



Georgia Tech 2014 Campus Tree Care Plan

Prepared by the Campus Tree Advisory Committee,
Revised December, 2014





The purposes of campus tree care plan are to:

- Facilitate the achievement of a minimum 55% tree canopy on campus as recommended by the 2010 Campus Landscape Master Plan.
- Facilitate the achievement of 22% woodlands coverage on campus as recommended by the 2010 Campus Landscape Master Plan.
- Protect and maintain the campus urban forest by managing the impact of development and construction on campus trees.
- Provide protection and to make sure that removal of all trees on campus are conducted with proper considerations and adequate replacement program, according to our approved 2010 Campus Landscape Master Plan.

The responsibility of the Campus Tree Care Plan rests with Georgia Tech Facilities Department.

The Campus Tree Advisory Committee is composed of

- Hyacinth Ide, Associate Director, Landscape Services & Vehicle Management
- Anne Boykin Smith, Master Planner, Capital Planning & Space Management
- Jason Gregory, Sr. Educational Facilities Planner, RLA, Capital Planning & Space Management
- Linda Daniels, Associate Director, Capital Planning & Space Management
- Jerry Young, Landscape Project Manager, Facilities Design & Construction
- Sivakumar Ramachandra, Research Engineer II, Center for Geographic Information System, School of Architecture
- Charlie Brown, Home Park Neighborhood
- Dr. Linda Green, Professor, School of Biology
- Hugh Crawford, Associate Professor, Literature, Media & Communication
- Patricia Bras, Midtown neighborhood representative
- George Roberts, Construction Foreperson, Landscape Services
- Michael Walsh, Horticulturist II, ISA Certified Arborist, Landscape Services
- Andrew McKinney, Turf Maintenance Foreperson, ISA Certified Arborist, Landscape Services
- Lisa-Marie Godfrey, Director of Institute & Capital Planning Budget Management
- Scott Mussak, Financial Analyst, Budget management & Capital Budgets
- Rob Paltz, Horticulturist II, Landscape Services
- Donna Chronic, Horticulturist II, Landscape Services
- Ed Lanz, Landscape/Waste Mgt Operations, Georgia Certified Landscape Professional, Housing Department, Georgia Tech
- Ritchie Brown, Senior Facilities Manager, Parking Department, Georgia Tech
- Student rep, Jonathon Digioia, Connor Perlett, Steven Touchton, Hannah Greenwald, Jeffery Landau, Christopher R. Altonji
- Jack Land, Building Manager 1, Support Services, GTRI



Roles of Representatives:

The committee members will accept to serve for a period of one calendar year with a renewal option. Members shall appoint officials who will conduct the day to day business of the committee. Committee members are expected to actively participate and contribute in policy/guideline issues as well as research/information gathering that would aid in the campus tree care plan.

CAMPUS TREE CARE POLICIES – TREE PLANTING

Plant Selection

Plant species used on Georgia Tech campus will come from the list of the Landscape Standards in the 2010 Landscape Master Plan, as updated and EBB/South Central Sector Plans. The list contains both native and exotic species that have been screened for adaptability to physical conditions and serviceability, to meeting planting needs based on site orientation, drainage, soil condition, use, etc. Where appropriate, the best plant shall be selected for a given site, which may or may not be a “native”. Trees to be used on campus must be pre-selected at the farm or nursery for good quality and tagged. Only trees of 2”-2 ½” minimum caliper and maximum of 4”-4 ½” caliper will be planted. Careful consideration need to be taken in selection of trees as it relates to the final placement. Per the 2010 Landscape Master plan, the mature size of the species should be taken into account prior to installing new trees. The final selections shall be reviewed and approved by the Tree Campus USA Advisory Committee and/or Arboretum Committee prior to installation.

Due to planting requirements, plant materials associated with donations or commemorative tree planting/benches, will be installed from November to March. Recommended species and placement shall be reviewed and approved by the Tree Campus USA Committee and office of the Executive Vice President for Administration through the office of Capital Planning & Space Management.

