

# **TOWN OF ATHERTON**

## **Tree Preservation Guidelines Standards and Specifications**



**February 2004**

## TOWN OF ATHERTON

# TREE PRESERVATION GUIDELINES STANDARDS AND SPECIFICATIONS

## SECTION 1.00 DEFINITIONS

For the purpose of these Guidelines and interpretation of the standards and specifications, the following definitions shall apply:

- 1.01 **Buildable Area** - means the area of a parcel upon which, under applicable zoning regulations, a main dwelling unit may be built without a variance
- 1.02 **Building Official** - means the Director of Building and Planning or the Director's designee
- 1.03 **Dead Tree** - means a tree that is dead or that has been damaged beyond repair or is in an advanced state of decline as determined by a certified arborist. If the tree has been determined to be dead, removal is permitted under Section 8.10 of the Atherton Municipal Code.
- 1.04 **Development Project** - means any construction activity including demolition, grading, drainage improvements, new construction of main house or accessory structures, added square footage to existing main house or accessory structures, site preparation and landscaping
- 1.05 **Diameter at Breast Height** - means the diameter of the tree trunk at 4 feet above natural grade level. The diameter may be calculated by using the following formula:  
$$\text{DBH} = \text{circumference at 4 feet} \div 3.142$$
- 1.06 **Disturbance** - refers to construction or development activities that may damage trees
- 1.07 **Dripline** - means the width of the tree, as measured by the lateral extent of the foliage
- 1.08 **Excessive Pruning** - means removing in excess of 25 percent of the functioning leaf, branch. Pruning in excess of 25 percent is injurious to the tree and is prohibited
- 1.09 **Heritage Tree** - means a tree 48 inches or more in circumference (15.2 inches dbh), measured at 48 inches above natural grade, located outside of the Buildable Area on the parcel AND any native oak (*Quercus agrifolia*, *Q. lobata*, *Q. kelloggii*) greater than 48 inches in circumference located anywhere on the parcel.

- 1.10 **Injury** - means bruising, scarring, tearing or breaking of roots, bark, trunk, branches or foliage, herbicide or poisoning, or any other action which is likely to cause the death or permanent damage to a tree.
- 1.11 **Mechanical Injury** - means a noninfectious injury which often leads to poor growth, a damaged appearance or death to the tree. Common causes of mechanical injury are landscape maintenance equipment, staking damage, vehicles, vandalism, weather, insects and animals.
- 1.12 **Monthly Inspection Report** - means a monthly written report prepared by the Project Arborist
- 1.13 **Project Arborist** - means a certified arborist retained by the owner for the purpose of overseeing on-site activity involving the welfare of the trees to be retained
- 1.14 **Protective Tree Fencing** - means a temporary enclosure erected around a tree to be protected at the boundary of the **Tree Protection Zone**
- 1.15 **Root Buffer** - means a temporary layer of material to protect the soil texture and roots. The buffer shall consist of a base course of tree chips spread over the root area, keeping one foot clear of the trunk clear, to a 4”- 6” depth, capped by a base course of 3/4-inch quarry gravel to stabilize the 3/4” plywood on top.
- 1.16 **Site Plan** - means a set of drawings (e.g. preliminary drawings, grading, demolition, building, utilities, landscape, irrigation, tree survey, etc.) that show existing site conditions and proposed landscape improvements, including trees to be removed, relocated or to be retained. Site plans shall include the following minimum information that may impact trees:
- A. Surveyed location, species, size, dripline area of heritage trees (including trees located on neighboring property that overhang the project site) and Street Trees within 30-feet of the project site
  - B. Paving, concrete, trenching or grade change located within the **Tree Protection Zone (TPZ)**
  - C. Existing and proposed utility pathways
  - D. Surface and subsurface drainage and aeration systems to be used
  - E. Walls, tree wells, retaining walls and grade change barriers, both temporary and permanent
  - F. Landscaping, irrigation and lighting within dripline of trees
  - G. All of the final approved site plan sheets shall reference tree protection instructions
- 1.17 **Soil Compaction** - means the compression of soil particles that may result from the movement or parking of heavy machinery and trucks, storage of construction materials, structures, paving, etc. within the **Tree Protection Zone. (TPZ)**
- 1.18 **Soil Fracturing** - means the loosening of hard or compacted soil around a tree

