

**Tree Inventory and Preservation Plan Report
440 Essa Road
Barrie, Ontario**

prepared for

**440 Essa Developments Inc.
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prepared by



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KUNTZ FORESTRY CONSULTING INC Project P2122

Introduction

Kuntz Forestry Consulting Inc. was retained by 440 Essa Developments Inc. to complete a Tree Inventory and Preservation Plan Report in support of a development application for a property located at 440 Essa Road in the City of Barrie. The subject property is located on the southeast side of Essa Road and Veterans Drive in Barrie, Ontario.

The work plan for this tree preservation study included the following:

- Prepare inventory of the tree resources over 10cm on and within six metres of the subject property and trees of all sizes within the road right-of-way;
- Evaluate potential tree saving opportunities based on the proposed development plans; and
- Document the findings in a Tree Inventory and Preservation Plan Report.

Tree resources were assessed utilizing the following parameters:

Tree # - number assigned to tree that corresponds to Figure 1.

Species - common and botanical names provided in the inventory table.

DBH - diameter (centimetres) at breast height, measured at 1.4 m above the ground.

Dripline – radius of tree crown, measures from the stem to the outermost branches

Condition - condition of tree considering trunk integrity, crown structure, and crown vigour. Condition ratings include poor (P), fair (F) and good (G).

Comments - additional relevant detail.

The results of the evaluation are provided below.

Methodology

Trees greater than 10cm DBH on and within six metres of the subject property and trees of all sizes within the road right-of-way were included in the tree inventory. Trees were located using a topographic survey provided for the subject property. Refer to Table 1 for the results of the tree inventory and Figure 1 for the location of the trees.

Existing Site Conditions

The subject property is currently occupied by a commercial building and associated gravel parking. Tree resources exist as landscape trees and natural generation. Refer to Figure 1 for the existing site conditions.

Tree Resources

The tree inventory was conducted on 7 June 2019. The inventory documented 32 trees on and within six metres of the subject property. Refer to Table 1 for the full tree inventory and Figure 1 for the location of trees reported in the tree inventory.

Tree resources included in the inventory are comprised of Manitoba Maple (*Acer negundo*), Silver Maple (*Acer saccharinum*), Sugar Maple (*Acer saccharum*), Green Ash (*Fraxinus pennsylvanica*), Scots Pine (*Pinus sylvestris*), Balsam Poplar (*Populus balsamifera*), Trembling Aspen (*Populus tremuloides*), and White Elm (*Ulmus americana*).

Proposed Development

The proposed development includes the demolition of the existing building and the construction of a seven-storey mixed-use building and associated surface parking. Refer to Figure 1 for the proposed development.

Discussion

The following sections provide a discussion and analysis of development impacts and tree preservation relative to the proposed development and existing conditions.

Development Impacts/Tree Removals

The removal of 24 trees is required to accommodate the proposed development. Required tree removals include Trees 1, 2, 5-13, 15-17, 19-24, 26-28, and 30. The removal of Tree 22 is recommended regardless of the site plan as Tree 22 is an Ash tree infested by Emerald Ash Borer with 50% crown-die-back. Refer to Figure 1 for the locations of proposed tree removals.

Tree Preservation

Preservation of remaining eight trees will be possible with the use of appropriate tree protection measures as indicated on Figure 1. Recommended tree preservation includes Trees 3, 4, 14, 18, 25, 29, 31, and 32. Tree protection measures will have to be implemented prior to the proposed earth works to ensure tree resources designated for retention are not impacted by the development. Refer to Figure 1 for the location of required tree preservation fencing, general Tree Protection Plan Notes, and the tree preservation fence detail.

