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Tree Conservation Report
Proposed Commercial Development
1243 Teron Road
Ottawa (Kanata), Ontario

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Submitted to:

Megha Holdings Inc.
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Ottawa, Ontario
K1G 4R7

Tree Conservation Report
Proposed Commercial Development
1243 Teron Road
Ottawa (Kanata), Ontario

January 6, 2020
Project: 64742.02

experience • knowledge • integrity

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1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Ltd. (GEMTEC) was retained by Megha Holdings Ltd., to carry out a Tree Conservation Report (TCR) for the property located at 1243 Teron Road, in the City of Ottawa (Kanata), Ontario, hereafter referred to as the "subject property". The site location is provided in Figure A.1 in Appendix A.

1.1 Purpose

The proponent is seeking to sever a 2.2 hectare (ha) parcel, from an existing 6.81 ha property, for future commercial development. In preparation for submission for a lot severance and Site Plan Approval, and in accordance with the City of Ottawa's Urban Tree Conservation By-Law (No. 2009-200), a Tree Conservation Report (TCR) is required to identify trees to be retained and protected under future development scenarios and, where feasible, identify opportunities to offset the loss of trees that cannot be retained or contribute to the City's forest cover targets.

The proposed development concept includes the creation of an 8,010m^2 commercial building, with an 8,900 m^2 parking lot and associated landscaping. The existing site layout and proposal development is provided in Figure A.2 in Appendix A.

1.2 Definitions

Terms and abbreviations used throughout the remainder of this report are summarized below.

Diameter at Breast Height (DBH), is defined as the diameter of the tree trunk measured at a height of 1.2 metres above ground surface for trees of 10 centimeters in diameter and greater.

Critical Root Zone (CRZ), is defined as the ground area within a circumference around the tree trunk calculated as 10 centimetres from the trunk of the tree for every one centimetre of tree truck diameter at breast height.

Distinctive Tree, a distinctive tree within the City of Ottawa is defined as any tree with a trunk calculated as 10 centimetres in diameter at breast height.

2.0 METHODOLOGY

2.1 Desktop Review

To complete the TCR, digital color air photos of the site available from GeoOttawa were reviewed from 1976 to 2017 to identify natural features, including historical trees, present on-site and in the vicinity of the site.

2.2 Field Investigations

In addition to the completion of a desktop review of historical air photos, two site visits were conducted on July 18 and 19, 2019, to document and identify all trees on-site with a DBH greater than 10 cm. The site investigation utilized transects bisecting the property to document the health of each tree greater than 10 cm in DBH, the trees location and the tree species. To determine the presence or absence of species at risk on-site and adjacent to site, butternut were searched for during the transect surveys. Site conditions during the site investigation are summarized in Table 2.2 below.

Table 2.2 Summary of Filed Investigations

Date	Time	Weather	Purpose
July 18, 2019	08:10-15:50	17°C, partly cloudy, Beaufort wind 3, no precipitation	Tree Inventory
July 19, 2019	10:00-13:20	26°C, clear, Beaufort wind 4, no precipitation	Tree Inventory

Site photographs taken during the field investigations are provided in Appendix B.

3.0 RESULTS

3.1 Existing Conditions

The site is currently occupied by two buildings of approximately 6,302 m^2 (0.63 ha) and 1,495 m^2 (0.15 ha), occupying approximately 11% of the 6.81 ha property. Other existing features on the property include the driveways and parking lots, providing access to Teron Road in three locations. Impermeable surfaces comprise approximately 46% of the 6.81 ha property. The remainder of the property consists of manicured lawn surrounding the existing infrastructure, and a large vacant area in the eastern portion of the property consisting of cultural meadow, thicket and woodland habitat.

The proposed land severance and development is to take place within the vacant eastern portion of the site, the existing vegetation communities in this area are illustrated on Figure A.3 in Appendix A. Numerous trees are present on the property, a summary of all trees on-site is provided in Section 3.2 below.

The vicinity of the site is characterized by commercial office properties. The nearest significant feature is the Ottawa Green Belt located approximately 400 m east of the site. There are no other natural environmental features in the vicinity of the project, as summarized in Table 3.1 below.

Table 3.1 Summary of Natural Features Present On-site or Adjacent to Site

Natural Feature	Present On-site or Adjacent
Surface water or wetlands present	None
Steep slopes, valleys or escarpments	None
Urban Natural Features or Natural Environment Areas	None
Significant Woodlands	None
Greenspace Linkages	None
High Quality Specimen Trees	None
Rare plant communities or unique environmental features	None
Presence of Species at Risk	None

Based on a review of historical air photos the site, the site has undergone no significant alteration since 1991, when the lot had the same configuration as today. In 1965 the lot was completely vacant, consisting of agricultural fields. The first building closest to Teron Road, was built between 1965 and 1976. The second building was built between 1976 and 1991.

Per the City of Ottawa's Significant Woodlands Guidelines, woodlands within the urban policy area are considered significant if they meet the size threshold of greater than 0.8 hectares and if they meet an age exemption of greater than 60 years old. While woodlands are present on the adjacent property to the east and south, review of historical air photos indicates that the

woodlands do not meet the age exemption criteria for urban woodlands. Review of the 1965 aerial photo from GeoOttawa indicates that the areas presently identified as woodland adjacent to site, consisted of patchy thicket habitat, not woodland habitat 55 years ago. As the adjacent woodlands do not meet the minimum age criteria of 60 years, no significant woodlands have been identified on-site or adjacent on site.

3.2 Tree Inventory Summary

A tree inventory was conducted on July 18 and July 19, 2019. Trees on-site were identified, enumerated and assessed for visual signs of distress and disease. Table C.1 in Appendix C provides a summary of all tree specimens on-site whose DBH was greater than 10 cm. CRZ values for trees with DBH greater than 10 cm are also present in Table C.1 in Appendix C. Critical Root Zones were not calculated for dead trees. For trees with multiple stems greater than 10 cm DBH, the largest DBH was used to calculate the CRZ. All trees with a DBH greater than 10 cm and their CRZ are illustrated on Figure A.4, A.5 and A.6, in Appendix A. In general, the tree community assemblage can be described as containing a few semi-mature and immature opportunistic trees.

Per the City of Ottawa By-law No. 2009-200, no distinctive trees (DBH > 50 cm) were identified on-site.

During the site investigation, no butternut trees were identified on-site or adjacent to site. None of the trees identified on-site are listed under the provincial Endangered Species Act.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on a review of the information summarized in Section 3.2, Table C.1 in Appendix C and the proposed development concept illustrated on Figure A.2, the following conclusions are provided:

- 243 trees were identified as non-retainable under the proposed development concept;
- No distinctive trees, meeting the City of Ottawa By-Law Np. 2009-200 requirements, were identified on-site;
- Trees on-site are of a typical urban and opportunistic or early successional species;
- 168 trees are in good/healthy condition and 131 trees are dead, dying or poor condition;
- No Butternut trees were identified on-site or adjacent to site; and
- None of the 299 trees present on-site represent exceptional native tree specimens, nor do they provide any conservation value.

4.1 Tree Conservation Recommendations

Opportunities exist along the perimeter of the proposed development along the northeast, northwest and southeast property boundaries to offset the loss of trees that are not retainable under the proposed development concept. In effort to offset the effect of vegetation clearing, consideration should be given to landscape planting with native tree species indicative of the Great Lakes – St. Lawrence Forest Region, such as white cedar, white spruce, red maple and red oak.

4.2 Recommended Mitigation Measures

The following mitigation measures and best practice recommendations are provided by GEMTEC in order to minimize and eliminate negative impacts to trees identified in Appendix C as retainable. Construction contractors shall apply the following measures below to prevent damages to trees identified to be retained in the redevelopment plan for the site;

- All trees identified to be retained should be clearly marked and the CRZ delineated with fencing to prevent encroachment and damage during construction;
- If existing pavement surface around trees to be retained is going to be removed than temporary fencing should be installed to delineate the CRZ of each tree;
- If trees to be removed overlap with the CRZ of trees to be retained, cut roots at the edge of the retained CRZ and grind down stumps after tree removal, do not pull out stumps. If roots must be cut, roots 20 cm or larger should be cut at right angles with clean, sharp, horticultural tools, without tearing, crushing, or pulling;
- Do not place any material or equipment within the CRZ of any tree identified to be retained;
- Do not attach any signs, notices or posters to any tree identified to be retained;
- Do not damage the root system, trunk, or branches or any tree identified to be retained;
- Ensure that exhaust fumes from all equipment are directed away from tree canopy; and

- Tree removal shall occur outside of the key breeding bird period (typically April 15 to August 15) as identified by Environment Canada for the protection of migratory birds and to avoid contravention of the Migratory Bird Convention Act. If vegetation clearing activities must take place outside of the aforementioned timing window than a nest survey shall be conducted by a qualified professional.

5.0 CLOSURE

This letter and the work referred to within it have been undertaken by GEMTEC Consulting Engineers and Scientists Ltd. (GEMTEC), and was prepared for Megha Holdings Inc., and is intended for the exclusive use of Mega Holdings Inc. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC and Mega Holdings Inc. Nothing in this report is intended to provide a legal opinion.

