*400 Attachment 2*

**City of Ellisville**

**Appendix B: Maintenance Guidelines**
**[Ord. No. 3559, 10-18-2023]**

**General Tree and Landscape Maintenance Requirements**
The following maintenance guidelines are provided to assist property owners with appropriate methods for maintaining trees and landscaping. Proper maintenance will improve the health of plantings, prevent hazards from developing, and increase the longevity of plantings.

**Pruning Trees**
After planting, trees should be pruned to correct minor structural problems. Branches that are broken, rubbing, or crossing should be removed. Light pruning after planting can also help direct growth to a central leader. In the years following planting, formative pruning should be used to develop a strong central leader and properly spaced scaffold branches. Formative pruning will help to develop a full and attractive tree crown.

As a tree grows it requires pruning up (crown lifting) gradually to meet the clearance desired between the bottom branches and the ground plane. A tree should never be pruned so that more than one-third (1/3) of the tree is unbranched trunk.

To help young trees develop a strong and healthy structure the following problems require correction through pruning (see Figure 46):

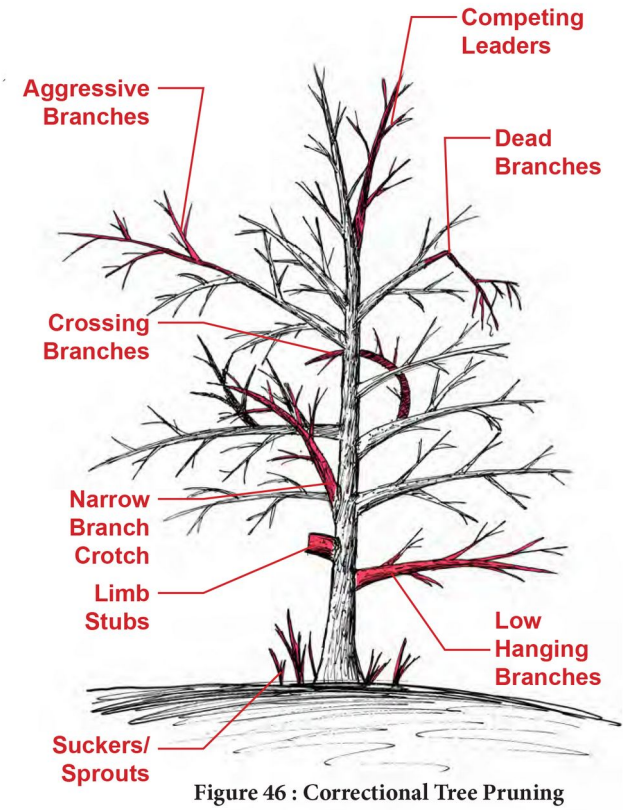



**Figure 46 : Correctional Tree Pruning**

- Dead or dying branches
- Sprouts (suckers) growing from or near the base of the trunk
- Crossing branches or branches growing towards the middle of the tree
- Narrow branch crotches
- Multiple leaders
- Low hanging branches
- Over-aggressive branches (not the central leader) growing faster than the rest of the tree.

Mature trees require occasional pruning as well to maintain a healthy form and to correct issues. Because pruning large trees is dangerous and the continued good health of the tree is important, work will be performed by a certified arborist. Crown reduction may be needed to reduce the overall size of a tree. Use the following guidelines for crown reduction:

- Do not remove more than twenty-five percent (25%) of the tree crown at any given time to help reduce stress on the tree.
- If possible, do not reduce the entire crown.
- Use reduction cuts to prune back lateral branches, pruning cuts should be hidden and produce a jagged outline (see Figures 47 through 49).

