Jacksonville Tree Commission

TASK FORCE ON URBAN TREE PLANTING BEST PRACTICES
July 15, 2025 11:00am - 1:00pm
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
Curtis Hart, Tree Commission Member
William Burke, Tree Commission Member

Non-Member attendees:

Jeff Lucovsky, PDDS
Jonathan Johnston, Parks
Guy Parola, DIA
Nancy Powell, Scenic Jax
Lisa Grubba, Greenscape
Valerie Feinberg, Fuse Fellow, UFMP

Advisors:

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

Staff:

Joe Rainey, Executive Assistant

AGENDA

Order of Agenda is Subject to Change

1. **Call to Order –** Chair

2. **Roll Call and Verification of Quorum** – Chair Submittal of Speaker's cards

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

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

5. **Approval of Minutes of June 23, 2025 Task Force Meeting**

6. **Overview of Approach- 2025 Updates to Mitigation by Degree of Urbanization**

    i. Filing an Application for Planting in an Urban Environment
        a. Establish minimum standards for Open Space/Cut Outs
            i. Proposed Development Project
            ii. Existing Conditions Project
            iii. Existing ROW Median
        b. Establish minimum standards for Minimum Planting Area
            i. Proposed Development Project
            ii. Existing Conditions Project
            iii. Existing ROW Median
        c. Requirement for Suitable Planting Environment within Planting Area
        d. Fast Tree Recommendations

7. **Amendments to the Approved Tree Planting List**
    a. Updates to reflect Canopy /Spread, Suitability as Street Trees and Notes

OLD BUSINESS:

8. **Meeting Dates for 2025**

9. **ADJOURNMENT**

Task Force on Urban Tree Planting Best Practices

Minutes
Monday June 23, 2025, – 10:12am-12:51pm
Via Zoom Platform & In Person
[Recording of Meeting can be obtained by sending request to Joe Rainey JRainey@coj.net]

Commissioners:
Susan Fraser, Chair, Tree Commission Member
Curtis Hart, Tree Commission Member
William Burke, Tree Commission Member
Nina Sickler, Director of Public Works

Non-Member attendees:
Jeff Lucovsky, PDDS
Jonathan Johnston, Parks
Nancy Powell, Scenic Jax
Dana Doody, Jacksonville Arboretum

Advisors:
Justin Gearhart - City Arborist
Shannon MacGillis - Office of General Counsel

Staff: Joe Rainey - Executive Assistant Mowing and Landscape

1. Call to Order
Conducted by Chair

2. Roll Call and Verification of Quorum
Conducted by Chair
Commissioners present:
Susan Fraser - present
William Burke - present
Nina Sickler – present at 10:58am

Quorum present (3, in person): Yes, at 10:58am

3. Call for Public Speakers (online & card): None

4. Submittal of speaker cards

5. Issue: Approval of Minutes of May 14, 2025 Task Force Meeting

***Tabled until arrival of Sickler (quorum).**

Motion: Approve, as presented.
Moved by: William Burke
Second: Nina Sickler
Vote: June 23, 2025 minutes approved, unanimous.

6. Overview of Approach- 2025 Updates to Mitigation by Degree of Urbanization

i. Fraser: PowerPoint presentation: Urban Tree Planting Standards meet Reality A detailed presentation of local and non-local sites with photos showing good and bad installations, site limitations, soil conditions, and best practice options. Review of tree planting application specification standards. **Fraser:** Concerns with disconnect between design and planting relating to quality and accuracy of install parameters. **Colburn:** There is a need for inspections to confirm install is done to specification.
Discussion: Overview of standards for planting in urban areas in relation to James Urban in relation to City of Jacksonville urban tree planting objectives. present alternative solutions to inherent issues indicative to Jacksonville's urban planting environment.

ii. William Burke: Presentation: Spatial Analysis
Selections of large non-Live Oak options and locations provided with measurements for discussion. (diagrams provided on video) **Powell:** What are other cities doing? How are they overcoming similar issues?

iii. Colburn: PowerPoint presentation: Design standards for Planting in Increasingly Urbanized Sites PowerPoint provided in supplemental documents

Presentation of graph on Slide 3, relating ultimate tree size to soil volume. Sourced to James Urban, Colburn described the impact of providing a soil volume that was constrained on the maximum tree canopy/spread and DBH for any tree planted in that volume. Example from the table illustrated that 1000 CF of available soil volume would limit the tree planted in that volume to a maximum of 16 inch DBH and a canopy of 800 square feet in area.

