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## Appendix D

# Tree Protection Policy

The following is according to the City of Hamilton's special provision SP-97.

### **General**

Tree Protection shall be in accordance with [OPSS 801](#) as amended by this special provision.

### ***Construction***

Where indicated on the tree removal and protection plan, all existing trees shall be protected from damage in accordance with the tree protection details given on the Contract drawings before the start of any works on this contract. Once tree protection is in place, the Contractor shall notify the City of Hamilton Forestry Section (see [Urban Forestry Contacts](#) list to follow) in order to arrange for inspection of all tree protection measures.

The Contractor shall not trim any trees. Where trimming is necessary, the Contractor shall contact the City of Hamilton Forestry Section to arrange for tree trimming.

Confine movement of heavy equipment and storage of same and materials to a predetermined area. Equipment shall not be placed or move over soil within the dripline of any tree. Do not store materials or place equipment over root systems. No rigging cables shall be wrapped around or on trees.

Contractor shall be responsible for the installation of protective fencing or approved equal, installed in accordance with City of Hamilton Forestry Section requirements, unless directed otherwise. Where the installation of the tree protection fencing is not practical, tree protection shall be placed as close as possible to the leading edge of the crown and never close than 1.85m (6 ft) from the trunk without approval of the Manager of Forestry or his representative.

This item shall include all costs to supply, install, maintain, relocate, and remove all required materials for tree protection, as necessary.

### ***Tree Protection Zone Signing***

This item shall include all costs to pick-up, deliver, install, maintain, and remove all Tree Protection Zone sign boards as required. Signs shall be strapped to the tree protection fencing and supported using adequate fasteners to ensure that the sign is secured against any movement and is clearly visible. Signs will be approximately 15 inches by 24 inches and made of lightweight “Coreplast” material. Signs are to be manufactured by the City of Hamilton Traffic Department. In general, the sign will be installed on both sides of the roadway near each intersection within the limit of the project, as directed by the Project Manager.

The Contractor shall pick-up Tree Protection Zone signs at the City of Hamilton’s Traffic Department at [1375 Upper Ottawa Street, Hamilton](#), deliver and install at the construction site at location to be determined by the Project manager. All Tree Protection Zone signs shall be returned to the Traffic Department for reuse once the project is completed.

### ***Excavation within Tree Driplines***

Caution shall be used to minimize injury to trees where excavation within tree driplines is required.

Protection measures may be requested such as temporarily mulching 4 inches to 6 inches within the tree’s dripline or using straw mats or plywood in the ground to alleviate soil compaction. The Forestry and Horticulture sections will also advise if a watering or surface fertilizer program will be required at the completion of construction.

Areas where roots with a diameter of 25 mm (1 inch) or greater are exposed, they must be cut flush with a sharp saw and then backfilled with clean loam to protect from contamination or damage. Roots and root-trunk flares growing over curbs shall be protected in place. Wood and bark issues shall not be injured by striking tissues with equipment in order to break out concrete.

Breaking of the existing concrete, asphalt, or other hard surfaces within the [Tree Protection Zone](#) may be done mechanically, but shall be done in a manner that will avoid root damage. Broken up material may be removed mechanically under the direct supervision of the Project Manager, Inspector, or City Arborist. When removing existing sidewalks and curbs, care shall be taken to avoid injury to the roots, trunk, and trunk flare.

In specific cases where the hard surfaces to be removed are adjacent to or in direct contact with critical root zones, the Contractor may be asked to remove those hard surfaces manually. In these cases, equipment such as backhoes or bobcats shall not be used to remove the broken up material. The breaking and removal of hard surfaces manually shall be as directed by the

Project Manager. There will be no separate payment for the breaking or removal of hard surfaces manually.

Motorized equipment and trailers, including tractors, Bobcats, bulldozers, backhoes, trucks, cars, and carts are not to enter the [Tree Protection Zone](#).

