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**Date** March 7, 2023 **Report No.** 2023-82

**To** Chair and Members  
Committee of the Whole - Operations

**From** Inderjit Hans, P. Eng., PMP  
General Manager, Public Works Commission

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## 1.0 Type of Report

Consent Item   
Item For Consideration

## 2.0 Topic **City Tree Protection & Maintenance Practices** [Financial Impact: None]

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## 3.0 Recommendation

- A. THAT Report No. 2023-82 City Tree Protection & Maintenance Practices BE RECEIVED; and
- B. THAT a By-law to regulate the planting, maintenance, protection, and preservation of City trees, attached as “Appendix A” BE APPROVED; and
- C. THAT the following By-laws BE PRESENTED to City Council for adoption with an effective date of May 1, 2023:
  - i. By-law to repeal Chapter 322 of the City of Brantford’s Municipal Code and adopt the City Tree Protection By-law
  - ii. By-law to amend Schedule 1 to By-law 30-2023, being a By-law to Fix Fees and Charges to be collected by The Corporation of the City of Brantford to include a revised fee for tree removal and replacement.

## 4.0 Executive Summary

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Urban trees are crucial climate change mitigation assets that contribute to a more livable outdoor environment. The City's most recently conducted LiDAR Study found that Brantford's average tree canopy coverage is 21.5%. This is on the lower end of other Ontario municipalities. Factors contributing to local tree canopy loss have included the Emerald Ash Borer, a rise in extreme weather events, and requests received by staff for the removal of healthy trees. This Report recommends that the City repeal and replace the existing City Tree By-law, being a By-law to regulate the planting, maintenance, protection, and preservation of trees on City property. A new City Tree Protection By-law is being recommended because gaps have been identified within both the content and administration of the existing City Tree By-law (Chapter 322 of the City of Brantford Municipal Code). These gaps are most pronounced in the lack of criteria for approving or denying tree removal requests, vague language surrounding the application of tree removal and replacement fees, and overall authority for adherence to the By-law.

The recommended new City Tree Protection By-law contains greater clarity regarding authority and administration of the By-law, specific criteria and responsibilities or managing requests for City tree removals, more detailed and consistent tree replacement value requirements, and defined enforcement measures and responsibilities related to contraventions of the By-law. If approved, the new By-law will come into effect May 1, 2023.

This new By-law does not apply to trees on private property, as there is a separate Private Tree By-law (119-2017) that regulates and protects trees on wetlands, woodlots, and natural areas. As part of the next steps after the approval of the new City Tree Protection By-law, staff will engage stakeholders and residents in the development of a more expansive Private Tree By-law. There is no direct financial impact of this Report and the climate and environmental impact is positive as it will result in greater protection of trees which are crucial to mitigating greenhouse gas (GHG) emissions.

## **5.0 Purpose and Overview**

This report presents the proposed new City Tree Protection By-law to Council, attached as "Appendix A: City Tree Protection By-law", for Council consideration. If approved, the new By-law will repeal and replace the existing City Tree By-law (Chapter 322 of the City of Brantford Municipal Code).

## **6.0 Background**

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The existing City Tree By-law (Chapter 322 of the City of Brantford Municipal Code), enacted in 1991, regulates the planting, maintenance, and protection of trees on public property. The City Tree By-law was last amended in 1997.

On June 7, 2010, the City of Brantford Waterfront Master Plan was adopted including recommendations to protect existing tree canopy and reforest urban lands. Specific recommendations included that the City prepare a City Tree/Woodlot By-law that restricts landowners from cutting trees without a permit. The City approved and amended Private Tree By-law (No. 119-2017) in 2017 to require permits to remove trees on private property if the property is designated as a protected woodlot, wetland, heritage area, or area where protected species exist.

City Council approved the City of Brantford's Corporate Climate Change Action Plan (CCAP) in Report #2020-472 on November 24, 2020. The Corporate CCAP stated that to reach 40% tree canopy coverage, 41 sq. km of tree coverage is required. The Corporate CCAP recommends the preservation of healthy trees and that any tree removal actions should require a replacement plan to ensure growth and survival. On July 26, 2022, the City Council adopted a Community Climate Change Action Plan in Report #2022-428. The Community CCAP stated that the City will work with residents to protect trees through education initiatives, but will also pursue enforcement of protective measures where necessary.

City Council at its meeting held on January 26, 2021 approved the City of Brantford Official Plan in Report #2021-20. The Official Plan stated that the City shall achieve a minimum of 40% tree canopy cover by 2051. The Official Plan also directed that the City will encourage the replacement of trees lost to development with new trees planted elsewhere, generally on-site. Where a development application will result in a net loss of trees, the proponent shall compensate the City of this loss of tree cover. In determining appropriate compensation, consideration should be given to the significance and value of the ecological function that the existing tree inventory provides, including carbon sequestration. This Report refers to the protection and preservation of trees on public property in service of the goal to increase the City's tree canopy by 2051.

