



Document Number	Tree Management SOP, D.32.01
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Related Policies and Procedures	

1. Purpose/Introduction

The purpose of the UNCG campus tree care plan is to set standards, policies, procedures, and tree practices that are used in planting, protecting, maintaining, and removing trees on the UNCG campus. Following are specific objectives developed to protect and provide a canopy of trees to be enjoyed by the campus community.

- Maintain and establish a healthy tree canopy on campus.
- Protect and/or replace trees during construction project.
- Educate campus community to learn about, respect, and value trees on the campus.
- Plant top quality trees set by the American Nursery Stock Standards (ANSI Z60.1).
- Control and eradicate invasive plants in the natural Peabody Park area of campus and throughout the rest of campus and campus owned properties.

2. Definitions

2.1 Responsible Department: The UNCG Grounds Department along with the Assistant Director of Facilities Operations for Grounds is located within the Facilities Operations Department and is responsible for the care of trees and plantings. Facilities Design and Construction works with the Grounds Department for large Capital projects.

2.2 Establishment of tree advisory committee.

2.2.1 Campus Advisory Committee: The campus tree advisory committee is formally known as the Peabody Park Preservation Committee. The committee is comprised of faculty, staff, a student and a Landscape Architect from Greensboro, NC. The committee meets quarterly and provides important input/research into the care and improvement of the campus landscape. The Committee and UNCG are supported by Greensboro Beautiful, a national award-winning, 40-year-old non-profit group that works to beautify and conserve the ecology of Greensboro through city-wide partnerships.

2.2.2 Tree Action Committee: The Tree Action Committee shall consist of the Assistant Director of Facilities Operations for Grounds, the Director of Facilities Operations and the

University Architect. The Tree Action Committee may decide the best course of action to take once a tree is determined to be hazardous.

2.3 BMP: Best Management Practice is the steps taken to ensure the health and aesthetics of the tree while meeting the safety needs of the campus. Best Management Practice can include redesign of the landscape including removal of a tree and replanting in a new location to reduce or eliminate the conflict.

2.4 Tree Risk Assessment Form: A document provided by the International Society of Arboriculture. The Tree Risk Assessment Form standardizes the process of evaluating trees (see Appendix B).

3. Procedural Steps

3.1 Initial evaluation for a tree concern will be performed by the Assistant Director of Facilities Operations for Grounds.

3.1.1 A Certified Arborist will complete a Tree Risk Assessment form to document the health of the tree in question.

3.1.2 The Tree Risk Assessment form will be shared with the Tree Advisory Committee.

3.1.3 An on-site meeting of the Tree Advisory Committee will be scheduled to discuss the BMP as laid out by the Assistant Director of Facilities Operations for Grounds.

3.1.4 Assistant Director of Facilities Operations for Grounds will advise the committee on the Tree Campus USA designation requirements for the work in question.

3.2 Committee to make recommendation on action to be taken. Majority opinion to be followed.

3.3 Assistant Director of Facilities Operations for Grounds to schedule and oversee work. The Facilities Operations work order system shall be used to track the tree work performed.

3.4 This SOP shall apply to all properties owned or managed by UNC Greensboro.

3.5 Campus Tree Policies: The University of North Carolina at Greensboro has a great diversity of trees, including evergreen and deciduous species. The following are policies regarding the upkeep of trees.

3.5.1 Pruning: All trees on the university campus are allowed to reach their mature size and shall be maintained at their mature size. Trimming and pruning either with in-house staff or a tree contractor shall be done in strict accordance with the American National Standards Institute (ANSI) standards. When working with a tree contractor, a specific plan shall be prepared that clearly identifies the need for pruning and the objectives and scope of pruning. This will be reviewed with the Assistant Director of Facilities Operations for Grounds. All pruning cuts shall conform to ANSI tree pruning standards. No flush cuts or remnant branch stubs are allowed.

