

City of Mississauga

# Arborist Report

November 2019

B000856

Burnhamthorpe Road West Improvements Class EA

**SUBMITTED BY CIMA CANADA INC.**

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## City of Mississauga

### Arborist Report

#### Burnhamthorpe Road West Improvements Class EA

Project no B000856

PREPARED BY:



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Associate Partner**

**CIMA+**

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Bowmanville, Ontario L1C 5M2

**November 2019**

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Appendix A – Tree Inventory Drawings TI-1 to TI-3

Appendix B – Tree Inventory and Assessment Table, Drawing TI-4

## 1. Introduction

CIMA+ was retained by the City of Mississauga to review the trees potentially affected by improvements to Burnhamthorpe Road between the West City Limit and Loyalist Drive. This report will help determine the proposed works' potential impacts and provide general recommendations to avoid and/or mitigate tree loss and injury.

## 2. Limitations

The assessment presented in this report has been made using accepted standard arboriculture techniques as outlined in the Council of Tree and Landscape Appraisers *Guide for Plant Appraisal, 9th Edition* (2000). These techniques include visual examination of above ground parts of each tree or trees in each group. The trees observed were not climbed, cored, or dissected, and excavation for detailed root crown inspection was not performed. Since some symptoms may only be present seasonally, the extent of observations that can be made may be limited by the time of year in which the inspection took place.

Since trees are living organisms, their health and vigour continually change over time due to seasonal variations, changes in site conditions, and other factors. For this reason, the assessment presented in this report is valid at the time of inspection, and no guarantee is made about the continued health of trees that are deemed to be in good condition. It is recommended that the trees be re-assessed periodically to identify changes in condition. While every standing tree has the potential for failure and therefore poses some risk, a tree assessment is a good indication of present health and potential problems that could arise in the future.

CIMA+ has prepared this report for the sole use of the client. Any use of this report by a third party, as any decision based on this report, is the singular responsibility of the third party. CIMA+ will not be held responsible for eventual damages towards a third party resulting from decisions taken, or based, on this report.

## 3. Methodology

CIMA+ conducted a site visit on November 13, 2017, to complete the following inventory and assessment.

Trees were identified within and adjacent to the existing right-of-way (ROW) and numbered, measured, and assessed for condition. The tree inventory plans are included in Appendix A which shows the locations of the numbered trees surveyed.

### 3.1 Tree Size

Size refers to trunk diameter (caliper or diameter at breast height (DBH)) measured in centimetres at 1.4 m above the ground. Where trees had more than one trunk from the base, the size of each trunk was recorded. Where trees forked to codominant trunks, each trunk was

measured, or the diameter was measured under the flare and the approximate height of the measurement was noted.

## 3.2 Observations

Several structural defects and health problems are included in the Comments section of the tree inventory and assessment table. Structural defects are often insignificant when a tree is small, but can pose problems when the tree grows larger and the weight of branches put added stress on defects that can cause weakness. Larger trees also have the potential to cause more damage should they fail. The following is an explanation of some of the observations included in the inventory and assessment table, and how they can affect trees over time.

- *Adventitious shoots* are vigorous growth of shoots from pruning cuts, inner branches, or along the trunk that usually occur in response to stress.
- *Buckthorn* is a thorny, invasive exotic shrub species that out-competes native vegetation.
- *Codominant leaders* (2 trunks or branches of approximately equal size) often have narrow branch angles, and are associated with weak branch attachment. Strong branch attachments occur between 2 limbs of unequal size with enough space for branch enlargement and formation of a branch bark ridge.
- *Included bark* is bark that has become embedded in a crotch where limbs join, and causes weakened branch attachments. As the trunk and branch increase in diameter, the bark of each stem in the tight crotch begin to push apart, increasing the likelihood of failure.
- A tree with a *lean* can be more susceptible to windthrow and soil failure. *Self-correcting lean* refers to a natural correction of the lean by development of new growth that counteracts the lean of the trunk to provide a more balanced form.
- *Narrow branch angles*, especially where there is included bark, can be a problem as trees grow larger because the inner wood is poorly attached.
- *Small dead branches* are an indicator of crown dieback and can be an early sign of stress.
- *Suppressed* trees are growing under the canopies of neighbouring trees, which can diminish vigour and affect structural form.