Discussion: Regarding application process and acceptable parameters. Using the table on the PowerPoint display, **Fraser** agreed the information allowed the Task Force to understand how the standards that may be adopted would affect the ultimate tree canopy that could be achieved. The Tree Commission can use the table to back solve for the desired tree canopy/spread; if the goal is to achieve a spread in a location of 30 feet, the table allows assessment of the success of the proposed soil volume in achieving this goal.

Gearhart: It sounds like it's kind of transitioning into a not necessarily dictating the soil volume directly but it's trying to dictate what size do we want?

Fraser: No, we're trying to say that if we're going to make an investment in a tree planting we want whatever we plant to be able to achieve a certain spread – it is a policy decision for the Tree Commission to decide if it's going to be a shade tree it's going to be planted so as to achieve some minimum spread. The table allows assessment of the proposed soil volume to determine if that minimum spread is possible.

Sickler: Now do we want to decide, what are we going to define in the urban area in terms of a minimum DBH and a canopy or is it certain types of trees for certain categories of trees?

Discussion: continues conversation regarding locations, species and plan of action regarding how to address and best implement a tree planting model that works with Jacksonville's unique urban environment.

ADJOURNMENT

END OF MEETING 12:51PM

Filing an Application for Planting in an Urban Environment

Level 2 and Level 3 Applications and Remove and Replace plantings within an existing right of way that include Urban Planting Environment(s) are subject to the following procedures and standards.

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 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 Conceptual Plan procedures established for a Level 3 Project.

A Suitable Planting Environment is defined as one where, at the time of planting: 1) sufficient area is provided to accommodate mature trunk volume, flare and surface roots; 2) sufficient Soil Quantity (volume) is provided to support the tree mass (spread) proposed; and 3) a classification of Not Compacted is achieved within the Required Soil Volume at each planting location.

Within a Level 2 or Level 3 Project, an Urban Planting Location is assumed to exist for a tree planting location if a Suitable Planting Environment is not provided in that location at the time of planting. A project may include tree planting locations that are determined to be Urban Planting Locations and locations that are not.

In addition to a suitable tree planting environment, the larger urban environment can pose other challenges to the long term health and vitality of trees plantings:

- vertical obstructions can limit the desired tree canopy and impose additional maintenance requirements;
- drainage patterns over paved surfaces can direct excessive water to a planting location;
- imported soils can include contaminants or be of poor quality;
- appropriate planting depth can become the critical factor when the planting location is constrained; and
- maintenance beyond initial warranty periods is required to address the stress the urban environment places on the tree.

The Tree Commission has determined that the following applications that include Urban Planting Environment(s) must establish a Suitable Planting Environment as prescribed herein to mitigate each otherwise Urban 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. Applications for projects determined to include Urban Planting Environments shall also recognize the additional challenges posed by the larger urban environment and mitigate or eliminate applicable challenges.

- Level 2 or Level 3 Project
- Tree planting under the Remove and Replace Program that occur within existing rights of way

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 volume, flare and surface roots.***

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

   The specified Minimum Open Space / Cut Out (OSCO) shall be provided for each tree location. 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 replacement as required to maintain an opening that is a minimum of 6 inches from the truck, measured at the time of inspection.

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

   Tree Grates specified in an Existing Conditions Project (Level 2 or Level 3 Application) 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. 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).

   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.

   Minimum planting areas may be combined to accommodate multiple trees; combined areas are eligible for a 25% reduction in the area required for an individual tree, however the minimum distance to impervious surface established for the OSCO cannot be reduced.

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

A Suitable Planting Environment requires the classification of NOT COMPACTED within each Required Soil Volume.

Applications that include an Urban Planting Environment shall meet the standards established in Table 3 to establish a Suitable Planting Environment within the Required Soil Volume. **Table 3.** identifies the standards applicable to each Project Type, subject to the process and requirements below.

A. Existing Conditions Project. Defined as a proposed Level 3 Project without associated development/construction or a Level 2 Project located within a Public Right of Way.

For a Level 3 Project, 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 the Required Soil Volume associated with each potential planting area as "COMPACTED", "NOT COMPACTED" or "POTENTIALLY COMPACTED". Staff may rely on visual inspection, 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 determination for each planting location to the Applicant. The Applicant shall apply the determinations in its development of a project application. The Planting Plan and Cost Estimate shall be based on the assigned classification and include mitigation measures required to establish a Suitable Planting Environment.

i. <u>Tree Planting within a Public Right of Way.</u> Staff shall apply the following assumptions for a determination of COMPACTED or NOT COMPACTED for planting locations within an existing ROW median. These assumptions may be rebutted with 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.

