

Update from the Urban Forest Manager

Regarding the Implementation of the
Tree Canopy Resolution

Marty Frye - Urban Forest Manager - May 19, 2019





Goals from the Resolution

- increase tree canopy coverage in neighborhoods with less coverage, using a participatory process for planning to create an equitably distributed tree canopy over time, and collaborating with members of those neighborhoods in the planning of tree plantings and in efforts to support and maintain existing mature trees.
- no net loss of the urban forest canopy overall, with the baseline measurement being approximately 60 percent tree canopy coverage citywide
- increased biodiversity (such as species, size) and a focus on planting of native species and where appropriate, climate-adapted species,



Actions Identified in Resolution

- to conduct a reassessment of the urban tree canopy City-wide through lidar or similar technology every three years, and advise the Council on needs to reassess tree canopy baseline goals, implementation efforts, and funding levels;
- to develop an updated species planting list that recognizes these overarching principles and goals, with a plan for periodic review and modification of the list
- to seek opportunities for collaboration with nonprofit organizations, institutions of higher learning, community groups, and government agencies to achieve our goals
- to review City processes that might perpetuate inequities in the tree canopy in the City;
- to work with Maryland National Capital Park and Planning Commission regarding maintenance of the tree canopy along Sligo Creek Parkway and county owned parks; and coordinate with State Highway Administration (SHA) to increase plantings along the state right of way; and
- to align urban forest plans and actions with the City's Sustainability and Climate Action Plan, Housing and Economic Development Strategic Plan, Public Space Plan, Racial Equity Initiative, and Tree Ordinance amendments.



Specific Directives From Resolution

Revise existing programs and structures

Completed Actions Include:

- Web Portal Rollout
- Updated Tree Impact Assessment and Tree Protection Plan processes

Planned Actions Include:

- Expanded selection of tree care resources on city website
- Ongoing review of programs for opportunities for improvement



My TKPK Online

Main Menu

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- Submit a Request
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Online Payment Services

- Landlord Registration and Licensing Fee
- Parking Fines
- Recreation Programs Fee

Other Resources

- City Calendar

Service Request Type: Tree Impact Assessment

Description: A Tree Impact Assessment must be requested and approved before conducting certain work near an urban forest tree. Please see the City of Takoma Park tree permits web page for information on situations where a Tree Impact Assessment is required. [Tree Impact Assessment Web Page](#)

Contact E-Mail: martytkpk@gmail.com

Project Address

Address 1*	<input type="text"/>
Address 2:	<input type="text"/>
City*	Takoma Park
State/Province*	MD
Zip/Postal Code*	20912

Additional Information

Applicant's Description of Project*

For Pruning work:

In the box above please provide a written description clearly explaining which branches and what percentage of the live crown will be pruned. If you are uncertain about what portion of the tree needs to be pruned, you should determine this with your tree care contractor prior to submitting this request for Tree Impact Assessment. Feel free to attach photos as needed to help depict the proposed pruning work.

For Construction, Landscaping, and Other work:

In the box above please provide a narrative describing your project and how work is to be performed. Please include as much detail as you can regarding the depth of excavation, the type of equipment to be used, the area of your property that will be disturbed by project activities, and anything else that might be relevant. Damage to roots by excavation and soil compaction by construction traffic or materials storage are of chief concern. Your project will be assessed for impacts to trees on your property as well as those on neighboring properties. Please also attach a project drawing or sketch to depict the proposed project.



Tree Protection Plan Permit Application

Tree Protection Plan Checklist

The following checklist will guide you through the creation of your tree protection plan. Checking a box alone is not sufficient, you must actually include the required element on your tree protection plan. Please provide a response for each element to state whether or not it applies to your project. Please refer to the Tree Protection Plan Manual as you work through this checklist for guidance in completing your Tree Protection Plan (TPP).

1. Tree Inventory/List

- (Required) I have included a tree inventory for all Urban Forest Trees (trees with trunks measuring 7.8 inches diameter or greater at 4.5 feet from the ground) within 50 feet of potential impacts involved with this project. This may include trees on neighboring properties, whose trunk measurements may be estimated. The trees are marked on the plan drawing with their inventory number and their diameters listed along with any other helpful information.

