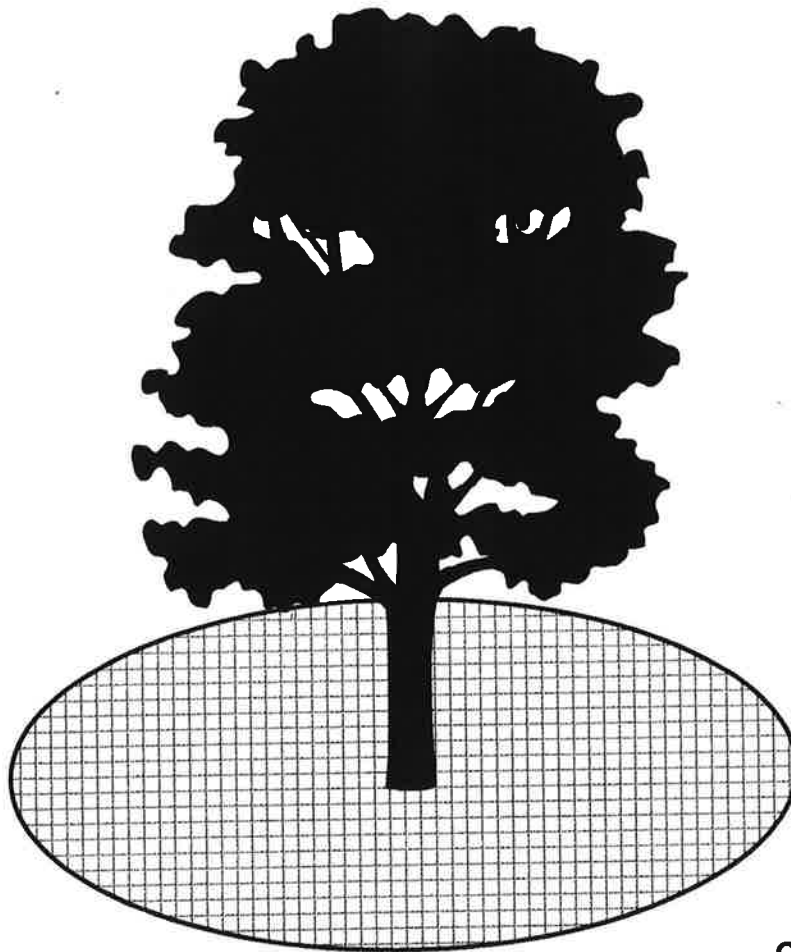


**City of Social Circle, Georgia
Community Tree
Management Ordinance**

**Administrative and
Technical Standards**



**Version 3.1
January 29, 2016**

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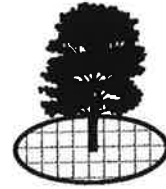
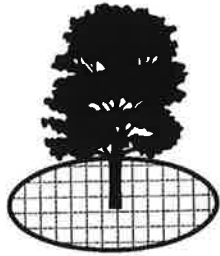


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Introduction

One of the City of Social Circle's community-wide goals is to have a safe, healthy, diverse, expansive, and well-functioning community forest that benefits everyone. These administrative and technical standards are considered basic requirements for achieving this goal. They are a supplement to the city's Community Tree Management Ordinance and are legally binding. Compliance with these standards is intended to promote pro-active, cost-effective, and successful management of community trees. Compliance with professional standards published by the International Society of Arboriculture, referenced throughout this document, and listed in Appendix A, is also required.

The standards apply to all activities, properties, and trees regulated by the tree ordinance. This includes all city-owned properties and city-owned trees, new private property development, and all privately-owned trees planted or conserved to satisfy tree ordinance requirements. The violation of any one of these standards constitutes a violation of the tree ordinance and may result in a revocation of development permits, a fine, or ineligibility or revocation of tree canopy cover credits.

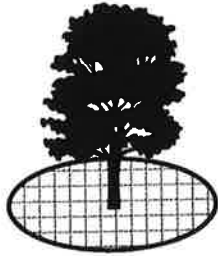
The administrator of the tree ordinance and these standards is the City Manager or the manager's designee. The administrator determines if tree ordinance requirements and these standards have been satisfactorily met.

The standards are organized into five (5) chapters that address major categories of tree management field operations, as follows:

- Chapter 1: Tree Establishment
- Chapter 2: Tree Conservation
- Chapter 3: Tree Protection
- Chapter 4: Tree Maintenance
- Chapter 5: Tree Removal

Additional information to facilitate compliance is included in the following appendices to these standards:

- Appendix A: List of ANSI Standards for Tree Care Operations and ISA Best Management Practices
- Appendix B: Official Tree Species List for the City of Social Circle, Georgia
- Appendix C: Community Forest Management Information Sources



Chapter 1: Tree Establishment

A long-term perspective is necessary for anyone who proposes to establish a tree in the landscape. Many of the decisions made throughout this process have long-term consequences. Therefore, good planning and compliance with basic tree establishment standards that promote survival and long-term tree health are required for all trees planted under the jurisdiction of the tree ordinance.

There are many steps involved in the process of establishing a tree in the landscape. Following the standards for each step should result in maximizing the health, longevity, and benefits of each tree planted. Failure to properly execute any one of these steps will reduce tree health and longevity, and increase tree planting, pruning, removal, and replacement costs.

Newly planted trees that are established according to standards receive tree canopy cover credit as described in the tree ordinance and as listed in the Official Tree Species List. Standards for receiving credit follow, along with tree establishment standards that are categorized by major steps in the process, which are:

- Site Selection
- Species and Tree Selection
- Transport and Storage
- Tree Planting
- New Tree Maintenance

Tree Canopy Cover Credit Standards for Newly Planted Trees

For trees that are planted to satisfy tree canopy cover requirements, the amount of tree canopy cover credit for which they are eligible is listed in the Official Tree Species List. A tree's eligibility for that credit is subject to the following standards.

STANDARD 1-1. For a tree to be eligible for tree canopy cover credit it must have the required minimum permeable open soil area.

STANDARD 1-2. For a tree to be eligible for tree canopy cover credit it must be established according to standards.

STANDARD 1-3. For a tree to remain eligible for tree canopy cover credit after the certificate of occupancy has been issued for a site it must be healthy and maintained according to standards.

Site Selection Standards

To begin the site analysis, first determine if the site has the potential to grow a healthy tree. If the soil is poor quality or significantly compacted and cannot or will not be amended, if the tree will cause a reduction in traffic sight visibility, or if the space is just too small and future conflicts in the short- or long-term with buildings and other hardscape are inevitable choose another,

more suitable, site. If you determine that the site is suitable, then choose a tree species with growth requirements that best match the site conditions.

If the establishment process starts instead by having a particular species you want to plant, you should choose a site with conditions that match that species' requirements. Regardless of whether you choose the site or the species first, *always match the planting site's characteristics and the tree's requirements*. Compliance with the following standards for below and above ground growing space is required.

Growing Space Standards

STANDARD 1-4. There must be adequate growing space below ground for tree roots to promote tree health. For each tree a minimum permeable soil area is required. Table 1 lists the minimum permeable soil area requirements by tree height category.

Table 1. Minimum Permeable Soil Area Requirements

Tree Height Category	Minimum Permeable Soil Area
Large Tree	400 square feet
Medium Tree	225 square feet
Small Tree	100 square feet

STANDARD 1-5. The minimum permeable soil area must be well distributed around the tree trunk and shall not be less than 5 feet wide in any one direction.

STANDARD 1-6. When more than one (1) tree is planted in the same restricted area, such as a parking lot landscape island, the minimum permeable soil area shall not be less than 8 feet wide in any one direction.

STANDARD 1-7. When trees will share rooting space in a restricted area such as a parking lot island, tree well, or compacted soils, the total minimum permeable soil area may be reduced by 10 percent for each additional tree, but in no case shall be reduced by greater than 50 percent.

EXAMPLES

1. The minimum permeable soil area that is required for three (3) large trees planted in a parking lot island totals 1,200 square feet, but can be reduced by 20 percent for the 2 additional trees or 240 square feet, for a total minimum permeable soil area of 960 square feet for the three (3) trees.
2. The minimum permeable soil area that is required for eight (8) large trees to be planted in a frontage landscape strip totals 3,200 square feet, but can be reduced by a maximum of 50 percent or 1,600 square feet, for a total minimum permeable soil area of 1,600 square feet for the eight (8) trees.

STANDARD 1-8. In parking lots, the minimum permeable soil area required for a single canopy tree may be reduced by 50 percent with written permission of the Tree Board if permeable pavement is installed around the tree or structural soils are installed beneath the pavement to allow for a wider area of root penetration. The area around the tree where permeable pavement or structural soils are installed must be at least twice the minimum permeable soil area requirement for this reduction to be approved.

STANDARD 1-9. Within the minimum permeable soil area, soil must be well aerated (not compacted), have a pH between 5.0 and 7.0, and contain at least 3 percent organic matter by volume. The City may require a soil test by an approved lab to demonstrate that this standard has been met.

STANDARD 1-10. There must be adequate growing space above ground for a tree to reach its potential mature height and crown size without conflict or severe pruning. Standards for minimum distances and clearances in feet between tree trunks, hardscape and infrastructure components in new developments are listed in Table 2.

Table 2. Minimum Distances in Feet Required Between Tree Trunks, Hardscape and Infrastructure in New Developments

Infrastructure Component	Distance to Small Trees	Distance to Medium Trees	Distance to Large Trees
Building	10	15	25
Curbing	2	3	4
Driveway	15	15	15
Fire Hydrant	10	10	10
Large Trees	15	25	40
Mailbox	15	15	15
Medium Trees	15	25	25
Overhead Utility Lines	0	20	30
Power Transformer Box (on the ground)	15	15	15
Sidewalks and Walkways	2	3	4
Small Trees	15	15	15
Street Intersection	35	35	35
Underground Utility Line	5	5	5
Utility Pole	15	15	15

Site Preparation Standards

Light and moisture conditions cannot be altered once a tree is planted, and it is difficult to adjust soil pH. However soil aeration and organic matter can be improved before planting to promote root growth, tree health, and survivability. If the soil within the minimum permeable soil area does not meet Standard 1-9 for aeration, pH, and organic matter, site preparation is required.

