



**Meeting Date:** May 22, 2024

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**Report No:** PWE 16-2024

**Subject:** Tree Inventory and Assessment

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**Recommendation:**

THAT Report PWE 16-2024 re Tree Inventory and Assessment be received for information.

**Purpose:**

The purpose of this report and the attached Tree Inventory and Assessment report is to provide residents, staff, and Council an understanding of the Municipality's current tree assets and any associated tree maintenance recommendations.

**Background:**

As part of the 2023 budget Council approved funding for the undertaking of a tree assessment and inventory. Furthermore on October 4, 2023 Council approved report PWE 35-2023, which created the Municipality's first standalone [Tree Policy](#), this policy establishes maintenance practices and responsibilities.

**Analysis:**

Trees are not often thought of as assets, and do not typically see the same level of maintenance or investment as other municipal assets such as roads or facilities. However, trees are an important feature of both the urban and rural landscape and maintaining and renewing these assets is important, trees provide numerous benefits such as but not limited to:

- Aesthetically enhance real estate value within the community.
- Help reduce air and noise pollution.
- Assist in conserving energy. (The shade produced by trees cools the air by as much as 10% in urban areas.)
- Help to filter water, stabilize soils, and provide habitat and food for wildlife.

- Supply oxygen in the air and help absorb carbon dioxide.
- Help reduce the effect of high winds.
- Provide snow breaks

Furthermore trees are important to realizing and implementing the various goals of Council's 2021-2026 [Strategic Plan](#), specifically Objective 5.3 "incorporating climate change and sustainability considerations in decision-making".

As well, Section 3.10 of the [Official Plan Update](#) promotes stewardship of natural areas, to protect and enhance natural areas, improve water quality, mitigate climate change, reduce soil erosion, and increase the amount and variety of natural species.

As with other municipal assets, through the Council approved 2023 budget staff procured Davey Resource Group to undertake a Tree Inventory and Assessment. The purpose of which was to inventory all the Municipality's tree assets located within the settlement areas, and park spaces, the inventory also included assessments on condition ratings and maintenance recommendations. This approach is consistent with how other assets are treated in the Municipality's [Asset Management Plan](#). This standardized approach will allow staff, residents and Council to better understand the maintenance needs and funding requirements required to maintain and renew these assets.

The focus of the study was on the Municipality's settlement areas, and parks, with some rural areas captured as well. A total of 8,587 trees were inventoried, with 6,448 being located within settlement areas, and 1,515 being located within parks and the remainder located in rural areas.

The estimated replacement value of the 8,587 trees inventoried is \$101,836,526.03. This value was calculated using the Trunk Formula Technique as described in the Guide for Plant Appraisals. Collectively these trees represent a significant municipal asset of significant financial value.

It is estimated there are an additional 15,000 trees (estimate does not include wood lots) located along the rural roads of the municipality that have not yet been inventoried or assessed, future funding and studies will be required to capture these assets along with their condition, and maintenance needs.

The Tree Inventory and Assessment provides important information on tree health and maintenance activities that support the long-term sustainability of these assets. A summary report of the inventory and assessment is provided in Appendix A.

Prior to the Tree Inventory and Assessment, tree maintenance and removal activities were based on feedback from residents or observations from staff undertaking routine road patrol. This type of maintenance is reactionary and is not efficient for maximizing the utilization of staff and equipment resources.

As with most assets, timely maintenance and interventions will prolong the life of the asset and generally result in less reactive maintenance, this is especially true for trees during significant storms where tree damage and possibly property damage, or road blockages are more likely to occur due to high winds.

The primary maintenance recommendations from the Tree Inventory and Assessment report are noted below.

<b>Primary Maintenance Recommendation</b>	<b>Count</b>
No Action	<b>7221</b>
Elevation Pruning	<b>291</b>
Priority 1 Pruning < 30 Days	<b>10</b>
Priority 2 Pruning < 6 Months	<b>106</b>
Priority 3 Routine Pruning	<b>638</b>
Priority 1 Removal (Higher)	<b>36</b>
Priority 2 Removal (Lower)	<b>285</b>
<b>Total</b>	<b>8587</b>

The above noted list represents a significant amount of work to undertake with 321 tree removals (77 removals located in Parks) and 1,041 pruning and maintenance recommendations (259 pruning and maintenance recommendations in Parks).

Tree requests are one of the most common requests received by transportation from the public with 240 requests received by transportation in 2023, out of 1040 total requests received.

Given the current staffing complement, the above noted work would take a number of years to work through, alternatively contractors could be used however this would result in significant cost, with tree removal costs of \$1,450 per tree or more.

Currently the 2-year average (2022 & 2023) for FTE time spent on tree removal and maintenance is 1.8, which equates to 1 FTE per 13,104 number of trees (estimated total number of trees is 23,587).

Tree removal and trimming activated currently undertaken by the municipality are reactive in nature, additional resources would be needed to move from a reactive to proactive maintenance program.

Given current staffing resources, staff will endeavor to undertake priority removal and trimming activities to minimize risk, and liability to the municipality. However, given the lengthy list of maintenance and removal needs contract services or additional staffing resources may be needed to complete all identified work in a timely manner, or risk falling further behind in maintenance and removals, with potentially increasing liability.

From a liability, efficiency, and tree health perspective it would be beneficial to move to a proactive maintenance program, such as block pruning, however, to do so would require dedicated staffing resources, with appropriate qualifications and experience.

Intact insurance has previously provided a two-page brochure (See Appendix B) that provides useful and applicable guidance on minimizing municipal liability which are as follows:

1. Establish and implement a tree inspection and maintenance plan.
2. Ensure policies and procedures are followed.
3. Implement a regular tree inspection program.
4. Train the responsible staff in recognizing the signs of tree hazards.

Through Council adoption of the Tree Policy, biennial inspections of trees are to take place by a qualified professional. These biennial inspections will form the basis for tree maintenance and removal activities minimizing municipal liability and risk.

Transportation is fortunate in that one of the equipment operators is also a licensed International Society of Arboriculture (ISA) arborist providing a trained and competent staff member to review and provide professional tree opinions, and inspections when required.

The municipal tree canopy is a complex and dynamic living entity. It can take many years and substantial resources to establish healthy and mature trees, but many threats can rapidly and adversely affect tree health and sustainability. Strategic planning and effective management are necessary to ensure the protection, maintenance, restoration, enhancement and expansion of municipal trees. This report, and the appended Tree Inventory and Assessment provides strategic direction to enable the Municipality to more effectively manage all aspects of the municipal tree canopy so that the many benefits it provides will be sustained and enhanced for current and future generations.

### **Financial Implications:**

Due to limited time that staff can commit to this work in a given year due to other demands it will not be possible to complete all the removals and maintenance items within the recommended time frame. Staff will proceed with the recommend work as efficiently as possible, but it is anticipated that tending to the recommendations will be a multi-year effort. The completion of the next Tree Inventory and Assessment within the urban areas will provide substantial information on the progress made during the period between the studies.

**Strategic Plan:**

This matter aligns with following strategic priorities:

- Sustainable Infrastructure and Services

The sustainable maintenance of trees in the municipality will reduce liability and maintain the municipalities tree canopy while looking to mitigate the effects of climate change.

**Attachments:**

Appendix A: Tree Inventory and Assessment Report

Appendix B: Intact Insurance Risk Management Considerations for Tree Liability