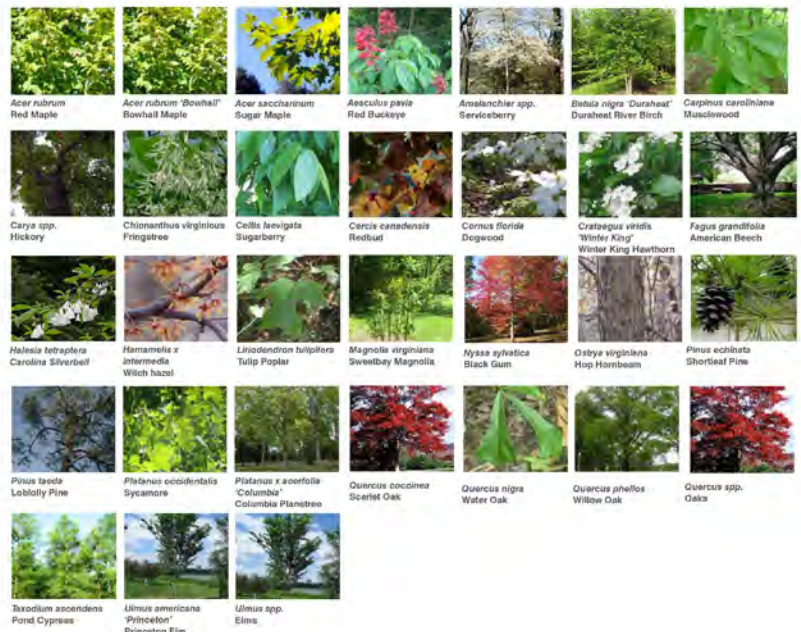
LANDSCAPE MASTER PLAN



www.space.gatech.edu/landscapeplan/assets/LMP_Final_Draft.pdf

7. Plant Palette

TREES		Hydic	Mesic	Xeric
Botanical Name	Common Name			
<i>Acer rubrum</i>	Red maple	x	x	
<i>Acer rubrum</i> 'Bowhall'	Red maple		x	
<i>Acer saccharum</i>	Sugar maple		x	
<i>Aesculus pavia</i>	Red Buckeye		x	
<i>Amelanchier</i> spp.	Serviceberry	x	x	
<i>Betula nigra</i> 'Duraheat'	River birch	x	x	
<i>Carpinus caroliniana</i>	Musclewood	x	x	
<i>Carya</i> spp.	Hickory		x	x
<i>Chionanthus virginicus</i>	Fringe tree		x	
<i>Celtis laevigata</i>	Sugarberry		x	
<i>Cercis canadensis</i>	Redbud		x	
<i>Cornus florida</i>	Dogwood		x	
<i>Crataegus viridis</i> 'Winter King'	Hawthorn		x	x
<i>Fagus grandifolia</i>	American beech		x	
<i>Halesia tetraptera</i>	Carolina silverbell		x	
<i>Hammamelis x intermedia</i>	Witch hazel		x	
<i>Liriodendron tulipifera</i>	Tulip poplar		x	
<i>Magnolia virginiana</i>	Sweetbay magnolia	x	x	
<i>Nyssa aquatica</i>	Water tupelo	x	x	
<i>Nyssa sylvatica</i>	Blackgum		x	
<i>Ostrya virginiana</i>	Hop hornbeam		x	x
<i>Pinus echinata</i>	Shortleaf pine		x	x
<i>Pinus taeda</i>	Loblolly pine		x	x
<i>Platanus occidentalis</i>	Sycamore	x	x	
<i>Platanus x acerifolia</i> 'Columbia'	Plane tree		x	
<i>Quercus coccinea</i>	Scarlet oak		x	
<i>Quercus nigra</i>	Water oak	x	x	
<i>Quercus phellos</i>	Willow oak		x	
<i>Quercus</i> spp.	Oak		x	
<i>Taxodium ascendens</i>	Pond Cypress	x		
<i>Ulmus americana</i> 'Princeton'	American elm		x	
<i>Ulmus</i> spp.	Elm		x	



Site Preparation

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

Settling the Plant and Back Filling the Hole

Plants must be set with trunk flare 1"-2" above the existing grade. Once the plant is properly placed, all visible ropes and burlaps at the top one-third should be cut away. The top 8"-16" of the wire basket should be removed once the rootball is stable in the planting hole and backfill the planting hole with the existing soil. If the existing soil is of a poor quality, addition of soil amendment as recommended by the soil analysis should be used. The backfill soil should be tamped firm enough to remove large air pockets, but not too firm as to remove all fine air spaces needed for a well aerated soil for root development. Complete the backfill by making sure that the trunk flare is completely exposed spread mulch or woodchips at 2-4" depth but not touching the trunk, water the rootball and the planting area deeply.

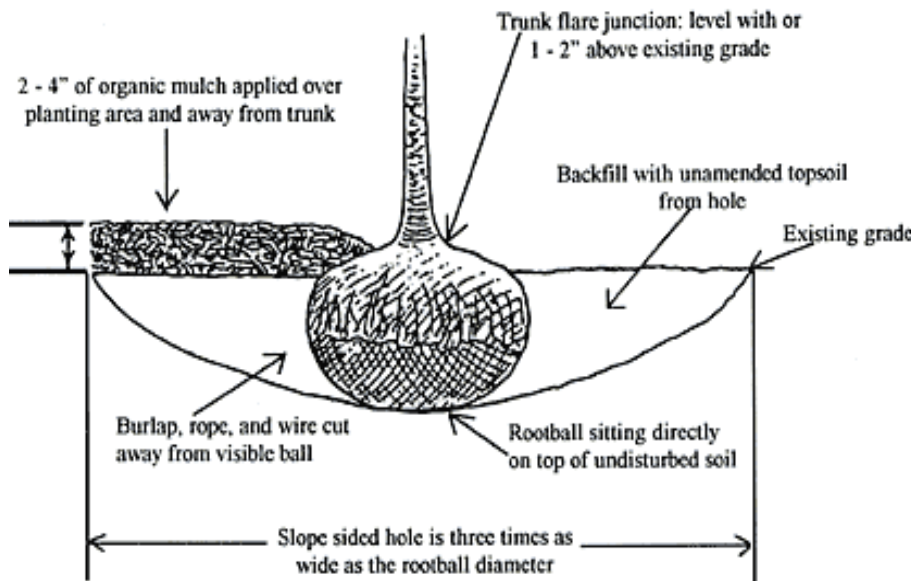


Diagram illustrating proper planting procedure for a tree or shrub.