STANDARD 1-11. Trees shall not be planted in compacted soil. If the soil in the minimum permeable soil area is compacted it must be tilled and aerated to a minimum depth of 8 inches prior to planting. This is required in parking lot islands, tree wells, and any location where soil has been compacted during grading or construction, or as the result of pedestrian or vehicular traffic, materials storage, equipment storage, or other compacting agent.

STANDARD 1-12. If the topsoil has been removed from the site, then it shall either be replaced or organic matter shall be incorporated throughout the entire minimum permeable soil area to a minimum of 3 percent and maximum of 5 percent by volume and to a minimum depth of 8 inches. Organic matter shall not be added in the planting hole only.

STANDARD 1-13. If the soil pH is not within the acceptable range of 5.0 to 7.0, the pH of the soil shall be adjusted before trees are planted.

STANDARD 1-14. If the soil has been contaminated by equipment washouts, including concrete, paint, oil, grease, or other contaminant, it must be removed and replaced with good quality topsoil.

Species Selection Standards

The next step in tree establishment is the selection of a suitable species of tree. Standards for selecting tree species follow.

STANDARD 1-15. Tree species selected for planting on regulated property are limited to those found in the Official Tree Species List. The planting of species other than those on the list requires written approval of the Tree Board.

The Official Tree Species List is located in Appendix B. Information included for each species is the tree canopy size category, the amount of tree canopy cover credit, mature height category, and approved planting locations.

STANDARD 1-16. Trees selected for planting within street rights-of-way and frontages, within parking lots, and beneath overhead utility lines are limited to those listed as approved for those locations in the Official Tree Species List.

STANDARD 1-17. Species selected for a site shall have growth requirements and mature size potential that match the conditions of the site.

When selecting a species for a site, also consider leaf texture and leaf drop habit. Consider the amount of litter a tree produces and avoid planting trees with large, messy, or unpleasant fruits or flowers near walkways, parking areas, patios, or windows. Evergreen trees may be more suitable than deciduous trees for screening and noise reduction. A mixture of textures and leaf types is desirable.

STANDARD 1-18. Species diversity shall be maintained. Species chosen by the city for planting along street rights-of-way and on other city properties shall be selected such that over time no one species shall comprise more than 10% of the city tree population.

STANDARD 1-19. The city will promote age diversity of the community forest by planting some trees every year when environmental and economic conditions are favorable.

STANDARD 1-20. When planting more than three (3) trees on a development site, no more than 30 percent of the trees may be of a single genus (oaks, maples, elms, etc.)

STANDARD 1-21. Invasive species shall not be planted on regulated properties. Invasive species include, but are not limited to, tree-of-heaven (*Ailanthus altissima*), chinaberry (*Melia azedarach*), Chinese privet (*Ligustrum sinense*), Chinese tallow (*Sapium sebiferum*), mimosa (*Albizia julibrissin*) and paper mulberry (*Broussonetia papyrifera*).

Tree Quality Standards

While it is important to select the right planting site, prepare the site well, and select an appropriate species for the site, it is equally as important to select a good quality tree to put in the ground. The best way to select a quality tree is to visit the nursery and personally select your trees or work with a nursery or landscape contractor who you trust to choose quality trees for you that meet your specifications. This will eliminate the costs and delays associated with the delivery, rejection, and reordering of poor quality trees that do not meet standards. Trees chosen for planting must meet the following standards.

STANDARD 1-22. All nursery stock shall meet ANSI Z60.1-2004 American Standard for Nursery Stock (published by the American Nursery and Landscape Association).

STANDARD 1-23. For balled and burlapped trees, the minimum acceptable root ball size is 24 inches in diameter for a 2 inch caliper field grown tree, and root ball sizes for larger trees shall meet ANSI standards.

STANDARD 1-24. At time of planting, trees shall be a minimum of 2 inches caliper for canopy, upright, and single-stemmed trees, and 5 feet tall for small, spreading, or multi-stemmed trees.

STANDARD 1-25. Containerized, balled and burlapped, and bare root trees are acceptable for planting if they meet other tree quality standards.

STANDARD 1-26. All balled and burlapped trees should have a root ball contained within a metal basket with nylon webbing attached for ease of unloading.

STANDARD 1-27. The soil and roots within the root ball shall be kept moist and protected from freezing or high temperatures; any tree with a root ball or soil that is cracked or dry or with a trunk that is loose in the root ball is unacceptable.

STANDARD 1-28. The tree shall be free from stem encircling roots and the roots shall otherwise be healthy, abundant, and vigorous.

STANDARD 1-29. Large canopy trees shall have a single dominant leader with no side branches taller than the main leader, and no forks, included bark, or dead leader.

STANDARD 1-30. Trees shall be properly target pruned—not flush cut, rounded-over, hedged, or topped.

STANDARD 1-31. Trees shall be free from wound paint, mechanical injury, wounds, bruises, or scrapes affecting the trunk or limbs.

STANDARD 1-32. Trees shall be free from disease and insect infestations.

Transport and Storage Standards

Trees should be protected during transport and storage from drying out, from excessive heat or cold, and from wounding. Tree buds and twigs can be damaged and killed by wind during transport if they are not covered, and root balls can dry out. Roots within a root ball that has completely dried out or has frozen will die. The minimum standards for tree transport and storage follow.

STANDARD 1-33. All tree trunks shall be wrapped during transport, storage, and installation. Trunk wrapping shall be removed immediately after installation.

STANDARD 1-34. Trees shall only be lifted or moved by grasping the sides or bottom of the root ball, the planting container, or the straps surrounding the root ball, and shall not be lifted or moved by the trunk.

STANDARD 1-35. All trees shall be covered by a mesh tarp while being transported to avoid drying out the roots, bark, buds, and leaves, unless they are transported in an enclosed vehicle.

STANDARD 1-36. Root balls shall remain moist, but not wet, during transport and storage.

STANDARD 1-37. Trees shall be stored upright at the planting site and not on their sides.

Tree Planting Standards

The next step in the process of establishing a tree is the actual placement of the tree in the ground. If planted correctly and well-maintained, a tree will thrive. If not planted correctly, it could easily die within the first year, or struggle for years in poor health before eventually dying. To encourage the survival of newly planted trees the following standards are required.

STANDARD 1-38. The following tree planting and mulching detail shall appear on all tree conservation plans.

TREE PLANTING

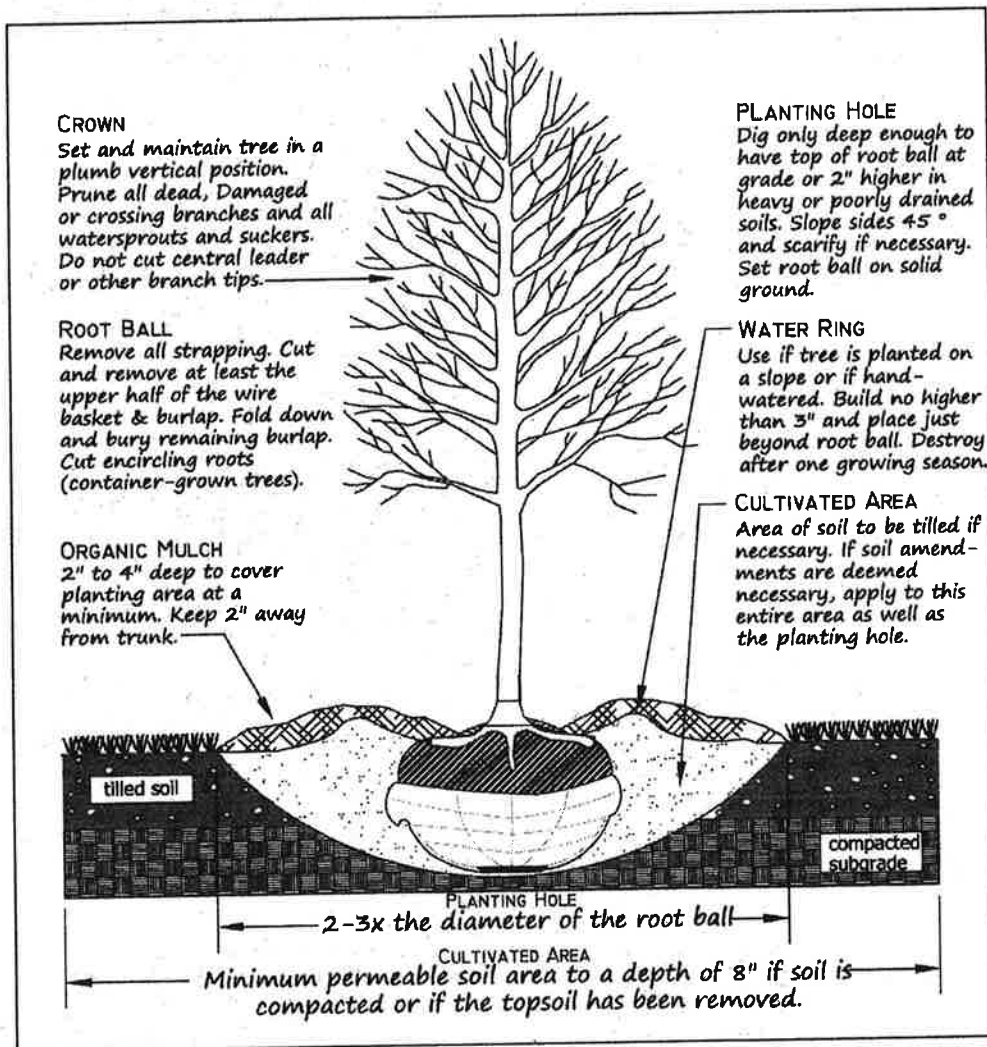


Figure 1. Typical Tree Planting and Mulching Detail

STANDARD 1-39. All tree planting shall be done in accordance with ANSI A300 American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices (Transplanting) (2005).

