

Review of Tree Protection Bylaws in Other Municipalities

Background

For the purposes of this report, over 20 municipal tree protection bylaws were reviewed. There are variety of approaches depending on the municipal context, enabling provincial legislation and integration with internal processes in each community. Below is a summary of recurring key components found in most municipal bylaws.

Tree protection bylaws add significant strength to municipal tree protection policies and practices, as they enable municipalities to levy fines and issue stop-work orders in the event of bylaw infractions related to site development. Without a tree protection bylaw in place, municipalities typically rely on voluntary compliance, negotiated settlements, or legal action (e.g., small claims court) to recover costs and value associated with the injury or destruction of municipal trees.

Most municipal tree protection bylaws outline the rationale and purpose of the bylaw. Typically, the purpose is to protect, to the greatest extent possible, the municipality's urban forest canopy. The purpose statement may also include a mission statement, which broadly outlines the efforts that will be undertaken by the municipality (and others affected) to fulfil its purpose. Tree protection bylaws also commonly outline a rationale for tree protection, citing the environmental, economic and societal services provided by trees and the importance of protecting the urban forest for the health and viability of the community.

Municipal Trees

Municipalities vary in terms of the trees that are included in their inventory and in tree protection bylaws. Most frequently bylaws that protect municipally owned trees address trees along right of ways. Additional categories include straddling or boundary trees, volunteer trees, trees and natural stands in parks and open spaces, and trees in areas slated for development.

Straddling or Boundary Trees

Trees that straddle one or more property lines are often referred to as boundary or straddling trees. Some municipalities outline ownership in their tree protection bylaws, with municipal ownership generally fall into two categories:

- 50% or more of the trunk on municipal property (e.g., Edmonton, AB; Vaughan, ON; and Halifax, NS)
- Any part of the trunk on municipal property (e.g., Calgary, AB; Ottawa, ON, and Oakville, ON)

Saskatoon's current practice is to define public trees as having 50% or more of trunk being on City property. During engagement, the community was interested in assuming responsibility for trees with any part of the trunk on city property with 60% of respondents in favour of this approach. However, respondents also expressed concerns about added costs to maintain more public trees, inadequate resourcing, and

private property rights if the City became responsible for trees with any part of the trunk on City property.

Volunteer Trees

Volunteer trees are those not planted and germinate from seed. When adjacent to a right of way, municipalities often include these trees in their inventory. However, when volunteer trees are adjacent to alleyways, they are rarely in public tree inventories.

Trees in Parks and Open Spaces (Landscape Trees and Natural Stands)

Municipalities have differing approaches to address tree protection in parks, open space, and natural areas. Some include these trees as part of their tree protection bylaws (e.g., Mississauga, ON; Edmonton, AB; and Ottawa, ON) and others specify protection measures for these trees in separate bylaws (e.g., Toronto, ON). In some cases, distances are greater for tree protection in natural stands, for example, Edmonton, AB, uses a 10 metre distance for natural stands.

Natural Stands in Areas slated for new development

In some communities, trees are protected in areas identified for future neighbourhoods. These trees are typically protected in private tree or forest protection bylaws. Saskatoon, through Saskatoon Land as a developer, creates a unique situation where City-owned land slated for development requires exemption to maintain consistency among developers. The bylaw would not apply to City property slated for development with the exception of trees along the right of way adjacent to City-owned vacant lots.

Permits

In most municipalities, there is a tree permit process when work occurs around trees. The general process is that the municipality directs applicants to provide information that typically includes:

- tree species
- address and tree locations
- size of trees
- timeframe of work
- tree protection zones
- tree protection materials
- type of work

The municipality reviews the application and issues a tree permit if satisfied that tree will be protected throughout the course of the work. Typically, bylaws enable the municipality to charge a fee to issue a permit, but the practice around permit fees is widely varying.

Permit Fees

City	Permit fee structure
Edmonton, AB	No fee
York Region, ON	No fee
Mississauga, ON	No fee for public trees
Oakville, ON	\$50 for one small tree (<24cm diameter) \$325 for larger trees (>24cm diameter) and additional small trees No fee for ash or buckthorn
Ottawa, ON	City tree permit fee is included in development application fee
Toronto, ON	\$355 per permit

Standards and Specifications

All of the municipalities reviewed and interviewed possess standards and specifications developed outside of the bylaw that provide details on tree protection. With the development of a new bylaw, Administration will as part of a parallel process, review its existing tree protection standards and specifications and update these documents as required. Three key elements that are outlined are the tree protection zone, tree protection barrier, and anti-compaction measures.

Tree Protection Zone

Tree Protection Zone (TPZ) is the area around a tree that is subject to the implementation of tree protection measures. The TPZ is usually expressed as a radius measured from the base of the tree's main stem, and is generally conceptualized as a circular area, but may exclude existing hard surfaces like streets, driveways, walkways, or sidewalks. The minimum required size of the TPZ is typically a function of the tree's size, expressed as its diameter; however, some municipalities use a fixed dimension for a tree protection zone.

Currently, the City of Saskatoon's Parks Development Guidelines and Standard Construction Specifications: Parks specifies:

Tree Protection Zones:

Trunk Diameter(DBH) ¹	Minimum Protection Distances Required ² Whichever of the two is greater:
<100mm	The drip line ³ or 1.8m
110 – 400mm	The drip line or 2.4m
410 – 500mm	The drip line or 3.0m
510 – 600mm	The drip line or 3.6m
610 – 700mm	The drip line or 4.2m
710 – 800mm	The drip line or 4.8m
810 – 900mm	The drip line or 5.4m
910 – 1000+mm	The drip line or 6.0m

¹Diameter of tree trunk taken at 1.4m above the ground.