**Use the following where there is no “Tree Preservation Drawing”**

In addition to the above, Contractors working in the vicinity of municipally owned trees shall adhere to the Tree Preservation Fence detail (attached to this document) and the following requirements:

- All existing trees to remain on site, or on adjacent properties, shall be fully protected with tree preservation fencing to the satisfaction of the Manager of Forestry and Horticulture or his designate to protect the roots, trunks, and branches during construction. Areas within the protective fencing zone shall remain undisturbed and shall not be used for the storage of building materials, structures, or equipment. This tree protection zone shall be completed prior to the commencement of site clearance, demolition, or any type of construction.
- Surplus soil, equipment, vehicles, tools, debris, or materials shall not be placed over the root system of the trees within the [Tree Protection Zone](#). No contaminants shall be dumped or flushed where feeder roots of trees exist.
- The Contractor shall, wherever possible, avoid cutting surface roots. If root cuts are necessary, they should be done quickly, making smooth flush cuts. The roots shall be backfilled and watered before they have a chance to dry out.
- Where limbs or portions of trees must be removed to accommodate construction work, Forestry personnel in accordance with accepted Arboricultural practices will remove them.
- Where necessary, the trees will be given an overall pruning by the City of Hamilton Forestry personnel at appropriate stages during construction.
- The Contractor shall, wherever possible, avoid disturbing original grades around trees in areas of protective fencing.



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- At no time shall the Contractor place, deposit or store of any stone, brick, sand, concrete, soil, or any other material or equipment which may impede the free passage of water, air, or nutrients to the tree.
  - No cables or ropes of any type shall be wrapped around or installed in trees.
  - At no time, under any circumstances, shall any part of the tree that is to remain after construction is completed have signs or fences nailed to it or survey markings or paint applied to the tree.
  - The Manager of Forestry and Horticulture or his designate shall be notified to inspect all Tree Protection measures. These measures shall remain in effect until the completion of construction, at which time authorization from the Manager of Forestry and Horticulture or his designate must be obtained for the removal of the Tree Protection Zone.
  - The Manager of Forestry and Horticulture must be notified immediately when any municipality owned tree is injured or destroyed during construction.



# Urban Forestry Contacts

## Forestry General Inquiries Line

**905-546-2424 ext. 5524**

## Forestry Technical Inquiries

### **Sam Brush**

*Urban Forest Health Technician*

Phone: 905-546-2424 ext. 7375

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### **Shannon Clarke**

Urban Forest Health Technician

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Urban Forest Health Technician

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# Tree Protection Zone

**All trees situated on City property are protected under provisions of City by-laws. In order to protect trees within or near a construction site you must consider the following:**

