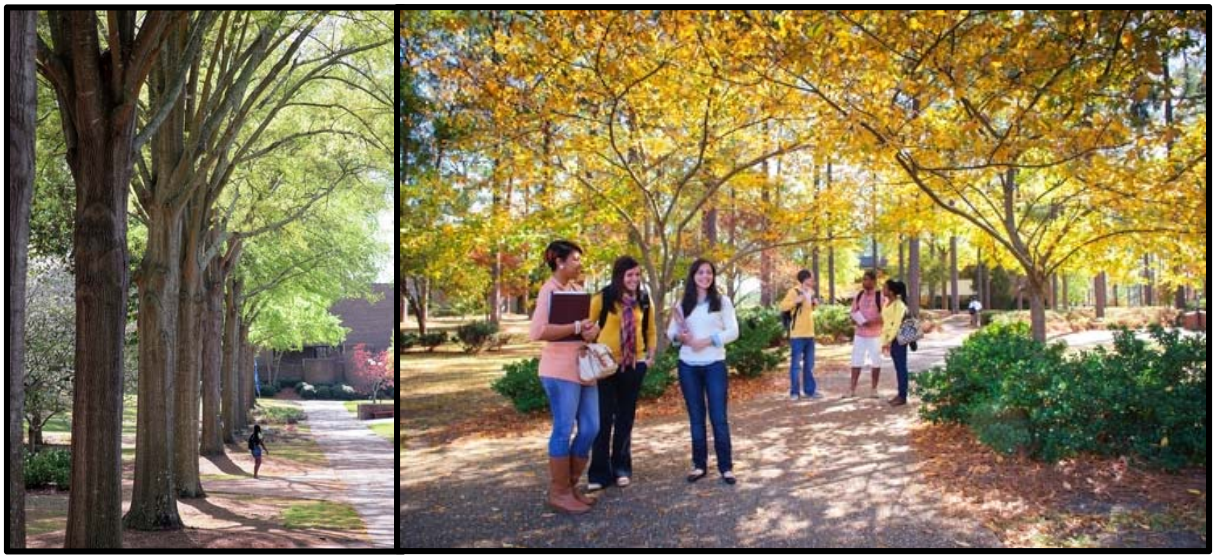
UNIVERSITY OF
SOUTH CAROLINA
AIKEN



Campus Tree Care Plan

UNIVERSITY OF SOUTH CAROLINA AIKEN

Table of Contents

Purpose:

The purpose of USC Aiken Campus Tree Care Plan is to:

- Develop a policy(s) that establishes the University of South Carolina Aiken's commitment and future strategic direction for tree planting, protection, management and maintenance;
- Protect and maintain the campus urban forest by managing the impact of development and constructions on campus trees.
- Protect and provide a guideline for the correct removal and planting of trees on campus and to address diseased or hazardous trees.

Campus Tree Advisory Committee:

The campus tree advisory committee assists in providing guidance planning, approval of a comprehensive campus tree plan, education of the campus population as the benefits of the campus trees, and development of connectivity to the community. The Campus Tree Advisory Committee is composed of:

- Brian Enter, USC Aiken Senior University Facilities Executive
- Matt Butler, USC Aiken Grounds Manager
- Alex Oliver, USC Aiken Student and Student Government
- Dr. Andy Dyer, USC Aiken Department of Biology and Geology
- Tom Rapp, City of Aiken Horticulturist/Arborist

Campus Tree Care Plan:

Plan Enforcement:

The responsibility of the Campus Tree Care Plan rests with the Department of Operations and specifically the University Facility Executive. The University Facility Executive will work with the Campus Tree Advisory committee and the USC Aiken grounds department to ensure the Tree Care Plan has appropriate input and guidance and faithfully executed.

Existing Species

The following is a list existing tree species at USC Aiken. The University strives to plant and maintain trees that are indigenous to the South East region. However there are some species that are not native.

Dogwood: Cornus floridanus, Native

Flowering cherry: Prunus serrulata, Japan and Asia

Crepe myrtle: Lagerstroemia indica, southern Asia

Fragrant tea olive: Osmanthus fragrans, Asia

Eastern redbud: Cercis Canadensis, Native

Longleaf pine: Pinus palustris, Native

River birch: Betula nigra, Native

Below is the existing rendering of the campus tree canopy. The existing campus provides some prime areas of green-scape that define a positive character for the overall campus. The central quad sets a high standard for a park-like quality of pedestrian movement through a naturally forested landscape. The wooded areas around existing facilities provide a sense of the natural environment that characterizes this region of the state. The significant width of green buffer along the campus perimeter creates a comfortable setback for buildings and parking areas.

