Best Practices and Potential Code Updates Related to Trees and Tree Preservation

May 5, 2025 City Council City of Lewisville







Rudy Bruner Center for Urban Excellence School of Architecture and Planning

Presentation Overview

Policy Research



University at Buffalo Rudy Bruner Center for Úrban Excellence School of Architecture and Planning

PARD Update



Q + A and Discussion



Project Goals: Policy Research

Texas A&M Forest Service, Community Forestry Grant Program

- Evaluate city ordinances related to trees and landscaping across residential and commercial properties
- Identify strategies to incentivize protection and growth of the urban treescape.
- Survey Commercial Properties to understand needs



Research Team + Project Schedule

Policy Research Team



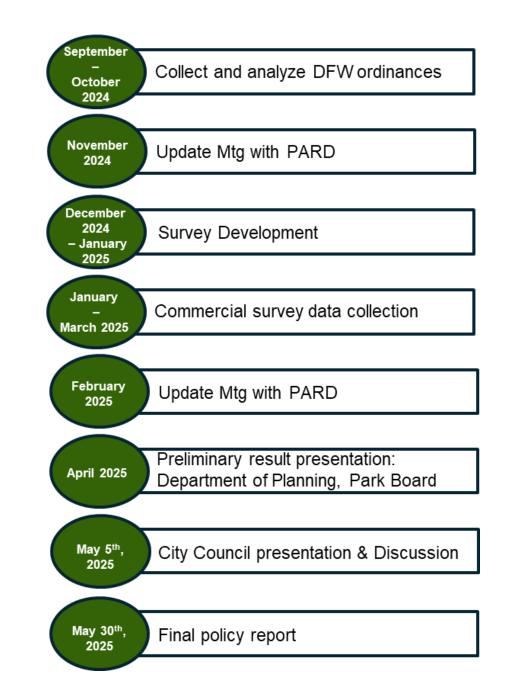
 University at Buffalo

 Rudy Bruner Center

 for Urban Excellence

 School of Architecture and Planning

Lauren Ames Fischer, PhD Zachary Andrews Siddhi Pawar



HIP Goals and Objectives

GOAL 5

Utilize Nature as a Centerpiece

Objective 5.2

Preserve and grow the urban tree canopy

HIP Action Step	Action Step Description
5.2.1	Protect high value replacement trees
5.2.2	Protect riparian forest buffers surrounding riverine features
5.2.3	Enhance survivability of young stands of native trees
5.2.4	Create a dataset to prioritize suitable planting areas
5.2.5	Create pocket prairies with trees as centerpieces
5.2.6	Conduct follow up studies to monitor urban forest
5.2.7	Free or low cost trees give-a-ways and education for residents
5.2.8	Use air monitors to help identify and prioritize planting areas
5.2.9	Establish Urban Forestry Unit
5.2.10	Partner with private development to support urban tree canopy
5.2.11	Build complete streets to improve tree canopy

Comparison of Practices in DFW

Information from 40 cities in the DFW metroplex

- Lewisville Peers: population size, regional location, % developed
- Regional Leaders

Evaluate existing policies + programs

- Municipal Ordinances (ex. "tree", "tree preservation")
 - Tree Preservation, Credit and Mitigation policies
 - Landscaping and Parking Lot regulations
- Municipal websites for educational and incentive programs

Tier 1	Tier 2	T
Tree preservation is only addressed in a city's code.	Tree preservation is addressed in the city's code and somewhere else.	
Tier 3 Tree preservation is thoroughly addressed in the city's code and is either doing so in a creative way, or repeatedly addresses tree preservation elsewhere.	Tier 4 Tree preservation is thoroughly and creatively addressed in the city's code, there are innovative approaches to tree preservation, and good educational material on the importance of tree preservation.	Т

