

**St. Mary's Coptic Orthodox
Church
Tree Conservation Report**

Proposed Service Building
Project No. 160410203




Prepared for:
St. Mary's Coptic Orthodox
Church

Prepared by:
Stantec Consulting Ltd.

November 29, 2019

Sign-off Sheet

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Prepared by  _____
(signature)

Isabelle Lalonde, Landscape Architect

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Executive Summary

This Tree Conservation Report has been prepared in support of a Zoning Application and a Site Plan Application to permit the expansion of 1 Canfield Road in Ottawa, Ontario. This project proposes the construction of a service building and associated infrastructure.

The 0.78-hectare property is located at the intersection of Greenbank Road and Canfield Road, north of West Hunt Club Road, within the City of Ottawa. It consists of five (5) parcels of land currently developed with a church on the corner parcel and four (4) residential properties. The site is described legally as Lots 19, 38, 39, and 40 and Part of Block J Registered Plan 485324, City of Ottawa. The site is designated "General Urban Area" in the City of Ottawa Official Plan. The current zoning as per the 2008 City of Ottawa Comprehensive Zoning By-law is as follow: Block J is zoned "Minor Institutional Zone" (I1B [428]); Lots 19, 38, 39, and 40 are zoned "Residential First Density Zone" (R1FF). As part of this exercise, Lots 19, 38, 39 and 40 have requested to be rezoned from R1FF to I1B, the same zoning as the current church. The residential dwelling on Lot 40 will remain but will have a reduced rear yard to accommodate for the proposed development. A single residential dwelling is permitted in the I1B zone and a Zoning Schedule will be prepared, illustrating the retention of the residential dwelling.

This Tree Conservation Report will summarize the condition of the current vegetation and define trees to be retained and / or removed to permit the development of this project. A Tree Assessment Investigation was conducted to review the species and health condition of the existing vegetation growing at and in periphery of the site in Ottawa and on adjacent land. The construction of this project is planned to occur in 2020-2021.

Glossary

Critical Root Zone (CRZ)	Zone under a tree where there should be no disturbance before, during and after construction. The CRZ is established as being 10 centimetres from the trunk of a tree for every centimetre of trunk diameter.
Diameter at Breast Height (DBH)	Diameter of a tree trunk measured at 1.4 metre above ground, standardized by the Council of Tree and Landscape Appraisers and the International Society of Arboriculture. DBH are generally measured in centimetres.
Dieback	Condition in which the ends of the branches are dying.
Distinctive Tree	Any tree with a DBH of 50 centimetres or greater.
Drip Line	Perimeter of the area under a tree delineated by the crown.
Leader	The primary terminal shoot or trunk of a tree.
Sapling	A young tree measuring one (1) to two (2) metres high and having a DBH of two (2) to four (4) centimetres.
Scaffold Branches	The permanent or structural branches of a tree.
Seedling	A plant grown from a seed with a height of not more than one (1) metre.
Significant Tree	Tree / shrub deemed valuable because it is unusually beautiful or distinctive, comparatively old, distinctive in size or structure for its species, rare or unusual in the subject area, provides a habitat for rare or unusual wildlife species in the subject area, or has an historical, cultural, or landmark significance.
Significant Woodland	Woodland that contain mature stands of trees 80 years or older, have interior forest habitat more than 100 metres from forest edge, and are adjacent to a surface water feature.
Specimen Tree	Individual tree located in the middle of a field or open space. A specimen tree is not automatically a significant tree.
Stress	Any factor that negatively affects the health of a tree.

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Structural Defect	Flaws, decay, or other faults in the trunk, branches, or root collar of a tree, which may lead to failure.
Topping (Topped)	Cutting back a tree to buds, stubs, or laterals not large enough to become a new leader on the tree.
Tree Protection Zone (TPZ)	The area surrounding a tree that is marked and fenced off and where there is no storage of materials of any kind, no parking or moving of vehicles, and no disturbance of the soil or grade.
Tree Shoots	Tree shoots are sprouts that emerge from dormant buds along the trunk or branch of a tree. In an urban environment shoots are often associated with stress to the tree. Trees with severe dieback due to winter injury, drought and salt spray often produce many shoots as a means of compensating for the loss of leaf surface due to stress or injury.
Tree Suckers	Tree suckers are sprouts that form from the roots of existing trees and tend to form new trees or shrubs. In an urban environment suckers can be associated with stress to the tree and are prevalent after a disturbance such as when mature trees are cut down. Some tree species have the tendency to sucker.
Vigour	Overall health; capacity to grow and resist stress.