²Tree Protection Zone distances are measured from the outside edge of tree base.

³Drip line is defined as the area beneath the outer most branches of a tree and may be limited by an existing paved surface, provided the existing paved surface remains intact throughout the Construction work.

Tree Protection Barrier

The most basic, and arguably most effective, tree protection measure is the establishment of a tree protection barrier around the trees to be protected. The specifications for the construction of tree protection barriers vary between municipalities; some require framed solid hoarding (e.g., plywood or OSB), while mesh fencing is sufficient in others. Some municipalities require different types of barriers depending upon the installation location; in Toronto, ON; for example, framed construction fencing (i.e., orange plastic mesh) is required within the road right-of-way or in other locations where sightlines must be maintained, and solid hoarding is required elsewhere. Tree protection barrier specifications may also include requirements for informational signage and maintenance and inspection procedures.

Root Zone Soil Compaction Protection

Some municipalities maintain specifications for root zone soil compaction protection, to be implemented in the event vehicular or pedestrian traffic, or material storage, may be necessary within the required tree protection zone. Although the technical details of these specifications vary, they typically include prescriptions for the installation of load-absorbing and load-dissipating materials, such as geotextiles, wood chips, plywood sheeting or steel plates. Both Toronto, ON; and Edmonton, AB; provide specifications to protect against root zone soil compaction. An important consideration for an effective root zone compaction protection specification is to account for the actual anticipated severity, frequency and duration of the compaction-causing events; specifying excessive (overbuilt) compaction prevention measures is likely to serve as a disincentive to compliance due to the associated complexity and cost. Additionally, removal of some anti-compaction material can cause soil disturbance and damage roots and should be avoided, for example, removing wood chips with heavy machinery.

Compensation for Tree Damage and Removal

All bylaws emphasize the importance of tree protection and preservation, but also carry provisions for compensation in cases where there are no options to retain a tree or avoid injury. In most cities (e.g., Edmonton, AB; Oakville, ON; Ventura, ON; Ottawa, ON; Regina, SK; Toronto, ON; Newmarket, ON) the trunk formula method is used to determine tree value. This method from the Guide to Council of Tree & Landscape Appraisers, Guide for Plant Appraisal, ninth edition using condition location and tree size and replacement cost to determine tree value. Similarly, the City of Saskatoon currently uses this standard to determine value of trees. This formula can be applied to (a) assess the value of an entire tree, or (b) to assess the value of damage to a portion of a tree

As part of total compensation, it is common to see replanting requirements. This may involve the retention of planting locations or replanting trees. Other costs that may be applicable, particularly with public trees, would be labour and equipment costs associated with work to prune or remove a tree.

The appraised value of a tree is based on four major elements: size, species, condition, and location.

1. The size of the tree is measured, primarily based on diameter.
2. The species rating is a comparative value given to the tree or plant based upon its individual characteristics. Consideration is given to the tree's assets and its inherent qualities.
3. The condition of the tree is an assessment of the tree's structural integrity and health at the time of appraisal. Thought is given to rooting, branching, health and vigor, any damage or wounds, and evidence of pest infestation.
4. The location factor involves the landscape value of the site and the placement of the tree on the property. Factors considered are the location of the property, overall quality of the landscape, hardscape and its proximity to utilities.

Based on recent tree appraisals in Saskatoon, the value of a tree can range from a couple thousand dollars to \$40,000. There are also rare cases where a tree has been appraised at upwards of \$65,000.

Enforcement

Tree protection bylaws generally enable municipalities to lay charges, levy fines, and issue stop work orders in the event of bylaw infractions. Stopping any work that is causing tree injury can be important to both preserve trees and mitigate imminent hazards created by work that destabilizes trees.

Bylaws vary considerably in their fine structure. In some cases, bylaws specify increasing fines with a continuing offense, increasing fines based on the number of trees impacted, or increases based on the size of the tree(s) impacted. In Calgary, AB; and Victoria, BC; there is an itemized list of infractions; however, this is not common in other jurisdictions. Some communities have a special fine that is applied when a person contravening the bylaw may have the opportunity for economic gain and allows for fines to exceed \$100,000 (e.g., Oakville, ON; Ottawa, ON; Markham, ON; and Richmond Hill, BC). In Saskatchewan, *The Cities Act* outlines the maximums fines that a municipality can impose in a bylaw, stating \$10,000 for individuals and \$25,000 for corporations.

City	1st offense and Single Tree	Stop Work Orders
Calgary, AB	Min \$75 No Maximum Stated	Yes
Edmonton, AB	Min \$250 No Maximum Stated	Yes
Guelph, ON	Min \$500 Max \$10,000	Yes
Halifax, ON	Min \$100, Max \$5,000	Yes
Kelowna, BC	No Minimum Maximum \$2,000	No

City	1st offense and Single Tree	Stop Work Orders
Markham, ON	Min \$500 Max \$10,000	Yes
Oakville, ON	Min \$500 Max \$100,000	Yes
Ottawa, ON	Min \$500 Max \$100,000	Yes
Regina, SK	No minimum Max \$2,000 (Individual) Max \$5,000 (Corporation)	Yes
Richmond Hill, ON	Min \$300 Max \$10,000	Yes
Toronto, ON	Min \$500 Max \$100,000	Yes
Vaughan, ON	Min \$500 Max \$10,000	Yes
Victoria, BC	Min \$500 Max \$50,000	Yes
York Region, ON	Min \$100 Max \$50,000	Yes