Jacksonville Tree Commission

TASK FORCE ON URBAN TREE PLANTING BEST PRACTICES
Monday November 10, 2025 11:00 AM to 2:00 PM
Ed Ball Building, 10th Floor, Conference Room 5 and Zoom Webinar

Task Force Members:

Susan Fraser, Tree Commission Member, Chair
Nina Sickler, Tree Commission Member, Vice-Chair
William Burke, Tree Commission Member
Curtis Hart, Tree Commission Member

Non-Member Attendees:

Jeff Lucovsky, Public Works
Jonathan Johnston, Parks

Advisors:

Jonathan Colburn, Urban Forestry Manager
Justin Gearhart, City Arborist
Shannon MacGillis, Office of General Council

Staff:

Joe Rainey, Executive Assistant

AGENDA

1. **Call to Order –** Chair

2. **Roll Call and Verification of Quorum -**Chair

3. **Public Comment : (up to 3 minutes, allotted at discretion of Chair)**

4. **Submittal of Speaker's Cards** – Chair
   - **i.** A raised hand icon will be acknowledged by the Chair.
   - **ii.** For those attending in person, paper speaker's cards will be available.

5. **Approval of Minutes of October September 29, 2025 Task Force Meeting**

6. **Review of Standards, Procedures and Policies of the Tree Commission for Planting in an Urban Environment**

   Discussion with Prosser, Inc. on State Street Contract Findings

7. **ADJOURNMENT**

Standards, Procedures and Policies of the Tree Commission for Planting in an Urban Environment

Scope and Purpose

1. Definition of Urban Planting Environment
2. Applicability of Standards and Procedures
3. Suitable Planting Environment Definition
4. Responsibility for Determination of Suitable Planting Environment
5. Other Urban Impacts on Tree Planting

Suitable Planting Environment is Provided at Each Tree Planting Location

1. Sufficient area is provided to accommodate mature trunk, flare and surface roots.
2. Sufficient Soil Quantity (volume) is provided to support the tree mass (spread) proposed.
3. A classification of Not Compacted is achieved within the Required Soil Volume at each planting location.
   - **A.** Existing Conditions Project
     - i. 630-CITY and Remove & Replace Programs not within a Public ROW Median
     - ii. Remove & Replace Programs within a Public Right of Way Median
     - iii. Level 2 Project without associated development/construction
     - iv. Level 3 Project without associated development/construction
   - **B.** Proposed Development Project.
     - i. Identify Unsuitable Planting Environments
     - ii. Mitigate Unsuitable Planting Environments
       - a. Required Soil Volumes located within an SPA
       - b. Required Soil Volumes located outside an SPA
     - iii. Concept Plan Review
       - a. Submittal Requirement
       - b. Approval of the Concept Plan
       - c. Staff Report
       - d. Compliance Inspections

Urban Impacts on Tree Planting are Addressed

1. Vertical and Overhead Obstructions are Recognized in Tree Selection.
2. Soil Quality within the Required Soil Volume
3. Short and Long Term Maintenance is Provided
4. Canopy Goals are Considered

Attachments

Exhibit A. Charge Memo dated November 20, 2025
Table 1. Minimum Open Space Cut Out Requirements
Table 2. Required Soil Volume
Table 3. Standards for Establishing Classification of NOT COMPACTED
Table 4 Soil Replacement Approved to Mitigate COMPACTED Soil in ROW Median
Exhibit B. LDPM, Volume 4. Section 601, Effective January 2025
Exhibit C. Soil Profile Rebuilding Standards

Standards, Procedures and Policies of the Tree Commission for Planting in an Urban Environment

Scope and Purpose

The Chair of the Tree Commission established the Task Force on Jacksonville Urban Tree Planting Best Practices for the purpose stated in the Amended Charge Memorandum dated November 20, 2024 (***Exhibit A***).

1. *Definition of Urban Planting Environment*

The Task Force is empowered to review and provide recommendations on initiatives and strategies related to the planting of trees on urban public land in the City for the purpose of maximizing the long term health and vitality of trees planted with Tree Mitigation Funds on urban public land pursuant to the Tree Commission Programs. As defined by the Charge Memorandum , the term "urban" refers to *planting or replanting trees anywhere in the geographic City of Jacksonville that is constrained, horizontally or vertically, or both by, including but not limited to, development (such as buildings, utilities, etc.), grey infrastructure, hardscape, concrete, asphalt, pavement or brick, etc. above or below ground ("Urban Planting Environment")*

The Task Force has recommended the following standards, procedures and policies to the Tree Commission, and at its DATE meeting, the Tree Commission has determined that trees planted with Tree Mitigation Funds in an Urban Planting Environment pursuant to the Tree Commission Programs listed below shall be subject to the standards, procedures and policies herein to achieve a Suitable Tree Planting Environment for each proposed tree planting location.

- 630- CITY
- Remove and Replace
- Level 2
- Level 3

Each Application shall establish a Suitable Planting Environment (SPE) for each tree planting location as prescribed herein to mitigate each otherwise Unsuitable Planting Environment to be eligible for funding from the Tree Mitigation Funds unless the Tree Commission approves an alternative mitigation strategy to achieve a Suitable Planting Environment. Recognizing the additional impacts posed by the larger urban environment on tree planting, Applications shall also mitigate or eliminate Urban Impacts to Tree Planting determined to impact proposed tree planting locations. Evidence of establishment of an (SPE) for each tree planting location and a summary of any alternative standards proposed for Tree Commission approval shall be documented in the Staff Report for the Application to considered by the Tree Commission when Tree Commission approval is required and shall be documented in Program records when Tree Commission approval is not required under the Procedures of the Tree Commission.

The establishment of these standards and procedures is intended to inform project applicants and designers of the minimum requirements determined to be applicable to tree planting in an Urban Planting Environment to achieve a healthy and sustainable tree canopy within the City. The

standards and procedures address Existing Conditions Projects in a manner that recognizes the conditions likely to be encountered when planting trees in existing Urban Planting Environments and provide guidance to direct applicants to alternative planting locations and tree selections when the minimum standards cannot be met. The standards and procedures for New Construction Projects are intended to challenge applicants and project designers to apply the minimum standards applicable to this category of project in initial design decisions in a manner that avoids and minimizes the need for supporting infrastructure such as soil replacement, structure support for surface improvements and compaction mitigation to address Urban Planting Environments within the project. Consideration of New Construction projects by the Tree Commission include an assessment of the extent to which the need for supporting infrastructure is minimized or eliminated; based on site conditions and design decisions represented in the Application, Applicants may be required to pay for the supporting infrastructure necessary to achieve Suitable Planting Environments within the project.