- 1.19 **Street Tree** - means any tree growing within the street right-of-way, outside of private property
- 1.20 **Tree Appraisal** - means a method of determining the monetary value of a tree as it relates to the real estate value of the property, neighborhood or community
- 1.21 **Tree Protection and Preservation Plan** - means a plan prepared by a certified arborist that outlines measures to protect and preserve trees
- 1.22 **Tree Protection Zone, (TPZ)** - means, unless otherwise specified by a Project Arborist or Town Arborist, the area of temporary fenced tree enclosure, as set forth in Section 2.03
- 1.23 **Trenching** - means any excavation to provide irrigation, install foundations, utility lines, services, pipe, drainage or other property improvements below grade
- 1.24 **Verification of Tree Protection** - means the Project Arborist shall verify, in writing, that all pre-construction requirements have been met
- 1.25 **Vertical Mulching** - means auguring, hydraulic or air excavation of vertical holes within a tree's root zone to loosen and aerate the soil, typically to mitigate Soil Compaction

# TOWN OF ATHERTON

## TREE PRESERVATION GUIDELINES STANDARDS AND SPECIFICATIONS

### SECTION 2.00 PROTECTION OF TREES DURING CONSTRUCTION

The objective of this section is to reduce the negative impacts of construction on trees. The tree protection regulations are intended to guide a construction project to insure that appropriate practices will be implemented in the field to eliminate or mitigate undesirable consequences that may result from construction activities.

Typical negative impacts that occur during construction may include:

- Mechanical injury to roots, trunk or branches
- Compaction of soil, which degrades the functioning roots, inhibits the development of new ones and restricts drainage
- Changes in existing grade which can cut or suffocate roots
- Alteration of the water table - either raising or lowering
- Sterile soil conditions associated with stripping off topsoil

### SECTION 2.01 TREE PROTECTION AND PRESERVATION PLAN

Prior to commencement of a development project, a property owner shall have prepared a *Tree Protection and Preservation Plan* if any activity is likely to impact a Heritage Tree as determined by the Town Arborist. The *Tree Protection and Preservation Plan* will be prepared by a certified arborist to assess impacts to trees, recommend mitigation to reduce impacts to a less than significant level and identify construction guidelines to be followed through all phases of a construction project.

### SECTION 2.02 PRE-CONSTRUCTION REQUIREMENTS

The following six steps shall be incorporated within the *Tree Protection and Preservation Plan* prior to grading, demolition or building permit issuance:

#### A. Site Plan

On the *Tree Protection and Preservation Plan* for the project, plot accurate trunk locations and the Dripline of all Heritage Trees. In addition, for Heritage Trees the plans shall accurately show the species, trunk diameter, dripline and clearly indicate the **Tree Protection Zone** (TPZ) to be enclosed with the specified tree fencing as a bold dashed line.

#### B. Tree Disclosure Statement

A statement signed by the owner of the property, on a form provided by the Town, acknowledging the existence of Heritage Trees on the property. (See *Appendix II*)

**C. Verification of Tree Protection**

The Project Arborist shall verify, in writing, that all pre-construction requirements have been met as set forth in Section 2.02. Written verification must be submitted to and approved by the Town Arborist prior to demolition, grading or building permit issuance.

**D. Pre-Construction Meeting**

The demolition, grading and general contractors are required to meet with the Project Arborist and the Town Arborist at the site prior to beginning demolition, grading or new construction to review tree protection measures and to establish haul routes, staging areas, etc.

**E. Protective Tree Fencing for Heritage Trees or Street Trees**

Fenced enclosures shall be erected around trees to be protected to establish the **TPZ** in which no soil disturbance is permitted and activities are restricted.

**1. Size and type of fence**

All trees to be preserved shall be protected with 6 foot high, minimum 12 gauge chain link fence. Fences are to be mounted on 2-inch diameter galvanized iron posts, driven into the ground to a depth of at least 2-feet at no more than 10-foot spacing (See detail, *Appendix III*). This detail shall appear on grading, demolition and building permit plans.