2. Critical Root Zones (CRZ)

- (Required) I understand the potential extents to which tree roots may grow and have adequately considered the root zone of Urban Forest Trees in this plan.

Note: Drawing a circle on your plan for the CRZ of each tree is optional, though can be helpful, particularly when done under the guidance of a qualified arborist.

3. Tree Protection Fence (TPF)

- TPF will be installed and I have depicted its location on the plan drawing. I have also specified the type of approved TPF to be used by including an approved detail drawing and/or description as part of my submission.
- No TPF will be installed.

4. Equipment Usage

- Heavy equipment, such as a mini-excavator, will be used on this project and I have included details on the specific equipment to be used, including type of equipment, model, ground pressure, and other information as available.
- No heavy equipment will be used. All work will be conducted with hand tools and by foot traffic only.

5. Trunk Protection

- Equipment or vehicles may pass close to a tree's trunk and trunk protection has been specified on the plan for the relevant trees. The installation detail for the trunk protection has been included as part of this submission.
- No trees will require trunk protection.



Tree Protection Plan Manual

II. Tree Protection Plan Checklist Instructions

1. Tree Inventory/List

A tree inventory documents each Urban Forest Tree (trees over 24" circumference or 7 and 5/8" diameter) on the project property and adjacent properties. It is comprised of a list of the trees with their inventory number and details as well as a map that locates each tree with its number.

A key component of a tree inventory is the diameter of the trunk measured at 4.5' from the ground, also called the tree's Diameter at Breast Height (DBH). This in turn is used to calculate the tree's Critical Root Zone. Please see the Tree Permits page on the City of Takoma Park website for instructions on how to measure DBH.

A Tree Inventory must include at least the following:

- Tree inventory/map number (1, 2, 3, etc...)
- Tree species (best guess by applicant is acceptable)
- Tree diameter in inches measured at 4.5' from ground level

Some more complex and high impact projects may also benefit from additional details determined by a qualified arborist:

- Tree species (verified by a qualified arborist)
- Tree condition
- Tree condition comments
- Tree canopy radius
- Special tree protection measures (root prune, stress mitigation measures, etc...)

Note that having a qualified arborist conduct your inventory can be helpful in determining which trees may be in decline and not worth preserving, which trees are especially vigorous and tolerant of construction impact, and/or what the typical rooting pattern of a tree of a given species is likely to be. This knowledge can aid in your design process and make for a smooth tree protection experience.

2. Critical Root Zones (CRZ)

The CRZ is the area around a tree in which its roots may be expected to be found. According to industry best management practices, a tree's CRZ may vary between 0.5 and 1.5 feet of radius per inch of trunk diameter. The size varies based on species susceptibility to root loss, age of tree, and condition of tree.

For projects that are simpler in scope and that have less substantial tree impacts, the CRZ of every tree does not need to be professionally determined or drawn onto the plans. However, the Urban Forest Manager will be reviewing your project with tree CRZ's in mind and may require adjustments if a sufficient portion of a tree's roots have not been adequately protected.

For more complex and high-impact projects, the UFM may require the CRZ of the trees to be drawn onto the plans under the guidance of a qualified arborist.



Specific Directives From Resolution

target planting efforts, both public and private, toward actions that are the most effective at promoting robust tree canopy, with an appropriate focus on native and climate adapted species

Completed / Ongoing Actions Include:

- Updated Species List
- Plan and implement high-quality tree plantings
- Deploy effective outreach and engagement strategies

Planned / Under Consideration Include:

