

Strategic Tree Canopy Plan

OCTOBER 2025



The City of
Hopewell, Virginia



<https://hopewellva.gov>

Plan by the Green Infrastructure Center Inc. for the City of Hopewell



Green Infrastructure Center

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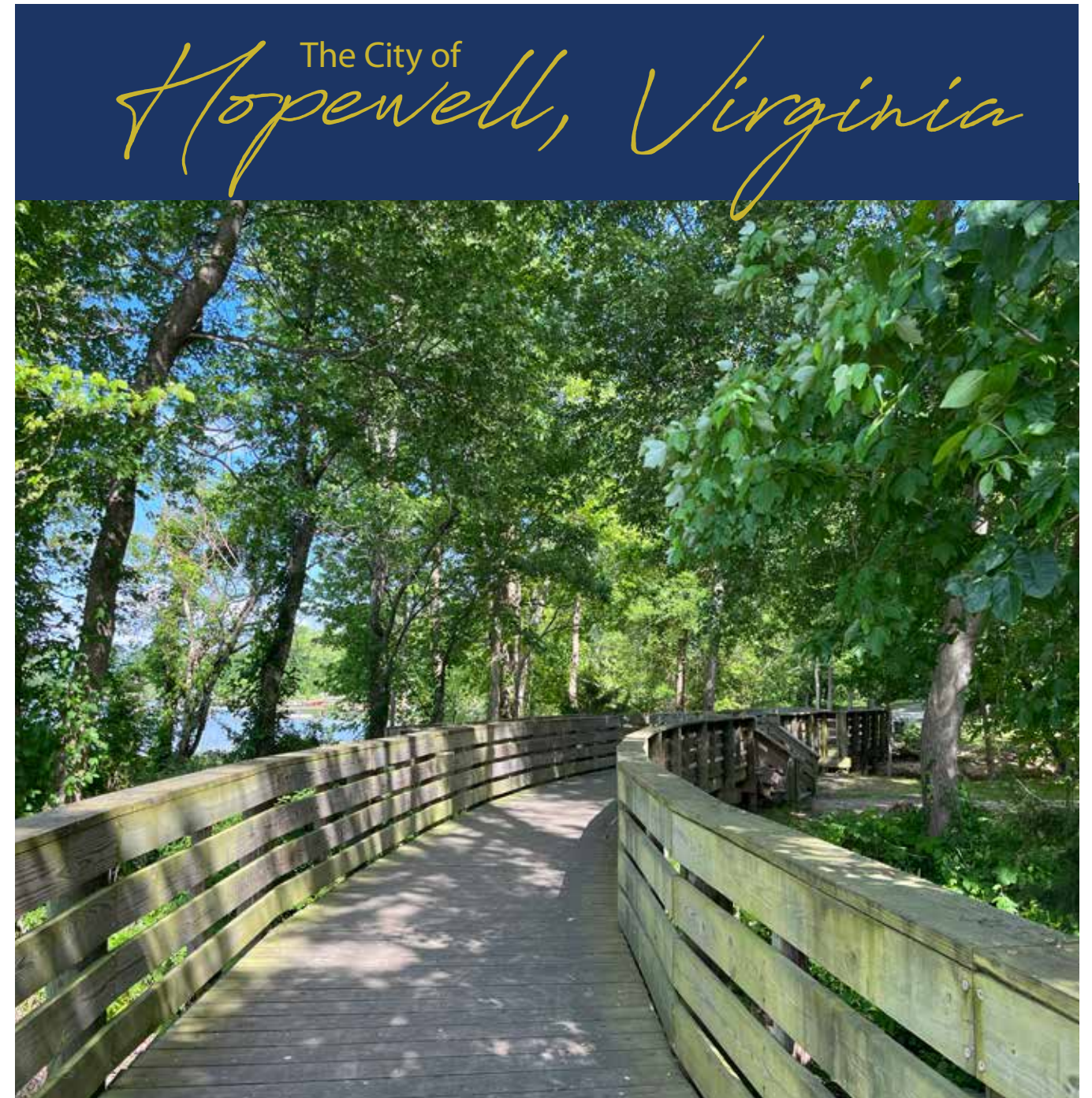
Strategic Tree Canopy Plan

