



Tree Inventory, Assessment, and Preservation Plan

750 Lockhart Road
City of Barrie, Ontario

FEBRUARY 2022



Tree Inventory, Assessment, and Preservation Plan

750 Lockhart Road
City of Barrie, Ontario

REPORT PREPARED FOR

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FEBRUARY 2022

GEI FILE: 1901398

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1.0 INTRODUCTION

GEI Consultants, Savanta Division (GEI) was retained by Ballymore Building (Barrie) Corp. ("Ballymore") to complete a tree inventory and prepare a Tree Inventory, Assessment, and Preservation Plan for their property located at 750 Lockhart Road in Barrie, Ontario, herein referred to as the Subject Lands (**Figure 1, Appendix A**). The Subject Lands consist of a single parcel of land within the Hewitt's Secondary Plan area.

The Subject Lands are subject of Draft Approved Plan of Subdivision File no. D12-444. The proposed development is comprised of 87 street townhouses in the northern part of the subdivision, four(4) Future Development Blocks (Medium Density Residential) and a stormwater management (SWM) pond in the southern portion of the subdivision, as well as Kneeshaw Drive (Collector Road) and local streets.

GEI completed a tree inventory within the Subject Lands in December 2020. This Tree Inventory, Assessment, and Preservation Plan presents the results of the tree inventory, identifies opportunities for tree preservation and protection, and recommends measures to protect preservation trees. The objective of the Tree Preservation Plan is to retain existing tree cover wherever feasible and to minimize the risk of injury to trees identified for protection. The preparation of this report was guided by the City of Barrie *Tree Protection Manual* (2019).

2.0 PROPOSED DEVELOPMENT

The Subject Lands will develop in phases. The first phase will include the 87 street townhouse units, Kneeshaw Drive, SWM pond, and the local roads as shown on the Draft M-Plan (see attached). The NHS Block and NHS Buffer Blocks will be congested gratuitously to the City of Barrie at the time of the subdivision plan registration.

The four (4) Future Development Blocks will be subject to further planning applications (e.g., site plan or part lot control).

This tree inventory, assessment and preservation plan addresses all aspects of the proposed development.

3.0 METHODOLOGY

GEI defined the Study Area for the tree inventory as the proposed development limit (including the limit of grading) and the immediately adjacent 6 m (**Figure 1, Appendix A**). GEI completed the tree inventory on December 3, 2020, in accordance with preliminary discussions held with the City of Barrie on November 6, 2020 (pers. comm. William McGregor).

Trees with a diameter-at-breast-height (DBH) of 10 cm and greater located within the development footprint were tallied. Detailed tallies were completed for the grouping of trees surrounding an existing building at the southern end of the Subject Lands and for the trees within the edge of the NHS woodland. Trees within these areas were tallied based on species and size class. Hedgerow trees were simply counted, and the typical size was noted along with representative species.

A tree assessment was completed for trees with a DBH of 10 cm and greater located outside of the development footprint but within the adjacent 6 m. Assessed trees were not tagged; however, a unique identifier was assigned for mapping and reference purposes. The locations for all assessed trees were recorded in UTM coordinates using a sub-meter capable GPS unit, and the following information was recorded: species, DBH, crown radius, overall health category, and notes regarding the assigned health category.

Tree health was categorized as good, fair, or poor. Trees categorized as “good” overall had at least 80% live canopy and showed no significant structural defects (e.g., weak limbs, girdling roots, stem lean) or evidence of biological damage (e.g., insect damage, fungal growth, leaf dieback). “Fair” trees were those with 50% to 80% live canopy and showed no significant structural or biological defects, or the tree had over 80% live canopy but did show some evidence of structural defects and/or biological damage. Trees categorized as “poor” were those with less than 50% live canopy and/or had significant structural defects and/or biological damage.

Note: This tree inventory was completed under “leaf-off” conditions, which may limit certain species identification due to lack of foliage and other defining characteristics present during “leaf-on” conditions. Furthermore, there are limitations to the assessment of health condition due to the absence of foliage.

4.0 EXISTING CONDITIONS

The Subject Lands consist of a mixture of agricultural land and naturalized vegetation communities. Ecological Land Classification (ELC) vegetation community types present on the Subject Lands include: Cultural Thicket (CUT), Cultural Meadow (CUM), Mixed Swamp (SWM), Thicket Swamp (SWT), Meadow Marsh (MAM), and Shallow Marsh (MAS). The majority of the naturalized vegetation community areas consist of swamp, which were previously evaluated by the Nottawasaga Valley Conservation Authority but did not receive a score high enough to qualify as being provincially significant. The Subject Lands gently slope towards the NHS, and ultimately down to Hewitt's Creek predominantly east of the Subject Lands. The NHS on the Subject Lands connects along Hewitt's Creek north to Lake Simcoe.

5.0 TREE INVENTORY

A total of 124 live trees and one dead tree were individually assessed and another 650 trees were tallied during this tree inventory, for a total of 775 inventoried trees (**Figure 2, Appendix A**).

Table 1 (Appendix B) outlines the results of the tree assessment, including the following information: tree identification number, species, size (DBH of the tree and of the individual stems), crown radius, overall health category, Tree Protection Zone (TPZ), percent encroachment of the proposed development into the TPZ, recommendations for preservation or removal, and notes regarding the assigned health category.

Table 2 (Appendix B) summarizes the results of the tree grouping tally, including the following information: species, number of individuals per size class, and recommendation for removal.

Table 3 (Appendix B) summarizes the results of the hedgerow tree tally, including the following information: number of trees, typical size, recommendation for removal, and representative species.

5.1 Preservation Trees

Preservation trees are those that are unlikely to be significantly impacted by the proposed construction or can likely be preserved using tree protection measures, as described in section 6. Of the 125 individually assessed trees, 88 are preservation trees.

5.2 Removal Trees

Removal trees are those that are located within the proposed construction footprint or those that are located immediately adjacent to the proposed construction footprint and pose a hazard due to being dead or in poor health condition. All 650 tallied trees are recommended for removal. Of the 125 individually assessed trees, 37 are removal trees.

All removal trees are located on private property. No public property trees have been identified for removal through the preparation of this Tree Inventory, Assessment, and Preservation Plan.

Tree removals should comply with the timing window restrictions identified within the Addendum to the Natural Heritage Evaluation (Savanta 2019) with regards to the protection of nesting birds and species at risk bats.

6.0 TREE PRESERVATION PLAN

Tree preservation will be achieved through avoidance and/or the use of appropriate tree protection measures. GEI inventoried 775 trees within the Study Area. Of these, 88 are preservation trees. The proposed Tree Preservation Plan for these trees is described in the following subsections.

6.1 Tree Protection Zones

The area of protection around a tree is referred to as the Tree Protection Zone (TPZ) and is measured outward from the trunk. TPZs were determined in accordance with the Tree Protection Manual (City of Barrie 2019). Trees were assigned a protection distance equivalent to the crown radius, or dripline.

