



City of
Peterborough

To: **Members of the Finance Committee**

From: **Jasbir Raina, Commissioner of Infrastructure and Planning Services**

Meeting Date: **January 16, 2023**

Subject: **2023 Urban Forest Capital Program, Report IPSACP23-002**

Purpose

A report to provide information on the current state of the urban forest canopy cover and to highlight the capital program needs to protect and enhance the urban forest.

Recommendation

That Council approve the recommendation outlined in Report IPSACP23-002, dated January 16, 2023, of the Commissioner, Infrastructure and Planning Services as follows:

That the report be received for information.

Budget and Financial Implications

There are no budget or financial implications associated with approving this report.

The draft 2023 Capital Budget proposes to continue funding in support of three main programs that protect and enhance the urban forest: the Urban Forest Strategic Plan; the Emerald Ash Borer (EAB) Management Plan; and the Tree Removal By-law. However, due to budget pressures and the setback to the urban forest from significant losses resulting from the May 21, 2022 derecho, the proposed level of investment is falling short of meeting Council approved targets and objectives. This will result in an increased level of investment in subsequent years to recover, or an accepted decline in the Level of Service provided to the community by the urban forest.

Background

The urban forest includes public trees, private trees and woodlands. The City's trees and woodlands are vital community assets. They are part of the City's green infrastructure and provide many services to our community. Some of these services include removing pollutants from the air and water, sequestering carbon, reducing storm water runoff, cooling streets and homes, providing habitat for wildlife and improving the public health of residents in our community among many others.

In terms of supporting the City's climate change goals, the urban forest supports both mitigation (i.e., reducing carbon dioxide from the atmosphere) and adaptation initiatives (i.e., mitigating flood impacts of wet weather events, reducing heat island effects during more frequent extreme heat events). Enhancing and preserving the urban forest is recognized as core climate action.

The Urban Forestry Section is responsible for managing the protection, planning and enhancement of the Urban Forest through by-laws, policies, and various programs such as tree planting, removals and pest management programs guided by the Urban Forest Strategic Plan (UFSP), the Emerald Ash Borer Management (EAB) Plan, and the Tree Removal By-law.

Municipal Responsibilities

The various urban forestry programs, policies and by-laws are intended to protect and enhance the Urban Forest Canopy in the City of Peterborough, as per the requirements of Subsection 270 (1, clause 7) of the **Municipal Act, 2001** and to facilitate the target of achieving a 35% urban forest canopy cover by 2051 as identified in the draft Official Plan.

The environmental services and aesthetic benefits of trees are widely recognized and can be quantified. Given the benefits that trees provide collectively as an urban forest to

the community, there is a legislative requirement for the municipality to protect and enhance the tree canopy of the urban forest.

Subsection 270 (1) of the **Municipal Act, 2001** (clause 7) requires Council to adopt and maintain policies that outline “the manner in which the municipality will protect and enhance the tree canopy and natural vegetation in the municipality.”

Given the canopy cover losses that have occurred as result of impacts of the May 21, 2022 derecho and continued losses associated with EAB, new development and private tree removals, in order to achieve our canopy cover target we need to invest in tree planting programs aimed at protecting and enhancing the tree canopy.

Urban Forest Strategic Plan

City Council, at its meeting on June 27, 2011, approved Report USPW11-008 – Urban Forest Strategic Plan for the City of Peterborough (UFSP), and at its meeting of May 16, 2016, approved Report USDIR16-007 – Urban Forest Strategic Plan Update. This plan establishes various strategic objectives and recommendations on the City’s approach to managing the urban forest, including direction on replacement and replanting requirements.