The Green Infrastructure Center Inc. completed this report, tree canopy analysis, and strategic planning process with grant funding provided by the U.S. Department of Agriculture (USDA) Forest Service and Virginia Department of Forestry. The mention of trade names, commercial products, services, or organizations does not imply endorsement by the U.S. Forest Service, Virginia Department of Forestry, or the City of Hopewell, Virginia.

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Prepared by the Green Infrastructure Center Inc.
Publication Date: October 2025



OCTOBER 2025



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Executive Summary

The urban forest is a critical asset for healthy, resilient, and sustainable cities. Trees provide benefits that directly support public health by cleaning the air and filtering and reducing stormwater runoff, reducing urban temperatures, and fostering greater economic development. However, these benefits are at risk because tree canopy cover is declining across many U.S. localities. This *Strategic Tree Canopy Plan* provides data and strategies for maintaining and restoring tree canopy in Hopewell, Virginia.

This plan is the culmination of a year-long planning process that included workshops and strategic planning sessions led by the Green Infrastructure Center Inc. (GIC) with City staff and community partners. Information about this program and tree work in Hopewell was shared with the public through the City's website, media, tabling at outreach events, and displays of maps and educational posters in community centers, as well as meetings with community groups. The extent of urban forest cover was determined by analyzing aerial imagery to map the City's land cover. Open space was evaluated to determine the *Potential Planting Area* where future trees might be planted, along with assessments of the environmental and social benefits the City's trees provide. Strategies for retaining, protecting, and restoring tree canopy coverage were created from this process.

City Goal

The City of Hopewell currently has 45% tree canopy coverage city-wide. The City's goal is to maintain a no-net-loss of tree canopy coverage over the next 10 years. Tree planting will be needed to maintain the canopy because trees will still die from pests, storms, landowner removals, development, or old age. The City will maintain 45% tree canopy coverage by:

1. Increasing tree canopy equity across wards to ensure all residents have equitable access to trees in public spaces.
2. Encouraging more tree plantings on private property.
3. Building capacity for community involvement, education, and outreach.
4. Strengthening codes and policies to preserve and enhance urban trees.
5. Improving the stewardship of publicly owned trees.
6. Monitoring and plan for the future tree canopy.

How Trees Benefit the City

Tree canopy provides benefits such as cleaner air, urban cooling, stormwater capture, wildlife habitat, and natural beauty. This plan quantifies and identifies strategies to increase these benefits.



Air Quality

Trees sequester carbon and clean the air of particulate matter and ground-level ozone. Each year, Hopewell's trees remove:

- 13,603 metric tons of carbon
- 76,231 lbs. of ground-level ozone (O₃)
- 15,014 lbs. of airborne particulate matter



Urban Cooling

Excessive pavement and lack of shade create urban heat islands. Hopewell's trees counter urban heating by shading hot areas. Tree canopy cover lowers surface temperatures and cools the city.



Stormwater Uptake

Trees capture rainfall and filter pollutants. During a ten-year/24-hour rainfall event (5.14 inches) the City's trees:

- soak up 27.7 million gallons of water
- reduce runoff pollution loads for nitrogen by 21%, phosphorus by 27%, and sediment by 11%



Canopy Goals

Hopewell's goal is to maintain a no-net-loss tree canopy coverage (45%) over the next 10 years.

Tree Canopy and Potential Planting Area

The City of Hopewell now has baseline data to identify opportunities to plant new trees for shade, energy savings, increased stormwater uptake, and improved air and water quality.