- 3.5.2 Removal: Trees on campus are removed only when they are considered a hazard to pedestrians or structures. The grounds department evaluates trees on a regular basis to make decisions on pruning or removal. If the grounds department deems necessary, they can contact a Certified Arborist to help evaluate and make recommendations on any trees.
- 3.5.3 Management of catastrophic events: After a catastrophic event such as a hurricane or ice storm, grounds teams are sent out to assess the damage. Safety is a top priority in decisions about clean-up. A tree contractor and a Certified Arborist are brought on campus for hazardous and dangerous tree cleanup. A list and budget are developed for tree replacement projects. Student volunteer groups may be utilized to assist in plantings, which helps to educate them about the value of trees.
- 3.5.4 Planting: A species list has recently been developed and is included in Appendix A. The Peabody Park Preservation Committee recommends tree species for the campus and educational purposes. Only native species are planted in Peabody Park woods, no invasive or potentially invasive species are planted on campus. Trees are planted according to the American Nursery Standards (see Appendix C). Newly planted trees are hand-watered for the first two years. Trees that have been removed from campus because they are hazards are replaced with new ones.
- 3.5.5 Maintenance: Trees are evaluated by grounds staff at regular intervals in order to remove dangerous limbs, which could fall and damage structures or harm pedestrians. Major work by a tree contractor (e.g., JR Tree) should be scheduled during student breaks if possible when there are few pedestrians on campus. The tree contractor provides wood chips to be recycled as mulch, which are used under large canopy trees.
- 3.5.6 Protection and Preservation Procedures: The University Of North Carolina at Greensboro Design and Construction Guidelines clearly state procedures used to preserve and protect campus trees during construction and renovation projects. Construction equipment (including vehicles) is prohibited from parking under trees, and equipment items that do will receive a ticket or be towed. Trees are surveyed and reviewed by an arborist and designers during project development to determine which trees are worth saving. For each project, an urban forester and arborist recommend tree preservation procedures, such as tree protection, root pruning, fertilization, and aeration. These procedures are incorporated into the construction plans.
- 3.6 Goals and Targets: UNCG is developing a GPS-coordinate campus tree map and inventory. Approximately 50% of the campus trees have already been inventoried. The inventory is being used for campus planning, tree management, and education. 1) A goal is to increase the number of trees inventoried by 10% per year. 2) Another goal is to remove non-native trees and other exotics from Peabody Park. Twice yearly community workdays are scheduled using student, faculty, and staff volunteers to assist with the removal of non- native trees and invasive species.
- 3.7 Tree damage assessment, enforcement, and penalties: Enforcement of protection measures is performed by project managers, on-site engineers, and the Assistant Director of Facilities Operations for Grounds. A Consulting Arborist may be used to assess older and highly valued trees. In case of vandalism resulting in the destruction of property, appropriate legal action is

taken in accordance with the provision of section 30-8-5 (civil Penalty-Assessments and Procedures) Ordinance of the City of Greensboro.

3.8 Prohibited Practices

3.8.1 Bike Locking Bicycles may be parked only at bicycle racks. Bicycles cannot be locked to trees.

3.8.2 Topping of Trees: Topping, heading, dehorning, hat-racking, or any other form of inappropriate crown/branch reduction pruning is not permitted. Trees are to be pruned according to the ANSI 300 standards.

3.8.3 Posting flyers: No posting of any type of material is allowed on trees. Grounds staff is instructed to remove postings immediately from all trees and contact the group responsible for putting it up to educate them about proper tree care. Some trees have been labeled with their scientific names to educate the public.

