

APPENDIX 'E'
FORMAT AND CONTENT REQUIREMENTS
TREE PLAN, PROTECTION AND REPLACEMENT

SECTION 1: Tree Inventory

Pursuant to [Section 19-6.3.2 \(A\), Tree Inventory Required](#), a tree inventory shall be completed as part of an application for a final development plan, site plan permit, and grading permit. This inventory shall be in the following form:

1. An accurately measured tree survey to be undertaken and prepared by a registered land surveyor or as approved by the administrator. The survey should, at a minimum, contain the following:
 - (A) The location of all trees.
 - (B) Other relevant features, such as streams, buildings and other structures, and significant boundary features.
 - (C) To be determined by the project designer, the approximate location of trees on land adjacent to the development site whose critical root zone extends onto the subject site.
2. The tree survey shall have an accuracy of plus or minus three (3) feet and shall overlay the site plan or plat at the same scale; it shall locate all heritage trees, historic trees, and any tree(s) ten (10) inches or greater in diameter. Likewise, this survey must depict any trees being saved and applied as part of the credit unit total (trees in this category shall have a minimum diameter at breast height (DBH) of three (3) inches. The diameter of trees shall be measured 4 1/2 feet above finished grade. Dead or diseased trees shall be identified, where possible.
3. Multi-stem or groups of trees located in close proximity (within five feet of each other) may be designated as a clump of trees with the predominant species being calculated by adding the diameter of each trunk at DBH and then dividing by the number of trunks that were added together.
4. Tree Protection Plan shall be shown on tree survey or as an overlay to the site plan or plot at the same scale and shall include the following.
 - (A) Trees selected for retention (marked in a manner showing retention);
 - (B) Trees to be removed (marked in a manner to dictate removal);
 - (C) The precise location for the erection of protective barriers and any other relevant physical protection;
 - (D) The Tree Protection Zone (TPZ) fencing (marked as a hatched polygon). As shown on the tree protection fence detail from City of Greenville;
 - (E) The critical root zone of trees being protected;
 - (F) Any proposed structure that results in modifying existing site conditions must be marked on tree protection plan documents. Examples of this would be structures such as buildings, driveways, irrigation, walkways, and underground utility lines.;

(G) Typical Details provided by the City of Greenville.

5. Market price per 4" caliper Heritage or Historic Tree replacement is \$400 and shall be paid to the City of Greenville's Tree Foundation at 864-467-4350.

Pursuant to [Section 19-6.3.2 \(B\), Tree Protection and Replacement](#), all properties subject to the Section shall maintain a tree density of 15 tree credit units per acre excluding building footprint and athletic fields and courts (or pro rata portion). To that end, a landscape plan shall accompany the required inventory reflecting the manner in which the applicant intends to meet this objective via the retention, or installation, of trees meeting the requirements of the Ordinance and this Manual. Planted, replanted, or replaced trees shall have a minimum diameter of three (3) inches.

SECTION 2: Tree Credits

The following Tables shall apply:

**TABLE A. TREES SAVED:
CONVERSION FROM TREE DIAMETER IN INCHES TO TREE DENSITY UNITS FOR
TREES REMAINING ON SITE**

Diameter at Breast Height (inches)	Units	Diameter at Breast Height (inches)	Units
3	1.1	27	7.7
4	1.3	28	8.0
5	1.5	29	8.25
6	1.8	30	8.5
7	2.0	31	8.8
8	2.25	32	9.1
9	2.5	33	9.4
10	2.8	34	9.7
11	3.1	35	10.0
12	3.4	36	10.25
13	3.7	37	10.5
14	4.0	38	10.8
15	4.25	39	11.1
16	4.5	40	11.4
17	4.8	41	11.7
18	5.1	42	12.0
19	5.4	43	12.25

20	5.7	44	12.5
21	6.0	45	12.8
22	6.25	46	13.1
23	6.5	47	13.4
24	6.8	48	13.7
25	7.1	49	14.0
26	7.4	>50	14.25

**TABLE B. TREES PLANTED, REPLANTED, OR REPLACED:
CONVERSION FROM TREE DIAMETER IN INCHES TO TREE DENSITY UNITS FOR
PROPOSED NEW TREES**

Caliper (inches)	Existing Units
(Understory or Ornamental Trees Only)	0.75
3	0.9
4	1.1
5	1.3
6	1.5
7	1.8
8	2.0
9	2.25
10	2.5
11	2.8
12	3.1
13	3.4
14	3.7

Example 1: One acre must be planted after the building footprint is excluded.

