



TREE PROTECTION/PRESERVATION POLICY

**THE CORPORATION OF THE TOWN OF AURORA
PARKS AND RECREATION SERVICES**
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1.0 PURPOSE

The purpose of the Tree Protection/Preservation Policy is to prevent or minimize damage to trees during land development, construction work, maintenance activities and snow removal operations.

2.0 OBJECTIVES

The objectives of the policy are as follows:

- 2.1 To provide efficient and sensitive construction management that will minimize damage to trees from land development construction activities.
- 2.2 To provide a process for determining protective requirements for trees on construction sites.
- 2.3 To provide guidelines for protecting trees in and around construction sites.
- 2.4 To protect the public from possible injury from trees located on construction sites.
- 2.5 To provide guidelines for protecting trees during maintenance work.
- 2.6 To train staff in the proper maintenance practices around trees.

3.0 DEFINITIONS

Tree – A self-supporting woody plant with one or more stems and a minimum caliper width of 5 centimeters which will reach a height of at least 5.4m (15 feet) at maturity.

Public Land - Any real property owned or controlled by the Town of Aurora including, but without limiting the generality of the foregoing, any real property the Town of Aurora is granted access to utilize for parks and recreational purpose.

Public Tree - Any tree located on public land including parks, boulevards, medians, buffer strips and naturalized areas.

Private Tree - Any tree located on private property.

Contractor - Includes any private contracting firm or Town department.

Caliper – The diameter of the tree trunk at a height of 1.4 meters from the ground. Caliper must be the determining measurement when the caliper exceeds 40 mm.

Root Pruner - A specialized mechanical device that cuts roots to a depth of 0.5 meters below grade.

4.0 RESPONSIBILITY

- 1 The Manager of Parks is responsible for ensuring the application of the Tree Protection Policy.
- 2 The Arborist is responsible for coordinating field operations involving Parks Division staff.
- 3 The Arborist is responsible for conducting preliminary and follow-up site inspections.
- 4 Parks Division will implement Integrated Pest Management for pests and diseases and for implementing programs to control their impact.
- 5 The Bylaw Enforcement Division is responsible for enforcing the related provisions of the *Tree Permit Bylaw #4474-03.D*.
- 6 The approval of the Manager of Parks is required before any exposed root over ten centimeters is cut or removed. Roots smaller than ten centimeters may be removed with the approval of the Municipal Arborist.
- 7 The Manager of Parks shall approve the removal of any hazardous tree within a construction zone. Tree removals must follow the process outlined in the Tree Removal Policy.

- 8 The approval of the Director of Parks and Recreation Services is required before any live tree not deemed a hazard is removed.

5.0 MANAGING DEVELOPMENT/CONSTRUCTION IMPACT ON TREES

5.1 Summary Requirements

The basic objective of the Town of Aurora's vegetation management and tree preservation initiative is to preserve as many quality trees and vegetation areas as possible. This Department's philosophy is to work with the Developer/Contractor and other Departments to achieve this objective. In this regard, the Parks and Recreation Services Department is responsible for reviewing and assisting the Developer/Contractor and his agents in the preparation of plans that reflect site specific attainable goals.

Vegetation management and tree preservation initiatives will generally be reviewed prior to Draft Plan approval. The Town, at its sole discretion, may require detailed vegetation management information to be provided prior to Draft Plan approval that may add to or clarify the standard vegetation management initiatives required through the development process. Minimum standards for vegetation management are noted below.

5.2 Vegetation Management

The Owner/Developer shall be required in the Development Agreement to provide and implement a Vegetation Management Plan (VMP) to the satisfaction of the Director of Parks and Recreation Services. The VMP shall be prepared by the consulting landscape architect in coordination with a certified arborist or registered professional forester, or other environmental specialist as required. The Vegetation Management Plan shall include, but not be limited to the following:

- a) A vegetation inventory & assessment: Identify all vegetation 50mm caliper or greater for individual tree assessments and/or identify perimeter at canopy of woodland, groups or stands of vegetation; identify trees & vegetation on adjacent property that may be impacted. Inventory shall include species, size and condition.
- b) Identification of all vegetation removals and identification of all protection measures including Tree Preservation Zones for vegetation designated to be preserved; an at-grade impact assessment to support vegetation removals and/or preservation measures.
- c) A monetary vegetation appraisal in order to determine compensation planting. See *Appendix 3, Policy "C" Tree Removal/Pruning & Compensation Policy*
- d) Provision of compliance monitoring and protection/mitigation specifications including all arboricultural requirements for trees designates to be preserved during construction; provision of post construction performance monitoring and rehabilitation specifications. Include the Town's minimum tree preservation standards.
- e) A compensation planting plan providing plantings equal to or greater that the appraised value of vegetation designed to be removed from the site, which compensation planting shall be in addition to the town's minimum planting standards.
- f) Coordination of vegetation-related recommendations from environmental reports as applicable

5.3 Approvals

The Parks Division shall conduct a site inspection with the developers to review the proposed Vegetation Management Plan for the project and provide appropriate comments or instructions based on the assessment of the site.