**Figure 47: Typical Reduction Cut**

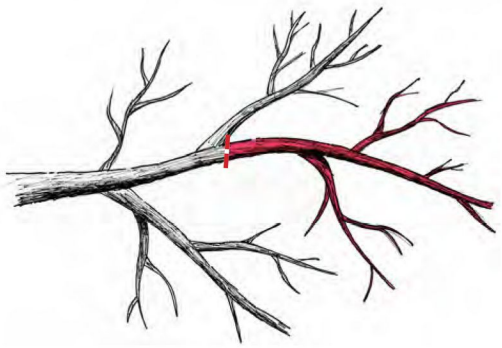


**Figure 48: Correct Crown Reduction**

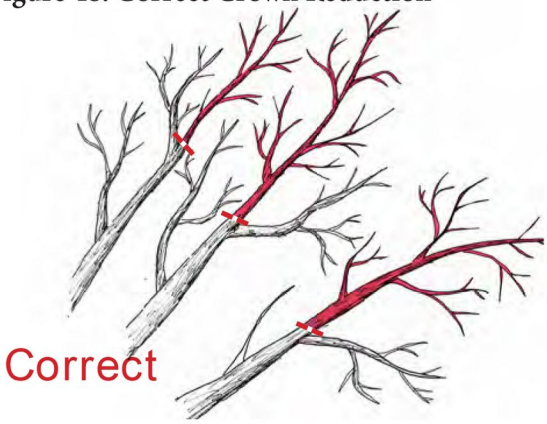
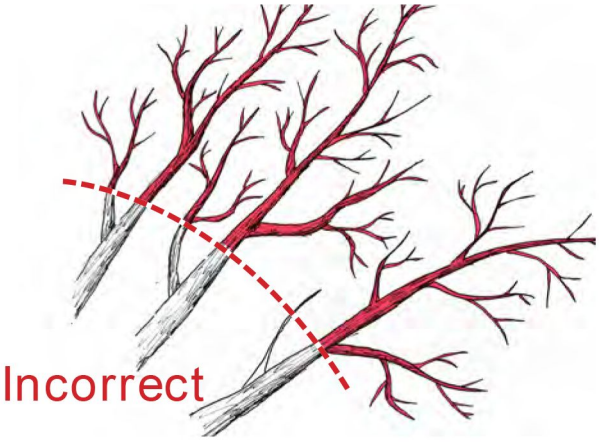
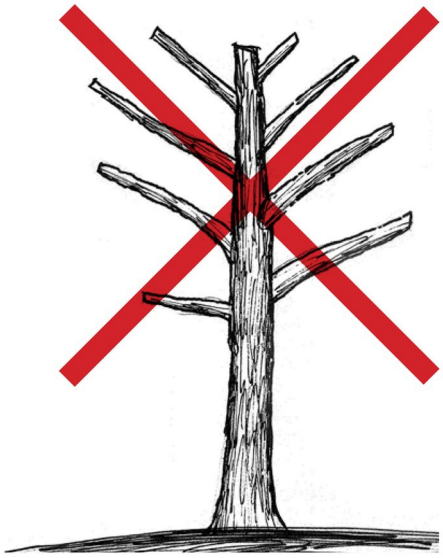



**Figure 49: Incorrect Crown Reduction**



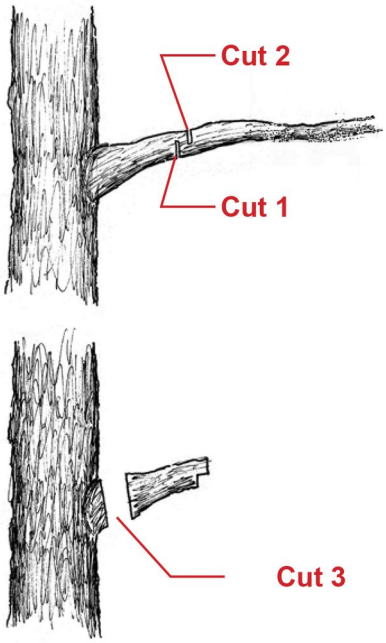

- Do not use heading or topping cuts to achieve crown reduction. Tree topping damages the natural form of the tree, and leaves the tree prone to decay and storm damage (see Figure 50).

**Figure 50: Tree Topping**



- Ideal time for tree pruning is late winter while trees are still dormant. Pruning in late winter will allow for pruning wounds to heal faster as new spring growth occurs.
- Ensure clean cuts are being made when pruning to avoid bark tear. Tearing bark or making flush cuts against the trunk can make the tree prone to insect infestation and disease. For larger branches use a three step method to prevent barking tearing (see Figure 51).

