Winthrop University

Campus Tree Plan

August 25, 2016

1.0 Purpose / Introduction

The purpose of this plan is to develop a long range plan that strategically develops policies, procedures, and practices that will be used in planting, protecting, maintaining, and removing trees that ensure a safe, attractive, and sustainable tree campus.

Trees are very important to Winthrop University's charm and we cherish the value of those trees. "The distinctive architecture, coupled with an abundance of colorful foliage, towering shade trees, and well-manicured lawns, attracts numerous visitors each year." Our most famous tree is the Southern Magnolia on front campus that was selected as the 2010 Heritage Tree by TreesSC. However, because many of the existing trees are of similar maturity and species, there is a need to create proactive long range plan that will to ensure a healthy and diverse tree canopy if we are to maintain the distinct character of the campus. Despite the desire to quickly replace trees lost, it must be understood that not all trees will be or should be replaced because of concerns for life safety and general long-term maintenance of trees and buildings while simultaneously considering the many aesthetic, environmental, educational, historical, and psychological benefits trees offer, thus establishing the basis for developing a comprehensive Campus Tree Plan.



2.0 Responsible authority/department

This plan to be applied to the 109 acre Main Campus as well as the 300+ acre Research & Recreation Complex. While all faculty and staff will have knowledge of the guidelines established by this tree plan, Winthrop Facilities Management & Operations under the direction of the Associate Vice President for Facilities Management will be responsible for ensuring the guidelines are adhered to.

3.0 Campus Tree Advisory Committee

- City of Rock Hill Forester
- Associate VP Facilities Management
- Assistant Director Grounds & Custodial Services
- Greenhouse Supervisor
- Sustainability Coordinator
- Environmental Health & Safety
- Facilities Management Staff
- Faculty (2)
- Student (2)

4.0 Campus Tree Selection & Care Policies

4.1 Choosing a Planting Location

There are many considerations when selecting the location of a new tree. Most critical is the site's climate, overhead conditions, nearby buildings, below grade conditions, proximity of existing trees, soil conditions, and drainage. For more information, refer to the Clemson Cooperative Extension cut sheet – Choosing a Planting Location (document title hyperlinked) "Choosing a Planting Location" was revised by Bob Polomski, Ph.D., Extension Horticulturist/Arborist, 06/12. Revised by Millie Davenport, HGIC Horticulture Specialist, Clemson University, 11/06.Originally prepared by Bob Polomski, Ph.D., Extension Horticulturist/Arborist, and Debbie Shaughnessy, HGIC Information Specialist, Clemson University, 01/99.

4.2 Tree Selection

Considerations when selecting a new tree include color, form, texture, appeal, soil type & moisture, and space. When selecting a tree from a source (see 4.14), consider proper sizing, rootball characteristics, how and where tree was grown, and condition of the tree, i.e. pests or other damage. Refer to the <u>American Standard for Nursery Stock ANSI Z60.1- 2014</u> (document title hyperlinked) for current standards for nursery stock trees and shrubs. Refer to 4.10 of this document for a list of recommended trees. Refer to 4.11 of this document for undesirable trees. For other information, refer to Clemson Cooperative Extension cut sheet – <u>Tree Selection</u> (document title hyperlinked) "Choosing a Planting Location" was prepared by Bob Polomski, Extension Consumer Horticulturist, and Debbie Shaughnessy, HGIC Information Specialist, Clemson University. (New 01/99.)

4.3 Planting

The planting hole shall be dug such that the root ball sits on undisturbed soil and the root flare is at or less than two inches above the adjacent finished grade. The width of the hole should be at least twice the diameter of the root ball and have sloping sides. Thoroughly water in the root ball and add more soil if settling of backfill occurs. For more information, refer to Clemson Cooperative Extension cut sheet – Planting Trees Correctly (document title hyperlinked) "Planting Trees Correctly" was prepared by Bob Polomski, Extension Consumer Horticulturist, and Debbie Shaughnessy, HGIC Information Specialist, Clemson University. (New 5/99. Revised 10/04.)