The City currently procures the supply and delivery of replacement trees through the Urban Forest Strategic Plan capital project (Capital Budget Reference #5-8.05). This program is intended to compensate for City-owned trees removed at the end-of-life at a one-to-one ratio and does not provide for an increase or enhancement of the urban forest canopy. As result of the May 21, 2022 derecho, and losses that have occurred as a result of pest and diseases, private healthy tree removals, construction and development impacts over the past two years the community lost approximately 7.5% of the total urban forest canopy of the entire City of Peterborough which includes both privately-owned and publicly-owned trees. The City lost approximately 800 healthy municipal trees along city road allowances and in parks. Because the storm destroyed healthy trees that were not at the end of their life cycle, the City aims to replace the lost trees at a three-to-one ratio based on replacing the ecological services they provided. It is estimated that each year approximately 200 tree replacements are required for trees that have reached the end of their lifecycle and are replaced one-to-one.

Because healthy trees were lost as result of the May 21, 2022 derecho, the City will need to increase the UFSP budget to implement a tree replacement program that requires three replacement trees for each one lost if the level of service is to be replaced within a 25-year timeframe. Based on the average contracted rate of \$550 per 40 mm caliper tree (supply, delivery, installation, watering and 2-year warranty) the cost to replace the estimated 800 public trees lost as result of the storm is approximately \$1.32 million (2,400 trees at \$550/tree).

Due to the need for balancing budget pressures and the importance of getting replacement trees established as soon as possible, this entire amount is not being requested in 2023. The approximately \$1 million budget request for the Urban Forest

Strategic Plan (Capital Budget Reference #5-8.05) includes staffing costs for delivering the various urban forest programs, data collection & analysis and community outreach and education initiatives in addition to replacing trees. Staff anticipate that a maximum of half of the required trees (~1,200) will be replanted in 2023 with the remainder to be requested in future budget years.

Emerald Ash Borer Management Plan

City Council, at its meeting on September 30, 2013, approved Report USDIR13-012 that established the Emerald Ash Borer (EAB) Management Plan and its tree replacement program. This program requires three replacement trees for every one ash tree removed. The EAB Management Plan was updated and extended by City Council at its meeting on April 23, 2018 from (2014-2023) for an additional two years (12 years from 2014-2025) with a total budget of \$4.0 million dollars. This budget is allocated to the monitoring, treatment, removal of failing trees, removal of stumps and new tree replacement planting.

As the EAB infestation has progressed, an increasing number of ash trees are dying, particularly in parks and open spaces as these areas were not included in the EAB Management Plan scope for treatment. Recent data indicates that the infestation is persisting longer than original estimates and even trees that have been treated are showing signs of decline. It is estimated that approximately 400 dead or dying ash trees along streets will be removed by the end of 2022 and will require 1,200 tree replacements in 2023 with an estimated investment of \$660,000. Based on the current proposed 2023 budget of \$350,000 for the Emerald Ash Borer Management Plan (Capital Budget Reference #5-8.04) all available funds (less staffing costs) would need to be allocated to tree removals and treatments, with removal of stumps and replacement plantings deferred until a subsequent management approach is developed and presented to Council. Staff will be presenting an updated report with recommendations on how to best manage the risk and liability posed by declining ash in public spaces and the approach to recovering lost trees in 2023.

Tree Removal By-law

City Council at its meeting of May 25, 2021, approved Report IPSIM21-008 which established the Tree Removal By-law and approved capital budget for the City's commitment to provide two replacement trees for each healthy private tree removed. Between July 9, 2021, and July 9, 2022, 605 healthy private trees have been removed. The City is committed to providing 1,210 replacement caliper trees. To date the City has planted:

- 190 – 40 mm caliper-sized trees
- 40 – 20 mm fruit trees
- 1,100 – 10 mm potted trees planted on City property
- 400 – 10 mm potted trees given away to residents at community events

Using the aggregate inch replacement method that is commonly used by many municipalities for calculating tree compensation, the City would require four 10 mm trees or two 20 mm trees to equate to one 40 mm caliper tree. Based on this method, the City has provided the equivalent of five hundred eighty-five (585) 40 mm caliper trees to further support the City's commitment to the Tree Removal By-law tree replacement.

The Tree Removal By-law Planting Program capital budget (Capital Budget Reference #5-8.06) has been set to recover the fixed operating/staffing costs for administering the by-law and fund the replanting programs. However, in recognition of the ongoing budget pressures, the plan for 2023 is to defer replanting the second replacement tree to a future year.

