

PLAINSBORO TOWNSHIP

Tree Maintenance Guide

Plainsboro Township
Shade Tree Advisory Committee
Phone 609-799-0099

Introduction

Proper maintenance is essential in developing a tree with a strong structure and desirable form.

URBAN TREES

- ❧ Preserve and protect aesthetics
 - ❧ Prevent erosion of topsoil
 - ❧ Decrease air born pollutants
 - ❧ Moderate climate
 - ❧ Community identity
 - ❧ Increase property values
 - ❧ Provides natural habitat
 - ❧ Buffers noise and unsightly obstructions
 - ❧ Provide shade and privacy
-

The Township of Plainsboro recognizes the substantial economic, environmental and aesthetic importance of its tree inventory and that the maintenance of trees is necessary to optimize the amount of tree cover on public lands. Trees help to preserve and protect aesthetic and scenic beauty while preventing erosion of topsoil and protecting against flood hazards and the risk of stream bank erosion. Through physiological processes, trees counteract the pollutants in the air; protect against high winds, and maintain the climatic balance. Their shape and size provide shade as well as privacy. In addition, trees provide habitat to a variety of wildlife species, and protect valuable historical and community assets. Studies have shown that trees increase commercial and residential property values.

Proper pruning techniques and removal procedures will contribute to the overall aesthetic appearance and health of urban trees. The following guidelines are intended to assist residents in achieving a standard pruning practice in maintaining Plainsboro Township's urban forest. The standards and guidelines follow, closely, those of the International Society of Arboriculture and those of the National Arborist Association.



Pruning Young Trees

Trees that receive the appropriate pruning measures while they are young will require little corrective pruning when they mature.

Cutting Guidelines

Where and how you make the cut is critical to a tree's response in growth and wound closure. Pruning should be applied with good judgement in order to maintain, as much as possible, the natural form of the tree. Pruning cuts should be made just outside the branch collar. Each cut should be made carefully, at the correct location, leaving a smooth surface with no jagged edges or torn bark (Figures 1.1). Hand pruning shears, lopping shears or pruning saws are acceptable tools for pruning. **Topping is not an acceptable pruning technique.**

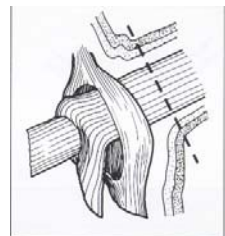


Figure: 1.1

Cutting technique

Large or heavy limbs should be removed using three cuts. The first cut undercuts the limb one or two feet out from the parent branch or trunk. A properly made undercut will eliminate the chance of the branch peeling or tearing bark as it is removed. The second cut is the top cut, which is usually made slightly further out from the limb than the undercut. The third cut is to remove the stub (Figure 1.2).

Wound dressing is not recommended.

Rules of Thumb

Avoid removing the tip of the dominant leader on young trees. Secondary branches that outgrow the leader should be removed.

If two branches develop from apical buds at the tip of the same stem, they will form **co-dominant** branches (Figure 1.3). It is usually best if one is removed when the tree is young.

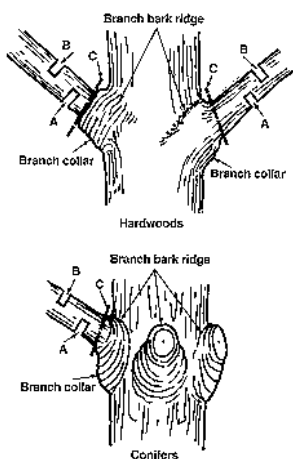


Figure: 1.2

If there is **included bark** (Figure 1.4) within crotches or co-dominant limbs, the branch attachment may be weakened and such branches are preferably removed.

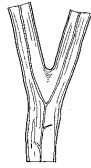


Figure: 1.3



Figure: 1.4

On large-growing trees (except whorl-branching conifers) branches that are more than 1/3 the diameter of the trunk should be well spaced along the trunk (at least 18 inches apart). Avoid allowing two scaffold branches to arise one above the other on the same side of the tree (Figure 1.5). Maintain one-half the foliage on branches arising in the lower 2/3 of the tree. For individual limbs, leave lower and inside branches along the limb so that the limb can develop taper and that stress can be evenly distributed.

