Tree Conservation Report
For 6160 Thunder Road & 5368 Boundary Road, Ottawa

2024-08-16

FINAL REPORT

KILGOUR & ASSOCIATES LTD.
www.kilgourassociates.com

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List of Acronyms and Abbreviations

CRZ – critical root zone
DBH – diameter at breast height
ESA – *Endangered Species Act*
KAL – Kilgour & Associates Ltd.
SAR – species at risk
SARA – *Species at Risk Act*
TCR – Tree Conservation Report

1.0 INTRODUCTION

This Tree Conservation Report has been prepared following guidelines set forth by the City of Ottawa ("the City", 2020) on behalf of Avenue 31 in support of their proposed development of the property at 6160 Thunder Road and 5368 Boundary Road, Ottawa, Ontario (the "Site"). The proposed development area will include approximately 15.1 ha (Figure 1).

A TCR is required for all Plans of Subdivision, Site Plan Control Applications, Common Elements Condominium Applications, and Vacant Land Condominium Applications where there is a tree of 10 cm in diameter at breast height (DBH) or greater on a site and/or if there is a tree on an adjacent site that has a critical root zone (CRZ) extending onto a development site. A "tree" is defined as any species of woody perennial plant, including its root system, which has reached or can reach a minimum height of at least 450 cm at physiological maturity. The CRZ is calculated as DBH x 10 cm.

The removal of trees on the Site cannot occur until written approval has been granted through a tree permit as per the City's Tree Protection By-law (2020), the application for which will be supported by this TCR. The tree permit will come in the form of a letter from the General Manager[1] with conditions specific to the Site, tree retention (if applicable), and associated tree protection and tree removal. The approved TCR itself is a requirement for the approval of the development applications listed above. A copy of the report must be available on the Site during tree removal, grading, construction, or any other site alteration activities, and for the duration of construction on the Site.

[1] General Manager of the Public Works & Environmental Services Department or the General Manager of the Planning, Infrastructure and Economic Development Department of the City of Ottawa, or their designate.

Figure 1 Site Location

Legend

Property Boundary

N

0 100 m

Project File: AVE 1606 - 2023-11a.map
MTM Zone 9
(NAD 83)
Printed on: 2022-11-17

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2.0 PROPERTY INFORMATION

The subject property is located at 6160 Thunder Road and covers approximately 15.1 ha.

2.1 Property Owner and Applicant Contact Information

Table 1 Organization, role, contact person, phone number, and email address for property owner and applicant

Organization	Role	Contact Person	Phone Number	Email Address
Avenue 31 Capital Inc.	Director - Construction	Geoff Boole	613-883-4326	gboole@ave31.com

2.2 Arborist Contact Information and Qualifications

Table 2 Organization, role, contact person, phone number, and email address for arborists

Organization	Role	Contact Person	Phone Number	Email Address
KAL	Biologist	Robert Hallett	613-367-5549	rhallett@kilgourassociates.com
KAL	Biologist	Anthony Francis	(613) 260-5555	afrancis@kilgourassociates.com

Robert Hallett (Dipl.T) is a biologist with a broad background in monitoring terrestrial environments. Rob has worked on a wide range of projects relating to species at risk (SAR), Invasive species, terrestrial and aquatic habitat assessments, environmental effects monitoring. He has extensive experience completing collection and assessments in support of tree conservation reports. As a biologist at KAL, Rob regularly participates in the production of TCRs, Environmental Impact Statements, and Integrated Environmental Reviews for land development projects throughout the region. Rob is a certified Butternut Health Assessor (BHA #546).

Anthony Francis (PhD) is a Senior Ecologist with 20 years' consulting experience to both government agencies and private industry. He has worked on a diversity of projects relating to species at risk (SAR), invasive species, terrestrial and aquatic habitat, environmental effects monitoring and mitigation, and fate/effects of contaminants. Within each of these subject areas, Dr. Francis has completed projects addressing specific site concerns and broader policy initiatives. Dr. Francis' academic background is in spatial ecology with a focus on tree species diversity. As a Senior Ecologist at KAL, he regularly completes TCRs, Environmental Impact Statements, and Integrated Environmental Reviews for land development projects throughout Ottawa and eastern Ontario. He is also a certified Butternut Health Assessor (BHA #104).

2.3 Additional Applications

Not applicable.