4.4 Fertilizing & Pest Management

Trees will only be treated for pest problems as a last resort and/or as required. Before fertilizing a tree, a need must be established based on soil testing, the age of the tree, and location. If it determined that a tree requires fertilizers, follow the industry recommended amount and process for applying these fertilizers specific to the tree being fertilized. For more information, refer to Clemson Cooperative Extension cut sheet – Fertilizing Trees & Shrubs' (document title hyperlinked) "Fertilizing Trees & Shrubs' was prepared by Bob Polomski, Extension Consumer Horticulturist; Donald L. Ham, Extension Urban Forestry Specialist; and Debbie Shaughnessy, HGIC Information Specialist, Clemson University. (New 05/99. Revised 10/04).

4.5 Pruning Trees

Tools, time or season, species, and techniques are the key factors to consider when pruning trees. Pruning will be completed only when safety of people is imminent, the health of the tree requires maintenance, and to improve the tree's aesthetics. When removing branches, the pruning cut shall not damage the branch bark ridge and branch collar. Evergreen trees should not be limbed for clearance but rather be allowed to maintain branches to the ground unless required for safety requirements. For more information, refer to Clemson Cooperative Extension cut sheet — Pruning Trees (document title hyperlinked) "Pruning Trees" was prepared by Bob Polomski, Extension Consumer Horticulturist, and Debbie Shaughnessy, HGIC Information Specialist, Clemson University. (New 1/99.)

4.6 Maintenance

The maintenance pruning schedule shall be dictated by tree species, age, function, and placement. Trees adjacent to roadways, walkways, signs, and street lights are annually inspected for safety and clearance issues and maintenance pruned as necessary. Maintain all plants to keep sight lines and physical access to emergency phones clear. Tree canopies should be maintained to prevent diminishing light from fixtures that are intended for security or safety purposes. Annual night inspections are recommended to look for problem areas.

4.7 Mulch

"Volcano Mulching" is not permitted. This causes the trunk to soften and become susceptible to fungal diseases and rot. The root flare of the trunk must be above ground and free from any contact with mulch. This can be achieved by pulling mulch away from trunk by 2 to 3 inches. For trees 2 to 6" in diameter, mulch every two years at depth not to exceed a 4". For lager trees, mulching to be done as required, depth not to exceed 4". For more information, refer to Clemson Cooperative Extension cut sheet – Mulch (document title hyperlinked) "Pruning Trees" was prepared by Marjan Kluepfel, HGIC Horticulture Specialist, and Bob Polomski, Extension Consumer Horticulturist, Clemson University. Revised by Joey Williamson, HGIC Extension Agent, Clemson University. Revised by Janet Scott, HGIC Extension Agent Clemson University. (New 04/99. Revised 05/08.)

4.8 Topping Trees & Heading

The practice of topping is not permitted. Internode (heading) cuts should not be used except in storm response and crown restoration procedures. Heading of large limbs will be completed by professional tree removal service. For more information, refer to Clemson Cooperative Extension cut sheet – <u>Topping Trees</u> (document title hyperlinked) "Topping Trees" Prepared by Chuck Burgess, HGIC Horticulture Specialist, Clemson University. (New 12/05.)

4.9 Removal

Trees are only removed when required to protect the public safety or when they interfere with construction. Diseased trees are accessed to determine if recovery is reasonable after treatment. Should the disease be irrecoverable, the tree will be removed to maintain public safety. Trees may be removed after consultation with the Associate VP of facilities management. For trees that are removed, a weight of the wood that is chipped into mulch is required to be submitted to the Office of Sustainability.

4.10 Replacement

Any tree removed shall be replaced in the same location if:

- The species is found on the list of recommended trees (See 4.12) or approved by Campus Tree Committee.
- The stump can be removed to the extent necessary to replant and fill soil properly prepared to support new tree.
- There are no utility or location conflicts.
- The species is not on the list of prohibited trees (See 4.13)

4.11 Stump Grinding

After trees are removed, the stumps are then scheduled for grinding, provided there is adequate access to the site. When the stump is ground out, the grindings are raked and left slightly mounded to allow for decay and settling. It is not recommended to plant a new tree in that location unless the hole is properly cleared and prepared with new soil.