The investigation undertaken by GEMTEC with respect to this report and any conclusions or recommendations made in this report reflect the best judgements of GEMTEC based on the site conditions observed during the investigations undertaken at the date(s) identified in the report and on the information available at the time the report was prepared.

This letter has been prepared for the application notes and it is based in part, on visual observations made at the site, all as described in the report. Unless otherwise states, the findings contained in this report cannot be extrapolates or extended to previous or future site conditions or for portions of the site that were unavailable for direct investigation.

Should new information become available during future work, or other studies, GEMTEC should be requested to review the information and, if necessary, re-assess the conclusions present herein.

We trust this report provides sufficient information for your present purposes. If you have any questions concerning this report, please do not hesitate to contact our office.

Sincerely,

Taylor Warrington, B.Sc.
Biologist

Drew Paulusse, B.Sc.
Senior Biologist

6.0 REFERENCES

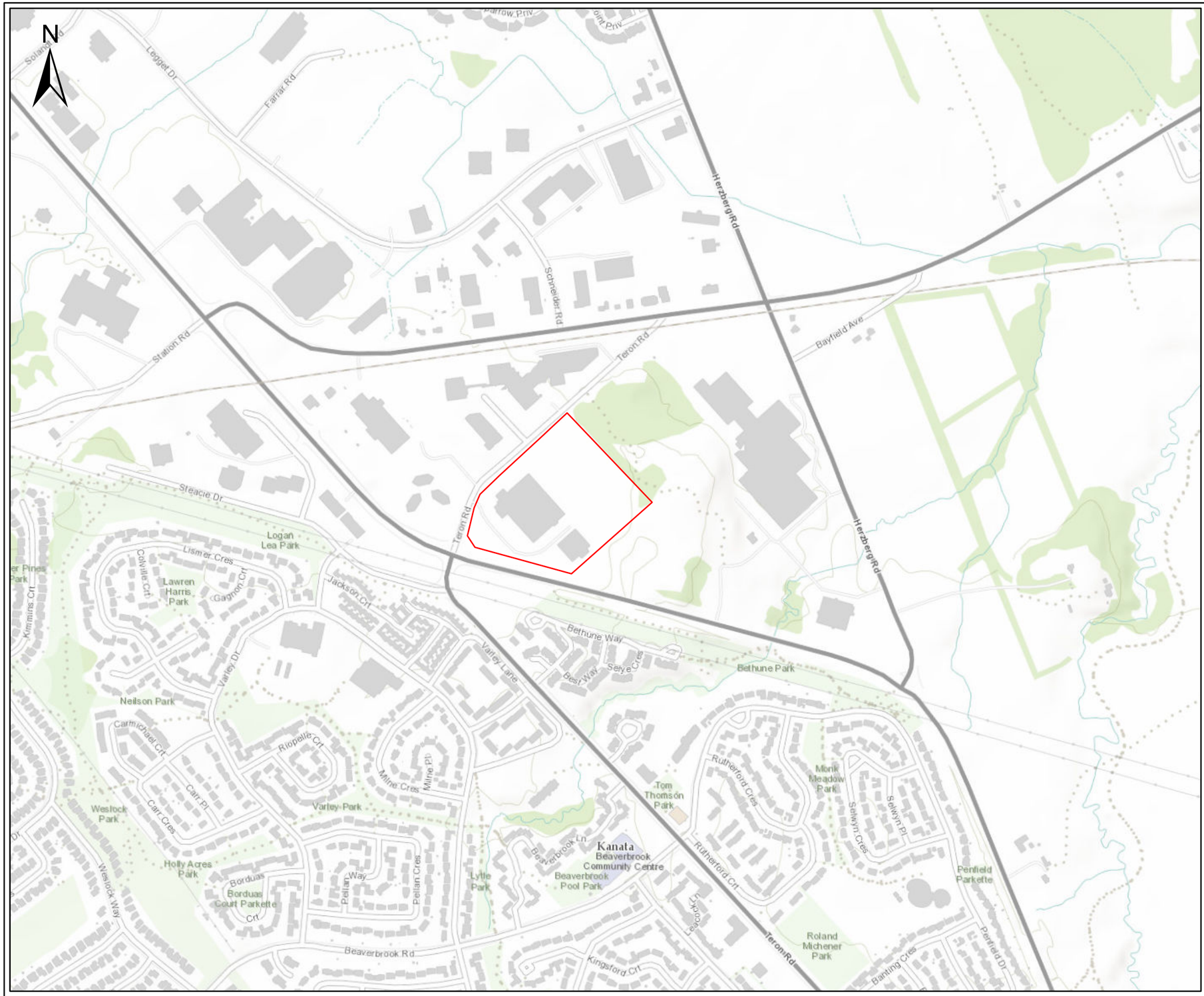
Ottawa, City of (Ottawa). 2003. City of Ottawa Official Plan. May

Ottawa, City of (Ottawa), By-law No. 2009-200, *Tree Conservation – Urban* (Updated June 2018).

7.0

APPENDIX A

Report Figures



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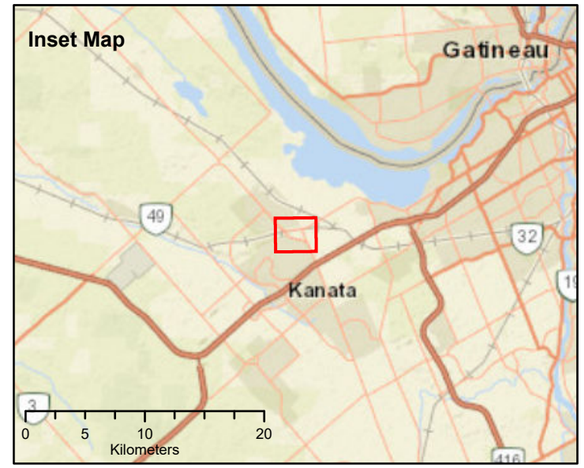
Property Boundary



Scale

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Client:	Project:
Mehga Holdings Inc.	64742.02

Location

1243 Teron Road
City of Ottawa (Kanata), Ontario

Drwn By:	Chkd By:	
TW	DP	Site Location

Date: September 2019	Rev.	
	0	Figure: A.1

Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: World Topographic Map: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
World Street Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Legend

- Study Area
- Property Boundary
- Proposed Development
- Proposed Severance
- Proposed Parking Lot