The detailed observations made concerning tree species, size, and condition are included in the tree inventory and assessment table on Drawing TI-4 in Appendix A.

## 3.3 Tree Condition

Each tree was given a subjective rating for trunk integrity, canopy structure, and crown vigour, and an overall health condition rating of Excellent, Good, Fair, Poor, or Dead. The following is a summary of how the ratings are determined:

- **EXCELLENT (E):** no apparent health problems; good structural form
- **GOOD (G):** minor problems with health and/or structural form
- **FAIR(F):** more serious problems with health and/or structural form

- **POOR (P):** major problems with health and structural form
- **DEAD (D):** dead

## 4. Construction Management

The most typical construction damage to trees is root damage from compaction and severance. While the dripline of a tree's canopy is typically thought to be associated with the root area, the root zones can actually extend significantly beyond the dripline of the tree, sometimes up to 2 or 3 times the height of the tree.

Grade changes and construction activities that could cause soil compaction should be kept away from trees as much as possible. If roots will be damaged by excavation equipment, it is better to cut roots cleanly with sharp pruning tools rather than allow them to be torn by large equipment. Clean cuts will help to minimize decay and entry points for disease. If branches are likely to hang in the way of passing equipment, the branches should be pruned by a qualified arborist to avoid tearing and undue injury to the tree.

Equipment and materials should not be stored near trees, and equipment should not be left idling where exhaust could burn foliage.

It is recommended that tree protection fencing be erected in accordance with City Tree Hoarding requirements in areas where trees could be affected by the work.

## 5. Certification and Closure

I certify that all the statements of fact in this assessment are true, complete, and correct to the best of our knowledge and belief, and that they are made in good faith.

Sincerely,



Lisa Cullen, OALA

ISA Certified Arborist ON-0741A

Attachments:

Appendix A: Tree Inventory Plan and Tree Inventory Table



## **Appendix A**

Tree Inventory Plan (TI-1 to TI-3)

Tree Inventory Table (TI-4)















CLIENT:

PROJECT NAME:

STAMPS

DESIGNED BY

APPROVED BY

[illegible]

No.	Date	Description	By
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SHEET TITLE:

BURNHAMTHORPE ROAD  
FROM NINTH LINE TO LOYELIST DRIVE  
TREE INVENTORY

**DISCIPLINE**

MUNICIPAL INFRASTRUCTURE

SCALE:

N.T.S

PROJECT No:  
B000856

CLIENT File No:

DRAFTER:  
L. MAY

DESIGNER:	
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DRAIVING N

TI-3

APPROVER:

APPROVER:  
L. CULLE

DATE \_\_\_\_\_

404

3 of 4

Tree Inventory and Assessment

Size refers to trunk diameter (caliper or DBH) measured in centimetres at 1.4m above the ground.