Newly planted trees must receive adequate water weekly during the entire first growing season right up until dormancy in the fall, by irrigation or placement of ooze bags or hand watering.



Tree planting on Earth Day

Transplanting

Desirable trees in a development area or other construction sites shall be transplanted by staff if the tree caliper is between 2" - 4" where there is an acceptable location during the planting season (November to March). Trees of larger caliper shall be contracted out using comparable tree transplanting equipments (spades). The tree inventory will be updated to show the new locations after trees are transplanted.



Transplanted Magnolias and Hollies North of Price Gilbert Library

Fertilizing

Newly planted trees should not receive fertilization during the first growing season except in a situation where a soil test recommends its use. A slow release type of fertilizer should be used around the tree basin. Trees in poor condition should receive deep root fertilization of 5-35-10 plus micro nutrients, with repeat application if necessary. Also, when necessary, we shall use 10-20-10 for evergreen trees and 25-10-10 for general application. Routine tree fertilizer application is not recommended; however, campus trees receive adequate nutrients from turf, shrubs and groundcover routine application of fertilizers. As part of the Tree Care Plan, records of fertilizing will be kept as part of the GIS database and used as a tool to track areas needing fertilization.

Staking

Staking of trees at planting is not required if the rootball is stable. If staking must be done, it will be done in accordance with ANSI most recent edition.

Pruning

After planting, only broken or damaged branches should be pruned. Tree wrapping is generally not recommended. As part of the Tree Care Plan records of pruning will be kept as part of the GIS database and used as a tool to track areas needing pruning.

Landscaping

Landscaping on Georgia Tech campus must adhere to the five plant communities indicated in the 2010 Landscape Master Plan. They are Woodland, Parkland, Meadowland, Ornamental and Lawn. All landscaping, new and old shall use the list of acceptable plants in the Campus Landscape Master Plan as updated. The best plant materials should be chosen based on the site conditions, not based solely on the merit of its being native. The objectives are to increase campus tree canopy to a minimum of 55% and campus coverage by Woodlands to 22%.

MAINTENANCE & REMOVAL

Preventive Maintenance Pruning

The tree team systematically prunes trees annually through a preventive maintenance pruning program. Preventive maintenance pruning is conducted on an as needed basis at this time. All campus trees are periodically surveyed and rated based on their pruning needs to determine scheduling priorities. Records of pruning will be kept as part of the GIS database and used as a tool to track areas needing maintenance.

Service Request

The tree team typically prunes over 500 trees annually by service request. Requests are made by customers around campus which is then followed up by an inspection of the trees by the staff arborist who generates the evaluation and tree rating to determine the type of pruning to be performed by staff. See appendix A, routine inspections by staff provide most of our pruning needs. <http://www.facilities.gatech.edu/om/requests/landscaping.php>

Fallen Limb Removal

When limbs fall from trees on campus, members of the campus community can call in or make a service request (via web base) and by staff inspection 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 (except in the Greek and religious properties). We do not maintain private properties. The remaining tree will be evaluated to assess its suitability for removal.



Woodland Pruning - Before



Woodland Pruning - After



Sheep used for Kudzu Removal



Street Tree Pruning

Hazard and Emergency Tree Removal and Re-use

When a tree removal request is made, an ISA certified arborist evaluates the tree in question and makes the determination for removal or not based, on the result. If the tree is considered a hazardous tree, it is then scheduled for removal. All hazardous trees have two things in common, a significant defect and a potential target for falling on a building, car or pedestrian. GT staff will remove trees 16" caliper or smaller. Very large trees needing a crane are contracted out. For trees 16" caliper or larger a second opinion from an ISA certified arborist shall be required to ensure that removal is necessary. For removal of trees less than 16" caliper, the Tree Campus Committee will be notified and the inventory will be updated as needed.

After verifying that it is necessary to remove a tree, CPSM will evaluate the tree for possible re-use for lumber. Suitability for reuse, ease of access/removal, and if there is a known use for the lumber will be considered as part of the evaluation process. If determined to be suitable, the wood shall be stored and processed to meet the anticipated need at the cost of the proposed end user of the wood.



"Tree-Cycling" Trees were harvested at the Engineered Biosystems Project to be reused in the building.

Tree Damage Assessment

All damaged trees on Georgia Tech campus shall be assessed by an ISA Certified Arborist using the existing tree evaluation form. Results from the evaluation determines whether the tree should be removed, pruned or receive the treatment such as fertilization, and insect/disease control. Removed trees are updated on the tree inventory list. If 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, company or department in violation, identifying the nature and location of the violation and specifying the remedial action is necessary to bring the violation into compliance. The person, company or department in violation shall immediately, conditions permitting, commence remedial action and shall have seven (7) working days after the receipt of the notice, or such longer times as may be specified in the notice, to complete the remedial actions required to bring the activity into compliance with this policy.