3.0 EXSITING CONDITIONS

3.1 Tree Inventory

A high-level inventory of trees on the Site was performed on November 2, 2023. The forest on the property was mapped so that each area represented a unique forest composition (Figure 2). In these areas, the species composition, size distribution (for trees with DBH ≥10 cm), and general health conditions. The species composition of the subcanopy (i.e., trees with DBH < 10 cm) in these areas was also recorded. All roadside trees along Thunder Road were also recorded.

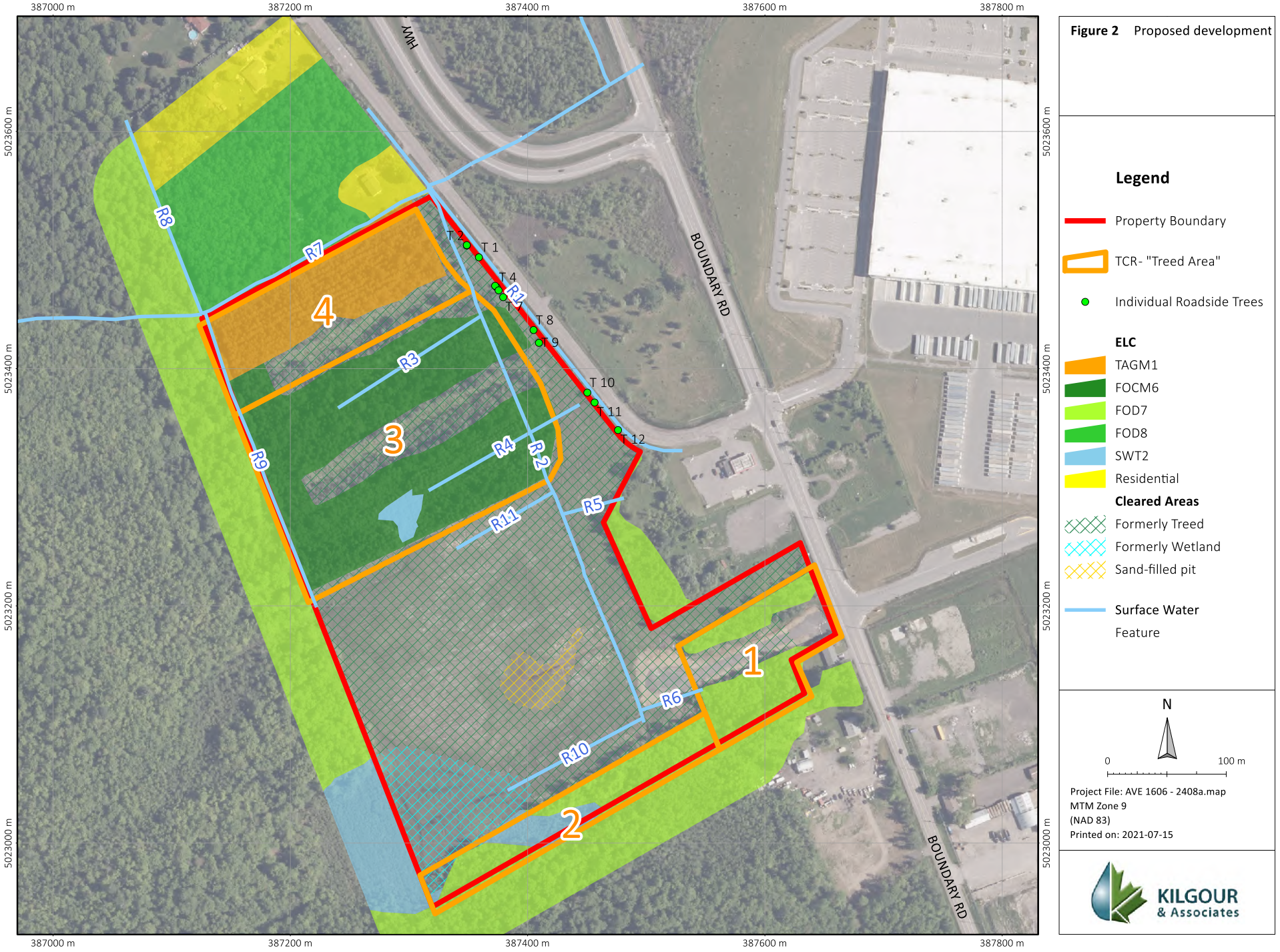

Figure 2 Proposed development

Legend

- Property Boundary
- TCR- "Treed Area"
- Individual Roadside Trees

ELC

- TAGM1
- FOCM6
- FOD7
- FOD8
- SWT2
- Residential

Cleared Areas

- Formerly Treed
- Formerly Wetland
- Sand-filled pit

- Surface Water Feature

N

0 100 m

Project File: AVE 1606 - 2408a.map
MTM Zone 9
(NAD 83)
Printed on: 2021-07-15

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In general, the Site contains four unique forested areas with a total of eight tree species and DBHs ranging between 20-30 cm. Based on aerial imagery from geoOttawa (City of Ottawa, 2023), the area was used as farmland prior to and in 1976, and therefore the trees within the Site are less than 47 years old.

Area 1 - consists of Trembling Aspen (*Populus tremuloides*) as the dominant canopy cover. The Trembling Aspen within this area generally ranged in DBH from 20-25 cm. The understory consisted of Willow sp. (*Salix sp.*), Green Ash (*Fraxinus pennsylvanica*) and White Ash (*Fraxinus americana*), which were all <10 cm DBH. The tree quality in this Area was poor, meaning the trees displayed greater than 40% deficiency/defect, as exemplified in (Figure 3).

Figure 3 Picture showing Area 1, 2023

Area 2 - The dominant canopy cover in Area 2 was Trembling Aspen and Red Maple (*Acer rubrum*) with DBHs ranging from 20-25 cm. Secondary canopy species included White Birch (*Betula papyrifera*), Green Ash (*Fraxinus pennsylvanica*), and White Ash (*Fraxinus americana*) with DBHs all <20 cm. The understory consisted of Willow sp. and young Green and White Ash, and all generally had DBHs <10 cm (Figure 4).

Figure 4 Photo showing the forest in area number 2, 2023