STANDARD 1-40. The person responsible for excavating the soil for tree planting is responsible for giving notice to the Utilities Protection Center at 1-800-282-7411 at least 72 hours, excluding weekends and holidays, prior to commencing work so that the locations of all utilities in the area can be marked.

STANDARD 1-41. The tree roots, trunk, and limbs should be protected from mechanical damage during the planting process. Do not remove trunk wrapping until the tree is in the ground.

STANDARD 1-42. The width of the planting hole shall be at least twice the width of the root ball in non-compacted, native soil. In compacted soil or in areas where the topsoil has been removed, the width of the prepared area shall be equal to the minimum permeable soil area (see Site Preparation Standards).

STANDARD 1-43. The depth of the planting hole shall be no greater than the height of the root ball. Soil above the root flare, from being deeply planted in the nursery or during harvest, shall not be included in the ball height measurement.

STANDARD 1-44. The soil at the bottom of the planting hole shall remain undisturbed to avoid settling of the tree after planting resulting in an unacceptable depth.

STANDARD 1-45. The sides of the planting hole shall be sloped inward toward the bottom of the hole, and the sides should be roughened to encourage root penetration into the surrounding, undisturbed soil.

STANDARD 1-46. Trees shall be planted at a depth such that their topmost, first order roots are no more than 2 inches below ground level.

STANDARD 1-47. Do not plant trees on mounds above the general grade of the site unless the trees are planted on a berm that serves as a buffer.

STANDARD 1-48. All straps, twine, plastic flagging, trunk wrapping, and tags shall be removed from the root ball, tree trunk, and crown.

STANDARD 1-49. The upper half of both the burlap and the wire basket shall be removed in their entirety from the tree and the planting hole. The remainder of the wire basket shall be bent down and the burlap pushed down into the bottom of the planting hole.

It is unacceptable for burlap to extend out of the planting hole and above ground. If the burlap has been treated for decay resistance, is plastic, or is non-biodegradable then it shall be removed in its entirety.

STANDARD 1-50. The hole shall be backfilled with the native soil to encourage rooting outside of the planting hole. No soil amendments, such as peat moss or fertilizer, shall be added to the planting hole, except that organic matter may be incorporated up to 5% by volume by tilling into the entire minimum permeable soil area.

STANDARD 1-51. Soil shall not be added on top of the root ball unless the first order roots are exposed.

STANDARD 1-52. The soil around the root ball should be watered when the planting hole is half full and then again when it is full to settle the soil around the roots. Do not compact the fill soil except by watering or lightly tamping. Check the tree within days after planting for settling of the soil and add additional soil if necessary around the root ball.

STANDARD 1-53. Do not construct a soil ring around the tree to retain water unless the tree is on a slope and water runoff is otherwise unavoidable or if the tree is to be hand watered. If a soil ring is used it shall be constructed just outside the root ball and shall be removed after the first full growing season.

Mulch shall be applied in an even layer 3 to 4 inches thick and if possible out to the edges of the critical root zone.

STANDARD 1-54. Mulch shall be kept at least 2 inches away from the trunk and the mulch area shall cover, at a minimum, the planting hole.

STANDARD 1-55. No turf or plants other than the tree shall be allowed within the minimum mulched areas.

STANDARD 1-56. All newly planted trees shall be mulched throughout the establishment period, with mulch re-applied annually in late winter.

STANDARD 1-57. Approved mulch materials include only organic materials such as a tree's own leaves (best), pine straw, compost, or aged wood chips (at least 3 months).

The use of grass clippings, large pieces of pine bark, plastic sheeting, landscape fabric, large rocks or gravel is prohibited.

STANDARD 1-58. A contact only herbicide may be applied to the turf and other herbaceous vegetation within the area where mulch will be applied. Weeds that come up through the mulch can be removed by hand or using additional applications of contact herbicides or hand removal.

STANDARD 1-59. Mowers and string weed trimmers are prohibited within the mulch beds.

STANDARD 1-60. The following tree anchoring detail shall appear on all tree conservation plans.

TREE ANCHORING
For trees larger than 2 inches caliper

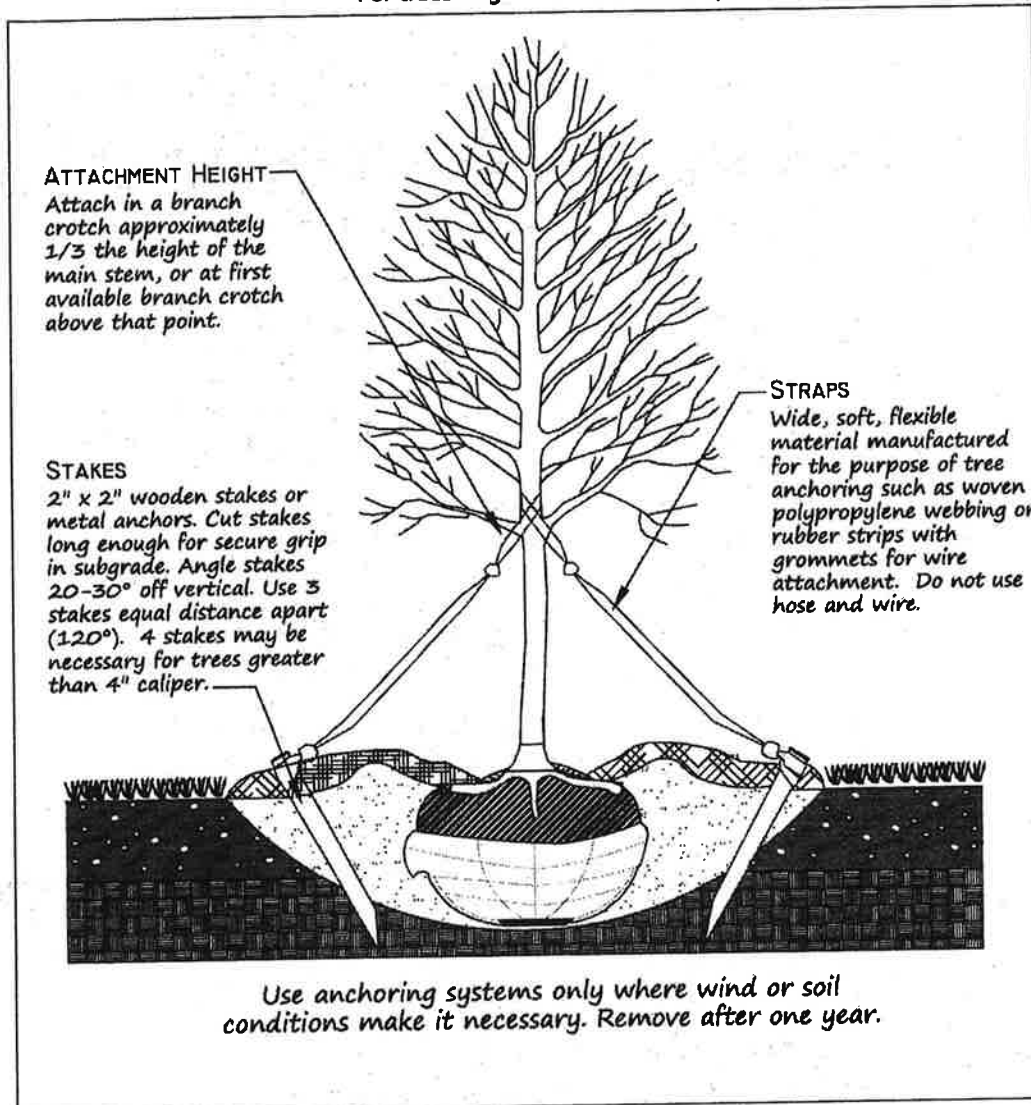


Figure 2. Typical Tree Anchoring Detail

STANDARD 1-61. Trees shall not be anchored unless they are subject to blowing over in high winds. Trees with insufficient roots or root damage and those unable to stand upright on their own are not acceptable and shall not be planted.

STANDARD 1-62. Trees that require staking shall be anchored using 2"x2" wooden stakes or metal anchors. Stakes shall be long enough for secure grip in subgrade and angled 20-30 degrees off vertical away from tree. Use three stakes placed equal distance apart (120 degrees). Four stakes may be necessary for trees greater than 4" caliper.

STANDARD 1-63. Tree tying material shall be a minimum ¾" wide soft, flexible material manufactured for the purpose of tree anchoring such as polypropylene or nylon webbing or rubber strips with grommets for wire attachment. Do not use wire and hose, string, or rope.

STANDARD 1-64. Attach the tree tying material in a branch crotch approximately 1/3 the height of the main trunk or at the first available branch crotch above that point. Allow for some trunk flexibility by tying loosely to tree.

STANDARD 1-65. Tree anchoring systems shall be removed before the second growing season.

New Tree Maintenance Standards

New trees require substantial care after planting to help them become well established. Their future value will be directly related to the amount of care they receive during the establishment period, generally considered to be the first 3 years after planting. These years are dedicated to stabilizing the tree and creating ideal conditions for root and shoot growth. Standards for new tree maintenance follow.

STANDARD 1-66. Trees shall be watered daily during the first week after planting, and then weekly throughout the first growing season in the absence of adequate rainfall (1 inch per week). Wet the soil 2 to 3 feet around the root ball in addition to the root ball, applying the equivalent of 1 inch of rainfall at each watering (10 to 20 gallons). Monitor the moisture in the root ball to avoid over- or under-watering.