The Tree Commission is committed to a partnership with all Applicants to meet its goal to maximize the future health and vitality of any tree planted under its programs; in support of the Tree Commission's duty to provide the best outcome for the future tree canopy of the City, project review and approval is intended to be an interactive collaboration in pursuit of this goal.

2. *Applicability of Standards and Procedures*

These standards shall apply to all locations within a project determined to be Urban Planting Locations. These procedures and standards established by the Tree Commission are the minimum required to provide a Suitable Planting Environment at the time of tree planting. Subject to approval by the Tree Commission, an Applicant may propose alternative standards that provide an equal or superior tree planting environment than that created by application of the established standards or address unique site conditions. Approval of alternative standards by the Tree Commission shall be required under the Schematic and Conceptual Plan procedures established herein.

For the purposes of these Standards, Procedures and Policies, the term "Application" shall include:

- projects prepared by staff or an Applicant other than staff for Tree Commission approval (Level 2 and Level 3 Programs); and,
- projects managed by staff under the 630-City and Remove & Replace Programs that do not require Tree Commission approval.

The term "Applicant" shall include the City when applications are prepared by City staff and any other party seeking approval of a project by the Tree Commission. Compliance with the applicable Standards, Procedures and Policies for projects not subject to Tree Commission approval shall be documented in the Program records of the City.

3. *Suitable Planting Environment Definition*

A Suitable Planting Environment is defined as a proposed tree planting location in which, at the time of planting:

1) sufficient area is provided to accommodate mature trunk volume, flare and surface roots (Table 1. OSCO Requirements) ; and,
2) sufficient Soil Quantity (volume) is provided to support the tree mass (spread) proposed (Table 2. Required Soil Volumes); and,
3) a classification of Not Compacted is achieved within the Required Soil Volume at each tree planting location (Table 3. Suitable Planting Environment Standards).

Within each project an Unsuitable Planting Location is assumed to exist for a particular tree planting location if, at the time of tree planting, without changes to the conditions that will exist at the time of tree planting, a Suitable Planting Environment would not be provided in that location. The determination of suitability is location specific; a project may include both tree planting locations that are determined to be Urban Planting Locations and locations that are not.

4. ***Responsibility for Determination of Suitable Planting Environment.***

Determination that a Suitable Tree Planting Environment exists for each tree planting location shall be determined by the entity listed or their designee. When approval by the Tree Commission is otherwise required for the project funding, the determining entity shall make a recommendation to the Tree Commission as to the provision of Suitable Planting Environment(s) within the project. The Tree Commission shall consider the staff recommendation and public comment in its review of the application. If compliance with the Standards cannot be achieved, approval of an alternative standard or variance to the adopted standard may be considered by the Tree Commission. The Tree Commission shall be solely responsible for approving alternative standards after consideration of the Staff Report, Applicant and public comment.

Program	Entity
630-CITY	City Arborist
Remove and Replace	City Arborist
Level 2	City Arborist recommendation; Tree Commission approval
Level 3	City Arborist recommendation; Tree Commission approval

5. ***Other Urban Impacts on Tree Planting***

In addition to a suitable tree planting environment, the surrounding urban environment can pose other challenges to the long term health and vitality of planted trees (Urban Impacts).

a. vertical obstructions may limit the desired tree canopy and impose additional maintenance requirements (Urban Impacts Section 1); and,
b. imported soils can include contaminants or may be of such a quality that tree health is not supported (Urban Impact Section 2); and,
c. maintenance beyond initial warranty periods may be required to address the stress the urban environment places on the tree (Urban Impacts Section 3); and,
d. constrained planting areas can affect the ultimate canopy spread and growth rate of a tree located in such an environment, reducing the shade benefit of the tree selected such that a fast growing tree species may achieve shade goals more effectively (Urban Impacts Section 4).

In addition to a recommendation as to the compliance with applicable standards to provide a Suitable Planting Environment at each planting location, each project application shall identify the presence or absence of each Urban Impact on the tree planting locations within the project limits and confirm compliance with the applicable standards established in Urban Impacts Sections 1-3. When a project goal of the tree planting location is to quickly provide shade, utilization of the tree species recommended in Uban Impacts Section 4 is encouraged.

Suitable Planting Environment is Provided at Each Tree Planting Location

The Application shall demonstrate for each planting area:

1. Sufficient area is provided to accommodate mature trunk, flare and surface roots.

To provide sufficient area to accommodate mature trunk, its flare and surface roots, an open space without surface improvements shall be provided around the trunk of the tree; this area, when located within an area of surface improvement, shall be provided in the form of a cut out within the surface improvement.

The Tree Commission's Approved Tree List classifies each Approved Tree as small, medium or large (Tree Size). **Table 1.** identifies the minimum Open Space / Cut Out (OSCO) required for each tree planting location based on the Tree Size.

The specified Minimum Open Space / Cut Out (OSCO) based on the Tree Size of the proposed tree to be planted shall be provided for each tree location.

For an Existing Conditions Project, if the standards in Table 1 cannot be met, the Tree Commission may approve the following alternative standard:

> The reduction of one dimension of the required OSCO Requirement is permitted provided the area of the applicable OSCO is not reduced and the minimum distance of the trunk to an impervious surface is maintained.

Tree Grates may be utilized to maintain the minimum OSCO opening dimensions. If installed within an OSCO, tree grates must have an opening (symmetrical around the truck) that is a minimum of 12" from the trunk at the time of planting and the long term maintenance agreement with the City must provide for annual tree grate inspection and modification or replacement as required to maintain an opening that is a minimum of 6 inches from the trunk, measured at the time of inspection.

Tree Grates specified in an Existing Conditions Project for installation within an OSCO in order to provide the minimum sidewalk width for the adjacent sidewalk as defined in Section 654, Ordinance Code and the LDPM Volume 2. Design Standards (***Exhibit A***) shall be eligible for funding from the Tree Mitigation Funds.

2. Sufficient Soil Quantity (volume) is provided to support the tree mass (spread) proposed.

The Tree Commission's Approved Tree List classifies each Approved Tree as small, medium or large (Tree Size). Based on this classification, the planting area for each proposed tree shall meet the standards in **Table 2**.

Table 2. identifies the Required Soil Volume (RSV) for each tree planting location. The area claimed as Required Soil Volume is calculated as the total depth x width x height minus the area of utilities or other encroachments (measured as the volume within the Required Soil Volume).

Unless otherwise approved by the Tree Commission, each Required Soil Volume must be provided within land controlled by the project's Maintenance Entity.

In the absence of hydric soils or vegetative indicators of a higher water table, the application of a depth of $\leq$ 3 feet to the calculation of the RSV is assumed to provide adequate drainage to obtain root growth in the soil. The application of a depth of > 3 feet to the calculation of the RSV requires additional testing to confirm the depth of the water table is lower than the depth applied in the calculation. Test results that indicate a water table at or above 3 feet will require the calculation of the RSV for those locations to utilize a depth above the identified water table.