Introduction

The City of Hopewell is the second oldest continuously occupied colonial settlement in the United States after Jamestown. Before colonization, lush wetlands and forests were actively managed by the Native Americans of the Weyanock and Appamatuck tribes who cultivated them for food production, hunting grounds, and shelter. In 1613, the establishment of "City Point" marked the beginning of oldest part of present-day Hopewell. Overlooking both the James River and Appomattox River, this strategic location played a pivotal role in several battles during the Revolutionary War and the Civil War as a Union base camp. While "City Point" has existed for hundreds of years, the City of Hopewell was not officially incorporated until 1916, when industries moved to the area to support World War I efforts (City of Hopewell, Virginia 2025). Throughout the 1900s, the City became an industrial hub consisting of manufacturing giants, including Dupont Company and later artificial silk and chemical manufacturing industries (City of Hopewell, Virginia 2025). Economic growth and job abundance encouraged the City's population to grow, leading to a wealth of diversity among its citizens. Because of this, Hopewell holds a rich African American, Native American, and immigrant history that is celebrated. In addition to its rich history, the City also has a

wealth of natural features, including urban trees, wetlands, streams, and rivers that provide social, economic, and ecological benefits to residents while creating a sense of place. By protecting and restoring its natural features and historic sites, Hopewell can ensure a healthy, green, and vibrant future.

The Strategic Tree Canopy Plan supports Hopewell's 2028 Comprehensive Plan by reinforcing sustainable land use planning practices and encouraging the revitalization of commercial, residential, and industrial areas through the expansion and improvement of the health of existing tree canopy. This plan calls for proactive tree management and planning in coordination with the 2028 Comprehensive Plan objectives to improve neighborhoods, community health, conserve and enhance natural water resources, and attract visitors to the City.

2028 Comprehensive Plan Goal 4: The Environment
"Conserve, protect, renew, and enhance the City's environmental resources, placing the highest emphasis on the intrinsic value of river frontage, stream valleys, and vulnerable ecologically sensitive areas. Establish a proactive program to address all aspects of the Chesapeake Bay Preservation Act."

FAST FACTS

Hopewell

Population: 22,970 people*

- 41.6% non-Hispanic Whites
- 42.6% Black/African Americans
- 8.6% Hispanic or Latino residents
- 1.1% Asian

Total City Area: 10.83 sq. miles

Land Area: 10.35 sq. miles

Lakes & Ponds: 68 acres

Wetlands & Marshes: 515 acres

Streams: 23.5 miles

Tree Canopy: 2,894 acres

Potential Planting Area: 668 acres

Impervious Surfaces: 1,890 acres



Appomattox Manor at City Point acted as General Grant's Headquarters during the last year of the Civil War.

*(U.S. Census 2024 estimate)

Tree Benefits

Trees benefit communities ecologically, economically, and socially. Some of the many benefits include:

- Cleaner air and water
- Enhanced natural beauty
- Bird and wildlife habitat
- Reduced city heat
- Reduced levels of crime
- Reduced traffic accidents
- Increased revenues from sales and property taxes
- Lower vacancy rates
- Improved mental health and focus
- Improved metabolic function
- Increased access to outdoor fitness opportunities.



Large canopy trees provide greater benefits than smaller trees. The USDA Forest Service found that in 2025 dollars, a large tree is worth \$7,411 in annual benefits while a small tree is worth just \$450 (Center for Urban Forest Research and Southern Center for Urban Forestry Research & Information 2006).

Trees Are Green Infrastructure

Trees and other vegetation serve as the City's "green infrastructure." Just as localities manage grey infrastructure (roads, sidewalks, bridges, and pipes), they should also manage vegetation as infrastructure. Trees support a vibrant, safe, and healthy community while adding to its historic character. They enhance sustainability by filtering stormwater and reducing runoff, cooling streets, cleaning the air, capturing carbon emissions, and increasing property values.