4.12 Recommended Tree List (See Appendix A for complete list of trees and notes)

	Recommended Trees 30 feet mature height or less	
Tre	ees Requested to Enhance Curricu	lum
Mountain Laurel	Pawpaw	**Anisetree
(Kalmia latifolia)	(Asimina triloba)	(Illicium floridanum)
Eastern Redbud	White Fringe-tree	**Buckeye
(Cercis canadensis)	(Chionanthus virginicus)	(Aesculus pavia)
Painted Buckeye	American hornbeam or Blue-	
(Aesculus sylvatica)	Beech or Ironwood or	
	Musclewood	
	(Carpinus caroliniana)	
	Other Trees	
Waxmyrtle	Umbrella Tree	Short Leaf Pine
(Myrica cerifera)	(Magnolia tripetela)	(Pinus echinata)
Yaupon Holly	American Hophornbeam	Flowering Dogwood
(Ilex vomitoria)	(Ostrya virginiana)	(Cornus florida)
Blackhaw Biburnum	Hoptree	Waxmyrtle
(Viburnum rufidulum)	(Ptelea trifoliata)	(Myrica cerifera)
Hoptree	Blackhaw Biburnum	**Yaupon Holly
(Ptelea trifoliata)	(Viburnum rufidulum)	(Ilex vomitoria)
Umbrella Tree	**Crape Myrtle	Flowering Dogwood
(Magnolia tripetela)	(Lagerstroemia) (not from North America)	(Cornus florida)
American or Common Witch-		
Hazel		
(Hamamelis virginiana)		
**Not native to north-central se	ction of Piedmont (Rock Hill)	

	Recommended Trees	
	Greater than 30 feet mature height	
Tre	ees Requested to Enhance Curricu	lum
Blackgum, Black Tupelo	Black Walnut	Black Cherry
(Nyssa sylvatica var. sylvatica)	(Juglans nigra)	(Prunus serotina)
American Persimmon	**Butternut or White Walnut	**American Linden, Basswood
(Diospiros virginiana)	(Juglans cinererea)	(Tilia americana)
**American chestnut	Sassafras	Sourwood
(Castanea dentata)	(Sassafras albidum)	(Oxydendrum arboreum)
American beech	Yellow-poplar, Tuliptree	American Holly
(Fagus grandifolia)	(Liriodendron tulipifera)	(Ilex opaca)
White Oak	**Bigleaf Magnolia (Magnolia	Loblolly pine
(Quercus alba)	macrophylla)	(Pinus taeda)
Post Oak	Magnolia (Magnolia acuminata)	**Longleaf pine
(Quercus stellata) Bitternut hickory	**Sweetbay Magnolia	(Pinus palustris) **Pitch pine
(Carya cordiformis)	(Magnolia virginiana)	(Pinus rigida)
Pignut Hickory	Box elder	Virginia pine
(Carya glabra)	(Acer negundo)	(Pinus virginiana)
Silverbell (Carolina silverbell)	Cucumber magnolia	Red maple
(Halesia tetraptera)	(Magnolia acuminata)	(Acer rubrum)
Pawpaw	Green Ash or Red Ash	,
(Asimina triloba) (for the wetland)	(Fraxinus pennsylvanica)	
	Other Trees	
**Baldcypress	Overcup Oak	Short Leaf Pine
(Taxodium distichum)	(Quercus lyrata)	(Pinus echinata)
River Birch	Chestnut Oak	Flowering Dogwood
(Betula nigra)	(Quercus prinus)	(Cornus florida)
**Pagoda Dogwood	**Laurel Oak or Darlington Oak	Waxmyrtle
(Cornus alternifolia)	(Quercus hemisphaerica)	(Myrica cerifera)
Water Oak	**Southern Live or Evergreen	**Yaupon Holly
(Quercus nigra)	Oak (Quercus virginiana)	(Ilex vomitoria)
Swamp Chestnut Oak	**Pin Oak	Eastern Red Cedar
(Quercus michauxii)	(Quercus palustris)	(Juniperus virginiana)
**Bur Oak	Willow Oak	
(Quercus macrocarpa)		Eastern Red Cedar
	(Quercus phellos)	(Juniperus virginiana)
**Shingle Oak	Scarlet Oak	American Tulip Tree
(Quercus imbricaria)	(Quercus coccinea)	(Liriodendron tulipifera)
American Hophornbeam	Eastern Redcedar	Black Tupelo
(Ostrya virginiana)	(Juniperus virginiana)	(Nyssa sylvatica)
American Sycamore or	**Swamp White Oak	
Planetree or Buttonwood	(Quercus bicolor)	
(Platanus occidentalis)		
**Not native to north-central se	ction of Piedmont (Rock Hill)	