Scale
1:2,500
0 15 30 60 90 120 Meters

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Project: 64742.02

Location
1243 Teron Road
City of Ottawa (Kanata), Ontario

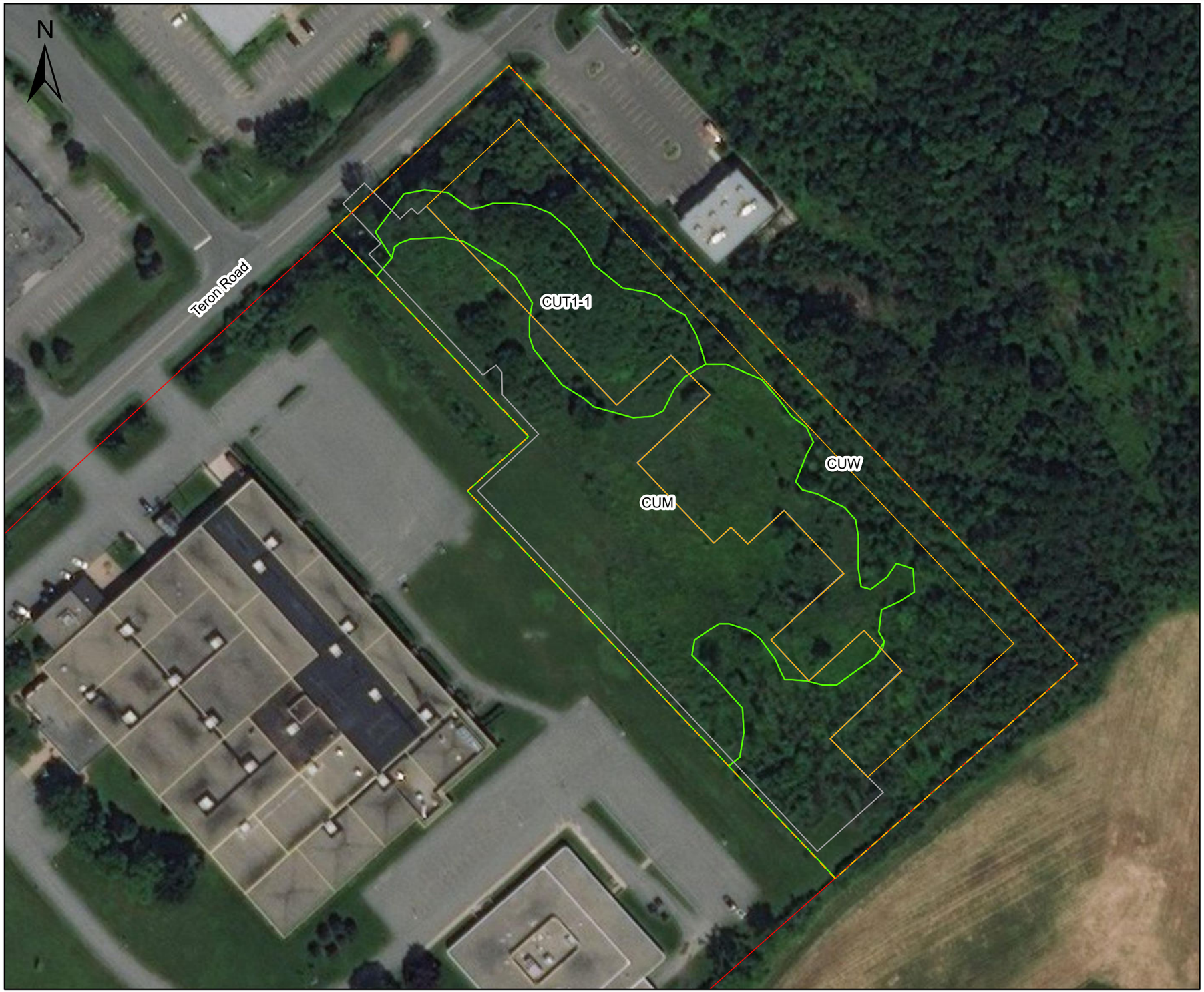
Drwn By: TW | Chkd By: DP | Site Layout

Date: September 2019

Rev. 0

Figure: A.2

Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: Imagery: DigitalGlobe



Legend

- Property Boundary
- Proposed Development
- Proposed Severance
- Proposed Parking Lot
- Vegetation

CUW = Cultural Woodland
CUM = Cultural Meadow
CUT1-1 = Sumac Cultural Thicket

Scale
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0 5 10 20 30 40 50
Meters

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Location
1243 Teron Road
City of Ottawa (Kanata), Ontario

Drwn By:	Chkd By:	
TW	DP	Existing Vegetation

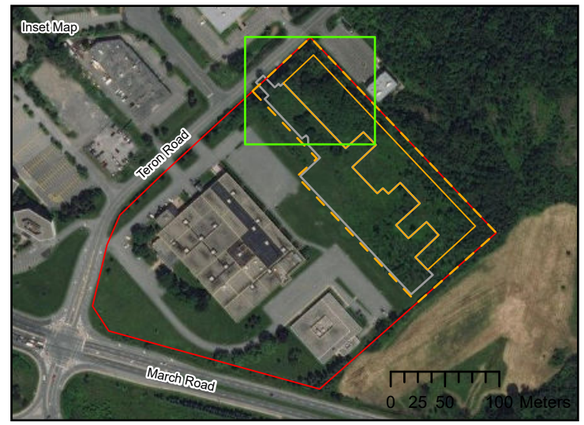
Date: September 2019	Rev.	
	0	Figure: A.3

Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: World Imagery: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Imagery: DigitalGlobe

Legend

- Property Boundary
- Proposed Development
- Proposed Severance
- Proposed Parking Lot
- Tree Number and Critical Root Zone

Note: Critical Root Zone values for all living trees are presented in Table C.1 in Appendix C.



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Client: Megha Holdings Inc.

Project: 64742.02

Location
1243 Teron Road
City of Ottawa (Kanata), Ontario

Drwn By: TW | Chkd By: DP | Tree Inventory - North

Date: September 2019

Rev. 0

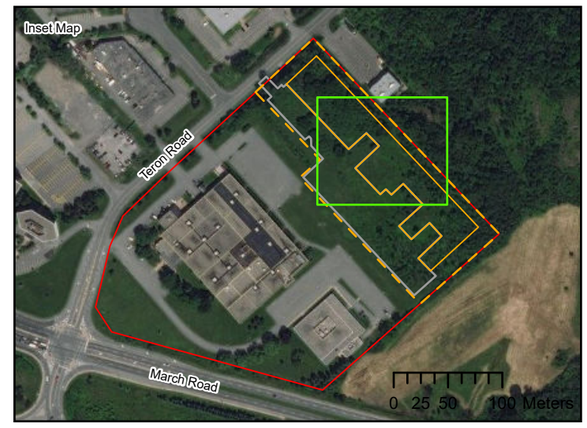
Figure: A.4

Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: World Imagery: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Imagery: DigitalGlobe

Legend

- Property Boundary
- Proposed Development
- Proposed Severance
- Proposed Parking Lot
- Tree Number and Critical Root Zone

Note: Critical Root Zone values for all living trees are presented in Table C.1 in Appendix C.



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Location
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Drwn By:	Chkd By:	
TW	DP	Tree Inventory - Central

Date: September 2019	Rev.	Figure: A.5
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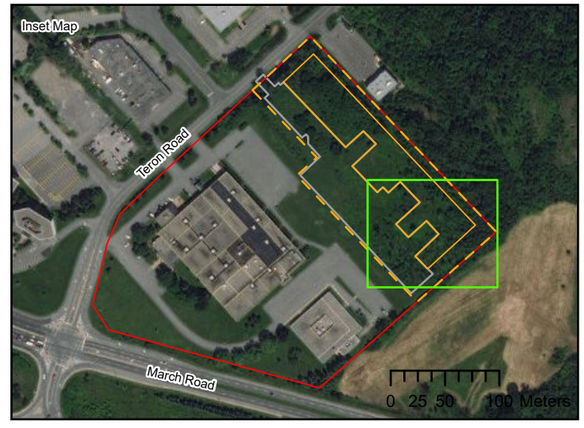
Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: World Imagery: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Imagery: DigitalGlobe

Legend

- Property Boundary
- Proposed Development
- Proposed Severance
- Proposed Parking Lot
- Tree Number and Critical Root Zone

Note: Critical Root Zone values for all living trees are presented in Table C.1 in Appendix C.



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Client: Megha Holdings Inc.

Project: 64742.02

Location: 1243 Teron Road
City of Ottawa (Kanata), Ontario

Drwn By: TW | Chkd By: DP | Tree Inventory - South

Date: September 2019

Rev. 0

Figure: A.6

Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: World Imagery: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Imagery: DigitalGlobe

APPENDIX B

Site Photographs

Site Photograph 1 – Cultural Meadow (CUM)

Site Photograph 2 – Cultural Meadow (CUM)

Site Photograph 3 – Cultural Meadow (CUM) with Cultural Woodland (CUW) in Background

Site Photograph 4 – Cultural Meadow (CUM) with Sumac Cultural Thicket (CUT1-1) and Cultural Woodland (CUW) in Background

Site Photograph 5 – Cultural Woodland (CUW) with Dead Ash Trees

Site Photograph 6 – Cultural Woodland (CUW)

Site Photograph 7 – Cultural Woodland (CUW)

Site Photograph 8 – Sumac Cultural Thicket (CUT1-1)