Good Condition (G): minor problems with health and/or structural form

Fair Condition (F):more serious problems with health and/or structural form

Poor Condition (P): major problems with health and structural form

Dead (D): tree is dead

Tree Number	Species	Size (cm)	Condition	Notes
1	Colorado Spruce	30	FG	lower branch dieback
2	Colorado Blue Spruce	27	F	dieback of lower half of canopy
3	Colorado Spruce	24	F	lower branch dieback, dead leader
4	Colorado Spruce	26	G	
5	Norway Spruce	11	F	sparse
6	Norway Spruce	15.5	G	
7	Norway Spruce	18	G	
8	Norway Spruce	5.5	F	sparse
9	Colorado Spruce	35	G	
10	Colorado Blue Spruce	25	G	
11	Colorado Blue Spruce	19	G	
12	Norway Spruce	15	G	
13	Norway Spruce	15	G	
14	Colorado Blue Spruce	30	G	lower branches pruned
15	Colorado Blue Spruce	31	G	lower branches pruned
16	Colorado Spruce	26	G	lower branches pruned
17	Colorado Blue Spruce	35	FG	lower branches pruned, dead branches
18	Colorado Blue Spruce	33	G	lower branches pruned
19	Norway Spruce	16	G	
20	Norway Spruce	15, 9.5	G	2 trunks
21	Colorado Blue Spruce	33	G	lower branches pruned
22	Colorado Blue Spruce	31	G	lower branches pruned
23	Colorado Blue Spruce	34	G	lower branches pruned
24	Norway Spruce	8	G	
25	Norway Spruce	13	G	
26	Colorado Spruce	33	G	
27	Colorado Spruce	26	G	
28	Colorado Spruce	35	G	
29	Colorado Blue Spruce	29	G	
30	Colorado Blue Spruce	29	G	
31	Colorado Blue Spruce	30	G	
32	Austrian Pine	31	G	Buckthorn shrubs at base
33	Austrian Pine	40	G	Buckthorn shrubs at base
34	Austrian Pine	27	FG	Buckthorn shrubs at base, slight lean towards sidewalk
35	Colorado Spruce	30	G	
36	Colorado Spruce	32	G	
37	Colorado Blue Spruce	25	G	lower branch dieback on fence side
38	Colorado Spruce	25	G	lower branch dieback on fence side
38	Colorado Spruce	30	G	lower branch dieback on fence side
40	Colorado Blue Spruce	30	G	
41	Colorado Blue Spruce	28, 15	G	
42	Colorado Spruce	30	G	
43	Colorado Spruce	28	FG	lean
44	Colorado Blue Spruce	27, 9, 9	G	
45	Colorado Blue Spruce	26	F	slight lean, topped
46	Colorado Blue Spruce	29	R	topped
47	Colorado Spruce	30	G	
48	Colorado Blue Spruce	26	G	
49	Colorado Blue Spruce	24	F	dieback on side of canopy
50	Colorado Blue Spruce	34	P	
51	Colorado Blue Spruce	30	P	
52	Colorado Blue Spruce	25	F	lower branch dieback
53	Norway Spruce	9.5	FG	
54	Colorado Blue Spruce	32	F	lower branch dieback
55	Colorado Blue Spruce	32	F	lower branch dieback, leader dead
56	Norway Spruce	10	G	
57	Colorado Spruce	35	G	lower branch dieback
58	Colorado Blue Spruce	30, 11	G	
59	Colorado Blue Spruce	20	F	lower branch dieback, leader dead
60	Norway Spruce	10	G	
61	Colorado Spruce	25	FG	lower branch dieback
62	Colorado Blue Spruce	28	F	lower branch dieback, leader dead
63	Norway Spruce	18	G	
64	Norway Spruce	15	G	
65	Colorado Spruce	28	G	
66	Colorado Blue Spruce	28	G	
67	Norway Spruce	12	G	
68	Norway Spruce	18	G	
69	Norway Spruce	14	G	
70	Colorado Blue Spruce	25	G	lower branches pruned
71	Colorado Blue Spruce	30	FG	lower branches pruned, leader dead
72	Colorado Spruce	30	G	lower branches pruned
73	Colorado Blue Spruce	30	FG	lower branches pruned
74	Colorado Blue Spruce	28	G	lower branches pruned, codominant at top