STANDARD 1-67. Water bags, rings, or other watering devices may be used. These devices shall be removed by the second growing season since roots should have expanded out beyond the original root ball.

STANDARD 1-68. No fertilizer shall be applied to the rooting zone within the first year after planting. Trees may be fertilized after their first growing season according to standards (see Tree Fertilization Standards).

STANDARD 1-69. Mulch trees according to standards immediately after planting and annually during the establishment period in the late winter prior to leaf-out (see Mulching Standards).

STANDARD 1-70. No pruning other than the removal of dead, diseased, dying, crossed, broken, or rubbing branches shall be done at time of planting or prior to the first winter after planting. Thereafter, trees shall be pruned regularly to improve health and structure. All pruning shall be done according to standards (see Tree Pruning Standards).

STANDARD 1-71. Tree anchoring systems (stakes and ties), if installed, shall be removed by the beginning of the second growing season.

STANDARD 1-72. Tree roots, trunks, and limbs shall be protected from damage at all times.

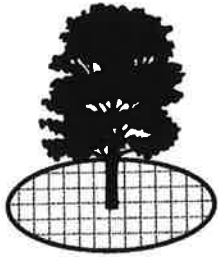
STANDARD 1-73. Mowers and string weed trimmers shall be kept away from tree trunks to avoid wounding tree trunks and shall not be allowed within mulched areas.

STANDARD 1-74. Trees shall be inspected at the end of each growing season. At the end of the establishment period (end of the third growing season) a letter shall be submitted by November 1 to the Tree Board stating the health and condition of all planted trees.

STANDARD 1-75. Trees found to be dead or unhealthy during the establishment inspection shall be replaced within six months during the planting season.

STANDARD 1-76. A 3-year tree maintenance schedule for newly planted trees shall appear on all tree conservation plans and shall include the following information.

1. Name of person(s) responsible for tree maintenance with contact information (telephone, e-mail address).
2. Irrigation schedule, frequency, and method.
3. Scheduled dates of mulching, materials to be used, and depth and width of mulch rings.
4. Scheduled dates of annual inspections to check tree maintenance needs.
5. Scheduled date of removal for tree anchoring systems (stakes and ties).
6. Trees shall be inspected at the end of each growing season. At the end of the establishment period (end of the third growing season) a letter shall be submitted by November 1 to the Tree Board stating the health and condition of all planted trees.



Chapter 2. Tree Conservation

It is the city's intent to achieve and maintain a healthy and abundant tree canopy that covers 60 percent of the entire city. Achieving this goal will require the establishment of new trees as well as the conservation of existing trees.

The conservation of existing trees is the most cost-effective means of achieving tree canopy cover requirements for new developments and making a contribution to the city's overall goal. Existing trees, especially large canopy trees, are also the most effective in providing environmental and economic benefits to the community. The tree ordinance requires a minimum amount of tree canopy cover be present on each site, and also requires that a portion of this canopy come from tree conservation.

Tree Canopy Cover Credit Standards for Conserved Trees

Conserved trees, tree groups, and forested areas are eligible for tree canopy cover credit in accordance with the following standards.

STANDARD 2-1. Only healthy trees are eligible for tree canopy cover credit.

STANDARD 2-2. Only trees that are protected according to standards are eligible for tree canopy cover credit.

STANDARD 2-3. Tree conservation areas as shown on approved plans shall remain as tree conservation areas in perpetuity.

STANDARD 2-4. When conserved trees die or must be removed to reduce risk, replacement trees shall be established in the area to the extent that tree canopy cover requirements continue to be satisfied.

STANDARD 2-5. For individual trees, the amount of tree canopy cover credit is either the standard credit listed in the Official Tree Species List or the actual square foot area of the projection of the tree canopy onto the ground, whichever is larger.

The actual canopy must be measured in the field and may be calculated as the area of a circle using the average diameter of the tree's crown. To determine the average diameter of the tree's crown, first measure the widest diameter, and then measure the diameter perpendicular to the widest diameter. Add these diameters together and divide by 2. Divide the average diameter by 2 to get the average radius.

EXAMPLE

The formula for calculating the area of a circle is the constant pi (3.14) times the radius squared.

$$\text{Area in square feet} = 3.14 * \text{radius}^2$$

For example, if the average diameter of a water oak tree's crown is 50 feet (60 feet in one direction, and 40 feet in a perpendicular direction), then the radius is 25 feet.

The actual tree canopy cover area would then be:

$$\text{Area} = 3.14 * (25 \text{ feet} * 25 \text{ feet}) = 1,962.5 \text{ square feet}$$

The result should be rounded up to the next whole foot. In this example the credit would be rounded up to 1963 square feet. In this case, by taking the actual measurement of the existing tree, an additional 163 square feet of tree canopy cover credit is gained.

STANDARD 2-6. The amount of tree canopy cover credit given to a group of trees or forested area is the actual amount of total land area covered by the combined canopies.

The area of tree canopy shall be measured during the site survey and the boundaries shown on the *Tree Conservation Plan*. The boundaries of conservation areas extend out to the edge of the canopy of the trees along the edge of the group or forested area. The boundaries may be generalized on the plan.

STANDARD 2-7. The natural groundcover of conserved forested areas shall remain undisturbed. Grubbing, grading, brush clearing, tilling, or the installation of turf or non-native herbaceous plants within the tree conservation area is prohibited.

Tree Conservation Plan Standards

As stated in the tree ordinance, the tree conservation plan must include information on showing how minimum tree canopy cover requirements will be met with conserved and established trees.

STANDARD 2-8. The amount of tree canopy cover required and proposed by type (planted and conserved) shall be calculated and shown on the tree conservation plan in both percent and square foot area. A chart that shows how tree canopy cover requirements shall be met is required on the plan.

The chart must include the following information:

- Conserved trees by species, DBH, and tree canopy cover credit (one tree, group, or area per line)
- Number of proposed trees by species, caliper or height, and tree canopy cover credit (one species per line)
- Number of trees in frontage areas, parking lots, and beneath overhead utility lines
- Total conserved tree canopy cover area for each tree, group, or forested area
- Total proposed tree canopy cover area for each species
- Summary of total tree canopy cover

EXAMPLE

Table 3 shows a sample chart for a site that is 2.1 acres in size (91,476 square feet) and zoned office-institutional (OI). The total tree canopy cover required is 50 percent, with 20 percent that must originate from conservation and the other 30 percent that will originate from established trees. This is equivalent to 45,738 square feet of total tree canopy cover ($2.1 * 43,560 * .5$), with 18,295 square feet ($2.1 * 43,560 * .2$) that must be conserved, and 27,443 square feet ($2.1 * 43,560 * .3$) that must be established.

Table 3. Tree Canopy Cover Summary

<u>Species Conserved</u>	Canopy Credit (sq. ft)	Number of Trees		DBH (conserved)	Conserved Canopy Cover(sq ft)*	% Canopy cover	% Canopy Cover req'd
Oak, Water	2,350	1		24"	7,050		
Oak, Water	1,900	1		18"	5,700		
Conserved Group	N/A	N/A		N/A	6,000		
Total:					18,750	20.5%	20%
*three (3) times actual for trees 18 inches DBH and greater							
<u>Species Proposed</u>	Canopy Credit (sq ft)	Number of Trees / % genus		Caliper/ Height (planted)	Planted Canopy Cover (sq ft)	% Canopy Cover	% Canopy Cover req'd
<i>Acer rubrum</i> Maple, Red	900	6	18.18	2" cal.	5,400		
<i>Cornus Florida</i> Dogwood	150	4	12.12	5' ht.	600		
<i>Lagerstroemia indica</i> Crapemyrtle 'Natchez'	150	8	24.24	6' ht.	1,200		
<i>Quercus nuttalli</i> Oak, Nuttall	1,600	3	15.15	2" cal.	4,800		
<i>Quercus phellos</i> Oak, willow	1,600	2		3" cal.	3,200		
<i>Ulmus parviflora</i> Elm, Chinese	900	5	15.15	2" cal.	4,500		
<i>Zelkova</i>	1,600	5	15.15	2" cal.	8,000		
TOTAL		33	99.99%		27,700	30.3%	30%
Total conserved + proposed canopy cover					46,450	50.8%	50%

Frontage: (200 l.f.) * 1 tree / 40 l.f. = 5 trees:

Satisfied by 5 oaks planted along street frontage of property

Parking: (21,000 s.f.) canopy coverage required (50%) = 10,500 sf req.:

Satisfied by (5) zelkova in landscape islands (8,000 at 100%), and 6 maples in perimeter of parking (5,400 at 50%= 2,700) for a total of 10,700 sf

City Tree Fund Standards

The City Tree Fund has been established as a mechanism for maintaining the city's tree canopy cover. Activities that negatively affect the city's tree canopy cover shall be counteracted by expenditures from the City Tree Fund according to the following standards.

STANDARD 2-9. When a violation of the tree ordinance exists and a fine is levied the fine shall be paid to the City Tree Fund.

STANDARD 2-10. When the city has wholly or partially waived the tree conservation requirement, a contribution to the City Tree Fund in lieu of the conservation shall be required in the amount of \$300 for every 1,600 square feet of tree canopy cover not conserved.

STANDARD 2-11. When the city has wholly or partially waived the tree canopy cover requirement, a contribution to the City Tree Fund in lieu of the tree canopy cover shall be required in the amount of \$300 for every 1,600 square feet of canopy not established.

STANDARD 2-12. When a city tree is damaged or destroyed the person responsible for the damage is required to reimburse the city for the value of the tree as described in the tree ordinance; the reimbursement shall be deposited to the City Tree Fund.