The TPZs must be fenced off to prevent physical damage to the tree and compaction of the soil, following City of Barrie Standard Details drawing BSD-23A for siltation control fencing (City of Barrie 2019) or wood hoarding (pers. Comm. William McGregor). Signage must be placed in 50 m intervals along the length of the tree protection fencing, per City of Barrie Standard Details drawing BSD-1231. The TPZ must remain fully intact throughout all phases of construction including landscaping and cannot be used for the temporary storage of fill, topsoil, building materials, equipment storage, washing of equipment, or dumping of any construction debris.

The objective of the TPZ is to maximize protection of the tree to ensure its long-term survival. It is recognized, however, that encroachment into the TPZ will sometimes be necessary to facilitate construction. Some healthy trees are known to withstand construction impacts such as root cutting, soil compaction, and soil saturation; however, these individual responses are dependent on the species, site condition, and degree of impacts (Matheny & Clark 1998).

6.2 Protection of Preservation Trees

There is potential for grading activities to occur within the TPZs of 32 live preservation trees; protection and mitigation techniques are expected to prevent these activities from impacting these trees. These trees will be given a modified TPZ prior to construction, which will follow the limit of grading activity. This modified TPZ will require strict adherence to the tree protection measures outlined below. If these trees cannot be adequately protected during construction, they will be identified as removal trees.

The Project Arborist should be on site during all works within the TPZ of live preservation trees, including tree removal, canopy or root trimming, and soil stripping, to monitor these activities and propose site-specific mitigation where appropriate. If any accidental tree damage or encroachment into the TPZ occurs or is observed, the Project Arborist should be notified in order to take appropriate action on site. In addition, the following tree protection measures should be implemented:

- All relevant contractors should meet with the Project Arborist prior to the beginning of site alteration to review tree protection procedures.

- Low branches may be pruned back or removed to accommodate vehicular movement. Trees to be removed should be felled in a manner that drops the tree away from adjacent preservation trees and their TPZs.
- Any brush clearing required within the TPZs should be completed using hand-operated equipment and should be lifted out and not skidded out.
- Where excavation or grading is proposed within the TPZs, affected tree roots must be cut at a 90° angle at the edge of anticipated disturbance using specialized equipment. Hydro-vac excavation will be necessary to expose the roots prior to cutting if existing conditions prevent machinery from making a clean, 90° cut.
- Tree roots damaged during construction should be exposed and cut cleanly at a 90° angle using hand operated equipment to aid in root regeneration.
- Tree roots damaged during construction should be exposed and cut cleanly using hand operated equipment.
- Sediment control fencing should be installed to provide a protective barrier between areas intended for stockpiling of excavated soil and candidate preservation trees. The sediment control fencing should be installed to Ontario Provincial Standard 219.130 and City of Barrie Standard BSD-23A.

7.0 SUMMARY

GEI inventoried 774 live trees and one dead tree within the Study Area. Of the inventoried trees, 88 are recommended for preservation and 687 are recommended for removal (including 686 live trees and one dead tree) due to anticipated construction impacts.

All removal trees are located on private property. No municipal trees have been identified for removal through the preparation of this Tree Inventory, Assessment, and Preservation Plan.

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Rick Hubbard, Project Director

REFERENCES AND BACKGROUND MATERIALS

City of Barrie 2019. Tree Protection Manual, Version 4. Barrie, ON: City of Barrie. 57 pp.

Matheny, N.P. and J.R. Clark 1998. Trees and Development: A Technical Guide to Preservation of Trees During Land Development. Denver, CO, U.S.A.: Dream Books Company.

Savanta 2019. Addendum to the Natural Heritage Evaluation for 750 Lockhart Road, Barrie, ON.

APPENDICES

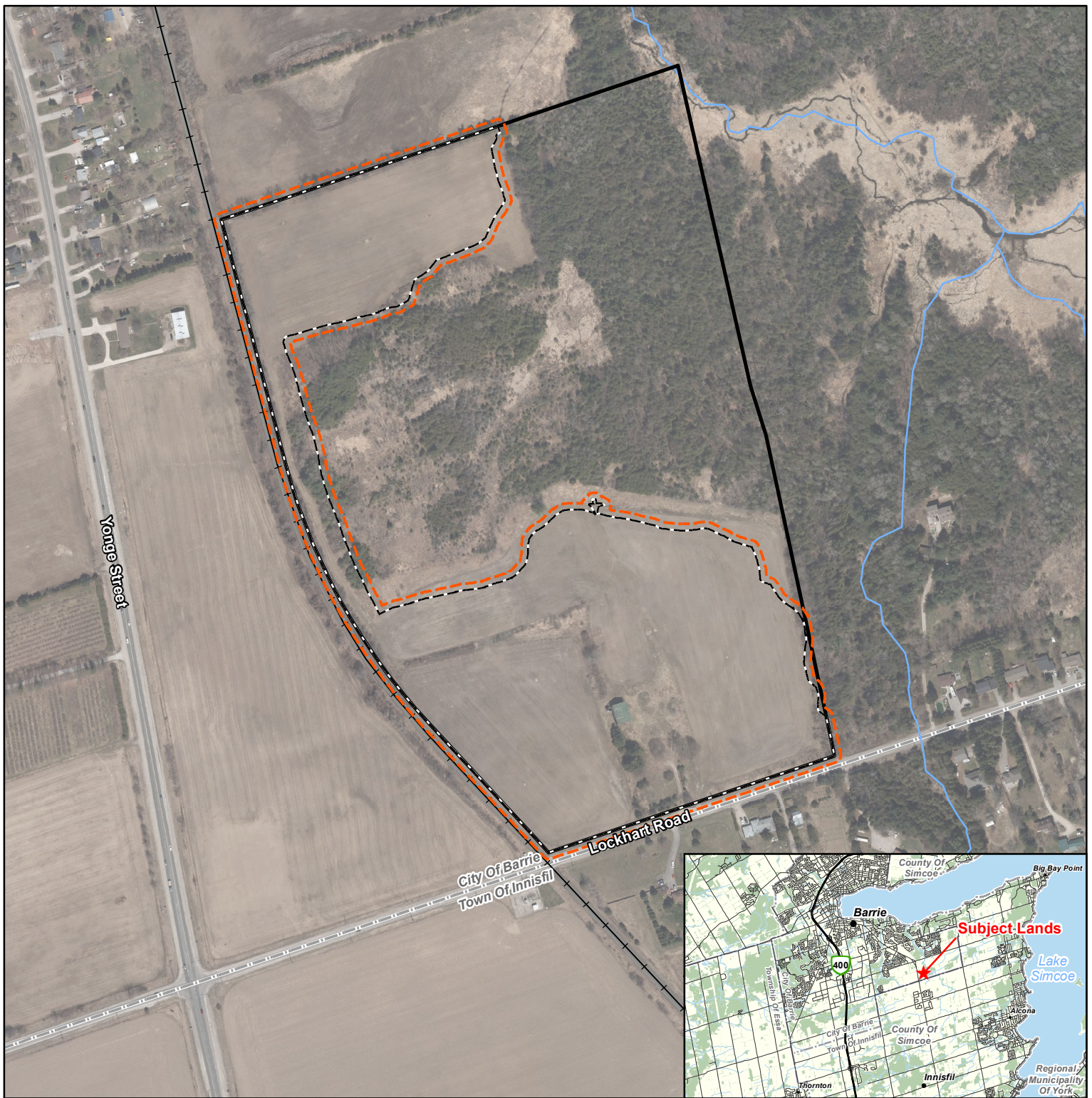
Appendix A – Figures

Figure 1:	Subject Lands
Figure 2:	Proposed Development
Figure 3:	Tree Inventory

Appendix B – Tables

Table 1:	Tree Assessment
Table 2:	Tree Grouping Tally
Table 3:	Hedgerow Tree Tally

Appendix A – Figures



NOTES:
 1. Coordinate System: NAD 1983 UTM Zone 17N.
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2022.
 3. Orthoimagery © First Base Solutions, 2022.
 Imagery taken in 2020.