Measuring the Urban Forest

Canopy cover is measured by the percentage of land area covered by tree and shrub canopies. The City's draft Official Plan and UFSP support the overall tree canopy cover target of 35 per cent by 2051. Because the urban forest is a dynamic system that is diverse in tree species and natural vegetation the percent of canopy cover can fluctuate over time.

As result of the May 21, 2022 derecho, the City carried out further assessments to compare the 2020 and 2022 LiDAR and 2021 leaf-on aerial imagery with 2022 leaf-on imagery captured after the storm to determine the extent of canopy cover loss as result of the storm.

The techniques used for this report have created a solid baseline, and the City plans to use the same techniques again to measure urban canopy and woodland cover in 2024 to ensure consistency and accuracy in measuring progress.

Based on the 2022 LiDAR and aerial imagery assessment, the City determined that approximately 7.5% of the total urban forest canopy cover in the municipality was lost in the past two years. Analysis to determine the extent of losses that are attributable to the single event of the May 21, 2022 derecho are ongoing.

Maintaining the Urban Forest

Public Works Parks and Forestry staff are responsible for maintaining an estimated 32,000 public trees. Maintaining the Urban Forest has mainly been done on a reactive basis based on public requests for tree maintenance services. This type of complaint based reactive service is not efficient for the long-term sustainability and health of the urban forest. When the City is providing tree replacements often the public refuse a new tree because they are concerned about the long-term care and maintenance of public trees. To support a healthy sustainable urban forest that can withstand future climatic changes – such as wind events, ice storms, drought, pest, and diseases – a proactive maintenance program is required to mitigate risk and improve the long-term health of trees.

Working Towards the City's Canopy Cover Targets

Progress towards achieving an overall tree canopy cover of 35 per cent by 2051, requires the preservation, protection, and enhancement of the urban forest. For the City to achieve this goal, the City will need to increase public and private initiatives to increase planting of trees within the City so that there will be an increase in overall tree canopy over time.

Staff are developing a detailed Tree Planting Strategy to:

- Prioritize planting in forestry zones impacted by May 21, 2022 derecho
- Identify all available opportunities for planting on public land
- Consider tree equity to provide trees across the community and prioritize tree planting locations based on the social, economic, and ecological benefits trees provide – healthy communities are associated with healthy diverse urban forests and the equitable distribution of benefits for the entire community
- Review opportunities for planting in the City's hard, impermeable surfaces of the Downtown core of the City as planting in these areas presents challenges for tree planting operations, minimizing tree mortality and requires a significant investment for design and installation.
- Determine how many trees need to be planted annually to achieve increased canopy cover.

The City's Urban Forest Section is increasing public engagement and education on the benefits of the urban forest through community tree planting events and tree giveaways. Staff are expanding current partnerships and community outreach initiatives to support the goal of maintaining and enhancing the urban forest. In recent years, the City has received small donations to support community tree planting events. Staff are working to formalize this program into expanded sponsorship opportunities for organizations and community members wanting to support the City achieving its urban forest canopy targets.

- Staff have partnered with local businesses and non-governmental organizations to carry out two community tree planting events on City property. With the support of these partnerships and funds collected from the Tree Removal By-law permit fees, 20 new 40 mm caliper trees and 1,100 potted 10mm caliper trees were planted.
- Urban Forestry have distributed 400 potted 10 mm caliper trees at community events held in the Spring and Fall of 2022. These trees were provided to City residents for planting on private property.
- Through the Community Fruit Tree Growing Project in partnership with GreenUp and Nourish, the City supplied forty 20 mm caliper fruit trees that were planted in

parks throughout the City to support the goals of Nourish in providing more publicly accessible food and fruit trees.

Summary

Sustaining the urban forest canopy and replacing canopy loss will involve a significant investment in the City's current tree planting programs. The City has a responsibility to achieve the canopy cover goals of the UFSP and the draft Official Plan. To be able to achieve the target canopy cover the City will need to maximize all potential opportunities to plant trees on public land and consider opportunities for private land.

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Submitted by,

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