New Construction project designs are encouraged to combine, and for Existing Conditions Projects, to relocate as practical, proposed tree planting locations so as to combine Required Soil Volumes in a manner that reduces the need for subsurface infrastructure to provide an UNCOMPACTED planting environment and maximizes the OSCO available to the planted trees. As an incentive, combined planting areas are eligible for a 25% reduction in the Required Soil Volume otherwise required for an individual tree, provided however that the minimum distance to an impervious surface established for the tree trunk cannot be reduced.

The Tree Commission may grant a variance reducing the Required Soil Volume applicable to a planting location based on the Tree Size of the tree proposed (Proposed Tree Size) to be planted provided:

i. Relocation of the planting area or combination of Required Soil Volumes does not provide the Required Soil Volume applicable to the Proposed Tree Size; and
ii. Reduction of the Proposed Tree Size, substituting a small or medium tree for proposed large tree or a small tree for proposed medium tree, does not provide the Required Soil Volume applicable to the substituted tree size.

3. A classification of Not Compacted is achieved within the Required Soil Volume at each planting location.

A Suitable Planting Environment requires the classification of NOT COMPACTED within each Required Soil Volume. Together, **Table 3.** and the sections below identify the standards and procedures for the determination of "NOT COMPACTED" by Project Type.

Applications that include a planting location classified as "COMPACTED" shall meet the standards established in Table 3 to establish a Suitable Planting Environment within the Required Soil Volume.

A. Existing Conditions Project. Defined as a project authorized under the 630-CITY and Remove & Replace Programs, a proposed Level 2 Project without associated development/construction, including Level 2 Projects within an existing Public Right of Way and a proposed Level 3 Project without associated development/construction.

i. **630-CITY and Remove & Replace Programs not within a Public Right of Way Median**

Staff shall inspect the proposed tree planting locations and identify, based on the Tree Size of the proposed tree to be planted, the Required Soil Volume associated with each. Each RSV shall be classified as "COMPACTED", "NOT COMPACTED" or "POTENTIALLY COMPACTED". Each RSV must ultimately be classified as "COMPACTED" or "NOT COMPACTED". Staff may rely on history of the site, health of adjacent tree plantings, on-site testing results (penetrometer) or order a bulk density test (BDT) to make a final determination of "COMPACTED" or "NOT COMPACTED" for each RSV. If a BDT is performed, a Bulk Density Score of 109 lb /cubic foot or above shall be classified as COMPACTED. Compacted of 85% or greater shall be classified as COMPACTED.

For Remove & Replace Plantings located within an existing Public Right of Way outside the median, staff shall apply the following assumption for a determination of COMPACTED or NOT COMPACTED. This assumption may be rebutted by staff based on health of adjacent tree plantings, on-site testing or BDT:

Planting locations located between the travel lane(s) and the right of way that are 8 feet in width or greater (exclusive of surface improvements including sidewalks) are assumed "NOT COMPACTED"; width less than 8 feet are assumed to be "COMPACTED".

If an RSV is classified as "COMPACTED" and tree planting is desired, the Staff shall submit a mitigation plan and cost estimate to establish a Suitable Planting Environment to the Tree Commission for approval.

ii. **<u>Remove & Replace Programs within a Public Right of Way Median</u>**

Staff shall inspect the proposed tree planting locations and identify, based on the Tree Size of the proposed tree to be planted, the Required Soil Volume associated with each. The Required Soil Volume for planting in an existing public right of way median is identified in Table 4. Each RSV shall be classified as "COMPACTED", "NOT COMPACTED" or "POTENTIALLY COMPACTED". Each RSV must ultimately be classified as "COMPACTED" or "NOT COMPACTED". Staff may rely on history of the site, health of adjacent tree plantings, on-site testing results (penetrometer) or order a bulk density test (BDT) to make a final determination of "COMPACTED" or "NOT COMPACTED" for each RSV. If a BDT is performed, a Bulk Density Score of 109 lb /cubic foot or above shall be classified as COMPACTED. Compacted of 85% or greater shall be classified as COMPACTED.

For Remove & Replace Plantings located within an existing Public Right of Way median, staff shall apply the following assumption for a determination of COMPACTED or NOT COMPACTED. This assumption may be rebutted by staff based on health of adjacent tree plantings, on-site testing or BDT:

Required Soil Volume located within an existing median 12 feet in width or less (measured BOC to BOC) are assumed to be "COMPACTED".

If an RSV is classified as "COMPACTED" and tree planting in that location is desired, mitigation in the form of Soil Replacement shall be authorized, up to the Volume to be

Replaced and Cost identified in **Table 4** for the Tree Size to be planted without additional review and approval by the Tree Commission. Mitigation in excess of the Cost identified in Table 4 for the Tree Size to be planted shall require approval by the Tree Commission.

iii. **Level 2 Project without associated development/construction.**
Staff shall inspect the proposed tree planting locations and identify the Required Soil Volume associated with each. Each RSV shall be classified as "COMPACTED", "NOT COMPACTED" or "POTENTIALLY COMPACTED". Each RSV must ultimately be classified as "COMPACTED" or "NOT COMPACTED". Staff may rely on history of the site, health of adjacent tree plantings, on-site testing results (penetrometer) or order a bulk density test (BDT) to make a final determination of "COMPACTED" or "NOT COMPACTED" for each RSV. If a BDT is performed, a Bulk Density Score of 109 lb /cubic foot or above shall be classified as COMPACTED. Compacted of 85% or greater shall be classified as COMPACTED.

Staff shall apply the assigned classifications for each RSV in its development of the Level 2 project application. The Planting Plan and Cost Estimate shall be based on the classification assigned each planting location and include mitigation measures required to establish a Suitable Planting Environment in each.

For Level 2 Projects located within an existing Public Right of Way without associated development/construction, staff shall apply the following assumptions for a determination of COMPACTED or NOT COMPACTED. These assumptions may be rebutted by staff based on health of adjacent tree plantings, on-site testing or BDT.

a. Required Soil Volume located within an existing median 12 feet in width or less (measured BOC to BOC) are assumed to be "COMPACTED".
b. Planting locations located between the travel lane(s) and the right of way that are 8 feet in width or greater (exclusive of surface improvements including sidewalks) are assumed "NOT COMPACTED"; width less than 8 feet are assumed to be "COMPACTED".

iv. **Level 3 Project without associated development/construction.** The Applicant shall prepare and submit a Schematic Planting Plan prior to the Project Scoping Meeting. The Schematic Planting plan shall, at a minimum, identify proposed planting locations, proposed Tree Size for each planting location and the OSCO and RSV proposed for each proposed planting location. Each proposed planting location shall be numbered and a tabular summary provided that identifies the extent to which each proposed planting location meets the applicable standards established herein. Upon receipt of a Level 3 Project Scope Submittal, staff shall perform an initial site visit prior to the Project Scope Review Meeting to identify /confirm the Required Soil Volume associated with each potential planting area as "COMPACTED", "NOT COMPACTED" or "POTENTIALLY COMPACTED" under existing site conditions. Staff may rely on health of adjacent tree plantings, history of the site, on-site testing results (penetrometer) or order a bulk density test (BDT) to make a final determination of "COMPACTED" or "NOT COMPACTED" for each proposed planting location. If a BDT is performed, a Bulk Density Score of 109

lb /cubic foot or above shall be classified as COMPACTED. Compacted of 85% or greater shall be classified as COMPACTED.