APPENDIX C

Tree Inventory Summary Table

Table C.1
Summary of Tree Inventory Results

Tree Number	Common Name	Scientific Name	Diameter (cm DBH)	Critical Root Zone (cm)	Condition	Retainable or Conflict	Signficant Tree (> 50 cm)	Wildlife Tree
1	Ash sp.	*Fraxinus sp.*	18	--	Dead	Conflict	N	N
2	Ash sp.	*Fraxinus sp.*	16	--	Dead	Conflict	N	N
3	Ash sp.	*Fraxinus sp.*	17.5	--	Dead	Conflict	N	N
4	Common Buckthorn	*Rhamnus cathartica*	12	120	Healthy	Conflict	N	N
5	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
6	Ash sp.	*Fraxinus sp.*	20 & 15	--	Multi-stem (2), dead	Conflict	N	N
7	American Elm	*Ulmus americana*	18	180	Healthy	Retainable	N	N
8	Ash sp.	*Fraxinus sp.*	12	--	Dead	Retainable	N	N
9	Ash sp.	*Fraxinus sp.*	18	--	Dead	Retainable	N	N
10	Ash sp.	*Fraxinus sp.*	12	--	Dead	Retainable	N	N
11	Ash sp.	*Fraxinus sp.*	12 & 10	--	Multi-stem (2), dead	Retainable	N	N
12	Ash sp.	*Fraxinus sp.*	12	--	Dead	Retainable	N	N
13	Ash sp.	*Fraxinus sp.*	18	--	Dead	Retainable	N	N
14	Ash sp.	*Fraxinus sp.*	13	--	Dead	Retainable	N	N
15	Manitoba Maple	*Acer negundo*	33, 25 & 22	--	Multi-stem (3), dead	Retainable	N	N
16	Common Buckthorn	*Rhamnus cathartica*	15 & 10	150	Multi-stem (2), healthy	Retainable	N	N
17	Common Buckthorn	*Rhamnus cathartica*	13, 11 & 11	130	Multi-stem (3), healthy	Retainable	N	N
18	Common Buckthorn	*Rhamnus cathartica*	18	180	Healthy	Retainable	N	N
19	Staghorn Sumac	*Rhus typhina*	11	110	Healthy	Retainable	N	N
20	Common Buckthorn	*Rhamnus cathartica*	10	100	Healthy	Retainable	N	N
21	Common Buckthorn	*Rhamnus cathartica*	10 & 10	100	Multi-stem (2), healthy	Retainable	N	N
22	Common Buckthorn	*Rhamnus cathartica*	11	110	Healthy	Retainable	N	N
23	Hawthorn	*Crataegus sp.*	13 & 10	130	Multi-stem (2), healthy	Conflict	N	N
24	Common Buckthorn	*Rhamnus cathartica*	15	150	Healthy	Conflict	N	N
25	Common Buckthorn	*Rhamnus cathartica*	14, 13, 12 & 10	140	Multi-stem (4), healthy	Conflict	N	N
26	White Ash	*Fraxinus americana*	16	160	Poor, dying	Conflict	N	N
27	Ash sp.	*Fraxinu sp.*	20	--	Dead	Retainable	N	N
28	Common Buckthorn	*Rhamnus cathartica*	12, 10	120	Multi-stem (2), healthy	Retainable	N	N
29	American Elm	*Ulmus americana*	19	190	Healthy	Conflict	N	N
30	American Elm	*Ulmus americana*	16	160	Healthy	Conflict	N	N
31	Ash sp.	*Fraxinus sp.*	13	--	Dead	Conflict	N	N
32	American Elm	*Ulmus americana*	12	120	Healthy	Conflict	N	N
33	Ash sp.	*Fraxinus sp.*	12	--	Dead	Conflict	N	N
34	Ash sp.	*Fraxinus sp.*	12	--	Dead	Conflict	N	N
35	Ash sp.	*Fraxinus sp.*	12	--	Dead	Conflict	N	N
36	Ash sp.	*Fraxinus sp.*	10	--	Dead	Conflict	N	N
37	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
38	Ash sp.	*Fraxinus sp.*	13	--	Dead	Conflict	N	N
39	Ash sp.	*Fraxinus sp.*	12	--	Dead	Retainable	N	N
40	Ash sp.	*Fraxinus sp.*	22 & 13	--	Multi-stem (2), dead	Conflict	N	N
41	Ash sp.	*Fraxinus sp.*	14	--	Dead	Conflict	N	N
42	Ash sp.	*Fraxinus sp.*	20 & 13	--	Multi-stem (2), dead	Conflict	N	N
43	Ash sp.	*Fraxinus sp.*	30	--	Dead	Conflict	N	N
44	Ash sp.	*Fraxinus sp.*	27	--	Dead	Conflict	N	N
45	Ash sp.	*Fraxinus sp.*	17	--	Dead	Conflict	N	N
46	Ash sp.	*Fraxinus sp.*	10	--	Dead	Conflict	N	N
47	Ash sp.	*Fraxinus sp.*	10	--	Dead	Conflict	N	N
48	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
49	Ash sp.	*Fraxinus sp.*	16	--	Dead	Conflict	N	N
50	Ash sp.	*Fraxinus sp.*	16	--	Dead	Conflict	N	N
51	Ash sp.	*Fraxinus sp.*	14	--	Dead	Conflict	N	N
52	Ash sp.	*Fraxinus sp.*	18	--	Dead	Conflict	N	N
53	Ash sp.	*Fraxinus sp.*	12	--	Dead	Conflict	N	N
54	Ash sp.	*Fraxinus sp.*	14	--	Dead	Conflict	N	N
55	Ash sp.	*Fraxinus sp.*	10	--	Dead	Conflict	N	N
56	Ash sp.	*Fraxinus sp.*	15	--	Dead	Conflict	N	N
57	Ash sp.	*Fraxinus sp.*	16	--	Dead	Conflict	N	N
58	Ash sp.	*Fraxinus sp.*	21	--	Dead	Conflict	N	N

Table C.1
Summary of Tree Inventory Results

Tree Number	Common Name	Scientific Name	Diameter (cm DBH)	Critical Root Zone (cm)	Condition	Retainable or Conflict	Signficant Tree (> 50 cm)	Wildlife Tree
59	Ash sp.	*Fraxinus sp.*	15	--	Dead	Conflict	N	N
60	Ash sp.	*Fraxinus sp.*	26	--	Dead	Conflict	N	N
61	Ash sp.	*Fraxinus sp.*	17	--	Dead	Conflict	N	N
62	Ash sp.	*Fraxinus sp.*	17	--	Dead	Conflict	N	N
63	American Elm	*Ulmus americana*	11	110	Poor, dying	Conflict	N	N
64	Ash sp.	*Fraxinus sp.*	17	170	Dead	Retainable	N	N
65	Ash sp.	*Fraxinus sp.*	21	--	Dead	Conflict	N	N
66	Ash sp.	*Fraxinus sp.*	15	--	Dead	Conflict	N	N
67	Ash sp.	*Fraxinus sp.*	16	--	Dead	Conflict	N	N
68	Ash sp.	*Fraxinus sp.*	14	--	Dead	Conflict	N	N
69	Hawthorn	*Crataegus sp.*	12, 10 & 10	120	Multi-stem (7), healthy	Retainable	N	N
70	American Elm	*Ulmus americana*	23	230	Healthy	Conflict	N	N
71	Ash sp.	*Fraxinus sp.*	22	--	Dead	Conflict	N	N
72	Ash sp.	*Fraxinus sp.*	16	--	Dead	Conflict	N	N
73	American Elm	*Ulmus americana*	14	140	Poor, dying	Conflict	N	N
74	Ash sp.	*Fraxinus sp.*	14	--	Dead	Conflict	N	N
75	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
76	Ash sp.	*Fraxinus sp.*	10	--	Dead	Conflict	N	N
77	Ash sp.	*Fraxinus sp.*	14	--	Dead	Conflict	N	N
78	Ash sp.	*Fraxinus sp.*	12	--	Dead	Conflict	N	N
79	Green Ash	*Fraxinus pennsylvanica*	14	140	Healthy	Conflict	N	N
80	Ash sp.	*Fraxinus sp.*	12	--	Dead	Conflict	N	N
81	Ash sp.	*Fraxinus sp.*	15	--	Dead	Conflict	N	N
82	Ash sp.	*Fraxinus sp.*	18	--	Dead	Conflict	N	N
83	Ash sp.	*Fraxinus sp.*	14	--	Dead	Conflict	N	N
84	American Elm	*Ulmus americana*	17	170	Healthy	Conflict	N	N
85	Ash sp.	*Fraxinus sp.*	15	--	Dead	Conflict	N	N
86	Ash sp.	*Fraxinus sp.*	13	--	Dead	Conflict	N	N
87	Ash sp.	*Fraxinus sp.*	22 & 22	--	Multi-stem (2), dead	Conflict	N	N
88	Ash sp.	*Fraxinus sp.*	22	--	Dead	Conflict	N	N
89	Ash sp.	*Fraxinus sp.*	13	--	Dead	Conflict	N	N
90	Ash sp.	*Fraxinus sp.*	16	--	Dead	Conflict	N	N
91	Ash sp.	*Fraxinus sp.*	21	--	Dead	Conflict	N	N
92	American Elm	*Ulmus americana*	29	290	Healthy	Conflict	N	N
93	Ash sp.	*Fraxinus sp.*	20	--	Dead	Conflict	N	N
94	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
95	Ash sp.	*Fraxinus sp.*	15	--	Dead	Conflict	N	N
96	American Elm	*Ulmus americana*	19	190	Poor, dying	Conflict	N	N
97	American Elm	*Ulmus americana*	15	150	Poor, dying	Conflict	N	N
98	Ash sp.	*Fraxinus sp.*	11 & 10	--	Multi-stem (2), dead	Retainable	N	N
99	Ash sp.	*Fraxinus sp.*	13	--	Dead	Conflict	N	N
100	American Elm	*Ulmus americana*	10	--	Dead	Conflict	N	N
101	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
102	Green Ash	*Fraxinus pennsylvanica*	16	160	Healthy	Conflict	N	N
103	American Elm	*Ulmus americana*	12 & 11	120	Healthy	Conflict	N	N
104	Ash sp.	*Fraxinus sp.*	12	--	Dead	Conflict	N	N
105	Ash sp.	*Fraxinus sp.*	13	--	Dead	Conflict	N	N
106	American Elm	*Ulmus americana*	13	130	Healthy	Conflict	N	N
107	White Ash	*Fraxinus americana*	14	140	Healthy	Conflict	N	N
108	American Elm	*Ulmus americana*	13	130	Healthy	Conflict	N	N
109	American Elm	*Ulmus americana*	12	120	Healthy	Conflict	N	N
110	American Elm	*Ulmus americana*	10	100	Healthy	Conflict	N	N
111	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
112	American Elm	*Ulmus americana*	11	110	Healthy	Conflict	N	N
113	American Elm	*Ulmus americana*	13	130	Poor, dying	Conflict	N	N
114	Ash sp.	*Fraxinus sp.*	12	--	Dead	Conflict	N	N
115	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
116	Ash sp.	*Fraxinus sp.*	13	--	Dead	Conflict	N	N
117	Ash sp.	*Fraxinus sp.*	14	--	Dead	Conflict	N	N
118	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
119	Ash sp.	*Fraxinus sp.*	10	--	Dead	Conflict	N	N
120	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
121	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
122	American Elm	*Ulmus americana*	21	210	Healthy	Conflict	N	N
123	American Elm	*Ulmus americana*	11	110	Healthy	Conflict	N	N
124	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
125	Ash sp.	*Fraxinus sp.*	13	--	Dead	Conflict	N	N
126	American Elm	*Ulmus americana*	17	170	Healthy	Conflict	N	N