Legend

- Subject Lands
- Limit of Grading (approximate)
- Limit of Grading + 6 metres
- Railway
- Watercourse
- Municipal Boundary, Lower/Single Tier

750 Lockhart Road
 Ballymore Building (Barrie) Corp.

Figure 1
 Subject Lands

0 50 m
 1:5,000





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Legend

- Subject Lands
- Limit of Grading (approximate)
- Limit of Grading + 6 metres
- Railway
- Watercourse

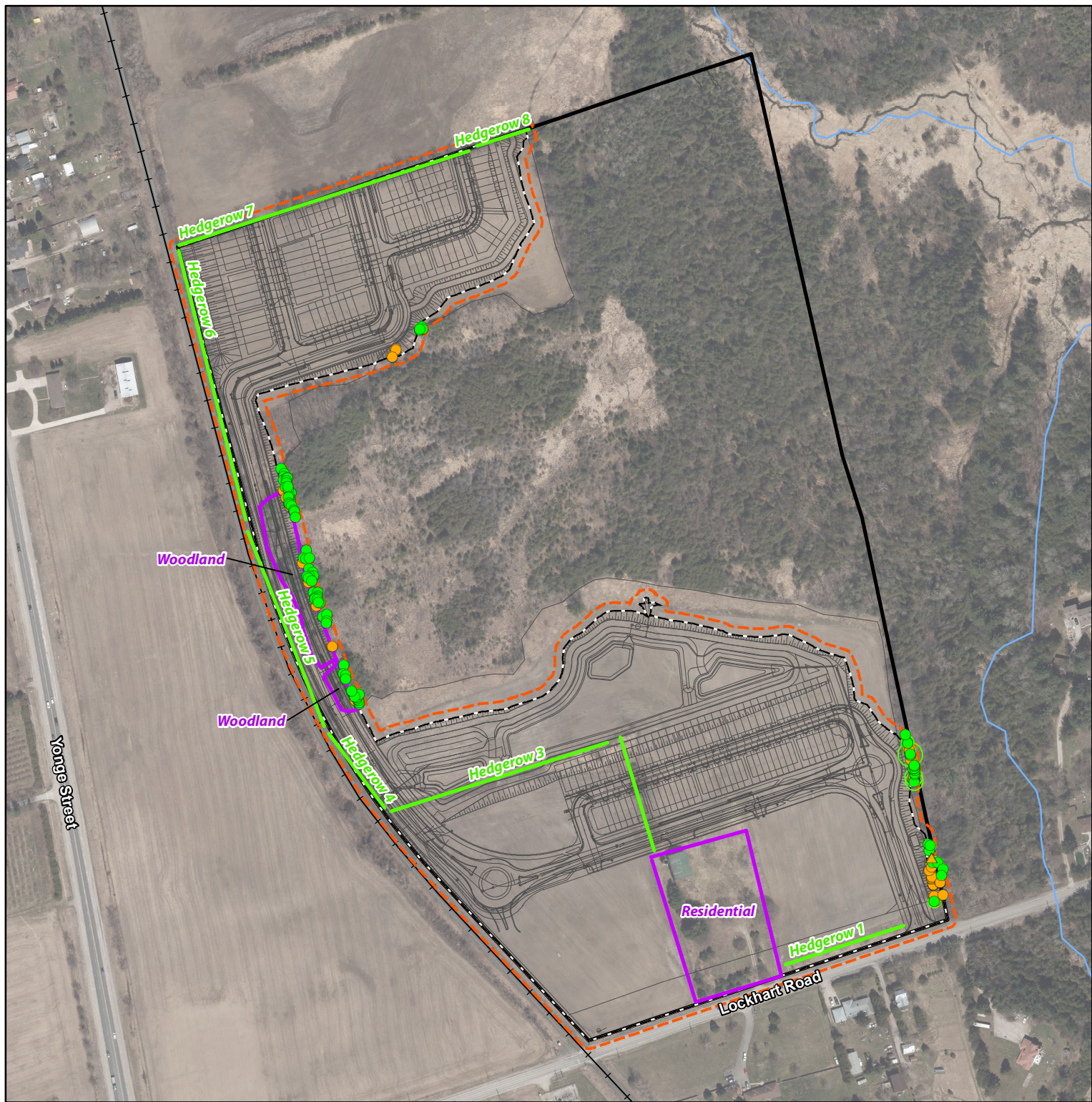
Project 1901398

750 Lockhart Road
Ballymore Building (Barrie) Corp.

Figure 2 Proposed Development

0 50 m
1:5,000





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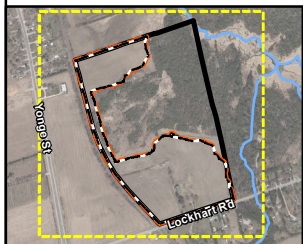
- Subject Lands
- Limit of Grading (approximate)
- Limit of Grading + 6 metres
- Site Plan
- Railway
- Watercourse
- Hedgerow Tree Tally
- Tree Grouping Tally
- Tree Protection Zone

Tree Inventory (Action - Overall Health)