Stump Grinding

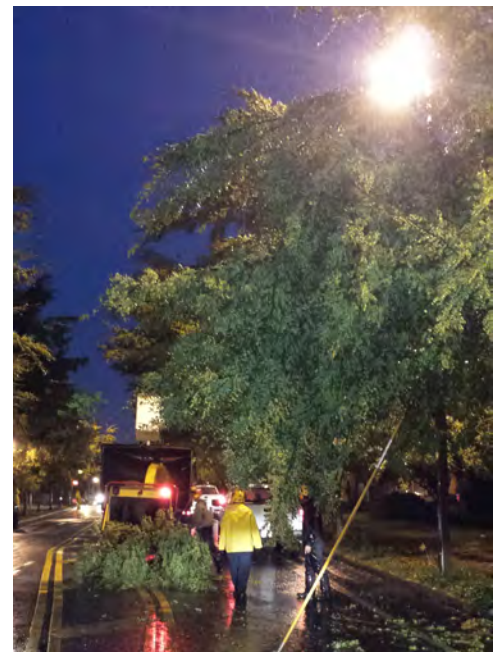
After trees are removed, the stumps are then scheduled for grinding, provided there is adequate access to the site. When the stump is ground out, the grindings are raked and left slightly mounded to allow for decay and settling to occur.

Managing for Catastrophic Events

In the event of severe weather conditions such as tornadoes or hurricanes, falling trees will be removed by Landscape Services staff or an outside tree removal company. Roads and streets shall be cleared first, then access to critical buildings; administration; buildings with critical labs, library, student center, etc. in that order. In the event of severe weather conditions, all necessary equipment shall be checked for readiness and safety by staff.

Protection and Preservation Policies and Procedures

Tree protection zones shall be established and maintained for all trees to be preserved in a construction or utility project site. Construct a simple barrier for each tree or grouping to protect the trunk and root systems. This reduces damage from heavy equipment and trucks. Wood, plastic or chain link 4' fencing would be suitable. Install the barrier fence 1 foot 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 anytime during clearing, grading or construction of a project. No equipment or vehicle shall be parked or construction material stored, or substances poured or disposed of or placed within any tree protection zone at anytime during clearing or construction of a project. To the extent possible, all work sites 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.



Tree removal due to storm damage.



Tree protection during construction.

New Building or Facilities Construction

Development activities shall be planned to the extent possible in order to preserve and protect trees on Georgia Tech Campus. Any tree on Georgia Tech campus that must be removed to accommodate development, due to damage from storm events, disease and water/sewer repairs must be shown on the site plan and replacement shall apply as prescribed by the 2010 Campus Landscape Master Plan, on page 62 (below).

- a) A 1" diameter tree shall be compensated with an equivalent monetary value.
- b) A 1" diameter tree shall cost no less than \$200.00 (2014 cost).
- c) The sum total of the diameter of replacement trees (inches) shall be multiplied by that year's actual cost of the tree market value.

An account shall be created to receive and manage the tree replacement program. This will allow for the flexibility of planting time or the issue of not having ready site or if the site has insufficient space for tree planting and payment shall be made to the tree planting and replacement account. The tree replacement or planting account shall be a separate account so that the funds can be used from year to year for the purpose of tree planting and replacement only.

GUIDELINES & STANDARDS

6.2.2 TREE REPLACEMENT

Objectives:

1. To replace the ecological value of existing trees that are removed because of construction or poor condition.
2. To increase the total tree canopy of the campus to a minimum of 55%.

Trees are vitally important to the ecology and sustainability of Georgia Tech's campus. When an existing tree is removed for some reason, it must be replaced with enough new trees to approximate its ecological value within a reasonable period. Since it takes several decades for a small planted tree to equal the size of a large removed tree, the number of replacement trees is based on the basal area of the removed tree. Basal area is the cross-sectional area of its trunk 4.5 feet above ground and reflects a tree's biomass, which includes its roots, trunk and canopy, and reflects its ecological value for campus soils, hydrology, micro-climate and biodiversity.

Eco-mimicry suggests that trees be planted abundantly to replace a lost tree. This is commonly seen in nature when an opening occurs in a forest and is spontaneously replaced with many seedlings - Nature appears unwilling to wait the decades required for a single tree to grow to equal

what was lost. Since Georgia Tech's goal is to grow its tree canopy to cover 55% of the campus, it makes sense to plant abundantly to replace lost trees.

Requirements:

1. If trees are to be removed, a tree condition assessment must be completed by a certified arborist.
2. Use the Tree Replacement Chart for Large and Medium Trees (Chart 6-3) to determine how many trees are required to replace a tree that is removed.