Area 3 - Is a spruce plantation that is dominated White Spruce (*Picea glauca*) with almost no understory. The White Spruce ranged from 20-30 cm DBH and are generally in good condition, meaning that the trees displayed less than 15% deficiency/defect. Area 3-B consists of the same tree composition, but is separated on the map because it is zoned as O1R and therefore has a different fate with respect to development plans compared to the rest of the Area.

Area 4 - Is a re-naturalized White Spruce plantation and, as such, is dominated by White Spruce with DBHs <30 cm (Figure 5). This Area also contains Balsam Poplar (*Populus balsamifera*), Trembling Aspen and White Birch as subdominant tree species, all with DBHs <10 cm. The understory consisted of Willow sp. again with DBH <10 cm. The trees in this Area had a generally good health status. Area 4-B consists of the same tree composition, but is separated on the map because it is zoned as O1R and therefore has a different fate with respect to development plans compared to the rest of the Area.

Figure 5 Photo showing the canopy and re-vegetation of Area 4, 2023

Individual Roadside Trees

Along the eastern Site boundary at Thunder Road, 12 trees were recorded, belonging to four species; White Birch (*Betula papyrifera*), Trembling Aspen (*Populus tremuloides*), Balsam Poplar (*Populus balsamifera*), and Gray Alder (*Alnus incana*). Trees ranged from 12-33 DBH in size. Approximately half of the trees were observed to be in good health, with a decay class of 1 (healthy, live tree, displays 0-15% deficiency), and half were observed to be in fair to poor health, with a decay class of 2 (declining live tree, part of canopy lost). Three trees are located just outside of the Site boundary on City property (T10, T11, T12; Figure 2).

3.1.1 Ecological Significance of Trees on Site

The Site does not contain any federally or provincially significant tree species (i.e., those listed under the *Species at Risk Act* (SARA), the ESA, or those tracked on the Natural Heritage Information Centre (MNRF, 2021)). The Site also does not contain tree species considered regionally significant (rare) in the Ottawa area per Muncaster Environmental Planning Inc. and Brunton Consulting Services (2005).

3.2 Other Natural Environment Elements

3.2.1 Surface Water Features

The Site contains a creek that runs along the north edge of the land parcel. A 30 m buffer of forested area adjacent to the creek will be preserved.

3.2.2 Steep Slopes

The development area does not contain any steep slopes.