The final Vegetation Management Plan shall be reviewed by the Manager of Parks for final sign-off by the Director of Parks and Recreation Services.

5.4 Construction Activities

1. The Parks Division shall verify installation of the protective materials as per the Vegetation Management Plan prior to any construction disturbance, grading or topsoil removal from the lands.
2. The Parks Division shall conduct periodic inspections of the construction site to ensure compliance with the Requirements for Construction near Trees. In cases where the Developer has failed to comply with the requirements, the Parks Division shall request the

Developer to correct the situation. If the Developer fails to comply within a reasonable period as determined by the Parks Division, the Town will retain the necessary forces to remedy non-compliance at the Developers expense.

3. The contractor shall contact the Parks Division within 24 hours of damage occurring to public trees and may be liable for these damages as stated in the applicable contract documents or development agreement.

6.0 TREE PROTECTION REQUIREMENTS

6.1 Tree Protection Zone

Protection fencing shall typically be installed beyond the canopy of the tree(s) to be protected. Where construction work is proposed within the dripline of the tree protection zone fencing shall be erected according to the International Society of Arboriculture standards as follows:

<u>Diameter of Tree Trunk</u>	<u>Protection Zone</u> (minimum distance in meters from trunk)
Up to 100 mm	1.5m
100mm - 250mm	2.4m
250mm - 375mm	3.0m
375mm - 500mm	3.6m
Over - 500mm	4.5m

Protection fencing shall be installed by the owner’s forces and approved by the Town of Aurora prior to commencement of any demolition, grading or construction activities on the subject lands. All protection measures shall be monitored by the owner’s arborist/landscape architect for the duration of the construction period.

Within this protective zone:

- i no rigging cables shall be wrapped around or installed in trees
- ii no equipment shall be operated
- iii no building material stored;
- iv no temporary buildings or work trailers placed;
- v no fuels, chemicals or other contaminants shall be flushed, stored or dumped;
- vi no soil piled; and
- vii no grading or excavation shall be allowed.

6.2 Tree Protection Fencing (Hoarding)

Details for tree protection fencing types are located in *Appendix 1, Policy “A Landscape Design Guidelines*.

The Developer/contractor is responsible for all costs incurred in erecting, maintaining and removing such hoardings and for the regular watering and maintenance of trees while so enclosed. All boulevard repair or reconstruction and tree repair and replacement shall be at the Developer/contractor's expense

6.3 Soil Compaction

Surface soils are often compacted on construction sites as a result of heavy equipment moving over the area. Compacted soils affect tree growth by restricting root activity and development. The resultant poor drainage and aeration increases the tree’s susceptibility to root diseases.

If extensive soil compaction has occurred as a result of construction, as determined by the Manager of Parks or designate, the contractor will be responsible for aerating the area once construction is completed and for fertilizing it the following year.

6.4 Grade Changes

Grade changes are frequently necessary when building sites are being prepared for construction. However, any change in grade around existing trees can have a marked effect on their survival and future growth. Unless corrective action is taken immediately, lowering the grade exposes the existing root system to the air and reduces the supply of nutrients and moisture available to the

roots. Raising the grade around a tree can have an even greater adverse effect. Air circulation is cut off and moisture and nutrients cannot reach the tree roots. In some cases drainage is impaired and the tree drowns. Generally, the original grade can be increased 10 to 15 centimeters a year without damaging the tree.