4.13 Existing Campus Trees

Existing Campus Trees				
Willow Oak	Flowering Dogwood	Southern Magnolia		
(Quercus phellos)	(Cornus florida)	(Magnolia grandiflora)		
**Canadian Hemlock	**Deodar Cedar (not from North America)	**Southern Crabapple		
(Tsuga Canadensis)	(Cedrus deodara)	(Malus angustifolia)		
**Pecan	Red Oak	**Carolina Ash		
(Carya Illinoinensis)	(Quercus ?)	(Fraxinus Caroliniana)		
American Elm	**Serbian Spruce	**Ginkgo		
(Ulmus Americana)	(Picea omorika)	(Ginkgo Biloba)		
**Laurel Oak or Darlington Oak	Water Oak	American Tulip Tree or Poplar		
(Quercus hemisphaerica)	(Quercus nigra)	(Liriodendron tulipifera)		
**Southern Live or Evergreen Oak	**Sugar Maple	American Holly		
(Quercus virginiana)	(Acer saccharum)	(Ilex opaca)		
**Longleaf pine	Eastern Redbud	White Oak		
(Pinus palustris)	(Cercis canadensis)	(Quercus alba)		
**Okame Flowering Cherry	**Japanese Zelkova	White Ash		
(??)	(Zelkova serrata)	(Fraxinus Americana)		
Urbinite or Red or Green Ash	**Baldcypress	Eastern Red Cedar		
(Fraxinus pennsylvanica)	(Taxodium distichum)	(Juniperus virginiana)		
**Crape Myrtle	**Scotch Pine	**Kwanzan Cherry		
(Lagerstroemia) (not from North America)	(Pinus sylvestris)	(Prunus 'Kanzan')		
**Pin Oak	River Birch	Shumard Oak		
(Quercus palustris)	(Betula nigra)	(Quercus shumardii)		
Savannah Holly	Pignut Hickory	**Saucer Magnolia		
(llex x attenuata 'Savannah')	(Carya glabra)	(Magnolia × soulangeana)		
**Bufordii Holly	**Carolina Hemlock	**Nellie Stevens Holly		
(??)	(Tsuga caroliniana)	(??)		
**Fosteri Holly Hybrid	**London Plaintree	**Bur Oak		
(??)	(Platanus × acerifolia)	(Quercus macrocarpa)		
**Chinkapin Oak	Short Leaf Pine	**Chaste Tree		
(Quercus muehlenbergii)	(Pinus echinata)	(Vitex agnus-castus)		
**Osage Orange	Sourwood	**Carolina Cherry Laurel		
(Maclura pomifera)	(Oxydendrum arboreum)	(Prunus caroliniana)		
**Japanese Maple	**Golden Chain Tree	**Fraser Photinia		
(Acer palmatum)	(??)	(Photinia x fraseri)		
**Japanese Black Pine	**Little Gem Magnolia	**Lacebark Elm		
(Pinus thunbergii)	(??)	(Ulmus parvifolia)		
**Weeping Cherry Tree	**Chinese chestnut	**Wax Leaf Legustrum		
(??)	(Castanea Mollissima)	(??)		
**Fruitless Sweet Gum Tree	**Swamp White Oak	**Weeping Yaupon Holly		
(Liquidambar styraciflua	(Quercus bicolor)	(??)		
'Rotundiloba')				
Carolina Cherry Laurel	**Saw Tooth Oak	American Beech		
(Prunus caroliniana)	(Quercus acutissima)	(Fagus grandifolia)		
American Sycamore or Planetree or	**Japanese Flowering Crabapple	**Red Maple		
Buttonwood	(Malus floribunda)	(Acer rubrum)		
(Platanus occidentalis)				
**Not native to north-central sec	tion of Piedmont (Rock Hill)			

