

Tree Preservation Study

City of New Orleans

City Planning Commission

Robert D. Rivers, Executive Director

Larry W. Massey, Jr., Interim Deputy Director

Last Revised: October 10, 2020

Prepared by:

Joanna Farley

Haley Delery

Paul Cramer

Brooke Perry



Table of Contents

Executive Summary	1
Introduction	5
Recommendations.....	6
<i>Approach to Supporting the Urban Tree Canopy.....</i>	<i>6</i>
<i>Tree Preservation Options.....</i>	<i>6</i>
<i>Other Recommended Management Tools.....</i>	<i>7</i>
Next Steps.....	7
I. Introduction and Goals	8
II. Definitions	9
III. Current Landscaping and Tree Regulations	10
A. Preservation.....	10
1. <i>Tree Preservation in the Comprehensive Zoning Code.....</i>	<i>10</i>
2. <i>Tree Preservation in the City Code.....</i>	<i>11</i>
3. <i>Tree Preservation in the Department of Parks and Parkways Policies</i>	<i>12</i>
4. <i>Assigning Value to Trees in the Public Right-of-Way.....</i>	<i>12</i>
5. <i>Permitting</i>	<i>12</i>
B. Encouraging the planting of new trees	12
1. <i>Comprehensive Zoning Ordinance.....</i>	<i>13</i>
2. <i>Board of Zoning Adjustments.....</i>	<i>15</i>
3. <i>Permitting.....</i>	<i>15</i>
4. <i>City Partnerships.....</i>	<i>15</i>
C. Analysis	16
IV. Benefits of Trees.....	17
A. <i>Stormwater management</i>	<i>18</i>
B. <i>Heat reduction</i>	<i>18</i>
C. <i>Energy Consumption.....</i>	<i>18</i>
D. <i>Carbon Sequestration.....</i>	<i>19</i>
E. <i>Air quality</i>	<i>19</i>
F. <i>Economic Value</i>	<i>19</i>
G. <i>Human Health and Safety.....</i>	<i>20</i>
V. Tree Canopy Conditions in New Orleans	21
VI. Best Practices Research.....	23
A. Defining trees worth preserving.....	23
B.....	26
Administration of Tree Preservation Regulations	26
C. Determining geographic areas where tree preservation regulations are applicable	29
D. Differences in regulations for a lot’s buildable area and required yard.....	31
E. Criteria used to determine if a protected tree may be removed	32
F. Mitigation measures when a tree is removed	33
G. Tree Funds from Preservation Program.....	36
H. Other Best Practices to Consider	36
VII. Other Information Sources and Studies.....	39
1. <i>LSU, Guide to Writing a City Tree Ordinance</i>	<i>39</i>
2. <i>American Planning Association, Planning the Urban Forest</i>	<i>39</i>

3. Davey Institute/ USDA Forest Service, <i>The Sustainable Urban Forest</i>	41
4. Nicholas Institute for Environmental Policy Solution, <i>Developing Tree Protection Ordinances in North Carolina</i>	42
5. Hauer R. J. and Peterson W. D, <i>Municipal Tree Care and Management in the United States – A 2014 Urban and Community Forestry Census of Tree Activities</i>	43
6. National Urban and Community Forestry Advisory Council. <i>Ten-Year Urban Forestry Action Plan: 2016-2026</i>	44
7. Danford et al. <i>What does it take to achieve equitable urban tree canopy distribution? A Boston Case Study</i>	45
8. Mock, Brentin. <i>Why Detroit Residents Pushed Back Against Tree-Planting</i>	46
9. Plumer, Brad and Popovich, Nadja. <i>How Decades of Racist Housing Policy Left Neighborhoods Sweltering</i>	46
10. Sisson, Patrick. <i>Can Planting Trees Make a City More Equitable?</i>	47
Summary	48
<i>Start with a Needs Assessment</i>	48
<i>Establish Responsibility</i>	48
<i>Articulate the Goals and Vision of the Ordinance</i>	48
<i>Have a Management Strategy</i>	48
<i>Evaluation</i>	49
VIII. Master Plan	50
Chapter 7: Parks, Open/Green Spaces and Recreation	50
Chapter 12: Adapt to Thrive: Environmental Stewardship, Disaster Risk Reduction, and Climate Change	51
IX. Public Input Received	52
A. Stakeholder Interviews	52
1. <i>Defining the problem</i>	52
2. <i>Definition of Heritage Trees</i>	53
3. <i>Recommendations for replacement strategies</i>	53
4. <i>Right Tree, Right Place</i>	54
5. <i>Effective tools for tree preservation</i>	54
6. <i>Program Implementation</i>	55
X. Analysis	56
A. <i>Trees on Private Property</i>	56
B. <i>Determining which trees to protect</i>	56
C. <i>Replacement and Payment-in-lieu</i>	57
D. <i>Planting Requirements</i>	57
E. <i>Standards for Planting</i>	58
F. <i>Equity Considerations</i>	58
XI. Recommendations	59
1. <i>Considerations and Components</i>	59
2. <i>Tree Protection Options</i>	62
B. <i>Option Two: A Focus on Protection</i>	63
C. <i>Option Three: Prioritize the Tree Canopy</i>	65
3. <i>Options in Applying Recommendations</i>	66
4. <i>Recommendations across all options</i>	67
A. <i>Needs Assessment</i>	67

B.	<i>Evaluation Period</i>	68
C.	<i>Define responsibilities and co-locate tree management ordinances</i>	68
D.	<i>Organize a project review process to support tree preservation</i>	69
E.	<i>Tree Replacement and Payment-in-lieu</i>	69
F.	<i>Establish Tree Care Guide for Residents</i>	69
G.	<i>Provide flexibility in the tree protection mechanism</i>	69
H.	<i>Strengthen the enforcement provision of the tree ordinance</i>	69
I.	<i>Supporting the full urban canopy ecosystem to ensure success</i>	70
XII. Next Steps		71

Executive Summary

Introduction

Trees play an important role in cities throughout the world, and New Orleans is no exception. Trees offer valuable benefits to New Orleans residents – they beautify the public right-of-way, offer shade and cooling effects and supplement the city’s stormwater management infrastructure. Many trees in New Orleans have historic significance, with the oldest trees in the city racking up to 800 years in age. Together, the individual trees that make up the full urban tree canopy, which offers significant benefit to New Orleanians.

Benefits offered by trees include a cooling effect for treed areas and increased stormwater management capacity through trees’ intake of water. Trees, therefore, help to mitigate two key issues that strain city infrastructure and residents’ health and resources. A greater presence of trees can reduce flooding, lower electricity bills, improve health outcomes and can offer a more accessible city for pedestrians, transit-riders and cyclists during hot weather seasons. However, the benefits offered by the current urban tree canopy is limited by its size and coverage. The canopy size was significantly impacted by Hurricane Katrina, during which an estimated 100,000 trees were lost. Efforts to replant the trees lost are still incomplete. The tree canopy, and benefits offered by it, are also not spread equitably across the city, with greater numbers of trees are found concentrated in few neighborhoods. Efforts to preserve and expand the tree canopy can help to sustain and spread the benefits offered by trees more equitable across the city.

Currently, the City of New Orleans has few tree planting and protection requirements. Trees are required to be planted only for a few kinds of developments. The City only protects a portion of its urban tree canopy. Only trees on public property, such as trees in the public right-of-way, on the neutral ground and within public parks are protected through regulations steered by the Department of Parks and Parkways and supported by the Comprehensive Zoning Code and the Department of Safety and Permits. The regulations ensure that public trees cannot be trimmed or removed without a permit; that public trees are protected during nearby construction activities; and that public right-of-way or street trees must be replaced if they are removed or harmed during construction. The regulations currently in place do not address or mention trees located on private property.

Trees located on private property also add value to New Orleans at-large, with benefits that extend past a property line. In recognition of this and pursuant to goals found in The Plan for the 21st Century (known as the Master Plan) the City Planning Commission authorized the Tree Preservation Study to inform potential new strategies and regulations for the preservation and planting of trees on both public and private property. The study includes an assessment of current conditions, current regulations, discussion of benefits, best practices, literature/information sources review, stakeholder meetings, public input, and recommendations.

Based on the Master Plan, the following goals were established for the Tree Preservation Study:

1. Promote and expand New Orleans' urban forest to reach 50% tree canopy by 2030.
2. Promote tree preservation and planting on private property.
3. Establish criteria for "heritage trees" to inform future development; identify heritage trees as those trees of native species, significant caliper (top 20%), located along public corridors. Use additional criteria as appropriate. Consider additional protections for qualifying trees and appropriate incentives for their retention.
4. Explore regulatory options for the retention, replacement and enhancement of the landscaping and live oak canopies characteristic of New Orleans, providing for complete protection of trees and landscaping during private and public construction, and power line maintenance and construction work by public utilities.
5. Promote a diversity of tree planting species and speeds of growth

City Planning Commission staff has put together the following study exploring the current regulatory landscape, best practices from other cities, other information sources and stakeholder input and considers a number of recommendations to address the stated goals.

Recommendations

In addressing the five major goals established for this study, staff proposes considerations and recommended options for the City Planning Commission to review. Based on policy priorities, City Planning Commissioners may choose from the suggested approaches and actions described below. A more detailed analysis of each of these takeaways is provided at the end of the report.

Approach to Supporting the Urban Tree Canopy

The Urban Tree Canopy can be supported by protecting trees to prevent any loss of trees, by planting trees to support an expansion of the canopy, or a combination of both protection and planting. An approach that focuses on protecting trees will only net new trees when a protected tree must be removed, and lead to a tree canopy that does not have a healthy mix of old and young trees. There may be a higher administrative burden with a tree protection approach, as staff must be able to effectively identify tree species and monitor and enforce tree removal regulations. A focus on tree planting will establish many more young trees in the canopy, but this approach may fail to protect old growth trees that offer significant benefits to city residents. Tree planting strategies can be easier to administer, as they can be more seamlessly integrated into permitting and inspection processes already in place. A combination of tree planting and protection strategies that balances these trade-offs to align with the priorities of policymakers can render the best outcome for a tree management ordinance.

Tree Preservation Options

Staff offers three options of tree management programs, representing the range of approaches, from a focus on protection to a focus on planting. These are as follows:

1. **Option One: Expand through Planting.** This option focuses on adding tree planting requirements to expand the Urban Tree Canopy.

2. **Option Two: A Focus on Protection.** This option emphasizes protection of the existing tree canopy as the way to stabilize and incrementally grow the canopy.
3. **Option Three: Prioritize the Tree Canopy.** This option offers a mix of added planting and protection measures and most aggressively pursues an agenda towards expanding the tree canopy.

Other Recommended Management Tools

To support a tree management ordinance, staff also recommend the development of additional tools to support the effective implementation of it. These include:

- Undertake a city-wide tree canopy inventory and assessment. The city-wide inventory will augment the street tree inventory completed by the Department of Parks and Parkways and will offer insights about trends in the health and expansion of the full tree canopy. Establishing this inventory sets the baseline and provides the data necessary to shape strategic tree planting and preservation activities so that they may begin to address inequities in the current canopy coverage.
- Establish an evaluation period for the tree ordinance and review the results of any ordinance put in place to determine if the approach taken is successfully supporting an achievement of the stated goals.
- Develop a tree planting and care guide aimed at supporting homeowners to choose an appropriate tree when planting and to properly care for trees they may have on their yard
- Clarify tree management responsibilities and streamline tree review and management processes within city departments.
- Solidify city partnerships with tree-planting non-profits to establish a comprehensive and cohesive tree management program in New Orleans.

Next Steps

While the recommendations in this report are informed by the Master Plan, stakeholder interviews, best practice review and general information research, there has not been wide community engagement about these possible tree protection and planting requirements. Staff believes that the next steps should include a request for input from neighborhood groups and residents to understand how different groups may receive a tree protection ordinance. Staff also suggests that a tree canopy management plan, developed jointly with tree stakeholders, neighborhood groups and residents, and informed by data from a city-wide tree inventory, could support a strategic and effective implementation of these measures. This management plan should respond to data gathered in the needs assessment in order to best ensure that tree protection and planting activities that result can be completed in a manner that promotes tree coverage equity without inviting gentrifying forces.

I. Introduction and Goals

The City Planning Commission (CPC) staff was requested by a City Planning Commissioner to study ways to preserve and expand the Urban Tree Canopy in the City of New Orleans. The CPC will consider and recommend provisions to support goals that preserve existing trees and encourage the healthy expansion of the urban tree canopy as a way to reach the goal of a 50% tree canopy in New Orleans by 2030. Specifically, the recommendations developed through in this study seek to:

Preserve existing trees:

- Promote tree preservation and planting on private property.
- Establish criteria for “heritage trees” to inform future development; identify criteria used to define heritage trees. Consider additional protections for qualifying trees and appropriate incentives for their retention.
- Explore regulatory options for the retention, replacement and enhancement of the landscaping and live oak canopies characteristic of New Orleans, providing for complete protection of trees and landscaping during private and public construction, and power line maintenance and construction work by public utilities.

Expand our urban tree canopy:

- Promote and expand New Orleans’ urban forest to reach 50% tree canopy by 2030.
- Promote a diversity of tree planting species and speeds of growth

These goals are included in Chapter 7 and Chapter 12 of Plan for the 21st Century, commonly referred to as the Master Plan for the City of New Orleans.



II. Definitions

Buildable Area – The area of a lot where a structure may be built once the minimum yard and open space requirements of the Comprehensive Zoning Ordinance have been met.

Caliper - Caliper is measured at six (6) inches above the ground for trees up to four (4) inches in caliper. If the caliper exceeds four (4) inches at six (6) inches above the ground, caliper is measured at twelve (12) inches above the ground as per ANSI Z60. Caliper is generally used for young nursery-sized trees. Once the tree matures, the trunk flare at the base of the tree would make caliper a less useful measurement.

Critical Root Zone -The Critical Root Zone (CRZ) of a tree is established on the basis of the trunk diameter. The CRZ is an equidistant circular area which has a radius calculated at one foot (1') to every one inch (1") diameter of trunk taken at four and one-half feet (4.5') above grade, or is defined as the outer edge of the dripline, whichever distance is furthest

Diameter at Breast Height (DBH) – Diameter of the tree at 4.5 feet above the ground. This measurement is used for mature trees.

Ornamental Tree - Ornamental trees are defined as having a height of less than forty (40) feet at maturity.

Shade Tree - Shade trees are defined as having a height of over forty (40) feet at maturity.

Significant renovations – Defined as demolition and reconstruction of existing buildings valued at fifty percent (50%) or more of the initial value of the existing building.

Urban Tree Canopy – A measurement of the tree coverage over an urban area.

Urban Heat Island Effect – As a result of urban areas having more reflective surfaces such as asphalt and concrete than natural landscaping, these areas regularly experience higher temperatures than surrounding areas with more natural over. This is known as the urban heat island effect.

Undesirable trees – These trees would be considered inappropriate for planting and possibly for protection because of a negative impact they may have in the New Orleans urban context. This may be because they considered an invasive species, or their growth patterns are incongruous with the urban landscape.

III. Current Landscaping and Tree Regulations

A. Preservation

The City of New Orleans already has some regulations in place for the preservation of trees, though these protective regulations only apply to trees in the right-of-way. These tree protection measures are articulated in the Comprehensive Zoning Ordinance (CZO), the City Code and the Department of Parks and Parkways Administrative policies. There are two existing permitting processes relevant to tree preservation and planting, and these only apply to trees in the public right-of-way.

1. Tree Preservation in the Comprehensive Zoning Code

Article 23 of the Comprehensive Zoning Ordinance (CZO) describes landscaping requirements as they apply to different kinds of developments. The landscaping requirements in the CZO have the purpose of assisting in the development of a sustainable New Orleans; supporting reduced stormwater runoff; increasing compatibility between abutting land uses and the public right-of-way; providing for water conservation; protecting public health and safety by preserving and enhancing the built environment; and reducing the urban heat effect. The landscaping requirements in the CZO exempt single-family, two-family and multi-family developments under 6 units but apply to all other use types.

Article 23, Section 23.10 in the CZO landscape section addresses tree preservation for trees in the public right-of-way. This section requires preservation of all public right-of-way or street trees that have a diameter at breast height (DBH) of over six (6) inches. These trees may not be removed unless they meet certain criteria. Protection of those trees during construction is also required as per the requirements described in City Code Section 106 (see below).

Article 23, Section 23.10 only allows the protected trees in the public right-of-way to be removed with authorization by the Executive Director of the City Planning Commission due to one of the following situations:

1. The tree poses a hazard. In order to verify that a hazard exists, the City may require a tree hazard assessment to be performed by a qualified arborist.
2. The tree is planted too close to an existing structure, such that it is either damaging or has the clear potential to damage the structure.
3. The roots of the tree are causing damage to paved areas or sewer and plumbing lines.
4. The tree has an incurable disease or pest infestation that cannot be eliminated. The City may require this condition to be verified by a qualified arborist.
5. The tree is out of keeping in character with a proposed comprehensive landscape plan or with an otherwise cohesive existing landscape.
6. The tree has been damaged to the point that it cannot recover and grow properly, or it will grow in a misshapen or unsightly manner.

7. The Executive Director of the City Planning Commission determines that the removal of the tree is necessary to carry out construction in compliance with approved plans

Article 23, Section 23.10 also requires that any tree removed from the public right-of-way be replaced by a tree of an appropriate species in an appropriate location. The Executive Director of the City Planning Commission can allow trees to be removed and replaced by other types of landscaping elements if:

1. The property includes other trees that provide sufficient shade so that additional trees are not necessary.
2. If a replacement tree would be out of character in conjunction with an approved landscape plan.
3. If in the opinion of the Executive Director of the City Planning Commission there is no suitable location on the property for a replacement tree.

A final component of Article 23 in the CZO prohibits clear-cutting of forests. This provision is also stated in **Article 5, Section 5.4. C.6**, which prohibits clear cutting of forests in Planned Developments.

2. Tree Preservation in the City Code

Section 106-211 to 220 of the New Orleans City Code includes protections for trees in the public right-of-way, including those in a public highway, neutral ground, park, place triangle or sidewalk. These trees are under the jurisdiction of the Parks and Parkways department. This section of the City Code protects these trees by:

- Prohibiting the injury of these trees in any way, including through cutting or pruning, spraying chemicals, disturbing the roots, or posting signs on trees
- Requiring permission from Parks and Parkways to plant any tree or shrub in the public right-of-way
- Requiring the placement of guards around trees belonging to the city during construction or repair of any building or structure.