3.2.3 Valued Woodlots

The development area itself does not contain any woodlots designated as Urban Natural Features or Natural Environment Areas, areas evaluated in the *City of Ottawa Urban Natural Areas Environmental Evaluation Study* (UNAEES; Muncaster Environmental Planning Inc. and Brunton Consulting Services, 2005), or other areas that meet the criteria used in the UNAEES.

3.2.4 Significant Woodlands

The contiguously forest areas adjacent to the development area meets the Significant Woodland criteria or size thresholds for rural areas in Ottawa per *Significant Woodlands: Guidelines for Identification, Evaluation, and Impact Assessment* (City of Ottawa, 2018). Forest cover on the Site consists of remaining narrow extensions of the adjacent woodland. These extensions are all areas of relatively young, early successional growth or plantation on former agricultural lands. Trees here are generally in poor condition, include now rare species and provide no interior forest.

3.2.5 Greenspace Linkages

The development area does not contain any greenspace linkages as identified in the Greenspace Master Plan (City of Ottawa, 2016) or as may occur in the larger landscape.

3.2.6 Distinctive Trees

The Site does not contain any distinctive trees (i.e., with DBH > 50 cm; Appendix A).

3.2.7 Unique Ecological Features

The development area does not contain any riparian woodlots, rare communities, or other unique ecological features.

3.2.8 Species at Risk

Based on our review of existing information records, our ELC delineations of the Site to characterize potential habitat areas, and our field surveys (Appendix B), seven (7) species were considered to have some probability of transient presence.

Two bird species, Eastern Wood-Pewee and Wood Thrush, were noted a single time each in the mature forest areas to the southwest of the Site. These birds, however, were not observed on the Site and the mix of young, scrubby forest and coniferous plantation present there provides only marginally suitable habitat by comparison. While it is possible both species could occur there transiently, the forested portions of the Site are not considered to be suitable habitat areas for these species.

Snapping Turtles (*Chelydra serpentina*) commonly occur in the general vicinity and tend to live and breed in close proximity to permanent watercourse features (MNRF, 2014). Watercourse feature R7 has some potential to support the species, though no individuals have previously been noted here. Areas of the Site beyond R7 or its immediate riparian corridor lack any permanent water features and are not considered as potential habitat. As the species is listed as Special Concern, its habitat is not specifically protected under the ESA regardless.

The Committee on the Status of Species at Risk in Ontario (COSSARO) has updated the provincial status for the Hoary Bat, Silver-haired Bat, and Eastern Red Bat to Endangered. These species will receive general habitat protection on or prior to January 31, 2025. Although these species are not officially listed at the time of this EIS, it is anticipated that protections may apply throughout the development application timeline. As such, these species are considered and assessed as Endangered species in this EIS.

The Hoary Bat, Silver-haired Bat, and Eastern Red Bat were detected in moderate numbers at the monitoring station on the Site, and therefore likely forage and/or roost in proximity to the Site. The numbers of detections, however, were not high, suggesting only a limited transient presence over most of the Site, with little evidence of maternal roosting activity or habitat. The Little Brown Myotis was observed to have some potential to occur transiently on the property. The young forests of the Site include few large snags typical of roosting trees. As such, they are unlikely to provide significant nursery habitat. The sandy soils of the area do not include cave-supporting geology for potential hibernacula.

As Endangered species, the Hoary Bat, Silver-haired Bat, Eastern Red Bat, and Little Brown Myotis receive “general habitat protection” under the ESA. However, vegetation removal on the Site would not result in a loss of maternal roosting habitat.

4.0 PROPOSED DEVELOPMENT

The proposed development consists of warehouse and employment uses in the general rural area (Figure 7). Three stormwater ponds are proposed for the Site; one large SWM pond located in the northern portion of the Site, one located centrally along the western Site boundary, and a small pond at the southeastern Site boundary adjacent to Boundary Road. The extent of development on the Site will feature permanent fencing as the final barrier between the buffer areas and future Site activity.

A 736 m naturalized watercourse and swale feature is proposed to be located in the western and southern portions of the Site centrally within the O1R zone (R9, R12). While some regrading along the development side of the buffer may be completed as part of the overall restoration/renaturalization (i.e. including but not necessarily limited to the swale habitat), Site works would not otherwise encroach on the O1R zone. Currently bare areas and the regraded edges will be fully planted with appropriate, native plant species to develop the O1R buffer zone as a naturalized terrestrial-to-wetland transition.