When changing the grade around a tree, careful consideration shall be given to methods of preventing injury to the tree. Preventing damage is always cheaper and more effective than attempting to correct the situation after the damage has been done. Where grade changes are necessary around trees, the following measures shall be followed:

- i) All grade changes that will impact preserved trees must be approved by the Manager of Parks or designate.
- ii) Any increases or decreases in the grade shall be gradual.
- iii) Reduction in grade levels up to, but no greater than, 75 millimeters can be tolerated without significant tree root damage. Any grade reductions greater than 75 millimeters shall be accomplished by terracing around the tree. The first terrace shall be made as far away from the tree as possible and no closer to the tree than the drip line or edge of the tree crown. The terrace should be supported by a retaining wall.
- iv) Any grade increases of 2 - 10 centimeters must be aerified by drilling 4 centimeter holes to a depth of 10 centimeters deeper than the fill over the entire fill area. The holes are to be filled with 20 millimeters weeping tile stone and covered with soil filter fabric.
- v) Any grade increases greater than 10 centimeters require the installation of a retaining wall to maintain the soil level to the dripline.
- vi) If the grade is to be increased a total of more than 45 centimeters, a tree well will be needed.
- vii) Where extensive measures may be necessary to save a tree, the Manger of Parks or designate shall determine whether the value of the tree and its contribution to the landscape is worth the expense and effort required.

6.5 Excavation and Trenching

The cutting of roots by a trencher, root pruner or saw to a depth of 0.5 meters shall be done prior to the commencement of any excavation when the work is to occur within two meters of the trunk.

When work is to occur more than 2 meters away from the trunk, repair to any damaged roots shall occur once the excavation is complete.

Any roots that must be exposed for a period of time shall be covered by a wet tarp to prevent drying and periodically watered to be kept moist.

Wherever possible the contractor shall directional bore instead of trenching when working within 2 meters of the tree trunk.

All open holes shall be backfilled as soon as possible.

Machinery or motorized equipment exhaust shall not be permitted to outlet in or beneath the canopy of any tree.

7.0 CONSTRUCTION ON PRIVATE LAND

In those cases where the proposed construction is on private property but may impact a nearby tree on public land, the owner should contact the Parks Division to conduct a site inspection. The Parks Division may require the owner to enter into an agreement to protect the tree and/or retain the services of a Certified Arborist to provide an evaluation and recommendations on the appropriate tree protection measures to be performed including any branch or root pruning that may be required.

8.0 CONSTRUCTION ON PUBLIC LANDS

The following tree protection requirements are to be considered the normal practice for protecting trees on public land. The Manager of Parks may consider alternatives to or relaxations of these requirements

when the developer, contractor or their agents provide a written submission outlining the reasons for waiving the requirements.

8.1 Construction near Trees on Public Land

Authority

Protection of trees during construction is authorized by this Policy.

Application

The following responsibilities apply to both municipal construction on Town property and private construction activities that occur within five meters of a public tree.

Responsibilities

1. The contractor or applicant is responsible for contacting the Parks Division to arrange a site inspection prior to commencing work in order to determine all protection and follow-up maintenance requirements.
2. The contractor is responsible for providing the necessary tree protection based on the assessment of the Municipal Arborist or designate.
3. For approval to remove or relocate a tree refer to the Tree Removal Procedures.
4. The contractor is responsible for notifying the Parks Division within 24 hours of any damage occurring to Town owned trees.
5. The Parks Division and the applicants project Arborist are responsible for conducting periodic inspections of all construction sites.

Costs Incurred

Any costs incurred for protecting, repairing, removing or replacing public trees as a result of construction activities shall be the responsibility of the contractor or applicant.

8.2 Pre-Construction Planning and Site Evaluation

The Parks Division and IES Departments shall meet in the off season (November – February) to discuss the one to three year schedule for Town related construction projects. This meeting will determine which sites require advance work i.e. pruning, tree removal or root pruning and provision for detailed Arborists reports prior to the commencement of construction work.

During the planning stage of a proposed development IES or the utility company undertaking the project shall contact the Manager of Parks to arrange an on-site evaluation of those sites where public trees could be impacted.

Applicants applying for a building permit whose construction activities will impact public trees shall be advised to contact the Parks Division for a copy of the Tree Protection Requirements described in section 6.0. It is the responsibility of applicants to notify the Parks Division in advance of any site where construction will occur closer than five metres to a public tree.

All preliminary and final construction plans for Town of Aurora contracted projects and permit requests for utility or private construction projects in the public tight-of-way that may impact public trees shall be routed through the Parks Division for review.

8.3 Setback Requirements for Construction near Trees on Public Land

The following requirements are to be followed during construction activities near trees on public land. The contractor will be held financially responsible for any damage that occurs to public trees as a result of not applying these guidelines.

1. No one shall construct a walkway, driveway or paving within a distance of 0.5 meters from the base of any tree for every 10 centimeters of diameter of the trunk at a point 100 centimeters off the ground.