Encroachment into the dripline of Tree 18 will be required to accommodate the proposed development. Shoring for the proposed underground parking will be required along the required tree preservation fencing. Given that encroachment is moderate there may be some adverse effects anticipated to the tree such as a reduction in above-ground growth rates until the tree regenerates its lost roots. The following mitigation measures must be implemented to ensure Tree 18 respond well to the impacts of development:

- Prior to the construction of the building, tree preservation fencing should be installed as indicated on Figure 1;
- All tree roots should be pruned by a Certified Arborist in accordance with Good Arboricultural Standards;
- During warm periods and periods of drought the tree should be irrigated weekly; and,
- Compost tea should be injected into the root zone in attempts to aid the tree in regenerating lost roots. Regeneration of lost roots will ensure that the tree has means to absorb nutrients from the soil required to support the crown and remains structurally sound.

A fence is proposed within the dripline of Tree 31. Any crown pruning required to accommodate clearance for the fence should occur by a certified Arborist in accordance with Good Arboricultural Standards. The posts for the fence should be hand dug within

the dripline of this tree. If structural roots are encountered, the post should be relocated. Smaller roots can be pruned in accordance with Good Arboricultural Standards.

Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by 440 Essa Developments Inc. to complete a Tree Inventory and Preservation Plan in support of a development application for the property located at 440 Essa Road in Barrie, Ontario. A tree inventory was conducted and reviewed in the context of the proposed development.

The findings of the study indicate a total of 32 trees on and within six metres of the subject property. The removal of 24 trees will be required to accommodate the proposed development. The remaining 8 trees can be preserved provided appropriate tree protection measures are followed throughout construction.

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 for general Tree Protection Plan Notes and the tree preservation fence detail.

- Tree protection barriers and fencing should be erected at locations as prescribed on Figure 1. All tree protection measures should follow the guidelines as set out in the tree preservation plan notes and the tree preservation fencing detail.
- No construction activity including surface treatments, excavations of any kind, storage of materials or vehicles, unless specifically outlined above, is permitted within the area identified on Figure 1 as a tree protection zone (TPZ) at any time during or after construction.
- Branches and roots that extend beyond prescribed tree protection zones that require pruning must be pruned by a qualified Arborist or other tree professional. All pruning of tree roots and branches must be in accordance with Good Arboricultural Standards.
- Site visits, pre, during and post construction is recommended by either a certified consulting arborist (I.S.A.) or registered professional forester (R.P.F.) to ensure proper utilization of tree protection barriers. Trees should also be inspected for damage incurred during construction to ensure appropriate pruning or other measures are implemented.

Respectfully Submitted,

Kuntz Forestry Consulting Inc.