This section of the city code also requires that any person wishing to cut, prune or remove a tree in the public right-of-way to submit a request in writing to the Parks and Parkways Commission. The Parks and Parkways Commission responds to the request by investigating the tree in question to determine if the tree substantially interferes with the lawful use of private property so as to cause loss, damage or deprivation of the lawful use of such property. This section also requires that the city agency carry out the cutting, pruning or removal of the tree in place of a private contractor.

Section 106-228 enables the parks and parkways commission to claim and collect damages for from any unauthorized person who damages or removes trees, flowers, shrubbery and other property under the care of the commission. This section allows the city to sue for such damages when necessary.

3. Tree Preservation in the Department of Parks and Parkways Policies

Department of Parks and Parkways Policy Section 015639 addresses Temporary Tree and Plant Protection, setting forth requirements for contractors working adjacent to or within City-owned property. In this section, the Department of Parks and Parkways prohibits the removal of trees from city-owned property without the approval and written permission of the Department of Parks and Parkways.

This section describes a payment and replacement structure for trees removed or damaged during construction. For approved removal, this section requires compensation to be paid to Parks and Parkways prior to construction. If a tree is damaged during construction or has to be removed after construction began, Parks and Parkways is compensated and a minimum replacement rate of one caliper inch of replacement tree per inch of diameter at breast height of the pre-existing tree, as shown in the project survey.

The Department of Parks and Parkways also describes the specific protection measures that must be taken during construction to protect trees in the public right of way. These protection measures are required for projects adjacent to or including city trees. The protection measures include placement of a protective fence around the critical root zone of the tree, irrigation requirements and limitations on grade changes around the critical root zone of trees. Drawings with this guidance are also included in these resources (see Appendix A).

4. Assigning Value to Trees in the Public Right-of-Way

Parks and Parkways uses the formula included in “Guide for Establishing Value of Trees and Other Plants” prepared by the Council of Tree and Landscape Appraisers published by International Society of Arboriculture to determine the amount of damages owed when a contractor harms a tree. To calculate the value, first the department begins with the cost of the tree that could be planted in the space given the size of it. Then they determine the area of the tree that was lost. The amount lost minus the area of the replacement tree provides the Basic Tree Cost, which is further reduced based on actual characteristics of the tree lost, such as the species, condition and location. The result is the appraised value of the tree. An example of this valuation is included in Appendix B.

The Department of Parks and Parkways also enforces tree protection measures by way of a fine. Any violations of tree protection plans, protection fencing, or specifications are due a fine of \$1,000 per infraction.

5. Permitting

The Department of Parks and Parkways currently has a permitting system for people who wish to do tree maintenance on any city tree. This permit is free of charge and requires a description of the work to be done by a Louisiana licensed arborist, submitted along with their license and an insurance certificate with the City of New Orleans as certificate holder.

B. Encouraging the planting of new trees

The city currently requires or encourages the planting of trees through landscape requirements in the Comprehensive Zoning Ordinance and standard provisos in the Board

of Zoning Adjustments processes. These landscaping requirements also address species diversity and appropriate tree sizing. In addition to those landscape requirements, which result in planting on private property, the Department of Parks and Parkways has a permitting process for people wishing to plant trees in the public right-of-way. Augmenting its own schedule of planting and maintenance of public trees, the Department of Parks and Parkways has partnerships with tree planting and distributing non-profits that aid in the expansion of the urban tree canopy.

1. Comprehensive Zoning Ordinance

Article 23 of the Comprehensive Zoning Ordinance describes landscaping requirements for development (exempting single and two-family residential development). These sections require developers to plant trees and other plant material on private property, supporting the expansion of the tree canopy.

These relevant sections of this Article are summarized below:

- **Article 23, Section 23.3.B** requires landscaping plans submitted in compliance with the regulations to be prepared by a registered landscape architect licensed by the Louisiana Horticulture Commission. Landscape plans are required to show both the existing plants on the site and the proposed plants, including the size and name of the plants.
- As per **Article 23, Section 23.2** enforcement of these measures is done through period inspections and by making issuance of a certificate of occupancy contingent on sign-off of landscaping installation by a licensed landscape architect or engineer.
- **Article 23, Section 23.5.C** describes the required sizes of trees for landscaping at the time of planting. These requirements are as following:

Table 1. Tree Size Requirements

Tree Type or Location	Size Requirements at Planting
Trees adjacent to sidewalks	Minimum height of 12 feet, minimum canopy clearance of 6.5 feet
Deciduous shade trees	Minimum caliper of 2.5 inches for single trunk trees; 1.25 inches for multi-trunk trees; clear trunk height of at least 6 feet
Evergreen trees	Minimum height of 8 feet
Ornamental trees	Minimum caliper of 3 inches; multiple stem ornamental trees should have a minimum height of 8 feet and a minimum of 3 trunks with 1.5-inch caliper each, 5 trunks maximum.

- **Article 23, Section 23.5.J** describes the guidelines for species diversity in required landscaping. The table below describes these guidelines, which also apply to trees. In addition to these species diversity guidelines, Article 23, Section 23.4.A and Section 23.4.C.1 encourages the use of native plant species in all landscaping projects.

Table 23-1: Diversity Requirements

TOTAL NUMBER OF PLANTS PER PLANT TYPE	DIVERSITY REQUIREMENTS		MINIMUM NUMBER OF SPECIES
	MAXIMUM OF ANY SPECIES	MINIMUM OF ANY SPECIES	
1-4	100%	Not Applicable	1
5-10	60%	40%	2
11-15	45%	20%	3
16-75	40%	10%	5
76-500	25%	5%	8
500-1,000	30%	5%	10
1,000+	15%	4%	15

- **Article 23, Sections 23.6, 23.7 and 23.8** state the requirements for tree planting by development type and location. These are summarized in the table below:

Table 2. Required Tree Planting by Development Type

Development Type	Tree Planting Requirements
Article 23, Section 23.6: Multi-family dwellings of seven (7) or more dwelling units, mixed-use developments and non-residential uses that maintain parking in front of the building	Article 23, Section 23.6 offers four landscaping options to meet the requirements. These are: <ul style="list-style-type: none"> • 1 Shade Tree, 2 Ornamental Trees, 20 Shrubs • 1 Shade Tree, 1 Ornamental Tree, 1 Evergreen Tree, 30 Shrubs • 2 Ornamental Trees, 3 Evergreen Trees, 25 Shrubs • 4 Evergreen Trees, 34 Shrubs
Article 23, Section 23.7: Parking Lot Landscaping	<u>Perimeter parking lot:</u> 1 shade tree every 40 feet on center or 1 ornamental tree every 25 feet <u>Interior parking lot:</u> 1 shade tree in every parking lot island or landscaped area on the interior of the parking lot. If the island extends the width of a double row, 2 shade trees are required
Article 23, Section 23.8: Buffer Yard Landscaping	1 shade tree for every 40 linear feet or 1 ornamental tree for every 25 linear feet of the adjacent property line.

<p>Article 23, Section 23.11: Parkway trees – those trees in the areas within the public right-of-way located between the curb and the sidewalk within the Central Business District, Commercial Centers and Institutional Campus Districts</p>	<p>1 shade tree for every 40 linear feet or 1 ornamental tree for every 25 linear feet. Where appropriate, parkway trees may be clusters or spaced differently as determined appropriate or necessary by the Department of Parks and Parkways.</p> <p>A variety of compatible species should be included. Tree species selection shall be reviewed and approved by Department of Parks and Parkways.</p>
--	--

2. Board of Zoning Adjustments

The City Planning Commission encourages the planting of street trees in the public right-of-way through the Board of Zoning Adjustments (BZA) process. Through this process, BZA cases that are approved are required to comply with the following proviso:

The applicant shall plant one (1) street tree in the public right-of-way adjacent to the site for every thirty (30) feet or fraction thereof, of street frontage, subject to the review and approval of the Department of Parks and Parkways.

Though the Department of Parks and Parkways may waive this proviso when a street tree is not needed, the inclusion of this proviso in BZA approvals incorporates an opportunity for a new tree to be added to the New Orleans tree canopy in the BZA process. Enforcement of this measure is done through holding of permits for those projects that have not fulfilled this requirement.

3. Permitting

The Department of Parks and Parkways issues permits for new tree plantings in the public right-of-way. These permits are issued without a fee. Applicants must submit a description of the tree intended to be planted and agree to water the tree for one year. Trees planted must have a minimum caliper of 2 inches and height requirement of 5 feet. The Department of Parks and Parkways offers guidelines showing how to plant new trees.

4. City Partnerships

The Department of Parks and Parkways also partners with two non-profits, Sustaining Our Urban Landscape (SOUL) and NOLA Tree Project to offer and plant free trees throughout the New Orleans area. This supports an expansion of the tree canopy by planting trees in the public right-of-way. While NOLA Tree Project generally focuses on free tree distributions, SOUL leads volunteer street tree planting efforts around the city.

In administering street tree planting programs, SOUL has used two different models of determining the planting locations for trees. In the opt-in model, SOUL works with volunteer block captains to identify homeowners interested in having a tree planted in the public right-of-way fronting their property. In the opt-out model, SOUL identifies an area of the city to

target in a street tree planting campaign. Following neighborhood engagement through public meetings and open discussion on tree locations, homeowners are notified of the tree planting proposals and given the opportunity to opt-out of the planting if they do not wish to have a tree in the right-of-way fronting their house. SOUL estimates that about 80% of the homeowners chose to participate in the 2020 planting campaign in Old Algiers. This structure also supports greater clustering of trees, which help amplify benefits offered by trees.

C. Analysis

The City of New Orleans has several regulations already in place that address tree protection and planting of new trees. Compared with other cities, these regulations are fairly limited in their scope.

Protection regulations only apply to city-owned trees, for example, leaving trees on private property without any preservation measures. The enforcement measures when a public tree is damaged or removed are also limited in scope, leaving ample room for people to overlook the protections in place. The replacement requirements and guidance for trees that have been removed have few details, which may also prevent replacement planting for the greatest impact.

Tree planting efforts in New Orleans are largely carried out by non-profits in collaboration with the Department of Parks and Parkways. Homeowners are able to apply for a permit to plant a tree in the public right-of-way with a fairly low-barrier application process. Trees are required to be planted on private properties through landscaping requirements in the CZO and a standard proviso in the BZA process. However, these tree planting requirements have a limited reach because of the exemption of residential development under seven units. Additionally, existing developments and lots that do not go through the BZA process are left out of any tree planting required by the City.

The many locations of these tree preservation measures also make it difficult to have a complete picture of all that the City of New Orleans does to protect trees. A more comprehensive approach articulated in one main place may help to create a more effective strategy.

IV. Benefits of Trees

Trees in an urban area offer many benefits to city residents. Enhanced tree preservation measures in the New Orleans Comprehensive Zoning Code can help maintain and expand these benefits for New Orleans residents. Trees have been shown to improve stormwater management, air quality and resident health. Trees offer economic benefits as well, as they can help residents save on electricity bills and have been shown to increase nearby property values. This section provides an overview of the main benefits offered by an urban tree canopy.

The 2019 Tree Inventory completed by the Department of Parks and Parkways includes an estimate of the dollar value that the public trees in New Orleans offer for each of these benefits. These estimations are only for those trees that are managed by the Department of Parks and Parkways, which includes street trees, trees in parkways and the neutral ground and in parks. Missing from these estimates is the value provided by trees on private property, in City Park and Audubon Park and on land managed by the Levee Board. In total, this inventory found that trees offer benefits worth \$6,579,939 annually to the City of New Orleans. The breakdown of the benefits described in this inventory are included in the sections below.¹



¹ City of New Orleans Department of Parks and Parkways. *Tree Inventory Summary Report*. August 2019

A. Stormwater management

Trees support stormwater management systems by catching and soaking up rainwater, thereby reducing the volume and delaying the flow of water into the city's stormwater system. Trees boost the capacity of the municipal stormwater management system in this way. This function is especially important for the City of New Orleans, which has a municipal stormwater management system that is frequently overburdened by large rain events. Preserving and expanding New Orleans' tree canopy increases the assistance they can provide to the New Orleans stormwater management system, which in turn helps to prevent flooding during a big rain event.

Trees offer this assistance during rainfall by first catching water in its canopy, holding water on its leaves and branches. Once it has saturated the leaves and branches, the rainwater drips onto the ground, slowing the rate at which water hits the ground, reducing the likelihood that the stormwater management system would be overwhelmed. Tree roots also help water soak into the soil beneath them by altering the structure of the soil so that it is able to hold more water. The roots then also pull water from the soil to use during the growing season.² The Parks and Parkways Inventory estimates that public trees save the City of New Orleans \$2,085,774 in stormwater management costs annually.

B. Heat reduction

Also important for New Orleans is the way that trees can help cool cities. The Urban Heat Island Effect is caused by the abundance of impervious and reflective surfaces and lack of vegetation in cities, which can lead cities to be significantly hotter than the rural areas that surround it. Trees help combat this by lowering the surface temperature of the surfaces they shade, which then reduces the heat transmitted to buildings around it. Shaded areas can be 20 degrees to 45 degrees cooler than unshaded areas. Trees also cool the area around them through evapotranspiration – a process through which trees release water into the atmosphere from their leaves. This can reduce temperatures by 2 degrees to 9 degrees.³ Shade trees therefore offer refuge to people during high heat events, which is one way that cities can combat the increasingly common extreme heat events which disproportionately effect low-income communities of color.

C. Energy Consumption

Trees reduce energy consumption during the summer months because they lower the heat from the sun that goes into homes. The effectiveness with which trees do this is based on their location and size. A medium size deciduous tree with leaves can reduce the heat going into a house by up to 80%. This can lower the energy consumption for the household, which translates both to decreased energy bills and decreased demand for the production of electricity at power plants.⁴ The Parks and Parkways Inventory estimates that public trees save the City of New Orleans \$1,312,038 in energy consumption costs annually.

² U.S. Department of Agriculture. *Urban Forest Systems and Green Stormwater Infrastructure*. February 2020.

³ U.S. Environmental Protection Agency. *Reducing Urban Heat Islands: Compendium of Strategies, Trees and Vegetation*. http://www.actrees.org/files/Research/epa_uhi_trees.pdf

⁴ Vibrant Cities Lab. *Energy Use Impact*. <https://www.vibrantcitieslab.com/research/energy-use-impact/>

D. Carbon Sequestration

Trees sequester carbon dioxide (CO₂) through the photosynthesis process, during which they take in CO₂ and release oxygen as a byproduct. Reducing the CO₂ in the atmosphere can lessen the greenhouse effect caused by CO₂, which traps heat on the Earth's surface, contributing to global climate change. This sequestration of CO₂ plus the reduction in temperature around the tree together helps to reduce conditions that create smog.⁵ The Parks and Parkways inventory estimates that amount of carbon sequestered by public trees is valued at \$235,176 annually.

E. Air quality

Trees have been shown to reduce respiratory disease in a city because of the way they improve air quality. Trees aid air quality by removing air pollutants, including ozone, nitrogen dioxide and particulate matter. Trees also give off chemicals back into the atmosphere as part of the photosynthesis process. These compounds, once released into the air, can interact with other airborne chemicals to cause pollution. However, all trees offer so many other benefits that they outweigh this negative impact on air quality.⁶ The Parks and Parkways Inventory estimates that the inventoried tree population has a negative value of -\$24,977 for pollutants removed, though this negative value is far offset by the value of the benefits provided.

F. Economic Value

Trees add economic value to the houses and businesses around them by increasing property values and attracting customers. Studies have found increases in property values ranging from 2% to 15% in the selling price of a house with a tree in the yard. Forested business districts have been found to have higher consumer spending than business districts without trees by 9%-12%. Shoppers are also more likely to travel further to reach these forested districts and spend more time in them.⁷

Figure 1. The Benefits of Urban Trees¹

Why Plant Trees?

- Energy Conservation**
Properly placed shade trees can reduce home energy consumption by up to 30% by providing shade for roofs and walls and moderating the effects of wind and rain.
- Property Value**
Trees help to stabilize your neighborhood and can add 13% to 21% to the value of a typical home by increasing curb appeal.
- Air Pollution Reduction**
Trees help clean the air by removing poisonous gases and particulates such as dust and pollen. Through photosynthesis, trees reduce atmospheric levels of carbon dioxide and release vital oxygen. In addition, well-placed trees reduce the need to burn fossil fuels to generate energy for air conditioning.
- Water Quality and Conservation**
Trees and other landscape plants help slow surface water runoff and reduce soil erosion. Trees also intercept and store some rain water and may reduce the possibility of flooding. Shade from trees plus evaporative cooling reduces overall temperatures so plants and turf require less water.
- Wildlife Habitat**
Trees provide food, nesting sites and protection to a wide variety of birds and animals.
- Environmental Improvement**
By planting trees in the urban environment we can help restore the natural cycle of plant growth, reproduction and decomposition. Moreover, trees contribute to community pride, instill feelings of relaxation and tranquility and add natural character and beauty through a variety of forms, colors and textures.
- Personal Statement**
Planting a tree says you care about our environment and our future. What better way to honor a friend or loved one or commemorate a birth or marriage than to plant a tree?

