Urban Forest Management Plan

2018 - Durham, NC

"There is little in the architecture of a city that is more beautifully designed than a tree."
Jaime Lerner

City of Durham
General Services Department

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INTRODUCTION AND BACKGROUND

Purposes of this Plan

"Without a management plan, the governments and individuals responsible for taking care of an urban forest will not be effective in meeting the true needs of the trees and the community. A management plan establishes a clear set of priorities and objectives related to the goal of maintaining a productive and beneficial community forest."

This Plan intends to:

Explain the City's goals and priorities for managing its trees, and why it is important to have a formal Plan.

Describe how the City currently manages its Urban Forest, and how this Plan will formalize enhancements to the program with measureable outcomes.

Detail how the City of Durham can work with residents, volunteers, and non-profit organizations to leverage its resources toward achieving a common goal.

Propose the methods, resources, and personnel needed to achieve goals over the next seven years.

Initiatives leading up to the creation of the Management Plan:

Background: City Initiatives

In recent years, Durham has seen a period of rapid growth and urbanization which has coincided with the loss of many of its iconic street trees. To get a clearer understanding of the number and condition of the city's trees, and of the overall tree resources covering all of Durham's land cover, in FY 2016-17 the City undertook two initiatives to collect tree-related data; a Selective Street Tree Inventory, and a Tree Canopy Assessment.

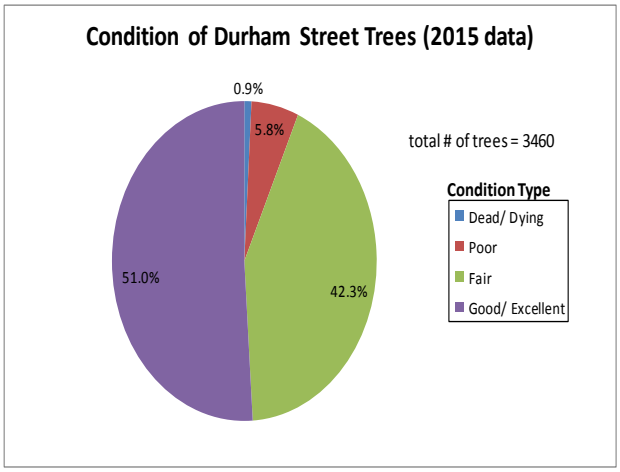
Selective Tree Inventory

The selective Inventory specifically targeted large old trees in Durham's central neighborhoods, finding 3,460 oaks greater than 16" in diameter. Species, Size, Location, and Condition were noted, and recommendations were made for follow-up action based upon observation and risk assessment.

A Risk Rating from 'Extreme' to 'Low', established a baseline priority for future needs. Overall condition ratings were on a scale from 'Excellent' to 'Poor'.

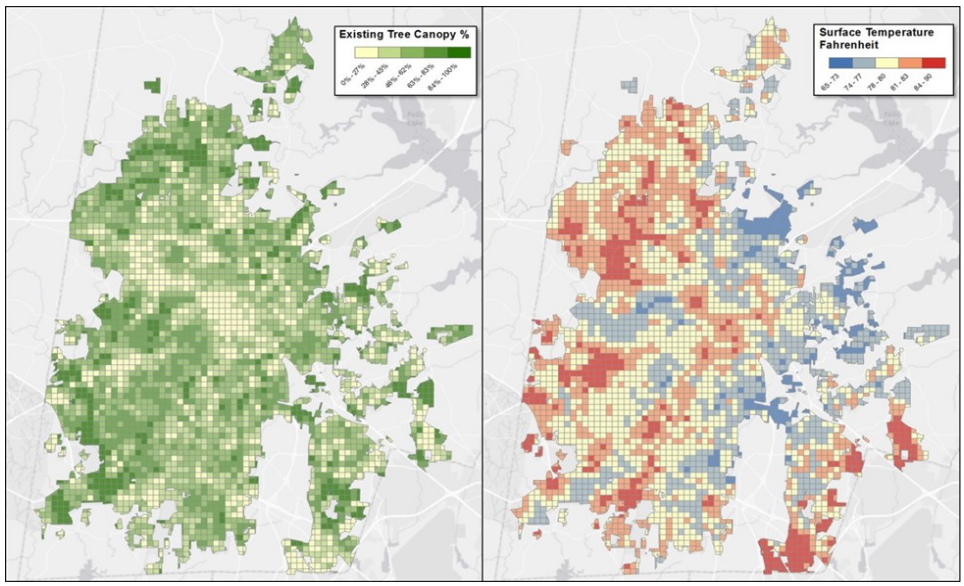
At the time the inventory was completed, the condition breakdown of the 3,460 large oak street trees were as follows:

- 0.9% or 30 trees in 'Dead/Dying' condition
- 5.8% or 200 in 'Poor' condition
- 42.3% or 1,465 in 'Fair' condition
- 51% or 1,765 in 'Good' or 'Excellent' condition