Tree Number	Species	Size (cm)	Condition	Notes
75	Colorado Blue Spruce	30, 16	F	lower branches pruned, leader dead
76	Colorado Blue Spruce	30	F	lower branches pruned, leader dead
77	Colorado Blue Spruce	25	F	lower branches pruned, leader dead, sparse
78	Norway Spruce	17	G	lower branches pruned
79	Colorado Blue Spruce	30	F	lower branches pruned, leader dead
80	Colorado Spruce	28	G	lower branches pruned
81	Colorado Blue Spruce	25	F	lower branches pruned, leader dead
82	Norway Spruce	16	G	
83	Norway Spruce	16	G	
84	Norway Spruce	21	G	
85	Colorado Blue Spruce	25	G	
86	Colorado Blue Spruce	18	G	
87	Colorado Blue Spruce	30	FG	leader dead
88	Norway Spruce	12	G	
89	Norway Spruce	12, 8	G	
90	Colorado Spruce	30	F	leader dead, branch dieback
91	Colorado Blue Spruce	25	FG	sparse lower canopy
92	Colorado Blue Spruce	28	F	lower half of canopy is dead
93	Colorado Blue Spruce	25	G	
94	Colorado Blue Spruce	25	F	sparse
95	Colorado Spruce	20	G	
96	Colorado Blue Spruce	30	G	
97	Silver/Hybrid Maple	31	G	
98	Silver Maple	28	G	adventitious shoots along trunk
99	White Elm	30, 30, 25, 20	G	3 codominant trunks from 0.5, height, narrow branch angles with included bark
100	Russian Olive	app. 10	F-G	4 multi-stem shrubs
101	Russian Olive	app. 10	F-G	3 multi-stem shrubs
102	Russian Olive	app. 15	F-G	multi-stem shrub, located just east of guiderail
103	Norway Maple	14	G	
104	Norway Maple	15	G	
105	Norway Maple	14	G	
106	Columnar Norway Maple	12.5	G	
107	Colorado Blue Spruce	30	G	
108	Colorado Blue Spruce	20, 10	FG	lower branch dieback, smaller trunk leaning towards road
109	Colorado Blue Spruce	20, 8	FG	lower branch dieback
110	Colorado Blue Spruce	30	G	
111	Colorado Spruce	20	F	lower branch dieback, leader dead
112	Colorado Blue Spruce	30	FG	sparse lower canopy
113	Colorado Blue Spruce	20	FG	sparse lower canopy
114	Colorado Blue Spruce	25	P	lower 2/3 of canopy dead
115	Colorado Spruce	20	FG	dead lower branches
116	Colorado Spruce	25	FG	
117	Colorado Blue Spruce	15	G	
118	Colorado Blue Spruce	20	G	
119	Colorado Spruce	25	G	
120	Colorado Spruce	25	FG	lower branch dieback
121	Colorado Blue Spruce	30	F	lower branch dieback and top dieback
122	Colorado Spruce	30	F	lower branch dieback
123	Colorado Blue Spruce	5	F	many dead branches
124	Colorado Blue Spruce	30	F	lower branch dieback, leader dead
125	Colorado Spruce	30	FG	lower branch dieback, leader dead
126	Colorado Blue Spruce	8	G	
127	Colorado Blue Spruce	35	G	
128	Colorado Blue Spruce	30	G	some dead lower branches
129	Colorado Blue Spruce	20	G	some dead lower branches
130	Colorado Blue Spruce	30	F	codominant leaders, lower branches pruned, many dead branches
131	Colorado Blue Spruce	25	G	codominant leaders, lower branches pruned, many dead branches
132	Colorado Spruce	25	G	lower branches pruned, many dead branches
133	Colorado Spruce	25	G	
134	Colorado Blue Spruce	30	G	
135	Colorado Blue Spruce	20	G	
136	Colorado Blue Spruce	25	G	
137	Colorado Spruce	25	G	
138	Colorado Spruce	25	G	
139	Colorado Blue Spruce	5	G	
140	Colorado Blue Spruce	20	FG	lower branch dieback
141	Colorado Blue Spruce	4	P	
142	Colorado Blue Spruce	12	G	

