

Guidelines for

PRUNING YOUNG STREET TREES

Prepared for the San Francisco Tree Advisory Board

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Most newly-planted trees need some pruning to develop strong structure and attractive form. This is particularly important for trees which eventually become large. These guidelines are intended to provide the basic information you need to prune a young street tree or instruct someone on how to do so. **A well trained young tree will greatly increase its safety and need for expensive pruning when mature.**

Five steps are outlined which apply to most street trees, regardless of species, but do not apply to conifers or trees intentionally grown to have multiple trunks. Frequently, a tree does not conform to the ideal tree and you will have to make adjustments. A table of problems and solutions is included to help you decide what to do in such cases.

When to prune? Both deciduous and broadleaf-evergreen trees should be pruned in the winter months: December - February. Deciduous trees lose their leaves in winter (e.g.: maples), while broadleaf-evergreen trees retain leaves all year (e.g.: eucalyptus). (Note: broad-leaf evergreens are not conifers). Wait until the leaves have fallen to prune deciduous trees. Prune well before new leaves begin to develop in the Spring for both deciduous and broadleaf evergreens.

5 EASY STEPS

These steps should be followed in sequence. If you encounter a situation that makes it difficult to apply one of these steps, then look at the table which provides suggested remedies for some commonly encountered difficulties. In cases where you cannot find the information needed to resolve your difficulty, contact a certified arborist or (Department of Public Works) at 554-6700.

Note: Generally no more than 25% of the branches or foliage should be removed in any one year.



Figure 1: Remove broken, diseased, drying or dead branches



Figure 2: A: Select a leader;
B: Remove competing leaders



Figure 3: Select the lowest permanent scaffold branches

STEP 1

Remove broken, diseased, dying or dead branches.

Look at the tree. If you see any broken, diseased, dying or dead branches, remove them beyond the point of injury. In some cases the whole branch may need to be removed. In other cases, just the injured part can be cut off.

STEP 2

Select a leader and remove competing leaders.

The leader is the central stem of the tree. Carefully follow the trunk of the tree up to the top. The trunk should narrow into a single stem that is in a vertical position. This is the leader. There should be only one leader! If there is more than one leader (competing leaders), then the strongest and most vertical stem should be selected as the central leader and other stems removed, cut back, or possibly selected as a permanent branch.

STEP 3

Select the lowest permanent scaffold branch.

The lowest permanent scaffold branch is the lowest branch attached to the trunk which will remain on the tree

throughout its lifetime. The position or height of the lowest permanent branch is usually determined by the location and use of the tree. For street trees, the lowest permanent branch over the sidewalk should be at least 8 ft. above the sidewalk. Over the street, the lowest branch should be 14 ft. above the street. These heights are mandated by local ordinance. Look for a strong branch above the sidewalk that meets the height requirement. Its stem diameter should be about half of the trunk diameter where the branch attaches to the trunk. You may want to tie a ribbon or piece of string on this branch so you know that it has been selected as the lowest permanent branch and can identify it later. If there are no branches at 14 ft. or even at 8 ft., then you'll have to wait until the tree grows taller.

STEP 4

Select scaffold branches and cut back or remove competing branches.

Scaffold branches are the permanent branches of the tree which constitute much of its framework. Scaffolds are located above the lowest permanent branch and are selected based on spacing and size considerations. Vertical spacing between the scaffolds should be 6-12

inches for trees that are small at maturity and at least 18-24 inches for large trees (see diagram). Scaffold branches also should be spaced radially around the trunk, like spokes in a wheel. **A.** Select scaffold branches starting with the lowest permanent branch and proceeding up and around the trunk. Selected scaffolds should be strong branches but smaller than the tree trunk. **B.** Remove branches that are very close to the scaffolds (within 4"). Leave very small branches (twigs).

STEP 5

Select temporary branches below the lowest permanent branch.

Branches located below the lowest permanent branch can be retained as "temporary" branches or removed. Temporary branches remain on the tree during the first few years of its life and are then removed. Temporary branches are important because they provide food for trunk growth, they shade the trunk, and they reduce the risk of tree damage due to vandalism. When possible leave temporary branches on the trunk. In many cases it is useful to shorten their length to 2 or 3 buds and keep them cut back during the growing season.

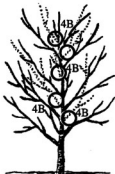


Figure 4: A: Select scaffold branches
B: Cut back or remove competing branches

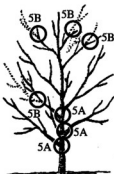


Figure 5: A: Select temporary branches below the lowest permanent branch
B: Cut back other branches



Finished Tree

PROBLEM

Leader

Leader is broken or has been cut

Two stems are in leader position: one is more vigorous while the other is straighter (more vertical)

Leader is bent and can't be uprighted by staking

Lowest Permanent Scaffold Branch

No branches above the minimum height for branches over a sidewalk.

Several branches crowded at position for lowest permanent branch

Scaffold Branches

Best scaffold branches are all on one side of tree

Branches too crowded - can't choose a scaffold

Temporary Branches

Can't decide whether the branch should be left on or removed

WHAT TO DO

Avoid nursery trees with cut or broken leaders. If the tree has already been planted, you will have to train another stem to become the leader. Select the most vertical stem that is large enough to develop as a leader.

Difficult choice. Select the more vigorous stem if it looks like it will grow upright when other stem is removed.

If bend is not severe, leave it alone and the stem will probably straighten itself. If severe, then cut leader back to bud in upright position. Summer prune to direct new growth.

Wait until next year or the year after. Be sure the central leader is established—it will give rise to the lowest permanent branch. Keep laterals which are below the minimum height pruned back to encourage height growth.

Select most vigorous branch that is growing in desired direction (should have diameter which is no more than one-half the trunk diameter). Remove other branches or leave as temporaries.

Try to invigorate smaller branches on other side by removing or reducing the size of close branches. Develop leader to encourage branch development on desired side. Remove or cut back competing branches.

Select vigorous branch in most desirable position as permanent scaffold. Remove or cut back some of the crowded branches and use them as temporaries.

Remove branch if it is large and closely spaced to a permanent branch. If it is not interfering with the development of permanent branches, then cut back to slow its growth and remove next year or later.

GLOSSARY

- **Arborist:** A person possessing the technical competence through experience and related training to provide for or supervise the management of trees and other woody plants in the residential, commercial and public landscape.
- **Branch:** A secondary shoot or stem arising from the main stem or trunk.
- **Crown:** The leaves and branches of a tree or shrub; the upper portion of a tree from the lowest branch on the trunk to the top.
- **Heading:** Pruning a currently growing or one-year-old shoot back to a bud, or cutting an older branch or stem back to a stub or lateral branch not sufficiently large enough to assume the terminal role.
- **Lateral:** A branch or twig growing from a parent branch or stem.
- **Leader:** A dominant upright stem, usually the main trunk.
- **Limb:** Same as branch, but usually larger and more prominent.
- **Parent Branch or Stem:** The tree trunk, or the larger limb from which lateral branches are growing.
- **Scaffold:** A large limb that is or will be part of the permanent branch structure of a tree.
- **Thinning:** The removal of a branch at its origin or cutting it or the leader to a lateral large enough to assume the terminal role to open up or reduce the crown.