Staff shall provide its classification for each planting location to the Applicant. The Applicant shall apply the classifications in its development of the Conceptual Level 3 project application. The Level 3 Conceptual Planting Plan and Cost Estimate shall be based on the assigned classification and include mitigation measures required to establish a Suitable Planting Environment.

The Level 3 Conceptual Planting Plan and Cost Estimate shall be approved, approved with conditions/modification or denied by the Tree Commission. A Level 3 Concept Plan approved by the Tree Commission with conditions/modification shall be revised by the Applicant to incorporate the conditions/modifications; the revised Concept Plan shall be reviewed by staff and re-approved by the Tree Commission as the Project Planting Plan; a Level 3 Concept Plan approved by the Tree Commission without conditions/modification shall, upon approval, be the Project Planting Plan. shall become the approved project plan.

B. **Proposed Development Project.** Defined as tree planting proposed in conjunction with any development/construction. When determined to be applicable to any Tree Commission Program other than a Level 3 Project, the Application shall be subject to the Level 3 Application requirements.

Within a Proposed Development Project, the Tree Commission seeks to limit the creation of Unsuitable Planting Environments through partnership with the project Applicant. A successful urban planting design balances the project goals with the impacts created by an urban environment on the health and long term viability of the desired urban tree canopy. A vibrant urban tree canopy can be best achieved by mitigating the constraints the urban environment places on trees through informed design decisions and management of construction practices. The standards established below represent the minimum requirements for mitigation of an Unsuitable Planting Environment.

i. **Identify Unsuitable Planting Environments**

To increase the quality of urban tree planting within a Proposed Development Project, an Applicant must first demonstrate that the design avoids the creation of Unsuitable Planting Environments to the maximum extent possible.

The initial Project Scope meeting with Staff shall identify proposed planting locations and tree species proposed for each location. The plan shall apply the Suitable Planting Environment standards for a Proposed Development Project to each proposed planting location and summarize in table form the mitigation required by these standards and policies to provide a Suitable Planting Environment at each planting location.

ii. **Mitigate Unsuitable Planting Environments**

In determining the mitigation required for a planting location, each planting location located within the limits of construction shall be classified as COMPACTED.

The Applicant shall demonstrate that the Proposed Development Plan employs the following design strategies to limit designation of COMPACTED to a Required Soil Volume:

a. Required Soil Volumes located within an SPA. In addition to the proposed planting plan, the Level 3 Project Scope submittal shall include a plan depicting the limits of construction within the Proposed Development Project (Limits of Construction Plan). Limits of construction include areas for storage of equipment, laydown of materials or supplies, limits of work, construction access, construction parking and all areas that are or will be impervious. Areas within the project limits that have been previously developed or disturbed shall be included in the area identified as the limits of construction. Areas that are outside the limits of construction shall be delineated on the Limits of Construction Plan and protected as Soil Preservation Areas (SPAs).

b. Required Soil Volumes located outside an SPA. If Tree Mitigation Funding is requested for the installation of a Surface Support System (silvacell, etc.), Staff will work with the Applicant and Public Agency in the development of the Conceptual Plan to meet the project goals, maximize the investment in future tree canopy and minimize the need for Surface Support System investment from the Tree Mitigation Fund. To effectuate coordination, the following design review is required to minimize planting locations within a Compacted Planting Environment that requires an SSS:

i. Tree locations have been evaluated to minimize or eliminate the need for installation of an SSS. *Staff may recommend the relocation of trees to achieve minimum need for* an SSS.
ii. Tree sizes (small, medium or large) have been evaluated to minimize the need for installation of an SSS. *Staff may recommend changes to tree size to reduce the volume of* SSS.
iii. Paved areas have been located so as to minimize the need for installation of an SSS. *Staff may recommend reduction or relocation of proposed paved areas to reduce the area of* SSS.

An Applicant may decline to accept the recommendations of Staff and seek approval by the Tree Commission. The Staff Report will document its recommendations and the consistency of the Project Planting Plan for which the Applicant seeks approval in its report to the Tree Commission. Tree Commission approval may assign costs associated with mitigation of a Compacted Planting Environment to the Applicant.

iii. **Concept Plan Review**

a. Submittal Requirements. To facilitate the design review, in addition to the required Level 3 Application materials, the Application shall include, with the Conceptual Planting Plan, a Compacted Environment Assessment Plan that overlays the location of each RSV on the Limits of Construction Plan. Each Required Soil Volume located within the Limits of Construction shall be classified as COMPACTED; Required Soil Volume(s) located outside the Limits of Construction, within an SPA, shall be classified as UNCOMPACTED unless site history or on site testing supports a finding of COMPACTED. Planting areas outside the Limits of Construction may be classified as COMPACTED if the creation of an

Unsuitable Planting Environment is anticipated to be created by future development activities/ factors. The Staff shall work with the Applicant to minimize the extent of COMPACTED classification(s) within the project limits. The Applicant shall incorporate Staff recommendations to the maximum extent possible into the Conceptual Plan to be considered by the Tree Commission.