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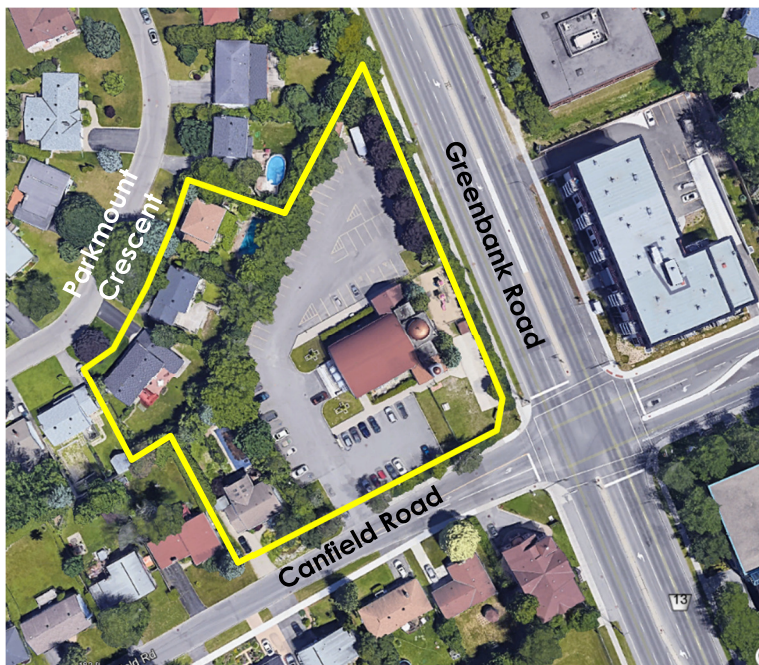
Introduction
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1.0 INTRODUCTION

Stantec Consulting Ltd. was retained by St. Mary's Coptic Orthodox Church to complete a Tree Conservation Report for 1 and 9 Canfield Road and 13, 15, and 17 Parkmount Crescent in support of a Zoning Application and a Site Plan Application. The objective with this rezoning and site plan exercise is to permit the construction of a new service building adjacent to the existing church including a paved parking area.

The 0.78-hectare property is located at the intersection of Greenbank Road and Canfield Road, north of West Hunt Club Road, within the City of Ottawa. It consists of five (5) parcels of land currently developed with a church on the corner parcel and four (4) residential properties. The site is described legally as Lots 19, 38, 39, and 40 and Part of Block J Registered Plan 485324, City of Ottawa. The site is designated "General Urban Area" in the City of Ottawa Official Plan. The current zoning as per the 2008 City of Ottawa Comprehensive Zoning By-law is as follow: Block J is zoned "Minor Institutional Zone" (I1B [428]); Lots 19, 38, 39, and 40 are zoned "Residential First Density Zone" (R1FF). As part of this exercise, Lots 19, 38, 39 and 40 have requested to be rezoned from R1FF to I1B, the same zoning as the current church. The residential dwelling on Lot 40 will remain but will have a reduced rear yard to accommodate for the proposed development. A single residential dwelling is permitted in the I1B zone and a Zoning Schedule will be prepared, illustrating the retention of the residential dwelling.

Figure 1: Location Plan



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The objectives of this Tree Conservation Report are:

- To describe the existing woody vegetation growing on site including trees and large shrubs. The description for each tree and / or large shrubs will include species, size, vigour, and health condition.
- To assess the environmental value and suitability for retention of the woody vegetation.
- To evaluate the anticipated impact of the proposed development on the existing woody vegetation.
- To provide recommendations related to tree protection and mitigation measures to reduce negative impact on the woody vegetation to be retained.
- To provide recommendations for the development of a compensation planting plan.

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Tree Assessment
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2.0 TREE ASSESSMENT

A Tree Assessment Investigation was conducted on July 15, 2019, by Carina Lood, Landscape Architect at Stantec Consulting Ltd., to review the species and health condition of the existing vegetation growing at 1 and 9 Canfield Road and 13, 15, and 17 Parkmount Crescent in Ottawa. In addition, our investigation included the assessment of trees growing in the road right-of-way and within 5 metres of the property lines, where access was possible.