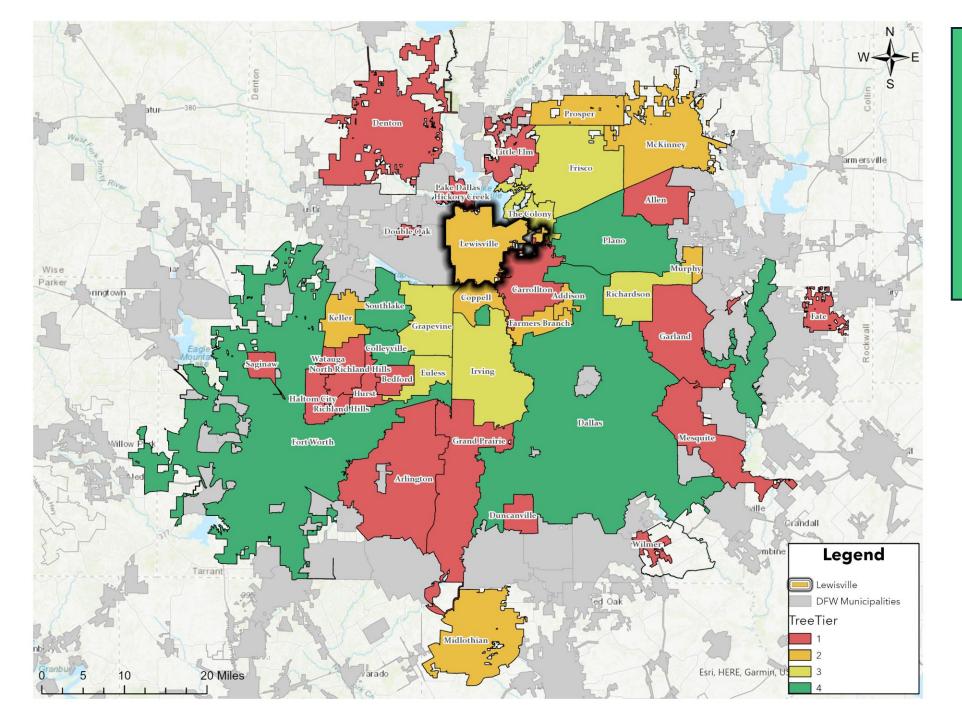
Information about Tiers

Tier 1 example, tree preservation ordinance

Trees of 12 inches or greater. Existing trees with a caliper of 12 inches or greater shall be saved and protected to five feet outside the drip line in landscape areas as a part of the development. -City of Saginaw

Tier 4 example, tree preservation ordinance:

It is the purpose of this section to achieve 30% tree canopy coverage citywide and to promote a multi-aged urban forest....by addressing the preservation and protection of healthy and significant trees, providing for the replacement and replanting of trees that are removed during development, and establishing additional tree canopy. - City of Fort Worth



Tree preservation is thoroughly and creatively addressed in the city's code using innovative approaches; High quality programs and educational material provided.

> Tier 4 Tier 4 Tier 1 Tree preservation is apply addressed in a

> only addressed in a city's code.

Lewisville: Tier 2

Why is Lewisville in Tier 2?

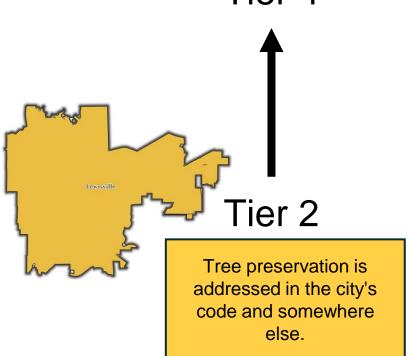
- A Few Ordinances
- Adoption of Healthy Infrastructure Plan

Potential Areas of Enhancement:

- Ordinance Enhancements/Integration
- Urban Forestry Webpage Materials
- Roots for Wings Program Expansion

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Tier 4



Ordinance Evaluation



Lewisville: Existing Ordinances

Landscaping Replacement (Art VIII, Chapter 3, Section 3, Subsection B)

Tree Preservation (*Art VIII, Chapter 3, Section 4*) Tree and Underbrush Removal (4.4, 4.5, 4.6) Tree Preservation Plans and Surveys (4.7) Protected Trees and Preservation Credits (4.10) Tree Mitigation Fee (4.11)

Existing Development: Commercial Landscaping

Replacing Dead or Damaged Landscaping. Commercial property owners in Lewisville must replace dead landscaping with original landscape plan.

Art VIII, Chapter 3, Section 3, Subsection B

Recommendation: Revise Ordinance

Suggest revising ordinance to allow replacement of dead or damaged landscaping with materials listed on the city's shrub, understory and shade tree list, and that adhere to the spatial layout of the original landscape plan.