⁵ Vibrant Cities Lab. *Trees Improve Air Quality*. <https://www.vibrantcitieslab.com/air-quality/>

⁶ City of New Orleans Department of Parks and Parkways. *Tree Inventory Summary Report*. August 2019

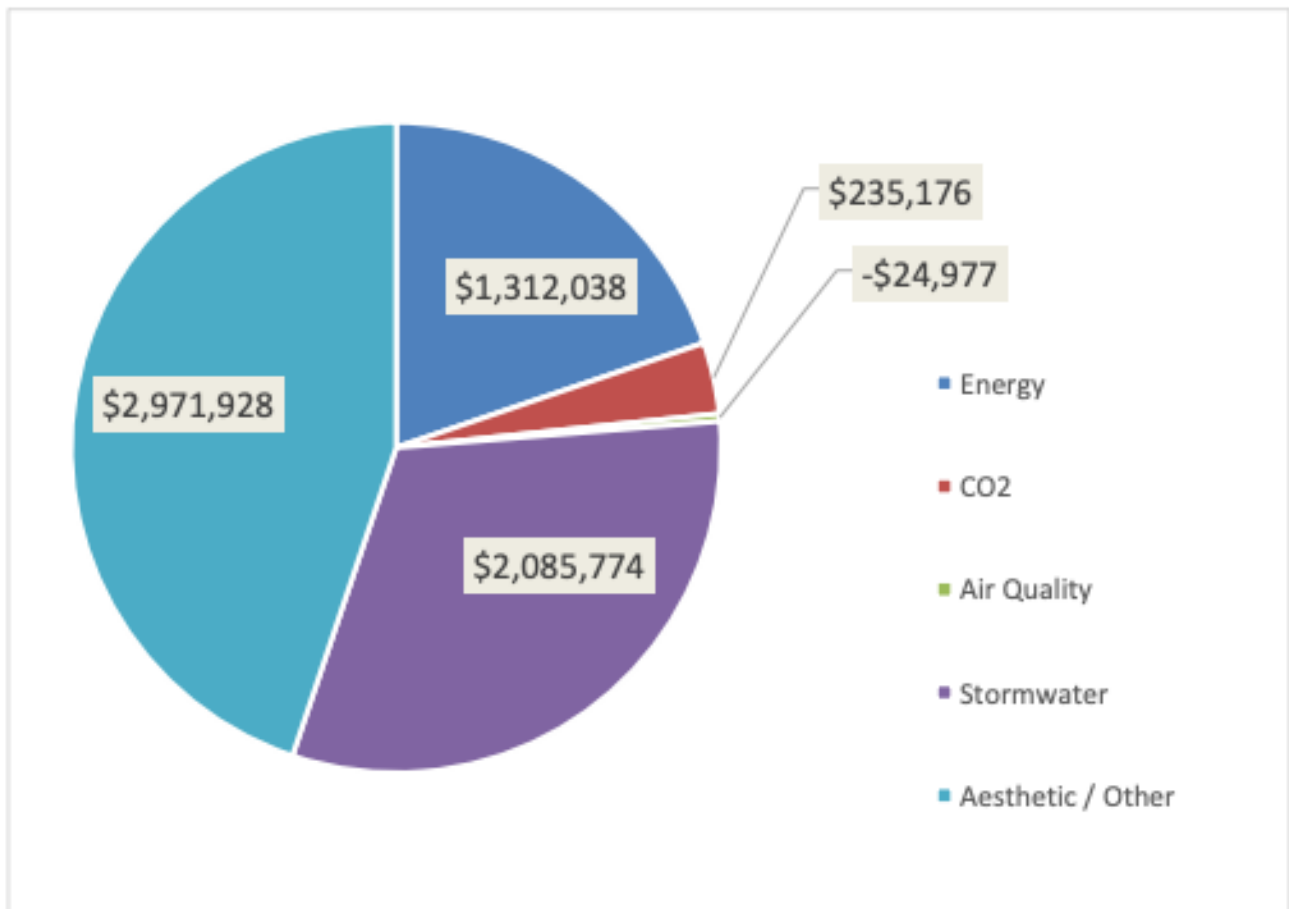
⁷ Wolf, K.L. City Trees and Property Values. *Arborist News* 16, 4: 34-36. August 2007

<http://www.naturewithin.info/Policy/Hedonics.pdf>

G. Human Health and Safety

Health indicators show improvements when there are ample trees in cities. Trees encourage recreation and enhance the walkability of streets, increasing the likelihood that people will walk, run or bike along these streets. Trees also lead to safer streets. Studies show that pedestrians feel safer when there are trees between the sidewalk and the street, and drivers go more slowly on tree-lined streets. Trees have also been linked to greater community connectedness and improvements in public safety.⁸ Trees in cities also support a sense of civic pride and develop place-based character.⁹ They improve the experience of being on a street, as well, making a walk down the street or a bike ride more pleasant with shading and calming effects. The economic value and improvements in human health and safety together offered by public trees in New Orleans are valued at \$2,971,928 annually.

Figure 2. Assessed Value of Street Tree Benefits in New Orleans¹⁰



⁸ Washington State Department of Commerce. *A Guide to Community and Urban Forestry Programming*. June 2009.

⁹ Schwab, James C. *Planning the Urban Forest: Ecology, Economy and Community Development*. American Planning Association. January 2009.

¹⁰ City of New Orleans Department of Parks and Parkways. *Tree Inventory Summary Report*. August 2019

V. Tree Canopy Conditions in New Orleans

The full New Orleans’ tree canopy has not been comprehensively studied. At the time of writing, only the conditions of the trees in the public right-of-way that are managed by the Department of Parks and Parkways are known. The gap in data and information about the size and condition of the trees in the full urban canopy, inclusive of both public and private land, will be necessary to shape tree preservation and planting measures.

In 2018, the Department of Parks and Parkways contracted ArborPro to complete a comprehensive GPS inventory of all trees located along the street right-of-way and in public parks.¹¹ The inventory does not capture those trees located in City Park or Audubon Park, nor the trees located on property managed by the Orleans Parish Levee Board. The inventory found that there were 104,117 trees in the public right-of-way and parks. According to the Director of Parks and Parkways during a stakeholder interview, this total number is significantly less than the department’s estimates prior to the inventory. The Department staff noted that many of the public trees were impacted during Hurricane Katrina.

The inventory found that the most common species of public tree are crape myrtle, southern live oak; bald cypress; hybrid holly and slash pine, though there were 352 distinct species of trees overall. The most common trees over 25” DBH are southern live oak, bald cypress and crape myrtle. The inventory found that 91.9% of the tree population is in “fair” or better condition and 50% is in “good” condition. Table 3 below shows the distribution of trees by zip code and Table 4 shows distribution of trees by parkway type.

Table 3. Trees by Zip Code

Zip Code	Count	%
70112	1,956	1.8%
70113	2,142	2.0%
70114	4,476	4.2%
70115	13,757	13.0%
70116	3,956	3.7%
70117	6,716	6.3%
70118	11,214	10.6%
70119	10,772	10.2%
70122	11,369	10.7%
70124	11,545	10.9%
70125	6,022	5.7%
70126	3,843	3.6%
70127	3,881	3.7%
70128	1,914	1.8%
70129	1,489	1.4%
70130	6,030	5.7%
70131	4,731	4.5%
Total	105,813	

Table 4. Trees by Parkway Type

Parkway Type	Count	%
Street Easement	82,846	78.3%
Tree Pit	785	0.7%
Neutral Ground	14,979	14.2%
Street Tree Total	98,610	93.2%
Park	7,203	6.8%
Grand Total	105,813	

¹¹ The inventory does not include trees in parks not managed by Parks and Parkways

The inventory also took stock of the maintenance needs of the trees in the inventory, assigning maintenance actions as needed. The inventory found that 0.7% of the street trees required pruning and 0.3% (277 trees) required removal. These maintenance needs are based on health conditions or safety hazards presented by the tree.

While the Department of Parks and Parkways' tree inventory offers a starting point, a more comprehensive inventory effort is required to understand the full canopy conditions in New Orleans and what is required to meet canopy goals.

VI. Best Practices Research

Staff reviewed the tree preservation practices in cities known to have strong tree protection measures, such as Miami and Atlanta, as well as in nearby jurisdictions. This review offered ideas for how the City of New Orleans might structure a new tree preservation ordinance. The jurisdictions considered in this section include: Jefferson Parish, Mandeville, Miami, Austin, Atlanta, San Jose, Charlotte, Savannah and Knoxville.

A. Defining trees worth preserving

Cities reviewed defined a special class or classes of trees to that require additional protections. These protected classes of trees require permits for pruning and removal, and often require mitigation measures if they are removed. Most of the protected classes have definitions based on the size of the tree, using the standard measurement of the diameter of the tree at 4.5 ft above the ground as the base, known as diameter at breast height (DBH). In addition to the size of the tree, most cities identify tree species that are of particular importance to the region and also consider historical or community importance in the definition of protected tree classes. Miami also includes specific species that are not to be protected.

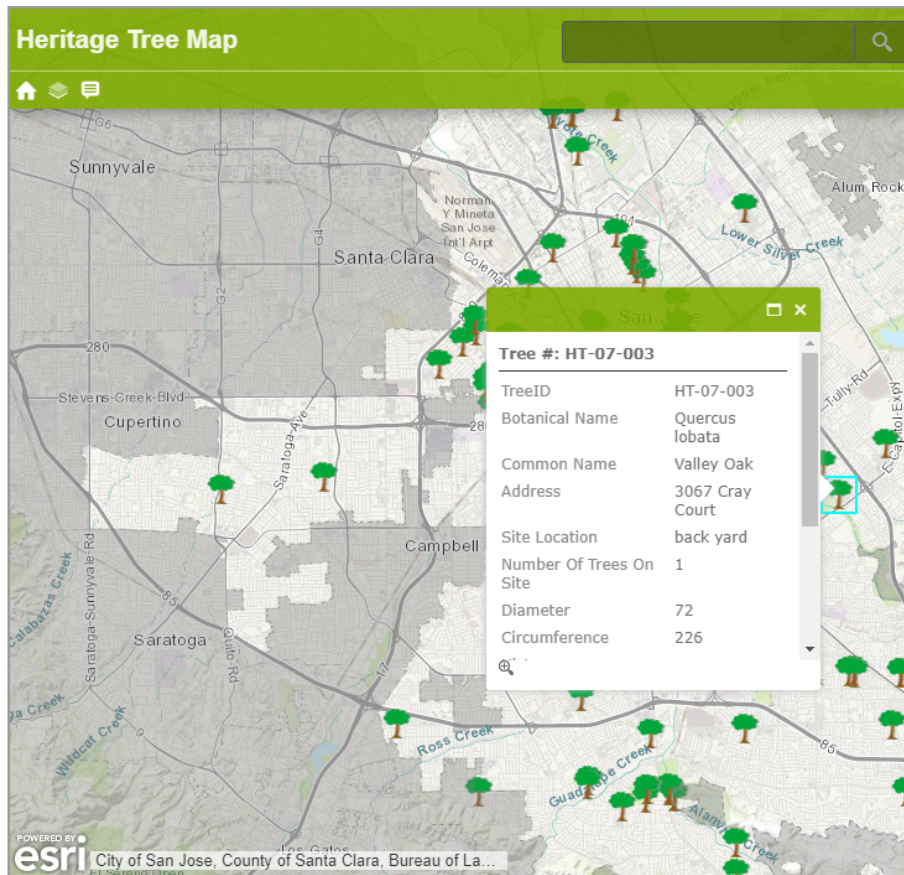
City	Protected Tree Definition
Jefferson Parish, where tree protection in effect	<p><u>Protected trees:</u> shall include all significant trees and other canopy trees where at least fifty (50) percent of the base of the tree is located in a preservation area, and all replacement trees, as further described below: Significant trees shall include the following species that have a DBH of eight (8) inches or greater:</p> <ul style="list-style-type: none"> • Oak: Live • Elm: American • Cypress: Bald, except those located within 15 ft of a parking space or building foundation • Magnolia: Southern, Sweetbay • Sycamore <p>Other canopy trees shall include trees specified as a protected or significant tree in a base or overlay district that requires tree preservation.</p> <p>Replacement trees shall include a tree planted as a replacement tree for a protected tree. The replacement tree is then considered a protected tree.</p>
City of Mandeville	<p><u>Protected Trees:</u> All live oaks over 6 inches DBH are protected</p>
City of Miami	<p><u>Specimen Tree:</u> equal or larger than 18 inches DBH or any other tree determined by the department to be of substantial value because of its species, size, age, form and/or historical significance.</p> <p>Certain trees do not qualify: palms, non-native Ficus species, and any non-native fruit tree cultivated as a grove tree</p>

City of Austin	<p><u>Heritage Tree:</u> has a DBH of 24 inches or more and is one of 10 identified species</p> <p><u>Protected Tree:</u> has a DBH of 19 inches or more</p>
City of Atlanta	<p><u>Specimen Tree:</u></p> <ul style="list-style-type: none"> • Large hardwoods or softwoods in good or better condition with a DBH equal to or greater than 30 inches • Smaller understory trees in fair or better condition with a DBH equal to or greater than 10 inches • Lesser-sized trees of rare species, exceptional aesthetic quality or historical significant as designed by the tree conservation commission <p><u>Historic Tree:</u> tree that has been designated by the tree conservation commission, upon application by the city arborist or others, to be of notable historic value and interest because of its size, age or historic association.</p> <p><u>Protected Tree:</u> Permit also required to remove any tree having a DBH of 6 inches or more located on private property, pines having a DBH of 12 inches or more; and to remove any tree on public property</p>
City of San Jose	<p><u>Heritage Tree:</u> Any tree which has special significance to the community, because of factors including but not limited to its history, girth, height, species or unique quality. The City of San Jose maintains a Heritage Tree list with 100 + trees that meet this definition. The Heritage Tree List was adopted by City Council.</p> <p><u>Ordinance Tree:</u> If single trunk , has 38 inches or more at DBH If multi-trunk, has a combined DBH add up to 38 inches or more</p>
City of Charlotte	<p><u>Heritage Tree:</u> Any tree that is listed in the North Carolina Big Trees List, the American Forest Association’s Champion Tree list or any tree that would measure 80% of the points of a tree on the North Carolina Big Trees List</p> <p><u>Specimen Tree:</u> a tree or group of trees considered to be an important community asset due to its unique or noteworthy characteristics or values. A tree may be considered a specimen tree based on its size, age, rarity or special historical or ecological significance as determined by the city.</p> <p>Examples include large hardwoods and softwoods in good or better condition with a DBH of 24 inches or greater and understory trees in good or better condition with a DBH of ten inches or greater.</p>
City of Savannah	<p><u>Protected Trees:</u> On undeveloped property, any tree over 2 inches DBH; on developed property, any tree equal to or bigger than 12 inches DBH (except single-family lots); any tree counting towards required Tree</p>

	<p>Quality Points, any tree in a wetland, any tree designated as a specimen tree or exceptional tree.</p> <p><u>Specimen Tree:</u> large canopy tree species, over 24 inches DBH with a life expectancy of at least 10 years. Only applies to trees located on commercial, industrial, institutional or multifamily properties.</p> <p><u>Exceptional Tree:</u> hardwood canopy tree over 36 inches DBH, softwood tree species over 30 inches DHB or understory tree species over 8 inches DBH located Only applies to trees located on commercial, industrial, institutional or multifamily properties.</p> <p>Trees may be nominated to receive exceptional tree status by written request to the Park and Tree Director, or may be nominated by the Director. The nomination is reviewed by the Tree Commission in conjunction with a neighborhood association representative, confirmed by the City Manager. To become an exceptional tree, trees much have an association with a historic event, have high aesthetic value or unique character. Exceptional trees much as also be free of disease or pests, have a life expectancy of more than ten years and be free from structural defects.</p>
City of Knoxville	<p><u>Historical Tree:</u> Permit required to cut or substantially alter a living tree with a trunk diameter of 20 inches or more at 1 ft above the ground which is located within 150 ft of any building built in or before 1860.</p>

Figure 3. City of San Jose’s map of Heritage Trees

B.



Administration of Tree Preservation Regulations

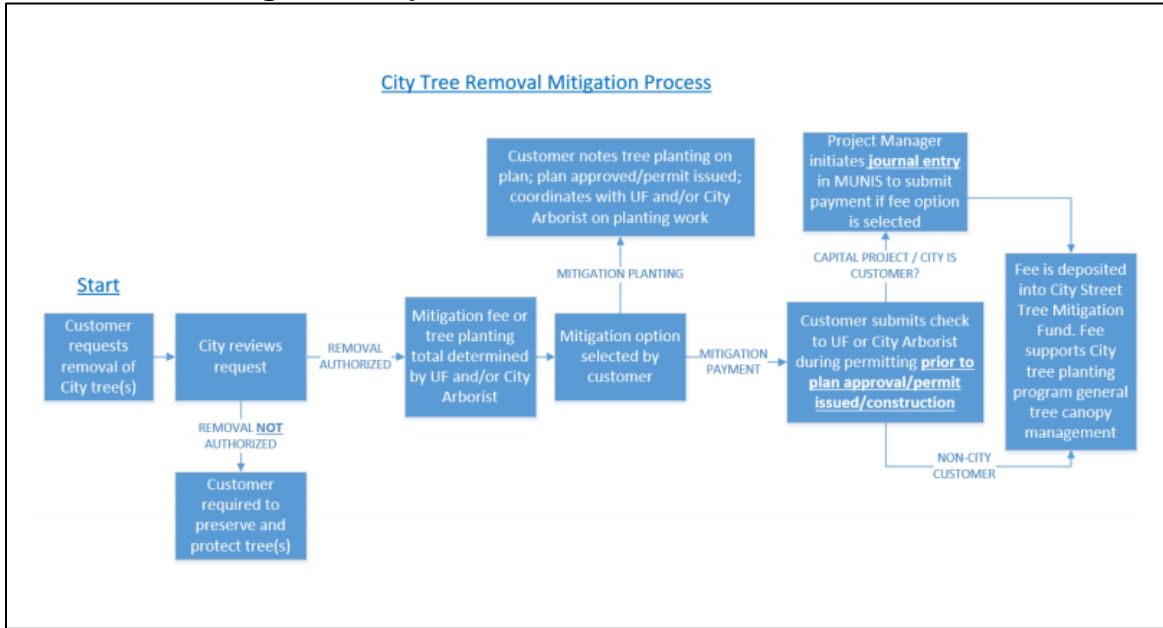
Administration of tree ordinances tend to be led by the department of buildings or official city arborists. Most cities require an application process for a permit to remove, prune more than 25% of the tree canopy, or access the critical root zone for protected trees.

City	Tree Preservation Administration
Jefferson Parish	<p>Protected trees cannot be cut or cleared, except for pruning and tree maintenance in accordance with ANSI A-300 Tree Care standards, and no excavation, grading, filling, trenching, demolition, construction, or other activity that may adversely affect a protected tree may occur on the property on which the protected tree is located, without a tree protection plan, or approval for cutting or clearing. In addition to the standards described in the code, the parish landscape architect or parish arborist may recommend additional tree preservation requirements.</p> <p>For public trees, if the root protection zone (RPZ) falls on or in private property, tree protection requirements apply to the RPZ associated with the public tree.</p>

	Only the parish council may approve the cutting or removal of a heritage, historic or landmark tree.
City of Mandeville	To remove a live oak bigger than 6"DBH, a tree removal permit must be obtained by the Building Inspector. The applicant must state in writing that the tree removal will enhance the health, safety and welfare of public.
City of Miami	All tree activity (pruning > 25% of canopy, removal, root cutting, etc.) for protected trees requires a permit given by the department of code enforcement (on private land) or resilience and public works department (public right of way or owned by the city)
City of Austin	Permits are required for removal, pruning more than 25% of the canopy, and impacting the critical root zone of a protected tree. Permits are reviewed and issued by the City Arborist. For new construction, a tree review is conducted along with residential building plan review for new construction. If development will remove a protected tree, City arborist must review the application and make a recommendation before the application can be approved or presented to the Land Use Commission or city council If development will remove a heritage tree, applicant must file a request for a variance to remove the heritage tree before the application can be approved.
City of Atlanta	Permits to remove trees on private property are issued based on the reason for removing the tree: <ul style="list-style-type: none"> • Dead, dying, diseased or hazardous tree permit applications and trees removed for landscaping or silviculture are reviewed and issued by City of Atlanta Arborist Division • Trees impacted by construction are permitted under a building permit. Plan must be required by the Arborist Division
City of San Jose	For unsuitable trees, a Tree Removal Permit Application is considered and decided by City Arborist Department director For ordinance-sized trees (38 inches or more DBH), Tree Removal Permit Application is submitted, the City issues public notices and a City Arborist Director's Hearing is held.
City of Charlotte	Tree ordinance is overseen by the Land Development Urban Forestry Staff.

