	60	4.5	lower canopy pruned at edge of sidewalk, lights in canopy	Good	Private
20	Aesculus hippocastanum	Horse Chestnut	68	5.0	buried trunk flare, cavities and decay at pruning cuts	Poor	Boundary*

Tree ID No.	Species	Common Name	dbh (cm)	Canopy (m radius)	Comments	Rating	Ownership *Boundary trees to be confirmed
21	Gleditsia triacanthos var. inermis	Thornless Honeylocust	70	8.0	buried trunk flare, lights in canopy, co-dominant, pruning cuts not fully healed, minor dieback of twigs, signs and birdhouse affixed to trunk, some decay at pruning cuts	Fair	Private
22	Acer saccharinum	Silver Maple	84	10.0	trunk at least 50cm above sidewalk grade, large girdling root, co-dominant, hydro through canopy, pruning cuts on road side not healed	Fair	Town
23	Acer platanoides	Norway Maple	51.1	5.5		Good	Private
24	Acer platanoides	Norway Maple	47.5	5.0	dieback in lower to mid canopy, co-dominant at 1.4m	Fair	Town
25	Acer platanoides	Norway Maple	44.5	6.5	buried trunk flare, shallow scalped roots, co-dominant with included bark, large split from grade to first branch with weeping, pruning cuts road side (not healed), one branch with decay and branch above is dead	Poor	Town
26	Robina pseudoacacia	Black Locust	52	6.5	sweep in trunk, dieback lower to mid canopy	Good-Fair	Private
27	Robina pseudoacacia	Black Locust	47.3	7.0	1cm diameter holes in trunk, minor dieback	Good	Private
28	Acer platanoides	Norway Maple	27.3	4.5	minor dieback, car parked under canopy (on grass blvd), co-dominant, unhealed pruning cuts, hydro through canopy	Good	Town
29	Picea glauca	White Spruce	34.5	3.0	canopy limbed up	Good	Private
30	Acer saccharinum	Silver Maple	75.5	9.0	large buttress roots, scalped/cut roots, most canopy pruning cuts closed, significantly heaved sidewalk	Good-Fair	Town
31	Gleditsia triacanthos var. inermis	Thornless Honeylocust	29.5	5.0	decay in split at base, co-dominant, suspected decay at branch union (sapwood exposed)	Fair	Town
32	Acer saccharinum	Silver Maple	91.5	8.5	approx. 30cm above grade, significant root cutting/scalping at sidewalk, large cavity west side, unhealed pruning cuts, vigorous sprouting at base	Poor	Town
33	Acer saccharinum	Silver Maple	57	6.0	approx. 30-50cm above grade, several pruning cuts road side (not healed) with decay, co-dominant at 1.35m	Fair-Poor	Town
34	Acer saccharinum	Silver Maple	77.3	7.5	7.5cm dia. girdling root, hydro under canopy, several pruning cuts (not healed), co- dominant with included bark	Poor	Town
35	Acer saccharinum	Silver Maple	65.5	8.0	cavity at base, co-dominant, several pruning cuts (not healed)	Poor	Town
36	Acer saccharinum	Silver Maple	59	9.0	several unhealed pruning cuts with mushroom on one cut, minor dieback upper canopy, epicormic trunk sprouts	Poor	Town
37	Betula papyrifera	White Birch	5.4, 26	6.5	multi-stem, included bark	Good	Private
38	Acer platanoides	Norway Maple	18.5	5.0	lean to East, canopy just clears stop sign	Good	Boundary*
39	Acer saccharinum	Silver Maple	41.5	5.0	buried trunk flare, scalped roots, several unhealed pruning cuts road side, stones at base, co-dominant, possible decay	Fair-Poor	Town
40	Acer saccharinum	Silver Maple	107	9.0	trunk flare 50-60cm above grade, co-dominant, included bark, large unhealed pruning cuts, scalped roots, dieback especially East side	Fair-Poor	Town
41	Acer platanoides	Norway Maple	45.3	5.0	buried trunk flare, some unhealed pruning cuts	Fair	Town
42	Acer saccharinum	Silver Maple	65		sprouts at base, lean towards road, several unhealed pruning cuts and decay, co- dominant	Fair	Town
43	Acer saccharinum	Silver Maple	53	7.7	bark blackened on road side along ridge running on trunk (possibly lightening strike), canopy dieback over house	Fair	Town

Tree ID No.	Species	Common Name	dbh (cm)	Canopy (m radius)	Comments	Rating	Ownership *Boundary trees to be confirmed
44	Acer platanoides	Norway Maple	46.5	6.0	car parked under canopy, buried trunk flare, co-dominant and included bark	Good	Private
45	Tilia americana	Basswood	4.5	1.0	buried trunk flare, low branching	Good	Town
46	<i>Picea</i> sp.	Spruce	24.7	4.0	limbed up, thin canopy	Fair	Private
47	Robinia pseudoacacia	Black Locust	77.5	6.0	cavity at 2m, immediately adjacent to construction site, significant di back in canopy	Poor	Private
48	Betula papyrifera	White Birch	9, 25.6	7.0	co-dominant, 2m sidewalk clearance (may require pruning)	Good	Private
49	Fraxinus sp.	Ash	31	3.5	emerald ash borer, nearly dead	Poor	Town
50	Picea abies	Norway Spruce	15	2.5		Good	Private
51	Acer platanoides	Norway Maple	35.9	5.0	buried trunk flare, cavity at base of in trunk on road side, leaking sap, several pruning cuts	Fair-Poor	Town
52	Acer platanoides	Norway Maple	45	7.0	co-dominant, heavily pruned north side, leaning towards sidewalk	Fair	Private
53	Acer platanoides	Norway Maple	45	8.0	some pruning scars not healed	Good	Private
54	Acer platanoides	Norway Maple	36.1	7.0	large split road side (ridge), buried tree flare, branch stubs, sunken bark	Poor	Town
55	Tsuga canadensis	Hemlock	5	2.0		Good	Private
56	Tsuga canadensis	Hemlock	5	2.0		Good	Private
57	Picea abies	Norway Spruce	15	2.5		Good	Boundary*
58	Aesculus hippocastanum	Horse Chestnut	66	6.0	wire affixed to tree, decay, cavities in trunk, co-dominamt	Poor	Boundary*
59	Acer saccharum	Sugar Maple	69.5	8.0	large unhealed pruning cuts, co-dominant, heavily pruned north side, decay at base to 1.8m at pruning cut, fissure down trunk, one branch with split and decay (house side, likely to fail)	Poor	Boundary*
60	Acer saccharinum	Silver Maple	55.2	8.0	very high (50-60cm) above grade, hydro under canopy, unhealed pruning cuts, scalped roots (new sidewalk panels), some broken branches	Good-Fair	Town
61	<i>Malus</i> sp.	Crabapple	32	6.0		Good	Private
62	Acer saccharum	Sugar Maple	7.2	2.0		Good	Private
63	Acer saccharinum	Silver Maple	56.5	6.0	vigorous sprouting throughout, co-dominant (u-shaped), significantly pruned (not healed), minor canopy dieback	Fair	Town
64	Acer saccharinum	Silver Maple	53.6	7.0	co-dominant, hydro through canopy, minor dieback to canopy, unhealed pruning cuts road side, scalped roots	Good-Fair	Town
65	<i>Fraxinus</i> sp.	Ash	41.5	7.0	emerald ash borer, nearly dead	Poor	Town
66	Malus sp.	Crabapple	15	3.0	multi-stem	Good	Private