Existing campus tree canopy

Site Preparation / Planting

The planting hole should be dug no deeper than the root ball when measured from the bottom of the root ball to the trunk flare. The width of the hole should be at least 2 to 3 times the diameter of the root ball.

Existing Tree Description

Cornus Florida: flowering dogwood is a small deciduous tree growing to 10 m (33 ft.) high, often wider than it is tall when mature, with a trunk diameter of up to 30 cm (1 ft.). A 10-year-old tree will stand about 5 m (16 ft.) tall. The leaves are opposite, simple and they turn a rich red-brown in fall.

Prunus serrulata, flowering cherry, is a small deciduous tree with a short single trunk, with a dense crown reaching a height of 26–39 feet (7.9–11.9 m). The smooth bark is chestnut-brown, with prominent horizontal lenticels. From China, Korea, Japan and Indian subcontinent Lagerstroemia indica, crepe myrtle, is an often multi-stemmed, deciduous tree with a wide spreading, flat topped, rounded, or even spike shaped open habit. Planted in full sun or under canopy, the tree is a popular nesting shrub for songbirds and wrens.

Osmanthus fragrans, variously known as sweet osmanthus, sweet olive, tea olive, and fragrant olive, is a species native to Asia from the Himalayas through southern China to Taiwan and southern Japan. It is cultivated for being an ornamental plant in gardens and its flower carry scents that smell of ripe peaches or apricots.

Cercis canadensis (eastern redbud) is a large deciduous shrub or small tree, native to eastern North America from Southern Ontario, Canada south to northern Florida but can thrive as far west as California. The bark is dark in color, smooth, later scaly with ridges somewhat apparent, sometimes with maroon patches. The twigs are slender and zigzag, nearly black in color, spotted with lighter lenticels.

Pinus palustris, commonly known as the longleaf pine, is a pine native to the southeastern United States. Longleaf pine forests are rich in biodiversity. They are highly pyrophytic.

Betula nigra (black birch, river birch, water birch) is a species of birch native to the Eastern United States. While its native habitat is wet ground, it will grow on higher land, and its bark is quite distinctive, making it a favored ornamental tree for landscape use.

Tree Selection

Plant species used on USC Aiken campus will come from the list of both native and exotic species that have been screened for adaptability to this region. The best plant shall be selected for a given site, which may or may not be native to the region. Trees to be used on campus must be preselected at the farm or nursery for good quality and tagged.
Only trees of 2”-2 ½” minimum caliper will be planted.

Site Preparation / Planting

The planting hole should be dug no deeper than the root ball when measured from the bottom of the root ball to the trunk flare. If the hole is deeper than the root ball, it often results in the settling of the plant above the trunk flare and structure roots which can result in the root ball being planted too deep. But the width of the hole should be at least 2 to 3 times the diameter of the root ball with sloping sides.

Transplanting

If the need arises to transplant a tree due to construction or another issue, the tree shall be transplanted between the months of October and March to limit stress to the tree. A qualified contractor may be used to transplant large trees with caliper greater than 4 inches.

Maintenance:

Fertilizing

Use of fertilizers and pesticides shall follow USC Aiken policy; furthermore, the value of the historic trees shall weigh heavily in determining use of all chemicals or other procedures at USC Upstate which have the potential to damage the historic trees. Use of fertilizers new planted trees

should not receive fertilization during the first growing season except in a situation where a soil test recommends its use. Trees in poor condition should receive deep root fertilization of 5-35-10. Routine tree fertilization is not recommended; however, campus trees receive adequate nutrients from turf, shrubs and groundcover routine application of fertilizers.

Pruning

The objective of pruning is to produce strong, healthy, attractive plants. The main reasons for pruning ornamental and shade trees include safety, health, and aesthetics. In addition, pruning can be used to stimulate fruit production and increase the value of timber. Pruning trees early in their life minimizes pruning impacts and allows development of a strong structure. Crown thinning, primarily for hardwoods, is the selective removal of branches to increase light penetration and air movement throughout the crown of a tree. The intent is to maintain or develop a tree's structure and form.

Crown raising is the practice of removing branches from the bottom of the crown of a tree to provide clearance for pedestrians, vehicles, buildings, lines of site, or to develop a clear stem for timber production.

Crown reduction pruning is most often used when a tree has grown too large for its permitted space.

Pruning cuts should be made so that only branch tissue is removed and stem tissue is not damaged. At the point where the branch attaches to the stem, branch and stem tissues remain separate, but are contiguous. If only branch tissues are cut when pruning, the stem tissues of the tree will probably not become decayed, and the wound will seal more effectively.

All running performed at USC Aiken will be done by a qualify contractor who is certified by the USDA for correctly pruning trees.