## **7.0 Corporate Policy Context**

- 2021-2022 Council Priorities Outcome 7: Tier 1 Priority: Demonstrate the City's commitment to environmental leadership through visible projects.

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- City of Brantford Official Plan (2021) Section 3.5: Promoting Sustainable Development and Adapting to Climate Change: The City shall achieve a minimum of 40% tree canopy cover by 2051.
  - Corporate Climate Change Action Plan (2020): Short term goals include expanding the City's tree canopy to sequester carbon and provide shade.
  - Community Climate Change Action Plan (2022): City actions will include exploring measures that encourage tree preservation through education and enforcement.
  - Parks and Recreation Master Plan (2018): Recommendation 91: Plan for native species plantings and resiliency to changing climate conditions, supportive of maintaining and expanding urban forest cover.
  - Waterfront Master Plan (2010): Trees and Forests; Prepare a City Tree/Woodlot By-law that restricts landowners from cutting trees without a permit.

## **8.0 Input From Other Sources**

- Cemeteries, Horticulture and Forestry Operations
- Property Standards & By-laws Services
- Planning and Development Services
- Legal Services
- Finance Services
- Communications, Community Engagement and Customer Service

## **9.0 Analysis**

### **9.1 Importance of Urban Trees**

As highlighted within many of the City's Corporate Master Plans, including the Official Plan (2021), Corporate Climate Change Action Plan (2020), and Waterfront Master Plan (2010), tree canopies are crucial climate change mitigation assets. Urban trees provide shade and thermal benefits that contribute to reduced air and ground temperatures, making urban spaces safer and more livable. Trees also improve air quality by absorbing carbon and pollutants, while creating oxygen. Additional benefits of trees

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include, but are not limited to, creating critical habitats for animals (including pollinator species), preventing surface water flooding, and contributing to a more livable outdoor environment that encourages use of outdoor public spaces.

## **9.2 Updated Tree Canopy Study**

In fall 2022, the City's tree canopy was measured through a LiDAR (Light Detection and Ranging) study. LiDAR measures the time taken for a laser pulse emitted from an aerial-mounted sensor to travel and reflect off the earth's surface back to the sensor. Each reflection becomes a measurement point for a tree's location and canopy change at the individual tree level.

The City's total tree canopy coverage is currently between 18%-25% (average 21.5%). At the time of the LiDAR study (September-October 2022), there were 674,975 trees within City boundaries:

- 18% of those trees are located on City parcels of land,
- 74% of those trees are located on private parcels of land (including land owned by individuals, corporations, institutions, or other levels of government),
- 6.5% of those trees are located on the built Right of Way,
- 1.3% of those trees are located on the semi-rural roads and streets Right of Way.

The results of the LiDAR study highlights that Brantford's tree canopy is lagging behind many surrounding municipalities, indicated in Table 1. Furthermore, the City of Brantford is utilizing a tree canopy target of 40% by 2051 which many cities have updated to be more reflective of the available lands for tree planting. Surrounding municipalities have developed tree canopy targets that correspond to their specific environmental conditions and climate adaptation needs. To support the achievement of an improved and more realistic tree canopy target, the City will assess its tree canopy target against a more in-depth tree inventory from the LiDAR study.

**Table 1 - Comparison of Tree Canopies Across Ontario Municipalities**

<b>Municipality</b>	<b>Current Tree Canopy</b>	<b>Tree Canopy Goal</b>
Brantford	21.5%	40% by 2051
London	24%	34% by 2026
Burlington	30%	35% by 2041
Cambridge	25%	30% by 2041
Guelph	23.5%	40% by 2031
Windsor	19%	27% by 2049
Peterborough	26.8%	35% by 2041
Kingston	21.4%	Double by 2025

Since an internal tree canopy study was conducted in 2011 that identified 25% average canopy coverage, the City of Brantford has responded to the threat and effects of the Emerald Ash Borer, which required the removal of Ash trees from all Right of Ways, parks, and trails. In addition to other contributing factors, such as extreme weather events that resulted in significant tree damage, requests received by staff for the removal of healthy trees has also put the City’s tree canopy at risk.

### **9.3 Gaps in Existing City Tree By-law**

While the current City Tree By-law outlines that trees on public property shall not be removed without approval of the “Administrator”, it does not outline any standards for determining when requests to remove City trees can be declined or accommodated. The current City Tree By-law also does not outline a consistent cost recovery and tree replacement formula that will apply when tree removal requests can be accommodated.