Table C.1
Summary of Tree Inventory Results

Tree Number	Common Name	Scientific Name	Diameter (cm DBH)	Critical Root Zone (cm)	Condition	Retainable or Conflict	Signficant Tree (> 50 cm)	Wildlife Tree
127	Ash sp.	*Fraxinus sp.*	10	--	Dead	Conflict	N	N
128	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
129	American Elm	*Ulmus americana*	13	130	Healthy	Conflict	N	N
130	American Elm	*Ulmus americana*	17	170	Poor, dying	Conflict	N	N
131	American Elm	*Ulmus americana*	12	120	Healthy	Conflict	N	N
132	American Elm	*Ulmus americana*	13	130	Healthy	Conflict	N	N
133	American Elm	*Ulmus americana*	16	160	Healthy	Conflict	N	N
134	American Elm	*Ulmus americana*	11	110	Healthy	Conflict	N	N
135	American Elm	*Ulmus americana*	16	160	Healthy	Conflict	N	N
136	American Elm	*Ulmus americana*	21	210	Healthy	Conflict	N	N
137	American Elm	*Ulmus americana*	20	200	Healthy	Conflict	N	N
138	American Elm	*Ulmus americana*	11	110	Healthy	Conflict	N	N
139	American Elm	*Ulmus americana*	12	120	Healthy	Retainable	N	N
140	Green Ash	*Fraxinus pennsylvanica*	10	100	Healthy	Retainable	N	N
141	Ash sp.	*Fraxinus sp.*	21	--	Dead	Conflict	N	N
142	American Elm	*Ulmus americana*	13	130	Healthy	Retainable	N	N
143	Ash sp.	*Fraxinus sp.*	20	200	Dead	Conflict	N	N
144	American Elm	*Ulmus americana*	22	220	Healthy	Conflict	N	N
145	American Elm	*Ulmus americana*	18	180	Healthy	Conflict	N	N
146	American Elm	*Ulmus americana*	27	270	Healthy	Conflict	N	N
147	Ash sp.	*Fraxinus sp.*	13	130	Healthy	Conflict	N	N
148	American Elm	*Ulmus americana*	11	110	Healthy	Conflict	N	N
149	American Elm	*Ulmus americana*	10	100	Healthy	Conflict	N	N
150	Staghorn Sumac	*Rhus typhina*	11 & 10	110	Multi-stem (2), healthy	Retainable	N	N
151	Ash sp.	*Fraxinus sp.*	10	--	Dead	Conflict	N	N
152	American Elm	*Ulmus americana*	10	100	Poor, dying	Conflict	N	N
153	American Elm	*Ulmus americana*	13	130	Poor, dying	Conflict	N	N
154	Ash sp.	*Fraxinus sp.*	15	--	Dead	Conflict	N	N
155	Ash sp.	*Fraxinus sp.*	12	--	Dead	Conflict	N	N
156	American Elm	*Ulmus americana*	17	170	Healthy	Conflict	N	N
157	American Elm	*Ulmus americana*	10	100	Healthy	Conflict	N	N
158	American Elm	*Ulmus americana*	11	110	Healthy	Conflict	N	N
159	Ash sp.	*Fraxinus sp.*	18	--	Dead	Conflict	N	N
160	Green Ash	*Fraxinus pennsylvanica*	11	110	Poor, canopy dead	Conflict	N	N
161	Green Ash	*Fraxinus pennsylvanica*	10	100	Poor, canopy dead	Conflict	N	N
162	Green Ash	*Fraxinus pennsylvanica*	11	110	Poor, canopy dead	Conflict	N	N
163	Green Ash	*Fraxinus pennsylvanica*	10	100	Multi-stem (2), poor, dying	Conflict	N	N
164	Green Ash	*Fraxinus pennsylvanica*	11 & 11	110	Multi-stem (2), poor, dying	Conflict	N	N
165	American Elm	*Ulmus americana*	10	100	Healthy	Conflict	N	N
166	White Ash	*Fraxinus americana*	11	110	Poor, canopy dead	Conflict	N	N
167	Green Ash	*Fraxinus pennsylvanica*	10	100	Poor, canopy dead	Conflict	N	N
168	Bur Oak	*Quercus macrocarpa*	10	100	Multi-stem (3), healthy	Conflict	N	N
169	Staghorn Sumac	*Rhus typhina*	12	120	Healthy	Retainable	N	N
170	Ash sp.	*Fraxinus sp.*	16	--	Dead	Conflict	N	N
171	Ash sp.	*Fraxinus sp.*	14	--	Dead	Conflict	N	N
172	American Elm	*Ulmus americana*	12 & 11	120	Multi-stem (2), healthy	Conflict	N	N
173	Green Ash	*Fraxinus pennsylvanica*	19	190	Poor, canopy dead	Conflict	N	N
174	Willow sp.	*Salix sp.*	12	120	Poor, some dead limbs	Conflict	N	N
175	Ash sp.	*Fraxinus sp.*	10	--	Dead	Conflict	N	N
176	American Elm	*Ulmus americana*	10	100	Multi-stem (2), healthy	Conflict	N	N
177	Ash sp.	*Fraxinus sp.*	11	--	Dead	Conflict	N	N
178	Bur Oak	*Quercus macrocarpa*	10	100	Multi-stem (2), healthy	Conflict	N	N
179	Ash sp.	*Fraxinus sp.*	11	--	Dead	Retainable	N	N
180	Unknown		11	--	Dead	Retainable	N	N
181	American Elm	*Ulmus americana*	12	120	Healthy	Retainable	N	N
182	American Elm	*Ulmus americana*	10	100	Poor, canopy dead	Conflict	N	N

Table C.1
Summary of Tree Inventory Results

Tree Number	Common Name	Scientific Name	Diameter (cm DBH)	Critical Root Zone (cm)	Condition	Retainable or Conflict	Signficant Tree (> 50 cm)	Wildlife Tree
183	American Elm	*Ulmus americana*	14	140	Multi-stem (2), healthy	Retainable	N	N
184	Bur Oak	*Quercus macrocarpa*	13 & 10	130	Multi-stem (2), healthy	Retainable	N	N
185	Basswood	*Tilia americana*	10	100	Healthy	Retainable	N	N
186	American Elm	*Ulmus americana*	11	110	Healthy	Retainable	N	N
187	American Elm	*Ulmus americana*	14	140	Healthy	Retainable	N	N
188	Willow sp.	*Salix sp.*	11	110	Healthy	Conflict	N	N
189	Basswood	*Tilia americana*	13, 11 & 11	130	Multi-stem (6), healthy	Conflict	N	N
190	Bur Oak	*Quercus macrocarpa*	12	120	Healthy	Retainable	N	N
191	Basswood	*Tilia americana*	10	100	Multi-stem (7), healthy	Retainable	N	N
192	Trembling Aspen	*Populus tremuloides*	17	170	Healthy	Conflict	N	N
193	Trembling Aspen	*Populus tremuloides*	12	120	Poor, canopy dead	Retainable	N	N
194	Trembling Aspen	*Populus tremuloides*	22	220	Healthy	Conflict	N	N
195	Manitoba Maple	*Acer negundo*	12	120	Healthy	Conflict	N	N
196	White Willow	*Salix alba*	26, 25, 24, 22, 21, 18, 18 & 17	260	Multi-stem (8), healthy	Conflict	N	N
197	Staghorn Sumac	*Rhus typhina*	12	120	Healthy	Conflict	N	N
198	Staghorn Sumac	*Rhus typhina*	16	160	Healthy	Conflict	N	N
199	Malus sp.	*Malus sp.*	10	100	Multi-stem (10), healthy	Conflict	N	N
200	Staghorn Sumac	*Rhus typhina*	10	100	Healthy	Conflict	N	N
201	White Willow	*Salix alba*	27, 23 & 18	270	Multi-stem (3), healthy	Conflict	N	N
202	White Willow	*Salix alba*	26	260	Healthy	Conflict	N	N
203	Manitoba Maple	*Acer negundo*	27	270	Healthy	Conflict	N	N
204	White Willow	*Salix alba*	29, 27, 23, 19, 16, 16 & 12	290	Multi-stem (7), healthy	Conflict	N	N
205	Manitoba Maple	*Acer negundo*	26	260	Healthy	Conflict	N	N
206	White Willow	*Salix alba*	15 & 14	150	Multi-stem (2), healthy	Conflict	N	N
207	White Willow	*Salix alba*	34	340	Healthy	Conflict	N	N
208	White Willow	*Salix alba*	17	170	Healthy	Conflict	N	N
209	Manitoba Maple	*Acer negundo*	25 & 18	250	Multi-stem (2), healthy	Conflict	N	N
210	Manitoba Maple	*Acer negundo*	23 & 20	230	Multi-stem (2), healthy	Conflict	N	N
211	Manitoba Maple	*Acer negundo*	24, 21, 19 & 18	240	Multi-stem (5), healthy	Conflict	N	N
212	Manitoba Maple	*Acer negundo*	20, 16 & 12	200	Multi-stem (3), healthy	Conflict	N	N
213	Manitoba Maple	*Acer negundo*	17	170	Healthy	Conflict	N	N
214	White Willow	*Salix alba*	27	270	Healthy	Conflict	N	N
215	Manitoba Maple	*Acer negundo*	21 & 20	210	Multi-stem (2), healthy, leaning	Conflict	N	N
216	Manitoba Maple	*Acer negundo*	27, 24 & 14	2710	Multi-stem, with one stem fallen over (4), healthy	Conflict	N	N
217	Manitoba Maple	*Acer negundo*	14 & 10	140	Multi-stem (2), healthy	Conflict	N	N
218	White Willow	*Salix alba*	25 & 22	250	Multi-stem (2), healthy	Conflict	N	N
219	White Willow	*Salix alba*	35 & 28	350	Multi-stem (2), healthy	Conflict	N	N
220	Manitoba Maple	*Acer negundo*	24 & 21	240	Multi-stem (2), healthy	Conflict	N	N
221	Manitoba Maple	*Acer negundo*	17, 15 & 12	170	Multi-stem (4), healthy	Conflict	N	N
222	Manitoba Maple	*Acer negundo*	22 & 21	220	Multi-stem (2), healthy	Conflict	N	N
223	Trembling Aspen	*Populus tremuloides*	21	210	Healthy	Conflict	N	N
224	Manitoba Maple	*Acer negundo*	26	260	Healthy	Conflict	N	N
225	Manitoba Maple	*Acer negundo*	12	120	Healthy	Conflict	N	N
226	Manitoba Maple	*Acer negundo*	11	110	Healthy	Conflict	N	N
227	Manitoba Maple	*Acer negundo*	26	260	Healthy	Conflict	N	N
228	Manitoba Maple	*Acer negundo*	18 & 14	180	Multi-stem (2), healthy	Conflict	N	N
229	Manitoba Maple	*Acer negundo*	24	240	Healthy	Conflict	N	N
230	Manitoba Maple	*Acer negundo*	25	250	Healthy	Conflict	N	N