Develop web resources to guide residents in caring for their trees

- Street Tree Request Process

Takoma Park Approved Tree Species List

Scientific Name	Common Name	Nearest Historically Native State	Size Category	Mature Canopy Height (feet)	Mature Canopy Spread (feet)	Soil Moisture Preference			Sun Preference			Notes
						Dry	Moist	Wet	Full-Sun	Part-Sun	Shade	
<i>Acer rubrum</i>	Red Maple	Maryland	Large	40-75	35-80		x	x	x	x		Surface roots can inhibit other plant growth. Not recommended near pavement. Tolerant of a variety of soil and light conditions.
<i>Acer saccharinum</i>	Silver Maple	Maryland	Large	50-85	55-80		x	x	x	x		Surface roots can inhibit other plant growth. Not recommended near pavement.
<i>Acer saccharum</i>	Sugar Maple	Maryland	Large	55-85	45-70		x		x	x	x	Less tolerant of urban conditions than other maples
<i>Aesculus flava</i>	Yellow Buckeye	West Virginia	Large	55-75	45-65				x	x	x	Showy flower, large husked seed
<i>Carya cordiformis</i>	Bitternut Hickory	Maryland	Large	55-85	45-75		x	x	x	x		Large husked nut
<i>Carya glabra</i>	Pignut Hickory	Maryland	Large	55-80	35-50	x	x	x	x	x		Large husked nut
<i>Carya illinoensis</i>	Pecan	Kentucky	Large	75-100	40-75		x		x			Large husked nut, edible
<i>Carya ovata</i>	Shagbark Hickory	Maryland	Large	65-90	50-85		x		x			Large husked nut
<i>Carya tomentosa</i>	Mockernut Hickory	Maryland	Large	55-70	45-80		x		x	x		Large husked nut
<i>Celtis laevigata</i>	Sugarberry	Virginia	Large	60-80	60-80		x	x	x	x		Small edible fruit. More tolerant of urban conditions
<i>Celtis occidentalis</i>	Hackberry	Maryland	Large	40-75	40-75		x	x	x	x		More tolerant of urban conditions
<i>Fagus grandifolia</i>	American Beech	Maryland	Large	50-85	45-75		x		x	x		Small husked nut
<i>Gleditsia triacanthos</i>	Honey Locust	Maryland	Large	45-75	45-75	x	x	x	x			More tolerant of urban conditions. Recommend planting cultivated varieties without the large thorns
<i>Gymnocladus dioica</i>	Kentucky Coffee Tree	Pennsylvania	Large	60-80	40-55		x		x			Showy flower, large pod. More tolerant of urban conditions.
<i>Juglans nigra</i>	Black Walnut	Maryland	Large	65-90	65-90		x		x			Large husked nut. Releases a chemical 'juglone' that can inhibit the growth of other plants
<i>Liquidambar styraciflua</i>	Sweet Gum	Maryland	Large	60-85	50-70		x	x	x	x		Spikey seed capsule, low-fruited cultivated varieties available. More tolerant of urban conditions
<i>Liriodendron tulipifera</i>	Tulip Poplar	Maryland	Large	65-95	35-50		x		x	x		Showy flower
<i>Magnolia acuminata</i>	Cucumber Magnolia	Maryland	Large	55-85	35-55		x		x	x		Showy flower
<i>Magnolia grandiflora</i>	Southern Magnolia	North Carolina	Large	60-80	30-50		x		x	x		Evergreen, showy flower, showy fruit
<i>Pinus echinata</i>	Shortleaf Pine	Maryland	Large	50-75	35-50	x	x		x			Evergreen
<i>Pinus rigida</i>	Pitch Pine	Maryland	Large	45-70	40-85	x			x			Evergreen
<i>Pinus strobus</i>	Eastern White Pine	Maryland	Large	60-85	30-50	x	x		x	x		Evergreen
<i>Pinus taeda</i>	Loblolly Pine	Maryland	Large	55-90	30-50	x	x	x	x			Evergreen
<i>Platanus occidentalis</i>	American Sycamore	Maryland	Large	75-100	75-100	x	x		x	x		Anthraxnose can cause deformities and early leaf drop, but most trees can tolerate this without much issue
<i>Populus deltoides</i>	Eastern Cottonwood	Maryland	Large	65-95	45-90		x	x	x			"Cotton"-covered seeds
<i>Populus grandidentata</i>	Bigtooth Aspen	Maryland	Large	50-70	20-40		x					"Cotton"-covered seeds
<i>Prunus serotina</i>	Black Cherry	Maryland	Large	45-70	25-50	x	x		x	x		Small showy flower, small fruit
<i>Quercus alba</i>	White Oak	Maryland	Large	55-85	50-80		x	x	x	x		Acorns
<i>Quercus bicolor</i>	Swamp White Oak	Maryland	Large	55-75	50-65		x	x	x	x		Acorns. Better suited for urban conditions than other oaks
<i>Quercus coccinea</i>	Scarlet Oak	Maryland	Large	55-75	40-60	x	x		x			Acorns
<i>Quercus falcata</i>	Southern Red Oak	Maryland	Large	65-80	55-85	x	x		x			Acorns
<i>Quercus imbricaria</i>	Shingle Oak	Maryland	Large	45-60	45-80	x			x			Acorns
<i>Quercus lyrata</i>	Overcup Oak	Maryland	Large	40-60	40-80		x	x	x			Acorns
<i>Quercus macrocarpa</i>	Burr Oak	Maryland	Large	65-80	65-80	x	x		x			Acorns
<i>Quercus michauxii</i>	Swamp Chestnut Oak	Maryland	Large	50-70	55-75		x	x	x			Acorns
<i>Quercus montana (pinus)</i>	Chestnut Oak	Maryland	Large	50-75	55-70	x	x		x	x		Acorns
<i>Quercus muehlenbergii</i>	Chinquapin Oak	Maryland	Large	50-65	50-85	x	x		x			Acorns
<i>Quercus nigra</i>	Water Oak	Maryland	Large	50-80	45-70		x	x	x	x	x	Acorns
<i>Quercus palustris</i>	Pin Oak	Maryland	Large	55-75	40-80		x	x	x			Acorns
<i>Quercus phellos</i>	Willow Oak	Maryland	Large	55-80	35-55		x	x	x	x		Acorns. Better suited for urban conditions than other oaks
<i>Quercus rubra</i>	Northern Red Oak	Maryland	Large	55-80	55-75	x	x		x	x		Acorns
<i>Quercus stellata</i>	Post Oak	Maryland	Large	45-55	45-55	x	x		x			Acorns
<i>Quercus velutina</i>	Black Oak	Maryland	Large	60-75	60-75	x	x		x			Acorns
<i>Tilia americana</i>	American Linden	Maryland	Large	60-85	40-80		x		x	x	x	Notable nectary for bees and honey production
<i>Tsuga canadensis</i>	Eastern Hemlock	Maryland	Large	50-80	30-40		x			x	x	Evergreen, Woolly adelgid can lead to premature decline
<i>Ulmus americana</i>	American Elm	Maryland	Large	65-85	50-75		x	x	x	x		Dutch elm disease can lead to premature decline, disease resistant varieties available