2.1 METHODOLOGY

A complete assessment of every specimen tree over 10cm in DBH growing on the subject lands or in close proximity of property line was completed with the exception of the vegetation grouping growing between 1 Canfield and 11, 13, and 15 Parkmount. The DBH of trees was measured on site during the Tree Assessment Investigation. The species were determined based on bark and leaves identification. The vigour was assessed based on visible defects only.

The location of the trees, as shown on the **Current Vegetation Plan (TC-01)**, was established using the property survey completed by Stantec Geomatics Ltd. and dated June 2019.

2.2 OBSERVATIONS

The subject lands are relatively flat. The vegetation observed on the subject lands consists predominantly in specimen trees in a variety of species with groupings of trees and hedges at the periphery of the parcels.

2.2.1 Existing Vegetation

In general, the trees inventoried on this property appeared in healthy condition, are of various sizes and show no significant signs of disease. A total of 73 trees / groupings / hedges were assessed as part of this assessment. Tree species composition included a mix of deciduous and coniferous species. The complete list of all trees inventoried is described in the **Existing Vegetation Schedule** inserted on the **Current Vegetation Plan (TC-01)**.

Key vegetation features include the following:

- The vegetation fronting Greenbank Road visually impacts on the street and community surrounding the subject lands with mature trees growing adjacent to the roadway.
- A grouping of mature trees, mostly invasive and opportunistic species, is growing along the shared property lines between Block J and Lots 19, 39, and 40 (1 and 9 Canfield, and 11, 13, and 15 Parkmount Crescent).
- The street trees in front of Lots 38 to 40 contribute to the residential character of Parkmount Crescent.

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2.2.2 Species-at-Risk

No trees considered as species-at-risk or endangered species were observed on or adjacent to the property.

2.3 VEGETATION QUALITY AND SUITABILITY FOR RETENTION

Existing trees growing on and around the subject lands provide a mature character to the property. Although a quantity of trees growing on this property show good health conditions, other factors should be evaluated when establishing the suitability for retention of a tree. These factors include the following:

- Structural condition;
- Age and expected longevity of the tree;
- Species invasiveness; and
- Species response and tolerance to disturbance.

By considering all the factors listed above, trees recommended for retention will have a higher chance to respond positively to new site conditions for an extended period of time while providing a safe environment for the property users.

In addition to the factors listed above, **Table 1 – Retention Qualities** describes the suitability for each tree species for retention. The suitability for retention considers the capacity of the trees to survive to stress and changes in their environment but also the type of presence of each species in the Ottawa area and on site: native to Ottawa or invasive and opportunistic. Moreover, the suitability for retention should also study the proposed development of the property including grading works around the Critical Root Zones (CRZ) of trees and the proximity to construction, access roads, and / or built structures. This type of analysis will be completed in the following section of this report.

Table 1 - Retention Qualities

Tree Species (Botanical Name / Common Name)	Remarks	Suitability for Retention
<i>Acer ginnala</i> / Amur maple	Invasive and opportunistic species; bark is thin and easily damaged from mechanical impact; tolerant to drought; tolerant to poor soils.	Moderate
<i>Acer negundo</i> / Manitoba maple	Invasive and opportunistic species; shallow, fibrous and invasive root system; branches have tendency to lean and break easily.	Moderate

