

**ROOT PRUNING**

## **1.0 PURPOSE**

The purpose of the Root Pruning policy is twofold:

- 1.1. To provide guidelines for root pruning that will protect the health of the tree; and
- 1.2 To reduce safety hazards and damage to property caused by aggressive tree roots.

## **2.0 OBJECTIVES**

The objectives of the policy are as follows:

- 2.1 To reduce future root problems by implementing a proper planning and assessment process.
- 2.2 To develop root pruning practises and guidelines.
- 2.3 To control the growth of fast growing root systems through a pro-active root pruning program.
- 2.4 To provide a process for correcting existing root problems that are a threat to public safety or are causing property damage.
- 2.5 To train and instruct staff in the methods of root growth control.
- 2.6 To develop a communication link with other City departments whose operations are affected by aggressive tree roots.
- 2.7 To develop an inventory of public open space sites where tree roots are causing safety problems and/or property damage.

## **3.0 DEFINITIONS**

**Root Pruning** - The practice of removing a portion of a tree's root system.

**Root Pruner** - A machine that cuts roots up to a depth of half a meter below grade level.

**Tree** - A woody plant with one or more stems and a minimum calliper width of 2.5 centimetres and a minimum height of 1.5 meters.

**Aggressive Root** - A tree root that because of its growth patterns may be a safety hazard to either the public or property.

#### **4.0 RESPONSIBILITY**

- 4.1 The Superintendent of Urban Forestry has the overall responsibility for implementing the root pruning guidelines.
- 4.2 The Arborist is responsible for coordinating the root pruning operations.
- 4.3 The Forestry Technician assisted by the Open Space District Foreman is responsible for inspecting and developing an inventory of public open space sites with root problems.
- 4.4 The Horticultural Extension Officer and The Public Affairs Department are responsible for developing and implementing a public information and communication strategy.
- 4.5 The Arborist and the Community Services Department Training Officer are responsible for training staff.
- 4.6 Approval of the Superintendent of Urban Forestry is required before any tree root over ten centimetres in diameter is pruned. Any tree root with a diameter of less than ten centimetres can be pruned with the approval of the Arborist.
- 4.7 Approval of the Arborist is required before any tree deemed a hazard because of problems caused by its root system can be removed or relocated by tree spade.

#### **5.0 PROCESS**

- 5.1 The Urban Forestry Section shall develop an inventory of existing problem sites and determine the appropriate corrective measures, if any, for each particular location.
- 5.2 All new planting locations shall be assessed by the appropriate Urban Forestry personnel to avoid creating future root problems for the site. In order to prevent tree root problems created by using inappropriate trees for the site, The Tree Species Selection Guidelines and The Tree Spacing and Setback Requirements described in Appendix “D” Tree Planting Priorities, Requirements, Procedures and Specifications shall be followed by all persons planting trees on public land.
- 5.3 Applicants applying for a building permit whose construction activities will require a public tree to be root pruned shall be advised to contact the Superintendent of Urban Forestry.

- 5.4 All new construction projects shall be jointly assessed by the Superintendent of Urban Forestry and the contractor to determine if there is a need to do any root pruning before work commences. The contractor is required to notify The Urban Forestry Section as far in advance as is possible so that any root pruning can be completed before the work commences.
- 5.5 A schedule of root pruning projects shall be developed annually prior to the work season by the Forestry Technician.
- 5.6 The Superintendent of Urban Forestry together with either the Technician or Arborist shall conduct an on-site assessment of the root pruning work required.
- 5.7 The Arborist shall schedule a crew to do the root pruning required. The work shall be done in accordance with the root pruning guidelines described in Section 7.0.
- 5.8 The Forestry Technician is responsible for conducting ongoing site assessments while the project is occurring. This is to ensure that no additional roots are cut by the contractor without the approval of The Urban Forestry Section.
- 5.9 In cases where a tree on public property must be root pruned to accommodate a private development, the cost of the root pruning shall be billed to the proponent of the project.
- 5.10 Contractors or private property owners performing unauthorized root pruning on public trees resulting in instability to the tree or its subsequent demise shall be billed for any expenses incurred in remedying the situation or replacing the tree.
- 5.11 An assessment of all affected trees shall be conducted within two years of the project completion to determine the effectiveness of the root pruning and if any additional work will be required.
- 5.12 The Forestry Technician will determine any follow-up work needed.