Chart: 6-3

TREE REPLACEMENT CHART FOR LARGE AND MEDIUM TREES

	Circumference 4.5' Above Ground	Diameter 4.5' Above Ground	3" Caliper Tree*	2" Caliper Tree	1" Caliper Tree
If Tree is:	Less than 37"	or Less than 6"	then plant:	1 or 2 or 10	
If Tree is:	29" - 37"	or 6" - 11"	then plant:	2 or 4 or 20	
If Tree is:	38" - 56"	or 12" - 17"	then plant:	5 or 10 or 50	
If Tree is:	57" - 74"	or 18" - 23"	then plant:	10 or 20 or 100	
If Tree is:	75" - 93"	or 24" - 29"	then plant:	18 or 36 or 180	
If Tree is:	94" - 112"	or 30" - 35"	then plant:	28 or 56 or 280	
If Tree is:	113" - 132"	or 36" - 41"	then plant:	41 or 82 or 410	
If Tree is:	More than 132"	or More than 42"	then plant:	55 or 110 or 550	

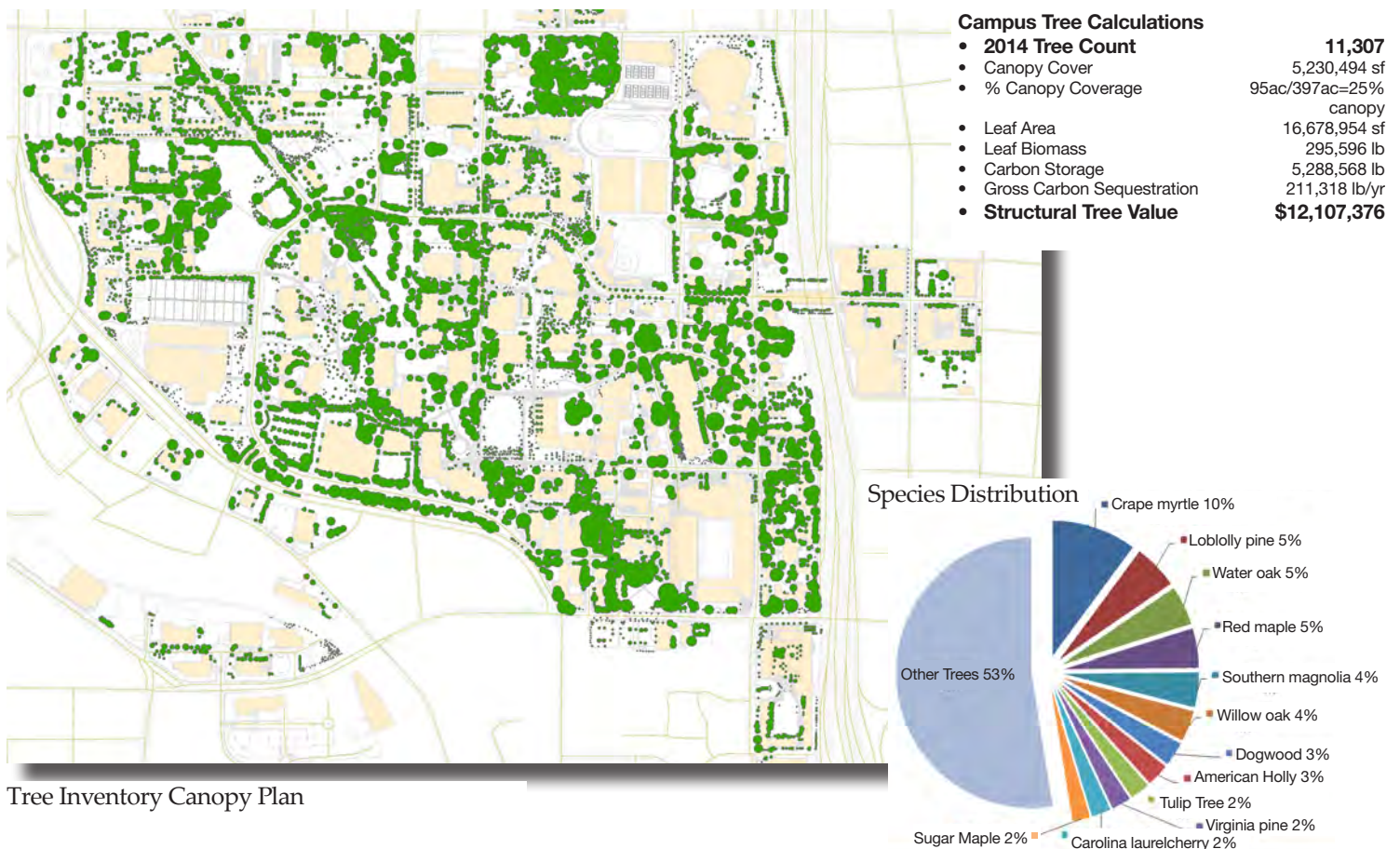
* The caliper of replacement trees are measured 6" above ground. To substitute other acceptable sizes: 1(3" caliper tree) = 2 (2" caliper trees) or 10 (1" caliper trees)

Tree inventory upkeep strategy

Continued maintenance of tree inventory is of utmost importance. Plenty of examples exist where comprehensive inventories go un-maintained and become stale and unreliable. Since the completion of a full campus tree inventory in 2012, Georgia Tech has committed to keeping its inventory continually updated. Campus stakeholders will document and monitor tree maintenance activities including regular on demand maintenance tasks such as pruning, fertilizer applications, new trees plantings, tree removals, and transplanting of trees. Center for GIS will deploy applications to log maintenance activities on an ongoing basis. Maintenance activities will be recorded as an overlay to the existing inventory on a GPS handheld GIS application. Prior to monthly Tree Campus USA meeting modifications will be synchronized to the database. Updates to the campus tree inventory will be presented to the entire Tree Campus USA committee during the monthly meetings with maps and reports of monthly activities. These updates will also serve as a tool for Tree Campus USA renewal process each year.