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<i>Acer platanoides</i> / Norway maple	Invasive and opportunistic species; tolerant to poor soils, compaction and pollution; once established, Norway maples form a dense canopy that shades out most other species.	Moderate
<i>Acer saccharum</i> / Sugar maple	Native to Ottawa; shallow to moderately deep root system; low tolerance to drought; grows in well drain and moist and fertile soils; intolerant of fill, of increased light, and of restricted root space.	Moderate
<i>Betula alleghaniensis</i> / Yellow birch	Native to Ottawa; moderately deep root system; prefers moist, well drained, fertile, deep and cool soils; intolerant to soil compaction.	Moderate
<i>Betula papyrifera</i> / White birch	Native to Ottawa; moderately deep root system; prefers moist and well-drained soils; sensitive to bronze birch borer; intolerant of soil compaction and increased light and heat especially in the root zone.	Moderate to Low
<i>Picea abies</i> / Norway spruce	Susceptible to wind throw; tolerant to drought; intolerant of excessive root loss.	Moderate
<i>Picea glauca</i> / White spruce	Native to Ottawa; shallow root system; susceptible to wind throw; tolerant to drought.	Good to Moderate
<i>Picea pungens</i> / Colorado spruce	Susceptible to wind throw; tolerant to drought; intolerant of excessive root loss.	Moderate
<i>Pinus banksiana</i> / Jack pine	Native to Ottawa; tolerates some fill in sandy soils.	Good
<i>Pinus sylvestris</i> / Scotch pine	Intolerant of moisture level fluctuation	Good to Moderate
<i>Thuja occidentalis</i> / Eastern white cedar	Native to Ottawa; shallow root system; tolerates excess moisture if given time to adapt; tolerates wounding; tolerates some fill and soil compaction	Good
<i>Ulmus americana</i> / American elm	Native to Ottawa; shallow root system; sensitive to Dutch elm disease and phloem necrosis both fatal diseases; prefers rich, moist soils but grows well under a variety of conditions; will tolerate some fill, restricted root space, and low oxygen sites; tolerant to excavation works.	Moderate to Low

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3.0 PROPOSED DEVELOPMENT & TREE RETENTION RECOMMENDATIONS

3.1 PROPOSED DEVELOPMENT

The project for 1 and 9 Canfield Road and 13, 15, and 17 Parkmount Crescent proposes the construction of a service building with associated asphalt drive aisles, walkways, and landscaping. The construction of the service building and associated parking will necessitate the removal of a number of trees. The proposed development shown on the **Tree Preservation Plan (TC-02)** illustrates the location of the proposed building and affiliated infrastructure.

3.2 TREE RETENTION RECOMMENDATIONS

3.2.1 Tree Retention

The Site Plan developed for this application proposes some locations where trees may be preserved. As indicated on the Tree Preservation Plan, Stantec recommends the preservation of most of the vegetation growing on the edge of Greenbank Road and Canfield Road. Additionally, the intention is to preserve the existing mature trees growing in the front lawn of lots 38, 39, and 40 (13, 15, and 17 Parkmount Crescent). Based on the Tree Assessment Investigation, all trees to be retained and growing on the subject lands show good health condition. As indicated in table 1 above, these trees also present good retention qualities.

To ensure tree survival during and after construction, mitigation measures should be considered during construction. Adequate protection of the trees to be retained and their immediate environment is crucial for the survival of these trees. As such, the Contractor shall apply the following measures to prevent damages to these trees.

3.2.1.1 Tree Health Monitoring

Trees located adjacent to construction works will experience change in their immediate environment. As a result, tree health should be monitored. Photographs of trees to remain should be taken prior to construction, if possible when the trees are in full leaf, as a record of their condition. Monitoring tree health both during and after construction should be made a priority. Actions should be taken as early as possible if / when the health of a protected tree declines. Damages may include:

- Physical damage on tree bark;
- Broken branches;
- Compaction of root systems due to equipment and materials stored within the protected areas;
- Cutting of the roots; and

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- Root exposure following excavation adjacent to trees to be preserved.

Services of an arborist should be used in order to give adequate care to damaged trees.

Trees that have died or have been damaged beyond repair by the Contractor during construction shall be removed and replaced by the Contractor as directed by the project landscape architect.

3.2.1.2 Temporary Tree Protection Fencing

The roots of a tree are located in the top 150 to 250 millimetres of soil and can very easily be inadvertently damaged. To ensure protection of the root system of trees to remain, temporary tree protection fencing shall be installed at the critical root zone (CRZ) of trees located inside or adjacent to the construction area. **The CRZ of a tree is the zone around the trunk where there should be no disturbance before, during, and after construction. The CRZ is established as being 10 centimetres from the trunk for every centimetre of trunk diameter.**

Temporary tree protection fencing shall be installed according to the detail inserted on drawing **TC-03 – Tree Preservation Details and Notes** at the end of this report. Fencing shall always be maintained in good repair during construction operations and shall only be removed upon completion and when agreed by the contract administrator. Temporary removal of fencing shall not be permitted without the approval from the contract administrator.