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Table 1. Tree Inventory

Location: 440 Essa Road, Barrie

Date: 7 June 2019

Surveyors: KH

Tree#	Common Name	Scientific Name	DBH	TI	CS	CV	CDB	DL	Comments	Owner	Action
1	Manitoba Maple	<i>Acer negundo</i>	28, 24, 24	F	F	F	15	10	Union at 0.6m with included bark (H), lean (L-M), dead branches (H), epicormic branches (H), sparse crown (L), debris in root zone	Neighbour	Remove
2	Manitoba Maple	<i>Acer negundo</i>	27, 22.5	F	F	F		6	Co-dominance at 0.2m with included bark (L), bow (M) to east, asymmetrical crown (M)	Private	Remove
3	Silver Maple	<i>Acer saccharinum</i>	~25	G	G	G		6		City	Preserve
4	Silver Maple	<i>Acer saccharinum</i>	~25	G	G	G		6		City	Preserve
5	Balsam Poplar	<i>Populus balsamifera</i>	10	G	G	G		4	Debris in root zone	Private	Remove
6	Balsam Poplar	<i>Populus balsamifera</i>	32	G	G	F	15	8	Crook (L), dead branches (L), debris in root zone	Private	Remove
7	Balsam Poplar	<i>Populus balsamifera</i>	27	G	G	F	15	6	Sweep (VL), dead branches (L), debris in root zone	Private	Remove
8	Balsam Poplar	<i>Populus balsamifera</i>	~24, 19, 14	F/G	G	F	-	6	Union at base	Private	Remove
9	Balsam Poplar	<i>Populus balsamifera</i>	23	G	G	F	-	6	Asymmetrical crown (M)	Private	Remove
10	Manitoba Maple	<i>Acer negundo</i>	54, 15, 14	P	G	F/G	-	12	Union at base, lean (M-H), stem wounds (M) on largest stem, crook (M), sweep (L), crook (L)	Private	Remove
11	Scots Pine	<i>Pinus sylvestris</i>	31.5	F	F	F	10	5	Bow (L), stem wounds (M), small crown, dead branches (L)	Private	Remove
12	Green Ash	<i>Fraxinus pennsylvanica</i>	10.5	F	F	P/F	30	4	Co-dominance at 3m, bow (L), grape vine competition (M)	Private	Remove
13	Trembling Aspen	<i>Populus tremuloides</i>	10.5	F	G	F/G	-	5	Lean (M) to east	Private	Remove
14	Sugar Maple	<i>Acer saccharum</i>	18.5	G	G	G	-	6		Private	Preserve
15	Scots Pine	<i>Pinus sylvestris</i>	29.5	F/G	F/G	F	-	5	Lean (L)	Private	Remove
16	Scots Pine	<i>Pinus sylvestris</i>	21	F/G	F/G	F	-	4	Bow (L)	Private	Remove
17	Scots Pine	<i>Pinus sylvestris</i>	22.5	F/G	G	F/G	-	5	Crook (L)	Private	Remove
18	White Elm	<i>Ulmus americana</i>	44	F/G	G	G	-	8	Co-dominance at 3m with included bark (L)	Private	Preserve
19	Scots Pine	<i>Pinus sylvestris</i>	11.5	G	G	F/G	-	3	Crook (L), understory tree	Private	Remove
20	Scots Pine	<i>Pinus sylvestris</i>	17	F	F	F	25	3	Lean (L), crook (L), dead branches (M)	Private	Remove
21	Sugar Maple	<i>Acer saccharum</i>	21.5	G	G	G	-	6		Private	Remove
22	Green Ash	<i>Fraxinus pennsylvanica</i>	23	F/G	P	P	50	4	Co-dominance in crown	Private	Remove
23	Scots Pine	<i>Pinus sylvestris</i>	28	F	F/G	F/G	-	5	Lean (L), sweep (M)	Private	Remove
24	Scots Pine	<i>Acer platanoides</i>	25	G	G	F/G	-	4		Private	Remove
25	Manitoba Maple	<i>Acer negundo</i>	~25, 22, 13	P/F	F/G	F/G	-	6	Union at base, lean (L-H), sweep (M), crook (M), epicormic branches (H)	Neighbour	Preserve
26	Scots Pine	<i>Pinus sylvestris</i>	32	G	G	F/G	-	6		Private	Remove
27	Scots Pine	<i>Pinus sylvestris</i>	25	G	G	F/G	-	5		Private	Remove
28	Scots Pine	<i>Pinus sylvestris</i>	20	F/G	G	F/G	-	4	Crook (L)	Private	Remove
29	Scots Pine	<i>Pinus sylvestris</i>	~40	F/G	F	F	15	5	Bow (L), stem wounds (L) at base	Neighbour	Preserve
30	Scots Pine	<i>Pinus sylvestris</i>	27	G	G	F/G	-	5	Crook (L)	Private	Remove
31	Scots Pine	<i>Pinus sylvestris</i>	30	G	G	F/G	-	5		Neighbour	Preserve
32	Scots Pine	<i>Pinus sylvestris</i>	~50	G	F	P/F	20	8	Dead leader, crook (L)	Neighbour	Preserve

Codes		
DBH	Diameter at Breast Height	(cm)
TI	Trunk Integrity	(G, F, P)
CS	Crown Structure	(G, F, P)
CV	Crown Vigor	(G, F, P)
CDB	Crown dieback	%
DL	Dropline	(m)
~ = Estimate, (VL) = very light, (L) = light, (M) = moderate, (H) = heavy		