Proposed Urban Forest Program Website Update:

- Takoma Park Urban Forestry Program
 - Tree Permits and Regulation
 - Tree Removal Permit
 - Tree Impact Assessment and Tree Protection Plan Permit
 - Emergency Work Near Trees
 - Other City Tree Regulations
 - State and County Tree Regulations
 - Tree Ownership, Property Lines, Easements
 - Tree Planting and Other City Tree Programs
 - Plant-A-Tree
 - Tree Planting on City Property
 - Pilot Planting Program
 - Leaf Collection, Leaf Mulch, and Woodchips
 - Emergency Tree Fund
 - Tree Care and Education
 - How to plant a tree
 - Young tree care
 - Mature tree care
 - Concerning Tree Pests and Diseases of Particular Concern
 - Vines and Trees
 - Tree Concerns with Landscaping and Hardscaping
 - Tree Concerns with Construction
 - Building Healthy Soil for Healthy Trees
 - Tree Benefits / Designing for Trees in the Landscape
 - Workshops and other resources





Specific Directives From Resolution

address the need for greater community planting efforts to replenish trees on private property that are removed

Ongoing Efforts Include:

- Plant-a-Tree Program

Planned Efforts Include:

- Pilot Planting Program
- New educational resources
- Increased promotional efforts



Plant-A-Tree Order Form
The City of Takoma Park offers discount tree plantings
for private properties inside the city

- For the first tree, half of the cost is covered by the city. The cost to you for the first tree is \$130.
- For additional trees, you get the city's reduced wholesale pricing. The cost to you for additional trees is \$260.
- The Urban Forest Manager will coordinate the entire ordering and planting processes.
- You get a minimum 1.5" caliper tree (6-10 feet tall) planted with a ring of mulch and a deer guard.