EXAMPLE

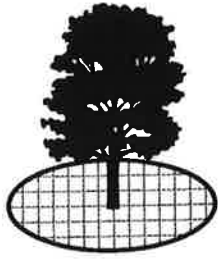
If 10 percent tree conservation is required on a 1 acre site, the total area of tree canopy cover that must originate from tree conservation is 4,356 square feet, as calculated below.

$$43,560 \text{ square feet} \times .10 = 4,356 \text{ square feet conserved tree canopy required}$$

If no conservation is proposed and the requirement is waived, then the amount of the contribution to the tree fund is \$810, as calculated below.

$$(4,356 \text{ square feet} / 1,600 \text{ square feet}) = 2.7225 \text{ (should be rounded to 1 decimal place)}$$

$$2.7 \times \$300 = \$810$$



Chapter 3. Tree Protection

Trees can only live a long and healthy life if they are continually protected from damage to their roots, trunk, limbs, and crown. Damage takes only a few seconds, as in the case of a lightning strike, or a few minutes, in the case of soil trenching and root damage. A tree's reaction to these and other types of damage is not always immediate. Often it takes a tree 1 to 5 years to die after damage occurs, after it has used up all of its energy reserves to seal off damage, resist insects and diseases, and continue to grow. Poor planning or carelessness may kill a tree that has survived and adjusted to other changes in its environment for 100 years or more.

There are two (2) types of protection that benefit trees. One is passive protection which is constant and ongoing throughout the life of a tree. The second type of protection is active and is done in advance of site disturbance, including any event or activity that is potentially harmful to a tree, such as building construction or maintenance, utility installation or maintenance, increase or concentration in pedestrian or vehicular traffic, or any other site activities that may encroach into the tree protection zone. Active protection requires planning, preparation, monitoring, and follow-up care.

Tree Protection Standards

STANDARD 3-1. All trees regulated by the tree ordinance shall be protected from damage to their roots, trunk, and crown within the tree protection zone and minimum permeable soil area.

STANDARD 3-2. Protection shall begin when a tree is planted and shall continue throughout a tree's life.

STANDARD 3-3. The tree protection zone shall be continually expanded to include the entire CRZ as a tree grows.

STANDARD 3-4. Trees to be conserved on development sites shall be protected prior to site disturbance by sturdy fencing erected around the trees at the boundary of the CRZ, which extends out from the trunk a distance of 1.25 feet for every one inch in DBH or to the drip line. For groups of trees or forested areas, the tree protection zone shall be the land covered by the combined canopies. The fencing shall remain undisturbed until site disturbance is completed.

STANDARD 3-5. Prior to any potentially harmful activity that will occur within 15 feet of a city tree's tree protection zone, tree protection fencing shall be installed at the critical root zone by the individual proposing the activity.

STANDARD 3-6. The following tree protection detail shall appear on all tree conservation plans.

TREE PROTECTION FENCE

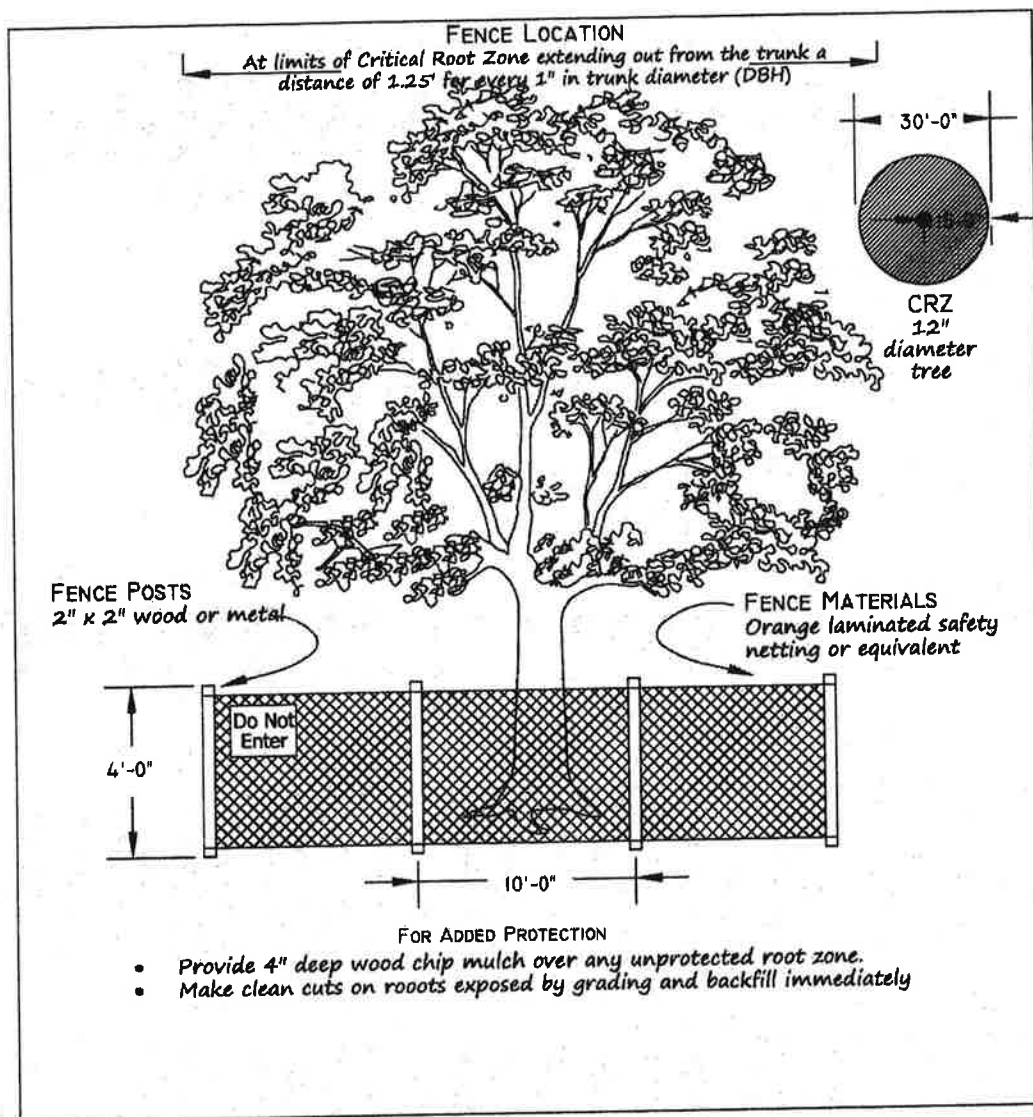


Figure 3. Typical Tree Protection Fencing Detail

STANDARD 3-7. Tree protection fencing shall be a minimum of 4 feet high and shall be high visibility orange polyethylene or chain link. Fencing shall be installed using either metal fence posts or two-by-two lumber.

STANDARD 3-8. An easily visible, plastic laminated sign identifying the area as a tree protection zone and including the phrase "DO NOT ENTER" shall be erected every 30 feet around the perimeter of the fencing, and on at least two (2) opposite sides.

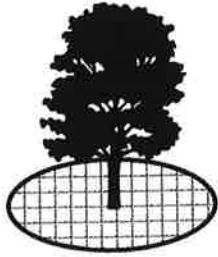
STANDARD 3-9. The following activities are prohibited within the tree protection zone and minimum permeable soil area:

- Soil compaction from heavy equipment and vehicle traffic, pedestrian traffic, or materials storage
- Soil contamination from equipment washouts, concrete, paint, oil, grease, vehicle fluids, and other contaminants
- Grubbing of understory vegetation using heavy equipment (hand removal is allowed)
- Planting or cultivation of invasive trees, shrubs, and vines, including but not limited to Chinese privet, wisteria, English ivy, and other species
- Removal of topsoil and compaction of subsoil
- Grade changes including soil cuts and backfill
- Trenching for utility line installation or repair, or irrigation system installation or any other purpose
- Paving over a tree's root zone for parking lots, roadways, driveways, sidewalks, plazas, and patios
- Fires
- Placing nails, screws, wires, and spikes into trunks for any reason including, but not limited to, attaching mail boxes, signs, lighting, or other structures
- Mowing or weed trimming within the mulched area of newly planted trees.
- Placement of temporary structures including, but not limited to, offices, buildings, structures, and portable toilets
- Materials and equipment storage

STANDARD 3-10. Tree limbs that extend outside the CRZ may be pruned according to standards to reduce chance of breakage during construction activities.

STANDARD 3-11. Make clean cuts on all roots exposed by grading (outside the CRZ) and backfill immediately.

STANDARD 3-12. During any activities that may wound a tree's trunk or major scaffold limb, the tree's trunk or limb should be wrapped with impact resistant materials to eliminate damage to the bark or wood.



Chapter 4. Tree Maintenance

There are many activities involved in ongoing tree maintenance, but the primary maintenance activities considered essential for maintaining tree health are:

- Mulching
- Irrigation
- Pruning

Standards for these activities and for tree fertilization in addition are included in this chapter. Additional information on and standards for other tree maintenance activities are available from the sources listed in *Appendix C*.

Tree Mulching Standards

Mulch provides many benefits, including conservation of soil moisture, moderation of soil temperatures, improvement of soil texture and fertility, delineation of the minimum permeable soil area, and reduction in turf and mowing time.

Mulch is simple to apply and mulch materials are often readily available, sometimes at little to no cost. However, if mulch is applied incorrectly or unsuitable materials are used, then serious consequences to the tree can result. Commonly seen mistakes made in applying mulch and the consequences of these mistakes include:

- Mulch piled up around the stem can promote trunk decay and damage by insects, diseases, or rodents and encourage stem encircling and girdling roots.
- Mulch materials such as rocks and gravel can increase soil temperatures as they absorb heat.
- Impervious materials such as plastic or fine landscape fabric can reduce or eliminate water penetration, slow down or eliminate the exchange of gases between the air and the soil, and increase soil temperatures through heat absorption.

STANDARD 4-1. Mulch shall be applied in an even layer 2 to 4 inches thick and if possible out to the edges of the critical root zone.