Table C.1
Summary of Tree Inventory Results

Tree Number	Common Name	Scientific Name	Diameter (cm DBH)	Critical Root Zone (cm)	Condition	Retainable or Conflict	Signficant Tree (> 50 cm)	Wildlife Tree
231	Manitoba Maple	*Acer negundo*	16, 12 & 10	160	Multi-stem (5), healthy	Conflict	N	N
232	Manitoba Maple	*Acer negundo*	23, 20 & 16	230	Multi-stem (3), healthy	Conflict	N	N
233	Manitoba Maple	*Acer negundo*	22	220	Healthy	Conflict	N	N
234	Trembling Aspen	*Populus tremuloides*	22	220	Healthy	Conflict	N	N
235	Trembling Aspen	*Populus tremuloides*	20	200	Healthy	Conflict	N	N
236	Trembling Aspen	*Populus tremuloides*	19 & 19	190	Multi-stem (2), healthy	Conflict	N	N
237	Staghorn Sumac	*Rhus typhina*	10	100	Healthy	Conflict	N	N
238	White Willow	*Salix alba*	30, 24 & 16	300	Multi-stem (5), healthy	Conflict	N	N
239	White Willow	*Salix alba*	32, 31, 30, 28, 27 & 18	320	Multi-stem (6), healthy	Conflict	N	N
240	White Willow	*Salix alba*	17	170	Healthy	Conflict	N	N
241	Trembling Aspen	*Populus tremuloides*	26	260	Healthy	Retainable	N	N
242	White Willow	*Salix alba*	37	370	Healthy	Retainable	N	N
243	Trembling Aspen	*Populus tremuloides*	16	160	Healthy	Retainable	N	N
244	American Elm	*Ulmus americana*	18	180	Healthy	Retainable	N	N
245	Large-tooth Aspen	*Populus grandidentata*	12	120	Healthy	Retainable	N	N
246	Large-tooth Aspen	*Populus grandidentata*	12	120	Healthy	Retainable	N	N
247	Large-tooth Aspen	*Populus grandidentata*	12	120	Healthy	Retainable	N	N
248	Staghorn Sumac	*Rhus typhina*	14	140	Healthy	Retainable	N	N
249	Manitoba Maple	*Acer negundo*	23	230	Healthy	Retainable	N	N
250	Prunus sp.	*Prunus sp.*	12 & 10	120	Multi-stem (8), healthy	Retainable	N	N
251	Staghorn Sumac	*Rhus typhina*	11	110	Healthy	Conflict	N	N
252	White Willow	*Salix alba*	26, 24, 20 & 16	260	Multi-stem (4), healthy	Retainable	N	N
253	White Willow	*Salix alba*	44, 38, 23 & 20	440	Multi-stem (4), Poor, dead and broken limbs	Conflict	N	N
254	Manitoba Maple	*Acer negundo*	16 & 12	160	Multi-stem (2), healthy	Retainable	N	N
255	Manitoba Maple	*Acer negundo*	20 & 19	200	Multi-stem (2), healthy	Retainable	N	N
256	Trembling Aspen	*Populus tremuloides*	25	250	Healthy	Conflict	N	N
257	Trembling Aspen	*Populus tremuloides*	21	210	Healthy	Conflict	N	N
258	Trembling Aspen	*Populus tremuloides*	16	160	Healthy	Conflict	N	N
259	Trembling Aspen	*Populus tremuloides*	18	180	Healthy	Conflict	N	N
260	Trembling Aspen	*Populus tremuloides*	17	170	Healthy	Conflict	N	N
261	Trembling Aspen	*Populus tremuloides*	24	240	Healthy	Conflict	N	N
262	Staghorn Sumac	*Rhus typhina*	19	190	Healthy	Conflict	N	N
263	Green Ash	*Fraxinus pennsylvanica*	12 & 11	120	Multi-stem (2), healthy	Conflict	N	N
264	Green Ash	*Fraxinus pennsylvanica*	11	110	Poor, canopy dead	Conflict	N	N
265	Ash sp.	*Fraxinus sp.*	12 & 11	120	Multi-stem (2), dead	Conflict	N	N
266	Ash sp.	*Fraxinus sp.*	15	150	Dead	Conflict	N	N
267	White Willow	*Salix alba*	17, 16 & 14	170	Multi-stem (2), healthy	Conflict	N	N
268	Manitoba Maple	*Acer negundo*	27	270	Healthy	Conflict	N	N
269	Trembling Aspen	*Populus tremuloides*	21	210	Healthy	Conflict	N	N
270	Trembling Aspen	*Populus tremuloides*	18	180	Healthy	Conflict	N	N
271	Trembling Aspen	*Populus tremuloides*	14 & 11	140	Mutli-stem (2), healthy	Conflict	N	N
272	Trembling Aspen	*Populus tremuloides*	22	220	Healthy	Conflict	N	N
273	Trembling Aspen	*Populus tremuloides*	15	150	Healthy	Conflict	N	N
274	Trembling Aspen	*Populus tremuloides*	11	110	Healthy	Conflict	N	N
275	Trembling Aspen	*Populus tremuloides*	10	100	Healthy	Conflict	N	N
276	Staghorn Sumac	*Rhus typhina*	11	110	Poor, dead limbs	Conflict	N	N
277	Staghorn Sumac	*Rhus typhina*	14	140	Poor, dead limbs	Conflict	N	N
278	Staghorn Sumac	*Rhus typhina*	11	110	Healthy	Conflict	N	N
279	Staghorn Sumac	*Rhus typhina*	12	120	Multi-stem (3), healthy	Conflict	N	N
280	Staghorn Sumac	*Rhus typhina*	11	110	Poor, dead limbs	Conflict	N	N
281	Staghorn Sumac	*Rhus typhina*	11	110	Healthy	Conflict	N	N

Table C.1
Summary of Tree Inventory Results

Tree Number	Common Name	Scientific Name	Diameter (cm DBH)	Critical Root Zone (cm)	Condition	Retainable or Conflict	Signficant Tree (> 50 cm)	Wildlife Tree
282	Staghorn Sumac	*Rhus typhina*	20	200	Healthy	Conflict	N	N
283	Malus sp.	*Malus sp.*	15, 14 & 12	150	Multi-stem (14), poor	Conflict	N	N
284	Staghorn Sumac	*Rhus typhina*	12	120	Healthy	Conflict	N	N
285	Manitoba Maple	*Acer negundo*	28, 24 & 13	280	Multi-stem (3), healthy	Conflict	N	N
286	Manitoba Maple	*Acer negundo*	24 & 19	240	Multi-stem (2), healthy	Conflict	N	N
287	Staghorn Sumac	*Rhus typhina*	11	110	Healthy	Conflict	N	N
288	Manitoba Maple	*Acer negundo*	42	420	Multi-stem, healthy	Conflict	N	N
289	Manitoba Maple	*Acer negundo*	24	240	Healthy	Conflict	N	N
290	Manitoba Maple	*Acer negundo*	24 & 21	240	Multi-stem (2), healthy	Conflict	N	N
291	Manitoba Maple	*Acer negundo*	21	210	Healthy	Conflict	N	N
292	Manitoba Maple	*Acer negundo*	22	220	Healthy	Conflict	N	N
293	Manitoba Maple	*Acer negundo*	14	140	Healthy	Conflict	N	N
294	Manitoba Maple	*Acer negundo*	26 & 17	260	Multi-stem (2), healthy	Retainable	N	N
295	Manitoba Maple	*Acer negundo*	25, 24 & 19	250	Multi-stem (3), healthy	Retainable	N	N
296	Manitoba Maple	*Acer negundo*	42	420	Healthy	Retainable	N	N
297	Red oak	*Quercus rubra*	14	140	Healthy	Retainable	N	N
298	Manitoba Maple	*Acer negundo*	20, 17 & 15	200	Multi-stem (3), healthy	Retainable	N	N
299	Ash sp.	*Fraxinus sp.*	32 & 22	--	Multi-stem (2), dead	Conflict	N	N