The watercourse/swale will be a low-intensity open feature primarily receiving flow backwatered from R7, input from southern forest drainage onto the Site, overland flow, and during large precipitation events and spring freshet. The swale will have a grade of 0.1% and is expected to retain back water into late summer and function as 300 m of fish habitat, connected to the R7 system. It is intended to serve as an important natural element within the O1R zone between the development and the adjacent aquatic, wetland, and forested areas supporting its overall form and functionality as a transitional habitat zone.

The large SWM pond in the northern portion of the Site will provide 50 m of fish habitat and connectivity with R7. An OGS and headwall with riprap will be located at the outlet of the SWM pond to R7. Between the OGS and headwall and R7, a 1 m wide, open, shaded, and naturalized trapezoidal channel to R7 will be established to meander through the TAGM1 vegetation community, with a minimum 2% slope and 3:1 side slopes. The large SWM pond will be setback greater than 30 m from the northern Site boundary and the top of bank of the channel R7. The retention of forest cover within the riparian buffer to channel R7 would provide a ~63 m wide natural corridor (i.e. two 30 m setbacks plus the width of the channel).

Figure 7 Proposed development

Legend

Forest Cover-
Post Development
Enhanced
Newly Established
Retained

Watercourses
Post Development
Intermittent/
Ephemeral
Permanent
(direct fish habitat)

Individual Roadside Trees

N

0 100 m

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MTM Zone 9
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5.0 MITIGATION MEASURES

5.1 Site Preparation and Construction

The following mitigation measures should be applied during Site preparation and construction:

- Tree and vegetation clearing should not take place during sensitive times of the year for wildlife (breeding season; early spring throughout summer) unless mitigation measures are implemented and/or the habitat has been inspected by a qualified biologist.
    - The *Migratory Birds Convention Act* protects the nests and young of migratory breeding birds in Canada. No clearing of vegetation shall occur during the breeding bird window (between April 15 and August 15; City of Ottawa, 2015) to prevent impacts to birds. Combining the breeding bird window with the bat roosting season (May to September; MNRF, 2015a), no clearing of vegetation shall occur between April 15 and September 30 inclusive to prevent impacts to both birds and bats.

It is expected that all trees on the Site would need to be cleared for the project. Vegetation removal on the Site should be limited to that which is necessary to accommodate construction. If it is possible to retain trees on the Site, the following general protection measures are recommended for retained trees during site preparation and construction (City of Ottawa, 2015):

- Erect a fence beyond the CRZ of retained trees. The fence should be highly visible (orange construction fence) and paired with erosion and sediment control fencing. Pruning of branches is recommended in areas of potential conflict with construction equipment.
- Do not place any material or equipment within the CRZ of trees unless otherwise approved by the General Manager.
- Do not attach any signs, notices, or posters to any trees unless otherwise approved by the General Manager.
- Do not raise or lower the existing grade within the CRZ of trees unless otherwise approved by the General Manager.
- Do not extend any hard surface or significantly change landscaping within the CRZ of trees unless otherwise approved by the General Manager.
- Do not damage the root system, trunk, or branches of any remaining trees unless otherwise approved by the General Manager.
- Use tunneling or boring when digging within the CRZ of a tree.
- Ensure that exhaust fumes from equipment are not directed towards any tree's canopy.

5.2 Tree Planting Recommendations

Trees are to be planted within open areas, along Thunder Road, around stormwater ponds, within the O1R zone, and the ~5 m wide area within the 30 m environmental setback from R7 at the north of the Site.

Specific trees to be planted on the site will be identified in the landscape plan for the development (EIS Appendix I). Trees species identified in this plan however must be non-invasive and be native to the Ottawa. Final selection of tree species within the landscape plan must also consider the City of Ottawa's Clay Soils Policy.

6.0 CLOSURE

This report was prepared for exclusive use by Avenue 31 Capital Inc. and may be distributed only by Avenue 31 Capital Inc. Questions relating to the data and interpretation can be addressed to the undersigned.

Respectfully submitted,

KILGOUR & ASSOCIATES LTD.