Requirements:

- The property must be located within the Takoma Park city limits.
- Trees being planted to fulfill a replant requirement for a Tree Removal Permit are not eligible for the half-cost price but are eligible for the wholesale price. Please calculate the total cost accordingly.
- You must provide a sketch or map of your property with the tree planting location noted when you submit your application. Applications submitted without a map cannot be accepted. A plat of your property or a screen-shot of a web map can be useful as a base map for locating the trees.
- A check for payment must be provided at the time you submit your application. Checks must be made payable to City of Takoma Park.

Please sign below to indicate your compliance with these requirements

Signature: Date:

Name: Phone:

Address:

Email:

Indicate the quantity of each species you would like to order:

Blackgum Southern Magnolia Sycamore Bald Cypress

River Birch Swamp White Oak American Linden

Total number of trees ordered:

Pricing key:*

1 tree = \$130	2 trees = \$390	3 trees = \$650	4 trees = \$910	5 trees = \$1170
6 trees = \$1430	7 trees = \$1690	8 trees = \$1950	9 trees = \$2210	10 trees = \$2470

*Note: The prices of the trees already include the 6% Maryland sales tax.

Applications must be mailed to or dropped off at the Public Works building.
Feel free to contact the Urban Forest Manager if you have any questions.



Specific Directives From Resolution

address racial disparities in current efforts and that otherwise exist with respect to tree canopy coverage within the City

Ongoing Actions Include:

- Prioritize wards 4 and 6 for public planting

Planned Actions Include:

- Pilot Planting Program



Specific Directives From Resolution

provide recommendation on options for measurement and benchmarks to use to measure urban forest health

Recommendation

- Continue with periodic lidar-based canopy analysis
- Follow trends and best practices for urban forest health assessment
- Explore options for developing a public space tree inventory

Takoma Park Tree Canopy Assessment



Why is Tree Canopy Important?

Trees provide many benefits to communities, such as improving water quality, reducing stormwater runoff, lowering summer temperatures, reducing energy use in buildings, removing air pollution, enhancing property values, improving human health, providing wildlife habitat, and aesthetic benefits¹. Many of the benefits that trees provide are correlated with the size and structure of the tree canopy which is the layer of branches, stems, and leaves of trees that cover the ground when viewed from above. Therefore, understanding tree canopy is an important step in urban forest planning. A tree canopy assessment provides an estimate of the amount of tree canopy currently present as well as the amount of tree canopy that could theoretically be established. The tree canopy assessment can be used by a broad range of stakeholders to help communities plan a greener future.

¹National Research Council. Urban Forestry: Toward an Ecosystem Services Research Agenda: A Workshop Summary. Washington, DC: The National Academies Press, 2013.

How Much Tree Canopy Does Takoma Park Have?

An analysis of the City of Takoma Park based on land cover data (Figure 1) derived from circa 2018 data found that 772 acres of the city is covered by tree canopy (termed Existing Tree Canopy). This represents 58% of all of the land within the City (Figure 2). An additional 25% (338 acres) of the city's land area could theoretically be modified to accommodate tree canopy (termed Possible Tree Canopy). Within the Possible category, 15% (201 acres) of total land area was classified as Vegetated Possible and another 10% (138 acres) as Impervious Possible. Establishing tree canopy on areas classified as Impervious Possible will have a greater impact on water quality and summer temperatures while planting on Vegetated Possible (grass/shrub), will generally be easier. 1.7% (210 acres) of the city is generally not suitable for establishing new tree canopy (buildings and roads).



Figure 1: Study area and example of the land cover derived from high-resolution imagery for this project.

About the Project

This project applied the USDA Forest Service's Tree Canopy Assessment protocols to the City of Takoma Park. The analysis was conducted using imagery and LIDAR acquired in 2017 and 2018, respectively.

The Spatial Analysis Laboratory (SAL) at the University of Vermont's Rubenstein School of the Environment and Natural Resources carried out the assessment in collaboration with the City of Takoma Park.