Gray vs. Green

The image on the left shows the City of Hopewell's gray infrastructure, including buildings and roads. Classified high-resolution satellite imagery (on the right) adds the City's green infrastructure (trees and other vegetation). This green infrastructure provides cleaner air and water, energy savings, and natural beauty.



Reducing Stormwater Runoff and Filtering Pollutants

Trees protect communities from problems associated with stormwater runoff. As forested land is converted to impervious surfaces, such as roads, buildings, and parking lots, urban stormwater runoff increases. Excess stormwater runoff can cause temperature spikes in receiving waters, increased pollution of surface and ground waters, and greater potential for flooding.

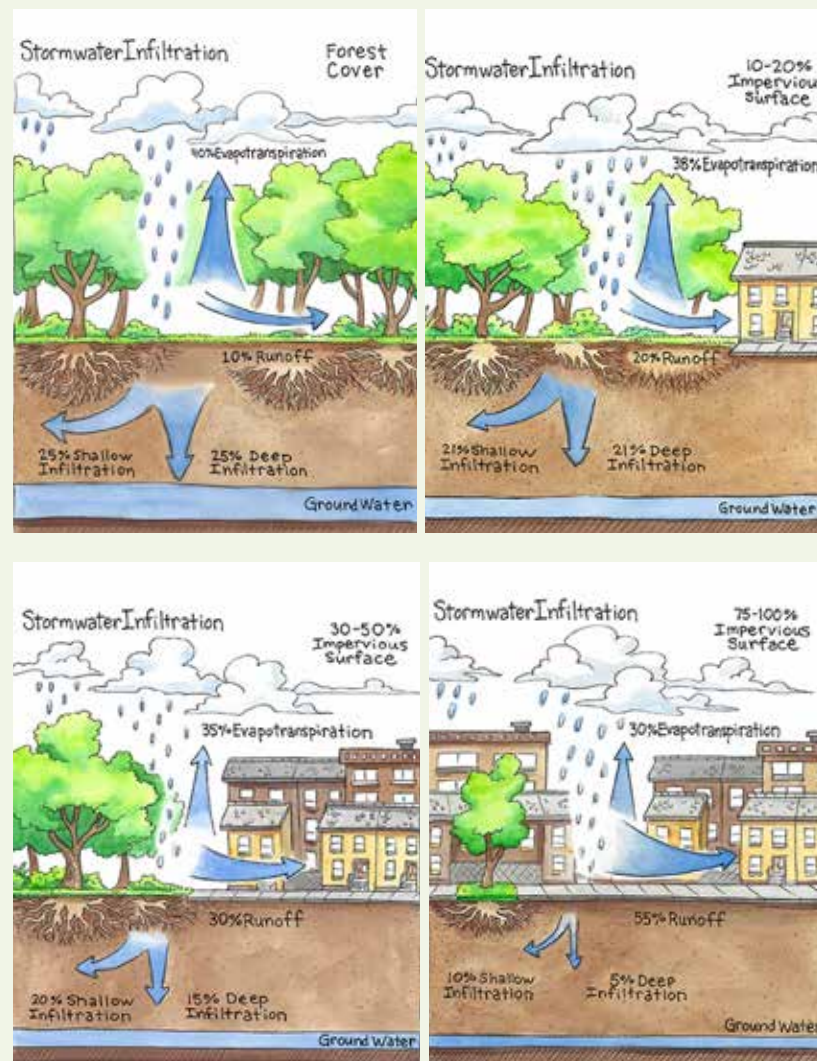
Trees reduce nitrogen, phosphorus, and sediment in stormwater by filtering runoff of these pollutants. Increased loads of nutrients in stormwater runoff reduce oxygen in surface water, causing harm to fish and other aquatic life. Nitrogen and phosphorus can cause harmful algal blooms, while sediment can clog fish gills, smother aquatic life, and necessitate additional dredging of canals and waterways. As tree cover is lost and impervious areas expand, excessive urban runoff of these harmful pollutants greatly increases. The presence of trees means fewer pollutants enter the City's many watersheds, including the Appomattox River, James River, and eventually the Chesapeake Bay.

