



# Arborist Report and Tree Preservation Plan

551 Avonhead Road  
City of Mississauga, Ontario

JUNE 2021



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City of Mississauga, Ontario

## **REPORT PREPARED FOR**

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## 1.0 INTRODUCTION

GEI Consultants, Savanta Division (GEI) was retained by Cartera Management Inc. to prepare an Arborist Report and Tree Preservation Plan for their property located at 551 Avonhead Road in the City of Mississauga, Ontario (herein referred to as the Subject Lands), as shown on **Figure 1, Appendix A**. The approximately 15.16 ha Subject Lands are legally described as Part of Lots 32, Concession 3. The Subject Lands are generally bounded by Avonhead Road to the west, industrial complexes and Lake Ontario to the south, disturbed open areas and industrial lands to the north, and additional industrial lands to the east.

The proposed development will consist of two single story industrial buildings with associated loading areas and parking (**Figure 2, Appendix A**). The proposed development will occupy most of the Subject Lands. This report presents the results of the tree inventory, identifies opportunities for tree preservation and protection, recommends measures to protect retainable trees, and proposes compensation for tree removals. The objective of the preservation plan is to retain existing tree cover wherever feasible and to minimize the risk of injury to trees identified for protection.

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## 2.0 METHODOLOGY

GEI completed a tree inventory within the Subject Lands and the immediately adjacent (i.e., within 6 m) lands on April 23, 27, and May 17, 2021. The inventoried trees are governed under City of Mississauga Private Tree Protection By-law No. 0254-2012, with additional requirements retrieved from the City of Mississauga Site Plan Application Process Guidelines (2017). All live trees with a diameter-at-breast-height (DBH) of 15 cm and greater and occurring on the Subject Lands were tagged and assessed; dead trees were mapped but not tagged. Trees on adjacent lands were mapped as individuals, or as treed units—however they occurred; these trees were assessed but not tagged.

The locations for all inventoried trees on the Subject Lands were recorded in UTM coordinates using a sub-meter capable GPS unit. Live trees were tagged, and the following information was recorded: species, DBH, health category (biological, structural, and overall), and notes regarding the assigned health category. A unique identifier was assigned to non-tagged trees for mapping and reference purposes: “N” for neighbour, followed by a number and “D” for dead (including neighbour trees), followed by a number.

Tree health was categorized as good, fair, or poor. Trees categorized as “good” overall had at least 80% live canopy and showed no significant structural defects (e.g., weak limbs, girdling roots, stem lean) or evidence of biological damage (e.g., insect damage, fungal growth, leaf dieback). “Fair” trees were those with 50% to 80% live canopy and showed no significant structural or biological defects, or the tree had over 80% live canopy but did show some evidence of structural defects and/or biological damage. Trees categorized as “poor” were those with less than 50% live canopy and/or had significant structural defects and/or biological damage.

### 3.0 TREE INVENTORY

A total of 390 trees were mapped and assessed during this tree inventory, of which 232 were dead (**Figure 3, Appendix A**). The live inventoried trees included 14 different species. Of the 158 live inventoried trees, 134 (85%) are native to the TRCA watershed (TRCA 2017).

Following analysis of anticipated impacts to the inventoried trees, it was determined that 59 trees are recommended for preservation and 331 trees are recommended for removal due to anticipated construction impacts. Further detail is provided in the following subsections. **Table 1 (Appendix B)** outlines the results of the tree inventory, including the tree identification number, species, DBH, crown radius, health category (biological, structural, and overall), and notes regarding the assigned health category. **Table 1 (Appendix B)** also provides the Tree Protection Zone (TPZ), the percent encroachment of the proposed construction footprint into the TPZ, recommendations for preservation or removal, and the rate of compensation tree plantings.

One Butternut (*Juglans cinerea*), listed as Endangered under the *Endangered Species Act, 2007* (ESA), was documented on adjacent lands. No direct construction impacts to the TPZ are anticipated to this tree, and therefore it is recommended for preservation. Consultation with the Ministry of the Environment, Conservation and Parks (MECP) remains ongoing to ensure compliance with the ESA with respect to impacts to individual Butternut and their habitat.

#### 3.1 Preservation Trees

Preservation trees are those that are unlikely to be significantly impacted by the proposed construction or can likely be preserved using tree protection measures, as described in section 4. Of the 390 inventoried trees, 59 are preservation trees (including 31 dead trees).

#### 3.2 Removal Trees

Removal trees are those that are located within the proposed construction footprint and cannot be preserved. Of the 390 inventoried trees, 331 are removal trees (including 201 dead trees). Compensation for removal trees is discussed in section 5.

The proponent should ensure that the works are in conformance with the *Migratory Birds Convention Act, 1994* and the *Endangered Species Act, 2007*. Specifically, tree removals should comply with timing window restrictions with regards to the protection of nesting birds and Species at Risk bats. Where these timing windows cannot be avoided, it is recommended that a qualified ecologist conduct a nest search and bat habitat assessment. Further discussion on mitigation measures and specific timing windows are provided within the *Environmental Impact Study* (GEI Consultants 2021).

## **4.0 PRESERVATION PLAN**

Tree preservation will be achieved through avoidance and/or the use of appropriate tree protection measures. GEI inventoried 390 trees within the Study Area. Of these, 28 are live preservation trees. The proposed Tree Preservation Plan is described in the following subsections.