Tree Number	Species	Size (cm)	Condition	Notes
143	Colorado Blue Spruce	15	G	
144	Colorado Blue Spruce	12	G	
145	Colorado Blue Spruce	30	F	many dead branches
146	Colorado Blue Spruce	30	G	
147	Colorado Blue Spruce	30	G	lower branch dieback
148	Colorado Blue Spruce	25	G	lower branch dieback
149	Colorado Blue Spruce	25	F	lower branch dieback, leader dead
150	Colorado Blue Spruce	28	G	
151	Colorado Spruce	20	G	
152	Colorado Blue Spruce	20	G	
153	Colorado Blue Spruce	10	G	
154	Colorado Blue Spruce	10	G	
155	Colorado Blue Spruce	10	G	
156	Colorado Blue Spruce	20	G	
157	Colorado Blue Spruce	25	F	top dead
158	Colorado Blue Spruce	20, 12	G	
159	Colorado Blue Spruce	20	F	sparse
160	Colorado Blue Spruce	30	G	
161	Colorado Blue Spruce	35	G	
162	Colorado Blue Spruce	5	FG	
163	Colorado Blue Spruce	30	G	
164	Colorado Spruce	30	G	
165	Colorado Blue Spruce	10	G	
166	Colorado Blue Spruce	12	G	
167	Colorado Blue Spruce	8	G	
168	Colorado Blue Spruce	35	G	lower branches dead
169	Colorado Blue Spruce	30	G	lower branches dead
170	Colorado Blue Spruce	30	G	lower branches dead
171	Colorado Spruce	25	G	
172	Colorado Blue Spruce	25	F	
173	Colorado Spruce	25	P	top dead, canopy dieback
174	Colorado Blue Spruce	10	G	
175	Colorado Blue Spruce	10	G	
176	Colorado Blue Spruce	10	G	
177	Colorado Blue Spruce	10	G	
178	Colorado Blue Spruce	10	G	
179	Colorado Blue Spruce	10	G	
180	Colorado Blue Spruce	25	G	
181	Colorado Spruce	20	D	
182	Colorado Blue Spruce	20	D	a few lower branches alive
183	Colorado Spruce	20	P	lower half of canopy is dead
184	Colorado Spruce	30	FP	lower branch dieback, leader dead
185	Colorado Blue Spruce	5	F	
186	Colorado Blue Spruce	30	F	
187	Colorado Blue Spruce	3	F	
188	Prunus (Hedge)	10	G	3 trunks from base
189	Colorado Blue Spruce	6	FG	
190	Colorado Blue Spruce	8	FG	
191	Colorado Blue Spruce	8	FG	
192	Colorado Blue Spruce	30	P	
193	Colorado Blue Spruce	25	D	
194	Colorado Blue Spruce	30	G	lower branch dieback
195	Colorado Blue Spruce	28	G	lower branch dieback
196	Colorado Spruce	25	G	
197	Colorado Blue Spruce	10	G	
198	Colorado Blue Spruce	15	G	
199	Colorado Blue Spruce	15	G	
200	Colorado Blue Spruce	5	G	
201	Colorado Blue Spruce	15	G	
202	Colorado Blue Spruce	15	G	
203	Colorado Blue Spruce	30	FG	several dead branches
204	Colorado Blue Spruce	30	FG	dead lower branches
205	Colorado Blue Spruce	30	D	
206	Colorado Blue Spruce	30	FG	dead lower branches
207	Colorado Blue Spruce	30	G	
208	Colorado Blue Spruce	10	G	
209	Colorado Blue Spruce	10	G	
210	Colorado Blue Spruce	10	G	
211	Colorado Blue Spruce	10	G	
212	Colorado Blue Spruce	30	G	dead lower branches
213	Colorado Blue Spruce	30	G	dead lower branches
214	Colorado Blue Spruce	3	G	suppressed
215	Colorado Spruce	35	G	dead lower branches
216	Colorado Blue Spruce	30	FG	dead lower branches
217	Colorado Spruce	30	FG	dead lower branches
218	Colorado Blue Spruce	25	G	dead lower branches
219	Colorado Blue Spruce	30	G	
220	Douglas Fir	15	G	
221	Colorado Blue Spruce	6	G	
222	Colorado Blue Spruce	6	G	
223	Colorado Spruce	6	G	

LEGEND



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Fax: 905 697-0443  
www.cima.ca

CLIENT:

PROJECT NAME:

STAMPS:

DESIGNED BY

APPROVED BY

No.	Date	Description	By
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SHEET TITLE:

BURNHAMTHORPE ROAD  
FROM NINTH LINE TO LOYELIST DRIVE  
TREE INVENTORY

DISCIPLINE:

MUNICIPAL INFRASTRUCTURE

SCALE:

N.T.S.

PROJECT No:

B000856

CLIENT File No:

DRAWN BY:

L. MAY

DESIGNER:

L. CULLEN

DRAWING No:

TI-4

DATE:

SHEET No:

4 of 4

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