The developer saves:

4 ea. 10" diameter trees worth 2.8 credits = 11.2 credits.

1 ea. 16" diameter tree worth 4.5 credits = 4.5 credits.

Total credits: 15.7

The site has met the 15 required credits by preserving (5) five existing trees on the property after the development is complete. No new trees are required to be planted.

Example 2: One acre must be planted after the building footprint is excluded.

The developer saves:

3 ea. 3" diameter trees worth 1.1 credits = 3.3 credits.

1 ea. 16" diameter tree worth 4.5 credits = 4.5 credits.

The developer plants:

5 ea. 3" diameter trees worth .9 credits = 4.5 credits.

3 ea. 4" diameter trees worth 1.1 credits = 3.3 credits.

Total credits: 15.6

The site has (12) twelve trees, 4 existing and 8 new, on the acre after the development is complete.

TABLE C. ACCEPTABLE SHADE TREE SPECIES

The administrator reserves the right to accept additional species that are not listed below

* Denotes Native Species

Native species are preferred because they are best for our soils and climate, attract a variety of wildlife, provide food and shelter for many species, require less care and watering, thrive with less fertilizer and disease control.

Common Name	Botanical Name
Ash, Green*	Fraxinus pennsylvanica
Ash, Green Georgia Gem*	Fraxinus pennsylvanica 'Oconee'
Ash, Green Patmore*	Fraxinus pennsylvanica 'Patmore'
Ash, Green Urbanite*	Fraxinus pennsylvanica 'Urbanite'
Ash, White*	Fraxinus americana
Blackgum*	Nyssa sylvatica
Chinese Pistache	Pistacia chinensis
Elm, Allee	Ulmus parvifolia 'Emer II'
Elm, Athena	Ulmus parvifolia 'Emer I'
Elm, Bosque	Ulmus parvifolia 'UPMTF'
Elm, Drake	Ulmus parvifolia 'Drake Chinese Elm'
Elm, Lacebark	Ulmus parvifolia 'Chinese Lacebark Elm'
Elm, Princeton*	Ulmus americana 'Princeton'
Elm, Slippery *	Ulmus rubra
Elm, Winged	Ulmus alata
Fort McNair Red Horse Chestnut	Aesculus x carnea 'Fort McNair'
Ginkgo, Male Only	Ginkgo biloba
Hackberry*	Celtis occidentalis
Kentucky Coffeetree	Gymnocladus dioicus
Linden, Littleleaf Greenspire	Tilia cordata

Maple, Autumn Blaze	Acer x freemanii 'Jeffers Red'
Maple, Red Autumn Flame*	Acer rubrum Autumn Flame
Maple, Red October Glory*	Acer rubrum October Glory
Maple, Red Sunset *	Acer rubrum 'Franksred'
Maple, Sugar	Acer saccharum 'Northern Sugar Maple'
Maple, Sugar Green Mountain	Acer saccharum 'Green Mountain'
Maple, Sugar Legacy	Acer saccharum 'Legacy'
Oak, Swamp White	Quercus bicolor
Oak, Darlington Laurel	Quercus hemisphaerica 'Darlington'
Oak, Live*	Quercus virginiana
Oak, Northern Red*	Quercus rubra
Oak, Nuttall	Quercus nuttalli
Oak, Overcup*	Quercus lyrata
Oak, Pin	Quercus palustris
Oak, Sawtooth	Quercus acutissima
Oak, Scarlett *	Quercus coccinea
Oak, Shumard *	Quercus shumardii
Oak, White*	Quercus alba
Oak, Willow *	Quercus phellos
Oak, Willow Hightower*	Quercus phellos 'QPSTA'
Oak, Willow Wynstar*	Quercus phellos 'QPMTF'
Pistachio, Chinese	Pistachia chinensis
Planetree, London Bloodgood	Platanus x acerifolia 'Bloodgood'
Planetree, London Yarwood	Platanus x acerifolia 'Yarwood'
River Birch*	Betula Nigra
Sycamore*	Platanus occidentalis
Sourwood*	Oxydendrum arboreum
Tulip Poplar*	Liriodendron tulipifera
Yellowwood	Cladrastis kentukea
Zelkova, Green Vase	Zelkova serrata 'Green Vase'
Zelkova, Myrimar	Zelkova serrata 'ZSFKF'
Zelkova, Village Green	Zelkova serrata 'Village Green'