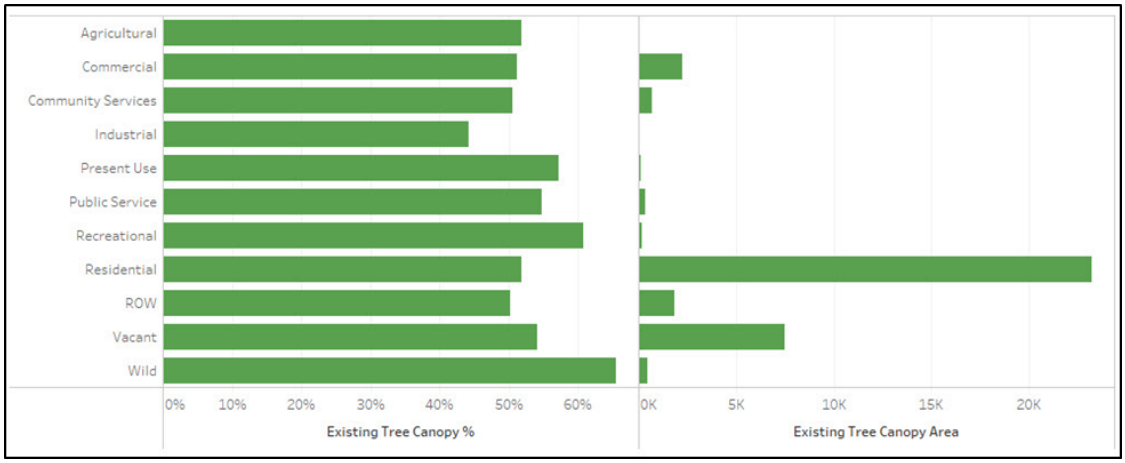


Information from the condition assessments and risk ratings were used to guide tree pruning and removal in subsequent years (all 'Dead/Dying' and 'Poor' trees have since been removed). The inventory has subsequently tracked all additions and subtractions, and currently holds over 9,000 City-owned trees and over 8,000 empty planting sites.

Canopy Study



The report indicated where trees exist on public and private property within the City of Durham, and at what density. The information provided back to the City indicated where trees are in relation to reflected heat, proximity to impervious surfaces, and other physical and demographic contexts.
Findings show that Durham has 36,600 acres of tree canopy, covering 52% of the City, comparing favorably with many regional cities. All land uses were shown to have relatively high canopy cover, but most of the land in the City is zoned residential. It was suggested that tree planting and preservation in residential areas would be a critical strategy for maintaining Durham's 52% canopy.



Background: External Tree Advocacy

Tree Summit: In the FY 2016-17 period a group of concerned residents calling themselves the "Durham Tree Advocates" held a Tree Summit in response to concerns about tree removal, social equity in tree resource allocation, and rapid urban development.
Resident Survey: At roughly the same time a group of students at the Nicholas School of the Environment at Duke University conducted a survey of resident's perceptions of Durham's Environment and City Environmental Programs.

Recommendations taken from the four initiatives:

The main points taken from each of the four initiatives **that support the creation of a Management Plan** include the following:

- Durham has a significant asset in it's tree canopy, which is primarily located in residential areas. Robust planting and preservation strategies are needed to maintain this asset (Canopy Study)
- The 1,465 mature street trees rated as 'Fair' in the FY 2016/17 inventory project will require ongoing monitoring and possible removal over the next 10 years (Inventory)
- There is a large number of people in the community (over 98% of respondents) who find trees important, and feel that more trees are needed (Resident Survey)
- There are engaged residents who want a "Full Canopy" of trees over Durham (Tree Summit)

The main points taken from the four initiatives that have been **included in this Management Plan** are as follows:

- Establish a specific Canopy Goal and a date by which it is attained (Canopy Study)
- Influence landowners and developers to maintain or expand canopy on private residential lots (Canopy Study)
- Plant a minimum of 1,000 trees/year (Canopy Study)
- Continue with inventory (Canopy Study)
- Use census data to identify high-priority areas to focus tree planting efforts on (Canopy Study)
- Increase diversity of newly planted trees (Tree Summit)
- Continue and expand public/private partnerships in tree planting and stewardship (Tree Summit)
- Develop relationships with civic groups and non-profits for education and outreach (Tree Summit)

URBAN FORESTRY PROGRAM VISION

Vision statement: *"Durham's Urban Forestry Program develops and maintains the health, beauty, and viability of the City's urban tree canopy as a key resource that provides benefits to all residents, businesses, and visitors to our community."*

To achieve this vision, the Urban Forest Management Plan will facilitate the following key objectives:

- Active programmed maintenance partnered with continued responsiveness to resident concerns
- Gradual replacement of trees with elevated risk with a diverse selection of new trees
- Expanding the canopy of street trees into historically under-planted dense urban neighborhoods
- Partnership with other agencies, non-profits and volunteer groups to preserve canopy over areas not owned or controlled by the City of Durham

MANAGEMENT PLAN GOALS AND OUTCOMES

Goal 1: Preserve, manage and expand tree canopy:

Outcome A: Halt canopy loss and expand tree planting

- Maintain canopy at 52%.
- Increase annual planting to 1500 trees.
- By 2040, increase canopy to 55%

Outcome B: Active Management

- Newly planted trees inventoried.
- All trees programmed for periodic maintenance, inspection, and evaluation.
- Updated tree condition assessments continuously entered into inventory.