New/Redevelopment: Tree Survey Requirements

Tree survey - The exact location, size, condition and common name of each tree that is eight (8) inches DBH and larger.

Art VIII, Chapter 3, Section 4.7.2a

Recommendation: Consider revising to trees six (6) inches DBH and larger

Lewisville's Tree Canopy Study showed that **60% of the canopy** is composed of trees that **are six (6) caliper inches or less**. Expanding the size of trees that need to be included in the Tree Survey from 8 to 6 inches would protect more of the existing Tree Canopy.

Practices among DFW cities vary. For Tier 4 cities, Dallas, Fort Worth, and Southlake require all trees to be recorded and measured. Colleyville requires it for 6 inches DBH and Plano requires it for 8 inches in caliper or greater. Of the Tier 3 cities, Frisco requires a survey of all trees, Grapevine for 3-inch caliper, Irving for 6 inches DBH or larger.

New/Redevelopment: Replacement Trees

Protected trees, if removed, or damaged or destroyed during construction, shall be replaced with <u>replacement trees</u> at a one-to-one (1:1) ratio of caliper inch measured at DBH. All replacement trees shall be at least three (3) inches DBH. Replacement trees shall be shade trees from the approved list in Article VIII.3.3 or alternatives approved by the Planning Director.

Art VIII, Chapter 3, Section 4.10.A

Recommendation: None

Lewisville's Tree and Shrub Replacements lists are comprehensive and provide guidance on shade trees, understory trees and shrubs. Few other municipalities distinguishes replacement trees in this manner. Lewisville sets itself apart from the few that do by clarifying which species are native. Another example of a comprehensive replacement list is Fort Worth, which is a Tier 4 municipality.

Exhibits VIII.3.3-2 through 4

New/Redevelopment: Protected Trees

Tree, Protected - Hackberry trees 12 inches in DBH and **any other tree eight (8) inches in DBH** except for trees with the common names of Bois d'Arc, cottonwood, Chinese pistache, junipers, mesquite, all Callery pear cultivars and any tree species determined to be invasive by the Parks and Recreation Director.

Article II, Chapter 2, Section 2.1

New/Redevelopment: Heritage vs Protected Trees

Heritage Trees can be designated on DBH, specific species or cultural importance.

Georgetown, **Texas**:

Protected Tree is any tree, excluding Hackberry, Chinaberry, Ashe Juniper (cedar), Mountain Cedar, Blueberry Juniper, Post Cedar, Chinese Tallow, and Mesquite, that has a diameter at breast height (DBH) of 12 inches or larger, excluding Heritage Trees.

Heritage Tree classification applies to the following tree species that have a DBH of 26 inches or larger: Live Oak, Post Oak, Shumard Oak, Bur Oak, Chinquapin Oak, Monterey Oak, Bald Cypress, American Elm, Cedar Elm, Pecan, Walnut, Texas Ash, or Southern Magnolia.

The Heritage Tree classification may also be designated by resolution of the City Council to any tree of historical value or significant community benefit.

New/Redevelopment: Heritage Trees

The city of Lewisville does not currently have a Heritage Tree designation

Recommendation: Explore a Heritage Tree Designation

- Specific Species (i.e. Post Oaks, Blackjack Oaks, Cedar Elm)
- DHB size (i.e. 26 inches or larger)
- Allow designation by City Council resolution for trees of historical value or significant community benefit.

New/Redevelopment: Tree Preservation Credits

For every tree in healthy, thriving condition that is preserved, tree preservation credits shall be given as shown in Exhibit VIII.4.10-1 below. Tree preservation credits may be used to offset the required replacement of protected trees required herein.

Art VIII, Chapter 4, Section 10, Subsection C

EXHIBIT VIII.4.10-1 TREE PRESERVATION CREDITS	
TREE CLASSIFICATION	TREE PRESERVATION CREDIT
Post Oaks and Black-jack Oaks less than 8 inches DBH	One (1) inch for every inch preserved
Protected Post Oaks and Blackjack Oaks	Two (2) inches for every inch preserved
All Other Protected Trees	One (1) inch for every inch preserved

Tree Preservation Credits

Tree preservation credits are found in 15 cities, use different methods of organization.