3.9 To maintain Tree Campus USA designation, UNCG will:

3.9.1 Schedule one tree planting event and one educational event per year. They can be the same event.

3.9.2 Have an Arbor Day observance with an educational and/or planting event.

4. Appendices

- 4.1 Appendix A UNCG Approved Tree List
- 4.2 Appendix B Tree Risk Assessment Form
- 4.3 Appendix C Tree Planting Schematic
- 4.4 Appendix D ANSI A300: Pruning Trees and Woody Plants

Revision #	Section #	Summary of Changes	Approval Date
D.32.01		To establish a Standard Practice for Tree Management.	2/24/20

Appendix A

UNCG Approved Tree List

Updated 01/15/2020

- **Flowering Trees: installation size 8 feet tall**
 - *Cercis canadensis* - Eastern redbud
 - *Cornus florida* - Flowering dogwood
 - *Prunus x 'yedoensis'* - Yoshino cherry
 - *Aesculus x carnea 'Ft. McNair'*
 - *Halesia caroliniana* - Carolina silverbell

- **Medium Trees: installation size 2 inch caliper**
 - *Acer rubrum* - Red maple
 - *Nyssa sylvatica* - Black gum
 - *Fagus grandifolia* - American beech

- **Large Canopy Trees: installation size 3 inch caliper**
 - *Quercus alba* - White oak
 - *Quercus rubra* - Red oak
 - *Quercus phellos* - Willow oak
 - *Quercus nuttalli* - Nuttall oak
 - *Liriodendron tulipifera* - Tulip poplar

Appendix B

ISA Basic Tree Risk Assessment Form

Client _____ Date _____ Time _____
 Address/Tree location _____ Tree no. _____ Sheet _____ of _____
 Tree species _____ dbh _____ Height _____ Crown spread dia. _____
 Assessor(s) _____ Tools used _____ Time frame _____

Target Assessment

Target number	Target description	Target protection	Target zone			Occupancy rate 1 – rare 2 – occasional 3 – frequent 4 – constant	Practical to move target?	Restriction practical?
			Target within drip line	Target within 1x Ht.	Target within 1.5 x Ht.			
1								
2								
3								
4								

Site Factors

History of failures _____ Topography Flat Slope _____ % Aspect _____
 Site changes None Grade change Site clearing Changed soil hydrology Root cuts Describe _____
 Soil conditions Limited volume Saturated Shallow Compacted Pavement over roots _____ % Describe _____
 Prevailing wind direction _____ Common weather Strong winds Ice Snow Heavy rain Describe _____

Tree Health and Species Profile

Vigor Low Normal High Foliage None (seasonal) None (dead) Normal _____ % Chlorotic _____ % Necrotic _____ %
 Pests/Biotic _____ Abiotic _____
 Species failure profile Branches Trunk Roots Describe _____

Load Factors

Wind exposure Protected Partial Full Wind funneling _____ Relative crown size Small Medium Large
 Crown density Sparse Normal Dense Interior branches Few Normal Dense Vines/Mistletoe/Moss _____
 Recent or expected change in load factors _____

Tree Defects and Conditions Affecting the Likelihood of Failure

— Crown and Branches —

Unbalanced crown <input type="checkbox"/> LCR _____ % Dead twigs/branches <input type="checkbox"/> _____ % overall Max. dia. _____ Broken/Hangers Number _____ Max. dia. _____ Over-extended branches <input type="checkbox"/> Pruning history Crown cleaned <input type="checkbox"/> Thinned <input type="checkbox"/> Raised <input type="checkbox"/> Reduced <input type="checkbox"/> Topped <input type="checkbox"/> Lion-tailed <input type="checkbox"/> Flush cuts <input type="checkbox"/> Other _____	Cracks <input type="checkbox"/> _____ Lightning damage <input type="checkbox"/> Codominant <input type="checkbox"/> _____ Included bark <input type="checkbox"/> Weak attachments <input type="checkbox"/> _____ Cavity/Nest hole _____ % circ. Previous branch failures <input type="checkbox"/> _____ Similar branches present <input type="checkbox"/> Dead/Missing bark <input type="checkbox"/> Cankers/Galls/Burls <input type="checkbox"/> Sapwood damage/decay <input type="checkbox"/> Conks <input type="checkbox"/> Heartwood decay <input type="checkbox"/> _____ Response growth _____
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_____ Condition(s) of concern _____