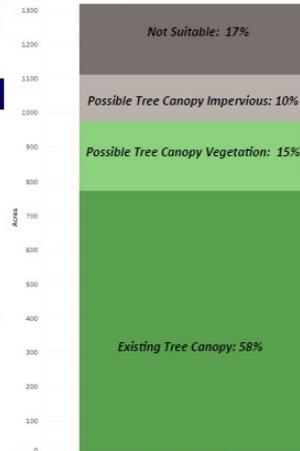


Figure 2: Tree Canopy metrics showing the total acres of land area covered by each category.

Key Terms

Tree Canopy: Tree canopy is the layer of branches, stems, and leaves of trees that cover the ground when viewed from above.

Land Cover: Physical features on the earth mapped from aerial or satellite imagery, such as trees, grass, water, and impervious surfaces.

Existing Tree Canopy: The amount of urban tree canopy present when viewed from above using aerial or satellite imagery.

Impervious Possible Tree Canopy: Asphalt or concrete surfaces, excluding roads and buildings, that are theoretically available for the establishment of tree canopy if improvements were made.

Vegetated Possible Tree Canopy: Grass or shrub area that is theoretically available for the establishment of tree canopy.

Not Suitable: Areas where it is highly unlikely that new tree canopy could be established (primarily buildings and roads).



Specific Directives From Resolution

a prioritized city tree planting plan
and map on city property and right
of way

Ongoing Actions Include:

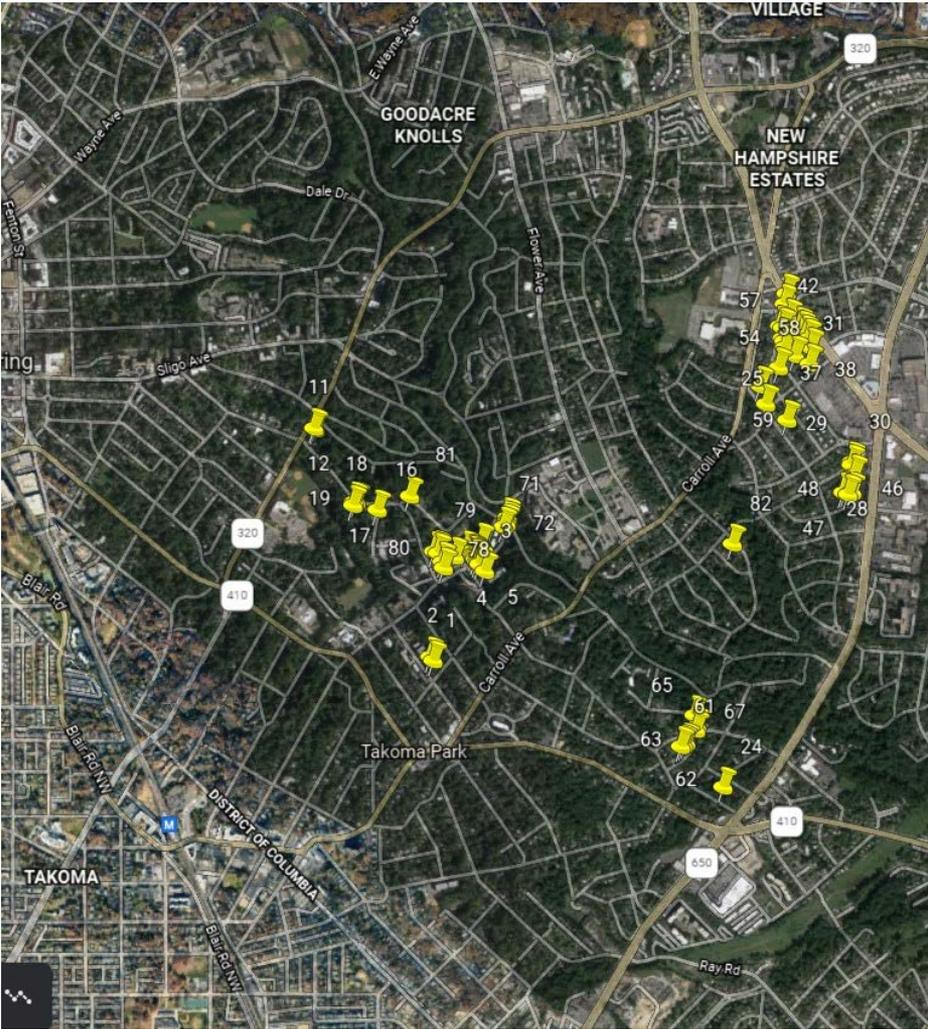
- To address racial equity goals, wards 4 and 6 will remain the priority
- Planting locations determined on a rolling basis.