The administration and enforcement gaps within existing By-law are resulting in requests to remove trees even if they are in good health and assessed to be low-risk. Reasons for these requests have varied, but the most common have included:

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- Trees drop leaves, seeds, fruit, honeydew onto adjacent private properties,
  - Allergies to a specific type of tree, their droppings, or mold,
  - Roots or branches encroach on public or private infrastructure (ex. sidewalks or driveways),
  - Trees block a particular view,
  - Dislike or fears associated with trees, birds, insects, or other wildlife.

#### **9.4 Jurisdictional Scan**

Comparator municipalities across Ontario are taking a variety of approaches to protect and enhance their tree canopies. City Tree By-laws are one complementary part of larger corporate strategies and plans for tree protection. The general standard of these By-laws is that City trees are not to be removed upon request, unless the tree has been assessed as dead, declining, or high risk.

The cities of Guelph, London, Peterborough, and Burlington in particular have implemented By-laws that outline clear authority and criteria for how requests for the removal of City trees will be managed. These By-laws also outline consistent tree replacement values that are applied when the removal of a healthy, low-risk City tree is approved for removal.

#### **9.5 Recommended Replacement By-law**

In light of the By-laws and practices of other Ontario municipalities, the recommended course of action to address the gaps in Brantford's existing City Tree By-law is to repeal and replace it with a new City Tree Protection By-law. This new By-law, attached as "Appendix A: City Tree Protection By-law", will outline enhanced protection standards for trees located on City property, including trees on the Right of Way and boundary trees. Enhanced areas of the new By-law include:

- Greater clarity regarding authority and administration of the By-law,
- Specific criteria and responsibilities for managing requests for City tree removals,

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- More detailed and consistent tree replacement value requirements,
  - Defined enforcement measures and responsibilities related to contraventions of the By-law.

Through this By-law, staff will be authorized to:

- Plant, maintain, remove, and replace trees on City parcels of land,
- Review requests, make inspections, and issue decisions regarding maintenance or removal of trees on City parcels of land,
- Pursue replacement tree compensation in applicable situations where a healthy, low-risk trees are removed.
- Pursue investigations into potential contraventions of the By-law, pursuing fines when applicable.

The new standard will be that the City will not accommodate requests to remove trees on City property that are assessed by staff as low-risk and in good health. In rare situations where the applicant's concern is a matter of health, safety, or accessibility, and this concern cannot be mitigated by any maintenance work, the City tree can only be removed if the Tree Replacement Compensation Value of the tree(s) in question is paid to the City. The intention of this criteria and compensation requirement is to act as a deterrent for non-essential requests and a cost recovery mechanism needed to replace any losses to the City's tree canopy.

The recommended new City Tree Protection By-law outlines tree replacement compensation ratios based on the size of the tree(s) being removed. The minimum compensation ratio for removing any City tree is 3:1, meaning that for each tree that is removed, a minimum of three must be planted in its place. Once the Diameter at Breast Height (DBH) of a City tree measures at 31 centimeters, the tree replacement value will start to increase. To reflect the new replacement ratios outlined in the City Tree Protection By-law, staff is recommending to amend the Fees and Charges By-law to include a flat fee of \$500 fee per tree based on the replacement ratios, plus actual cost of labour including 40% benefits, equipment, materials, and/or third party contractors, plus 15% administrative fee.



**Table 2 - Tree Replacement Values by Diameter at Breast Height**

<b>City Tree DBH (cm)</b>	<b>Tree Replacement Value</b>
10-30	3:1
31-40	4:1
41-50	5:1
51-60	6:1
61-70	7:1
71-80	8:1
81-90	9:1
91+	10:1

One element of the new City Tree Protection By-law that remains the same is that no person shall remove, disturb, damage, destroy, or alter in any way a City Tree. No person shall plant any trees on City Property without prior consent of the General Manager, or as part of planned public tree planting activities approved by the City.

Any person who contravenes any provision of the City Tree Protection By-law may be liable to a fine and such other penalties as provided for in the Provincial Offences Act, R.S.O. 1990, c. P. 33, and the Municipal Act, 2001, as amended. Any person who is charged with an offence under the City Tree Protection By-law by the lying of information under Part III of the Provincial Offences Act and is found guilty of the offence is liable, pursuant to the Municipal Act, 2001, to a penalty as follows:

- a) The minimum fine for an offence is \$500 and the maximum fine is \$100,000,
- b) In the case of a continuing offence, in addition to the penalty mentioned above, for each day that the offence continues, the minimum fine shall be \$500 and the maximum fine shall be \$10,000, and the total of daily fines for the offence is not limited to \$100,000.