Part Size _____ Fall Distance _____ Load on defect N/A <input type="checkbox"/> Minor <input type="checkbox"/> Moderate <input type="checkbox"/> Significant <input type="checkbox"/> Likelihood of failure Improbable <input type="checkbox"/> Possible <input type="checkbox"/> Probable <input type="checkbox"/> Imminent <input type="checkbox"/>	Part Size _____ Fall Distance _____ Load on defect N/A <input type="checkbox"/> Minor <input type="checkbox"/> Moderate <input type="checkbox"/> Significant <input type="checkbox"/> Likelihood of failure Improbable <input type="checkbox"/> Possible <input type="checkbox"/> Probable <input type="checkbox"/> Imminent <input type="checkbox"/>
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— Trunk —

Dead/Missing bark Abnormal bark texture/color
 Codominant stems Included bark Cracks
 Sapwood damage/decay Cankers/Galls/Burls Sap ooze
 Lightning damage Heartwood decay Conks/Mushrooms
 Cavity/Nest hole _____ % circ. Depth _____ Poor taper
 Lean _____ ° Corrected? _____
 Response growth _____

_____ Condition(s) of concern _____

Part Size _____ Fall Distance _____
 Load on defect N/A Minor Moderate Significant
 Likelihood of failure Improbable Possible Probable Imminent

— Roots and Root Collar —

Collar buried/Not visible Depth _____ Stem girdling
 Dead Decay Conks/Mushrooms
 Ooze Cavity _____ % circ.
 Cracks Cut/Damaged roots Distance from trunk _____
 Root plate lifting Soil weakness
 Response growth _____

_____ Condition(s) of concern _____

Part Size _____ Fall Distance _____
 Load on defect N/A Minor Moderate Significant
 Likelihood of failure Improbable Possible Probable Imminent

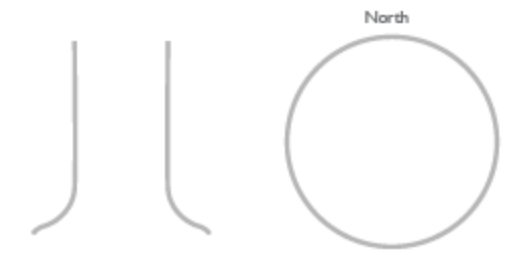
Risk Categorization																			
Target (Target number or description)	Tree part	Condition(s) of concern	Likelihood								Consequences				Risk rating (from Matrix 2)				
			Failure				Impact				Failure & Impact (from Matrix 1)								
			Improbable	Possible	Probable	Imminent	Very low	Low	Medium	High	Unlikely	Some what	Likely	Very likely		Negligible	Minor	Significant	Severe

Matrix 1. Likelihood matrix.

Likelihood of Failure	Likelihood of Impact			
	Very low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2. Risk rating matrix.

Likelihood of Failure & Impact	Consequences of Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low