Irving, Texas: Only DBH measures

Healthy Protected Trees	Transplanted Protected Trees
< 6 inches in DBH	1 inch credit per 1 inch DBH
6 to 12 inches in DBH	2 inch credit per 1 inch DBH
12 to 24 inches in DBH	3 inch credit per 1 inch DBH
24 inches or more DBH	5 inch credit per 1 inch DBH

Mesquite, Texas: Only Protected Trees

Credit for preserving a protected size tree, as defined in 1A-500 Tree Schedule, shall be given by counting each protected tree saved as 2 trees for the purpose of fulfilling the calculated landscape tree requirement, or by reducing the required landscape area by 500 square feet for each tree preserved.

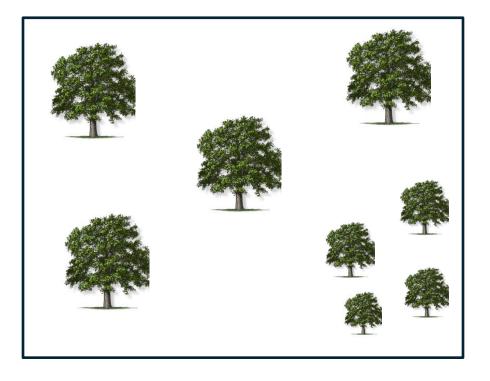
Tree Credits: In Practice

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Tree Credits were **intended to help protect trees**. However, in practice in Lewisville, the current **credits incentivize removal of protected trees**. At a 2:1 ratio, for each tree protected, credits allow for the removal of up to two trees of the same size and species or the protection of smaller trees at the expense of larger trees, without any penalty or mitigation fee payment.

Tree Credits: In Practice (Scenario 1)

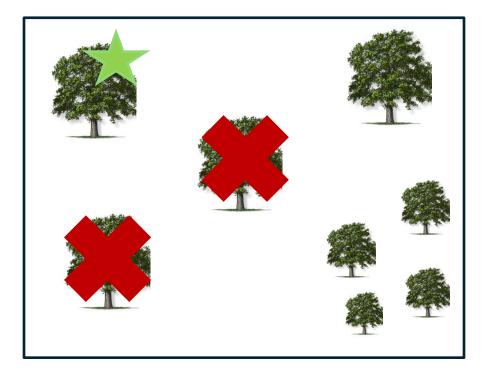
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There are 8 Post Oaks Half are Large (10-caliper inch DBH) Half are Small (5-caliper inch DBH)

Tree Credits: In Practice

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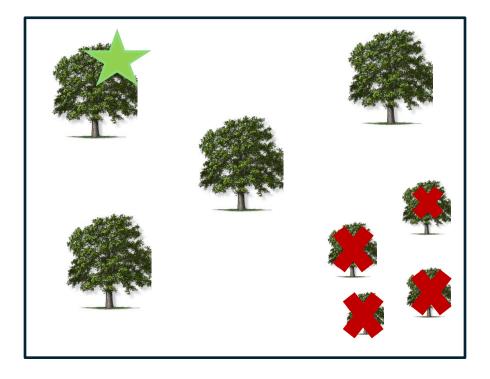
Preserving One Post Oak = 20 in tree credit

20 Tree Credits allows for:

- removal of 2 large Post Oaks
- removal of 4 small Post Oaks

Tree Credits: In Practice

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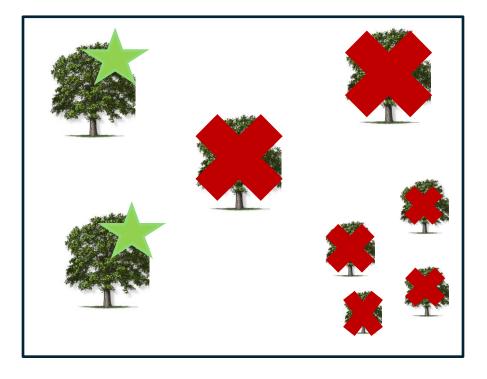
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20 Tree Credits allows for:

- removal of 2 large Post Oaks
- removal of 4 small Post Oaks

Tree Credits: In Practice (Scenario 2)

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Protected Post Oaks and Blackjack Oaks	Two (2) inches for every inch preserved
All Other Protected Trees	One (1) inch for every inch preserved



There are 8 Post Oaks Half are Large (10-caliper inch DBH) Half are Small (5-caliper inch DBH)

Preserving Two Large Post Oaks = 40 tree credits

40 Tree Credits allows for:

- removal of 6 Post Oaks (2 large + 4 small)

- removal of 4 Large Post Oaks

New/Redevelopment: Negative Tree Credits

The use of negative credits for larger trees or specific species, can provide additional protection. In the DFW metroplex, the municipalities of Murphy and Allen include these in their ordinances.