STANDARD 4-2. Mulch shall be kept at least 2 inches away from the trunk.

STANDARD 4-3. No turf or plants other than the tree shall be allowed within the minimum mulched areas.

STANDARD 4-4. All newly planted trees shall be mulched throughout the establishment period, with mulch re-applied annually in late winter.

STANDARD 4-5. Approved mulch materials include only organic materials such as a tree's own leaves (best), pine straw, compost, or aged wood chips (at least 3 months).

STANDARD 4-6. The use of grass clippings, large pieces of pine bark, plastic sheeting, landscape fabric, large rocks or gravel is prohibited.

STANDARD 4-7. A contact only herbicide may be applied to the turf and other herbaceous vegetation within the area where mulch will be applied. Weeds that come up through the mulch can be removed by hand or using additional applications of contact herbicides or hand removal.

STANDARD 4-8. The use of mowers and string weed trimmers are prohibited within the mulch beds.

Tree Irrigation Standards

Adequate water is critical to the survival of newly planted trees. During times of low rainfall and drought conditions irrigation is also critical for well-established trees and trees that have sustained root damage. Irrigate trees according to the following standards.

STANDARD 4-9. In the absence of adequate rainfall, new trees shall be watered daily for the first week and weekly thereafter during the first growing season. Weekly applications of water shall be equivalent to 1 inch of rainfall.

STANDARD 4-10. In the second and third growing seasons, new trees shall be watered weekly in the absence of adequate rainfall, but water shall be applied beyond the original root ball in an area up to 3 feet around the trunk in the second growing season and 6 feet around the trunk in the third growing season.

STANDARD 4-11. In periods of drought if local water restrictions permit individual and small groups of conserved trees shall be watered weekly to the degree that moisture penetrates to a depth of 8 inches.

STANDARD 4-12. Trees may be watered by hand, with a drip irrigation system, or with soaker hoses placed on the soil or mulch surface.

STANDARD 4-13. Repeated wetting of the tree trunk during irrigation is prohibited.

Tree Pruning Standards

Regular pruning of regulated trees to improve tree structure, maintain tree health, and maintain clearance for pedestrians, vehicles, utilities, buildings, and other hardscape and infrastructure is required. All pruning shall be done according to the following standards.

STANDARD 4-14. All pruning shall be done in accordance with ANSI Z133.1 American National Standard for Arboricultural Operations – Safety Requirements (2006) and ANSI A300 American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices (Pruning) (2001).

STANDARD 4-15. Tree topping is prohibited.

STANDARD 4-16. The city may require corrective pruning or removal of any tree pruned contrary to standards.

STANDARD 4-17. The pruning of any and all city trees shall be supervised by an ISA Certified Arborist. While not required, it is recommended that the pruning of regulated trees on private property also be supervised by an ISA Certified Arborist. Arborist certification can be verified at <http://www.isa-arbor.com>.

STANDARD 4-18. For newly planted trees at time of planting and during the first full growing season pruning shall be limited to the removal of dead, diseased, dying, crossed, broken, rubbing, or otherwise objectionable branches.

STANDARD 4-19. For newly planted trees begin an annual program of pruning in the winter after the first growing season to “train” their form, develop strong branch structure, and preserve tree health.

STANDARD 4-20. Prune trees only in the dormant season (preferred) or in mid-summer after leaf expansion has occurred and growth has slowed. Trees may be pruned at any time of year to remove deadwood or to correct a hazard situation.

STANDARD 4-21. Prune established trees to provide 13.5 feet of vehicular clearance over roadways, driveways, and parking areas and 8 feet of pedestrian clearance over walkways, lawns, and other pedestrian areas.

STANDARD 4-22. The pruning of trees using climbing spikes or spurs is prohibited, except in emergency situations.

STANDARD 4-23. When pruning diseased limbs, equipment shall be cleaned before moving to non-diseased limbs or trees.

STANDARD 4-24. All pruning cuts shall be made just outside the branch collar. Stub cuts and flush cuts are prohibited.

STANDARD 4-25. The removal of live wood from a mature or declining tree shall be limited to the minimum amount to ensure public safety and tree health.

Tree Fertilization Standards

Most trees do not require fertilization and have access to enough phosphorus (P) and potassium (K) for normal growth. If they are growing in healthy, well-aerated soil covered with a generous layer of mulch, they should not need nitrogen (N). Nitrogen fertilization will promote growth of the tree’s crown, but this may not always be desirable. Increased top growth demands more activity by the root system and also requires more pruning. Standards for tree fertilization follow.

STANDARD 4-26. Fertilize trees in accordance with ANSI A300 American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices (Fertilization) (2004).

STANDARD 4-27. Apply fertilizer only when a nutrient deficiency has been detected through soil or leaf tissue sampling.

To check the macro-nutrient and micro-nutrient levels available to your tree, sample the soil and have it tested. The soil should be tested for nitrogen (N), phosphorus (P), and potassium (K), pH (acidity) and percent organic matter.

Leaf tissue can also be sampled for its elemental content. Contact the State of Georgia Cooperative Extension Service for more information on soil and tissue sampling and testing.

STANDARD 4-28. Maintain a soil pH of 5.0 to 7.0 for optimal nutrient uptake and tree growth.

STANDARD 4-29. Do not fertilize newly planted, drought-stressed, or severely damaged trees.

STANDARD 4-30. Apply fertilizer when the roots are actively growing—in late winter, early spring, and early summer.

STANDARD 4-31. Use slow release organic fertilizers with a salt index of less than 50.

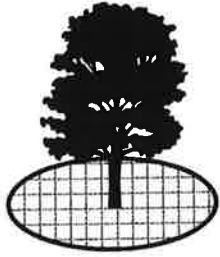
STANDARD 4-32. Apply slow release fertilizers at a rate between 2 and 4 pounds of actual nitrogen per 1000 square feet of root area.

STANDARD 4-33. Apply fertilizer beneath the dripline of trees, but only once to overlapping root zones.

STANDARD 4-34. Make sub-surface applications of fertilizer where turf or groundcover exists beneath trees, or where runoff is likely.

STANDARD 4-35. Make sub-surface applications of fertilizer 4-12 inches deep, in holes that are 2-4 inches in diameter and spaced 12 – 36 inches apart. Fertilizer should not be closer than 2 inches to the surface.

STANDARD 4-36. Do not use fertilizer injections and implants for routine fertilization.



Chapter 5. Tree Removal

Trees growing in areas where people, houses, cars, utility lines and other infrastructure exist will come to a point in their lives when they have to be removed. This point may come earlier or later in a tree's life based upon the maintenance and protection it receives.

The decision to remove a large tree may be the most difficult decision that an individual responsible for tree must make. To make the right decision, a person should first evaluate tree health and structural condition, the risk of partial or whole tree failure, and the type and frequency of targets beneath, or within falling distance of, the tree. Tree removal standards for regulated trees follow.

Tree Removal Standards

STANDARD 5-1. Any regulated tree that is dead, has an elevated risk of whole tree failure, has an insect or disease infestation that is causing tree decline and is not practical to treat, has extensive root or trunk decay, and is growing within falling distance of any structure, roadway, sidewalk, recreational facility, parking lot, gathering place, or other high value target, or is in irreconcilable conflict with infrastructure, such as but not limited to utility lines, utility poles, street rights-of-way, or buildings, shall be removed.

STANDARD 5-2. For city trees that are large, historic, or otherwise significant a public notice shall be published or placed on the tree at least 10 days prior to removal, to provide the public with information on the reasons and time frame for the removal, except when the risk of failure is such that the tree has to be removed immediately.

STANDARD 5-3. The city shall maintain a list of city trees in marginal condition and inspect these trees at least annually to insure their maintenance needs are met and public safety is maintained.

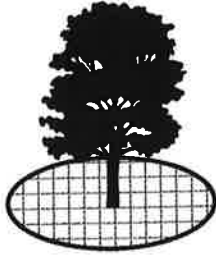
STANDARD 5-4. The removal of a regulated tree in conflict with a sign, billboard, sidewalk or driveway pavement, or other hardscape shall be prohibited without written approval of the Tree Bd.

STANDARD 5-5. The removal of trees within falling distance of overhead energized electrical power lines shall only be done by persons qualified to work within 10 feet of overhead lines.

STANDARD 5-6. Every tree removed from city street rights-of-way over 12 inches DBH shall be replaced from by two (2) trees within 2 years of removal in the same location or a nearby location.

STANDARD 5-7. City tree removal shall include the removal of any stump greater than 6 inches in diameter to a depth of 12 inches below grade. The wood chips generated from the stump grinding shall be mixed with an equal part of topsoil and replaced on the site.

STANDARD 5-8. The person responsible for excavating the soil for stump removal is responsible for giving notice to the Utilities Protection Center at 1-800-282-7411 at least 72 hours, excluding weekends and holidays, prior to commencing work so that the locations of all utilities in the area can be marked.



Appendices

Appendix A: ANSI Standards for Tree Care Operations and Best Management Practices

The following professional arboricultural standards adopted by the American National Standards Institute (ANSI), and the accompanying Best Management Practices published by the International Society of Arboriculture are available for review at www.isa-arbor.com, The International Society of Arboriculture's website¹.

ANSI Standards for Tree Care Operations

- ANSI Z60.1 American National Standard for Nursery Stock (2004).
- ANSI Z133.1 American National Standard for Arboricultural Operations – Safety Requirements (2006).
- ANSI A300 American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices (Pruning) (2001).
- ANSI A300 American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices (Tree Lightning Protection Systems) (2002).
- ANSI A300 American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices (Fertilization) (2004).
- ANSI A300 American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices (Transplanting) (2005).
- ANSI A300 American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices (Integrated Vegetation Management a. Electric Utility Right-of-way) (2005).
- ANSI A300 American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, and Construction) (2005).
- ANSI A300 American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices (Supplemental Support Systems) (2006).