**2. Duration**

Tree fencing shall be erected before any demolition, grading or construction begins and remain in place until the Town Arborist approves the removal.

**3. "Warning" Sign**

A warning sign shall be prominently displayed on each fence. (*See Appendix IV*). The signs are available at the Building Department.

**SECTION 2.03 TREE PROTECTION ZONE or (TPZ)**

Each Heritage Tree to be protected, including those on neighboring properties, shall have a designated **TPZ** identifying the area sufficiently large enough to protect the tree and roots from disturbance. **The TPZ area can be determined by the formula: One foot per inch of diameter.** For example a 20" diameter tree shall have a 20' radius from the perimeter of the trunk or a 20 foot **TPZ**. Any deviation in determining the **TPZ** will require approval by the Town Arborist.

**A. Activities prohibited within the TPZ include:**

1. Storage or parking vehicles, building materials, refuse, excavated spoils or dumping of poisonous materials, including but not limited to, paint, petroleum products, concrete, stucco mix or dirty water
2. The use of tree trunks as a winch support, anchorage, as a temporary power pole, sign posts or other similar function

3. Cutting of tree roots by utility trenching, foundation digging, placement of curbs and trenches and other miscellaneous excavation
4. Soil Disturbance, Soil Compaction or grade changes
5. Drainage changes

**B. Activities permitted or required within the TPZ include:**

1. **Mulching** - During construction, it is recommended that wood chips or similar material be spread within the **TPZ** to a 4-to 6-inch depth, leaving the trunk clear of mulch.
2. **Root Buffer** - When areas within the **TPZ** cannot be fenced, a Root Buffer is required and shall cover the root zone.
3. **Irrigation, aeration, fertilizing** or other beneficial practices that have been specifically approved for use by the Project Arborist within the **TPZ**.

**C. Erosion Control**

If a tree is adjacent to or in the immediate proximity to a grade slope of 8% (23 degrees) or more, then approved erosion control or silt barriers shall be installed outside the **TPZ** to prevent siltation and/or erosion within the **TPZ**.

**D. Tunneling and Directional Drilling**

If trenching or pipe installation has been approved within the TPZ, then the trench shall be either cut by hand, air spade, or by mechanically boring the tunnel under the roots with a horizontal directional drill and hydraulic or pneumatic air excavation technology. In all cases, install the utility pipe, immediately backfill with soil and soak within the same day.

**E. Tree Pruning and Surgery**

The most compelling reason to prune is to develop a strong, safe framework and tree structure and to reduce hazards. If the Project Arborist recommends that trees be pruned, the standard pruning shall consist of “crown cleaning” as defined by ISA Pruning Guidelines.

**1. Maximum Pruning**

Maximum pruning should only occur if approved by the Town Arborist. No more than one fourth (25 percent) of the functioning leaf, branch and stem area may be removed within one calendar year of any Heritage Tree, or removal of foliage so as to cause the unbalancing of the tree. Trees should not be topped.

## **2. Tree Workers**

Pruning shall not be attempted by construction or contractor personnel, but shall be performed by a qualified tree care specialist or certified tree worker, according to specifications contained within these procedures.

## **F. Tree Removal Procedure**

When Heritage Trees are removed, tree removal practices apply:

- 1.** A permit is required to remove any Heritage Tree.
- 2.** Any tree to be removed that may impact a Heritage Tree shall be done under the supervision of a certified arborist.
- 3.** The removal of trees that extend into the branches or roots of Heritage Trees shall not be attempted by demolition or construction personnel, grading or other heavy equipment. A certified arborist or certified tree worker shall remove, or oversee the removal of the tree in a manner that causes no damage above or below ground to trees that remain.

## **SECTION 2.04 INJURY MITIGATION**

A mitigation program is required if the approved development will cause drought stress, dust accumulation or Soil Compaction to trees that are to be saved. To help reduce impact injury, one or more of the following mitigation measures shall be implemented and supervised by the Project Arborist.

### **A. Irrigation Program**

Irrigate to wet the soil within the **TPZ** during the dry season as specified by the Project Arborist.