Outcome C: Regulation and Development

- Suggest changes to land development and redevelopment processes to emphasize preserving and enhancing tree cover on private land.

Goal 2: Maximize benefits for all residents

Outcome A: More trees in high priority areas

- High priority areas for tree planting have been identified based upon canopy density and furthering socioeconomic goals; improved walkability, reducing air pollution, and targeting benefits to disadvantaged or vulnerable residents.
- An inventory of all planting sites will be completed within high priority areas by 2020
- 85% of the 1500 new trees will be planted into these areas each year.
- The remaining 15% of new trees will be prioritized based upon resident request, site suitability, and logistical concerns.

Goal 2: Maximize benefits for all residents (continued)

Outcome B: Livability

- Trees will be planted where they can have the greatest impact.
- Trees will receive maintenance without resident-initiated requests, insuring equitable programmed inputs to all trees.
- Managed and appropriately selected trees will not interfere with motorists, pedestrians or infrastructure elements.

Outcome C: Environmental Benefits

- High priority planting areas were selected on the basis of air and water quality, and heat intensity.
- New trees will be selected on the basis of tolerance of drought, heat, and adverse urban planting conditions, while prioritizing native species and diversifying the overall forest.

Goal 3: Develop and Maintain Support for the Urban Forest

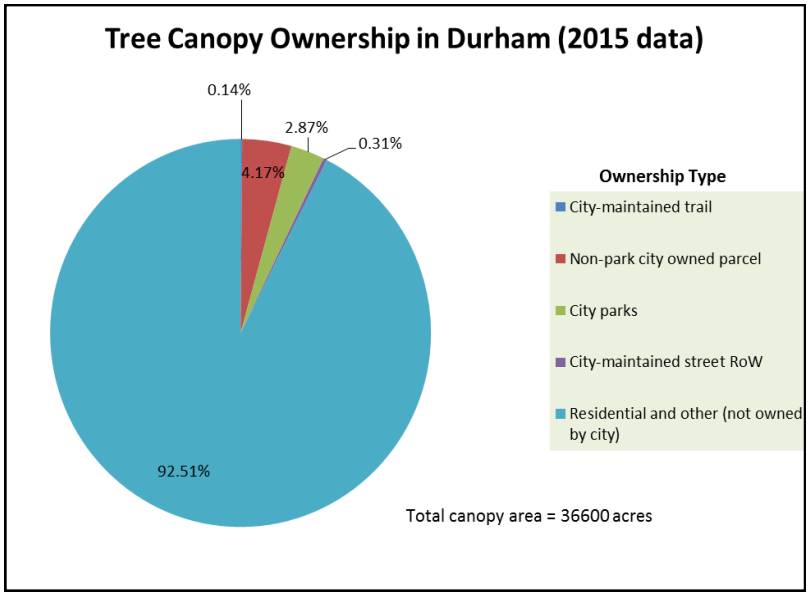
Outcome A: Shared responsibility and public education

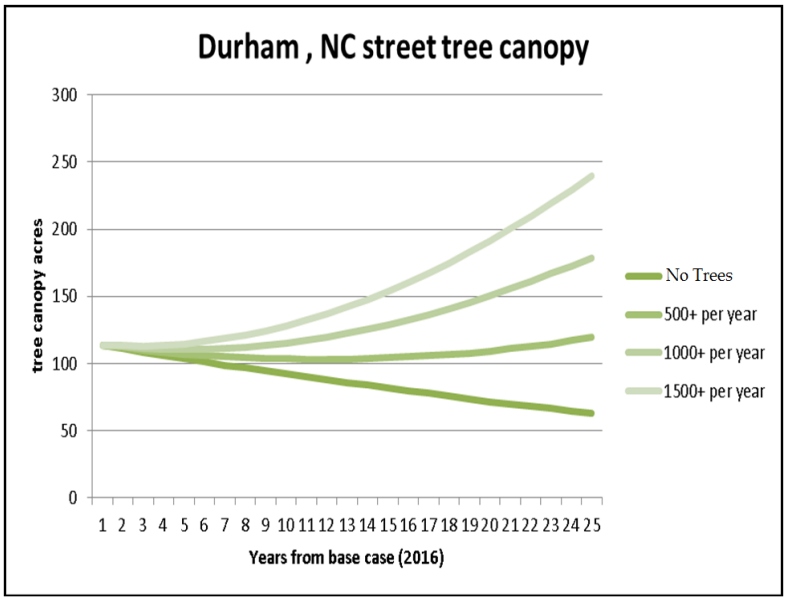
- Roles are defined for partnering agencies, non-profits, and stakeholders toward a collective canopy preservation and expansion goal.
- Education will be a key component of outreach and engagement efforts.

INTRODUCION TO DURHAM'S TREES

Durham's urban forest consists of all trees growing in and over the city of Durham's incorporated areas. The extent of this canopy was measured in 2016 (from 2015 imagery) at 36,600 acres. Of this impressive total, the estimated acreage of street tree canopy was 114 acres, just a fraction of a percent (0.03%). By planting 1,500 trees/year through 2040, this number can increase to 240 acres (0.07%).