	<p>All applications for grading, building, demolition, land use, change of use or rezoning permits on all property except single family development requires a tree survey. The survey identifies all trees of 8-inch DBH or more and planted trees of 2-inch caliper or greater and 6 ft in height that grow partially or wholly within the city right-of-way</p> <p>Tree protection plan required for all applications for grading, building, demo, land use, change of use or rezoning for all tree save areas and tree protection zones.</p> <p>All applications for single-family development must include a tree and root protection zone plan for heritage trees, specimen trees and tree save areas.</p>
<p>City of Savannah</p>	<p>Tree ordinance is overseen by the Savannah Park and Tree Commission.</p> <p>Any clearing of land that will impact a protected tree requires a land disturbance permit. The City of Savannah uses a Tree Quality Points system, whereby lots for development or redevelopment must meet a certain number of points which are achieved through the presence or planting of certain kinds of trees.</p> <p>Trees that otherwise be protected are exempt from the protections if a tree assessment is submitted in writing to the administrator showing a determination by an ISA Certified Arborist that the tree is hazardous or an immediate threat to public safety.</p>
<p>City of Knoxville</p>	<p>Permit required for removal of tree of historical or botanical importance from the City horticulturist.</p> <p>Prohibited to destroy more than 25% of trees on any one parcel of nonexempt land within a 5-year period. Where a building permit for new construction is required, minimum of 6 trees per acre shall be retained on the site unless because of cut or fill work such trees cannot be saved.</p> <p>Exempt land includes parcels of land for single-family or duplex dwellings; airport zones, easements for utility companies, or federal state or local governments; commercial nurseries.</p>

Figure 4. City of Charlotte Tree Removal Process



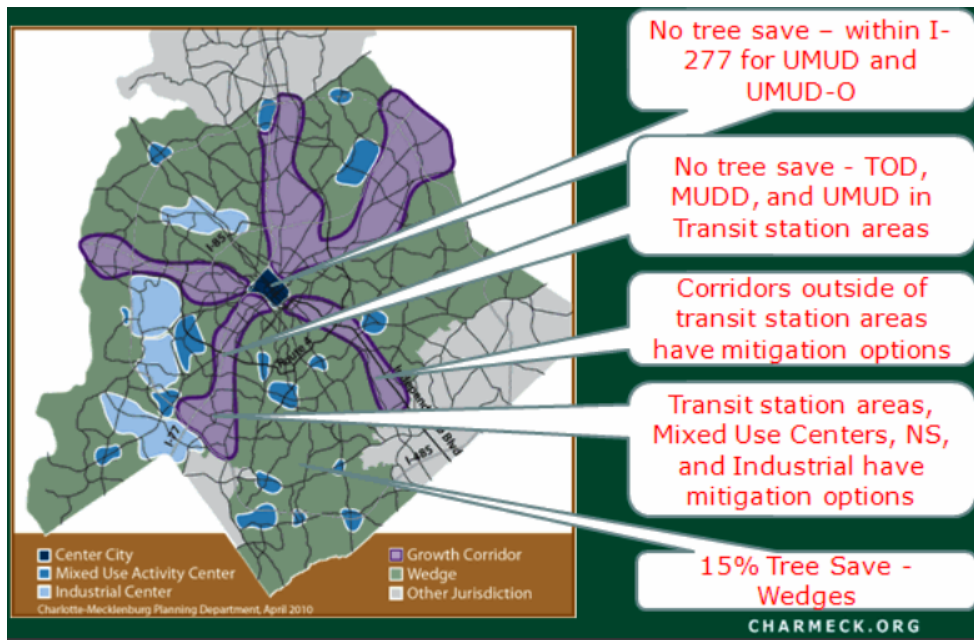
C. Determining geographic areas where tree preservation regulations are applicable

In some of the jurisdictions reviewed, tree protection ordinances vary slightly with the geographic area in question, with additional protections prescribed in some areas or tree coverage requirements altered slightly based on zoning.

City	Changes based on geographic areas
Jefferson Parish	<p>Areas of the parish that require tree preservation and protection are prescribed through the base or overlay district. At least 50% of the base of the tree must be located in the preservation area.</p> <p>For example, the Metairie Ridge Tree Preservation District (MRTPD), creates an overlay zone intended to protect the existing tree canopy in the preservation district. This district expands the definition of protected trees to include additional species of tree and includes any tree that contributes to the canopy of MRTPD and has a DBH of at least 24 inches.</p>
City of Mandeville	<p>The Live Oaks tree protection component applies uniformly.</p> <p>In low-density residential districts, 50% of existing trees larger than 3 inches DBH must also be preserved in required yard setback areas for land under development. In all other zoning districts, a greenbelt area must be located adjacent to the lot line of the public right-of-way with a requirement of 1 Class A tree and 1 Class B Tree per 25 linear feet. Trees within this greenbelt area are protected.</p>

<p>City of Miami</p>	<p>Identified “Environmental Preservation Districts” and “Scenic Transportation Corridors”. In these areas, permit for tree pruning or removal requires approval from the Preservation Officer of the Historic and Environmental Preservation Board.</p> <p>Environmental Preservation Districts are areas to be preserved and protected because of their educational, economic, environmental or ecological importance to the welfare of the general public and the city. These districts provide for preservation and protection of trees and other significant environmental and landscape features and encourage design and development activity which is sensitive to the natural landscape character of the site.</p>
<p>City of Austin</p>	<p>Tree protection applies equally across city</p>
<p>City of Atlanta</p>	<p>Defines minimum tree cover by zoning district, which ranges from 35 inches per acre to 150 inches per acre. Construction permits may require afforestation to meet the minimum tree cover per zoning district.</p> <p>Atlanta also identifies heat islands and soil stabilization areas as priority areas for planting</p>
<p>City of San Jose</p>	<p>Multifamily, commercial or industrial properties must receive a permit for the removal of any tree of any size, whereas other property types only must apply for a permit for ordinance-size trees. Ordinance-size trees require a permit for removal even if they are unhealthy or dead.</p>
<p>City of Charlotte</p>	<p>For Single Family Development, minimum of 10% of the site required to be preserved as “tree save areas”.</p> <p>Commercial areas have a requirement to set aside 15% of the lot as a “tree save area”. Different areas in the city are exempt from this commercial requirement, or have additional mitigation options if they are unable to meet this requirement.</p>
<p>City of Savannah</p>	<p>The tree protection ordinance does not apply to residential lots with a single-family or duplex until such time it is converted to a non-residential or multi-family.</p>
<p>City of Knoxville</p>	<p>Tree protection ordinance does not apply to any parcel of land for a single-family dwelling or duplex, airports, easements for utility companies, or to federal state or local governments; does not apply to containerized trees or nursery stock trees</p>

Figure 5. City of Charlotte’s tree save requirements for commercial land use by zone



D. Differences in regulations for a lot’s buildable area and required yard

City	Buildable area vs Required yard
Jefferson Parish	In accordance with district regulations, preservation areas where tree protection regulations are required must include certain areas of a lot or development site where tree protection is required. These areas are defined in relation to the streetscape area, property buffer, setback and buildable area.
City of Mandeville	Trees located in the required yard area have specific protections, as developers may not remove more than 50% of trees with a DBH of 3 inches or more. Live oaks that are 6 inches DBH or more require a permit for removal regardless of location.
City of Miami	Tree location in a buildable area or yard area where a structure can be placed, and the tree unreasonably restricts the permitted use of the property is criteria for consideration in determining if a tree permit should be issued. Trees located in the property frontage are not considered to be in the buildable area or yard.

City of Austin	<p>Criteria for issuing a tree permit include if the tree prevents:</p> <ul style="list-style-type: none"> • Reasonable access to the property, or • Reasonable use of the property. <p>However, this does not apply if it is a heritage tree being considered.</p> <p>No stated differentiation between buildable area and required yard.</p>
City of Atlanta	<p>Permit for removal may be issued if:</p> <ul style="list-style-type: none"> • The tree is located within the buildable area of the lot and the applicant has been granted a building, landscaping or other permit to make improvements otherwise permissible under all applicable ordinances of the city. • Tree is located in the portion of the setback or required yard area of the lot that must be used for vehicular ingress and egress or for the installation of utilities that cannot be accomplished in a manner allowing preservation of the tree • Tree is located within 5 feet of the structural foundation of an existing single-family residential dwelling structure or duplex (no replacement or recompense required) <p>In consideration of improvements, city arborist shall require that improvements are located so as to result in the protection of trees on the site:</p> <ul style="list-style-type: none"> • For lots of one acre or more, applicants have to identify environmentally sensitive areas. Development confined to lot portion required for intended construction • For lots less than one acre, root save areas established in the setback and required yard areas to preserve trees in these areas. Building confined to portion of the lot.
City of San Jose	No reference to buildable area/yard area
City of Charlotte	<p>Permit to remove heritage trees will only be granted when:</p> <ul style="list-style-type: none"> • Tree is located in the buildable area or yard area where a structure or improvement may be placed and there is no other reasonable location and/or preservation would unreasonable restrict use of the property
City of Savannah	The City of Savannah requires developers to meet a certain number of Tree Quality Points depending on the development use. The Tree Quality Points can be met through planting new trees or preservation of existing trees.
City of Knoxville	No reference to buildable area/yard area

E. Criteria used to determine if a protected tree may be removed

Each city considered has criteria which, if met, would enable an applicant to receive a permit to remove a protected tree. Common criteria used across all cities include:

- Tree unreasonably restricts permitted use of a property
- Tree is diseased, injured or is in danger of falling

Additional criteria include:

- Tree is a prohibited tree species (Miami)
- Tree creates a health hazard (Miami)
- Tree is considered unsuitable for single-family lots, defined as:
 - Tree trunk is 5 feet or less from the residence
 - Tree trunk is 5 feet or less from centerline of below-ground utility line or pipe
 - Tree is a species that the City Council has identified as being unsuitable for single-family lots (San Jose)
- If the tree is on public property, prevents opening of necessary vehicular traffic lanes or prevents the construction of utility or drainage facilities (Austin)
- Tree location unreasonably restricts the economic development of the parcel (San Jose)
- Demonstration that the tree in question is not of historical or botanical importance that the public interest would be served through the preservation of the tree

F. Mitigation measures when a tree is removed

Most cities require mitigation measures to be taken if a permit to remove a tree is issued. Mitigation measures usually include proportional replacement planting of the trees to be removed or payment in lieu of replacement planting. Replacement may be based on the number of trees removed and/or DBH of the trees removed.

City	Mitigation measures
Jefferson Parish	<p>Each protected tree that is to be replaced shall be replaced on-site with a tree of the same or similar species with a minimum trunk size of two and one-half (2½) inch caliper. Trees determined by a licensed arborist to be hazardous or diseased may be replaced on a one to one (1:1) ratio, only if that determination is corroborated by the parish arborist.</p> <p>A replacement tree shall also be:</p> <ul style="list-style-type: none"> • A nursery-grown certified tree; • Marked with a durable label indicating genus, species, and variety; and • Satisfying the standards established for nursery stock and installation thereof, set forth by the American Association of Nurseryman. <p>Replacement of protected trees shall occur within 1 calendar year of the date the removal approval was issued. If the tree was removed because of construction-related damage, replacement shall occur as soon as practicable given growing conditions, no later than one (1) calendar year after the protected tree was removed.</p> <p>Property owner may also pay in lieu of replacing the trees. This value shall be established based upon the current market value for local nursery stock. The money shall be placed in a special parish fund dedicated to the planting or maintenance of trees on Jefferson Parish public property.</p>

City of Mandeville	Replacement trees are only required if a required tree or a live oak is removed without a permit. When replacement is required, the total of the diameters of the replacement trees must equal the total of the diameters of the trees cut by inch.
City of Miami	<p>Applicants requesting to remove at tree may be asked to:</p> <ul style="list-style-type: none"> • Redesign a project to protect special trees or any other significant tree • Relocate specimen tree on or off-site • Replace all trees permitted to be removed • Contribution to Tree Trust Fund
City of Austin	If development will remove a tree 8 inches or larger in diameter, mitigation, including the planting of replacement trees, may be required as a condition of site plan approval.
City of Atlanta	<p>Removal of dead, dying or diseased trees do not require any replanting or recompense.</p> <p>Removal of healthy trees are assigned a recompense amount. Recompense equation = \$100 (number of trees) + \$30 (total inches DBH). Trees that are installed that meet the replacement standards reduce this recompense amount. This amount goes into the Tree Trust Fund.</p> <p>Replacement standards:</p> <ul style="list-style-type: none"> • Plant replacement trees that equal the total number being removed, destroyed or injured. Cumulative DBH or replacement trees shall be equal to or greater than the cumulative DBH of the trees removed, destroyed or injured. City arborist may approval a plan the results in the planting of trees on the site that can reasonably be expected to be accommodated in a manner which will allow mature growth of replacement trees. Remainder may be planted in on public lands. • Replacement trees shall be overstory or mid-canopy. • Species identified as unsuitable are unable to be used for replacement trees • Difference between the number of trees removed and number of trees replaced x the established recompense value paid to the tree trust fund.
City of San Jose	<p>Each ordinance-size tree that is removed must be replaced by the applicant.</p> <p>On single-family or duplex lots, ordinance sized trees must be replaced by a minimum of a 15-gallon tree. Other properties may have other conditions required.</p> <p>Possible conditions include:</p> <ul style="list-style-type: none"> • Suitable replacement tree be provided on site or at another site within City of San Jose. Replacement should be roughly proportionate to the tree needing replacement • On-site tree replacement includes a requirement that any on-site replacement tree that fails within three years after planting shall be

	promptly replaced. Off-site replacement shall include similar assurance of longevity of the replacement trees.
City of Charlotte	<p>Mitigation requirements:</p> <ul style="list-style-type: none"> • One mitigation tree planted in the street right of way for every 3 inches of DBH removed • Mitigation payment in lieu of replanting- payment equaling \$200 for every inch of diameter removed • Payment in lieu of setting aside a tree save area available for development excluding single-family development. Some development scenarios require mitigation at 100%, other at 150%, and some have no options. <p>No mitigation required</p> <ul style="list-style-type: none"> • If tree in poor health • If future streetscape condition will improve community tree canopy benefits
City of Knoxville	<p>Trees must be provided within 12 months of construction completion at a rate of 8 trees per acre, with at least half of the required number being species capable of attaining a height of 50 ft or more. Trees must have a minimum trunk diameter of 2 inches at 6 inches above the ground at planting, unless they are of an ornamental variety, which should have a minimum trunk diameter of 1 ¼ inches at 6 inches above ground at planting.</p> <p>All trees retained or provided must be properly maintained to survive for at least 18 months from final date of construction. Any tree that fails to survive 18 months must be replaced within 12 months.</p>

Figure 6. City of Miami of Tree Replacement Standards

Total diameter of tree(s) to be removed (sum of inches at DBH)	Total number of replacement trees required (where each Replacement Tree is a minimum of 2" DBH x 6' spread in Canopy x 12' in height)	OR	Total number of replacement trees required (where each Replacement Tree is a minimum of 4" DBH x 8' spread in Canopy x 16' in height)	Contribution to Tree Trust Fund
2"—3"	1	or	0	\$1,000.00
4"—6"	2	or	1	\$2,000.00
7"—12"	4	or	2	\$4,000.00
13"—18"	6	or	3	\$6,000.00
19"—24"	8	or	4	\$8,000.00
25"—30"	10	or	5	\$10,000.00
31"—36"	12	or	6	\$12,000.00
37"—42"	14	or	7	\$14,000.00
43"—48"	16	or	8	\$16,000.00
49"—60"	20	or	10	\$20,000.00

G. Tree Funds from Preservation Program

In addition to protecting living trees, many of the cities reviewed set up Tree Trust Funds to support growth of the city’s canopy coverage. Payment in lieu of planting replacement trees may go into these funds, which go towards planting and maintaining trees on public land or acquiring property upon which conservation easements may be placed.