8.4 Post Construction Evaluation and Remediation

The Parks Division shall conduct a final site inspection when the project is completed. The inspection shall:

- i) Determine corrective work required to trees damaged during construction.
- ii) List the damaged trees and notify the responsible parties.
- iii) Determine the costs to remedy the damaged trees and bill accordingly.
The costs may include:
 - a) Personnel, equipment and material costs for remedial action.
 - b) The value lost when trees suffer excessive root cambium, and/or crown loss.
 - c) The assessed value of trees that were entirely lost or destroyed.
 - d) The cost of replacement plantings.
 - e) The cost of any required follow-up.

The Parks Division will sign-off after final inspection verifying that all work has been completed according to plan.

8.5 Requirements for Maintenance Work Around The Base of Public Trees

The following practices shall be followed to protect trees on public land during turf maintenance:

- An orientation session is to be conducted before the start of each season by the Parks Division for all maintenance staff and contractors working around the base of trees. The session shall include information on the procedures to be followed while working around trees
- Maintenance staff shall not strike or rub against the bark of trees with maintenance equipment such as string trimmers, mowers and rototillers
- Trees 15 centimeters in diameter or less that are not in prepared planting beds shall have a protective guard placed around their base. The guards shall be of the plastic variety that expands on their own as the tree grows and shall be of an adequate length to provide protection from normal maintenance activities
- Trees in un-irrigated areas shall have mulched tree wells during their establishment period of 1- 3 years
- In open space areas where regular turf maintenance is required (parks, medians etc.) consideration shall be given to removing and or controlling the growth of turf around individual trees for ease of maintenance and aesthetic purposes
- The use of protective guards on grass mowers shall be incorporated into equipment where possible to reduce the damage to trees
- Equipment suitable to the size of the trees, the site, and the job to be done shall be utilized to minimize damage to trees
- Coniferous trees shall not be cultivated within their drip lines in order to prevent damage to their root system
- Non chemical herbicides may be used in planting beds to control weeds. Staff should be careful to read the Material Safety Sheet for the non-chemical herbicide to ensure that the herbicide is not toxic to the particular species being sprayed around
- Any suckering around the base of a tree shall be removed with hand pruners and not a weed whipper or lawnmower
- On those existing sites where a group of trees are planted so close together mowing may cause damage, the area encompassed by the trees shall be considered either a no-mow mulched area or a reduced frequency area of mowing

9.0 REQUIREMENTS FOR TRANSPORTING TREES

- a. All tree material being transported to a site shall be covered with a tarpaulin to reduce desiccation due to wind and heat. Trees shall also be protected from leaf loss, limb breakage and trunk damage during transportation, loading and unloading procedures. Anti-desiccants may be used to reduce moisture loss when a tree is being relocated, during times of heat/drought stress or to protect evergreens during cold dry winters.
- b. Ball and burlap trees are to be handled so as to ensure that the root ball is kept intact and not damaged. Trees moved by truck or trailer shall be secured to the deck by the root ball not the tree trunk.
- c. Trees are to be covered with soil, mulch or a tarpaulin to prevent drying during the storage or handling period and watered regularly to prevent desiccation.
- d. Containerized or ball and burlap trees wintered outside shall be protected from animals by surrounding them with snow fencing.
- e. Trees shall be planted immediately following removal from the nursery. They must not be stored on the landscape site for more than one working day. If trees must be stored the root balls should be watered to protect them from drying out.

10.0 REQUIREMENTS FOR SNOW REMOVAL AROUND PUBLIC TREES

It is reasonable to expect some damage to public trees as a result of Town snow removal activities. While the following points will not completely eliminate the damage they should help to minimize it.

- The Parks Division shall prune public trees to allow for the free movement of snow removal equipment
- IES Department shall bring to the attention of the Parks Division those locations where tree branches are impeding the movement of snow removal equipment
- The IES Department shall advise their operators and contractors to avoid damaging trees during snow removal
- Snow shall be plowed onto side or centre boulevards where applicable to provide off-road storage. Snow blowers shall not blow sand, ice or snow into coniferous trees or at the trunks of deciduous trees
- Boulevards are not to be cleared to turf level. A cover of 10 centimeters shall be left and 30 centimeter clearance shall be maintained from the tree trunk when removing snow
- To avoid damage to trees, the snow immediately next to the trees shall not be removed. Should trees be damaged the IES Department shall immediately notify the Parks Division so the necessary repairs can be completed

**END OF APPENDIX 4
POLICY "D"
TREE PROTECTION/PRESERVATION**