TABLE D. ACCEPTABLE ONAMENTAL OR UNDERSTORY STREET TREE SPECIES

The administrator reserves the right to accept additional species that are not listed below.

To be accepted as a ornamental or understory street tree the plant must be properly pruned and maintained in a tree like form.

· Denotes Native Species

Native species are preferred because they are best for our soils and climate, attract a variety of wildlife, provide food and shelter for many species, require less care and watering, thrive with less fertilizer and disease control.

Common Name	Botanical Name
American Hornbeam *	<i>Carpinus caroliniana</i>
Cherry, Dreamcatcher	<i>Prunus</i> 'Dream Catcher'
Cherry, Okame	<i>Prunus</i> x 'Okame'
Cherry, Pink Autumn	<i>Prunus subhirtella</i> 'Autumnalis Rosea'
Crape Myrtle	<i>Lagerstroemia indica</i>
Dogwood, Flowering*	<i>Cornus florida</i>
Dogwood, Kousa	<i>Cornus kousa</i>
Dogwood, Pink Flowering*	<i>Cornus florida rubra</i>
Fringetree*	<i>Chionanthus virginicus</i>
Fringetree, Chinese	<i>Chionanthus retusus</i>
Fosters Holly	<i>Ilex</i> x <i>attenuata</i> 'Fosteri'
Burford Holly	<i>Ilex cornuta</i> 'Burfordii'
Holly, Emily Bruner, 'Tree Form'	<i>Ilex</i> x 'Emily Bruner'
Holly, East Palatka, 'Tree Form'	<i>Ilex</i> x <i>attenuata</i> 'East Palatka'
Holly, Foster No. 2, 'Tree Form'	<i>Ilex</i> x <i>attenuata</i> 'Foster No. 2'
Yaupon Holly*	<i>Ilex vomitoria</i>
Magnolia, Saucer	<i>Magnolia</i> x <i>soulangiana</i>
Magnolia, Star	<i>Magnolia stellata</i>
Sweetbay Magnolia	<i>Magnolia virginiana</i>
Maple, Trident	<i>Acer buergeranum</i>
Plum, Purpleleaf	<i>Prunus cerasifera</i>
Plum, Thundercloud	<i>Prunus cerasifera</i> 'Thundercloud'
Redbud, Eastern*	<i>Cercis canadensis</i>

Redbud, Eastern White *	<i>Cercis canadensis</i> var. <i>alba</i>
Redbud, 'Forest Pansy' *	<i>Cercis canadensis</i> 'Forest Pansy'
Redbud, Mexican	<i>Cercis mexicana</i>
Redbud, Oklahoma	<i>Cercis reniformis</i> 'Oklahoma'
Redbud, Texas White	<i>Cercis reniformis</i> 'Texas White'
Smoketree	<i>Cotinus coggygria</i>
Snowbell, Japanese	<i>Styrax japonica</i>
Witch Hazel*	<i>Hamamelis virginiana</i>

TABLE E. ACCEPTABLE EVERGREEN SCREEN/BUFFER TREE SPECIES

The administrator reserves the right to accept additional species that are not listed below.