B. Proposed Development Project. Defined as tree planting proposed in conjunction with any development/construction within the proposed Level 2 or Level 3 Project. When determined to be applicable to a Level 2 Project, the Level 2 Project shall be subject to the Level 3 Application requirements.

Within a proposed development project, the Tree Commission seeks to limit the creation of Urban 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 only be achieved by mitigating the constraints the urban environment places on trees through informed design decisions and management of construction practices. The standards established represent the minimum requirements for mitigation.

Design

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 Urban Planting Environments to the maximum extent possible.

The initial Project Scope meeting with Staff shall include the 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 for each to provide a Suitable Planting Environment at each planting location.

Construction Practices

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).

Mitigation

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. For Required Soil Volumes located outside an SPA, if Tree Mitigation Funding is requested for the installation of a Pavement Support System (silvacell, etc.) the following design review is required to minimize planting within a Compacted Planting Environment that requires a PSS:

    i. Tree locations have been evaluated to minimize or eliminate the need for installation of a PSS. *Staff may recommend the relocation of trees to achieve minimum need for a PSS.*

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

To facilitate the design review, the Application shall include, with the Conceptual 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. Planting areas outside the Limits of Construction may be classified as COMPACTED if the creation of an Urban Planting Environment is anticipated to be created by other development activities/ factors. The Staff shall work with the Applicant to minimize the creation of Urban Planting Environments and shall document its recommendations. The Applicant shall incorporate Staff recommendations to the maximum extent possible into the Conceptual Plan to be considered by the Tree Commission.

The Submittal for Concept Plan approval to the Tree Commission shall include a Compacted Environment Assessment Plan (CEAP) that supports the Rough Estimate of Improvements for the Concept Plan. 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 to the extent the mitigation is requested to be funded by Tree Mitigation Funds.

Approval of the Concept Plan by the Tree Commission is required prior to submittal of a Planting Plan to the Tree Commission. Planting Plans must clearly identify the limits of construction and SPAs. SPAs depicted on the Planting Plan shall be protected 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 inspection.

To ensure compliance with SPA protection requirements, Staff may perform inspections at any time after approval of the project by the Tree Commission and enforce the maintenance of 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.

Staff will work with the Applicant and Public Agency to develop a Conceptual Plan that meets the project goals and minimizes the need for Pavement Support System investment from the Tree Mitigation Fund.

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

Other Impacts of the Urban Environment

4. 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. 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.

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. 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):

A. **Shade trees other than Live Oaks.** Minimum of 12 feet from the vertical constraint (building façade).
B. **Live Oaks**. Minimum of 20 feet from the vertical constraint (building façade).
C. **Trees other than shade trees.** Minimum of 0.75 times the radius of the mature canopy of the tree as such is identified on the Tree Commission Approved Tree Planting List.

*5. **Positive Drainage from the Planting Location is provided.***

The project plans and specifications require and specify positive site drainage away from planting areas.

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

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

7. ***Short and Long Term Maintenance is Provided.***

The long-term health and viability of a tree after planting can only be achieved with both short-term and long-term maintenance. Plantings 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.

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 insect and pest control.

The Tree Commission will include in its approval of an Urban Planting Project a requirement for a binding post warranty period maintenance plan that addresses long-term maintenance, including but not limited to regular inspections, scheduled pruning and a plan for insect and disease control when required. If tree grates are installed, the long term maintenance plan shall provide for tree grate replacement at the Applicant or Public Agency's expense. The Long Term Maintenance Plan will include the requirement for submittal of a report to the Tree Commission upon each 5 year anniversary of the approval of the Urban Planting Project certifying compliance with the Long Term Maintenance Plan.