Fallen Limb Removal

When limbs fall from trees on campus, members of the campus community can call in or make a service request to promptly clean up the debris. Every attempt will be made to clean up dropped limbs within the same day, depending on the severity of the storm and the extent of the tree damage.

Removal of Tree Suckers

Tree suckers compete with trees for valuable nutrients. Suckers should be removed as close as possible to the point of origin on the root. Dig down and remove the soil to reach the base of the sucker. Tear rather than cut away the sucker from the base.

Mulch around Trees

Prevent tree injury by maintaining a minimum 1.5 foot wide ring of wood or decomposed granite around trunk of all trees in lawn areas. The mulch should be approximately 3 inches deep and pulled away 1 to 2 inches from the base of the tree to prevent bark decay. In the lawn areas, keep soil and other debris cleared away from root crown to prevent crown rot.

Diseases and Infestations Prevention

Trees shall be inspected on a regular basis for symptoms of disease, insect infestation, and general overall poor health. Efforts will be made to treat any tree health problems with the goal of preserving the trees, especially the oldest specimens, before any consideration is given to their removal.

If a tree is suspected of having contracted a disease, the staff should be contacted immediately for proper care and treatment. Due the historic value and potential for long life of these trees, treatment should be evaluated and efforts made to prolong tree life and health.

Watering and Soil

Watering schedule – New plantings will require regular, deep, hand watering for at least the first three years. No amendments to the soil are necessary. Before watering any tree, the basin should be checked 2'' below soil surface to see if it is damp. Do not over water.

Dry Season, Year 1 - Unless located in a heavily irrigated lawn area, the tree needs to be watered by hand. During the summer months hand water each basin every 10 to 14 days as needed. Each basin should be filled to capacity and allowed to drain.

Dry Season, Year 2 - Hand water each basin every ten to twenty days as needed.

Dry Season, Year 3 - Hand water each basin every twenty to thirty days as needed.

Dry Season, Year 4+ - The trees may require some summer water depending on the soil, and climate conditions.

Tree Removals

Any tree removals except for emergency situations will conform to the USC Aiken tree removal policy and require consent of the Campus Tree Advisory Committee. Emergency removals are only defined as trees posing an imminent hazard, including potential removal without public

notification. In these situations, a removal report will be filed with the Campus Tree Committee within ten days of the removal.

Managing for Catastrophic Events

In the event of severe weather conditions such as tornadoes or hurricanes, fallen trees and/or limbs will be removed by either a contractor or the Grounds Department. Roads and streets shall be cleared first, then access to critical buildings including student dormitories, finally clearing access to the balance of facilities. Further, a certified arborist will review campus trees focusing on the older trees first, and will make recommendations to prune limbs to ensure safety of those walking under the trees and to prevent future infestation or disease.

Prohibited Practices

Under no condition shall a tree be planted on Georgia Tech campus for dedication without pre-approval from the office of the Senior University Facility Executive. This office will ensure, among other things, the tree is suitable for this climate region and soil type and meet the requirements set forth in this document.

Protection and Preservation Policies and Procedures

During construction or some other maintenance event where a tree is located, efforts will be made to protect the trees and the root systems. Tree protection zones shall be established and maintained for all trees to be preserved in a construction site. Construct a simple barrier for each tree or group of trees to protect the trunk and root systems. To keep heavy equipment out of the area. Fencing or some form of plastic barrier may be used as the barricade. Install the barrier fence for every inch diameter of that tree's diameter breast height (DBH), provided that in no case shall the protection zone be less than a radius of 2.5 feet. No root raking shall be allowed within any tree protection zone at any time during clearing, grading or construction of a project. To the extent possible, all site work shall be planned and conducted in a manner that will minimize damage to protected trees from environmental changes such as altered site drainage or any other land disturbance within or immediately adjacent to the critical root zone of the tree.

New Building or Facilities Construction

Development activities shall be planned to the extent possible in order to preserve and protect trees on USC Aiken Campus. Any tree on USC Aiken campus that must be removed to accommodate development water/sewer repairs must be shown on the construction drawings. Additionally, any trees removed for the purposed of development shall be transplanted or replaced in another location consist with the USC Aiken Master plan.

Goals and Targets

1. Complete the campus tree inventory by 2016 and include GIS coordinates on a map.
2. Conduct an Arbor Day celebration on the First Friday in December
3. Install arbor information plaques around campus to identify species and information of trees to enhance community knowledge by 2016
4. Maintain a heavy tree canopy for future campus in accordance with master land plan.