APPENDIX D

CVs for Key Personnel

GEMTEC

Drew Paulusse, B.Sc.
Senior Biologist / Manager of Environmental Services

Mr. Paulusse has over 12 years of experience in the environmental consulting industry, providing private industry and municipal and federal government clients with cost effective solutions to manage environmental constraints associated with land development proposals and infrastructure projects. Mr. Paulusse's expertise, as it relates to land development proposals and infrastructure projects is field assessment and regulatory permitting associated with species at risk, fish habitat and wetlands.

Education

- B.Sc., Biology, Trent University, 2007
- Environmental Technician, Fleming College, 2004

Professional Experience

2018-date	**GEMTEC Consulting Engineers and Scientists Limited** *Manager of Environmental Services*	**Ottawa, Ontario**
2011-2018	**Geofirma Engineering Limited** *Senior Biologist*	**Ottawa, Ontario**
2007-2011	**INTERA Engineering Limited** *Biologist*	**Ottawa, Ontario**
2007	**Canadian Wildlife Service, Environment Canada** *Wetland Conservation Officer*	**Burlington, Ontario**
2005	**Centre for Inland Waters, Environment Canada** *Junior Marine Technologist*	**Burlington, Ontario**

Professional Affiliations and Technical Training

- Canadian Society of Environmental Biologists
- Ontario Association for Impact Assessment
- MTO/DFO/MNRF Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings. Ministry of Transportation. 2018
- Ontario Wetland Evaluation System Certification Course. Ministry of Natural Resources and Forestry. 2017
- Headwater Drainage Feature Assessment Training Course. Rideau Valley Conservation Authority. 2017

- Ecological Land Classification System Certification Course. Ministry of Natural Resources and Forestry. 2015
- Ontario Benthic Biomonitoring Network Certification Course. Ministry of Environment, Conservation and Parks. 2011

Project Highlights

- ***DFO Self-Assessment and Preparation of Tender Special Provisions, Osceola Culvert Replacement, County of Renfrew, Ontario (2019):*** Project manager and technical lead responsible for the evaluation of the significance of fish habitat and species at risk, and completion of a DFO self-assessment. Work included aquatic habitat assessments, pathway of effects evaluation, culvert design recommendations and reporting.
- ***Biological Inventory, Ontario Power Generation Incorporated, Bath, Ontario (2018):*** Project manager and technical lead responsible for conducting a three-season inventory of avian and amphibian species at the Lennox Provincially Significant Wetland. Work included conducting presence and abundance surveys following the Canadian Wildlife Service marsh monitoring protocol and Bird Studies Canada breeding bird surveys, statistical analysis of species data trends and reporting.
- ***Wetland Management Plan, Ontario Power Generation Incorporated, Bath, Ontario (2018):*** Project manager and technical lead responsible for the development of an adaptive wetland management plan for the Lennox Provincially Significant Wetland. Work included a synthesis of historical data, statistical analysis of data trends, vegetation assessment, air photo interpretation, development of short-term and long-term management objectives and development of a standardized monitoring program.
- ***Environmental Compliance Monitoring, Petrie Island Causeway Rehabilitation Project, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for monitoring constructor compliance with various Department of Fisheries and Oceans, Ministry of Natural Resources and Conservation Authority permit conditions during the Petrie Island Causeway Rehabilitation Project within the Ottawa River. Work included species at risk surveys, fish salvage, exclusion fence inspection, monitoring of sediment and erosion control measures, turbidity monitoring, regulatory agency consultation and weekly reporting.
- ***Wetland Delineation and Wetland Function Assessment, National Capital Commission, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for the delineation of wetland pockets within the LeBreton Flats Redevelopment Area and the assessment of wetland function for the purpose of evaluating compensation requirements. Work was completed following both the federal and provincial wetland evaluation frameworks.

- ***Environmental Impact Statement, Code Drive Development, Smiths Falls, Ontario (2018):*** Project manager and technical lead responsible for the completion of an Environmental Impact Statement in support of a severance application for the creation of eight residential lots within a significant woodland and adjacent to a large local wetland. Work included targeted surveys for species at risk, breeding amphibians and marsh birds, impact assessment, development of lot-specific mitigation measures and agency consultations.
- ***Tree Conservation Report, Royal LePage Team Realty, Ottawa, Ontario (2018):*** Mr. Paulusse completed an inventory of all trees located on an urban commercial lot for the purpose of identify significant retainable trees and trees in conflict with the proposed site redevelopment. Work included, site inventory, tree removal permit preparation and reporting.
- ***Environmental Compliance Monitoring, Airport Parkway Culvert Rehabilitation Project, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for monitoring constructor compliance with Ministry of Natural Resources and Conservation Authority permit conditions. Work included species at risk surveys, exclusion fence inspection, monitoring of sediment and erosion control measures and weekly reporting.
- ***Tier I and II Natural Environment Report, Crain's Construction, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for completing an inventory of site flora and fauna, completion of species at risk surveys, regulatory agency consultation, impact assessment and reporting.
- ***Species at Risk Assessment, National Capital Commission, Gatineau, Quebec (2018):*** Project manager responsible for the completion of avian species at risk surveys to determine the presence or absence of chimney swift and barn swallows at a contaminated site. Work was undertaken to support an Ecological Risk Assessment.
- ***Fish Habitat Assessment, Various Culvert Replacements, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for the evaluation of the significance of fish habitat at three culvert crossings in rural Ottawa. Work included aquatic habitat assessments, pathway of effects evaluation, culvert design recommendations and reporting.
- ***Environment Effects Evaluation Assessment, Britannia Wall Rehabilitation Project, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for completing a comprehensive tree inventory, wetland boundary delineation, significant wildlife habitat assessment and evaluation of effects associated with the rehabilitation of the Britannia Wall, a 600-metre-long community flood protection structure.
- ***Environmental Compliance Monitoring, Petrie Island Beach Head Rehabilitation Project, Ottawa, Ontario (2018):*** Project manager and technical lead responsible for monitoring constructor compliance with various Department of Fisheries and Oceans, Ministry of Natural Resources and Conservation Authority permit conditions during the Petrie Island

Beach Head Rehabilitation Project within the Ottawa River. Work included species at risk surveys, exclusion fence inspection, monitoring of sediment and erosion control measures, and reporting.

- ***Provincially Significant Wetland Boundary Evaluation and Mitigation Plan, Town and County Chrysler, Smiths Falls, Ontario (2018):*** Project manager and technical lead responsible for revising the wetland boundary associated with a provincially significant wetland and development of a mitigation plan to enable the redevelopment of an adjacent commercial lot. Work included wetland vegetation delineation, regulatory technical document submissions, agency consultations, mitigation measure development and reporting.
- ***Environmental Impact Statement and Headwater Drainage Feature Assessment, Swank Construction Limited, Morrisburg, Ontario (2017-2018):*** Project manager and technical lead responsible for the completion of an Environmental Impact Statement with Headwater Drainage Feature Assessment for a 100-lot residential subdivision. Work included ecological land classification, breeding bird surveys, impact assessment and a three season assessment of hydrological conditions and their contributions to downstream fish habitat.
- ***Natural Heritage Inventory and Environmental Impact Assessment, Combermere Lodge Limited, Barry's Bay, Ontario (2017-2018):*** Project manager and technical lead responsible for the completion of a Natural Heritage Inventory and Environmental Impact Assessment completed in support of a 54-lot condominium development located in an environmentally sensitive area. Work included wetland boundary delineation, identification of significant wildlife habitat, application of the significant wildlife habitat mitigation support tool, completion of a two-year survey of site flora and fauna, impact assessment and town hall presentations.
- ***Lake Capacity Assessment, Combermere Lodge Limited, Barry's Bay, Ontario (2017-2018):*** Project manager and technical lead responsible for the predictive assessment of septic effluent impacts relating to the operation of a 54-lot condominium development on three adjacent waterbodies. Work included limnological investigations over two seasons, application of the provincial lakeshore capacity model, hydrogeological investigations, mass flux analysis, mitigation measure development and reporting.
- ***Detailed Quantitative Ecological Risk Assessment, National Capital Commission, Gatineau, Quebec (2016 to 2018):*** Project manager and technical lead for the completion of a Detailed Quantitative Ecological Risk Assessment completed for a former landfill property located adjacent to the Ottawa River. Work included aquatic habitat assessment, benthic community characterization, species at risk surveys, terrestrial wildlife surveys and analysis of site-specific aquatic toxicity data.
- ***Environmental Compliance Monitoring, Carp Snow Dump, Ottawa, Ontario (2017):*** Project manager and technical lead responsible for monitoring constructor compliance with a Ministry of Natural Resources overall benefit permit for blanding's turtle associated with the

construction of the Carp Snow Dump. Work included weekly exclusion fence inspection and weekly reporting to the contract administrator.