Allen. Texas. For every protected tree removed, including fence row trees, the owner shall receive negative tree credits or shall be required to plant replacement trees as follows:

1. Trees six to ten caliper inches, two negative credits for each caliper inch.

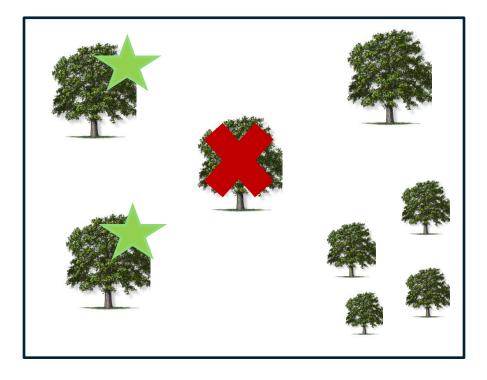
2. Trees 10.1 to 15 caliper inches, four negative credits for each caliper inch.

3.For any healthy, unprotected tree over 12 caliper inches located outside the floodplain, the owner shall receive negative tree credits calculated at one-half of the caliper inches for such tree if the city determines that the tree should be preserved. **Murphy, Texas**. For every protected tree removed, including fence row trees, the property owner shall receive negative tree credits for each caliper inch removed or shall be required to plant replacement trees as follows:

- Trees six (6) to ten (10) caliper inches, one (1) negative credits for each caliper inch.
- 2. Trees 10.1 to 15 caliper inches, two (2) negative credits for each caliper inch.
- 3. Trees 15.1 to 24 caliper inches, three (3) negative credits for each caliper inch.
- 4. Trees 24.1 caliper inches or larger, four (4) negative credits for each caliper inch.

Negative Tree Credits: In Practice

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All Other Protected Trees	One (1) inch for every inch preserved



There are 8 Post Oaks Half (4) are Large (10-caliper inch DBH) Half (4) are Small (5-caliper inch DBH)

Addition of a Negative Tree Credit (ex. Allen) Trees 10.1 - 15 = four negative credits (caliper inch)

Removing 1 Large Post Oak = - 40 credits Preserving 2 Large Post Oak = + 40 credits

New/Redevelopment: Tree Preservation Credits

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All Other Protected Trees	One (1) inch for every inch preserved

For every tree in healthy, thriving condition that is preserved, tree preservation credits shall be given as shown in Exhibit VIII.4.10-1 below. Tree preservation credits may be used to offset the required replacement of protected trees required herein.

Art VIII, Chapter 4, Section 10, Subsection C

Recommendation: Remove 2:1 ratio for Post Oaks, Blackjack Oaks; Explore Negative Tree Credits

New/Redevelopment: Tree Mitigation Fees

Tree mitigation fees shall be designated to a tree mitigation fund dedicated to the replacement of protected trees and urban forestry management.

Art VIII, Chapter 4, Section 11, Subsection D

Lewisville Current Fees:

\$150 per caliper inch for all trees over 8 inches DHB

No escalation for Protected Trees or Larger DBH

Mitigation Fees: DFW Practices

Municipality	Mitigation Fee
Hickory Creek	\$250 per caliper inch
Carrolton	\$225 per caliper inch
Allen	\$200 per caliper inch
Bedford	\$200 per caliper inch
Grand Prairie	\$200 per caliper inch
Plano	\$175 per caliper inch
Keller	\$150 per caliper inch
Lewisville	\$150 per caliper inch
Arlington	\$100 per caliper inch
Lake Dallas	\$100 per caliper inch
McKinney	\$100 per caliper inch
Prosper	\$100 per caliper inch
The Colony	\$100 per caliper inch

For municipalities that use caliper inches to calculate mitigation fees, 50% charge more than Lewisville

Municipality	Miscellaneous Mitigation Fee
Fort Worth	\$200 per diameter inch for up to 25% of the removed trees over six inches in diameter
Grapevine	Calculated based on roadway type
Haltom City	\$500 per tree
Irving	\$195 per one inch DBH
Little Elm	Employs valuation formula, fees range from \$622 - \$16,554/tree
Mesquite	\$2000 for each unauthorized removal of protected tree
Southlake	\$150 per diameter inch
Wilmer	Between \$100 and \$500 per caliper inch, determined by city

New/Redevelopment: Tree Mitigation Fees

Tree mitigation fees shall be designated to a tree mitigation fund dedicated to the replacement of protected trees and urban forestry management.