The other trees that the City of Durham owns and maintains exist within city-maintained trails (50 acres), city-owned parcels that are not considered parks (1,528 acres), and within city parks (1,050 acres).





These combine to equate to 7.2% of the city's 52% canopy coverage total.

The acres of canopy covering City of Durham property are made up of thousands of "City Trees". Each City Tree occupies a site. Sites vary in required level of care from the "natural area" (unoccupied woods) to the "tree pit" (densely urban).

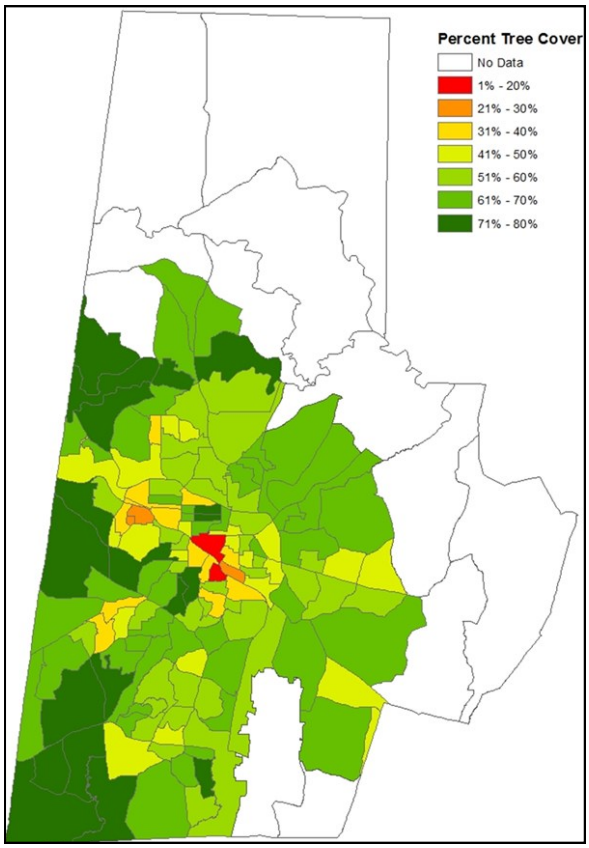
This plan's main focus is on planting and maintaining trees in dense urban areas; along roadways and in high-use areas of parks.
These require periodic care throughout their lifespans.

Many of the largest trees within parks and along roadways are the surviving oaks from a period of intense civic tree planting starting in the early 1930's which continued through the early 1950's.

Tree planting at that time was supported by federal grants, but like many local and federal programs of the time, benefits were largely limited to white neighborhoods within a segregated city.

Part of the impetus to plant more trees into historically under-planted dense urban neighborhoods is to equitably provide both trees and active tree care to the larger community.

PROPOSED IMPROVEMENTS TO URBAN FOREST MANAGEMENT



The "Urban Forest" and Canopy

The urban forest is made up of trees whose roots and branches grow across multiple ownerships, land use, and zoning categories. The benefits of having a significant urban canopy similarly transcend boundaries, with no one agency having jurisdiction or resources to preserve, maintain or manage all of the Urban Forest's components.

Trees managed by the City of Durham: The City of Durham's General Services Department houses the Urban Forestry Division, consisting of staff specifically trained and resourced for performing tree work. The trees that receive care from the Urban Forestry Division grow on opened public rights-of-way, in parks and along greenways, and on city owned parcels, both occupied and vacant – so called "City Trees".

Trees impacted by the City of Durham: Other City and City/County departments, such as Transportation, Public Works, Water Management, Planning, and Inspections perform functions that both directly and indirectly impact trees and tree canopy. Their impacts are related to regulating land development activities, and to the ongoing upkeep and expansion of infrastructure.

Tree Management: "Requests for Service" vs "Programmed Inputs"

Service Requests: The Urban Forestry Division is assigned work through Service Requests received through the Durham OneCall system when a resident or employee notices that a City Tree has maintenance needs and initiates a request for service.
This system insures detailed records are created, and sets up a feedback loop that generates useful metrics and places an emphasis on providing high quality customer service.
Despite the benefits of this approach, periodic tree care is needed regardless of whether residents see or report it. Current practice involves city staff visually inspecting trees and initiating work, but only when the volume of incoming requests is low.

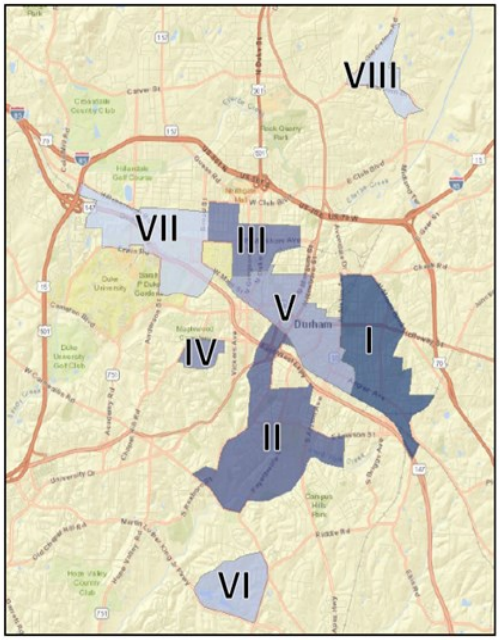
Programmed Inputs: Proposed improvements start with programming routine maintenance into the annual work plan, with resident's service requests integrated into larger work projects. For example: instead of dispatching a crew to prune a single tree at the request of a resident, the entire block would be addressed as a component of the larger work plan, with information given to the caller.