- ***Fish Habitat Assessment, Little Bark Bay Properties, Barry's Bay, Ontario (2017):*** Project manager and technical lead responsible for the identification and evaluation of significance of fish habitat within and adjacent to a proposed plan of subdivision. Work included aquatic habitat assessments, pathway of effects evaluation, application of the Department of Fisheries and Oceans self-assessment process and reporting.
- ***Species at Risk and Migratory Bird Screening Assessment, City of Ottawa, New Edinburg Park Redevelopment Project, Ottawa, Ontario (2017):*** Project manager and technical lead responsible for the completion of a species at risk and migratory bird screening assessment to assist in bid tender package preparation for the re-development of New Edinburg Park. Work included a general habitat assessment, a probability of occurrence assessment, follow-up pre-construction surveys and reporting.
- ***Fish Habitat Assessment, Highway 417 Culvert Replacement Project, Ottawa, Ontario (2017):*** Project manager and technical lead responsible for the evaluation of the significance of fish habitat at two culvert crossings Ottawa. Work included aquatic habitat assessments, pathway of effects evaluation, application of the Department of Fisheries and Oceans self-assessment process and reporting.
- ***Fish Habitat and Headwater Drainage Feature Assessment, Private Landowner, Ottawa, Ontario (2017):*** Project manager and technical lead responsible for the completion of a two-season hydrological assessment of on-site water courses and assessment of fish habitat. Work completed in support of a permit required to develop an unopened road allowance.
- ***Environmental Impact Statement and Wetland Boundary Assessment, Town and Country RV, Perth, Ontario (2016-2017):*** Project manager and technical lead responsible for delineation of a provincially significant wetland and impact assessment associated with the expansion of an existing commercial enterprise. Work included ecological land classification, identification of significant wildlife habitat, species at risk surveys, wetland vegetation assessment, impact assessment and development of site-specific mitigation measures.
- ***Environmental Impact Statement, Blueberry Creek Veterinary Clinic, Perth, Ontario (2016):*** Project manager and technical lead responsible for delineation of a provincially significant wetland and impact assessment associated with the development of a commercial lot. Work included ecological land classification, identification of significant wildlife habitat, species at risk surveys, wetland vegetation assessment, impact assessment and development of site-specific mitigation measures.

GEMTEC

Taylor Warrington, B.Sc.
Junior Biologist

Ms. Warrington has 3 years of experience in the environmental consulting industry, providing private industry and municipal and federal government clients with cost effective solutions to manage environmental constraints associated with land development proposals and infrastructure projects.

Education

- B.Sc., Life Sciences, McMaster University, 2015
- Graduate Certificate, Ecosystem Restoration, Niagara College, 2016

Professional Experience

2019-date	**GEMTEC Consulting Engineers and Scientists Limited** *Junior Biologist*	**Ottawa, Ontario**
2017-2019	**Geofirma Engineering Limited** *Junior Biologist/Scientist*	**Ottawa, Ontario**
2016	**Dillon Consulting** *Junior Field Biologist*	**Little Current, Ontario**
2014	**McMaster University** *Laboratory-Research Assistant; URBAN Project Coordinator*	**Hamilton, Ontario**

Professional Affiliations and Technical Training

- Ontario Reptile and Amphibian Survey Course. Blazing Star Environmental, Natural Resource Solutions Inc., and Ontario Nature. 2018
- Ontario Benthic Biomonitoring Network Certification Course. Ministry of Environment, Conservation and Parks. 2016

Project Highlights

- ***Surface Water Impact Assessment, Green Lake Development, Barry's Bay, Ontario (2019):*** Biologist responsible for the completion of a surface water impact assessment supporting two residential lot severances. Work included a review of existing data on Green Lake, application of the provincial lakeshore capacity model, mitigation measure development and reporting.
- ***Biological Inventory, Ontario Power Generation Incorporated, Bath, Ontario (2018):*** Field Biologist responsible for conducting a three-season inventory of avian and amphibian species at the Lennox Provincially Significant Wetland. Work included conducting presence

and abundance surveys following the Canadian Wildlife Service marsh monitoring protocol and Bird Studies Canada breeding bird surveys, statistical analysis of species data trends and reporting.

- ***Environmental Compliance Monitoring, Petrie Island Causeway Rehabilitation Project, Ottawa, Ontario (2018):*** Field biologist responsible for monitoring constructor compliance with various Department of Fisheries and Oceans, Ministry of Natural Resources and Conservation Authority permit conditions during the Petrie Island Causeway Rehabilitation Project within the Ottawa River. Work included species at risk surveys, fish salvage, exclusion fence inspection, monitoring of sediment and erosion control measures, turbidity monitoring, regulatory agency consultation and weekly reporting.
- ***Environmental Impact Statement, Code Drive Development, Smiths Falls, Ontario (2018):*** Field Biologist responsible for the completion of an Environmental Impact Statement in support of a severance application for the creation of eight residential lots within a significant woodland and adjacent to a large local wetland. Work included targeted surveys for species at risk, breeding amphibians and marsh birds, impact assessment, development of lot-specific mitigation measures and agency consultations.
- ***Tier I and II Natural Environment Report, Crain's Construction, Ottawa, Ontario (2018):*** Field biologist responsible for completing an inventory of site flora and fauna, completion of species at risk surveys, regulatory agency consultation, impact assessment and reporting.
- ***Species at Risk Assessment, National Capital Commission, Gatineau, Quebec (2018):*** Field biologist responsible for the completion of avian species at risk surveys to determine the presence or absence of chimney swift and barn swallows at a contaminated site. Work was undertaken to support an Ecological Risk Assessment.
- ***Environment Effects Evaluation Assessment, Britannia Wall Rehabilitation Project, Ottawa, Ontario (2018):*** Field Biologist responsible for completing a comprehensive tree inventory, wetland boundary delineation, significant wildlife habitat assessment and evaluation of effects associated with the rehabilitation of the Britannia Wall, a 600-metre-long community flood protection structure.
- ***Environmental Compliance Monitoring, Petrie Island Beach Head Rehabilitation Project, Ottawa, Ontario (2018):*** Field biologist responsible for monitoring constructor compliance with various Department of Fisheries and Oceans, Ministry of Natural Resources and Conservation Authority permit conditions during the Petrie Island Beach Head Rehabilitation Project within the Ottawa River. Work included species at risk surveys, exclusion fence inspection, monitoring of sediment and erosion control measures, and reporting.

- ***Natural Heritage Inventory and Environmental Impact Assessment, Combermere Lodge Limited, Barry's Bay, Ontario (2017-2018):*** Field biologist responsible for the completion of a Natural Heritage Inventory and Environmental Impact Assessment completed in support of a 54-lot condominium development located in an environmentally sensitive area. Work included wetland boundary delineation, identification of significant wildlife habitat, application of the significant wildlife habitat mitigation support tool, completion of a two-year survey of site flora and fauna, and impact assessments.
- ***Detailed Quantitative Ecological Risk Assessment, National Capital Commission, Gatineau, Quebec (2017 to 2018):*** Field biologist for the completion of a Detailed Quantitative Ecological Risk Assessment completed for a former landfill property located adjacent to the Ottawa River. Work included aquatic habitat assessment, species at risk surveys, and terrestrial wildlife surveys.
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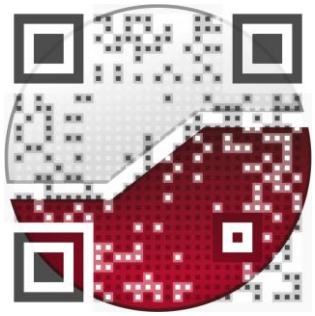
- ***Post-Construction Windfarm Monitoring for Wildlife Impacts, Little Current, Ontario (2016):*** Field biologist responsible for the completion of post-construction monitoring of a windfarm for avian and mammalian fatalities. Work included fatality surveys, vegetation surveys, and wildlife scavenger surveys.
- ***Long-term Changes in Ecosystem Health, Frenchman's Bay, Pickering, Ontario (2015):*** Field biologist responsible for evaluating the long-term changes in ecosystem health of Frenchman's Bay. Work included: data review, analysis of data trends, watershed and land-use mapping, digitization of wetland vegetation cover and analysis of changes over time, reporting and symposium presentation.

experience • knowledge • integrity



civil	civil
geotechnical	géotechnique
environmental	environnementale
field services	surveillance de chantier
materials testing	service de laboratoire des matériaux

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