Art VIII, Chapter 4, Section 11, Subsection D

Recommendation: Increase Tree Mitigation Fee

Current replacement costs per tree are about \$200. Increasing the mitigation fee would ensure that funds are sufficient for tree replacement.

*Option would remain for developer to provide a value estimate from an arborists, in-lieu of the set fee.

Summary: Ordinance Recommendations

- Revise Commercial Landscaping Ordinance
- Revise Tree Surveys (trees six (6) inches DBH and larger)
- Add a Heritage Tree Designation
- Reevaluate Tree Credit System
- Explore Negative Tree Credits
- Increase Tree Mitigation Fee

Future Considerations

Lewisville 2035

Future Considerations:

Tree Canopy Credits

Zoning Overlays

Tree Canopy Credits work in similar ways as Tree Credits escape that credits are calculated based on the size of the tree canopy at normal maturity.

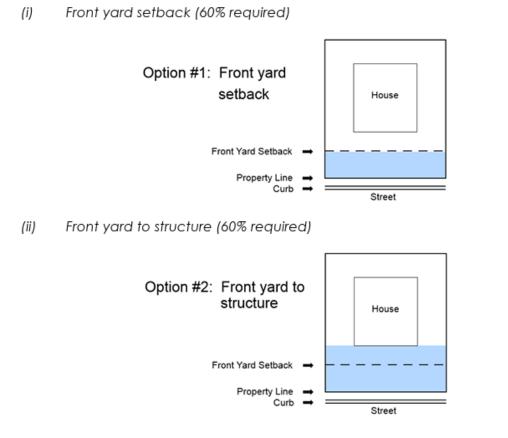
Only Dallas and Fort Worth use these

Dallas' Neighborhood Forest Overlay Districts are designed to help residents collaboratively establish goals and direction for future development of the neighborhood.

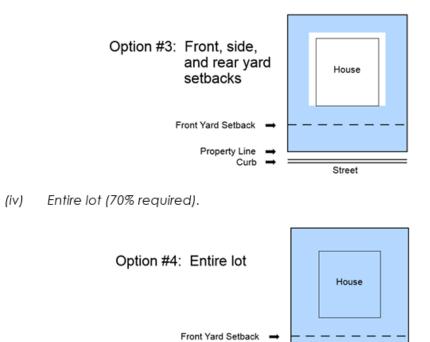
Only Dallas uses this (since 2019)

Dallas Forest Overlay

The neighborhood selects a tree conservation area from set options:



(iii) Front, side, and rear yard setbacks (70% required).



Property Line

Curb

Street

Future Considerations: Rebates/Irrigation Incentives

Water bill (irrigation) rebates can provide incentives for residential or commercial property owners to install or maintain native and lowwater landscaping. This form of rebate is not seen in any of the DFW sample municipalities.

The City of Round Rock offers irrigation rebates for both commercial and residential properties, with the later limited to owners of existing irrigation systems, up to \$500/account.

Future Considerations: Grant Programs

Several cities use tree mitigation funds and other sources to support community grants for projects that enhance treescapes and the urban forest canopy.

The City of Austin's **Urban Forest Grant** funds projects led by a variety of stakeholders, including parent-teacher organizations, academic and private institutions, non-profit organizations, community groups or individuals.

City of Ft Collins, Colorado, offers **Nature in the City** grants that support larger investments through community-led planning (Dream It Up Planning Grant) and project implementation (Make It Happen Implementation Grant).

Future Considerations: Education + Outreach

Online Resources: Innovative Practices







YouTube Video Links

Who Can Help Me?

Maintaining a healthy community forest is a team effort. Many departments across the City provide services related to trees. Use this directory to find the right contact to address your question or concern.