There may be instances where a large capital construction project may plant number of new trees, remove existing trees, or transplant existing trees. In situations like these the contractor will be required to provide a complete tree update as per Georgia Tech's inventory specification outlined in campus yellow book.

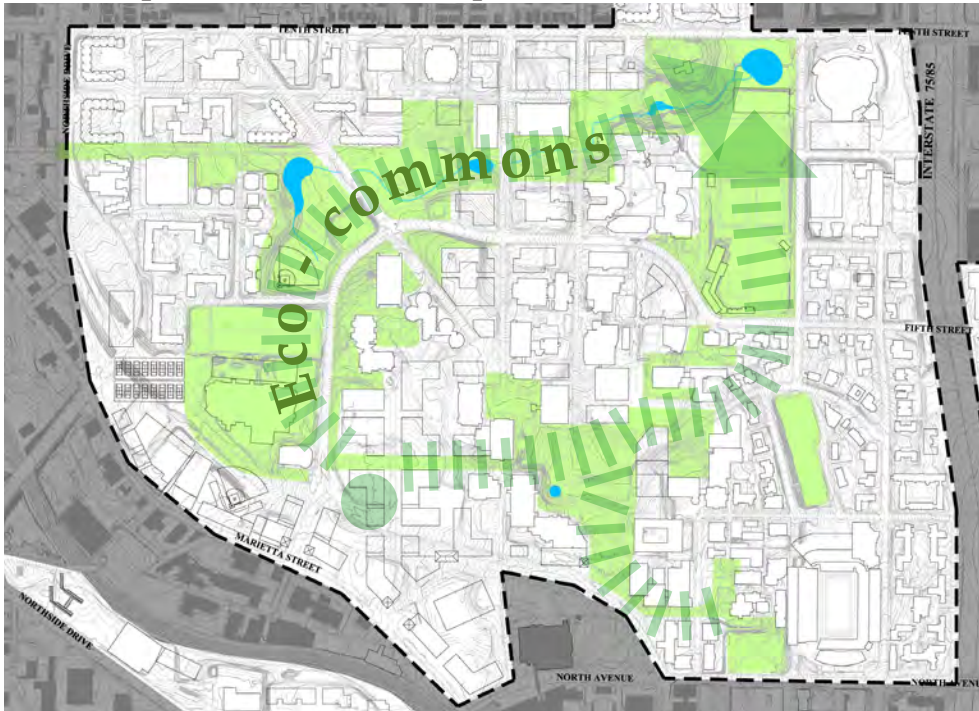
Keeping in mind the 5-7 year life cycle of the tree inventory, efforts will be made to visually inspect and record tree condition alongside regular maintenance activities. Recommendations for further evaluations of concerned trees will be made to the owners of trees such as Greek or religious organizations on campus.



Tree Inventory Canopy Plan

Design Requirements

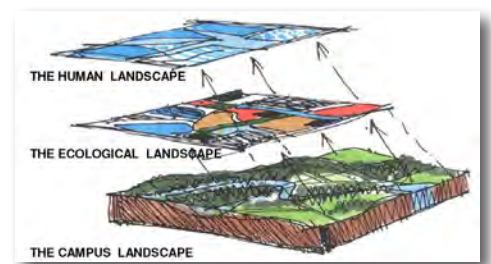
Design of a new development or reconstruction shall include a green space plan in the proposal. Such plans shall include a tree protection, tree establishment and landscape plan. Such plan shall conform to the landscape standards as prescribed in the Campus Landscape Master Plan, as updated. (www.space.gatech.edu/landscapeplan/assets/LMP_Final_Draft.pdf)



Eco-commons Diagram



Illustrative section of Eco-Commons



Campus Landscape Diagram

Goals and Targets

Develop an integrated, ecologically based landscape and open space system that will help Georgia Tech achieve its goal of environmental sustainability by 1) increasing campus tree canopy to a minimum of 55%, 2) increase campus coverage by Woodlands to 22% and 3) The completion of a Campus Tree Inventory. The campus tree inventory as indicated in the 2006 Campus Landscape Master Plan 2005 was 5000 trees and the tree canopy coverage was 15-18%. In 2008 and 2009, it estimated that Georgia Tech Campus had about 6,700 and 7,023 trees respectively providing approximately 33.8% of tree canopy in 2008. In 2012, Georgia Tech completed GIS Tree Inventory of its 2" caliper or greater trees for the 400 acre campus. The inventory total was 11,046 with approximately 178 species. Due to an increase in area and accuracy of data collection, the campus now has 25% canopy coverage. The inventory was completed using a GIS base system and further leveraged to derive environmental benefits resulting from campus trees using the USF iTree software model. The model will be rerun with updated inventories periodically to assess the performance of trees across campus. As of November 2014, Georgia Tech has 11,307 trees.