- Preservation - Alive
- Removal - Alive
- Removal - Dead

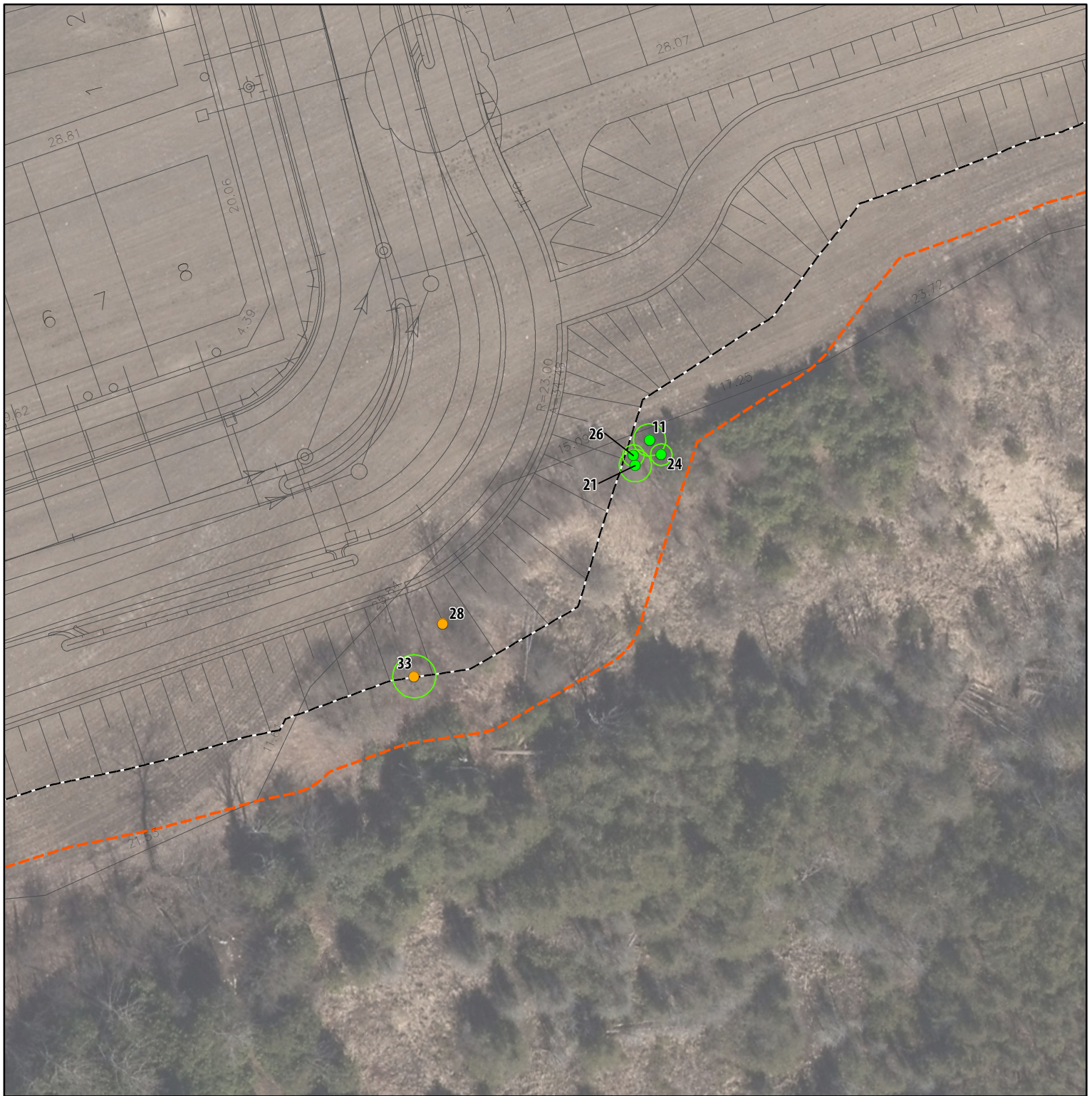
750 Lockhart Road
Ballymore Building (Barrie) Corp.

Figure 3.1 Tree Inventory



0 60 m
1:4,000





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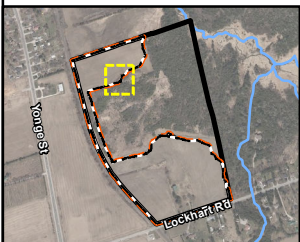
- Subject Lands
- Limit of Grading (approximate)
- Limit of Grading + 6 metres
- Site Plan
- Railway
- Watercourse
- Hedgerow Tree Tally
- Tree Grouping Tally
- Tree Protection Zone

Tree Inventory (Action - Overall Health)

- Preservation - Alive
- Removal - Alive
- Removal - Dead

750 Lockhart Road
 Ballymore Building (Barrie) Corp.

Figure 3.2 Tree Inventory



0 8 m
 1:500





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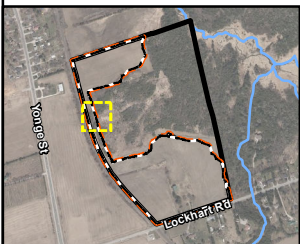
- Subject Lands
- Limit of Grading (approximate)
- Limit of Grading + 6 metres
- Site Plan
- Railway
- Watercourse
- Hedgerow Tree Tally
- Tree Grouping Tally
- Tree Protection Zone

Tree Inventory (Action - Overall Health)

- Preservation - Alive
- Removal - Alive
- Removal - Dead

750 Lockhart Road
 Ballymore Building (Barrie) Corp.

Figure 3.3 Tree Inventory



0 8 m
 1:500





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Legend

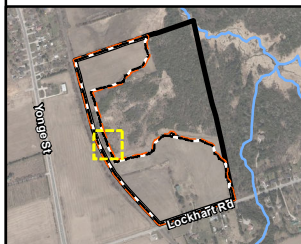
- Subject Lands
- Limit of Grading (approximate)
- Limit of Grading + 6 metres
- Site Plan
- Railway
- Watercourse
- Hedgerow Tree Tally
- Tree Grouping Tally
- Tree Protection Zone

Tree Inventory (Action - Overall Health)

- Preservation - Alive
- Removal - Alive
- Removal - Dead

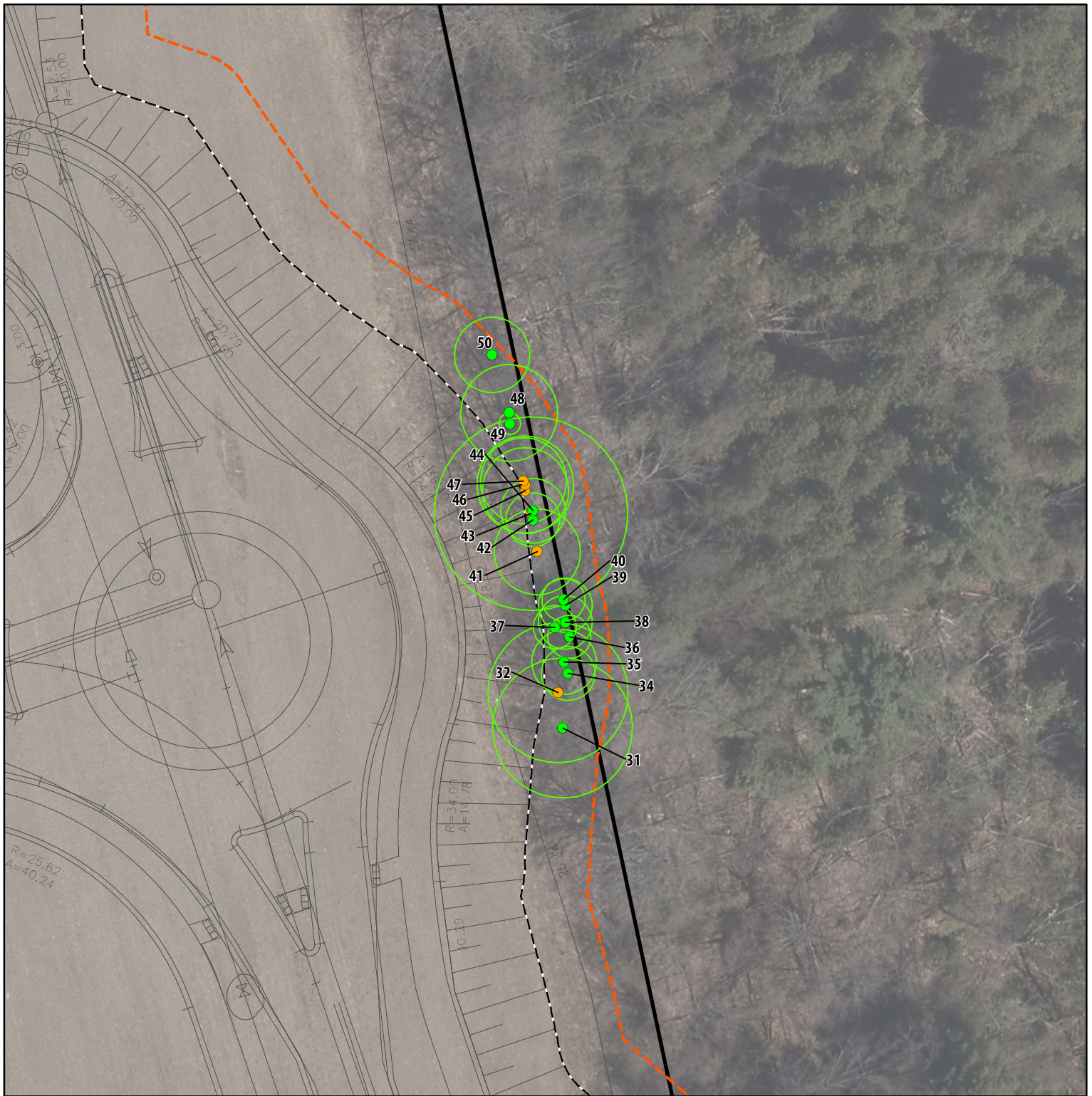
750 Lockhart Road
Ballymore Building (Barrie) Corp.