Maintenance protocols

Tracking inputs: Under current practices all maintenance work done is tracked from initiation to completion within the cityworks platform. Trees planted and proposed planting sites are mapped in the inventory.

Proposed improvements include tracking all work through the inventory in addition to in cityworks. Each tree worked on or planted would be inventoried and programmed for periodic follow-up in the work plan. Trees removed would automatically be considered for replacement.

Planting and young tree care: Current practices for planting and caring for trees placed an emphasis on partnering with outside groups such as neighborhood associations, volunteer groups and non-profits.
It evolved from a need to replace City Trees where they were being lost while keeping within budgeted resources. Sizes and species of tree were a function of cost and availability, and follow-up care was assumed by the adjacent resident.



Priority Neighborhoods

- I Old East Durham
- II Southside / College View
- III Walltown
- IV Lyon Park
- V Downtown
- VI Stratford Lakes
- VII Old West Durham
- VIII Weaver

Proposed improvements include the following:

- Priority planting areas – establishing new populations of City Trees while re-planting in areas of canopy loss.
- Using staff to plant and care for trees – at least 1,200 of the annual 1,500 new trees will be planted by General Services staff. Follow-up care including watering, mulching, staking and pruning, will be programmed into the annual work plan to increase establishment success and promote better appearance and community acceptance.
- Specific requests for new and/or replacement trees will be received via Durham OneCall (919.560.1200 or http://durhamnc.gov/1439/Durham-One-Call). For requests made for sites outside of the priority areas, the first 225 trees will be filled on a first-come, first served basis.
- Standardizing nursery material – an approved Plan allows for the contract-growing of trees specifically for use in roadside environments. Establishing an annual budget for trees commensurate with the 1,500 annual planting goal will set the per-unit cost of the trees and determine size at time of installation.

- Setting biodiversity goals - planting many different species reduces the threat of any one tree-damaging pest, disease, or environmental condition. No more than 10% of the same species, 20% of the same genus, and 30% of the same family will be planted each year.
- Maximizing ecological benefits - When selecting a species for a particular site, preference will be given to native trees when and where appropriate.

Pruning: Currently, tree pruning is initiated on the basis of staff observation or resident request. The work is done by General Services staff. Exceptions include periodic staff-guided volunteer pruning workshops and workdays, and work done by electrical utility contractors.

Pruning (continued):
Proposed improvements: In addition to service request response, routine inspection and pruning will be performed on all inventoried trees.

- Young trees (up to 10 years post-planting) would be inspected and pruned by staff or volunteers every 1 to 2 years, depending upon growth rate.
- Established trees which have had lower limbs cleared away from interfering with roadways and sidewalks will be periodically inspected and pruned by staff every 3 to 5 years.
- Mature trees which have reached their maximum size and age limits would receive inspection and pruning from staff every 1 to 2 years until removal/replacement.

Tree removal: Current practices for initiating the removal of trees involve a combination of staff observation and service request. Removal is done by General Services staff, by contract, and by electrical utility contractors.

Proposed improvements: Routine inspection, pruning and inventory updates will better track the condition of mature trees. Removal will be more routine and programmed, reducing or eliminating the need for contracting the service.

"Vegetation Management" (VM): A significant portion of the work performed by the Urban Forestry division in the summer months is in response to concerns of encroaching vegetation or discarded debris. Current practice often results in all service requests related to vegetation to be routed to General Services for resolution.

This issue often arises due to the non-compliance of property owners who fail to maintain the trees, shrubs and vines on their lots or in the surrounding rights-of-way as ordinance requires, or who improperly dispose of their vegetative debris. Significant amounts of staff time are allocated to routing these requests to other agencies and explaining policy to residents.

Proposed improvements: Streamline the process for assigning VM concerns to appropriate agencies by providing topic-specific training to staff at Durham OneCall, and modifying code entries in cityworks to reinforce best practices.

Tree preservation on public and private land: Currently, General Services staff are involved in the preserving city trees when projects or site improvements necessitate disruption to tree roots or projecting limbs. An evaluation of the tree(s) and of the proposed site impacts is made, and the probability of the trees' continued value as a public asset is determined. If preservation is recommended, strategies for minimizing damage are suggested.

When City-sponsored projects have potential to impact the health and longevity of privately-owned trees, subject matter experts within General Services staff are requested inform the process, often to determine which trees to remove in the course of the project, and which to allow to remain. The city's role in funding post-project tree removal in the event subsequent tree death has not been well defined.

Proposed improvements: This plan proposes a no-net tree loss objective, so preserving existing trees is of major importance. The General Services Department cannot act alone to incentivize or enforce tree preservation strategies. This plan proposes that the General Services Department continue to provide detailed and specific recommendations and encourages dialogue with other agencies to determine the best way forward to ensure subsequent compliance enforcement and follow-up.