- Trees in the Right of Way (Streets, Sidewalks, Medians)
- ✓ Trees Near Power Lines
- ✓ Trees in Creeks, Channels, & Drainage Easements
- <u>Trees in Parks, Trails, & Greenbelts</u>
- ✓ Yard Clippings, Large Brush, & Tree Pickup
- ✓ Trees in Alleys & Debris on Roadways
- ✓ Trees Blocking Traffic Signs

Information on Learning Resources and Regulations

Helpful Links

Find a Certified Arborist for your Property Tree Preservation Ordinance

> Ask an Urban Forester or Find an Arborist

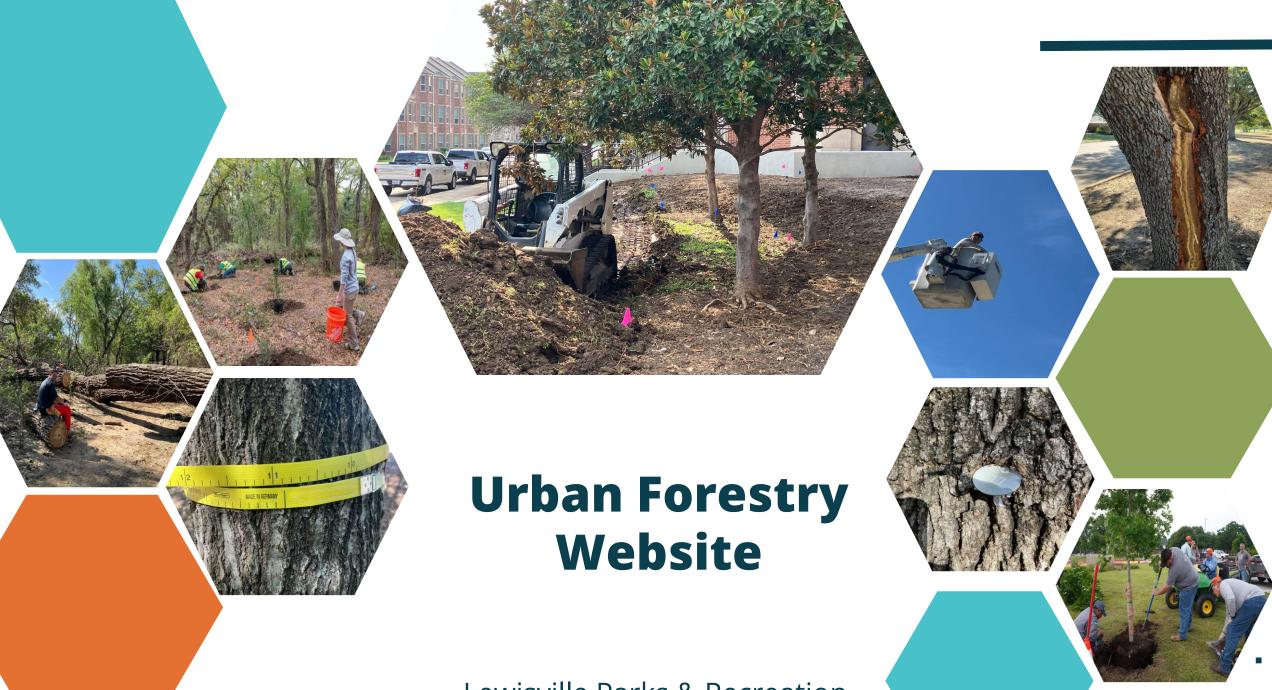
Future Considerations: Commercial Property Incentives

Survey of commercial properties is ongoing

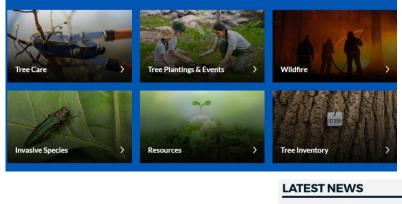
- Emails to Chamber of Commerce Members
- Email to Religious and Non-Profit Organizations
- Business Canvas (Main Street and RT121)
- ~16 responses (out of 100 businesses surveyed)

Preliminary Findings:

- Support for Landscaping Incentive or Grant programs
- Rental vs. Owner Needs



Website Examples



FOREST ACTION PLAN

TREE CANOPY, WATER QUALITY, AND COMMUNITY PROGRAM CAPACITY Wahrington, D.C., is unlique among northwastern states. The District is a large urban center with an increasing population that draws approximately 66:1251 people from Maryland and Virginia each work day. There are several federally managed large mapaces. Rut for its consists primarily of urban forest that cover 35% of the dry.