City	Tree Funds from Preservation Program
Jefferson Parish	All monetary proceeds from fines imposed under the tree preservation section, excluding court costs, shall be dedicated to a special fund for the planting or maintenance of trees on public property
City of Mandeville	Reduction of the landscaping requirements may be received through a contribution to the Landscape Mitigation Fund.
City of Miami	Tree Trust Fund, which serves as the City’s primary funding source for city sponsored tree canopy restoration efforts.
City of Austin	None
City of Atlanta	Tree Trust Fund, which is used for the work of the Atlanta Tree Conservation Commission. Funds are used for the protection, maintenance and regeneration of the trees and other forest resources of Atlanta. This includes: <ul style="list-style-type: none"> • Replanting on public property • Procurement of forested property (80% or more canopy cover, minimum forestation standards of 1,000 DBH inches; 50 mature trees per acre) • Administrative costs • Staffing - Arborists, Tree trimming crew • Tree Conservation Commission (Analyst, Education outreach)
City of San Jose	None
City of Charlotte	Tree fund is designated for the acquisition and preservation of land to ensure that the tree canopy is maintained for future generations. Once acquired, properties may have conservation easements or other legal forms of use restrictions to ensure the tree canopy is protected.
City of Savannah	City tree protection escrow fund receives funds paid in lieu of meeting Tree Quality Point requirements or for damage or removal of city-owned trees.
City of Knoxville	None

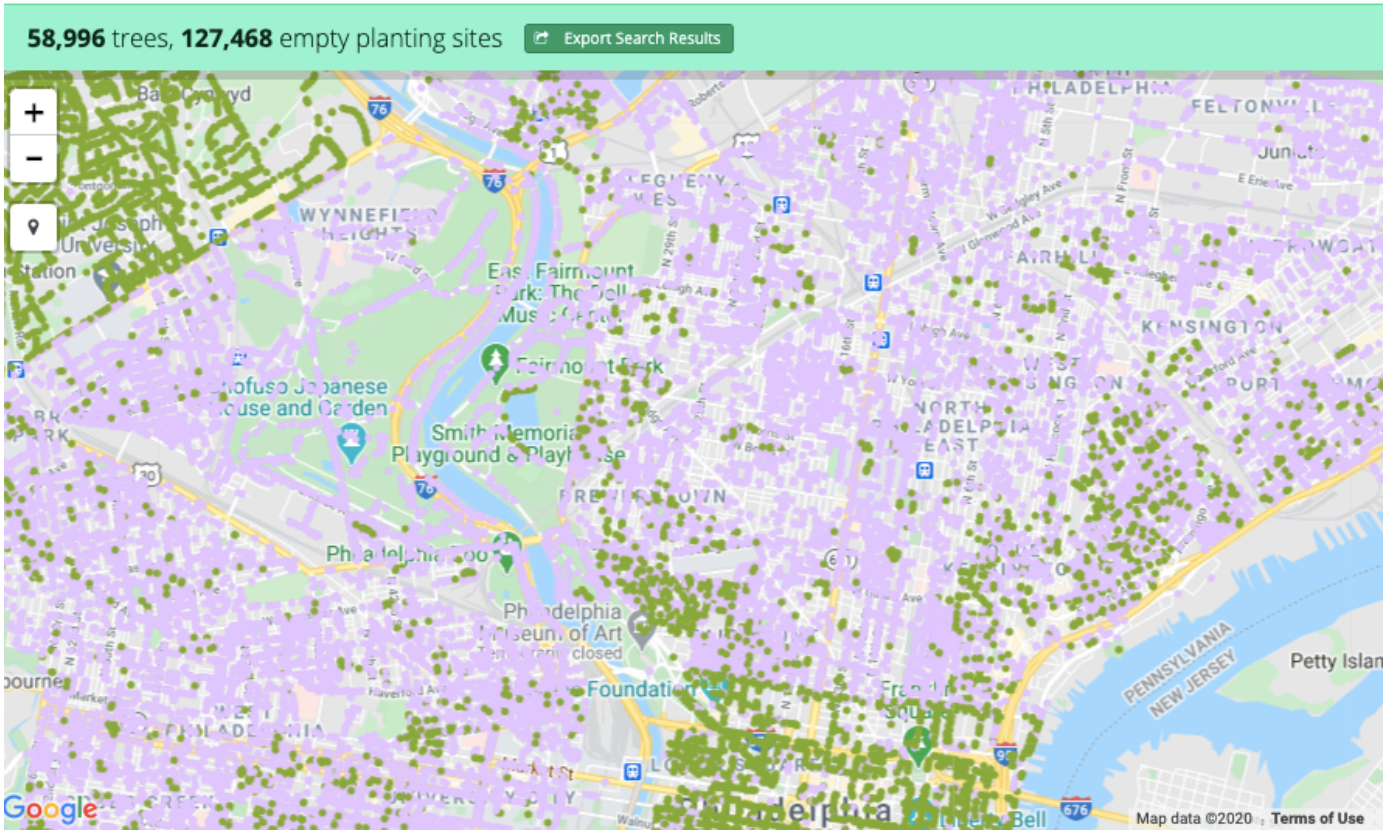
H. Other Best Practices to Consider

The cities reviewed included additional elements in their Tree Ordinances that may be relevant best practices for the City of New Orleans to consider. These are described below:

City	Other Best Practices to Consider
City of Miami	<p>Identifies trees that may harm the urban canopy:</p> <ul style="list-style-type: none"> • <u>Controlled Tree Species</u>: species which can become invasive in native plant communities when not located in, and cultivated properly, as part of a managed landscape design • <u>Prohibited tree species</u>: prohibited species in Miami’s Landscape Manual, plus Weeping Fig Trees <p>For tree replacements, the City of Miami requires that trees are native to the region or are non-invasive. Palm trees of a certain species are required to be replaced at a rate of 2:1. If more than 10 trees are installed as part of a replacement plan, a diversity of species is required.</p> <p>The City of Miami includes a hardship exemption for senior citizens as households with an income of 80% AMI for tree replacement requirements.</p>
City of Atlanta	<p>The Mayor is able to enter into agreements with private property owners to acquire an easement to plant trees on the property. In this case, the owners become responsible for maintenance of the trees.</p> <p>There is a 15-member Tree Conservation Commission, which establishes and maintains a tree record, hears and decides appeals on decisions about trees, establishes educational program, reviews and approves standards of practice.</p> <p>There is an established list of tree species that are not allowed to be used for replacement trees.</p> <p>Establishes minimum tree cover requirements per zoning districts: R-5, R-4-A and R-4-B districts: 35 inches per acre R-3, R-3-A and R-4 districts: 40 inches per acre R-2 and R-2-A districts: 100 inches per acre R-1 districts: 150 inches per acre RG, PD and all other districts: 90 inches per acre</p>
City of San Jose	<p>Defines list of tree species that are unsuitable for single-family lots.</p>
City of Philadelphia, San Jose and Washington, DC.	<p>These cities have online tools that engage the public about the urban tree canopy and invite them into the process. These online engagement platforms help to offer transparency and greater awareness of the importance of trees and the location of trees throughout the cities. Online tools like this may help to bolster general support and buy-in to tree protection ordinances.</p> <p>City of Philadelphia Open Tree Map</p> <p>City of San Jose Tree Story</p>

	City of New York NYC Street Trees Map
	City of Washington, D.C Map Journal
City of Seattle	The Green Seattle Partnership, which is a partnership between the city and a non-profit has been planting trees in Seattle since 2005. They use the city's Racial Equity Toolkit (Appendix D) to engage with and prioritize communities with less tree coverage

Figure 7. City of Philadelphia’s Open Tree Map



VII. Other Information Sources and Studies

In addition to researching best practices from other cities and requesting information from New Orleans stakeholders, City Planning Commission staff also reviewed resources that summarize research about supporting the urban forest more generally. These resources discuss the programs and principles that support the successful and sustainable management of that forest. This section provides a summary of the resources reviewed.



1. LSU, *Guide to Writing a City Tree Ordinance*

This document is a guide for any Louisiana municipality seeking to establish a tree management ordinance. The guide offers two models of management, one for small communities and one for larger communities. Regardless of the size of the community, the guide recommends the same key components for the development of a tree ordinance. These components include:

- A Tree Plan, which states the goals of the tree ordinance and a guiding document for tree preservation measures;
- The creation of a Tree Commission to study, recommend, disseminate new and information, review plans that call for removal of trees, assess fines for unlawful removal of trees;
- A City Arborist with the authority to uphold and promote rules and regulations;
- Management of trees on public property and standards for maintenance of trees on private land that require owner-led maintenance.

2. American Planning Association, *Planning the Urban Forest*

Planning the Urban Forest reviews the benefits of the urban forest and how a planned and programmatic approach to managing the urban forest can optimize those benefits. This resource categorizes the people involved in tree management into tiers: the first tier includes those with direct interaction with trees, such as foresters, arborists and park managers, who deal with the forest on the system level. On the second tier are planners, landscape architects and public works departments that help create the framework that support the growth of trees. The third tier includes the public, developer and elected officials, which together ensure the wider system of accountability. These tiers together form the basis of a successful urban forest management system, as the tier one stakeholders offer technical knowledge of the needs on the ground, the second tier extends management practices across systems and processes and the third tier offers the public policy supporting such efforts. Together, these tiers form the support system for the urban tree canopy, suggesting that all tiers should be considered in the development of an ordinance.

This document also identifies elements and strategies that make up and support successful tree management program. Among those strategies is an audit to determine where existing plans and regulations work against urban forestry, identify shortcomings in regulations. The authors describe that urban forestry succeeds when it is encouraged by plans and policies, reinforced by consistency across agencies, implemented effectively with regulations and programs that meet the goals of the plans, and followed through by alignment in development regulations. State and federal programs may also offer linkages and alignment with regulations to support urban forestry goals.

To build an urban forestry program, Planning the Urban Forest lists general, planning and design principals to ground the program. These include:

<p>General Principles:</p> <ul style="list-style-type: none"> - Integrate trees and ecosystems into processes, not allowing trees to be an afterthought. Quantifying a goal for the canopy is one way to support this. - Document the existing conditions and conduct a tree inventory as a way to inform the setting of a realistic goal - Partner with private and civic partners to plant and maintain trees - Establish the value of trees for the municipality through a valuation of them - Demonstrate how trees can be a profit center, seek sustained funding for tree planting programs
<p>Planning Principles:</p> <ul style="list-style-type: none"> - Incorporate tree ordinance into the development code, putting all tree-related planning in one place. - Collaborate with a wide range of stakeholders to draft the ordinance, including developers, environmentalists and other stakeholders - Include enforcement measures in the tree ordinance, setting the agency responsible for the ordinance, clear intervention points (such as the final approval prior to the Certificate of Occupancy) - Use an adaptive management approach, which includes a regular review of ordinances and regulations that integrates lessons learned - Plan for long-term maintenance and the budget implications of that, such as personnel and equipment.
<p>Design Principles:</p> <ul style="list-style-type: none"> - Combine goals of urban forestry with other planning goals, such as a sense of place, aesthetics, traffic safety and calming or other environmental goals - Introduce a green infrastructure element to the comprehensive plan - Set up a system whereby tree professionals are able to weigh in on the planting of trees to ensure that the right tree is planted in the right place.

This document presents 13 case studies from jurisdictions around the United States with tree preservation ordinances. Each case study presents examples of how municipalities can support tree preservation within their boundaries.

Planning the Urban Forest also offers recommendations for the development of a tree ordinance. These include:

- Take a big picture approach, for example, considering the full canopy instead of simply protecting individual trees. This is because stands and groups of trees can offer more ecological benefits than a single tree, and because focusing on individual trees can reduce the effectiveness of the ordinance.
- Leave room in the ordinance for adaptation as more information and knowledge about the effective preservation of trees becomes available
- Develop a checklist that is easy for developers to follow
- Encourage the use of appropriate trees in appropriate places to support the long-term success of tree planting
- Build in a review of the ordinance, including the staff, budget and implementing measures needed for its administration and enforcement.
- Include standards for performance such as canopy cover to attain, shade level for the city, and species diversity
- When developing criteria for issuing permits to remove trees, consider ways to formulate the criteria to look beyond the individual owner's needs. For example, calculating the amount of canopy that would be reduced if a tree was removed instead of what the owner is to gain by removing the tree
- Waiving permit fees for homeowners can boost voluntary compliance, especially as they may have expenses to gather required materials for the permit application
- It is recommended for the city or county to retain an expert to determine the appropriateness of removing a tree instead of relying on privately retained experts
- It is recommended to base replacement calculations on overall canopy cover, so replacement planting is sufficient to provide the requested amount of canopy cover for a parcel within 10 years

3. Davey Institute/ USDA Forest Service, *The Sustainable Urban Forest*

This resource is set up as a guide to help municipalities work towards long term sustainability for their urban forest, from assessing the state of the forest, to identifying concerns and addressing them in a path towards sustainability. This resource begins with a definition of the urban forest as a system “of trees, other vegetation, and water within any urban area. They can be understood as dynamic green infrastructure that provides cities and municipalities with environmental, economic, and social benefits. Urban forests are forests for people.” A sustainable urban forest is one with health that extends and increases over time to provide the benefits and ecosystem services to the people who depend upon it. This resource stresses that a sustainable urban forest includes those trees on private property, and not just those on public property.

Similar to other resources, this guide states that the starting step towards a sustainable urban forest is the completion of a needs assessment, which may specifically target the benefit hoped to be gained from the tree canopy, such as heat reduction, energy savings or stormwater runoff. Tailoring the needs assessment in this way can influence the management steps taken in response. For example, if environmental justice is among the priorities of the forest management goals, inequities in tree canopy coverage would be a focus of the needs assessment.

This guide uses a “3Ps” framework for establishing goals for tree coverage based on land cover mapping that asks:

1. What is possible – where can land support trees?
2. What is socially preferable – are there areas that are needed for other use, for example
3. What is potentially plantable – what areas are underutilized for tree planting

This guide includes a section on equitable urban forest management, which seeks to close the gap between neighborhoods or areas with the greatest benefits and those with the greatest need for benefits provided by trees. The need for benefits may include factors such as income inequality, rates of asthma or mortality or other equity metrics. A suggested method for highlighting the inequity is to rank neighborhoods in terms of canopy cover, population density, income and age. From this baseline, target variation levels can be established, which may guide efforts to reduce the gap between neighborhoods.

This guide offers an evaluation tool for municipalities to gauge their support for a sustainable urban forest. This evaluation tool is included as Appendix C as this may be of use to City officials when evaluating any adopted recommendations over time.

4. Nicholas Institute for Environmental Policy Solution, *Developing Tree Protection Ordinances in North Carolina*

This resource offers a range of policy options for achieving tree canopy protection with the encouragement that municipalities make the proper modifications to suit the needs of the community. The guide presents tree protection ordinances as the framework through which communities define their priorities in balancing development with forested areas. Through the tree protection ordinance, a municipality can monitor tree removal, establish an income stream to support the planting and maintenance of new trees, and educate residents and developers about the importance of trees.

This guide specifically focuses on the management options for trees that are on undeveloped lots, and does not include consideration of trees on lots that are already developed. This is one way that municipalities can limit the impact of a tree protection ordinance, by focusing on undeveloped land only. This guide also emphasizes the need to review the ordinance periodically to ensure it is kept up to date. This set of guidelines starts with the setting of the purpose and intent of the ordinance. The guide lays out a list of options to consider including to set the intention of the ordinance. This list includes:

- Minimize cost of constructing and maintaining engineered stormwater drainage systems by facilitating natural drainage patterns and infiltration of stormwater runoff
- Moderate temperature and promote energy conservation
- Emphasize importance of trees & vegetation as both visual and physical buffers
- Provide shade
- Conserve natural resources and maintain tree canopy
- Provide wildlife habitat by reducing forest fragmentation
- Encourage protection and planting of native trees
- Require preservation & planting of trees on site to maintain and enlarge tree canopy cover across a site
- Protect, facilitate and enhance the aesthetic qualities of the community

The guide then offers models that communities may adopt to reach their goals. The main strategy described is a canopy coverage and protection by area model. In this method, communities define minimum canopy requirements based on zoning or land use a way to retain larger undisturbed stands of trees. Developers would either have to preserve, plant, or both preserve and plant trees on a given lot to meet the minimum standards required in the ordinance. This strategy relies on knowledge of the existing coverage in different areas to understand what coverage metrics would be appropriate. One potential challenge highlighted is a limit to being able to connect between areas of protected trees. One other aspect that can be integrated into this approach is the removal of invasive, non-native trees and shrubs from the canopy by exempting those plants from coverage calculations. Regarding tree replacement standards, the authors suggest that using density or canopy coverage to determine replacement is most appropriate for large developments, on a total DBH inches per acre basis. Trees to be included in the canopy coverage standard should only be native tree species. With this approach, the focus would be on the extent of the tree coverage in a given area, not the individual trees. A benefit to this approach is that it encourages the retention of smaller and grouped stands of trees. Lists of appropriate replacement trees should be developed and kept as a separate document so that it can be updated regularly.

The authors suggest individual tree replacement may be more appropriate for smaller developments. The benefit of this approach is that it can ensure tree removals are appropriately replaced by species and sizes according to the needs of the community. It is easiest if there is a 1:1 tree replacement according to the number of trees removed, but that does not account for the size of the trees removed. The guide recommends establishing standards to address various situations, including the number of trees to be replaced, the acceptable species for replanting and the minimum diameter required for replaced trees.

Finally, the guide also speaks to tree protection zone and tree protection plans to ensure trees are not impacted by development. Mapping the site with the critical root zone is the best way to have clear communication between agencies about the tree protection areas, and ensures the site design does not conflict with the trees. The guide suggests all development approval shall include a tree protection plan that includes site information, a management plan and the plan for the physical protection of trees during development.

As with other guides, this document supports the creation of a tree advisory commission that can create and apply fees and penalties to ensure the success of the tree protection ordinance.

5. Hauer R. J. and Peterson W. D, Municipal Tree Care and Management in the United States - A 2014 Urban and Community Forestry Census of Tree Activities

This resource presents information from 667 communities on their tree management activities and how their municipal urban forestry operations are organized and funded. A wide range of communities is represented in the report, from smaller towns of 2,500 people to cities with one million people. 90% of the communities reviewed had a tree ordinance of some kind, 68% of which required tree planting in new developments and 77% of which

regulate the removal of dead and diseased trees. Half of the communities that responded had strategic plans about urban trees. Tree inventories supported this work in 67% of the communities reviewed, most with information about tree species and diameter used to direct work for planting, species selection, tree removal and pruning.

Other findings from this report particularly relevant to the New Orleans context include:

- 7% of the communities reviewed use stormwater fees as a mechanism to partially fund tree management activities. 52% of responding communities include their tree management plan in the municipal stormwater plan.
- More than half of the communities had a tree preservation program in place that required tree protection during development. 25% restricted the removal of trees on private property and 31% identified heritage trees or significant trees for preservation.
- 70% had an approved tree list for trees planted on public property and 26% had an approved list for trees planted on private property.
- 64% of the communities reported that the tree ordinances were enforced, and enforcement fines are deposited into a fund in 30% of the communities reviewed.

This resource offers many other data points about tree management practices used across the country. These points offer a way for the City of New Orleans to understand how adopted recommendations may compare across other cities, and what is considered standard practice across the country.

6. National Urban and Community Forestry Advisory Council. *Ten-Year Urban Forestry Action Plan: 2016-2026*

This plan provides recommendations, goals and actions to improve the status of urban forestry in the United States, as well as research, messaging and communication needs for forestry initiatives. The plan is compiled to serve the urban forestry community, the USDA Forest Service and Federal agencies with actionable items to support the expansion of urban and community forestry. This document evaluates progress on the goals and strategies of the Urban Forestry Action Plan and sets the agenda for the next ten years to further advance that progress. Case studies throughout the document highlight successful actions in cities throughout the US. The stated goals are:

1. Planning: Integrate Urban and Community Forestry into All Scales of Planning
2. Promote the Role of Urban and Community Forestry in Human Health and Wellness
3. Cultivate Diversity, Equity and Leadership with the Urban Forestry Community
4. Strengthen Urban and Community Forest Health and Biodiversity for Long-Term Resilience
5. Improve Urban and Community Forest Management, Maintenance and Stewardship
6. Diversity, Leverage and Increase Funding for Urban and Community Forestry
7. Increase Public Awareness and Environmental Education to Promote Stewardship

Recommendations resulting from this study for a tree preservation ordinance align most directly with Goal 5 of this document. The other goals, strategies and case studies included can serve to offer a structure for a complementary set of actions and plans that support a holistic tree management program for New Orleans.

7. Danford et al. *What does it take to achieve equitable urban tree canopy distribution? A Boston Case Study*¹²

As U.S. cities make plans to increase their urban canopies, recognizing the benefits offered by trees, this study makes the case that it's important for cities to look at ways that tree planting initiatives can increase equity in urban canopy cover while still meeting infrastructure and housing needs of the city's future population. This study looks specifically at Boston, Massachusetts, the socioeconomic drivers of the urban canopy cover in the city, and the possibilities of distributing trees in a way that would promote equitable access.