PARTNERSHIP AND COLLABORATION

Durham has a long tradition of public-private partnerships that serve to leverage resources and provide residents with opportunities to have an impact in areas that they find meaningful. City trees are unique public assets that increase in value over time and engender strong and emotional attachments with residents.

Providing volunteer and partnership opportunities to the public is a key focus of this plan. To ensure optimal outcomes, this plan indicates how and where volunteer inputs can be best applied, and details the resources that the General Services Department can contribute toward collaborative tree efforts.
This section will also provide a summary of the initiatives proposed that involve significant inputs from other agencies within the City of Durham.

Roles and responsibilities of the General Services Department in partnership projects:

Tree Planting: The GSD will have the lead role in determining where trees will be plated on rights-of-way and on City property, will notify adjacent residents and property owners of intent to install new trees, and will allocate space, staff, equipment and funding to purchase, store, transport and install trees.
The GSD will provide the platform for collecting and tracking inventory data, assign these duties to staff, and allow access to partnering organizations.

In support of Keep Durham Beautiful, the GSD will provide technical and logistical support (purchase, storage and transport) for their planting of city trees.
In support of other tree-planting non-profit or partnering group(s) the GSD will provide comment and technical advisory input on tree planting projects on private property, and will support (through direction, coordination and oversight) any volunteers working on inventory and outreach activities related to City of Durham Tree planting projects.

Young tree establishment: The GSD will provide staff and equipment resources for watering, mulching, pruning and staking as part of the annual work plan. Updates to the inventory will be performed using data collected during routine maintenance. The GSD will notify residents and/or property owners of intent to perform work.

Roles and responsibilities of the General Services Department in partnership projects (continued):

In support of other tree-planting non-profit or partnering group(s) the GSD will provide training to volunteers who elect to assist in early tree pruning, and will collect and dispose of debris generated in volunteer pruning, while supplying mulch for replenishment.

Expected roles and responsibilities of partnering groups involved in collaborative tree projects:

Tree Planting: Non–profit and/or volunteer-based organizations will have the lead role in identifying and prioritizing planting sites on property not owned or controlled by the City of Durham.

This includes securing the resources needed to purchase, handle, store, transport and install an unspecified number of trees. This will include the need to acquire, store and transport, the requisite tools, stakes, guards and mulch.

In support of GSD partnering groups are encouraged to provide volunteers as well as support, coordination and oversight to those volunteers to assist City Durham in inventory and outreach activities on City Tree planting projects. The outreach component should include education and engagement activities specifically related to informing the public on the planting of city trees.

Young tree establishment: For trees installed on private or non-city property, non – profit and/or volunteer-based organizations must obtain commitment from residents and/or property owners, and provide instruction and reminders to water and maintain trees.
Non-profit and/or volunteer based organizations are encouraged to secure and provide tools, equipment and coordination in support of volunteers performing early tree maintenance activities (pruning, watering, mulching, etc.) on both City Trees and trees installed on private property.

Roles and responsibilities of government agencies involved in the installation, maintenance, and preservation of trees:

Other City of Durham and City/County departments with tree planting, establishment, and preservation roles include City/County Planning and Inspections, Water Management, Transportation, and Public Works.

The Planning and Inspections departments have responsibility relating to trees required on approved plans. They perform the review of plans for adherence to development ordinance compliance and inspect for adherence to planting standards, requiring replacement if not in an acceptable condition after installation.

Roles and responsibilities of government agencies involved in the installation, maintenance, and preservation of trees (continued):

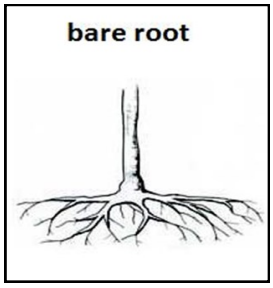
The Planning and Inspections departments will continue to enforce existing codes and ordinances requiring and incentivizing the retention and preservation of trees on new development projects, and will work in conjunction with GSD Urban Forestry and partnering advocacy groups to craft appropriate changes and updates to policy and ordinance in keeping with the increase value and visibility of trees in an urbanizing city.

Water Management, Transportation, and Public Works are involved in removing trees due to necessary upgrades and expansion of utility networks. Their role in replacing lost trees can be better defined.

Going forward, it is recommended that partnering agencies reviewing and amending policy and practice impacting the preservation or loss of trees and forested land, and looking at ways to facilitate the proper care and maintenance of required street and landscape trees on residential and commercial property.

COSTS OF PLAN IMPLEMENTATION

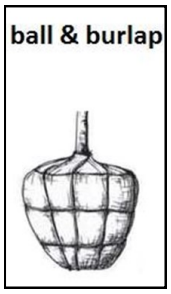
Material costs associated with tree planting: Trees come from nurseries as one of three types. Nursery types refer to the way in which the trees are grown, prepared for shipment, and handled prior to installation. These nursery types also have implications on the size of the available material, the time of year it can be shipped, and the overall cost to purchase, ship and install. What follows is a brief description of each type, how much they cost to install, and some of their management and selection implications.