Tree Damage Assessment

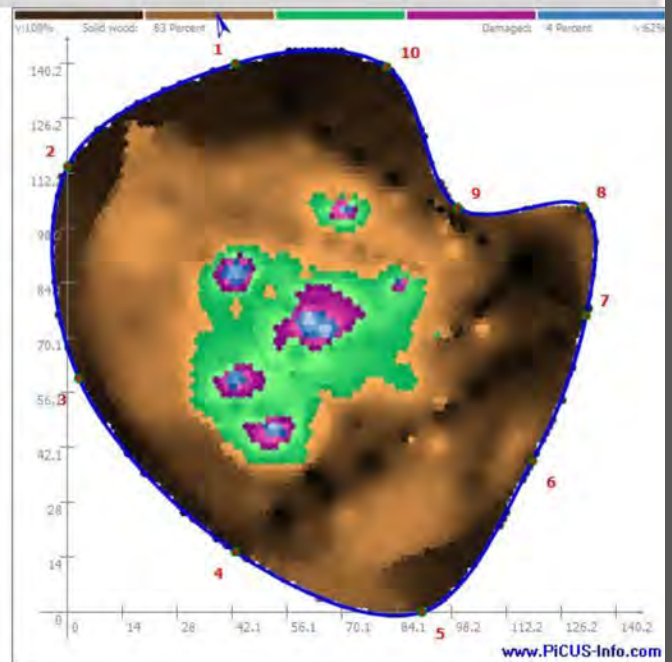
All damaged trees on Georgia Tech campus shall be assessed by a Certified Arborists using the existing tree evaluation form. Results from the evaluation determines whether the tree should be removed, pruned or receive treatment such as fertilization, and insect/disease control, see Appendix B (pgs 12-14) . Removed trees are updated on the tree inventory list. 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, identifying the nature and location of the violation and specifying that remedial action is necessary to bring the violation into compliance. The person or company or department in violation shall immediately, conditions permitting, commence remedial action and shall have seven (7) working days after the receipt of the notice, or such longer times as may be specified in the notice, to complete the remedial actions required to bring the activity into compliance with this policy.



Water Oak near Brown dorm, pruned due to storm damage

SCAN RESULTS

- Sensor one is located on the north side of the tree
- The brown areas are interpreted as dense wood that transmits sound waves well.
- Blue/pink areas are interpreted as wood that transmits the sound waves poorly.
- Green areas are interpreted as areas of altered wood that may turn to blue/pink in the future.
- The legend at top provides a percentage of sound wood and percentage of damaged wood.



Sonic Scan Test of Internal Structure for Water Oak near Brown Dorm

Prohibited Practices

Under no condition shall a tree be planted on Georgia Tech campus for dedication without pre-approval from the office of the Executive Vice President for Administration & Finance through the office of Capital Planning & Space Management.

Definitions:

- a) Caliper. The diameter or thickness of the main stem of a young tree or sapling as measured at six (6") inches above ground level. This measurement is used for nursery-grown trees having a diameter of four inches or less.
- b) Canopy trees. A tree that will grow to a mature height of at least 40 feet with a spread of at least 30 feet.
- c) Clearing. The removal of trees or other vegetation of two inches DBH or greater.
- d) 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).
- e) Development. The act, process or state of erecting buildings or structures, or making improvements to a parcel or tract of land.
- f) 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.
- g) Green space. Any area retained as permeable unpaved ground and dedicated on the site plan to supporting vegetation.
- h) Green space plan. A map and/or supporting documentation which describes for particular site where vegetation is to be retained or planted in compliance with these regulations. The green space plan shall include a tree establishment plan, or a tree protection plan, and a landscape plan.
- i) Impervious surface. A solid base underlying a container that is nonporous, unable to absorb hazardous material, free of cracks or gaps and is sufficient to contain leaks, spills and accumulated precipitation until collected material is detected and removed.
- j) 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.
- k) Native tree. Any tree species which occurs naturally and is indigenous within the region.
- l) Tree establishment plan. A map and supporting documentation which describes, for a particular site where existing trees are to be planted in compliance with the requirements of these regulations, the types of trees and their corresponding trees for reforestations.
- m) Tree protection plan. A map and supporting documentation which describes for a particular site where existing trees are to be retained in compliance with the requirements of the regulations, the types of trees and their corresponding tree for reforestations.
- n) 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

After the adoption of the Campus Tree Care Plan and Policies by the Advisory Committee and Georgia Tech Administration approval, an article on Georgia Tech's participation in the Tree Campus USA shall be placed in the student's newspaper "The Technique" and the staff newspaper "The Whistle". Also, the adoption shall be sent to the Georgia Tech community via electronic e-mail distribution system. Additionally, a press release shall be made to the local media through the office of Institute Communication & Public Affairs.



The screenshot shows the homepage of "The Whistle" online newspaper. At the top, there is a navigation bar with "Home >> Whistle Online >> Archives >> Feb. 16, 2009". Below this is a sidebar with links: "Whistle Home Page", "Whistle Archives", and "News Room". The main content area features the "THE WHISTLE" logo, which includes the Georgia Institute of Technology seal. Below the logo is the article "Planting in action". The article includes a photograph of a group of students planting a tree and a text block describing the event. The text mentions the Freshman Council's participation in planting trees for campus beautification, led by Council member Tomas Leon. It also provides contact information for Georgia Tech Communications & Marketing and a link to the website www.gatech.edu/greenbuzz.