4.14 Prohibited Tree List (See Appendix B for complete list of trees and notes)

For a complete list of plants that are not permitted on campus, refer to <u>Invasive Plant Pest Species of South Carolina</u> (July 2011) (document title hyperlinked) Other Prohibited Trees include the following:

All ash trees are prohibited as a result of emerald ash bore threat.			
Crabapples with poor disease resistance.			
Bradford pear	Zelkova (Zelkova serrata)	Washington Hawthorn	
(Pyrus calleryana 'Bradford')		(Crataegus Phaenopyrum)	
Sweet gum	Chinese elm (Ulmus parvifolia)	Chinese Chestnut	
(Liquidambar styraciflua)			
Silver maple	<u>Leyland Cyprus</u>		
(Acer saccharinum)	(X Cupressocyparis leylandii)		

No species that has been identified as an invasive species by the South Carolina Exotic Pest Plant Council, South Carolina Forestry Commission, Dept. of Agriculture Forest Service. Refer to Clemson's Invasive Plant Pest Species of South Carolina.

4.15 Sources for Purchasing Trees

Wilson's Nursery (click hyperlink for more information) 921 W. Main Street Rock Hill, SC 29732 803-327-6116	Farmer's Exchange (click hyperlink for more information) 322 S. Cherry Rd. Rock Hill, SC 29732 803-324-2925 (may be able to order or provide sources)
Mr. Jack's Tree Farm in Charlotte, NC (click hyperlink for more information) 16310 Wrights Ferry Road Charlotte, NC 28278 704-589-0435 Casey Bolen	Woodlanders Inc. (click hyperlink for more information) 1128 Colleten Ave. Aiken 29801 Native source (mail order but may request to work with in contract for larger sizes)
Ty Ty Nursery (click hyperlink for more information) 4723 US Hwy. 82 West Ty Ty Ga. 31795-0130 888-758-2252	UNC Charlotte Dr. Jeff Gillman, Director email: jgillman@uncc.edu Phone: 704-687-0722
Rolling Hills Nursery 873 Museum Rd. Rock Hill, SC 29732 (803) 329-1080	Paula Gross, Assistant Director email: pmgross@uncc.edu phone: 704-687-0719 Spring Sale: April

In addition, refer to <u>List of South Carolina Certified Nurseries and Dealers of Nursery Stock</u> (click hyperlink for more information)

4.16 Resources

TreesSC (click hyperlink for more information)

"Trees SC is a collaboration of individuals, organizations, and agencies dedicated to our state's trees. Together, we work to foster the stewardship of South Carolina's urban and community forests through education, advocacy, and networking." (Description is from website.)

i-Tree (click hyperlink for more information)

"i-Tree is a state-of-the-art, peer-reviewed software suite from the USDA Forest Service that provides urban and rural forestry analysis and benefits assessment tools. The i-Tree tools can help improve forest management and advocacy efforts by quantifying forest structure and the environmental services that trees provide." (Description is from website.)

Invasive Plant Atlas (click hyperlink for more information)

"The Invasive Plant Atlas of the United States is a collaborative project between the National Park Service, the University of Georgia Center for Invasive Species and Ecosystem Health, the Invasive Plant Atlas of New England and the Lady Bird Johnson Wildflower Center. The purpose of the Atlas is to assist users with identification, early detection, prevention, and management of invasive plants. The focus is on non-native invasive plant species impacting natural areas, excluding agricultural and other heavily developed and managed lands. Four main components are species information, images, distribution maps, and early detection reporting procedures. The Invasive Plant Atlas is one step in the effort to combat invasive species, preserve our natural landscapes and the native plants, animals, and other creatures that inhabit them." (Description is from website.)