Proposed Actions Include:

- Explore options for publishing a map of newly planted trees in public space.



Spring 2021 Public Space Plantings





Specific Directives From Resolution

develop a pilot project in collaboration with those most impacted in the community in areas of lesser tree cover – including renters, single-family homeowners, multifamily building owners/managers, and commercial and institutional property owners/managers –for effective methods to maintain and increase tree health and coverage that could then be used as a model for other areas of the city

Actions In Progress

- Pilot planting program framework has been developed
- Implementation to begin later this year
- Intern-supported program to start

Pilot Program Targets



Tree Plantings

Work with and conduct tree plantings at the following numbers of properties:

- At least 20 single-family homes
- At least 5 multi-family properties, 2 or more of which have 6 or more units
- At least 3 commercial properties
- At least 3 institutional properties, which may include churches, educational institutions, and other community facilities.

Plant 50 trees across all property types

Outreach

- Attend and present at least at 3 community meetings.
- Identify and conduct targeted outreach to at least 10 commercial properties that have plantable space for trees.
- Identify and conduct targeted outreach to institutional properties that have plantable space for trees.
- Identify and conduct targeted outreach to multi-family properties across wards 4 and 6.
- Identify and utilize venues for outreach to the general public in wards 4 and 6, such as neighborhood list serves, local publications, and community announcement boards.



Specific Directives From Resolution

provide recommendations on how the current tree fund may be restructured to help fund a pilot project and other tree planting and maintenance efforts, including financial assistance to low- and moderate-income residents for such purposes.

On-Going Activities Include:

- Plant-A-Tree Discounted Plantings
- Emergency Tree Fund for Hazardous Tree Maintenance

In-Progress Activities Include:

- Pilot Planting Program Low-Cost/Free Plantings



**City of Takoma Park Maryland
EMERGENCY TREE FUND
HOMEOWNER APPLICATION**

The Emergency Tree Fund Program provides assistance to income eligible homeowners unable to afford to pay for hazardous tree's on private property. If selected to participate in the program, approved tree removals will be completed by a licensed contractor under the direction of the City. Prior to the City assigning a contractor, homeowners will be required to enter into an agreement with the City identifying the specific work that will be performed on their behalf and detailing their obligations under the program. Approved work will be done at no cost to the homeowner.

SECTION 1: APPLICANT INFORMATION				
Name of Homeowner				
Street Address				
Phone Number	Daytime	Email Address		
	Cell			
Number of people living in the house		Do you own other property?		
Number of years at this address		<i>If yes, list address</i>		
Do you have a mortgage?		Do you have any renters?		
Is your mortgage payment current?		<i>If yes, amount of monthly rent</i>	\$	
Alternate Contact (in case we cannot reach you)			Relationship	
Phone Number	Daytime	Email Address		
	Cell			
SECTION 2: HOUSEHOLD MEMBERS. This information is required for of the homeowner and ALL of the people living in the home regardless of their age or familial relationship.				
Name	Relationship	Date of Birth	Ethnicity Race	Disabled Yes / No
	Homeowner			
SECTION 3: ANNUAL HOUSEHOLD INCOME. List ALL sources of income – both taxable and nontaxable –				



Some Closing Thoughts

- Tree preservation remains vitally important
- Our capacity to conduct city-scale data collection and analysis beyond the lidar study is limited, but we know what needs to be done:
 - Preserve our mature trees as best we can
 - Plant and care for new trees
 - Stay current with best management practices on regionally emerging pest and disease issues
- Private property holds the greatest potential for tree planting. Embarking on a city-led effort to address this entails a major expansion of scope for our urban forestry program, with staffing implications. We will learn much with the Pilot.



Conclusion

Thank you for your time!

Marty Frye - Urban Forest Manager