The Application for Concept Plan approval to the Tree Commission shall include a Rough Estimate of Improvements based on the Compacted Environment Assessment Plan (CEAP). Based on the CEAP, the Concept Plan shall reflect mitigation required to provide a Suitable Planting Environment for each Required Soil Volume. The Rough Estimate of Improvements shall include the cost associated with the provision of mitigation proposed to achieve Suitable Planting Environments. For each mitigated planting location, the extent to which the mitigation is requested to be funded by Tree Mitigation Funds shall be described. If all or a portion of the mitigation required to achieve Suitable Planting Environments will be funded from a source other than the Tree Mitigation Fund, such cost share shall be described and other funding source(s) identified.

b. Approval of the Concept Plan. Tree Commission approval is required prior to submittal of the Project Planting Plan to the Tree Commission. Project Planting Plans must clearly identify the limits of construction and SPAs consistent with the limits depicted on the Schematic and Concept Plans. SPAs depicted on the Project Planting Plan shall be maintained by the Applicant as UNCOMPACTED throughout construction and final acceptance utilizing protection from all encroachment in the same manner as required for tree protection areas in Section 656.1207, Ordinance Code. Location of fencing shall be depicted on approved plans and maintained by the Applicant /Public Agency as depicted through final acceptance.

c. Staff Report. The Staff Report to the Tree Commission for the Concept Plan Approval for a Level 3 Project shall identify actions taken to reduce the creation of Unsuitable Planting Environments and the need for Pavement Support Systems within the Level 3 Project.

d. Compliance Inspections. In addition to inspections related to tree installation, to ensure compliance with SPA protection requirements, Tree Commission Staff may perform inspections at any time after approval of a Level 3 project by the Tree Commission and enforce the maintenance of SPA protective fencing through final acceptance. If a CEI is retained for the project, inspections shall be assigned to the CEI professional retained for the project. Failure to maintain required fencing and encroachments within the SPA shall cause the project to be subject to additional review by the Tree Commission.

Urban Impacts on Tree Planting are Addressed

1. Vertical and Overhead Obstructions are Recognized in Tree Selection.

Within the urban environment, vertical obstructions can limit the extent (spread) of the tree canopy in one or more directions. Vertical obstructions are typically adjacent buildings and traffic clearance requirements but also include lighting provided to illuminate a road surface or pedestrian path. Failure to recognize these obstructions when selecting a tree species for a particular location can limit the natural mature spread of the tree species and require additional inspection, maintenance and pruning.

A. **Vertical Clearance to Adjacent Structures.** When selecting a tree species for an urban location, the following standards apply to vertical clearance to adjacent structures. Additional limitations in tree selection may be applied by Staff to recognize overhead and other vertical obstructions applicable to the planting location. Maintenance of Illumination for Sidewalks is specifically addressed in B. below.

The following distance requirements shall apply when ***the planting location is*** adjacent to a vertical structure of two stories or greater (measured to the center of the trunk of the tree):

i. **Large Trees.** Minimum of 12 feet from the vertical constraint (building façade) unless the Tree Commission approves a Proactive Maintenance Plan (PMP) prepared by Staff ~~for the Project~~ that, at a minimum, specifies the frequency of maintenance projected to be required to address conflicts with the vertical constraint. The PMP will identify the maintenance entity and funding source. If maintenance is provided by other than the City, an enforceable PMP shall be executed by the maintenance entity.

ii. **Small and Medium Trees.** The minimum sidewalk width for downtown sidewalks must be maintained and the required OSCO for the Tree Size provided.

B. **Maintenance of Illumination for Sidewalks.** Level 2 and Level 3 Project plans shall clearly identify the location and height of light sources within the project boundaries that illuminate a public sidewalk or public street (pole lights, wall lights, street lights, etc.) and depict the extent of the illumination on the ground surface that would be present without the proposed tree planting. Tree Planting Locations that, based on the mature canopy of the tree to be planted (height and width), will impact/ reduce the extent of illumination on the ground surface, shall submit a PMP prepared by Staff for Tree Commission approval that, at a minimum, specifies the frequency of maintenance projected to be required to address conflicts with the provision of ground illumination for public sidewalks and streets. The PMP will identify the maintenance entity and funding source. If maintenance is provided by other than the City, an enforceable PMP shall be executed by the maintenance entity.

2. Soil Quality within the Required Soil Volume is of sufficient quality to support tree growth and long term tree health.

A. Proposed Soil Replacement meets the adopted specifications for Soil Replacement. See ***Exhibit B***. Land Development Procedures Manual, Volume 4. Specifications Section 601. LANDSCAPING (*Effective January 2025)*

B. If required, Proposed Soil Profile Rebuilding and specifications are consistent with adopted standards. See ***Exhibit C***. Soil Profile Rebuilding Standards.
C. If imported soil/topsoil is proposed, soil analysis for imported soil/topsoil within each Required Soil Volume meets the adopted specifications for Soil Replacement in ***Exhibit B***.
D. Site History will be reviewed by Staff utilizing the City's GIS Ash Site and Brownfields Site Inventory. Based on historic site use, Staff may require additional soil testing or environmental assessment to address potential contamination that would adversely affect tree health.

3. Short and Long Term Maintenance is Provided.

The long-term health and viability of a tree planted in an urban environment requires both short-term and long-term maintenance. All tree planting funded from Tree Mitigation Funds are supported with short term maintenance for a period of one or two years under the applicable contract warranty period; without additional proactive maintenance, tree planting in urban environments have reduced long-term health, early decline/death and reduced contribution to the tree canopy. To maximize the long term health and vitality of tree planting in the City, additional long term maintenance is required beyond the short term maintenance period; within an urban environment this includes regular inspections and scheduled pruning and may include implementation of an integrated pest management plan.

The Tree Commission may include in its approval of an Urban Planting Project a requirement for an enforceable post warranty period maintenance plan that addresses long-term maintenance, including but not limited to regular inspections, scheduled pruning and as required, an integrated pest management plan. If tree grates are installed, the long term maintenance plan shall provide for tree grate replacement or modification at the Maintenance Entity's or Public Agency's expense.

4. Canopy Goals are Considered.

When a goal of the tree planting installation is to quickly provide shade / cooling environment through the use of tree canopy to address existing or future urban conditions that affect human health and comfort, the following trees are recommended. Locations include but are not limited to transit stops, adjacent to sidewalks, parking areas, civic locations such as plazas and other urban gathering spaces.

Medium Trees		**Growth Rate**
Althena Elm	*Ulmus parvifolia* "Emer I'	moderate
Bosque Elm	*Ulmus parvifolia* ' Bosque'	moderate
Drake Elm	*Ulmus parvifolia '* Drake*'*	moderate
River Birch	*Betula nigra*	rapid
Large Trees		
Allee Elm	*Ulmus parvifolia* "Emer II'	moderate
Red Maple	*Acer rubrum*	moderate
Shumard Oak	*Quercus shumardii*	rapid
Sycamore	*Platanus occidentalis*	rapid
Tulip Poplar	*Liriodendrum tulipfera*	rapid

Source: Tree Commission Approved Tree List, June 2025

TREE COMMISSION

November 20, 2024

TO: Tree Commission Members and Staff
FR: Curtis Hart, Chair, Jacksonville Tree Commission
RE: **Task Force on Jacksonville Urban Tree Planting Best Practices, *Amended***

The Jacksonville Tree Commission is charged as a coordinator for programs, projects, and activities related to planting projects and the health of the tree canopy between all public and private entities in the City of Jacksonville. Chapter 94, *Ordinance Code*. A healthy, sustainable tree canopy requires adherence to the principle, "right tree, right place". The restoration of Jacksonville's tree canopy necessarily includes the planting, or re-planting, of trees in urban areas, including downtown, which often requires enhanced site preparation and planting specifications that may not be supported by current Ordinance Code or City landscape design requirements. As such, to escalate the effective planting of trees in urban Jacksonville, certain planting policy and Ordinance Code provisions may need to be revised.