The long-range Land Plan seeks to enhance the green-scape of the campus by extending the character of the forested quad into the new courtyard spaces. A simple landscape of trees, flowering shrubs and wildflower meadows will continue the beauty of the park-like setting. Wildflower meadows in front of the Convocation Center will enhance the setting while bringing a strong visual focus toward the community facilities. Parking lots, whether old or new, will be shaded with a grid of trees. The perimeter of campus will continue the theme of green buffers that establishes a positive identity for the campus.

Rendering of future tree canopy for USC Aiken campus

Tree Damage Assessment

All damaged trees on USC Aiken campus shall be assessed by a Certified Arborists. Any recommendations made by the Arborist shall be followed thru by USC Aiken Facility Executive as soon as practical.
Whenever it is determined that violation of this procedure has occurred, the Facilities representative or designee shall immediately issue written and oral notice to the person or company or department in violation. The violating party shall have 7 working days to bring the violation into compliance or longer as determined by the Facility Executive.

Prohibited Practices

The following are not permitted on the campus of USC Aiken:

1. No equipment or cooking is permitted below the canopy of trees.

2. No staking or attachments to trees are allowed.

3. No permanent removal or relocation of movable benches/swing benches.

4. No dumpsters are allowed under tree canopies.

5. No vehicles allowed off sidewalks (except when authorized by USC Aiken Staff)

Definitions

Caliper - the diameter or thickness of the main stem of a young tree or sapling as measured at six (6") inches above ground level.

Canopy trees - A tree that will grow to a mature height of at least 40 feet with a spread of at least 30 feet.

Critical Root Zone - the minimum area surrounding a tree that is considered essential to support the viability of the tree and is equal to a radius of one foot per inch of trunk diameter (DBH).

Diameter, breast height (DBH) - The diameter or width of the main stem of a tree as measured 4.5 feet above the natural grade at its base. Whenever a branch, limb, defect or abnormal swelling of the trunk occurs at this height, the DBH shall be measured at the nearest point above or below 4.5 feet at which a normal diameter occurs.

Green space - any area retained as permeable unpaved ground and dedicated on the site plan to supporting vegetation.

Landscape plan - A map and supporting documentation which describes for a particular site where vegetation, is to be retained or provided in compliance with the requirements of this policy. The landscape plan shall include any required buffer elements.

Indigenous tree - any tree species which occurs naturally and is native within the region.

Tree protection zone - the area surrounding a preserved or planted tree that is essential to the tree's health and survival, and is protected within the guidelines of these regulations.

Communication Strategy

Once the Campus Tree Care Plan is approved by USC Aiken Administration an article will be placed in the student newspaper "Broken Ink" stating USC Aiken's participation in Tree Campus USA. Further this Tree Care plan shall be communicated via the email distribution system and placed on the USC Aiken's Facilities Website. Additionally, a press release shall be made to the local media through the office of University Advancement.

Dedicated Annual Expenditures for Campus Tree Program

Staff and Equipment

USC Aiken dedicated ¼ of a goundsman's time to tree care totaling $7,736. This time is spent maintaining the tree care program, tree maintenance, planting, and strategic planning. Additionally USC Aiken spend approximately $3,000 year on planting new trees.

On average USC Aiken spends $7500 per year on contract labor dedicated to tree maintenance and spends an additional 2,000 per year on materials.

The following equipment is used to maintain and care for the campus trees

- 2 chainsaws $1,800
- Pole saw $650
- Limb chipper $2,600
- Stump grinder $5,600
- John Deer tractor (1/4 of time) $5,500
- Trailer (1/4 of time) $900

Summary of expenses:

Goundsman time	$7,736/yr
New trees	$3,000/yr
Equipment	$17,050
Maintenance of equipment	$2,300/yr
Contract labor	$7,500/yr
Materials	$2,000/yr

Total	**$39,586**

USC Aiken's average full time enrolment is 3,200 students, and at $3 per enrolled student is $9,600. Therefore, USC Aiken is exceeding the suggest amount of expenditures needed for Tree campus USA participation.

USC Aiken Arbor Day Observance

USC Aiken aligns its Arbor Day celebration with South Carolina Arbor Day on the first Friday in December. For 2014, USC Arbor day celebration was December 5th. Communications was sent out to the campus and community to notify people about the event so they could participate. Usually, USC Landscaping department holds the event where at least 2 trees are planted and other activities are performing including mulching, removing fallen limbs and planning of other small flowers in beds around the trees. This work is done by the USC landscaping department and volunteers around the campus.

Service Learning Project:

For the service learning project, USC Aiken has established tree placards within the quadrangle of the campus. These tree placards are mounted on a wooden post near a tree. The placards display the common and Latin name of the tree along with its species origin. These placards are similar to what you would see in a state park that give information about the tree. The placards provide students and the community information about the tree so they are aware of its type and origin. As there will be future additions of trees within the quadrangle, more placards will be added to those trees as well.