Example of article in "The Whistle"

Dedicated Annual Expenditures for Campus Tree Program

Georgia Tech has dedicated three full time employees (two certified arborists & one equipment operator) and 1/3 of Foreperson's time totaling \$178,038.39 for the tree program. On average, Georgia Tech Landscape Services spends \$19,000.00 to purchase new trees per year. The following equipment is used in the maintenance and care of our campus trees.

• Handheld GPS Unit	\$ 9,500.00
• Chipper truck with 25' bucket	\$ 52,756.20
• Vermeer 1250 Chipper	\$ 20,000.00
• Vermeer Stump Grinder	\$ 11,542.90
• New Holland Ford Backhoe	\$ 55,542.90
• Bobcat 863 Loader	\$ 19,960.84
• Chainsaw (4)	\$ 3,600.00
• Pole saw	\$ 749.00
• Climbing Gears	\$ 1,122.75
• Bobcat Grapple Bucket	<u>\$ 2,999.000</u>
Subtotal (Equipment Invested)	\$177,773.59
Equipment Maintenance/yr	\$ 1,722.69
Grand total on equipment	<u>\$179,946.19</u>
Annual Contract Labor Cost	\$ 52,397.00

The Georgia Tech Beautification Day and Earth Day

The Georgia Tech Beautification Day and Earth Day held annually in April, account for over 500 students, faculty & staff volunteers. At 3 hours per volunteers x \$18 equals \$27,000.00 of volunteer labor per year. They participate in planting trees, shrubs, groundcover, flowers, laying sod, spreading pine straw and wood chips, pulling weeds, picking up trash, etc. on the Georgia Tech campus. Some Hands-On-Atlanta members also participate with the students, faculty and staff.

Other associated costs of the campus tree management are:

- Tree Inventory database maintenance by Georgia Tech Center at \$16,000/yr
- Updated Georgia Tech Campus Landscape Master Plan 2010
- Three staff members are ISA Certified Arborists with assorted fees of \$3,000.00
- Conducting of GIS Tree Inventory in 2012 at \$58,800

Summary of the dollar value dedicated to the tree program by Georgia Tech are:

• Labor staff/yr	\$178,038.39
• Labor contract/yr	\$ 52,397.00
• Labor volunteer/yr	\$ 27,000.00
• Tree purchase/yr	\$ 19,000.00
• Materials/yr	\$ 7,500.00
• Equipment investment	\$177,773.59
• Equipment maintenance/yr	\$ 1,722.69
• GIS Tree Inventory 2012	\$ 58,800.00
• Database tree maintenance/yrly	\$ 16,000.00
• Staff associations & training cost	<u>\$ 3,000.00</u>
TOTAL	\$541,231.67

Georgia Tech's full time student population is 21,500 x \$3 annual expenditure requirement is \$64,500.00. Therefore, Georgia Tech is well over the required amount of expenditures needed for Tree Campus USA participation.

TREE STRUCTURE EVALUATION

Georgia Tech Landscape Services

Building/Area _____ Date _____

Address _____ Tag # _____

Location _____ Phone _____

Inspector _____ Species _____ Water Oak _____ Height _____ DBH _____

Visual Inspection

Location

___ Target within 1 ½ x Tree height ___ Edge Tree ___ Tallest Tree
___ Construction/ Soil Disturbance ___ Lone Tree ___ Exposed Site

Species characteristics

___ Weak wood or prone to decay ___ Prone to wind throw or root rot

Crown

___ Small ___ Medium ___ Large for this size trunk ___ Low ___ Medium ___ High
___ Dead branches ___ Internodal / breakage ___ Unbalanced
___ Two sections ___ Weakly attached sprouts ___ Very Dense

Scaffold Limbs

___ Breaking hanging branches ___ Internodal pruning ___ Dead limbs
___ Lightning injure ___ Cracks ___ Storm injury
___ Decay **No Decay found** ___ Abrupt bends ___ Open wounds

Trunk

___ Canker/ open wound ___ Crack/ open seam ___ Decay
___ Conks ___ Open cavity ___ Burl
___ V-Crotch ___ Dead bark ___ Lean

Roots / Root Collar

___ Mushroom/ conks ___ Root decay/ root rot ___ Wet soil
___ Loose/ dead bark ___ Mounded soil ___ Grade change Limited
___ Compacted soil ___ Girdled roots ___ Root Plate

Quantification of Structural Weakness

Height of sampling ____' ____" feet

Bark thickness _____ Diameter at Weakest Point _____ Maximum Width of Opening _____

Depth to Decay – Root or Trunk (show sampling locations, minimum of three samples or one sample per 10 inches DBH).

1. _____ 4. _____

2. _____ 5. _____

3. _____ 6. _____

Quantification of Root Loss

Total Number of Buttress Roots (show locations) _____

Number of Decayed or Damaged Roots (show locations) _____

Abatement Techniques:

Can defect be corrected through pruning? ____no____ Can target be moved? ____no____

Hazard rating after employing abatement techniques? Low Medium High Monitor ____Yes____

Recommendation: After the climbing inspection

TREE WORK SCHEDULED (Check appropriate spaces)

(X)	Service	Request #	Sch. Date	Compl. Date
	Remove Tree			
	Remove Stump			
	Prune Tree			
	Plant Tree			
	Other			

(Signature) (Date)

Approved:

(Signature) (Date)