Figure 3.4 Tree Inventory



0 8 m
1:500





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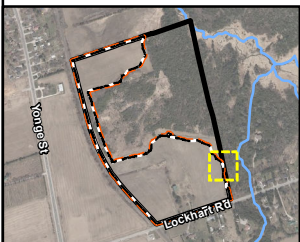
- Subject Lands
- Limit of Grading (approximate)
- Limit of Grading + 6 metres
- Site Plan
- Railway
- Watercourse
- Hedgerow Tree Tally
- Tree Grouping Tally
- Tree Protection Zone

Tree Inventory (Action - Overall Health)

- Preservation - Alive
- Removal - Alive
- ▲ Removal - Dead

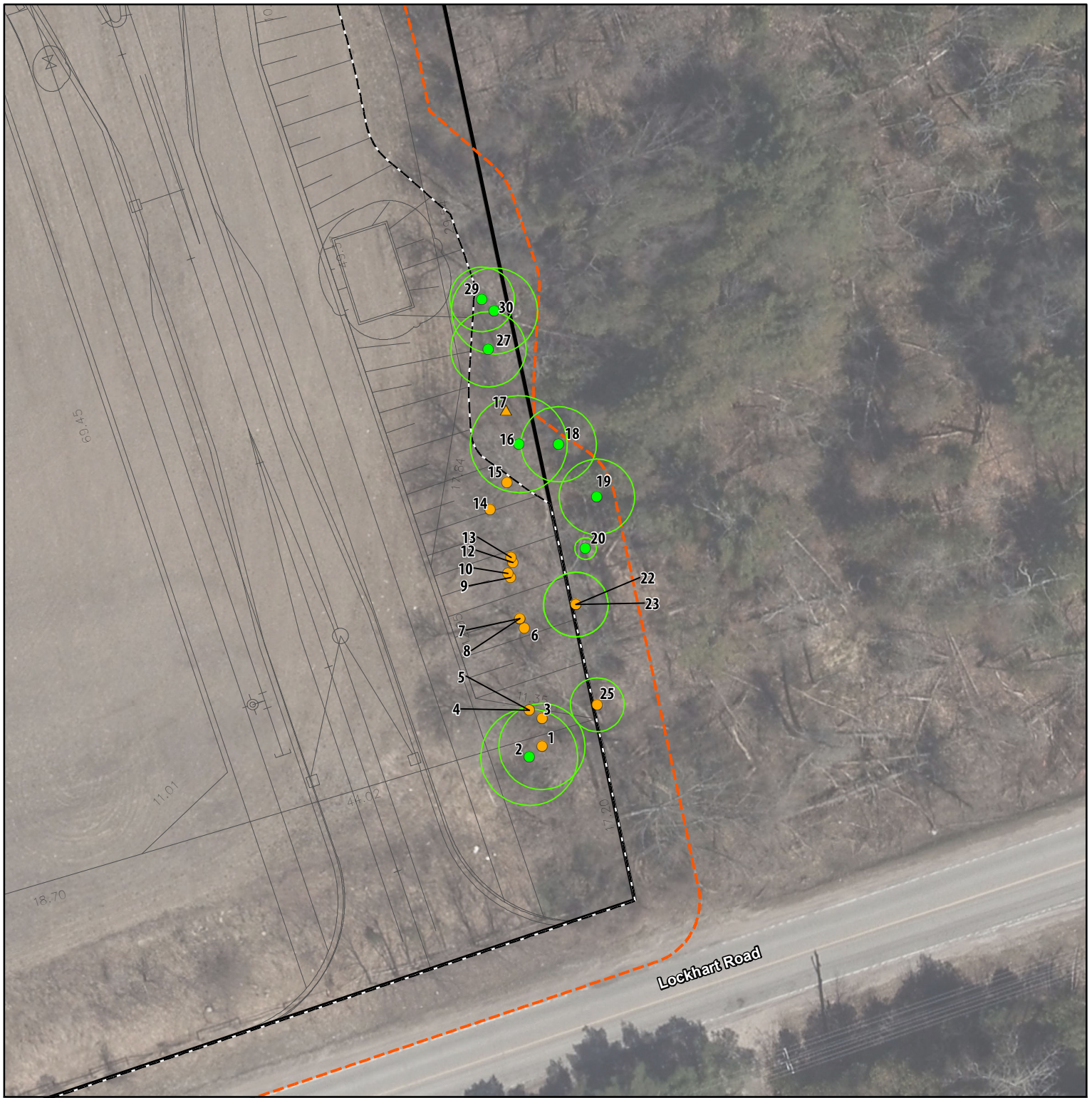
750 Lockhart Road
Ballymore Building (Barrie) Corp.

Figure 3.5 Tree Inventory



0 8 m
1:500





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Legend

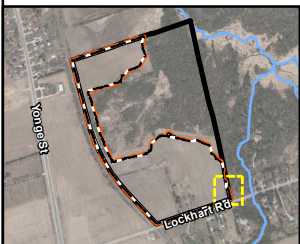
- Subject Lands
- Limit of Grading (approximate)
- Limit of Grading + 6 metres
- Site Plan
- Railway
- Watercourse
- Hedgerow Tree Tally
- Tree Grouping Tally
- Tree Protection Zone

Tree Inventory (Action - Overall Health)