Notes, explanations, descriptions

Mitigation options

1. _____ Residual risk _____

2. _____ Residual risk _____

3. _____ Residual risk _____

4. _____ Residual risk _____

Overall tree risk rating Low Moderate High Extreme

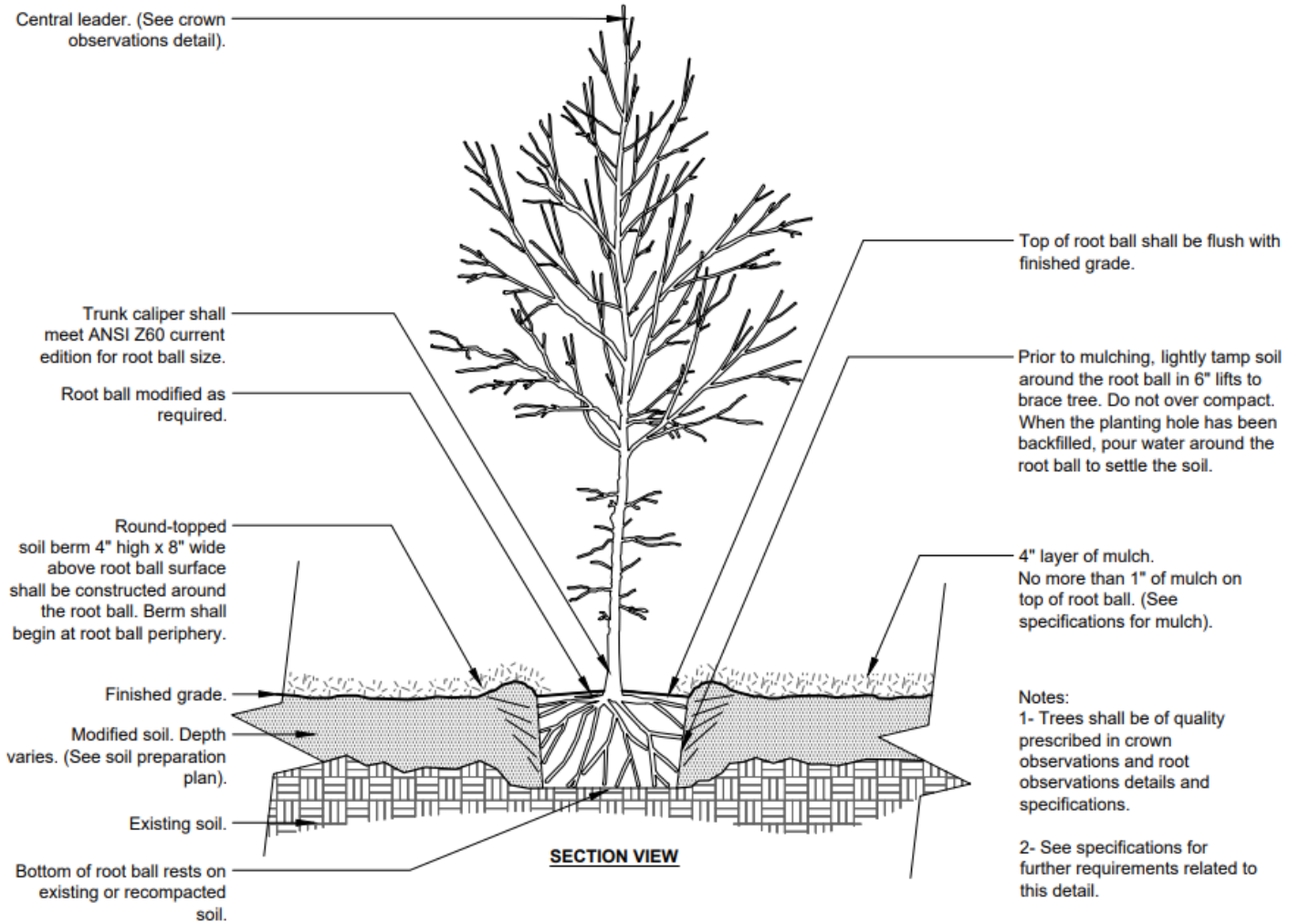
Overall residual risk None Low Moderate High Extreme Recommended inspection interval _____

Data Final Preliminary Advanced assessment needed No Yes-Type/Reason _____

Inspection limitations None Visibility Access Vines Root collar buried Describe _____

Appendix C

Tree Planting Schematic



P-X

TREE w/ BERM (EXISTING SOIL MODIFIED)