¹ Available for purchase at <http://www.isasouthern.org>, the website of the Southern Chapter of the International Society of Arboriculture, or at <http://www.isa-arbor.com>, the International Society of Arboriculture's website.

ISA Best Management Practices

- Integrated Pest Management
- Integrated Vegetation Management
- Managing Trees During Construction
- Tree and Shrub Fertilization
- Tree Inventories
- Tree Lightning Protection Systems
- Tree Planting (English and Spanish)
- Tree Pruning (English and Spanish)
- Tree Support Systems
- Utility Pruning of Trees (English and Spanish)

Appendix B: Official Tree Species List for the City of Social Circle

The city's Official Tree Species List is located in Table B on the following pages. Included in the list, along with the tree's common and Latin names, are the typical canopy sizes and mature height categories for each species, along with the locations where each species are approved for planting to satisfy tree ordinance requirements. In most cases, tree species are listed, but in some cases only the genus is listed. Approved cultivars and varieties are listed for some species. The use of other cultivars and varieties are subject to the approval of the Tree Board.

The tree canopy size categories in the list refer to the amount of shade the mature tree projects onto the ground when it is in full leaf, and is categorized as very small, small, medium, or large, as described below.

- Very Small = very small canopy that projects an insignificant amount of shade onto the ground; 150 square feet of tree canopy cover credit
- Small = small canopy that projects a significant amount of shade onto the ground; 400 square feet of tree canopy cover credit
- Medium = medium canopy that projects a substantial amount of shade onto the ground; 900 square feet of tree canopy cover credit
- Large = large canopy that projects an expansive amount of shade onto the ground; 1,600 square feet of tree canopy cover credit

Trees with medium and large canopies are considered to be "canopy" and "shade" trees. For an individual tree, the removal of branches through pruning or the loss of large limbs and portions of the tree crown from weather related events, vandalism, or poor health, can reduce a tree's potential to provide shade and related benefits. Tree canopy cover credit will only be given to trees in good condition and structurally sound with 50% or greater of their crown living.

The trees are also categorized in the list by their typical mature height as determined by standard sources of information on tree species². The three (3) categories of typical mature height are listed below by the codes used in the species list:

- Small = small (or short) height, less than 25 feet tall at maturity
- Medium = medium height, from 25 to 50 feet tall at maturity
- Large = large (or tall) height of greater than 50 feet at maturity

The species list includes information on whether or not a species is approved for planting along street rights-of-way or frontage landscape strips, within parking lots, or beneath overhead utility lines. Outside of these three (3) types of sites, any species in the list can be planted if adequate growing space and suitable site conditions exist, and all other requirements of the tree ordinance are met.

² Dirr, Michael A. Manual of Woody Landscape Plants, and Trees of Georgia and Adjacent States

For additional information on the growing requirements and characteristics of tree species, consult the following publications and websites:

- Dirr, Michael A. Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses, Revised 1998, Stipes Publishing Company LLC, Champaign, IL.
- Brown, Claud L. and Kirkman, L. Katherine. Trees of Georgia and Adjacent States, 1990, Timber Press Inc., Portland, OR.
- University of Georgia Cooperative Extension Service, <http://www.caes.uga.edu/Extension/>
- For additional information on the Official Tree Species List contact the Social Circle Tree Board Chairman through the City Manager's office, by phone at (770)464-2380, or by e-mail at dwhite@cityofsocialcircle.org.

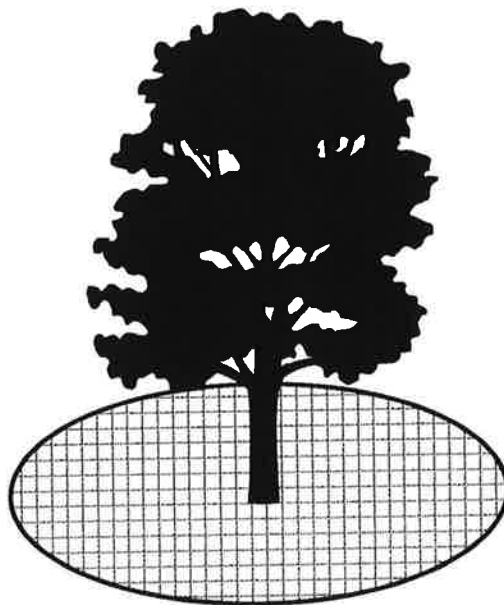


Table B. Official Tree Species List of the City of Social Circle, Georgia

SPECIES COMMON NAME	SPECIES LATIN NAME	CANOPY SIZE AND HEIGHT			APPROVED LOCATIONS		
		Canopy Size Category	Canopy Credit (sq ft)	Height Category	Street ROW/ Frontages	Within Parking Lots	Beneath Utility Lines
Ash, Green	<i>Fraxinus pennsylvanica</i>	Large	1,600	Large	Yes	No	No
Baldcypress	<i>Taxodium distichum</i>	Medium	900	Large	Yes	Yes	No
Beech, American	<i>Fagus grandifolia</i>	Large	1,600	Large	No	No	No
Birch, River	<i>Betula nigra</i>	Medium	900	Medium	Yes	No	No
Blackgum	<i>Nyssa sylvatica</i>	Medium	900	Medium	Yes	Yes	No
Catalpa, Southern	<i>Catalpa bignonioides</i>	Medium	900	Medium	No	No	No
Cedar, Deodar	<i>Cedrus deodara</i>	Medium	900	Large	No	No	No
Cedar, Japanese	<i>Cryptomeria japonica</i>	Medium	900	Large	Yes	Yes	No
Chastetree	<i>Vitex agnus-castus</i>	Very Small	150	Small	Yes	Yes	Yes
Cherry, Black	<i>Prunus serotina</i>	Medium	900	Large	No	No	No
Cherry, Flowering	<i>Prunus spp.</i>	Small	400	Small	Yes	No	Yes
Cherry laurel, Carolina	<i>Prunus caroliniana</i>	Medium	900	Medium	Yes	No	No
Crabapple, Flowering	<i>Malus spp.</i>	Small	400	Small	Yes	No	Yes
Crabapple, Southern	<i>Malus angustifolia</i>	Small	400	Small	Yes	No	Yes
Crapemyrtle, Common	<i>Lagerstroemia indica</i>	Very Small	150	Small	Yes	Yes	Yes
Cypress, Leyland	<i>Cupressocyparis leylandii</i>	Small	400	Medium	No	No	No
Dogwood, Flowering	<i>Cornus florida</i>	Small	400	Small	Yes	No	Yes
Dogwood, Kousa	<i>Cornus kousa</i>	Small	400	Small	Yes	No	Yes
Elm, American	<i>Ulmus americana</i>	Large	1,600	Large	Yes	Yes	No
Elm, Chinese	<i>Ulmus parvifolia</i>	Medium	900	Medium	Yes	Yes	No
Elm, Winged	<i>Ulmus alata</i>	Large	1,600	Large	Yes	Yes	No
Flametree, Chinese	<i>Koelreuteria bipinnata</i>	Small	400	Medium	Yes	Yes	No
Fringetree	<i>Chionanthus virginicus</i>	Very Small	150	Small	Yes	No	Yes
Fringetree, Chinese	<i>Chionanthus retusus</i>	Very Small	150	Small	Yes	No	Yes
Ginkgo (male only)	<i>Ginkgo biloba</i>	Large	1,600	Medium	No	No	No
Goldenraintree	<i>Koelreuteria paniculata</i>	Small	400	Medium	Yes	Yes	No
Hackberry, Common	<i>Celtis occidentalis</i>	Large	1,600	Large	Yes	No	No
Hickory, Mockernut	<i>Carya tomentosa</i>	Large	1,600	Large	Yes	Yes	No
Hickory, Pecan	<i>Carya illinoensis</i>	Large	1,600	Large	No	No	No
Hickory, Pignut	<i>Carya glabra</i>	Large	1,600	Large	Yes	Yes	No
Holly, American	<i>Ilex opaca</i>	Very Small	150	Medium	Yes	Yes	No
Holly, Foster's or Savannah	<i>Ilex x attenuata</i>	Very Small	150	Medium	Yes	Yes	No
Holly, Ornamental Varieties	<i>Ilex spp.</i>	Very Small	150	Small	Yes	Yes	Yes
Holly, Yaupon	<i>Ilex vomitoria</i>	Very Small	150	Small	Yes	Yes	Yes
Hophornbeam, American	<i>Ostrya virginiana</i>	Medium	900	Medium	Yes	Yes	No
Hornbeam, American	<i>Carpinus caroliniana</i>	Medium	900	Medium	Yes	Yes	No
Katsuratree	<i>Cercidiphyllum japonicum</i>	Medium	900	Medium	Yes	Yes	No
Magnolia, Southern	<i>Magnolia grandiflora</i>	Large	1,600	Large	Yes	No	No
Magnolia, Star	<i>Magnolia stellata</i>	Very Small	150	Small	Yes	Yes	Yes
Magnolia, Sweetbay	<i>Magnolia virginiana</i>	Medium	900	Medium	Yes	Yes	No
Maple, Chalk	<i>Acer leucoderme</i>	Medium	900	Medium	Yes	Yes	No