The authors describe how the distribution of urban trees is an environmental justice issue, as trees provide social benefits that are not distributed evenly across cities. The distribution of trees tends to be determined by socioeconomic conditions, not ecological conditions. Studies have found that urban tree distribution is negatively correlated with rentership, household density and minority populations. This study asks the following questions: 1. What is the state of the urban canopy cover in Boston and what neighborhoods have the least access? 2. What are possible planting scenarios for new trees? 3. How can each of these scenarios increase the equity of tree cover in Boston?

Boston has a tree planting initiative known as Grow Boston Greener, which provides small grants for tree plantings in Boston neighborhoods to non-profit organizations and their partners. Grants are provided for planting trees in publicly accessible areas, especially if the area is considered underserved by the tree canopy. The city of Boston also has a tree canopy coverage goal.

The authors established 5 different scenarios for tree planting, ranging from the All Trees scenario, where trees are planted solely on the basis of ecological availability to the Green Equity scenario, which specifically strives to achieve equity in urban canopy cover. Other scenarios are based on the programs in place at the time, assuming status quo, for example, or assuming increased investment based on strategies developed by the Metropolitan Area Planning Commission.

The study finds that even with a strong focus on planting in environmental justice areas, canopy cover equity was difficult to achieve because of greater physical limitations. Increased planting was also required to reach even limited equity improvements. The study finds that tree planting initiatives alone cannot address environmental equity issues, and policymakers should complement these initiatives with other environmental justice programs, such as greening alternatives like green roofs or walls, rain gardens or bioswales where physically locating trees is a limitation. Tree planting initiatives that include this broader definition of greening areas may be able to achieve greater measures of environmental equity.

¹² Danford, Rachel S.; Cheng, Chingwen; Strohbach, Michael W.; Ryan, Robert; Nicolson, Craig; and Warren, Paige S. (2014) "What Does It Take to Achieve Equitable Urban Tree Canopy Distribution? A Boston Case Study.," *Cities and the Environment (CATE)*: Vol. 7: Iss. 1, Article 2. Available at: <http://digitalcommons.lmu.edu/cate/vol7/iss1/2>

8. Mock, Brentin. Why Detroit Residents Pushed Back Against Tree-Planting

This CityLab article describes a reforestation program in Detroit in 2014 that operated through the provision and planting of free trees in front of people's houses. The planters were met with resistance, with about a quarter of residents refusing the tree. A researcher sought to understand the reasons for this refusal. The researcher found that while residents understood the benefits of having a tree in the city, the residents also distrusted the city-supported tree planting program. The researcher found also that the tree planting organizations had done little neighborhood outreach in advance of the tree planting, which furthered the distrust of the residents. The article describes that residents had little access to the decision-making around the tree planting. The planting group generally decided the neighborhoods, species and maintenance routines for the new trees. Tree maintenance by the city had also often been neglected in the past, and residents questioned if they'd be tasked with the care of the street trees once the new ones were planted. The article emphasizes the importance of including community members as decision-makers when it comes to addressing environmental justice concerns.

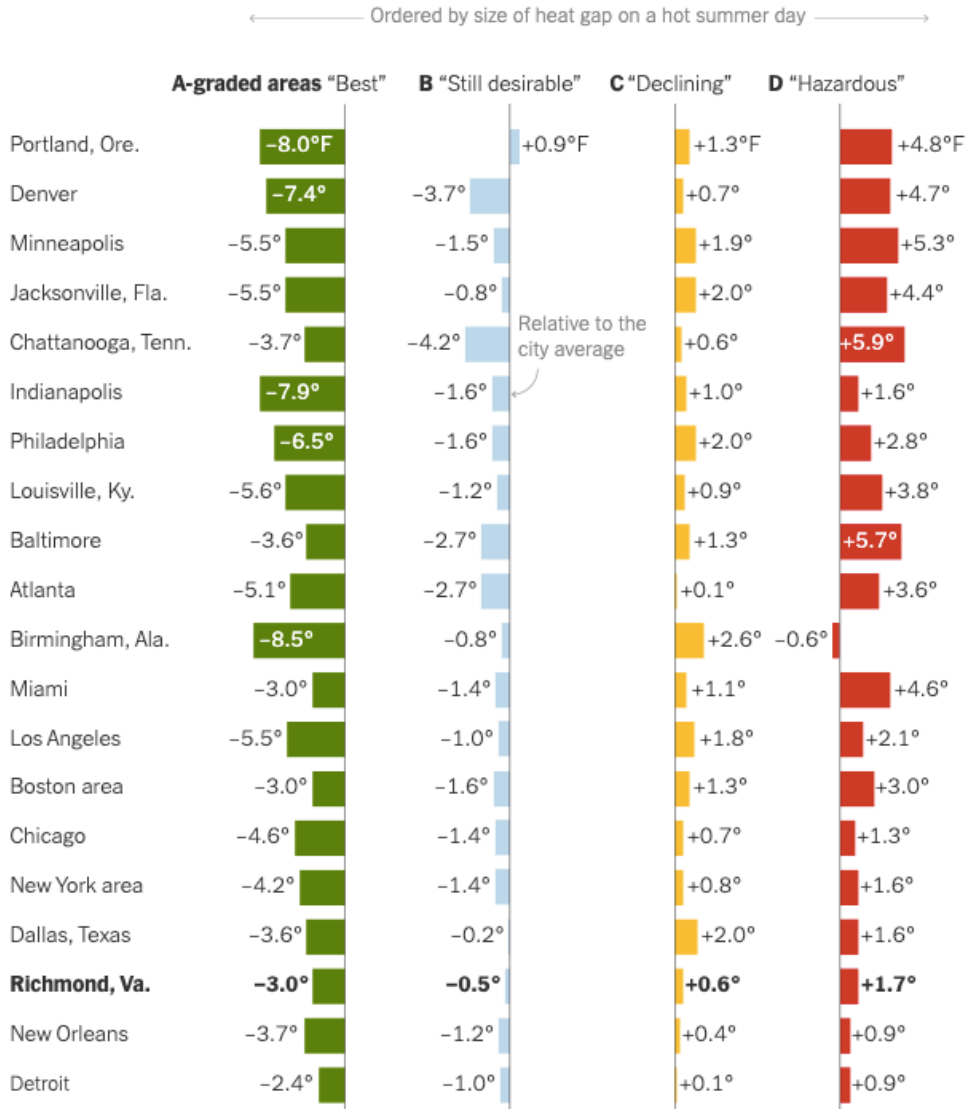
9. Plumer, Brad and Popovich, Nadja. How Decades of Racist Housing Policy Left Neighborhoods Sweltering

The article describes a study that establishes a connection between the historic race-based redlining housing policies and urban heat patterns. The study finds that formerly redlined neighborhoods are 5 degrees hotter, on average, than neighborhoods deemed acceptable for housing loans. Formerly redlined neighborhoods usually have fewer trees and parks which offer a cooling effect and are more likely to have excess paving and to be near highways. The study suggests this may be because redlined neighborhoods were targeted for industrial uses, highways and public houses, all of which concentrate concrete and asphalt, while non-redlined neighborhoods were more able to lobby for tree-lined sidewalks and parks.

The extra heat in these neighborhoods exacerbates physical and mental health issues and adds financial strain through increase electricity bills. The study finds this pattern of worse levels of extreme heat in formerly redlined neighborhoods consistent nationwide. As climate change increases the occurrence of extreme heat, this disparity is important: heat already kills as many as 12,000 people a year, and every extra one degree increase in temperature may increase the risk of death by 2.5%. While addressing this inequity is important, the article emphasizes that greening neighborhoods cannot be done with a singular focus as there are fears that gentrification may follow an increase in greenery. The article cites East Austin as one neighborhood where gentrifying forces followed improvements in environmental conditions, including tree cover.

New Orleans is among the cities reviewed in this study, with data showing that formerly redlined neighborhoods are on average 5.5 degrees hotter than neighborhoods with an A-grade on a hot summer day.

Figure 8. Heat Disparity by Redlined Neighborhood Type



10. Sisson, Patrick. Can Planting Trees Make a City More Equitable?

Cities across the U.S. are turning towards tree planting to address climate change drivers and impact while also addressing geographic racial disparities. By joining the global effort known as the Trillion Trees initiative, U.S. cities, non-profits and companies are seeking to improve air quality and offset carbon emissions through planting trees in neighborhood disproportionately affected by pollution and climate change. These entities that are committing to planting trees have to take an intentional approach to addressing the inequities in tree coverage seen in most cities. Tree planting efforts have to be tailored to appropriately reach disinvested neighborhoods and communities that have a greater need for the cooling and air-cleaning effect offered by trees. Offsetting carbon emissions through tree planting, meanwhile, is most effective when done in dense groves and wooded areas. An approach that makes parks and wooded areas more accessible through transit and wayfinding may help to bridge both approaches.

Summary

This research completed offers guidance on principles and practices to incorporate to make a successful tree preservation ordinance, based on studies of active tree ordinances in different cities. This section provides a summary of the recommended sections and content described in the reviewed research documents.

Start with a Needs Assessment

Guides consistently pointed out that a needs assessment will set the course for a jurisdiction's ordinance by highlighting what gaps are found in the existing tree canopy. The comprehensive needs assessment should determine the state of the urban forest on both public and private property. The needs assessment should also identify those factors that may be impacting the urban forest, answering the question, "what is impacting the health of the forest today and what will impact the health of the forest in the future?". This can help administrators tailor the ordinance to address the key issues.

Establish Responsibility

Researched recommended clearly establishing the responsible individual and agency for the urban forest. Many cities have created tree commissions or other civilian bodies that steward the provisions of the tree ordinance, and these responsibilities should be clearly outlined at the outset of developing an ordinance. In addition to stewardship, the agency responsible for enforcement should be identified. Researchers found that it was most effective to have a single central tree authority, but that it has also been effective to split responsibilities between a tree commission – which sets policy – and city staff – who manage the operations and enforcement.¹³

Articulate the Goals and Vision of the Ordinance

As a follow-on to the needs assessment, which describes the current state of the urban forest, articulating the goals of a tree ordinance describes the desired result of enacting an ordinance. Setting goals creates the conditions for effective evaluation of the ordinance. Building a vision statement describes the value of trees to the jurisdiction and the intention to protect them.

Have a Management Strategy

This component develops the framework for monitoring tree removal and protecting trees of value. For most cities, measures include:

- Mitigation strategies that prevent the removal of trees (guidelines for developing and evaluating tree ordinances) suggests this should be the highest priority to avoid damage or removal of valuable trees. When protection of the trees on-site is not possible, options available include: replanting trees on-site or offsite or planting new trees on-site or off-site. Most ordinances offer a fee-in-lieu option for developers to pay into so that the city can complete the mitigation planting.
- Permitting process for the removal of protected trees
- Establishment of an income stream to support tree planting, maintenance and necessary staff

¹³ Washington State Department of Commerce. A Guide to Community and Urban Forestry Programming. June 2009.

- Assistance and incentive programs for planting new trees
- Public education programs for residents and developers about the value of trees in the community

Evaluate Results

Including a regular evaluation of the tree canopy and ordinance measures provides necessary feedback to determine if the ordinance is effective and in accordance with the stated goals and vision. Evaluation measures generally include gathering data that captures changes to the overall canopy number, the health of the trees in the canopy, and the value of the benefits provided by trees to community members.

Center Equity in Tree Preservation and Planting Activities

Research showed clearly how trees offer benefits to city residents, from offering shade and cooling to improving measures of mental and physical health. Resources reviewed also confirmed that the distribution of trees and their benefits across cities is almost always inequitable, skewing to provide the most benefits to wealthier and whiter neighborhoods. New Orleans is no exception to this pattern. It is increasingly acknowledged that programs that address the expansion of the urban tree canopy must center equity as an organizing principle to ensure that historically created environmental justice disparities are not worsened. This centering of equity should be done hand-in-hand with plans that hold gentrifying forces at bay as environmental justice issues are addressed.

VIII. Master Plan

The City of New Orleans' Plan for the 21st Century, commonly referred to as "The Master Plan" sets the planning framework for the core systems that shape New Orleans' physical, social, environmental and economic future. The Master Plan is shaped by a community participation process and the goals within the plan speak to the values and priorities of participants. The Master Plan was adopted in 2010 and most recently amended in 2016-2018. Two of the goals presented in the Master Plan speak directly to the tree planting and preservation-related activities. City Planning Commission staff used the goals, recommended strategies and actions as guidance in the development of the recommendations resulting from this study.

Chapter 7: Parks, Open/Green Spaces and Recreation

Chapter 7 of the Master Plan most directly addresses New Orleans' urban tree canopy. Goal 2 in this Chapter commits to the, "Restoration and expansion of New Orleans' urban forest to reach 50 percent tree canopy by 2030". This goal is the direct link to this Tree Preservation Study, and the recommended strategies and actions in the Master Plan largely align with those of the Tree Preservation Study.

The background provided in the Master Plan for this goal informs the analysis and recommendations that follow in the Tree Preservation Study. For example, the Master Plan explains that New Orleans' urban forest was significantly damaged by Hurricane Katrina, resulting in the loss of approximately 100,000 trees. As of 2016, roughly 50,000 new trees were planted, and many more have been planted since then. Overcoming the tree deficit to re-establish and grow the urban tree canopy still remains a challenge.

The strategies recommended for Goal 2 are as follows:

- 2.A. Promote tree planting on public property
- 2.B. Promote tree preservation and planting on private property
- 2.C. Restore and plant new trees in parks, open/green spaces and neutral grounds
- 2.D. Develop and establish storm water management practice in public parks, open/green spaces and neutral grounds

The actions included in those strategies include:

- Define "heritage trees" that indicate especially valuable trees to the urban tree canopy and set protections for these trees
- If large trees are unable to be preserved, new trees equal in total caliper to the tree removed should be planted as replacement. A compensatory mitigation program may also offset the removal of trees lots. Partnership with local non-profits, and volunteer organizations can help promote tree planting and preservation.
- The city ordinance protecting trees should be extended to protect trees on private property that are of special significance.
- A tree plan should be developed to guide planting of trees. The guide should reference both species and location.

- Establish storm water management practices in public parks, open/green spaces and neutral grounds

The full list of recommended strategies and actions for Goal 2 of Chapter 7 is found in Appendix E.¹⁴

Chapter 12: Adapt to Thrive: Environmental Stewardship, Disaster Risk Reduction, and Climate Change

Trees are also mentioned in The Master Plan in Chapter 12, which addresses the environmental issues facing the City of New Orleans.

Goal 6 of the Chapter 12 is for, “Environmental quality and justice through targeted investments in natural resources and improved ecosystem services”, which recognizes that the benefits offered by natural resources are not equitably distributed in the City of New Orleans. Strategy 6A calls to, “Target investments in new and enhanced green spaces in areas of highest risk with the most vulnerable populations, underserved and low-income neighborhoods, and communities of color”. The first recommended action within that strategy area is to, “Mitigate urban heat island through the targeted planting of trees and other enhancements in underserved areas, particularly where the most vulnerable populations (elderly, youth, low-income)”.

Sustainability and environmental justice considerations are also incorporated into the final recommendations resulting from this study. The full list of recommended strategies and actions for Goal 6 of Chapter 12 of the Master Plan is found in Appendix E.¹⁵

¹⁴ <https://www.nola.gov/city-planning/master-plan/> [https://www.nola.gov/nola/media/City-Planning/Master-Plan-Chapter-7-FINAL-ADOPTED\(vol-2\).pdf](https://www.nola.gov/nola/media/City-Planning/Master-Plan-Chapter-7-FINAL-ADOPTED(vol-2).pdf)

¹⁵ <https://www.nola.gov/city-planning/master-plan/> [https://www.nola.gov/nola/media/City-Planning/Master-Plan-Chapter-12-\(including-former-Ch-13\)-FINAL-ADOPTED.pdf](https://www.nola.gov/nola/media/City-Planning/Master-Plan-Chapter-12-(including-former-Ch-13)-FINAL-ADOPTED.pdf)

IX. Public Input Requested

A. Stakeholder Interviews

City Planning Commission staff met with a wide range of stakeholders to better understand the context, practices and opportunities for tree preservation in New Orleans. Stakeholders included representatives from non-profits engaged in tree planting, city agencies involved in tree maintenance and permitting, the homebuilders association, private tree care companies, landscaping companies and researchers. Together, these stakeholders provided information that City Planning Commission staff used to properly tailor tree preservation recommendations for New Orleans. Specifically, these stakeholders included:

- a. City of New Orleans Department of Parks & Parkways
- b. LSU AgCenter
- c. Sustaining Our Urban Landscape (SOUL)
- d. NOLA Tree Project
- e. Benton Tree Service
- f. Dana Brown & Associates Landscape Architects
- g. Evans and Lighter Landscape Architects
- h. City of New Orleans Safety & Permits Department
- i. Home Builders Association
- j. Buck Abbey, LSU Professor
- k. Former Jefferson Parish Planner
- l. Bayou Tree Service, Former Jefferson Parish Parkways Department

In each meeting, City Planning Commission staff presented the goals of the tree preservation study and asked for input on how to achieve these goals, including how to define a protected tree. Staff asked about stakeholders' experience with tree planting, preservation and protection in New Orleans and the surrounding area. A summary of the main points of these discussions is provided below.

1. Defining the problem

Stakeholders were largely in agreement that an improved tree preservation mechanism for New Orleans would greatly benefit of city residents. Most stakeholders emphasized the value of trees in the city, especially when it comes to stormwater management benefits. There was broad consensus that the current measures in place as not going far enough to support the protection of a healthy urban forest.

Parks and Parkways representatives added that the current protection provisions do not have strong enough enforcement measures to effectively protect the public trees. Parks and Parkways stakeholders described their limited ability to collect due recompense from people who remove, harm or improperly prune street trees. The Department of Parks and Parkways also explained that they are often unable to effectively flag and prevent conflicts between development and public trees through the current permit review process.

Several stakeholders recommended taking a holistic and strategic view for an updated tree preservation ordinance. The New Orleans tree canopy today, for example, does not equally provide tree benefits across neighborhoods. Interviewees urged reforestation efforts to be structured in a way that may balance coverage without overly burdening residents. Trees also support each other when they are in clusters, suggesting a strategic view might encourage and protect clusters of trees over single-tree plantings.

A developer with experience working within the more restrictive Jefferson Parish tree preservation ordinance noted that the biggest difficulty for contractors working within a stricter tree preservation ordinance is the time added to the permitting process because of it. This extra time getting permitting approval may complicate the timing of a bank loan, for example, which can disrupt financing for a project. Stakeholders warned against a system where homeowners are required to take on the burden of demonstrating what trees are or are not on their property, as this can be unnecessarily costly, especially if a homeowner needs to simply prove that there are no trees on their lot.