For these reasons, pursuant to §94.104(b), *Ordinance Code*, I am hereby creating a Jacksonville Tree Commission Task Force on Urban Tree Planting Best Practices ("Urban Tree Task Force").

As used herein the term, "urban", refers to planting or replanting trees anywhere in the geographic City of Jacksonville that is constrained, horizontally, vertically, or both, by, including but not limited to, development (such as buildings, utilities, etc.), grey infrastructure, hardscape, concrete, asphalt, pavement or brick, etc., above or below ground.

The Urban Tree Task Force shall address the following:

1. Review current code provisions and related procedures and policy affecting the planting of trees in urban environments, including but not limited to, Chapter 656, Part 12, Subpart C (Landscaping Requirements), *Ordinance Code*, and the Land Development Procedures Manual, to identify and make recommendations to encourage the planting of trees and improve the outcome of planted trees. Consideration should be given to findings related to urban tree planting made by the Subdivision Standards and Policy Advisory Committee (SSPAC) LDPM Subcommittee, and the findings by the Context Sensitive Streets Standards Committee. The recommendations of this Task Force are not bound by findings of these Committees/Subcommittees.
2. Review and provide recommendations on initiatives and strategies on the planting of trees on urban public land in the City, including recommendations on practices, policy and

procedure within the City of Jacksonville, Public Works, regarding the planning and design of tree plantings to promote the maintaining of existing trees, the planting of additional trees, and to improve the outcome of planted trees.

3. Review and provide recommendations on initiatives and strategies on the planting of trees on urban public land in the City, including recommendations on practices, policy and procedure within JTA regarding the planning and design of bus stops to promote the maintaining of existing trees, the planting of additional trees and to improve the outcome of planted trees.
4. Consider methods to incorporate the Tree Commission in the planning and design process of agencies or entities of the City, including but not limited to the above named, to promote the planting of urban trees and to appropriately apply Tree Fund dollars to enhance and promote a healthy, sustainable tree canopy in the City.

The Task Force is NOT tasked to create or implement an Urban Forestry Master Plan, rather to consider current obstacles and best practices for the City to accelerate the appropriate planting of trees in urban Jacksonville and to enhance the stewardship role of the Tree Commission in the development of a healthy, sustainable tree canopy in the City.

Pursuant to §94.104(e), *Ordinance Code*, The Urban Tree Task Force includes the following:

Members (3 required for quorum):

Susan Fraser, Tree Commission Member, Chair
Nina Sickler Tree Commission Member, Vice-Chair
Curtis Hart, Tree Commission Member
William Burke, Tree Commission Member

Non-member recommended attendees/advisors (non-voting; non-quorum):

Jonathan Colburn, Urban Forestry Manager, Tree Commission Advisor
Anne Coglianese, Chief Resilience Officer, COJ
Kathleen McGovern, Parks Development Coordinator, COJ
Jill Enz, Chief of Natural and Marine Resources, COJ
Representative, Scenic Jacksonville, Inc.
Representative, Greenscape of Jacksonville

I would like to thank Tree Commission Member Susan Fraser for chairing this Task Force.

Staff: All meetings of the Urban Tree Task Force shall be noticed and open to the public. Meeting frequency, dates and times shall be decided by the Task Force Chair. The Director of Public Works shall designate a Public Works employee as the staff person who shall be responsible for all meeting notices and minutes. At the discretion of the Task Force Chair, an allotment of time for public comment (up to three minutes per person per meeting) may be provided at each meeting.

Deadline: A report describing recommendations for policy, practice or law amendments, or a request for an additional term shall be delivered to the Tree Commission Chair on or before **May 31, 2025.**

Cc: Tree Commission Members and Staff / Mayor's Office / Electronic Notice Kiosk – 1st Floor City Hall

Urban Planting Standards

Minimum Planting Area is Provided for each Proposed Tree

Table 1 *October 29, 2025 Task Force*

- Sufficient area is provided to accommodate mature trunk, flare and surface roots.

Tree Size [1]	min. distance from trunk to impervious surface (656.1211)	*Minimum Open Space Cut Out (OSCO)Requirements* [2]		
		Proposed Development Project	**Existing Conditions Project incl Existing ROW (other than median)**	**Existing Right of Way Median**
Small Tree	2 feet	6' x 6' / 36 SF area	6' x 6' / 36 SF area	6' x 6' / 36 SF area
Medium Tree	3 feet	8' x 8' / 64 SF area	8' x 8' / 64 SF area	8' x 8' / 64 SF area
Large Tree				
Other Than Live Oak	4 feet	10' x 10' / 100 SF area	8' x 8' / 64 SF area	10' x 10' / 100 SF area
Live Oak	6 feet	12' x 12 '/ 144 SF area	12' x 12' / 144 SF area	12' x 12' / 144 SF area

[1] *As classified by the Tree Commission Approved Planting List*

[2] *Reduction of one dimension of the OSCO dimension shall be permitted provided the area of the OSCO is not reduced and the minimum distance from the trunk to impervious surface is maintained.*

Urban Planting Standards

Minimum Planting Area / Required Soil Volume is Provided for each Proposed Tree

Table 2 *July 15, 2025 Task Force*

- Provide sufficient soil quantity to support the tree mass proposed.

	Required Soil Volume (depth x height x width) [3]			
	Permitted Depth [1]	**Proposed Development Project** [2]	**Existing Conditions Project incl Existing ROW (other than median)**	**Existing Right of Way Median**
Small Tree	2' - 3'	*300 CF*	*300 CF*	*300 CF*
Medium Tree	2.5' - 4'	*800 CF*	*600 CF*	*600 CF*
Large Tree				
Other Than Live Oak	3' - 4'	*1,000 CF*	*750 CF*	*750 CF*
Live Oak	3' - 4'	*1,000 CF*	*1,000 CF*	*1,000 CF*

[1] *Calculations based on depth over 3 feet requires water table depth confirmation*

[2] *Required Soil Volume may be reduced by up to 25% if planting area is shared between multiple trees.*

[3] *Aspect ratio of area claimed as Required Soil Volume shall not exceed 4:1; no dimension of the RSV shall be less than the applicable OSCO smallest dimension in Table 1 (as may be reduced by shared RSV, without add'l reduction).*

Urban Planting Standards

Suitable Planting Environment is Provided

Table 3 *October 29, 2025 Task Force*

- A classification of NOT Compacted is Achieved within the Required Soil Volume

The Required Soil Volume is provided without encroachment by surface improvements.