- Preservation - Alive
- Removal - Alive
- Removal - Dead

750 Lockhart Road
 Ballymore Building (Barrie) Corp.

Figure 3.6 Tree Inventory



0 8 m
 1:500



Appendix B – Tables

Table 1: Tree Assessment

Tree ID Number	Species Common Name	Species Scientific Name	Multi-stem DBH ¹ (cm)	Stem 1 DBH (cm)	Stem 2 DBH (cm)	Stem 3 DBH (cm)	Stem 4 DBH (cm)	Stem 5 DBH (cm)	Crown Radius (m)	Overall Health	TPZ (m)	TPZ Encroachment (%)	Recommended Action	Notes
1	Manitoba Maple	<i>Acer negundo</i>	25	25	0	0	0	0	4	Fair	4	34	Removal	
2	Manitoba Maple	<i>Acer negundo</i>	20	20	0	0	0	0	4.5	Poor	4.5	27	Preservation	Significant lean into subject lands (>45 degrees)
3	Yellow Birch	<i>Betula alleghaniensis</i>	55	38	40	0	0	0	5	Poor	5	68	Removal	Canopy about 90% dead
4	Manitoba Maple	<i>Acer negundo</i>	53	21	28	18	21	29	5	Poor	5	81	Removal	Significant lean into subject lands
5	Manitoba Maple	<i>Acer negundo</i>	53	21	28	18	21	29	5.5	Poor	5.5	78	Removal	Significant lean into subject lands, one stem broken/dead
6	Trembling Aspen	<i>Populus tremuloides</i>	12	12	0	0	0	0	1.5	Good	1.5	100	Removal	
7	Manitoba Maple	<i>Acer negundo</i>	36	19	31	0	0	0	3.5	Poor	3.5	100	Removal	Significant lean into subject lands, one stem dead, other splintered but live.
8	Manitoba Maple	<i>Acer negundo</i>	36	19	31	0	0	0	3.5	Poor	3.5	100	Removal	Significant lean into subject lands, one stem dead, other splintered but live.
9	Manitoba Maple	<i>Acer negundo</i>	12	12	0	0	0	0	2.5	Poor	2.5	100	Removal	Dead branches, peeling bark, moderate lean into subject lands
10	Manitoba Maple	<i>Acer negundo</i>	24	24	0	0	0	0	3	Poor	3	100	Removal	Dead branches, on moderate lean into subject lands
11	Eastern White Cedar	<i>Thuja occidentalis</i>	11	11	0	0	0	0	1.5	Good	1.5	0	Preservation	
12	Manitoba Maple	<i>Acer negundo</i>	40	27	30	0	0	0	6.5	Poor	6.5	91	Removal	Dead branches, moderate lean into subject lands
13	Manitoba Maple	<i>Acer negundo</i>	33	20	21	16	0	0	6	Poor	6	93	Removal	2 of 3 stems fractured; rot at base
14	Ash	<i>Fraxinus sp.</i>	12	12	0	0	0	0	2.5	Good	2.5	100	Removal	
15	Manitoba Maple	<i>Acer negundo</i>	47	35	32	0	0	0	5.5	Fair	5.5	57	Removal	Moderate lean into subject lands
16	Black Cherry	<i>Prunus serotina</i>	38	19	27	19	0	0	4.5	Poor	4.5	12	Preservation	One stem dead, one 50% dead, one live; significant rot at stem bases
17	White Elm	<i>Ulmus americana</i>	17	17	0	0	0	0	2	Dead	2	0	Removal	Hazard; located entirely outside workspace
18	Eastern White Cedar	<i>Thuja occidentalis</i>	32	32	0	0	0	0	3.5	Good	3.5	0	Preservation	
19	Eastern White Cedar	<i>Thuja occidentalis</i>	28	28	0	0	0	0	3.5	Fair	3.5	0	Preservation	Moderate lean
20	Ash	<i>Fraxinus sp.</i>	19	19	0	0	0	0	1	Poor	1	0	Preservation	Possibly 100% dead
21	Green Ash	<i>Fraxinus pennsylvanica</i>	13	13	0	0	0	0	1.5	Good	1.5	5	Preservation	
22	Basswood	<i>Tilia americana</i>	13	13	0	0	0	0	3	Fair	3	42	Removal	Contorted leader
23	Basswood	<i>Tilia americana</i>	13	13	0	0	0	0	3	Fair	3	42	Removal	Contorted leader
24	Eastern White Cedar	<i>Thuja occidentalis</i>	11	11	0	0	0	0	1	Good	1	0	Preservation	
25	White Elm	<i>Ulmus americana</i>	11	11	0	0	0	0	2.5	Fair	2.5	34	Removal	Dead snag fallen on this tree causing leader to grow on 90 degree lean
26	Green Ash	<i>Fraxinus pennsylvanica</i>	12	12	0	0	0	0	1	Good	1	7	Preservation	
27	Trembling Aspen	<i>Populus tremuloides</i>	22	22	0	0	0	0	3.5	Good	3.5	22	Preservation	
28	Willow	<i>Salix sp.</i>	13	13	0	0	0	0	1.5	Fair	1.5	100	Removal	
29	Ash	<i>Fraxinus sp.</i>	15	15	0	0	0	0	3	Fair	3	32	Preservation	
30	Manitoba Maple	<i>Acer negundo</i>	29	29	0	0	0	0	4	Fair	4	20	Preservation	Moderate lean into subject lands; canopy overhang low to the ground
31	Sugar Maple	<i>Acer saccharum ssp. saccharum</i>	54	54	0	0	0	0	6.5	Good	6.5	28	Preservation	
32	Sugar Maple	<i>Acer saccharum ssp. saccharum</i>	63	50	39	0	0	0	6.5	Fair	6.5	35	Removal	Weak stem union but no obvious stress
33	Elm	<i>Ulmus sp.</i>	26	26	0	0	0	0	2	Fair	2	53	Removal	
34	Black Walnut	<i>Juglans nigra</i>	10	10	0	0	0	0	2.5	Fair	2.5	2	Preservation	Many live shoots from base
35	Sugar Maple	<i>Acer saccharum ssp. saccharum</i>	11	11	0	0	0	0	3	Good	3	13	Preservation	
36	Eastern White Cedar	<i>Thuja occidentalis</i>	17	10	14	0	0	0	2	Good	2	0	Preservation	
37	Eastern White Cedar	<i>Thuja occidentalis</i>	18	18	0	0	0	0	2	Good	2	16	Preservation	
38	Eastern White Cedar	<i>Thuja occidentalis</i>	20	20	0	0	0	0	2.5	Good	2.5	3	Preservation	
39	Eastern White Cedar	<i>Thuja occidentalis</i>	32	18	26	0	0	0	2.5	Good	2.5	0	Preservation	
40	Eastern White Cedar	<i>Thuja occidentalis</i>	28	28	0	0	0	0	2	Good	2	0	Preservation	
41	Black Cherry	<i>Prunus serotina</i>	40	40	0	0	0	0	4	Fair	4	38	Removal	Branch dieback
42	Black Cherry	<i>Prunus serotina</i>	34	34	0	0	0	0	2.5	Fair	2.5	33	Preservation	Dead limb
43	Sugar Maple	<i>Acer saccharum ssp. saccharum</i>	72	72	0	0	0	0	9	Fair	9	43	Removal	Divided at 1.5 m, union weak but no obvious stress
44	Black Cherry	<i>Prunus serotina</i>	30	30	0	0	0	0	3	Fair	3	32	Preservation	Multiple dead limbs
45	Sugar Maple	<i>Acer saccharum ssp. saccharum</i>	30	30	0	0	0	0	4	Good	4	40	Removal	
46	Black Cherry	<i>Prunus serotina</i>	40	40	0	0	0	0	4.5	Good	4.5	38	Removal	
47	Sugar Maple	<i>Acer saccharum ssp. saccharum</i>	26	26	0	0	0	0	4	Good	4	38	Removal	
48	Ash	<i>Fraxinus sp.</i>	41	25	24	22	0	0	4.5	Fair	4.5	14	Preservation	EAB
49	Manitoba Maple	<i>Acer negundo</i>	20	20	0	0	0	0	1	Poor	1	0	Preservation	Leader cut off at 4 m, just all live epicormics for canopy
50	Sugar Maple	<i>Acer saccharum ssp. saccharum</i>	21	21	0	0	0	0	3.5	Good	3.5	0	Preservation	
51	Eastern White Cedar	<i>Thuja occidentalis</i>	10	10	0	0	0	0	1	Good	1	0	Preservation	
52	Common Apple	<i>Malus pumila</i>	10	10	0	0	0	0	1.5	Fair	1.5	0	Preservation	
53	Eastern White Cedar	<i>Thuja occidentalis</i>	18	18	0	0	0	0	1.5	Good	1.5	0	Preservation	
54	Eastern White Cedar	<i>Thuja occidentalis</i>	18	18	0	0	0	0	2	Good	2	0	Preservation	
55	Poplar	<i>Populus sp.</i>	22	22	0	0	0	0	2	Good	2	1	Preservation	
56	Black Walnut	<i>Juglans nigra</i>	11	11	0	0	0	0	1	Good	1	0	Preservation	
57	Eastern White Cedar	<i>Thuja occidentalis</i>	13	13	0	0	0	0	1.5	Good	1.5	0	Preservation	
58	Common Apple	<i>Malus pumila</i>	20	20	0	0	0	0	2	Fair	2	0	Preservation	
59	Eastern White Cedar	<i>Thuja occidentalis</i>	18	18	0	0	0	0	1.5	Good	1.5	0	Preservation	
60	Eastern White Cedar	<i>Thuja occidentalis</i>	11	11	0	0	0	0	1.5	Good	1.5	0	Preservation	
61	Eastern White Cedar	<i>Thuja occidentalis</i>	18	18	0	0	0	0	1.5	Good	1.5	53	Removal	
62	Eastern White Cedar	<i>Thuja occidentalis</i>	15	15	0	0	0	0	1	Good	1	0	Preservation	
63	Eastern White Cedar	<i>Thuja occidentalis</i>	20	20	0	0	0	0	1	Good	1	0	Preservation	
64	Eastern White Cedar	<i>Thuja occidentalis</i>	15	15	0	0	0	0	2	Good	2	0	Preservation	