### **4.1 Tree Protection Zones**

The area of protection around a tree is referred to as the Tree Protection Zone (TPZ) and is measured outward from the trunk. Each inventoried tree was assigned a TPZ equivalent to the crown radius (i.e., dripline), per the City of Mississauga's "Development & Design Construction Hoarding" standard details for tree protection (2008).

The objective of the TPZ is to maximize protection of the tree to ensure its long-term survival. It is recognized, however, that encroachment into the TPZ will sometimes be necessary to facilitate construction. Some healthy trees are known to withstand construction impacts such as root cutting, soil compaction, and soil saturation; however, these individual responses are dependent on the species, site condition, and degree of impacts (Matheny & Clark 1998).

### **4.2 Protection of Preservation Trees**

There is potential for construction activities to occur within the TPZs of five preservation trees. Protection and mitigation techniques are expected to prevent impacts to these trees. A modified TPZ will be given to these trees prior to construction, which will follow the limit of construction activity. This modified TPZ will require strict adherence to the tree protection measures outlined below. If these trees cannot be adequately protected during construction, they will be identified as removal trees and will require compensation as described in section 5.

Where construction activity is proposed to occur within a TPZ, the TPZ must be properly prepared. The Project Arborist should be on site during all site alteration activities within the TPZ of live preservation trees, including tree removal, canopy or root trimming, and soil stripping, to monitor these activities and propose site-specific mitigation, where appropriate. If any accidental tree damage or encroachment into the TPZ occurs or is observed, the Project Arborist should be notified in order to take appropriate action on site. In addition, the following tree protection measures should be implemented:

- All relevant contractors should meet with the Project Arborist prior to the beginning of site alteration to review tree protection procedures.
- Low branches may be pruned back or removed to accommodate vehicular movement.

- Trees to be removed should be felled in a manner that drops the tree away from adjacent preservation trees and their TPZs.
- Any brush clearing required within the TPZs should be completed using hand-operated equipment and should be lifted out and not skidded out.
- If excavation or grading is proposed within the TPZs, affected tree roots must be cut at a 90° angle at the edge of anticipated disturbance using specialized equipment. Hydro-vac excavation will be necessary to expose the roots prior to cutting if existing conditions prevent machinery from making a clean, 90° cut.
- Tree roots damaged during construction should be exposed and cut cleanly at a 90° angle using hand operated equipment to aid in root regeneration.
- Any roots exposed for longer than four hours should be kept moist using wet mulch or burlap wrap or be directly irrigated. These affected trees should have wood mulch applied to their respective TPZs at a depth of 5–10 cm to help maintain moisture and moderate soil temperature.
- Horizontal root protection should be used in locations where regular movement of equipment through the TPZ is anticipated.
- Where construction activity is proposed to occur within or near the TPZs, irrigation should be implemented during periods of drought, especially during the summer months. A slow soaking of the entire TPZ to a depth encompassing the root system is the preferred method of irrigation, but it may vary depending on the tree species and soil texture. Water should not be directed at or near the trunks. The frequency of irrigation will depend on air temperature and precipitation at the time of construction.
- Sediment control fencing should be installed to provide a protective barrier between areas intended for stockpiling of excavated soil and candidate preservation trees. The sediment control fencing should be installed to Ontario Provincial Standard 219.130.

If preservation trees cannot be adequately protected during construction or if they exhibit canopy dieback post construction, they will be identified as removal trees and will require compensation as described in section 5.



## 5.0 COMPENSATION REQUIREMENTS

Trees inventoried within the Study Area are governed under Private Tree Protection By-law No. 254-12. Removals of 103 healthy trees under 50 cm DBH will require compensation at a 1:1 ratio. Removals of four healthy trees 50 cm DBH or greater will require compensation at a 2:1 ratio. Removals of a total of 23 trees in poor condition and/or Ash (*Fraxinus* sp.) trees do not require compensation. Accordingly, a total of 111 trees are required as compensation for tree removals. The opportunity for compensation through cash-in lieu may be reviewed with the City of Mississauga.

Compensation trees, if planted, shall be native to the Toronto and Region Conservation Authority watershed. Coniferous replacement trees will be at least 1.8 m tall, and deciduous replacement trees will be at least 6 cm DBH (City of Mississauga 2019a). Additional details regarding tree compensation will be refined at a later stage.

## 6.0 SUMMARY

GEI inventoried 390 trees within the Study Area, of which 158 were live and 232 were dead. Of the inventoried trees, 59 trees are recommended for preservation (including 31 dead trees) and 331 trees are recommended for removal (including 201 dead trees) due to anticipated construction impacts. Compensation is required for the removal of 107 healthy trees (103 trees under 50 cm DBH at a 1:1 ratio and four trees 50 cm DBH or greater at a 2:1 ratio), for a total of 111 compensation trees or cash-in-lieu equivalent.

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## REFERENCES AND BACKGROUND MATERIALS

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## APPENDICES

### Appendix A – Figures

- Figure 1: Location of Subject Lands
- Figure 2: Proposed Development
- Figure 3: Tree Inventory

### Appendix B – Tables

- Table 1: Tree Inventory