Test Required Soil Volume for compaction if site history indicates. If Required Soil Volume is:

NOT COMPACTED	Meet the standards of LDPM Section 601
COMPACTED	Mitigate compacted environment with Soil Replacement. Soil Profile Rebuilding may be appropriate.
Existing ROW Median	Assess for compation; see Section 3. A. ii. and Table 4.

The Required Soil Volume includes existing or proposed surface improvements.

Existing Conditions Project	Assume Required Soil Volume is Compacted. Apply Existing Project standards. Mitigate compacted environment within Required Soil Volumw with Soil Replacement.
Proposed Development Project	Design the surface improvements to limit compaction within Required Soil Volumes. Group tree planting areas, combine Required Soil Volumes, utilize tree grates, raised planters and locate trees strategically to maximize area of OSCO (bump outs, planting within adjacent parallel parking) and minimize requirement for support of surface improvements. When compaction within the Required Soil Volume is not avoided, mitigate compacted environment created through Soil Replacement and as required, structural support of. surface improvements. After approval of Conceptual Plan that minimizes the requirement for structural support for necessary surface improvements, where required install minimum support necessary for surface improvement integrity to create and maintain an uncompacted environment within the Required Soil Volume. Protect Required Soil Volume from compaction during construction activities.

Urban Planting Standards

Suitable Planting Environment is Provided

Table 4 *October 29, 2025*

- A classification of NOT Compacted is Achieved within the Required Soil Volume

Soil Replacement Approved to Mitigate Compacted Environment
in an Existing Median under Remove & Replace

Tree Size [1]	Minimum OSCO [2]	RSV Depth	Soil Replacement Volume (OSCO x RSV Depth)		FY 2025/26 Cost ($200 / CY)
Small	6' x 6'	3'	108 CF	4 CY	$800
Medium	8' x 8'	3'	192 CF	7 CY	$1,400
Large	10' x 10'	3'	300 CF	11 CY	$2,200

[1] *As classified by the Tree Commission Approved Planting List*
[2] *Table 1*

Task Force

Land Development Procedures Manual
Volume 4. Specifications *Effective January 2025*

Section 601. LANDSCAPING

2.3 TOPSOIL

A. Fine sand or loamy fine sand indigenous to the area suitable for plant growth that is free of weeds, roots, stumps, rocks larger than ½" diameter, organic muck, hard pan, toxic substances detrimental to plant growth, and construction debris such as limerock, concrete, and asphalt pieces. Deliver in a normally moist condition, neither muddy nor wet. Soil used for topsoil shall meet the following criteria measured in accordance with the appropriate AASHTO and ASTM standard:

1. USDA Texture: Fine Sand, Loamy Fine Sand
2. AASHTO Classification: A-3
3. pH 5.0-7.5
4. Deleterious Material 0-2% maximum by mass (rocks, roots, sod)
5. Organic Matter Content 1-10% by mass
6. Sand Content 80-96% by mass
7. Silt & Clay Content 3-10% by mass

B. Submit a one-quart sample of the topsoil to the Engineer before beginning planting and obtain approval. If requested by the Engineer, submit a soil test report from a commercial soil testing laboratory to verify compliance with the above criteria.

2.4 EXISTING SOIL

Use existing soil in plant pits if the soil complies with the standard for topsoil, unless the soil is contaminated with limerock, clay, brush, weeds, roots, stumps, stones larger than 1 1/2 inches in any dimension, litter and other extraneous or toxic matter harmful to plant growth. Remove contaminated soil and replace with acceptable stockpiled existing soil or new topsoil.

2.6 SOIL CONDITIONER

Provide 100% organic soil conditioner, free of limerock, clay, brush, weeds, roots, stumps, gravel, litter and other extraneous or toxic matter harmful to plant growth. Soil conditioner shall be one of the following:

A. Pine Bark Fines. 100% pine bark fines screened from other pine bark products in accordance with standards of the Mulch & Soil Council (Web: www.mulchandsoilcouncil.org) with a maximum of 15% pine wood content and at least 90% of particle size 1/4" or less.

B. Compost: A commercially blended and ground mixture of yard waste, tree trimmings, manure, and other biodegradable materials composted at a temperature and for the time necessary for the biological decomposition of the material, which significantly reduces the viability of pathogens and weed seeds, stabilizes carbon, produces high fungal material to benefit plant growth. Compost shall meet the following US Compost Council STA/MECC criteria.

Stability:	≤2 mg CO2-C per G OM per day
Maturity:	90-100% seed emergence and vigor
Moisture Content:	35-60% wet weight Organic Matter Content 35-60% dry
weight Particle Size:	3/8”-1/2” screen size to pass through
pH:	6.0-7.5
Soluble Salts:	Max. 5 dS/m (mmhos/cm) dry weight basis
Physical Contaminants:	≤0.5% dry weight basis
Chemical Contaminants:	meet or exceed US EPA Class A standard, 40CFR §503.13 Tables 1 and 3
Biological Contaminants:	meet or exceed US EPA Class A standard 40CFR § 503.32(a)

Exhibit C. Soil Profile Rebuilding Standards

Source:

This project was made possible in part by a grant from the Tree Research and Education Endowment Fund.

Additional support was provided by the Institute for Critical Technology and Applied Research.

https://sres.frec.vt.edu/

Soil Profile Rebuilding

Specification for Restoration of Graded and Compacted Soils that will be Vegetated

CSI Div 2

CSICode-02910-Plant Preparation-Soil Preparation

CONTENTS

1. PURPOSE AND DESCRIPTION

1.1 Purpose

Soil Profile Rebuilding is an appropriate soil restoration technique for sites where topsoil has been completely or partially removed and subsoil layers have been compacted (graded and/or trafficked by equipment). It may also be used with some modifications if topsoil is present. This is not an appropriate technique in sites with surface compaction only (6 inches or less), although this situation is rare on construction sites. This technique is not appropriate within the root zones of trees that are to be protected. Soil Profile Rebuilding can improve physical and biological characteristics of soil to allow for revegetation. Soil chemical problems, soil contamination from heavy metals, pathogens, or excessive debris or gravel shall be addressed separately.

1.2 Description of Procedure

The procedure includes a subsoiling procedure, addition of organic matter in the form of compost, replacement or addition of topsoil, and subsequent planting with woody plants. The soil preparation portion of Soil Profile Rebuilding puts the components in place for restoration to characteristics similar to undisturbed soils, however, the complete restoration process requires root activity and occurs over many years. This technique may be appropriate for restoration of disturbed soils as defined by SITES™.

1.3 Expected Outcomes

Soil Profile Rebuilding may improve vegetation establishment, increase tree growth rates, increase soil permeability, enhance formation of aggregates in the subsoil, and enhance long-term soil carbon storage.