Table 1: Tree Assessment

Tree ID Number	Species Common Name	Species Scientific Name	Multi-stem DBH ¹ (cm)	Stem 1 DBH (cm)	Stem 2 DBH (cm)	Stem 3 DBH (cm)	Stem 4 DBH (cm)	Stem 5 DBH (cm)	Crown Radius (m)	Overall Health	TPZ (m)	TPZ Encroachment (%)	Recommended Action	Notes
65	Eastern White Cedar	<i>Thuja occidentalis</i>	20	20	0	0	0	0	1.5	Good	1.5	0	Preservation	
66	Eastern White Cedar	<i>Thuja occidentalis</i>	12	12	0	0	0	0	1.5	Good	1.5	0	Preservation	
67	Paper Birch	<i>Betula papyrifera</i>	18	18	0	0	0	0	1	Good	1	0	Preservation	
68	Scots Pine	<i>Pinus sylvestris</i>	28	28	0	0	0	0	2	Good	2	0	Preservation	
69	Eastern White Cedar	<i>Thuja occidentalis</i>	13	13	0	0	0	0	1.5	Good	1.5	0	Preservation	
70	Eastern White Cedar	<i>Thuja occidentalis</i>	10	10	0	0	0	0	1.5	Good	1.5	0	Preservation	
71	Eastern White Cedar	<i>Thuja occidentalis</i>	10	10	0	0	0	0	1.5	Good	1.5	0	Preservation	
72	Eastern White Cedar	<i>Thuja occidentalis</i>	12	12	0	0	0	0	1.5	Good	1.5	48	Removal	
73	Black Walnut	<i>Juglans nigra</i>	20	20	0	0	0	0	2	Good	2	31	Preservation	
74	Black Walnut	<i>Juglans nigra</i>	20	20	0	0	0	0	2	Good	2	35	Removal	
75	Balsam Poplar	<i>Populus balsamifera</i>	23	23	0	0	0	0	2	Good	2	22	Preservation	
76	Common Apple	<i>Malus pumila</i>	13	13	0	0	0	0	2	Fair	2	43	Removal	
77	Common Apple	<i>Malus pumila</i>	15	15	0	0	0	0	2	Fair	2	0	Preservation	
78	Black Walnut	<i>Juglans nigra</i>	15	15	0	0	0	0	2	Good	2	0	Preservation	
79	Green Ash	<i>Fraxinus pennsylvanica</i>	15	15	0	0	0	0	1.5	Fair	1.5	0	Preservation	
80	Eastern White Cedar	<i>Thuja occidentalis</i>	15	15	0	0	0	0	2	Good	2	2	Preservation	
81	Eastern White Cedar	<i>Thuja occidentalis</i>	15	15	0	0	0	0	2	Good	2	0	Preservation	
82	Trembling Aspen	<i>Populus tremuloides</i>	30	30	0	0	0	0	2	Good	2	11	Preservation	
83	Trembling Aspen	<i>Populus tremuloides</i>	30	30	0	0	0	0	2	Good	2	0	Preservation	
84	Eastern White Cedar	<i>Thuja occidentalis</i>	10	10	0	0	0	0	1.5	Good	1.5	0	Preservation	
85	Trembling Aspen	<i>Populus tremuloides</i>	20	20	0	0	0	0	2	Good	2	60	Removal	
86	Scots Pine	<i>Pinus sylvestris</i>	15	15	0	0	0	0	2	Good	2	0	Preservation	
87	Eastern White Cedar	<i>Thuja occidentalis</i>	11	11	0	0	0	0	1.5	Good	1.5	0	Preservation	
88	Eastern White Cedar	<i>Thuja occidentalis</i>	13	13	0	0	0	0	1.5	Good	1.5	0	Preservation	
89	Eastern White Cedar	<i>Thuja occidentalis</i>	15	15	0	0	0	0	2	Good	2	0	Preservation	
90	Eastern White Cedar	<i>Thuja occidentalis</i>	10	10	0	0	0	0	1.5	Good	1.5	26	Preservation	
91	Eastern White Cedar	<i>Thuja occidentalis</i>	15	15	0	0	0	0	2	Good	2	20	Preservation	
92	Eastern White Cedar	<i>Thuja occidentalis</i>	12	12	0	0	0	0	1.5	Good	1.5	44	Removal	
93	Eastern White Cedar	<i>Thuja occidentalis</i>	10	10	0	0	0	0	1.5	Good	1.5	38	Removal	
94	Eastern White Cedar	<i>Thuja occidentalis</i>	12	12	0	0	0	0	1.5	Good	1.5	48	Removal	
95	Eastern White Cedar	<i>Thuja occidentalis</i>	10	10	0	0	0	0	1.5	Good	1.5	0	Preservation	
96	Eastern White Cedar	<i>Thuja occidentalis</i>	15	15	0	0	0	0	2	Good	2	10	Preservation	
97	Eastern White Cedar	<i>Thuja occidentalis</i>	12	12	0	0	0	0	1.5	Good	1.5	0	Preservation	
98	Trembling Aspen	<i>Populus tremuloides</i>	15	15	0	0	0	0	2	Good	2	0	Preservation	
99	Trembling Aspen	<i>Populus tremuloides</i>	18	18	0	0	0	0	2	Good	2	0	Preservation	
100	Trembling Aspen	<i>Populus tremuloides</i>	12	12	0	0	0	0	2	Good	2	18	Preservation	
101	Eastern White Cedar	<i>Thuja occidentalis</i>	10	10	0	0	0	0	1.5	Good	1.5	17	Preservation	
102	Eastern White Pine	<i>Pinus strobus</i>	12	12	0	0	0	0	2	Good	2	0	Preservation	
103	Black Walnut	<i>Juglans nigra</i>	10	10	0	0	0	0	1.5	Good	1.5	0	Preservation	
104	Black Walnut	<i>Juglans nigra</i>	10	10	0	0	0	0	1.5	Good	1.5	0	Preservation	
105	Trembling Aspen	<i>Populus tremuloides</i>	40	40	0	0	0	0	2	Good	2	61	Removal	
106	Green Ash	<i>Fraxinus pennsylvanica</i>	20	20	0	0	0	0	1.5	Fair	1.5	2	Preservation	
107	Trembling Aspen	<i>Populus tremuloides</i>	23	23	0	0	0	0	2	Good	2	0	Preservation	
108	Green Ash	<i>Fraxinus pennsylvanica</i>	10	10	0	0	0	0	1.5	Fair	1.5	0	Preservation	
109	White Spruce	<i>Picea glauca</i>	20	20	0	0	0	0	1.5	Good	1.5	0	Preservation	
110	Eastern White Cedar	<i>Thuja occidentalis</i>	15	15	0	0	0	0	2	Good	2	38	Removal	
111	Trembling Aspen	<i>Populus tremuloides</i>	10	10	0	0	0	0	2	Good	2	11	Preservation	
112	Trembling Aspen	<i>Populus tremuloides</i>	10	10	0	0	0	0	2	Good	2	4	Preservation	
113	Balsam Poplar	<i>Populus balsamifera</i>	11	11	0	0	0	0	2	Good	2	0	Preservation	
114	Trembling Aspen	<i>Populus tremuloides</i>	10	10	0	0	0	0	2	Good	2	4	Preservation	
115	Eastern White Cedar	<i>Thuja occidentalis</i>	12	12	0	0	0	0	1.5	Good	1.5	61	Removal	
116	Scots Pine	<i>Pinus sylvestris</i>	42	30	30	0	0	0	2	Good	2	0	Preservation	
117	Scots Pine	<i>Pinus sylvestris</i>	19	19	0	0	0	0	2	Good	2	7	Preservation	
118	Scots Pine	<i>Pinus sylvestris</i>	10	10	0	0	0	0	2	Good	2	18	Preservation	
119	Scots Pine	<i>Pinus sylvestris</i>	17	12	12	0	0	0	2	Good	2	30	Preservation	
120	Paper Birch	<i>Betula papyrifera</i>	12	12	0	0	0	0	1	Good	1	0	Preservation	
121	Eastern White Cedar	<i>Thuja occidentalis</i>	42	30	30	0	0	0	2	Good	2	5	Preservation	
122	Eastern White Cedar	<i>Thuja occidentalis</i>	35	25	25	0	0	0	2	Good	2	36	Removal	
123	Scots Pine	<i>Pinus sylvestris</i>	10	10	0	0	0	0	2	Good	2	30	Preservation	
124	Eastern White Cedar	<i>Thuja occidentalis</i>	40	28	28	0	0	0	2	Good	2	30	Preservation	
125	Scots Pine	<i>Pinus sylvestris</i>	10	10	0	0	0	0	2	Good	2	30	Preservation	
Notes:														
1: Square root of the sum of each stem squared														