* Denotes Native Species

Native species are preferred because they are best for our soils and climate, attract a variety of wildlife, provide food and shelter for many species, require less care and watering, thrive with less fertilizer and disease control.

Deodar Cedar	<i>Cedrus deodara</i>
Italian Cypress	<i>Cupressus sempervirens</i>
Eastern Redcedar*	<i>Juniperus Virginiana</i>
American Holly (cultivar)*	<i>Ilex Opaca</i> 'Varied Cultivars'
Southern Magnolia*	<i>Magnolia grandifolia</i>
Loblolly Pine*	<i>Pinus Taeda</i>
Virginia Pine*	<i>Pinus Virginiana</i>
Canadian Hemlock	<i>Tsuga Canadensis</i>
Japanese-Cedar	<i>Cryptomeria japonica</i>
American Arborvitae	<i>Thuja occidentalis</i>
Fosters Holly	<i>Ilex x attenuata</i> 'Fosteri'
Burford Holly	<i>Ilex cornuta</i> 'Burfordii'
Nellie R. Stevens Holly	<i>Ilex x</i> 'Nellie R. Stevens'
Yaupon Holly*	<i>Ilex vomitoria</i>
Hollywood Juniper	<i>Junipers chinesis</i>
Waxy Leaf Ligustrum	<i>Ligustrum japonicum</i>
Chinese Fringe Flower	<i>Loropetalum chinense</i>
Magnolia, 'Little Gem'*	<i>Magnolia grandiflora</i>

Star Magnolia	Magnolia stellata
Sweetbay Magnolia	Magnolia virginiana
Wax Myrtle*	Myrica cerifera
Chinese Evergreen Oak	Quercus myrsinifolia
Spruce Pine*	Pinus glabra
Carolina Cherry Laurel*	Prunus caroliniana
Tea Olive	Osmanthus fragrans
White Pine	Pinus Stobus

TABLE F. PROHIBITED TREE

Species	Reason
Ailanthus	Invasive, weak wood, littersome
Black locust	Weak wood, pests
Box elder	Weak wood, <u>pests</u>
Bradford Pear	Weak wood
Chinaberry	Weak wood, littersome
Female ginkgo	Littersome, smelly fruit pods
Mimosa	Invasive, weak wood
Morus spp.	Weak wood, littersome, invasive
Poplar spp.	Weak wood, pests
Silver maple	Weak wood
Siberian elm	Weak wood

Prohibited Plant Lists

Species that are listed within the following documents are prohibited from use.

1. "Invasive Plant Pest Species of South Carolina." Clemson Extension.
<http://www.clemson.edu/psapublishing/PAGES/FORESTRY/ForLf28.pdf>
2. "Roadside Plants to Avoid." SCDOT.
http://www.scdot.org/community/pdfs/plants_to_avoid.pdf
3. "South Carolina EPPC List."
<http://www.clemson.edu/psapublishing/PAGES/FORESTRY/ForLf28.pdf>
4. "Prohibited Plant List for the South Carolina Upstate Region"
<http://www.greenstepschools.com/greensteps/pdf/UPSTATE%20SC%20-%20Prohibited%20Plant%20List%20-%20FINAL%20Update%207-10-9.pdf>

SECTION 3: Typical Details and Checklists

1. The following typical details, tables, and calculation are to be included in all landscape plan submissions. Visit <http://www.greenvillesc.gov/PlanningZoning/> for downloadable versions.
 - a. Tree Protection Details
 - i. Tree Protection Fencing Signs available for purchase at the City's Planning and Development Office at City Hall.
 - b. Tree Planting and Staking Details
 - c. Shrub Planting Detail
 - d. Interior Parking Lot Landscaping Table
 - e. Tree Credit Table
 - f. Typical Plant Schedule
 - g. General Landscape Notes

2. Landscape Ordinance Plan Review Checklist
 - a. The City of Greenville has developed a landscape plan review checklist to assist city staff reviewers in the permitting process. This checklist has been made available to the general public as information only and is not required to be submitted with permit application.