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- c) In the case of multiple offences, for each offence included in the multiple offences, the minimum shall be \$500 and the maximum fine shall be \$10,000, and the total of all fines included in each offence is not limited to \$100,000.

To progress the ability to enforce the new City Tree Protection By-law, staff will continue to develop a formal Standard Operation Procedure to outline how Forestry and By-law staff will collaborate to conduct investigations and pursue enforcement of this By-law. If adopted by Council, the new By-law will come into effect May 1, 2023.

## **9.6 Other Activities and Next Steps**

The City conducts a number of other activities to support the protection and enhancement of local tree canopy, including regular tree planting, an annual Free Residential Tree Giveaway event, and maintenance work which broadly includes: tree pruning, tree removal, tree planting, stump removal, and other activities such as cabling and support installation, young tree watering and mulching, tree stake removal, and pest management.

### **9.6.1 Maintenance:**

Tree maintenance is undertaken in priority order to minimize risks to people and property and with the overall goal to ensure the overall health and longevity of trees and the urban forest. Maintenance activities take into consideration include factors such as standard clearance requirements for road right-of-ways or overhead infrastructure, structures, traffic signs and sight-lines, risks from dead or diseased branches, low branching, dying, diseased or dead trees, and structural and/or juvenile tree pruning.

The City uses a blend of contracted services and City crews for the delivery of tree maintenance activities. Contracted services are currently used exclusively for tree planting and stump removal and restoration. The coordination, management and oversight of these activities are overseen exclusively by Forestry staff.

### **9.6.2 Stumping:**

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Stump removal and site restoration is typically the final step in the removal of any City tree. This contracted service is administered and coordinated by Forestry staff. Stumping operations start and finish each year based on the availability of sod, typically occurring between the months of May and November.

Historically, stumping operations were primarily organized around the age of the stump, grinding the oldest stumps on the list first with some consideration given to geographic groupings. Recently a balanced approach has been implemented in efforts to increase the productivity of contracted crews and address the backlog of stumps with significant success. When necessary, specific requests for stump removals have been prioritized to resolve resident concerns. Once staff have assessed the backlog and resources available, there may be a request to increase contracted services or internal resources to improve response times.

### **9.7 Next Steps:**

Immediate next steps will include the development and launch of public information resources to help residents understand how the new City Tree Protection By-law impacts them, including how residents can request service for boulevard trees.

Longer-term next steps will include ongoing reviews and updates to internal strategies and guidelines governing the City's tree planting and maintenance activities.

## **10.0 Financial Implications**

There are no financial implications directly associated with this report.

## **11.0 Climate and Environmental Implications**

Trees absorb carbon dioxide and store the carbon as the tree grows. The carbon absorption and storage of one tree is 0.022 tonnes of carbon dioxide equivalent per year (CO<sub>2</sub>-eq) The City's current tree canopy of 21.5% is made up of 674,975 individual trees. The exact carbon offset of these trees will vary depending on their age, size, species, and other factors, but using the Climate Lens Tool it can be estimated that the current tree canopy sequesters 14,849.45 tonnes of CO<sub>2</sub>eq per year.

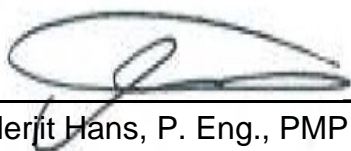
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Larger, older trees sequester more carbon than smaller, younger trees. Preserving the City's existing tree canopy is the best case scenario for maximizing carbon offset. In cases where a City tree, especially a larger, older tree, must be removed, the tree replacement compensation ratio will ensure that a sufficient number of new trees are planted to mitigate the long-term climate impact of removing that tree.

## 12.0 Conclusion

It is recommended that the City repeal and replace the existing City Tree By-law. The proposed new City Tree Protection By-law will better support the regulation of planting, maintenance, protection, and preservation of trees on City property. If approved by Council, the new City Tree Protection By-law will come into effect May 1, 2023.

The new By-law will keep the regulation of trees on City property and trees on private property separate, to enable the City to lead by example and start enhancing protections for City trees sooner. Development of a Private Tree Protection By-law is underway. Public engagement resources will be launched to support the implementation of new tree by-laws, to communicate to residents how new provisions in the by-laws impact them. Other initiatives, such as community planting events, tree giveaways, and continued tree planting efforts by Forestry staff and partners, will further support the City's efforts to protect and enhance local tree canopy.



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Attachments (if applicable)

Appendix A: City Tree Protection By-law

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In adopting this report, is a By-law or agreement required? If so, it should be referenced in the recommendation section.

By-law required  yes  no

Agreement(s) or other documents to be signed by Mayor and/or City Clerk  yes  no

Is the necessary By-law or agreement being sent concurrently to Council?  yes  no