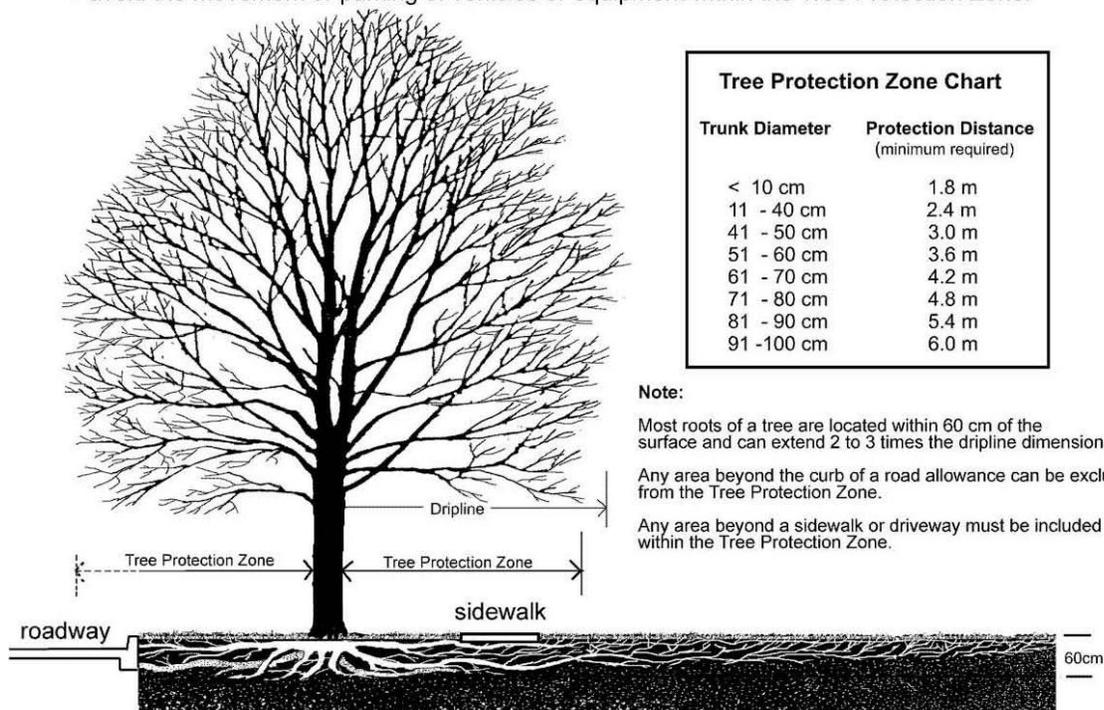
Use the chart below to determine the Tree Protection Zone.

Delinate or fence off the Tree Protection Zone by means appropriate to the project. e.g. caution tape for short duration, snow fencing or plywood hoarding for longer.

Avoid excavating within or near the Tree Protection Zone.

Within the Tree Protection Zone of a tree please remember:

- avoid any alteration or disturbance to existing grade;
- do not change grade by adding fill, excavating or scraping;
- do not store construction materials, soil, waste material or dispose of liquid material;
- if no other options for storing of excavated material is available, place soil on a tarp and avoid the base of the tree as much as possible.
- avoid the movement or parking of vehicles or equipment within the Tree Protection Zone.



Trunk Diameter	Protection Distance (minimum required)
< 10 cm	1.8 m
11 - 40 cm	2.4 m
41 - 50 cm	3.0 m
51 - 60 cm	3.6 m
61 - 70 cm	4.2 m
71 - 80 cm	4.8 m
81 - 90 cm	5.4 m
91 -100 cm	6.0 m

**Note:**

Most roots of a tree are located within 60 cm of the surface and can extend 2 to 3 times the dripline dimension.

Any area beyond the curb of a road allowance can be excluded from the Tree Protection Zone.

Any area beyond a sidewalk or driveway must be included within the Tree Protection Zone.

When installing new service within or near the [Tree Protection Zone](#), always consider directional tunneling wherever possible. If excavating within or near the Tree Protection Zone cannot be avoided then be sure to:

- First contact the manager of Forestry and Horticulture or their designate for approval to proceed with alternate methods under their on-site guidance
- Hand dig a shovel width wide (or hydrovac a slot trench), 30-40 cm deep, along the tree side edge of the excavation to expose roots;
- Cut exposed roots cleanly with a sharp cutting tool before excavating. This prevents a backhoe from ripping up and damaging roots beyond the excavation;
- Leave larger roots (50 mm or more) across trench, if possible;
- If roots 50 mm or more need to be cut, they should be cut by or under the supervision of a qualified arborist. Call the District Supervisor with any questions or concerns.
- Backfill with native soil or as specified. Backfill in 150 mm lifts, tamping using feet (or equivalent). Soak backfill to achieve proper soil compaction for root growth and avoid settlement;
- See chart above to determine the [Tree Protection Zone](#).

**Note:** This does not exclude the applicant from conforming to The City of Hamilton [Tree By-Law No. 06-251](#), and its pertaining Policies rendered enforceable by Section 137 of the Municipal Act, S. O. 2001, c. 25.

# Tree Preservation Fencing