Bare root trees: These are grown in a field and transported in bundles without soil on their roots. They are available between December and March, and are highly perishable. Durham typically purchases trees from 4.5' to 6' in height, based upon availability. Complete cost (including shipping, handling and all associated guards and stakes) range from $15 to $25 per tree. The labor and logistics costs associated with bare root trees ranges from .2 to.4 staff hours with no heavy equipment.

Container trees: These are grown in containers, ranging from #3 to #30 (the # symbol replaced "gallon" in horticultural nomenclature but indicates a volumetric designation). They are available all year, but are best installed between the months of October and March. Complete cost (including shipping, handling and all associated guards and stakes) range from $25 to $150 per tree. The labor and logistics costs associated with container trees ranges from .3 to 1.0 staff hours per tree. This range is due to the fact that #3 to #7 trees can be hand dug, but #15 and #30 trees require the use of a tree auger.

Ball and Burlap trees (B&B): These are trees that are grown in filed conditions and are spaded up along with a "rootball" consisting of roots and soil. These trees are sold on the basis of caliper size, a measure of diameter taken 6" above grade. Typical sizes used range from 1.5" to 3". The associated rootballs can weigh in excess of 300 - 500lbs. B&B trees are available between December and March, and cost between $200 and $400 per tree. B&B trees require a full complement of staff and equipment to handle, transport, and install, roughly equivalent to 5 staff hrs. per tree.



The expanded planting of city street trees will involve an increase in budgetary and staff resources *in direct proportion to the size of the trees used;* Annual planting plans will include a number of trees from each category. Material costs and staff/equipment allocations will range accordingly. With mostly small (bare root) trees the annual goals can be met by reallocating existing resources, but an increase in the size of the material will requite additional resources.

Staff costs associated with planting early tree maintenance: A part-time intern will identify and inventory planting sites in high priority districts. The long-term need for this initiative includes one full-time Tree Planting Coordinator to manage community outreach and logistics coordination for planting and young tree establishment using in-house staff and leveraged partnerships.

The combined resources of the GSD's Urban Forestry and landscape Services divisions will be applied to the planting and proactive management of young trees. This requires that the costs of this initiative be borne as opportunity costs. Volunteer inputs may offset some of the opportunity costs, but those will require oversight and support from managers and supervisors.

Costs associated with including pruning cycles to annual work plan: Routing crews on the basis of targeting populations of similar trees for programmed maintenance, in addition to responding to requests, will initially be folded into the annual budget of the Urban Forestry division. Additional costs are anticipated, but cannot be projected at this time.

IMPLEMENTATION TIMELINE, 2018-2025

FY 2018—2019

Identify high priority tree planting districts
Fund part-time paid internship position for tree planting inventory
Inventory all vacant planting sites in high priority planting districts
Complete Urban Forest Management Plan and submit for formal acceptance
Initiate multi-departmental review of practices, policy and ordinance related to tree preservation, planting, and establishment to improve outcomes.
Train UF staff on inventory protocol and expand collection of data collection
Initiate 1,500 tree/year tree planting goal
Initiate pruning cycles based upon groupings of similar trees
Initiate tree watering and young tree maintenance program

FY 2019 – 2020

Complete multi-departmental review of practices, policy and ordinance related to tree preservation, planting, and establishment to improve outcomes.
Propose updates to tree-related codes, policies, practices and procedures
Identify resource needs for expanding maintenance cycles and propose budgetary changes
Inventory vacant planting sites throughout City of Durham

FY 2020 – 2021 through FY 2024 – 2025

Initiate second Canopy Assessment (2025) to obtain canopy coverage data to compare with base-line 52% measure from 2015 data
Implement maintenance cycles for all street trees
Complete inventory of all street trees and vacant planting sites by 2025

EXECUTIVE SUMMARY

BACKGROUND:

Trees are important assets for Durham. They lower temperatures, increase air and water quality, control storm-water run-off, noise and light pollution, and provide many other benefits while beautifying the community.

The City of Durham owns and cares for a significant number of trees, while a much larger number of trees exist on privately owned land. The measure of the relative size and number of trees in a community's urban forest is termed "canopy", which equates to the amount of land covered by the crowns of trees.

A Canopy Assessment conducted in 2016-17 used remote sensing imagery to discern how much cover existed and where density is highest and lowest across the city. It found that 36,600 acres of the City of Durham's 54,170 total acres are under canopy. This equates to 52% of Durham's total land area. Of the 36,600 acres of canopy, less than 10% (3,400 acres) are owned by the city. Out of this fraction, Durham's street trees make up just over 2%, or 800 acres.

In 2016-17 the City of Durham NC also conducted a selective tree inventory to evaluate the baseline condition of Durham's largest and oldest street trees. The findings indicated that of the 3,460 trees inventoried, just over 51% could be considered to be in good or excellent condition, with the remaining 49% rated as fair, poor or dying.

These trees are only a small percentage of the City's overall canopy, but they are visible and recognizable features that serve to illustrate the City of Durham's commitment to a green, livable, and equitable future.

This Urban Forest management Plan uses the data provided in the two studies described to guide practices and initiatives in support of proactive and targeted resource allocation. Its three main objectives are to:

1. Increase the health and diversity of the City's street trees through active maintenance.
2. Extend the canopy of street trees over high priority/low canopy areas.
3. Encourage the preservation of trees on properties not owned or maintained by the City of Durham through partnerships and the re-evaluation of policies and practices.