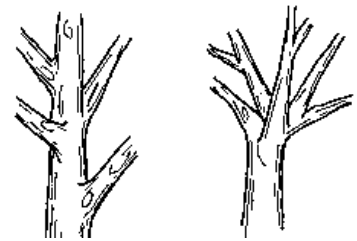


Figure: 1.5

Clearance Standards

The height of the lowest scaffold limb must follow standards for Street Trees as designated in the Township of Plainsboro's Tree Policy. Select main branches to give radial distribution.

- The lowest branch extending over public sidewalks must be no less than 8 feet in vertical alignment.
- The lowest branch reaching over a roadway must have no less than 14 feet in vertical clearance as measured at the curb line.
- Trees along public trail systems or walkways must have approximately 8 – 9 feet vertical clearance and 1 foot beyond each edge of the trail or path (two way bike paths should have 2 feet of side clearance).

Pruning Mature Trees

Pruning should be done with an understanding of how the tree responds to each cut. Improper pruning can cause damage that will last for the life of the tree.

Cutting Guidelines

Methods of Pruning

- ≡ Crown cleaning
- ≡ Crown thinning
- ≡ Crown raising
- ≡ Crown reduction
- ≡ Side pruning
- ≡ Drop Crotch pruning

For mature trees, the most common reasons for pruning of Township trees include removal of dead, weak, or diseased branches, removal of crowded or rubbing limbs, and the elimination of hazards. Avoid heavy thinning of mature trees, where appropriate. The various pruning methods used by arborists include, thinning (Crown thinning), dead wooding (Crown cleaning), shaping (Crown cleaning, Crown reduction), and elevating (Crown raising). These are the techniques recommended on all Township owned trees. **Topping is not an acceptable pruning technique.** Spikes are not to be used to climb trees.

Crown Cleaning

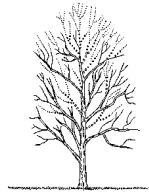


Figure: 2.1

The removal of dead, dying, diseased, crowded, weakly attached and low-vigor branches from the crown of a tree (Figure: 2.1).

Crown Thinning

The selective removal of branches to increase light penetration, and air movement through the crown. Thinning opens the foliage of a tree, reduces weight on heavy limbs, and helps retain the tree's natural shape (Figure: 2.2).



Figure: 2.2

Crown Raising

Removal of the lower branches from a tree (Figure: 2.3) in order to provide clearance for buildings, vehicles, pedestrians and vistas. Includes side pruning (Figure: 2.4).

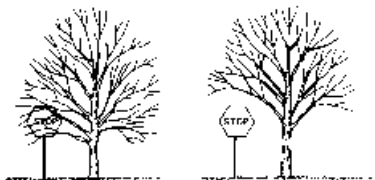


Figure: 2.3

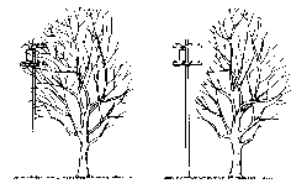


Figure: 2.4

Crown Reduction

Reduces the size of a tree, often for clearance of utility lines. This is usually best accomplished by pruning back the leaders and branch terminals to lateral branches that are large enough to assume the terminal roles (at least 1/3 the diameter of the cut stem) (Figure: 2.5).

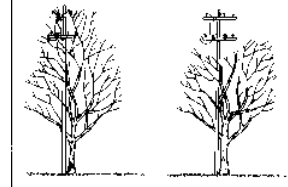


Figure: 2.5

ANSI A300 STANDARDS

- ◆ Proper cuts will be made
- ◆ Spikes will not be used to climb
- ◆ No more than 1/4 (25%) of the foliage of the canopy or individual limbs will be removed in any one season
- ◆ At least 1/2 the foliage will remain evenly distributed in the lower 2/3 of the canopy, after pruning is complete

Rules of thumb

Size, species, age, and pruning objectives should be taken into account when determining the amount of live tissue that should be removed. For Mature trees, no more than one fourth of a tree's leaf bearing crown should be removed.