Within the CRZ of trees, as delineated by temporary tree protection fencing there should be:

- No disturbance or alteration of the existing grade without approval including addition of fill, excavation, or scraping of the soil;
- No installation of signs, notices or posters on trees;
- No storage of construction materials, surplus soil, construction waste, or equipment;
- No disposal (dumping or flushing) of contaminants or liquids; and,
- No movement of vehicles (personal or business), equipment or pedestrians.

Section 3.2.1.3 addresses mitigation strategies should disturbances or alterations within the tree protection zone be unavoidable.

3.2.1.3 Work within Protected Areas

3.2.1.3.1 Excavation Work

To ensure the roots are not disturbed more than necessary and where excavation works are unavoidable within the CRZ of trees, the following mitigation measures shall be used:

- **All excavation within the CRZ of trees shall be by hand or hydro excavation using the smallest tools.** Root cutting shall be made using a sharp spade or knife at the limit of disturbance prior to any construction activities.
- **The Contractor shall only tunnel or bore within the CRZ,** instead of creating a trench.

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- **Any roots that are exposed by construction activities must be covered with native topsoil immediately**, to ensure that the roots do not dry out or have any further damage occur to them.

In all those instances where root pruning is required, the service of a Certified Arborist or Qualified Tree Worker under the supervision of a Certified Arborist shall be retained. In addition, all remedial works must be conducted by a certified care professional to ensure proper care is administered in order to enable the continued health of the trees.

3.2.1.3.2 Grading Work

Where re-grading is required within the CRZ, it should be performed by hand under the supervision of a Certified Arborist.

3.2.1.4 Additional Protection Measures

The following mitigation measures shall also be respected:

- When working near vegetation, **the Contractor shall ensure that exhaust fumes from all equipment are NOT directed towards any tree's canopy.**
- **Where limbs or portions of trees are removed to accommodate construction work, they will be removed carefully in accordance with accepted arboricultural practices.**
- **Where necessary, the trees will be given an overall pruning to restore their appearance.** Not more than one-third of the total branching shall be removed during a single operation. The services of a Certified Arborist shall be retained for this task.

3.2.2 Tree Removal

In order to provide a safe environment, we recommend the removal of all trees located inside or close to the limit of construction. The following measures shall be observed when removing trees and vegetation on the subject lands.

3.2.2.1 Clearing and Grubbing of Trees

It should be noted that no tree shall be removed without the City of Ottawa written approval as deemed under By-law number 2009-200.

Any trees designated for removal and located outside a protected area will have the stumps completely excavated and removed unless such removal will adversely affect existing trees / ecology to remain. **When removing trees located adjacent to construction limits, special consideration shall be taken to prevent damages to adjacent trees to be retained.**

3.2.2.2 Wildlife Protection

Clearing operations are prohibited during the breeding migratory bird period which extends from April 15 to August 15 of any year for most migratory birds. Should tree removal during this

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period be unavoidable, the contractor is required to retain the services of a qualified Avian Biologist who will conduct a breeding migratory bird screening. This screening will identify and ensure there is no evidence of breeding migratory bird activities including active nests. Tree removal will be allowed within five days of conducting the screening.

3.2.3 Compensation Planting

In general, trees shall be planted wherever possible to compensative for the loss of vegetation on site. Tree planting should propose a mix of deciduous and coniferous trees. In addition, we recommend the following:

- Tree species selected to compensate tree loss shall not necessarily correspond to tree species removed on site. Tree species adequate for this site and neighbourhood include maples, cedars, and ornamental "residential" trees.
- Planting of non-invasive tree species.

Planting of shrubs and perennials shall also be included as part of this development. A mix of ornamental and native species shall be used to reflect the residential character of the neighbourhood and the type of development.

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4.0 CONCLUSION

The proposed development provides the ***opportunity to preserve trees growing along the peripheral property lines*** creating a transitional zone to the residential character of the adjacent properties. To ensure survival of the trees to be retained, protection measures recommended in this report shall be applied. Preservation of those trees will be possible by ***limiting the footprint of the work area and visually delineating the protected zones from the construction zones***. By installing a tree protection fence, damages to trunks, branches, and root systems will be limited.

By following the mitigation recommendations outlined in this report and ***ensuring compensation planting of a mix of trees and shrubs is included as part of this development***, we believe this development will integrate well to the community.

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5.0 REFERENCES

City of Ottawa Tree Conservation – Urban By-law 2009-200.

APPENDIX A - DRAWINGS