Missouri Botanical Garden (click hyperlink for more information)

Look up, view a photo and read about the over 6,800 plants which are growing or have been grown in the Kemper Center display gardens (plus selected additions) by scientific name, common name and/or selected plant characteristics. (Description is from website.)

5.0 Protection, Preservation Policies & Procedures

5.1 Protecting Trees During Construction

During the design phase of new construction or renovation, reasonable effort should be made to save all trees in or near the proposed construction area. This tree policy is to be brought to attention of contractors during preconstruction meeting and/or included in specifications. Protection of trees and root system must also be considered during any trenching planned or completed on campus. Refer to Clemson Cooperative Extension cut sheet – <u>Protecting Trees During Construction</u> (document title hyperlinked) Prepared by Debbie Shaughnessy, HGIC Information Specialist, and Bob Polomski, Extension Consumer Horticulturist, Clemson University. (New 09/99.)

5.2 Managing Catastrophic Events

Storm response and recovery are prioritized by the severity of the disruption. Trees and debris that blocks campus streets, disrupts campus operations, or poses hazards to individuals entering campus. Once critical needs are addressed, any other damaged trees will be assessed to determine if the trees can be salvaged or require removal. The tree committee will convene to evaluate replacing those trees lost and establish a reasonable time schedule for replacement.

5.3 Annual Assessment

The committee's charge is to conduct an annual review and to revise the Tree Campus Plan recommendations, policies, procedures, and practices used in planting, protecting, maintaining, and removing trees as to maintain a safe, attractive, and sustainable tree campus as determined necessary.

5.4 Memorial Trees

Any proposals for trees planted in dedication are to be reviewed by the tree committee to ensure trees selected and planted shall meet the intent of this plan. Collaborate with development

6.0 Prohibited practices

The following practices are prohibited because they could be harmful to the campus trees:

- Posting of signs, artwork, banners or attaching any object to any tree
- Using trees to secure dogs, bicycles, motor bikes, mopeds, and motor scooters
- Cutting down or otherwise destroying or damaging campus trees outside the guidelines established by this tree plan
- Topping of trees, heading, hat-racking, or any other form of inappropriate crown/branch reduction
 pruning shall not be permitted except in emergency situations or in executing a crown restoration
 procedure
- Volcano mulching

Who will have the authority to enforce these rules?

7.0 Goals and Targets

	Committee to meet annually to review and/or revise Tree Campus Plan
	Maintain Tree Campus Certification
	Develop and maintain training program for all Facilities Management staff (Matt researching options.)
	Develop online self-guided interpretive program that highlights key trees on campus
	Develop Campus Landscape master plan
	Complete and maintain GIS Campus Tree Inventory for both main campus and recreation complex
	Hire and/or include in existing job description (50% of time) Certified Arborist and someone with Tree Risk
	certification
	Establish and maintain membership to TreesSC (July 2016)
	Develop long-term landscape plan & Integrated Pest Management Plan
	Identify migratory birds or other species that we can assist by the plants we choose.
	Incorporate tree plan into revised master plan
	Establish plan that eliminates any parking within the drip line of trees
	Investigate process for establishing long-term protections of existing forest
	Identify and certify heritage trees – look into RH heritage tree
П	Identify funding sources

8.0 Glossary of Tree Terms (document titles are hyperlinked)

- Arbor Day Foundation
- Nature's Beauty
- Allen's Tree Service

9.0 Communication

Upon implementation, this plan will be made available for review on the Facilities Management and the Office of Sustainability web site. Arbor Day events will be coordinated with the City of Rock Hill and will serve as a means for communicating this tree plan annually.

10.0 Other

Tree Policies Referenced:

- <u>University of Oregon</u> (13 pages)
- Longwood University (13 pages)
- Wake Forest University (18 pages)
- <u>Virginia Tech</u> (11 pages)
- <u>University of Connecticut</u> (74 pages)
- Georgia Tech (8 pages)