Avoid pruning just after the spring growth flush. This can stress the tree.

Avoid pruning during periods of active transmission periods of some tree diseases, such as oak wilt (this disease can be spread when pruning wounds allow spores access into the tree).

Cutting technique

Large or heavy limbs should be removed using three cuts. The first cut undercuts the limb one or two feet out from the parent branch or trunk. A properly made undercut will eliminate the chance of the branch peeling or tearing bark as it is removed. The second cut is the top cut, which is usually made slightly further out from the limb than the undercut. The third cut is to remove the stub. Refer to Chapter 1, Pruning Young Trees (Figure: 2.6). Wound dressing is not recommended.

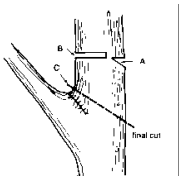


Figure: 2.6

Clearance standards

The height of the lowest scaffold limb must follow standards for Street Trees as designated in the Township of Plainsboro's Tree Policy. Select main branches to give radial distribution.

- The lowest branch extending over public sidewalks must be no less than 8 - 9 feet in vertical alignment.
- The lowest branch reaching over a roadway must have no less than 14 feet in vertical clearance. Trees along public trail systems or walkways must have approximately 7 - 9 feet vertical clearance and 1 - 2 feet beyond each edge of the trail or path.

Tree Care Responsibilities

Ownership and Responsibilities

The ownership and responsibilities for the care of trees in Plainsboro varies throughout the Township.

Plainsboro Township, through the Shade Tree Advisory Committee/Public Works Department, provides for the pruning, planting and care of trees in all parks, Township grounds and specific street trees in the roadway right-of-way, primarily in the Township Village Center.

The majority of residential street trees in single-family neighborhoods are planted on the homeowner's lawn, not in the roadway right-of-way. These trees are the responsibility of each property owner. Plainsboro Township ordinances 79-12 through 79-16 require that each property owner maintain his or her trees with adequate clearance for sidewalk use. Proper pruning will provide the needed clearance in addition to enhancing the health and appearance of the trees. Contact the Shade Tree Advisory committee at (609) 799-0099, regarding ownership questions and for advice on proper care.

Many housing developments have common areas with landscape plantings. Your homeowners association is responsible for these plantings.

Condominium and apartment complexes provide for the care of trees on these properties. Contact your management office with maintenance questions.

For tree care that is beyond your capability, contact the Shade Tree Advisory Committee/Public Works Department at (609) 799-0099, for a list of New Jersey Certified Tree Experts. The Rutgers Agricultural Extension Service of Middlesex County can provide publications and additional resources regarding trees.

Summary

Pruning

- ◆ Use three cuts to remove large or heavy limbs (Figure 4.1). The first cut undercuts the limb 1-2' out from the parent branch or trunk. The second cut is the top cut, slightly further out from the limb than the undercut. The third cut removes the stub
- ◆ Do not “Top” the tree
- ◆ Pruning cuts should be made just outside the branch collar. One-half the foliage should remain evenly distributed in the lower 2/3 of the canopy after pruning.
- ◆ Adhere to Traffic By-law signage and standards when working near roadways

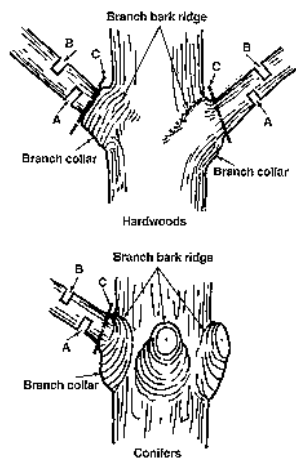


Figure: 4.1

Clearance Standards

- ◆ The lowest branch extending over public sidewalks must be no less than 8 feet in vertical alignment
- ◆ The lowest branch reaching over a roadway must have no less than 14 feet in vertical clearance as measured at the curb line.
- ◆ Trails and walkways must have approximately 7 feet vertical clearance and 1 – 2 feet beyond the each edge of the trail or path.