Urban Planting Standards

Minimum Planting Area is Provided for each Proposed Tree

Table 1

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

		Open Space Cut Out Requirements*		
	min. distance to impervious (656.1211)	**Proposed Development Project**	**Existing Conditions Project incl Existing ROW**	**Existing Right of Way Median**
Small Tree	2 feet	6' x 6' min OSCO (36 SF)	6' x 6' min OSCO	10' x 10' OSCO
Medium Tree	4 feet	8' x 8' min OSCO (64 SF)	8' x 8' min OSCO	10' x 10' OSCO
Large Tree				
Other Than Live Oak	4 feet	10' x 10' min OSCO (100 SF)	8' x 8' min OSCO	12' x 12' OSCO
Live Oak	6 feet	12' x 12 ' OSCO (144 SF)	12' x 12' in OSCO	12' x 12' OSCO

**Reduction to one dimension of the OSCO dimension up to the minimum distance to impervious shall be permitted provided the area of the OSCO is not reduced.*

Urban Planting Standards

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

Table 2

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

		Required Soil Volume		
	depth range*	**Proposed Development Project****	**Existing Conditions Project incl Existing ROW****	**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*

** 4 ' depth requires water table confirmation*

*** Planting Area may be reduced by up to 25% if planitng area shared between trees.*

Tree Size Calculator based on Required Soil Volume

Soil Volume	Ultimate Tree Size		
200 CF	4" DBH	14 foot spread	(150 SF canopy)
400 CF	8" DBH	21 foot spread	(350 SF canopy)
600 CF	9.6" DBH	21.2 foot spread	(440 SF canopy)
750 CF	12" DBH	26.5 foot spread	(550 SF canopy)
1,000 CF	16" DBH	32 foot spread	(800 SF canopy)
1,280 CF	20" DBH	36 foot spread	(1,000 SF canopy)
1,525 CF	24" DBH	39 foot spread	(1,200 SF canopy)

source: J. Urban, Aternatives to Structural Soil for Urban Trees and Rainwater

Suitable Planting Environment is Provided

Table 3

- 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	Replace Required Soil Volume if median is less than 12 ' in width (BOC) or testing confirms compacted environment within Required Soil Volume.

The Required Soil Volume includes existing or proposed surface improvements.

Existing Improvements	Assume Required Soil Volume is Compacted. Apply Existing Project standards. Remove existing improvements within Minimum Planting Area(s) and mitigate compacted environment with Soil Replacement. Install support for surface improvements as required if surface improvements are reconstructed/ replaced in a manner that creates a compacted environment within the Required Soil Volume.
Proposed Improvements	Design the surface improvements to limit compaction within Required Soil Volume. Group tree planting areas, combine Required Soil Volumes, utilize tree grates, raised planters and locate trees strategically to provide largest OSCO (bump outs, planting within adjacent parking). When compaction within the Required Soil Volume is not avoided, mitigate compacted environment created through Soil Replacement. Install support for surface improvements as required to provide surface improvements are constructed in a manner that creates a compacted environment within the Required Soil Volume. Protect Required Soil Volume from compaction during construction activities.

Exhibit A. Sidewalk Width Standards

Applicable excerpts of Section 654, Ordinance Code and LDPM Volume 2. Design Standards.

Sec. 654.133. - Required improvements: streets; curbs and gutters; sidewalks; and bikeway requirements.

(a) Streets and public ways shall be cleared and graded, including side slopes to the specified grade. If required to prevent erosion or excessive washing of the shoulders, protective measures shall be taken by the developer as required by the Director.

(b) Streets shall be paved and standard curb and gutter installed to meet the specifications of the Land Development Procedures Manual.

(c) Sidewalks shall be provided for all developments, including residential or non-residential infill lots, and along all new, reconstructed, and existing streets, to provide safe pedestrian travel. The Land Development Procedures Manual outlines general sidewalk requirements based upon the Development Area of the proposed development, and the impacted roadway type identified on the City of Jacksonville Context Classification map. Also, the following shall be observed:

> (1) When standard sidewalk width cannot be attained due to demonstrated right-of-way constraints, provide the greatest sidewalk width possible, but not less than five feet.

Land Development Procedures Manual
Volume 2. Design Guidelines *Effective January 2025*

1.4 Pedestrian Considerations
All new development and redevelopment projects are required to provide adequate pedestrian access via the construction or reconstruction of sidewalk infrastructure. The goal of this policy is to ensure that all modes of transportation are taken into consideration when designing any new project, whether residential, commercial, industrial or recreational. Furthermore, it is ensuring that a complete sidewalk network is provided throughout the city, while also recognizing that sidewalks may not be feasible in all circumstances due to unforeseen or uncontrollable situations.