2. PROCEDURE

2.1 Location

Profile Rebuilding shall occur on all soil areas that are to be vegetated that have been disturbed by trafficking or grading during construction or prior to construction. Soil areas that are not to be treated should be protected by permanent fencing during the construction period and all access to these areas prohibited. A soil map delineating protected areas and areas to be treated shall be approved by the owner, arborist, or landscape architect before grading or construction begins.

2.2 Sequencing

Profile Rebuilding shall occur after site disturbance is complete, including all vehicle and equipment trafficking, but before replacement of topsoil. Once profile rebuilding is complete, all traffic and equipment or materials storage on treated areas is prohibited with the exception of foot traffic for the purposes of planting or mulching.

If topsoil is already present and is 4 inches or greater in depth, use the “modifications for pre-existing topsoil.”

2.3 Remove foreign materials

Remove all foreign materials resulting from construction operations, including oil drippings, stone, gravel, and other construction materials from the existing soil surface.

2.4 Application of Compost

Spread mature, stable compost (see Section 3. Definitions for definition of compost) to a 4 inch depth over compacted subsoil.

2.5 Subsoiling

Subsoiling may be performed when soil is neither wet nor dry. If a shovel cannot be forced into the soil, it is too dry. If the surface is sticky or muddy, it is too wet. Use a backhoe rearbucket or similar equipment with a tined bucket to break up the compacted soil and incorporate the compost. Work backwards away from excavated soils so that treated soil is not trafficked by the equipment. Insert the bucket through the compost layer and into the subsoil to a depth of 24 inches and raise a bucket of soil at least 24 inches above the soil surface. Tip the bucket and allow soil to fall. Repeat this procedure until no clumps of compacted soil larger than 12 inches in diameter remain. The tines of the bucket can be used to break apart larger clumps if necessary. 50% of the soil shall be in clumps 6 inches or smaller. No clumps shall be greater than 18” in diameter. The subsoiling is not intended to homogenize the compost and soil, but rather loosen the soil to a 24-inch depth and create veins of compost down to that depth as well. To ensure that subsoiling reached the appropriate depth, a push tube soil sampler shall be used to verify compost is present at 24 inch depth.

2.6 Replacement of topsoil

2.6.1 Standard procedure

Stockpiled topsoil, or additional topsoil if none is available from the site, shall be returned to the site to a 4 inch minimum depth (see *Section 3.3 Definitions* for definition of topsoil). If soil was severely disturbed (see definitions), a 6-8 inch minimum shall be replaced.

2.6.2 Modification if significant topsoil is already present before Profile Rebuilding is initiated

Case 1:

At least four inches of topsoil is present on the site after construction activities are completed AND soil **is not** severely disturbed (see *Section 3.3 Definitions* for description of severely disturbed).

Case 2:

Less than 4 inches of topsoil is present on site after construction activities were completed but before Profile Rebuilding is initiated, OR soil is severely disturbed (see *Section 3.3 Definitions* for description of severely disturbed).

For Case 1: A minimum of 3 inches additional topsoil shall be placed over the subsoiled layer before tilling.

For Case 2: Follow *Section 2.6.1 Standard procedure*, as if no topsoil had been present.

2.7 Tilling

Rototill topsoil to a depth of 6-8 inches when soil is neither dry nor very moist. Rototilling depth should cross the interface with the subsoiled layer by a minimum of 1 inch and can be verified with a random sampling with a push tube soil sampler.

2.8 Planting

Plant the site with woody plants, trees or shrubs, at a density that insure a minimum of 50% of the site will be occupied with roots within 10 years. Planting of at least one large stature tree (e.g., one that will mature at approximately 60-70 feet in height) or 20 medium stature shrubs per 5,000 sq. ft. shall be considered to achieve this.

3. DEFINITIONS

3.1 Topsoil

Soil can be considered topsoil if it originates from an A horizon of a natural soil or is a mineral soil with 3% or greater organic matter content and a NRCS textural class similar to pre-development A horizon soils for the site or as specified by the owner, arborist, or landscape architect. Blended soils shall not be used unless specified by the owner, arborist, or landscape architect. In addition topsoil shall:

1. Be friable and well drained

2. have a pH between 5.2 and 7.5 (a narrower range may be specified for particular plant material)
3. have an organic matter content not less than 3%
4. have low salinity as indicated by an electrical conductivity of less than 4.0 mmhos/cm
5. be free of debris, stones, gravel, trash, large sticks, heavy metals, and other deleterious contaminants, (if screening is used to remove debris, screen size must be ¾ inch or larger).
6. have a nutrient profile such that it is able to support plant growth
7. be free of noxious weed seeds

3.2 Compost

Compost feedstock shall be leaves, yardwaste, or foodwaste. Biosolid-based composts shall not be used. A compost sample with analysis shall be submitted for approval to the client before application.

Stability refers to the rate of biological breakdown, measured by carbon dioxide release. Maturity refers to completeness of the aerobic composting process and suitability (lack of plant toxicity) as a plant growth media, often measured by ammonia release and by plant growth tests. Compost manufacturers that subscribe to the US Composting Council's testing program may document stability as compost testing 7 or below in accordance with TMECC 05.08-B, "Carbon Dioxide Evolution Rate". Maturity (suitability for plant growth) may be documented as compost testing greater than 80% in accordance with TMECC 05.05-A, "Germination and Vigor". Compost is considered mature and stable if it tests at 6.0 or higher on the Solvita Compost Maturity Index Rating, which is a combination of Carbon Dioxide and Ammonia Maturity Tests (test information and equipment available at www.solvita.com).

Compost shall also:

1. Free of weed seeds
2. Free of heavy metals or other deleterious contaminants
3. Have an EC of less than 4.0 mmhos/cm

3.3 Severely Disturbed Soil

Soil shall be considered *severely disturbed* if grade was lowered more than 14 inches OR soil was compacted in lifts regardless of the final grade.

4. SUBMITTALS

4.1 Soil Map

A soil map indicating soil areas to be protected and those to be restored via Soil Profile Rebuilding shall be submitted by the contractor for approval by the owner, arborist, or landscape architect before construction begins.

4.2 Compost

A compost sample with analysis certifying it is stable, mature, from acceptable feedstocks and free of contaminants and weed seeds shall be submitted for approval to the landscape architect or owner before compost is applied to the soil.

4.3 Topsoil

A topsoil sample with analysis from a certified testing laboratory and verification of source shall be submitted for approval to the landscape architect or owner before application. Separate documentation is required for each 100 cubic yards of topsoil unless otherwise approved by the landscape architect or owner.

REFERENCES & PERMISSIONS

Use of this specification has been documented to increase tree canopy and soil carbon stores compared with typical practices. See www.urbanforestry.frec.vt.edu/SRES for more information.