## **6.0 WORK ASSIGNMENTS**

- 6.1 The Superintendent of Urban Forestry shall contact the various City departments involved with infrastructure construction projects during the off season to determine well in advance sites that will require root pruning.
- 6.2 The Forestry Technician shall conduct routine site inspections during and after the work is done. The Forestry Technician shall also keep a computerized record of project sites and the root work done at each site along with any required follow up maintenance. All sites

requiring root pruning shall be forwarded to the Forestry Arborist for scheduling.

- 6.3 The Arborist shall conduct training sessions for forestry personnel in the use of root pruning equipment and methods of root control. The Arborist shall also provide on-site supervision of the root pruning work being undertaken by Forestry personnel.
- 6.4 The Forestry Technician shall notify the contractor once all preliminary root work is completed.

**7.0 ROOT PRUNING GUIDELINES**

Root pruning is done:

- 1) to prevent serious damage to a tree's root system by construction;
- 2) to alleviate root invasion to drains and sewers;
- 3) to eliminate a safety hazard; and
- 4) to alleviate or prevent damage to public property.

Root pruning should be employed as a last resort when viable alternatives to severing the roots cannot be found. The following guidelines shall be employed for root pruning.

- 7.1 All root pruning work associated with City trees shall be done by Urban Forestry Section staff.
- 7.2 All root pruning requires the approval of the Superintendent of Urban Forestry.
- 7.3 Root pruning shall be done when below ground construction work is occurring within five meters of a city tree. The root pruning will be done to a depth of half a meter below ground. The following root pruning table shall act as a guide for the distance to prune away from the base of a tree.

TRUNK DIAMETER	DISTANCE FROM TREE BASE
0 – 10 centimetres	1 meter
11 – 15 centimetres	2 meters
16 – 20 centimetres	2.5 meters
21 – 25 centimetres	3.0 meters
26 – 30 centimetres	3.5 meters

31 – 35 centimetres	4.0 meters
36 – 40 centimetres	4.5meters
41 – 45 centimetres	5.0 meters
46 – 50 centimetres	5.5 meters

- 7.4 All roots shall be cut clean with a root pruner, a sharp saw and/or hand pruners.
- 7.5 No more than one third of a tree's root system shall be removed without the approval of the Superintendent of Urban Forestry.
- 7.6 Roots must not be removed from more than one side of the tree in any given year.
- 7.7 All excavation holes are to be covered with a wet tarp and kept moist for the duration of the construction project to protect the roots from dessication.
- 7.8 Root barriers shall be used in association with root problems adjacent to concrete and asphalt walkways.
- 7.9 Should the Superintendent of Urban Forestry determine that root pruning will not alleviate the problem then the tree may be rated as a hazard tree as specified in *Urban Forestry Bylaw #9607* and subsequently removed in accordance with that Bylaw.
- 7.10 Root control barriers may be used in those sites deemed appropriate.
- 7.11 Severe root pruning of American Elm trees is not recommended as they are intolerant to major root loss.
- 7.12 All trees that have been root pruned shall receive deadwood removal in the year after the root pruning occurred.
- 7.13 Top soil shall be used to backfill the excavation area.
- 7.14 Root pruning of surface roots shall only occur if the level of the surrounding surface cannot be raised.
- 7.15 No root pruning will occur within two meters of a tree without the approval of the Superintendent of Urban Forestry. The installation of any utilities within the two meter zone shall be by auguring a trench under the tree.

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