2. Definition of Heritage Trees

City Planning Staff asked stakeholders to suggest criteria to define protected trees. Criteria offered included the species type and/or diameter at breast height (DBH) size of the tree. Some suggested curating a list of specific species to be protected, with broad agreement that Live Oak would top this list. Others suggested adding Bald Cypress and Southern Magnolia trees. These trees represent those which are both characteristic of New Orleans as tree species native to this area, and which are particularly good at offering stormwater management benefits to the city. An expanded list of trees was suggested to include all oaks, elms, bald cypresses, pecans, magnolias, and sycamores.

Using DBH to determine protected tree status was another strategy suggested by stakeholders. Stakeholders cited a range of DBH from eight (8) inches to twelve (12) inches to twenty-four (24) inches as indicating significant trees. One suggested all trees over 24 inches DBH would effectively protect only those trees that are important to the New Orleans urban tree canopy and would generally select those trees that are native to this area and appropriate for this context. This DBH-focused strategy may be complemented with a list of exempted trees, made up of those invasive species that may be causing harm to the New Orleans urban forest.¹⁶ Another stakeholder suggested protecting all trees until the tree canopy reaches the 50% coverage goal, recognizing the value in all trees that add to the canopy. Following the reaching of that goal, a phased strategy of removing non-natives could further strengthen the tree canopy.

3. Recommendations for replacement strategies

Stakeholders also discussed replanting and replacement schemes for the tree preservation ordinance, recognizing that there must be flexibility given to residents to remove a tree when necessary. A replacement scheme would compensate for the removal of that tree through the replanting of other trees or a payment into a tree fund.

¹⁶ Exempted trees suggested included the following: Chinese Tallow, Privet, Chinaberry, Golden Raintree, Camphor, Water Oak, Pine Trees that are not in a grove.

Replacement formulas discussed included a one-to-one replacement of DBH removed and replanted, with a possible “recommended trees” list. Stakeholders suggested that replacement trees should at minimum be 15-gallon sized, 6-7 ft high with the 1-2” caliper. Replacement trees should come with the requirement that they be properly protected, staked and watered for a full year.

Stakeholders were in agreement that a payment-in-lieu option should also be available for property owners that do not have the space to plan the appropriate number of replacement trees. The International Society of Arboriculture (ISA) has a methodology for valuing a tree, and stakeholders recommended that this be used for the fee-in-lieu. This is the method by which Parks and Parkways currently determines the value of a tree for replacement. Fee-in-lieu payments would support the public tree care, maintenance and planting done by the Department of Parks and Parkways.

4. Right Tree, Right Place

On the subject of planting new trees, stakeholders encouraged the development of a set of guidelines to ensure that the appropriate tree would be planted in the appropriate place and planted in the right way. This kind of guidance would help prevent the planting of trees in places where they cannot thrive or where they may somehow disrupt city infrastructure. Interviewees mentioned several examples where poor tree placement led to the trees’ decline.

Stakeholders also noted tree maintenance as a key issue not to overlook in tree preservation. Newly planted trees require watering, mulching, staking and other protection measures to grow, which may be a limiting factor to wide-scale tree planting programs. Requiring tree planting may not be a surefire way to increase coverage for this reason. Parks and Parkways described a limited capacity to maintain mature trees, citing a significant backlog of tree trimming that they are unable to meet.

Another issue often cited was that of utility maintenance done on trees, which is often not carried out with tree preservation in mind. Stakeholders emphasized the importance of including tree planting guidance to ensure that the appropriate tree is planted in the appropriate locations as a way to avoid these issues.

5. Effective tools for tree preservation

Stakeholders interviewed have a wide range of working with the Greater New Orleans Region’s urban forest and provided suggestions on how to best shape a tree preservation program for New Orleans. These include recommendations to:

- Complement the tree preservation ordinance with an education program that reaches all relevant parties with information about proper tree care, planting, maintenance and preservation.
- Develop the city processes to be as quick as possible to reduce the possibility that a developer’s timing may be prolonged by tree preservation questions.
- Consider only applying the tree preservation ordinance to some parts of the city in order to reduce the possible financial burden on residents and administrative burden on the city.

- Arborists may be the best reinforcement for a tree preservation ordinance that addresses trees on private property, since they do the work to take down and prune most large trees. Louisiana law requires that arborists be licensed to do tree care, pruning and removal work, so their participation can help support enforcement across the board.
- Revise goals to include details about the diversity of species to have in the canopy, as well of the mix of canopy heights.
- Include a minimum canopy for building sites and ground decisions about tree removal around the canopy potential of trees.

6. Program Implementation

City Planning staff met with representatives of the Department of Safety and Permits to discuss how a possible tree preservation program might be implemented by city agencies. Responding to a first draft of tree preservation program options, the Safety and Permits staff noted that:

- New tree planting measures would likely be easier to implement than protecting current trees. This is because protecting existing trees would require more staff effort from Safety and Permits, which is already overburdened. Staff noted that a tree planting program requiring the planting of new trees could more easily be folded into the current inspections and processes.
- A graduated approach is recommended for this effort. Staff suggested that following an evaluation of the first iteration of the preservation ordinance; more complexity might be added to address limitations.
- Trees that are to be protected should be as easy to identify as possible, as Safety and Permits inspectors should not be expected to have a broad knowledge of tree species, types and conditions. They must also be able to easily view the protected trees from public property.



X. Analysis

The New Orleans Urban Tree Canopy today has few protections. Trees may be cut down on private land regardless of value to the community, size, species or location on the property. Though trees in the public right-of-way are protected by the City Code and in the Parks and Parkways policies, weak enforcement mechanisms make it difficult to prevent these trees from being harmed, as well. This regulatory context does not support action towards the goals stated in the Plan for the 21st Century of 50% canopy coverage by 2030. This section offers an analysis of the tree preservation and planting context in New Orleans today.

A. Trees on Private Property

Today, only trees managed by the Department of Parks and Parkways are protected. Property owners may remove trees on their property as they wish, regardless of the value and benefits offered by the tree. A review of tree ordinances for other cities suggests that this is unusual, and that it is more common to formally recognize the benefits offered by individual trees and the wider canopy through protection measures that also apply to trees on private property. Cities throughout the United States and other Louisiana jurisdictions identify certain types of trees that play an especially important role in the urban tree canopy, whether because of their aesthetic value or based on the other kinds of benefits offered by trees, such as stormwater management or shade. This strategy more comprehensively supports the urban tree canopy, achieving greater coverage and extending benefits more widely through the city. Furthermore, stakeholders with experience working with homeowners and developers in the New Orleans area described that most property owners value trees on their property, suggesting that a protection ordinance that regulates the removal of private trees would be acceptable to most residents.

In addition to restricting removal of protected trees, negative impact from construction must be curtailed for trees protected on private lots. Tree protection plans for construction activities are required for trees located in the public right-of-way currently. This requirement could be expanded to protected trees in private areas for trees that may receive special protections.

B. Determining which trees to protect

Cities with protections for trees on private property identify types of trees that play an especially important role in the tree canopy to protect. Usually a short list of species is identified along with a size threshold that must be met. Consideration is also given to the location of the tree – for example, if the tree is located in the buildable area of a lot or the required yard.

Limiting tree protections to just those trees agreed to have an especially valuable role in the urban tree canopy provides flexibility for property owners with other types of trees on their land. However, defining specific trees and locations of them also complicates the administration of the tree protections. Staff responsible for ensuring that development does not impact protected trees must have the information about the location of trees on a lot and the species and size of the tree. This requires that permit applicants to provide this information through documentation of the trees on the lot. This additional requirement can

be costly to applicants. Safety and Permits representatives interviewed for this study expressed concern about a potentially regressive impact of a tree protection ordinance for this reason. There was also concern about the staff hours required to manage this extra review required. Additionally, a tree protection ordinance would most likely necessitate employment of a City Arborist, with different responsibilities from those currently employed by Parks and Parkways for the management of city-owned trees.

A tree protection ordinance must balance these factors as a way to ensure efficacy of the ordinance. A tree protection system that requires in depth knowledge of tree species or costly tree surveys may undermine the intent of a tree protection ordinance.

C. Replacement and Payment-in-lieu

Property owners may not always be able to comply with tree protections, so incorporating flexibility into the protections through tree replacement and payment-in-lieu options can ensure that the value of the tree removed is still retained. The Department of Parks and Parkways already has a valuing system in place to determine a recompense value for a tree removed, which could be expanded to those trees protected on private property. The funds from this option can build a tree fund that supports planting and maintenance activities done by the Department of Parks and Parkways. However, a stronger enforcement mechanism may be needed to ensure that value is actually paid. In interviews with the Department of Parks and Parkways representatives, the staff described a low success rate in actually receiving the payment due for public trees that are unduly removed.

A replacement planting option is often offered in cities with tree protection ordinances. For these cities, if a protected tree is approved for removal, the property owner must plant trees that serve to replace the value of the tree lost. Property owners can plant on their property or in other locations in the city deemed appropriate. Standards for the replacement trees are prescribed, and the replacement schedule is generally based on the DBH that is removed, though it may be also based on the number of trees removed.

Options such as these acknowledge the realities that development may not always be able to preserve a protected tree. Replacement and payment-in-lieu options provide alternative routes to preserving the value offered by trees to the wider community.

D. Planting Requirements

Another way to support the urban tree canopy in New Orleans is through increased planting requirements. The administrative burden of increased planting requirements may be less burdensome than protection measures, as compliance with tree planting requirements can be confirmed through the final inspection process that is already part of closing out a permit. Safety and Permits staff considered this to be an effective way to build up the New Orleans tree canopy, through stronger requirements for new tree planting.

A recently adopted Interim Zoning District (IZD) for the Lower Ninth Ward is piloting this expanded planting approach. This IZD requires that a tree be planted where there is a front yard dept of five feet or more. If the front yard is more than twenty feet in depth, the IZD requires one shade tree for every forty feet of lot width. If the front yard is between 5 feet

and twenty feet, one ornamental tree is required for every twenty-five feet of lot width. If a front yard planting is not possible, a tree can instead be planted as a street tree in accordance with the specifications and approval of Parks and Parkways. The planting requirement included in this IZD is one model that could be used to apply city-wide.

As with protection requirements, a payment-in-lieu option can complement such requirements to allow flexibility for property owners while building up a fund for Parks and Parkways to support new planting and tree maintenance in public areas.

E. Standards for Planting

A planting standards manual may guide tree planting and preservation to support the greatest gains for the urban tree canopy. Stakeholders interviewed discussed the importance of species diversity and age diversity in the tree canopy, for example, as well as preferred and undesirable tree species to plant in New Orleans. Other planting specifics, such as encouraging groupings of trees and ensuring trees are put into the ground and watered correctly can support a healthier tree canopy. These considerations, and others could accompany a tree ordinance to have the best results.

F. Equity Considerations

As planting and preservation programs are developed, the City should keep an eye towards how these programs will address current inequities in New Orleans' tree canopy. Research has emphasized that cities must be intentional about this component to achieve any equalizing of tree benefits across the city, so a dedication to building equity without welcoming gentrification should be set within the framework from the start.

XI. Recommendations

1. Considerations and Components

The City Planning Commission requested an examination of potential tree preservation measures to implement in the City of New Orleans to support the goals stated in the Plan for the 21st Century. The study offers recommendations organized into three policy options, representing a range of preservation measures running from the least restrictive to the most restrictive. Depending on the City Planning Commission's ultimate objectives for the future of tree preservation regulations for the City of New Orleans, these three options provide a rationale and a path forward to meet those objectives. These options could also be combined, using different parts of each implemented alongside each other. The City Planning Commission staff does not endorse any particular policy option over others. However, staff does strongly recommend strengthening tree planting requirements as one component of added canopy supporting regulations. In developing these options, staff attempted to balance the benefits of a large urban tree canopy with the burden that tree preservation may place on developers and homeowners, as well as additional administrative work for city agency staff. Staff believe a review of tradeoffs, community input and possible impact on future development must inform the adoption of a new regulatory framework.

Each option considers the following main components of a tree preservation ordinance:

- **Protected trees** – The protection options suggest different categories of trees that should be given protected status. In all three options, the protections given to public trees remain. Therefore, the options focus on the trees to be newly protected on private land through a tree preservation ordinance.
- **Tree location** – The protection options offer scenarios for tree protection based on the location of the tree. In addition to the trees on public land, this looks trees on private property and where on private property the tree is located (e.g. in the buildable area or in the required yard).
- **Tree replacement** – The protection options describe a range of tree replacement options for when a tree of protected class is permitted to be removed.
- **Administration of tree protection** – This considers two main aspects of the administration of the program: The permitting system for removal of protected trees and the additional application requirements for permits, including construction, substantial improvement, and renovation.
- **Tree planting requirements** – The options suggest a range of requirements to be included in the ordinance that would support an increase in the tree canopy through new tree planting.

To create the different options, staff classified a range of components and developed actions that could be applied. A summary of the full range of each of these components is described below. This table can assist decision-makers to further tailor the options presented further below in this report.

Table 5. Tree Protection Components

Component	Least Restrictive	Intermediate	Most Restrictive
Protected Trees	Heritage Trees: All Live Oak, Southern Magnolia and Bald Cypress over 20” DBH; and other individual trees requested by residents.	Two classes of protected trees: Heritage Trees: Any Live Oak, Southern Magnolia and Bald Cypress over 12” DBH Significant Trees: Any tree over 20” DBH.	All trees over 12” DBH are protected trees, unless of a species considered “undesirable”
Tree Location	Trees only protected in the front and corner or side yard (for ease of enforcement). Trees in buildable area are not protected.	Trees only protected if they are located in the required yard. Trees in the buildable area are not protected.	Trees protected regardless of location on the lot (even if in buildable area)
Tree Replacement	No replacement required	Any heritage tree permitted for removal must be replaced, one tree replanted for each tree removed; or Payment of the equivalent value of the protected tree to be removed into a tree fund.	Any tree permitted for removal must be replaced with trees of an approved species on a 1:1 basis by DBH; or Payment of the equivalent value of the tree replacement into a tree fund.
Administration of Tree Protections: Permitting	Protected tree removal permit requires: Applicant must demonstrate that the tree is located within the buildable area.	Protected tree removal permit requires: Applicant must demonstrate tree is in hazardous condition through documentation from licensed arborist; or demonstrate that tree is located in the buildable area	Protected tree removal permit requires: Applicant must demonstrate that tree is in hazardous condition through documentation from licensed arborist and confirmation by City Arborist; or demonstrate that the tree reduces the buildable area of the lot by more than 25%.

Component	Least Restrictive	Intermediate	Most Restrictive
Administration of Tree Protections: Additional application requirements	<p>For permit applications, property owner /applicant must submit:</p> <ol style="list-style-type: none"> 1. Photos of the lot to indicate the location of trees on the lot and an attestation that there is no protected tree on the lot when none are present. 2. A tree protection plan for any lot with a protected tree 	<p>For permit applications, property owner /applicant must submit:</p> <ol style="list-style-type: none"> 1. Survey indicating the location and species of trees on a lot. When no trees are present, applicant may submit photos of the lot to document this. 2. A tree protection plan for any lot with a protected tree 	<p>For permit application, property owner /applicant must submit:</p> <ol style="list-style-type: none"> 1. Survey indicating the location, size and species, condition of any tree on a lot, or indicating no tree is present. 2. A tree protection plan for any lot with a protected tree
Tree Planting Requirements	None added	Expand the current front yard landscape requirement to single and two-family structures and multi-family structures under 7 units. Allow street tree or front yard planting options.	Minimum tree coverage per lot, defined by zoning district. All new permit applications must bring lot into compliance with the minimum lot coverage at maturity
Exemptions	Single-family and two-family dwellings are exempted	Application of tree protections applied on an opt-in basis	No exemptions

2. Tree Protection Options

City Planning staff built three tree protection options using different choices from the table of components shown in Table 5 above and applying a different focus for each. Option one focuses on planting, Option two focuses on protection, and Option three describes a combination of the planting and preservation approaches. Each option is built to support the protection and expansion of the New Orleans tree canopy and to meet the goals stated in the Master Plan, though the options would attain these goals at different rates. Each option is described below along with a short analysis of the trade-offs.

A. Option One: Expand through Planting

Option One emphasizes required tree planting to reach the goals in the Master Plan. In this option, all new permits for construction and renovation would require the property owner to ensure that there is a minimum number of trees on the lot. Existing trees on a lot could be retained or new ones planted to meet the tree coverage standards required through this option. All permit applications for new construction and substantial improvement must include a demonstration of where trees exist or are planned to be planted. Final inspections will include confirmation that the tree planting requirements are met.

The new planting requirements are supplemented by a Live Oak protection measure that prohibits the removal of a Live Oak from a lot unless it is in a hazardous condition or it encroaches on the buildable area of a lot. The hazardous condition must be documented by a licensed arborist and the tree location must be documented by a survey showing the tree location. Any tree removed must be replaced with the same DBH removed, or a payment-in-lieu provided to the tree fund of an equivalent amount to the value of the tree removed. If a heritage tree is on the lot, a tree protection plan is also required.

Option One Summary

Trees Protected	Live Oak Trees over 20" DBH
Tree Location	Protected in the required yard
Tree Replacement	Replace the equivalent DBH of the tree removed; or pay in lieu the value of the tree removed
Tree Removal Permit	Approved if tree is in hazardous condition and/or if tree is located in the buildable area. Hazardous condition must be documented by licensed arborist. Reduction of buildable area must be demonstrated with a survey showing location of tree
Tree Protection Plan	Required for new construction and substantial improvement permits when a heritage tree is present. A survey showing the location of the tree is required with application. Photos of the lot required proving no heritage tree is present when this requirement does not apply.
Tree Planting Requirements	Tree planting standards are established by zoning district or on a per square foot basis. Applications for new construction or renovation must demonstrate compliance with the tree

	planting standards. Homeowners can pay into a tree fund if they are unable to meet the required planting standards.
Exemptions	None

Trade-Off Analysis

This option emphasizes planting as a way to support the New Orleans urban tree canopy. Through this option, trees will be planted throughout the city as property owners develop new buildings and renovate. This will ensure new trees are added to the tree canopy and will also protect trees on lots being developed, as existing trees may count towards the tree requirements. This option will be a lighter lift for city staff to administer, as planting requirements can be more smoothly folded into the current permitting process. Protecting the large Live Oaks is likely to have broad support, and these trees will be easily identifiable to permitting staff and community members.