The District of Columbia's Forest Action Plan strategy proposes to address three priority issues as determined by the Assessment of Urban Forest Resources: increasing urban tree cancey across the object protecting and improving air and water quality, and building whan and community program capacity. The assessment also addresses two regional priority issues of importance to the Editrict: the 195 Megregoria and the Chresspeake Bay Watershod.

+ Conserve + Protect + Enhance

Image: Constraint of the serve of the s

2024 Tree Planting

City Forestry plants trees in parks and medians as funding allows. In 2024, Forestry plans to plant an estimated 49 trees citywide, including 22 on the Flintridge medians (funded by The Dalton Family Foundation), 17 trees on the Cascade medians (funded by the North End Woodlands), and 10 trees in various neighborhood parks across the city.



Agencies

• Frisco

- Fort Worth
- Austin
- Raleigh

<u>Resources</u>

- Benefits of Trees
- Species Lists
- Management Plans
- Instructional Videos
- Calendar of Events



Website Plan





PLAY Website

Timeline

- March Benchmarking and brainstorming
- April Collection of resources and content
- May 12 Draft version of site for review
- May 30 Launch of Urban Forestry webpage





Two Approaches



Property Enhancement —— Program ——



*Draft version, created with AI

PEP Program All Residents

Branch Out Lewisville Targeted Program

PEP Program



- Lewisville Homeowners
- (50%) matching grant-rebate
- New Tree Planting eligible

<u>Goal</u>: More residential trees planted, canopy growth <u>Approach</u>: Enhanced marketing, resources <u>Outcomes</u>: Awareness, Canopy, Education



*Draft version, created with AI

<u>Goals</u>

- Expand canopy
- Environmental Equity, Sustainability
- Community Engagement

* Inspired by "Equi-Tree" program in San Antonio



*Draft version, created with AI

Program Details

- Free Trees for Residents
- Outreach Tools
- On-Site Consultations





- N Edmonds neighborhoods
- Approximate 400 homes
- Tree Equity Score of 62 (#63 out 67 in Lewisville)
- Contains Centennial Dr.



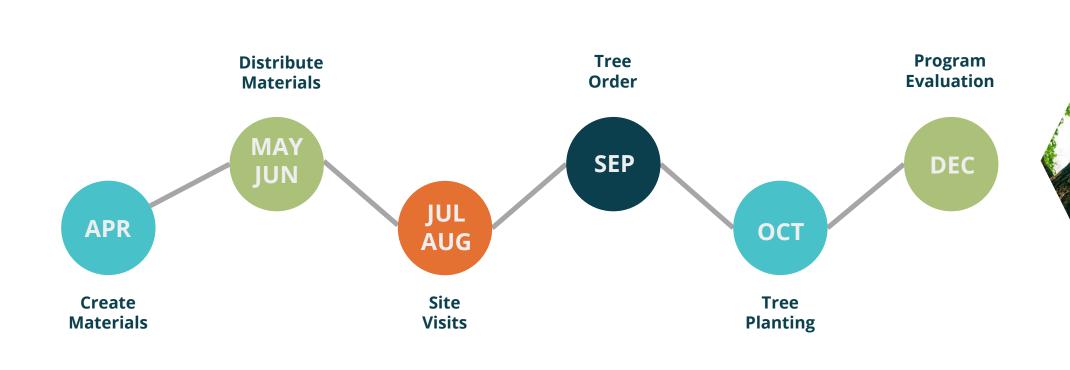


*Draft version, created with AI

Program Logistics

- Estimated Uptake
- Funding Source
- Contractor





Summary Recommendations

Short-Term Actions

Revise Commercial Landscaping Ordinance Revise Tree Surveys (trees six (6) inches DBH and larger) Add a Heritage Tree Designation Reevaluate Tree Credit System Explore Negative Tree Credits Increase Tree Mitigation Fee

Future Considerations

Tree Canopy Credits and Zoning Overlays Rebates and Incentives (Water Utilities) Education and Outreach

Thank You!

May 5, 2025 City Council City of Lewisville







Curversity at Buffalo Rudy Bruner Center for Urban Excellence School of Architecture and Planning