### **B. Dust Control Program**

During periods of extended drought, or grading, spray trunk, limbs and foliage to remove accumulated construction dust.

### **C. Soil Compaction Damage**

Compaction of the soil is the largest killer of trees on construction sites due to suffocation of roots. If compaction to the upper 12-inch soil within the **TPZ** has occurred, then one or more of the following mitigation measures shall be implemented as recommended by the Project Arborist or the Town Arborist.

#### **1. Type I Mitigation**

If an approved paving, hardscape or other compromising material encroaches within the **TPZ**, an aeration system shall be designed by a certified arborist and used within this area.

## **2. Type 11 Mitigation**

If inadvertent compaction of the soil has occurred within the **TPZ**, the soil shall be loosened by a method approved by the Town Arborist, such as Vertical Mulching or Soil Fracturing.

### **SECTION 2.05 DAMAGE TO TREES**

#### **A. Reporting**

Any damage or injury to trees shall be reported within 6 hours to the Project Arborist and Town Arborist so that mitigation can take place. All mechanical or chemical injury to branches, trunk or to roots over 2-inches in diameter shall be reported in the Monthly Inspection Report.

#### **B. Appraised Value**

If a tree is damaged, a Certified Arborist determines the Tree Appraisal value by adjusting a tree's basic value by its condition, location, and species using the most recent edition of the *Guide for Plant Appraisal*, published by the Council of Tree and Landscape Appraisers. The formula used should also be noted.

#### **C. Mitigation**

##### **1. Root injury**

If trenches are cut and tree roots 2-inches or larger are encountered they must be cleanly cut back to a sound wood lateral root under the supervision of the Project Arborist. The end of the root shall be sealed and kept moist. All exposed root areas within the **TPZ** shall be backfilled or covered within one hour. Exposed roots may be kept from drying out by temporarily covering the roots and draping layered burlap or carpeting over the upper 3-feet of trench walls. The materials must be kept wet until backfilled to reduce evaporation from the trench walls.

##### **2. Bark or trunk wounding**

Current bark tracing and treatment methods shall be performed by a qualified tree care specialist within two days.

##### **3. Scaffold branch or leaf canopy injury**

Remove broken or torn branches back to an appropriate branch capable of resuming terminal growth within five days. If leaves are heat scorched from equipment exhaust pipes, consult the Project Arborist within 6 hours.

### **SECTION 2.06 INSPECTION SCHEDULE**

The Project Arborist retained by the applicant shall conduct the following required inspections of construction sites containing protected Heritage Trees. Inspections shall verify that the type of tree protection is consistent with the standards outlined within these Guidelines. For each required inspection, a monthly inspection report of any change in tree

conditions and actions taken shall be provided to the Town of Atherton. Inspection Reports shall be faxed to the Town Arborist at (650) 688-6539 or by e-mail at kanderson@ci.atherton.ca.us.

## **SECTION 2.07      REQUIRED INSPECTIONS**

### **A.      Pre-Construction Meeting**

Prior to commencement of construction, the applicant or contractor shall conduct a pre-construction meeting to discuss tree protection with the job site superintendent, grading equipment operators, Project Arborist, and Town Arborist.

### **B.      Inspection of Protective Tree Fencing**

The Town Arborist shall be in receipt of a written statement from the applicant or Project Arborist verifying that he has conducted a field inspection of the trees and that the protective tree fencing is in place prior to issuance of a demolition, grading, or building permit.

### **C.      Inspection of Rough Grading**

The project arborist shall perform an inspection during the course of rough grading adjacent to the **TPZ** to ensure trees will not be injured by compaction, cut or fill, drainage and trenching, and if required, inspect aeration systems, tree wells, drains and special paving. The contractor shall provide the Project Arborist at least 48 hours advance notice of such activity.

### **D.      Monthly Inspections**

The Project Arborist shall perform monthly inspections to monitor changing conditions and tree health and submit a written report to the Town Arborist.

### **E.      Special Activities within the Tree Protection Zone**

Work in this area (TPZ) requires the direct onsite supervision of the Project Arborist.