**Figure 51: Three Step Pruning Cut**

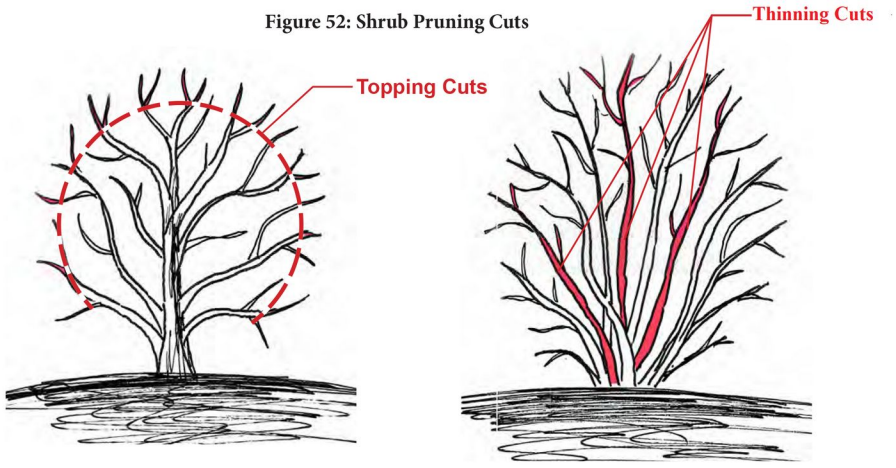


**Pruning Shrubs**

Generally shrubs should be pruned in early spring while still dormant, with the exception of spring flowering shrubs. To prevent removing buds from spring flowering shrubs, prune immediately after blooming. Avoid pruning in fall, which could force late new growth leading to winter injury.

There are two main techniques for pruning shrubs, heading and thinning. Heading involves cutting back branches to healthy buds, reducing the overall size of the shrub. Thinning involves completely removing branches back to ground level or major trunks, depending on the growth habit of the shrub. No more than thirty percent (30%) of a shrub will be removed in one (1) trimming.

Figure 52: Shrub Pruning Cuts




**Irrigation**

It is important to provide trees and landscape plantings with a consistent water source throughout the year, particularly in periods of drought. Typically, street trees and landscape plantings should receive about one (1) inch of water, per week, from a combination of rainfall and irrigation. Stress from midsummer drought conditions can kill new plantings and reduce aesthetic quality of established plantings.

During drought conditions new tree plantings will typically require two (2) to three (3) gallons of water every five (5) days. Check the tree during and after watering to ensure rootball soil is moist and not saturated, adjust water supply accordingly. Drip irrigation is an ideal source of water for newly planted trees. This can be achieved by soaker hoses, drip emitters, or plastic tree watering bags.

Automatic drip irrigation systems are preferred for providing consistent amounts of water to landscape beds. The irrigation system should be scheduled to meet the water requirements of the plantings. Newly planted landscape beds should be monitored to ensure an appropriate amount of water is being provided, adjust irrigation system as needed.

**Fertilization**

Fertilizing annually is suggested for young street trees and landscape plantings. The objective

of fertilizing is to maintain plant health and accelerate establishment. Use of a slow release fertilizer is preferred to prevent burning and provide plant nutrition over an extended period. Fertilizers should be applied from March to June or in mid-October when leaves are turning to fall color. Over fertilization should be avoided, this could lead to conflicts with diseases and pests.

**Pest Control**

The use of integrated pest management (IPM) is recommended by horticulturists as the best approach to managing pests and plant diseases. Successful pest and disease management is approached by using five mains type of control:

- Regulatory controls (quarantine)
- Genetic controls (using plant species or cultivars bred for pest or disease resistance)
- Cultural controls (good sanitation, species diversification, placing plant in ideal growing conditions)
- Biological controls (encouraging beneficial biological control agents, such as lady beetles to control insect pests or beneficial fungi or bacteria to combat harmful disease)
- Chemical controls (use of chemicals such as fungicide, bactericides, miticides, or nematicides to control or prevent diseases or infestation)

It is recommended to seek assistance from certified arborists for control and management of pests and diseases effecting large street trees.