1.4.1 Sidewalk Design Requirements
City of Jacksonville Sec. 654.133, Ordinance Code

Sidewalks shall be provided for all developments, including residential or non-residential infill lots, and along all new, reconstructed, and existing streets, to provide for safe pedestrian travel. Sidewalks shall be provided as indicated in Table 2.2-2 and shall be constructed in accordance with these Land Development Procedures Manual, the City Standard Details and the City Standard Specifications:

Sidewalk Width

- Where buildings are located along-side of the right-of-way, minimum sidewalk width specified in Table 2.2-2 shall be increased by 3 feet.
- When the projected volume of pedestrians on a sidewalk is unusually high, the Transportation Planning Section may require an increase in sidewalk width.

Sidewalk Planting Strips and Clear Zones

- To provide proper pedestrian/vehicle separation and adequate space for traffic signs, poles, utilities, etc., planting strips shall be located between the edge of pavement and sidewalk.
- For urban, suburban, and rural development areas, the minimum width of a planting strip shall be 5 feet, which measures from the back of the curb to the edge of the sidewalk.
- When trees will be located within the planting strip, the minimum width shall be increased to 8 feet.

Special Overlay Sidewalk Design Criteria

Sidewalk construction must be consistent with design criteria established for special overlay zones. The following special overlay zones have been established with special sidewalk requirements.

Special Overlay Zone	References
Downtown Overlay Zone	City Ordinance Section 656.361 Downtown Design Guidelines Riverwalk Park Design Criteria
Riverside/Avondale Zoning Overlay	City Ordinance Section 656.399.28-30
Renew Arlington Community Redevelopment Agency Overlay	City Ordinance Section 656.399.62

1.4.3 Exemptions From Sidewalk Requirements

Required sidewalk widths shall be provided within existing city or state road rights-of-way for all proposed development and re-development of property fronting along city or state road rights- of-way except as follows:

1. A sidewalk will not be required where a sidewalk already exists as long as it meets ADA Standards and General Sidewalk Requirements. ADA standard curb ramps, curb cuts, and detectable warnings are required at all intersections where one or more of the rights-of-way of the intersecting streets contain sidewalks.

2.1.3 Development Area

Each roadway exists within a development area, which defines the desirable development characteristics to maintain community growth according to the City's Comprehensive Plan. Development Areas are established by the Planning and Development Department. The development area can be found on the City's Land Development Review Map using the Land Use - Zoning Layer Group, Development Areas and are defined in Table 2.1-3.

Table 2.1-3 Development Area Descriptions

Development Areas	Description
Downtown	This area encompasses Jacksonville's downtown urban core. Within this area, the City encourages revitalization and the use of existing infrastructure through redevelopment and infill development at high densities.
Urban Priority Area (UPA)	This area generally includes the historic core of the City and major connecting corridors. Within this area, the City encourages revitalization and the use of existing infrastructure through redevelopment and infill development at high densities. Development is expected to employ urban development characteristics.
Urban Area (UA)	This area generally corresponds with the densely developed portions of the City that have been in residential or employment generating uses since consolidation. It also includes major corridors which connect the other Development Areas. Similar to the UPA, the intent of the UA is to encourage revitalization and the use of existing infrastructure through redevelopment and infill development, but at moderate urban densities which are transit friendly. Also similar to the UPA, the UA is intended to support multimodal transportation and the reduction of per capita greenhouse gas emissions and vehicle miles traveled.
Suburban Area (SA)	This area generally corresponds with the urbanizing portions of the City in areas that have usually been developed after consolidation. Development should generally continue at low densities with medium density development at major corridor intersections and transit stations. Development at these locations should promote a compact and interconnected land development form.
Rural Area (RA)	This area consists of all lands outside of the SA and corresponds with predominantly undeveloped portions of the City with land uses such as Agriculture, Recreation, Conservation, or Public Buildings Facilities. Development should occur at very low densities which create little demand for new infrastructure and community serving supporting uses, unless development occurs under the Multi-Use Category or as a Master Planned Community as defined in this element. Development may occur within the RA provided that it is consistent with Operational Provisions and the Land Use category descriptions. Otherwise, development beyond such boundaries is considered urban sprawl and is to be discouraged.

** ITE *Manual of Transportation Engineering Studies* provides guidance in regard to travel speeds

Table 2.2-1 Roadway Design Criteria

For all Context Sensitive Design Classifications, Table 2.2-1 specifies the following sidewalk widths for the Development Areas described in Table 2.1-3 above:

Downtown	8 feet
Urban	6 feet
Urban Priority Area	8 feet
Suburban Area	6 feet
Rural Area	5 feet

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:

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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

2. PROCEDURE

3. DEFINITIONS

4. SUBMITTALS

REFERENCES & PERMISSIONS

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.

8. 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 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