GOALS AND PROJECTED OUTCOMES:

Goal 1: Preserve, manage and expand tree canopy:

Outcome A: Halt canopy loss and expand tree planting

- Maintain canopy at 52%
- Increase annual planting to 1500 trees
- By 2040, increase canopy to 55%

Outcome B: Active Management

- Newly planted trees inventoried
- All trees programmed for periodic maintenance, inspection, and evaluation
- Updated tree condition assessments continuously entered into inventory

Outcome C: Regulation and Development

- Suggest changes to land development and redevelopment processes to emphasize preserving and enhancing tree cover on private land

Goal 2: Maximize benefits for all residents

Outcome A: More trees in high priority areas

- High priority areas for tree planting have been identified based upon canopy density and furthering socioeconomic goals; improved walkability, reducing air pollution, and targeting benefits to disadvantaged or vulnerable residents
- An inventory of all planting sites will be completed within high priority areas
- 85% of the 1500 new trees will be planted into these areas each year

Outcome B: Livability

- Trees will be planted where they can have the greatest impact

Outcome B: Livability (continued)

- Trees will receive maintenance without resident-initiated requests, insuring equitable programmed inputs to all trees
- Maintained and appropriately selected trees will not interfere with motorists, pedestrians or infrastructure elements

Outcome C: Environmental Benefits

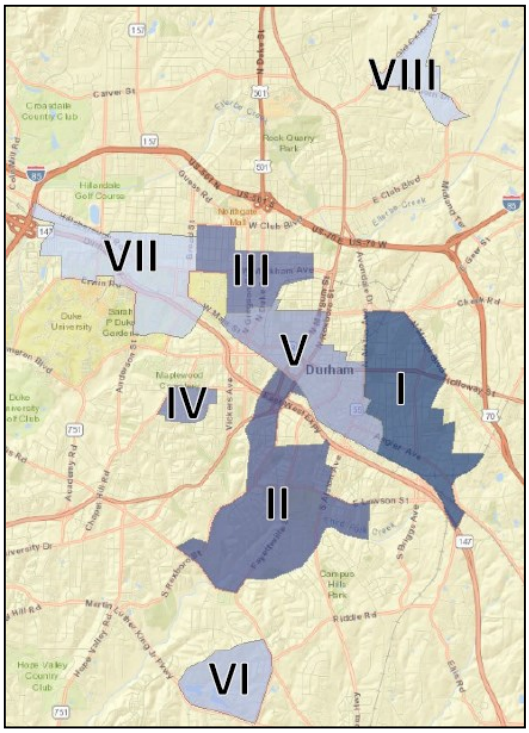
- High priority planting areas were selected on the basis of air and water quality, and heat intensity
- New trees will be selected on the basis of species diversification, while prioritizing native species

Goal 3: Develop and Maintain Support for the Urban Forest

Outcome A: Shared responsibility and public education

- Roles are defined for partnering agencies, non-profits, and stakeholders toward a collective canopy preservation and expansion goal
- Education will be a key component of outreach and engagement efforts

Identified low-canopy high-need areas (by Census Block designation)



I. **Old East Durham** - Includes Wellons Village, Hoover Rd., Old East Durham and Eastway/Albright neighborhoods
II. **Southside / College View** - Includes Southside / St. Teresa and College View neighborhoods
III. **Walltown** - Includes Walltown and northern sections of Trinity Park neighborhoods
IV. **Lyon Park** - Includes Lyon Park and Lakewood Park neighborhoods
V. **Downtown** - Includes Edgemont, Cleveland-Holloway, Old North Durham, and Golden Belt neighborhoods
VI. **Stratford Lakes** - Includes Stratford Lakes and unnamed surrounding communities near Cook Road Park
VII. **Old West Durham** - Includes Old West Durham and areas of high-density student housing near the I-85 corridor
VIII. **Weaver** - Includes Crown Point and other unnamed surrounding communities near Red Maple Park

RECOMMENDED ACTIONS, FY2018-2025:

- Allocate funding for paid intern or Tree Planting Coordinator position
- Adopt Urban Forest management Plan
- Formalize roles and responsibilities for tree planting, stewardship and preservation objectives between the General Services Department and volunteer based non-profit organizations
- Engage with stakeholder outreach programs in support of planting, inventory, and stewardship efforts
- Inventory 100% of available street tree planting sites in the 8 targeted census blocks by 2020.
- Initiate dialogue and process for evaluating long-term strategic plans, goals and objectives as well as operational policies and practices across City and County jurisdictions for alignment with Plan's goals and objectives
- Update codes, policies, practices and procedures related to tree planting, maintenance, preservation, permitting, and resource allocation
- Complete full street tree inventory and condition assessment by 2025
- Plant 1500 trees per year in public planting spaces 2018 through 2025, with 85% of new trees installed in the 8 priority census blocks
- Manage tree population through pruning, removal and other treatments to achieve a condition rating of 'Good' or 'Excellent' for at least 80% of street trees by 2025
- Re-measure canopy metrics in 2026 to evaluate the effectiveness of Plan