Table B. Official Tree Species List of the City of Social Circle, Georgia

SPECIES COMMON NAME	SPECIES LATIN NAME	CANOPY SIZE AND HEIGHT			APPROVED LOCATIONS		
		Canopy Size Category	Canopy Credit (sq ft)	Height Category	Street ROW/ Frontages	Within Parking Lots	Beneath Utility Lines
Maple, Japanese	<i>Acer palmatum</i>	Small	400	Small	Yes	No	Yes
Maple, Red	<i>Acer rubrum</i>	Medium	900	Medium	Yes	Yes	No
Maple, Southern Sugar	<i>Acer barbatum</i>	Medium	900	Medium	Yes	Yes	No
Maple, Sugar	<i>Acer saccharum</i>	Large	1,600	Large	Yes	Yes	No
Maple, Trident	<i>Acer buergeranum</i>	Small	400	Medium	Yes	Yes	No
Oak, Cherrybark	<i>Quercus falcata</i> var. <i>pagodifolia</i>	Large	1,600	Large	Yes	Yes	No
Oak, Chestnut	<i>Quercus prinus</i>	Large	1,600	Large	Yes	Yes	No
Oak, Diamond Leaf	<i>Quercus laurifolia</i>	Large	1,600	Large	Yes	Yes	No
Oak, Georgia	<i>Quercus georgiana</i>	Small	400	Medium	Yes	Yes	No
Oak, Laurel	<i>Quercus hemisphaerica</i>	Large	1,600	Large	Yes	Yes	No
Oak, Northern Red	<i>Quercus rubra</i>	Large	1,600	Large	Yes	Yes	No
Oak, Nuttall	<i>Quercus nuttalli</i>	Large	1,600	Large	Yes	Yes	No
Oak, Oglethorpe	<i>Quercus oglethorpensis</i>	Large	1,600	Large	Yes	Yes	No
Oak, Overcup	<i>Quercus lyrata</i>	Large	1,600	Large	Yes	Yes	No
Oak, Post	<i>Quercus stellata</i>	Large	1,600	Large	Yes	Yes	No
Oak, Scarlet	<i>Quercus coccinea</i>	Large	1,600	Large	Yes	Yes	No
Oak, Shumard	<i>Quercus shumardii</i>	Large	1,600	Large	Yes	Yes	No
Oak, Southern Red	<i>Quercus falcata</i>	Large	1,600	Large	Yes	Yes	No
Oak, Swamp Chestnut	<i>Quercus michauxii</i>	Large	1,600	Large	Yes	Yes	No
Oak, Swamp White	<i>Quercus bicolor</i>	Large	1,600	Large	Yes	Yes	No
Oak, Water	<i>Quercus nigra</i>	Large	1,600	Large	Yes	Yes	No
Oak, White	<i>Quercus alba</i>	Large	1,600	Large	Yes	Yes	No
Oak, Willow	<i>Quercus phellos</i>	Large	1,600	Large	Yes	Yes	No
Parrotia	<i>Parrotia persica</i>	Small	400	Small	Yes	Yes	Yes
Persimmon, Common	<i>Diospyros virginiana</i>	Medium	900	Large	Yes	Yes	No
Pine, Loblolly	<i>Pinus taeda</i>	Large	1,600	Large	Yes	Yes	No
Pine, Shortleaf	<i>Pinus echinata</i>	Large	1,600	Large	Yes	Yes	No
Pine, Virginia	<i>Pinus virginiana</i>	Medium	900	Medium	Yes	Yes	No
Pistache, Chinese	<i>Pistacia chinensis</i>	Medium	900	Medium	Yes	Yes	No
Planetree, London	<i>Platanus x acerifolia</i>	Large	1,600	Large	Yes	Yes	Yes
Plum, Chickasaw	<i>Prunus angustifolia</i>	Very Small	150	Small	Yes	Yes	Yes
Plum, Purpleleaf	<i>Prunus cerasifera</i>	Small	400	Small	Yes	Yes	Yes
Pondcypress	<i>Taxodium distichum</i> var. <i>nutans</i>	Medium	900	Large	Yes	Yes	No
Redbud, Eastern	<i>Cercis canadensis</i>	Small	400	Small	Yes	Yes	Yes
Redbud, Western	<i>Cercis reniformis</i>	Small	400	Small	Yes	Yes	Yes
Redcedar, Eastern	<i>Juniperus virginiana</i>	Medium	900	Medium	Yes	Yes	No
Redwood, Dawn	<i>Metasequoia glyptostroboides</i>	Medium	900	Large	Yes	Yes	No
Serviceberry, Downy	<i>Amelanchier arborea</i>	Small	400	Small	Yes	No	Yes
Silverbell, Carolina	<i>Halesia carolina</i>	Medium	900	Medium	Yes	No	No
Smoketree, American	<i>Cotinus obovatus</i>	Very Small	150	Small	Yes	No	Yes
Smoketree, Common	<i>Cotinus coggygria</i>	Very Small	150	Small	Yes	No	Yes
Yellowpoplar	<i>Liriodendron tulipifera</i>	Large	1,600	Large	No	No	No

Table B. Official Tree Species List of the City of Social Circle, Georgia

SPECIES COMMON NAME	SPECIES LATIN NAME	CANOPY SIZE AND HEIGHT			APPROVED LOCATIONS		
		Canopy Size Category	Canopy Credit (sq ft)	Height Category	Street ROW/ Frontages	Within Parking Lots	Beneath Utility Lines
Sourwood	<i>Oxydendrum arboreum</i>	Medium	900	Medium	Yes	No	No
Sugarberry	<i>Celtis laevigata</i>	Large	1,600	Large	Yes	No	No
Sweetgum	<i>Liquidambar styraciflua</i>	Large	1,600	Large	No	No	No
Sycamore	<i>Platanus occidentalis</i>	Large	1,600	Large	Yes	Yes	No
Walnut, Black	<i>Juglans nigra</i>	Large	1,600	Large	No	No	No
Waxmyrtle, Southern	<i>Myrica cerifera</i>	Very Small	150	Small	No	No	Yes
Winterberry, Common	<i>Ilex verticillata</i>	Very Small	150	Small	Yes	Yes	Yes
Witchhazel, Common	<i>Hamamelis virginiana</i>	Small	400	Small	Yes	Yes	Yes
Yellowwood, American	<i>Cladrastis kentukea</i>	Medium	900	Medium	Yes	Yes	No
Zelkova, Japanese	<i>Zelkova serrata</i>	Large	1,600	Large	Yes	Yes	No

Appendix C: Community Forestry Information Sources

The agencies and organizations listed in Table C can provide additional information on managing community trees.

Table C. Community Forestry Information Sources

Organization and Website	Description
CITY OF SOCIAL CIRCLE http://www.socialcirclega.us	Provides official information on the Social Circle Tree Board and the management of community trees in Social Circle. Includes access to documents such as the Community Tree Management Ordinance, the Administrative and Technical Standards, and forms and checklists for implementation of the tree ordinance.
CENTER FOR URBAN FOREST RESEARCH http://wcufre.ucdavis.edu/	Results of research that provides reliable scientific evidence that trees add value to communities. Research on issues such as energy conservation, airborne pollutants, atmospheric carbon dioxide, stormwater runoff, and property values.
GEORGIA FORESTRY COMMISSION http://www.gfc.state.ga.us	Provides information on Urban and Community Forestry issues, including Tree Ordinance Development, Community Tree Benefits and Care, Tree City USA and Arbor Day programs, and the Urban/Wildland Interface. Information on the USDA Forest Service's Urban and Community Forestry Assistance Program that provides grants to municipalities and non-profit organizations can be found here. Publishes <u>Community Tree Planting and Establishment Guidelines</u> , a reference for tree planting training programs.
GEORGIA URBAN FOREST COUNCIL, INC. http://www.gufc.org	Statewide organization that conducts tree care educational programs, quarterly meetings with educational component, and an annual fall Conference and Awards program. Offers memberships with discounts to programs.
HUMAN DIMENSIONS IN URBAN FORESTRY http://www.cfr.washington.edu/research.envmind/	Features research on peoples' perceptions and behaviors regarding nature in cities. Includes research on Nature and Consumer Environments, Trees and Transportation, Civic Ecology, International Urban Greening, Urban Forestry and Human Benefits.

Table C. Community Forestry Information Sources

Organization and Website	Description
<p>INTERNATIONAL SOCIETY OF ARBORICULTURE</p> <p>http://www.isa-arbor.org</p>	<p>A worldwide professional organization dedicated to fostering a greater appreciation for trees and to promoting research, technology, and the professional practice of arboriculture. Source of information and publications on all aspects of tree care. Conducts the voluntary certification programs for arborists, utility arborists, municipal arborists, master arborists, and tree care workers.</p>
<p>NATIONAL ARBOR DAY FOUNDATION</p> <p>http://www.arborday.org</p>	<p>Organization that helps people plant and care for trees and encourages the celebration of Arbor Day. Conducts the Tree City USA and Tree City USA Growth Award programs. Provides educational programs on a variety of topics related to urban forestry. Information also on tree conservation and use.</p>
<p>SOUTHERN CENTER FOR URBAN FORESTRY RESEARCH AND INFORMATION</p> <p>http://www.urbanforestrysouth.org</p>	<p>Formed to help communities and landowners across the Southern U.S. manage trees and forests where people live, work and play through research and information transfer. Partnership project of the USDA Forest Service.</p>
<p>SOUTHERN CHAPTER OF THE INTERNATIONAL SOCIETY OF ARBORICULTURE</p> <p>http://www.isasouthern.org</p>	<p>Southern Chapter of ISA located in Mt. Airy, North Carolina. Publications available by ISA including ANSI Standards, Best Management Practices, and Arborist Certification Study Guide. Conducts an annual Conference and Trade Show in the spring.</p>
<p>UNIVERSITY OF FLORIDA DEPARTMENT OF ENVIRONMENTAL HORTICULTURE</p> <p>http://hort.ifas.ufl.edu/woody/</p>	<p>Source of information on all aspects of woody plant culture, including tree species selection, planting, pruning, and pest identification and management.</p>
<p>UNIVERSITY OF GEORGIA WARNELL SCHOOL OF FOREST RESOURCES – SERVICE AND OUTREACH</p> <p>http://www.forestry.uga.edu/warnell/service/</p>	<p>Publications on all aspects of urban and community forestry, including assessing construction damage, drought effects on trees, fertilization, tree species, storm damaged trees, tree growth, and much more.</p>