B. Option Two: A Focus on Protection

Option Two sets up a system that protects key trees in the urban canopy today. In this option, there are two classes of protected trees: Heritage trees and Significant trees. The heritage trees list includes: Live Oak, Southern Magnolia, Bald Cypress over 20" DBH.¹⁷ Significant trees are all other trees over 20" DBH. This option recognizes that these large trees play an important role in filling out the urban tree canopy in New Orleans and removing them would greatly hinder the maintenance and growth of the canopy. Additionally, using the 20" DBH as the threshold for protection would generally lead to the protection of native trees of any species, as native trees tend to be the only type of tree able to reach that size in the New Orleans environment.

In Option Two, these two sets of trees are protected, "Heritage" and "Significant" trees. Heritage trees are protected anywhere on the lot, while Significant trees are only considered protected if they are located in the yard of a lot. A tree removal permit may be issued for heritage trees if the tree is demonstrated to be in a hazardous condition, as documented by a licensed arborist and confirmed by the City Arborist. A permit for removal of a heritage tree is also allowed if the tree reduces the buildable lot area by 25%. Significant trees are allowed for removal if documentation by a licensed arborist is submitted showing the tree is in a hazardous condition or if the tree is located within the buildable area.

Replacement of these protected trees is on a DBH basis, requiring the same DBH that is removed to be replanted, or payment in-lieu to the tree fund of the equivalent value of the tree removed. All permit applications for new construction and substantial improvement must include a survey showing the location of significant and heritage trees on the lot or photos demonstrating that there are no trees present. A tree protection plan is required when a protected tree is on the lot. There are no exemptions to these protections.

New tree planting is required through the expansion of the current front yard landscape requirements in the CZO. **Article 23, Section 23.6.A** currently applies only to multi-family

¹⁷ Detailed information about these heritage trees can be found in Appendix F.

dwellings of seven (7) or more units, mixed-use and non-residential use with a front or corner side yard of ten (10) feet or more and requires a single hedge row with shrubs every 36 inches, which may be supplemented with trees. In this option, this requirement is expanded to all uses with a front yard or corner side yard of ten (10) feet or more, and requires that an appropriate tree be planted, as well.

Option Two Summary

Trees Protected	“Heritage Trees”: Live Oaks, Southern Magnolia, Bald Cypress, if over 20” DBH; and “Significant Trees”: all trees over 20” DBH
Tree Location	Heritage Trees are protected anywhere on lot, Significant Trees are protected only in the required yard.
Tree Replacement	Replace the equivalent DBH of the tree removed; or pay in lieu the value of the tree removed
Tree Removal Permit	For Heritage Tree: approved if tree is in hazardous condition and/or if tree reduces buildable area of the lot by more than 25%. Hazardous condition must be documented by licensed arborist and confirmed by City arborist. Reduction of buildable area must be demonstrated with a survey showing location of tree. For Significant Tree: approved if in hazardous condition as documented by licensed arborist or if located in the buildable area. Reduction of buildable area must be demonstrated with a survey showing location of tree.
Tree Protection Plan	Required for new construction and substantial improvement permits when a Heritage tree or Significant tree is present. A survey showing the location of the tree is required with application. Photos of the lot required proving no heritage tree is present may be submitted when this requirement does not apply.
Tree Planting Requirements	Expand Article 23, Section 23.6.A to all uses, require appropriate tree to be planted
Exemptions	None

Trade-Off Analysis

Option Two expands the number of trees protected, ensuring that fewer trees will be removed. If they are removed, replanting requirements will support the growth of the canopy. Additional tree planting requirements would also incrementally grow the canopy coverage.

This option creates an added administrative burden by setting up two classes of protected trees with different treatments. This can be confusing for property owners and harder to administer by the City if there is no clear database of protected trees to reference. Because the protections are largely based on size, however, there would be some limit to the tree knowledge required for staff. This option would render greater cost to property owners and

developers, as more applications would require the submittal of a survey showing the tree locations on a subject lot, which are more expensive than surveys that do not show trees.

C. Option Three: Prioritize the Tree Canopy

Option three is the most protective option, extending protection to all trees over 12” DBH, unless they are trees of an “undesirable” species.¹⁸ The ‘heritage tree’ protections remain more intensive for Live Oaks, Southern Magnolias and Bald Cypresses over 20” DBH. This option does the most to ensure that the urban tree canopy remains at its current size and grows through the replanting requirements and new tree planting requirements added.

Description

In Option Three, any tree that is over 12” DBH is considered a protected tree. Tighter protections are given to “heritage trees”. In this option, all trees over 12” DBH are protected if they are located in the required yard. A tree removal permit for protected trees is approved if the tree is shown to be in a hazardous condition, as documented by a licensed arborist. The City Arborist must confirm an assessment of a hazardous condition for heritage trees. If removed, trees must be replaced on a 1:1 DBH basis or provide a payment-in-lieu equivalent to the value of the tree removed. New construction and substantial improvement permit applications must provide a survey showing the location and species of tree on the lot, or photos may be submitted proving the absence of trees on a lot. A tree protection plan must be submitted with these applications for any protected tree on the lot. There are no exemptions. Tree coverage standards are established for lots based on zoning district, and any permit application must show planned compliance with that tree coverage standard to receive approval.

Option Three Summary

Trees Protected	“Heritage Trees”: Live Oaks, Southern Magnolia, Bald Cypress, if over 20” DBH; and “Protected Trees”: all trees over 12” DBH
Tree Location	Anywhere on the lot, for Heritage Trees. Trees over 12”DBH are only protected if in the required yard.
Tree Replacement	Replace the equivalent DBH of the tree removed; or pay in lieu the value of the tree removed
Tree Removal Permit	For Heritage Tree: approved if tree is in hazardous condition and/or if tree reduces buildable area of the lot by more than 25%. Hazardous condition must be documented by licensed arborist and confirmed by a City Arborist. Reduction of buildable area must be demonstrated with a survey showing location of tree. For Protected Tree: approved if in hazardous condition, as documented by a licensed arborist and City Arborist. Reduction

¹⁸ Recommended as including: Chinese Tallow, Privet, Chinaberry, Golden Raintree, Camphor tree, Water Oak

	of buildable area must be demonstrated with a survey showing location of tree.
Tree Protection Plan	Required for new construction and substantial improvement permits when a heritage tree is present. A survey showing location and species of any tree on the subject lot is required with application. Photos of the lot required proving no trees are present may be submitted when this requirement does not apply.
Tree Planting Requirements	Required tree coverage per lot by Zoning District. Permit applications must bring lots into compliance with the coverage standards by district.
Exemptions	None

Trade-Off Analysis

This option does the most to support the comprehensive canopy. It protects a wide range of trees, supporting a diversity of tree species, sizes and types, lending to a stronger canopy overall. Replanting and new planting standards would also bolster the continued growth of the canopy through individual replanting and the tree fund for Park and Parkways planting. This option recognizes and prioritizes the benefits that the full tree canopy - not just individual trees - offers to New Orleans. As described in the benefits section of this report, the tree canopy provides quantifiable value to the city, and this option protects and expands that value. Because a wider range of trees are protected in this option, the result of the protection ordinance would be for more trees in more neighborhoods to be protected, supporting greater equity in tree coverage across the city. While only a select few neighborhoods may have the large live oak trees, many more neighborhoods are home to trees over 12” DBH.

However, this option comes with a higher administrative burden and higher cost to property owners. Many lots undergoing any kind of work would require a survey with tree location, size and species to be completed, which is not an insignificant cost. Though non-profits in New Orleans can assist property owners in obtaining trees at low cost, property owners may also have to take on the cost of planting and maintaining trees on lots after new construction or substantial improvement. Enforcement from the City side is a much bigger job with the number of trees now protected, and the details of what may be an “undesirable tree” adds complexity to administering the program.

3. Options in Applying Recommendations

In adopting recommendations, the City Planning Commission may consider mixing different aspects of each option to best meet the policy goals. Setting up exemptions may also lessen an identified burden associated with the tree protection.

Additionally, there is an option of implementing the tree preservation ordinance on a neighborhood-by-neighborhood basis. Similar to the New Orleans historic districts, the City Planning Commission could facilitate a process through which neighborhoods are able to self-designate as a “Tree Preservation Neighborhood.” Each self-identified neighborhood requesting this designation may develop the appropriate level of tree protection for their

neighborhood. This approach offers flexibility across the city for neighborhoods to choose a level of tree protection appropriate for their neighborhood. This kind of process would likely require a high level of effort from the City to gather and disseminate data and information widely through neighborhood groups and community stakeholders to ensure residents have the information needed to make tree protection decisions. One downside to this approach is that it fails to take a comprehensive view of the New Orleans canopy and may fall short in proactively addressing the disparities in tree coverage seen across New Orleans neighborhoods.

4. Recommendations across all options

The following are recommendations that would apply to all options, as ways to support the success of a tree protection ordinance. These recommendations speak to the tools, processes and structures that can facilitate an effective tree protection program.

A. Needs Assessment

As a first step to implementing any of these options, City Planning Staff recommends the completion of a comprehensive tree canopy needs assessment. Resources reviewed suggest that starting with a needs assessment builds the foundation for any newly enacted ordinance to protect trees and establishes the baseline against which evaluation of protection and planting measures can compare as the protection program unfolds. This assessment is also described in the City of New Orleans' Master Plan.

The Department of Parks and Parkways completed an inventory in 2019 of all the trees in the public right-of-way and City-administered parks. This detailed inventory includes the tree type and maintenance needs of all trees managed by the Department of Parks and Parkways. The inventory does not include trees on private property or trees on property managed by a different public agency, such as the trees on land operated by the Orleans Levee District. For the purposes of a tree protection ordinance, this inventory is insufficient in providing the needed information about the present condition of New Orleans' tree canopy. However, it is very useful for protecting public trees and informing plans for tree planting.

City Planning staff suggests supplementing this detailed inventory with a comprehensive review of the full urban canopy, inclusive of private property and other public land. This will support the development of a tree preservation ordinance that takes a holistic and specific view of New Orleans' tree canopy. To the extent possible, any recent changes in the tree canopy should be documented to understand any significant trends in the tree canopy over the last several years.

While studying the City's current tree canopy conditions, CPC staff found that the citywide data is not available to the City at the present time. Through discussions with both the City's Information Technology Department, the Regional Planning Commission, and the Louisiana Community Forestry Program, a project proposal was developed to obtain the data and map the City's tree canopy conditions. Due to the City's precarious COVID financial position, a non-profit stakeholder offered its financial assistance and this data project seems poised to begin. The project may include phases documenting both 2016 and 2020 conditions, so that

progress between these times could be assessed. The 2020 data may also be able to provide tree species, trunk DBH sizes, and condition information.

The needs assessment should also be tailored to support the type of protections included in the tree protection ordinance. For example, the assessment might locate those trees that meet the criteria of a “protected tree”. This could establish a database to be used by those reviewing plans to indicate where tree preservation provisions may apply during a review of new development or substantial improvements

Importantly, a needs assessment would establish the baseline against which the success of a new tree preservation ordinance can be measured. Without this component, the effectiveness of the tree protection measures adopted will be difficult to measure. Finally, this more detailed view of the full urban tree canopy in New Orleans can help preservation and planting efforts to be better targeted to the specific tree canopy needs in different neighborhoods across New Orleans as a way to level out disparities across neighborhoods.

B. Evaluation Period

City Planning staff recommend setting an evaluation period for ordinance. Following guidance from resources reviewed, staff recommends establishing a time period after which the impact of a tree protection ordinance is reviewed. The evaluation would seek to understand if the ordinance is meeting its goals of protecting and expanding the urban tree canopy and what alterations may be required. The proposed analysis of the 2016 and 2020 tree canopy data will be the first step in understanding how the current tree protection standards and planting efforts have supported the canopy in recent years.

C. Define responsibilities and co-locate tree management ordinances

City Planning staff recommend clearly defining the roles and responsibilities for all departments involved in tree preservation as part of any newly adopted preservation ordinance. Currently, tree preservation and planting measures are largely stewarded by the Department of Parks and Parkways, but the Comprehensive Zoning Ordinance allows the Executive Director of City Planning to permit the removal of street trees as per **Article 23, Section 23.10.B**. The resources used for this study all pointed to the establishment of clear responsibility as key for the success of a tree preservation ordinance. City Departments may have to develop a system through which a City Arborist is shared amongst them for the implementation of a tree preservation program.

Along with any adoption of a tree preservation ordinance, City Planning staff recommend packaging tree protection measures together in one regulatory tool or a summary document to improve ease of navigating protection requirements. Currently, the tree preservation-related measures are located in Landscape provisions of the CZO, the Parks and Parkways Policies and the City Code. Tree preservation regulations, if they appear in different regulating documents, should clearly reference the other places where relevant regulations may be located. In line with the resources reviewed for this study, City Planning staff also recommends keeping detailed and technical guides, such as lists of appropriate and undesirable trees, that may change as new research is available as a separate document

referenced by the body of the ordinance. This will enable the details of the protection mechanisms to more easily keep up with the industry best practices.

D. Organize a project review process to support tree preservation

Add a “Tree Review” step to the permit review process for new construction, substantial improvement or renovation. As part of the review of permits that would have an impact on the exterior of a house or on the area of a lot, staff recommends including a step for a “tree review”. In this review, permitting staff will reference tree protection guides and policies to determine whether a tree of a protected class may be impacted by the project. If found, a protected tree would trigger the need for the submittal of a tree protection plan as part of the request. This review process would be best served by a comprehensive database of protected trees or the submittal of a survey showing the location and type of trees on a property with the requests.

E. Tree Replacement and Payment-in-lieu

When a protected tree must be removed, a tree replacement requirement can serve to offset the impact to the canopy of that removal. A clear formula must be developed that articulates the expected replacement requirements when a tree is removed. A payment-in-lieu option should also be developed to provide an added layer of flexibility, with payments going towards a fund that pays for public tree plantings and maintenance.

F. Establish Tree Care Guide for Residents

To support the best tree planting outcomes, City Planning staff recommends establishing a tree planting guide. This guide would assist those property owners who must plant trees to meet the required tree coverage standard or as replanting to replace a protected tree. The standards would provide guidelines for property owners that ensure that the appropriate tree is planted in the appropriate place and that the tree is planted correctly. The guide may also connect property owners with other tree planting resources, such as free trees given away by non-profits, suggestions of where to find mulch as other required planting material.

G. Provide flexibility in the tree protection mechanism

Resources reviewed suggested including an appeals process and other flexibilities in a tree protection mechanism to ensure that all property owner needs may be accommodated. Flexibility may be offered through the development of a variance process that supports construction around a tree in the buildable area, for example. An appeals process may support property owners denied a tree removal permit to appeal the decision based on the needs of the lot. Staff recommend building this type of flexibility into the tree protection ordinance

H. Strengthen the enforcement provision of the tree ordinance

City Planning staff recommend enhancing enforcement provisions for the tree protection ordinance. Staff at the Department of Parks and Parkways described the enforcement provisions of the current tree preservation regulations as being insufficient, noting several examples of public trees destroyed without recompense. Staff recommends adding enforcement measures to support the additional permitting processes and improving the efficacy of them. These may include:

- a. To ensure there is no unpermitted removal of heritage and protected trees, commercial arborists active in the City of New Orleans should be made aware of the permitting requirements. If contracted to remove a protected tree, these arborists will be responsible for acquiring the proper permits.
- b. To ensure that required replacement trees are planted and maintained, the subject property should be inspected at three months following the planting and again at one year. If the required trees are not in place or have died, the responsible party must replace them. An additional required fee for the tree fund could be considered, as well, pay an additional
- c. If it has been found that a protected tree has been illegally removed, an assigned fee should be required in addition to the fee-in-lieu or replacement planting required for the removal. If the responsible party does not pay the fee in a determined period of time, city agencies should be empowered to place a lien on the subject property.

I. Supporting the full urban canopy ecosystem to ensure success

These recommendations fall outside of the regulation and planting of trees but may ensure that a tree preservation ordinance is effective in reaching the goals stated in the Master Plan.

Consider a Tree Commission

Many of the resources reviewed for this study recommended the creation of a Tree Commission to support the administration of a Tree Protection Ordinance. These Tree Commissions are suggested to be made up of residents with a relevant knowledge base, possibly including representatives from the Department of Parks and Parkways – usually the City Arborist, and the Department of Public Works. The commission sets tree protection goals and strategies, manages tree data, and may hold hearings on the contested issues regarding trees. City Planning Staff suggest this be considered as one thing that may support the implementation of a Tree Protection Ordinance.

Launch a public education and outreach campaign about these protection measures.

To support the effectiveness of this ordinance, staff recommends an education campaign that helps to inform residents and stakeholders about newly adopted measures. With greater awareness of the tree protection regulations, residents may be more likely to comply with them and report violations. This information campaign should include:

- d. Information about the adopted regulations, including the classes of protected trees and how to identify them
- e. Guide on what tree species are appropriate for different kinds of locations, as well as which tree species should be avoided.
- f. Tree planting guide
- g. Tree protection guide for construction activities
- h. Resources available to access free trees

Consider a process for residents to nominate Heritage Trees

In addition to the heritage trees identified by this study, Staff recommends considering a process through which individuals, neighborhood associations, businesses and non-profit organizations are able to nominate a tree to carry heritage tree status. This would help the tree protection ordinance to reflect the preferences of residents and also support their buy-

in to the tree protection measures. Other cities reviewed for this study, such as Washington DC, have launched similar campaigns with positive results.

Integrate equity considerations into new tree planting

Once a needs assessment is available, City Planning staff recommend adding elements to adopted tree protection measures that support a more equitable coverage of trees across the city. This may look like additional replacement or new planting standards based on location, different requirement considerations by city area, or other mechanisms that ensure the benefits of trees are more equitably distributed throughout New Orleans.

XII. Next Steps

This Study was directed by the City Planning Commission, rather than the Mayor or City Council. The City Planning Commission may decide to forward the Study to the City Council and Mayor with or without changes and recommendation in favor of a particular option. Once the City Council receives the Study, they may take as long as needed to read and consider their options. The Council is under no legal requirement to act upon the Study. They may choose to consider the recommendations in a Committee meeting, or they may pass a motion directing the City Planning Commission to consider zoning text changes based on the Study. Since different options are discussed in the Study, the Council would need to specify which policy options, or which components of the options, they would like to consider as zoning text amendments. Certain other recommendations of the Study may need to be implemented through the City Code or through administrative directions.

If the City Council passes a motion to consider implementation of Study recommendations through text changes to the Comprehensive Zoning Ordinance, an additional round of public hearings would be triggered. The City Planning Commission would docket the proposal, write a staff report recommending specific zoning text changes, and hold a public hearing before making recommendations to the City Council. The Council must also hold their own public hearing before adopting amendments to the Comprehensive Zoning Ordinance.