Appendix D

ANSI A300: Pruning Trees and Woody Plants

Pruning Trees and Woody Plants

- ANSI A300 (Part 1) 2017 Pruning – Intended for the development of work practices, written **specifications**, best practices, regulations and other measures of performance. Used to develop laws and regulations or work specifications not used for these things as a whole.
- ANSI A300 standards shall apply to any person or entity engaged in the management of trees, shrubs, palms or other woody plants including federal, state, or local agencies, utilities, **arborists**, consultants, arboricultural or landscaping firms, and managers or owners of property.
- Reasons to prune include reducing **risk**, improving or maintaining health, developing desired structure and appearance, preventing interference with the built environment, and other specific objectives.
- Pruning shall be performed only by arborists or other qualified professionals who, through related training and on-the-job experience, are familiar with the standards, practices, and hazards of **arboriculture** related to pruning and the equipment used in such operations.
- **Arboriculture**: The art, science technology, and business of commercial, public, and utility tree care.
- **Arborist**: An individual engaged in the profession of arboriculture who, through experience, education, and related training, possesses the competence to provide for or supervise the management of trees and other woody plants.
- **Pruning objectives**:
 - Improve **branch** and **trunk** architecture
 - Promote or subordinate certain leaders, **stems**, or branches
 - Promote desired branch spacing
 - Promote or discourage growth in a particular direction (**directional pruning**)
 - Minimize future interference with traffic, lines of sight, infrastructure, or other plants
 - Restore plants following damage; and/or rejuvenate shrubs
- **Provide clearance**:
 - Ensure safe and reliable **utility** service
 - Raise crowns for the movement of traffic or light penetration
 - Manage size and shape
 - Improve aesthetics
 - Manage production of fruit, flowers or other products
 - Manage wildlife habitat
- **Pruning systems**:
 - Natural – Allows for changes in appearance resulting from pruning when achieving specific goals such as:
 - Crown or branch **reduction**
 - **Raising** crowns
 - Developing or improving structure
 - Providing clearance
 - Improving tree health
 - Risk reduction
 - Enhancing views
 - Pollarding – A pruning system that maintains crown size by initial heading of branches on young trees followed by removal of shoots to their point of origin each year without disturbing the resulting pollard head.
 - Topiary – Pruning system that uses a combination of pruning, supporting, and training branches to orient a plant into a desired shape.

- Pleaching – Trains one or more plant to achieve a desired shape or form through a combination of pruning and interweaving or tying small branches to one another, or to a preformed frame.
- **Pruning specifications:**
 - Physical location of the plants to be pruned
 - Pruning objectives
 - Pruning system
 - **Pruning amount**
 - Pruning cut types
 - Size range
 - Plan for debris removal or repurposing
 - Time line for completion
- **Pruning cuts:**
 - The smallest diameter cut that meets the objective should be preferred
 - The number and size of cuts that expose heartwood should be minimized
 - Pre-cut branches when necessary to avoid splitting wood or tearing the bark
 - When removing a branch with included bark, the cut should be made as close as possible to the point where the wood of the stems join without damaging the remaining stem
 - When removing a dead branch or stem the final cut shall be made just outside the collar of living tissue without leaving a dead **stub** and the final cut should leave adjacent bark firmly attached
 - Interior and lower branches should be retained when compatible with objectives and system used
 - When removing live branches the majority of cuts should be in the outer portion of the crown
 - A **flush-cut** is not an acceptable pruning practice
- **Branch removal cut** – A pruning cut that removes the smaller of two branches at a union, or at the parent stem without cutting into the branch bark ridge or branch collar, or leaving a stub
- **Heading cut** – A pruning cut that removes a branch or stem between nodes (leaving a stub), to a bud, or to a live branch that is less than 1/3 the diameter of the branch or stem being removed
- **Shearing cut** – Cutting leaves, shoots, or branches to a desired plane, shape, or form
- **Topping** – Reduction of tree size by cutting to stubs without regard for long-term tree health **shall** be considered an unacceptable practice
- **Lion tailing** – When pruning trees using the natural system the removal of interior lateral branches that results in the concentration of growth at branch ends **shall** be considered an unacceptable practice
- **Find an arborist** – <http://treesaregood.org>