Tally Location	Species Common Name	Species Scientific Name	Stems > 20 cm DBH	Stems 13–20 cm DBH	Stems 10–12 cm DBH	Recommended Action
Residential	Balsam Fir	<i>Abies balsamea</i>	1	1	0	Removal
Residential	Manitoba Maple	<i>Acer negundo</i>	2	1	2	Removal
Residential	Norway Maple	<i>Acer platanoides</i>	5	0	1	Removal
Residential	Horse Chestnut	<i>Aesculus hippocastanum</i>	1	0	0	Removal
Residential	Ash	<i>Fraxinus sp.</i>	0	1	0	Removal
Residential	Red Cedar	<i>Juniperus virginiana</i>	0	0	1	Removal
Residential	Common Apple	<i>Malus pumila</i>	4	0	0	Removal
Residential	White Spruce	<i>Picea glauca</i>	6	0	0	Removal
Residential	Red Pine	<i>Pinus resinosa</i>	1	2	0	Removal
Residential	Eastern White Pine	<i>Pinus strobus</i>	8	0	0	Removal
Residential	Scots Pine	<i>Pinus sylvestris</i>	4	7	3	Removal
Residential	Eastern White Cedar	<i>Thuja occidentalis</i>	2	4	11	Removal
Woodland	Balsam Fir	<i>Abies balsamea</i>	1	1	0	Removal
Woodland	White Birch	<i>Betula papyrifera</i>	0	2	4	Removal
Woodland	Ash	<i>Fraxinus sp.</i>	0	0	1	Removal
Woodland	Common Apple	<i>Malus pumila</i>	0	0	1	Removal
Woodland	Eastern White Pine	<i>Pinus strobus</i>	13	2	2	Removal
Woodland	Scots Pine	<i>Pinus sylvestris</i>	4	7	6	Removal
Woodland	Balsam Poplar	<i>Populus balsamifera</i>	11	2	5	Removal
Woodland	Trembling Aspen	<i>Populus tremuloides</i>	6	18	23	Removal
Woodland	Willow	<i>Salix sp.</i>	1	0	0	Removal
Woodland	Eastern White Cedar	<i>Thuja occidentalis</i>	5	21	78	Removal
Woodland	White Elm	<i>Ulmus Americana</i>	0	2	0	Removal

Table 3: Hedgerow Tree Tally

Hedgerow ID	Number of Trees	Typical DBH (cm)	Recommended Action	Representative Species
1	10	15	Removal	Ash, Black Locust
2	6	12	Removal	Manitoba Maple, Sugar Maple
3	4	12	Removal	Hybrid White Willow
4	23	20	Removal	Common Apple, Black Cherry, White Elm
5	24	15	Removal	Common Apple, Ash, Black Cherry
6	141	25	Removal	Large-toothed Aspen, Black Cherry, Green Ash, Sugar Maple
7	121	20	Removal	Green Ash, Manitoba Maple, Eastern White Cedar, Black Cherry, Sugar Maple
8	37	15	Removal	Eastern White Cedar