Robert Hallett, Dipl.T
Biologist

Anthony Francis, PhD
Director of Land Development

LITERATURE CITED

City of Ottawa. 2003. Official Plan. Available online at: https://ottawa.ca/en/planning-development-and-construction/official-plan-and-master-plans/official-plan

City of Ottawa. 2015. Environmental Impact Statement Guidelines. Available online at: https://documents.ottawa.ca/sites/documents/files/documents/eis_guidelines2015_en.pdf

City of Ottawa. 2016. Greenspace Master Plan. Available online at: https://ottawa.ca/en/planning-development-and-construction/official-plan-and-master-plans/greenspace-master-plan

City of Ottawa. 2017. Tree Planting in Sensitive Marine Clay Soils – 2017 Guidelines. Available online: https://documents.ottawa.ca/sites/documents/files/tree_sensitive_soil_guide_en.pdf

City of Ottawa. 2018. Significant Woodlands: Guidelines for Identification, Evaluation, and Impact Assessment. Available online at: http://ottwatch.ca/meetings/file/572913

City of Ottawa. 2020. Tree Protection (By-law No. 2020-340).

Government of Canada. 1994. *Migratory Birds Convention Act*, 1994 (S.C. 1994, c. 22). Available online at: https://laws-lois.justice.gc.ca/eng/acts/m-7.01/

Government of Canada. 2002. *Species at Risk Act*. 2002. S.C. 2002, c. 29. Available online at: https://laws.justice.gc.ca/eng/acts/S-15.3/

Government of Ontario. 2007. *Endangered Species Act*. 2007. S.O. 2007, c.6. Available online at: https://www.ontario.ca/laws/statute/07e06

Kilgour & Associates Ltd. 2021. Environmental Impact Statement for the Proposed Development of 104 Willowlea Road and 228 Westbrook Road, Ottawa. Draft reported dated July 30, 2021 (Version 1). iii + 38 pp.

Ministry of Natural Resources and Forestry. 2015a. Technical Note: Species at Risk (SAR) Bats. OMNRF Regional Operations Division. 37 pp.

Ministry of Natural Resources and Forestry. 2015b. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. OMNRF Regional Operations Division: Southern Region Resources Section, Peterborough, Ontario. 39 pp.

Ministry of Natural Resources and Forestry. 2017. Survey Protocol for Species at Risk Bats within Treed Habitats: Little Brown Myotis, Northern Myotis & Tri-Colored Bat. OMNRF Guelph District. 13 pp.

Ministry of Natural Resources and Forestry. 2021. Natural Heritage Information Centre: Make Natural Heritage Map. Available online at: https://www.ontario.ca/page/make-natural-heritage-area-map

Muncaster Environmental Planning Inc. and Brunton Consulting Services. 2005. City of Ottawa Urban Natural Areas Environmental Evaluation Study Final Report. A report prepared for the Environmental

Management Division, Planning & Growth Management Department, City of Ottawa. Available online at: https://app06.ottawa.ca/calendar/ottawa/citycouncil/pdc/2005/05-24/Final%20Report_UNAEES.htm

Appendix A Tree inventory table for the Site

Area	Common Name	Scientific Name	Diameter at Breast Height (cm)	General Health Status	Dominant, Subdominant or Understory?	Comments
1	Trembling Aspen	*Populus tremuloides*	20-25	Poor	Dominant	NA
	Willow sp.	*Salix sp.*	<10		Understory	
	Green ash	*Fraxinus pennsylvanica*				
	White ash	*Fraxinus americana*				
2	Trembling Aspen	*Populus tremuloides*	20-25	Poor	Dominant	NA
	Red maple	*Acer rubrum*				
	White Birch	*Betula papyrifera*	<20		Subdominant	
	Green ash	*Fraxinus pennsylvanica*	<10-20		Subdominant/ Understory	
	White ash	*Fraxinus americana*				
	Willow sp.	*Salix sp.*	<10		Understory	
3	White spruce	*Picea glauca*	20-30	Good	Dominant	White spruce plantation with limited understory
4	White spruce	*Picea glauca*	<30	Good	Dominant	Re-naturalized White Spruce plantation
	Balsam poplar	*Populus balsamifera*	<10		Subdominant	
	Trembling Aspen	*Populus tremuloides*				
	White birch	*Betula papyrifera*				
	Willow sp.	*Salix sp.*			Understory	

Table Notes: Good = trees display less than 15% deficiency/defect; Poor = trees display greater than 40% deficiency/defect