The average annual precipitation in Hopewell is 49.76 inches (National Weather Service 2025). Much of this runoff flows into the municipal separate storm sewer system (MS4), transporting surface pollutants from the land to local waterways. Large paved areas contribute significant volumes to this runoff. While stormwater ponds and other best management practices (BMPs) are designed to mimic natural land cover rainfall release by detaining and filtering runoff, they do not fully replicate pre-development hydrology. In addition, older parts of the City may lack updated stormwater management practices required for new developments, so not all runoff is captured or treated before it flows into open waterways. Since trees filter stormwater and reduce overall flows, planting or conserving trees is a natural, cost-effective way to mitigate stormwater. Each tree plays an important role in stormwater management. Based on the GIC's review of canopy rainfall interception studies, a typical street tree's crown can intercept between 760 and 4,000 gallons of water per year, depending on the tree's species and age.



Trees filter and clean stormwater runoff before it enters surface waters, ensuring healthy rivers and creeks for recreation and habitat.

Stormwater Infiltration Rates with Development



Runoff increases as land is developed.

Graphic adapted by GIC. Data Source: U.S. EPA Watershed Academy 2025.



Excess impervious areas cause hotter temperatures and increased runoff. This parking lot at Cavalier Square could be retrofitted to add more trees, bioswales, and pervious surfaces that allow water to seep into the ground.



Adding trees and other riparian species along this channel along Elm Street would slow water during rain events, allowing for more infiltration into the soil.



These river birch trees provide stormwater management benefits for Woodlawn Park and the surrounding watershed.

Buffering Storm Damage with Green Infrastructure – Trees!

Another benefit of conserving trees and forests is buffering against storms and reducing losses from flooding. According to the U.S. Environmental Protection Agency (EPA), excessive stormwater causes increased flooding, property damage, and public safety hazards. The EPA recommends ways to use trees to manage stormwater in its book *Stormwater to Street Trees*. <https://www.epa.gov/sites/default/files/2015-11/documents/stormwater2streettrees.pdf>

Retaining trees and forests along streams prevents erosion and provides key habitat for fish, birds, animals, and people too. A community can categorize their trees as “green infrastructure” to help justify spending money on city trees because they function as natural infrastructure by reducing standing water, preventing erosion, serving as windbreaks, and shading areas to reduce excessive temperatures.

In some cases, FEMA has reimbursed communities for lost tree cover when those trees were part of identified infrastructure, such as when a stream restoration project was damaged by a hurricane and the community had already identified the planted trees as infrastructure. To qualify, trees must be inventoried, have records of maintenance, and be specifically utilized for stormwater management, buffers, or other “green infrastructure” functions. Trees should also be recognized as infrastructure in policy documents such as the Comprehensive Plan, the Capital Improvement Plan (CIP), and even the City's tree ordinances.



Riparian buffers prevent stream erosion and reduce the risk of flooding.

Improving Air Quality, Public Health, and Economic Values

Trees Clean the Air

Higher tree canopy cover is correlated with better air quality. Trees reduce ground-level ozone (O₃) while filtering out fine particulate matter, which can damage lungs and lead to respiratory distress and conditions such as asthma. In fact, well-treed neighborhoods have lower rates of respiratory illness (Rao et al. 2014). Trees capture such greenhouse gases as sulfur dioxide and carbon dioxide. These gases contribute to a warming planet and are associated with health problems from excessive heat. Trees also sequester carbon by storing it as wood, preventing its release into the atmosphere and mitigating the impact of climate change.

Trees Cool the City

Tree shade provides important refuge for children and the elderly during hot summers. Excessive heat can lead to heat stress, especially affecting infants and children up to four years of age, and people 65 years of age and older, or people with obesity or other health issues (Centers for Disease Control and Prevention 2024).



The City's trees reduce summer temperatures through evapotranspiration and by casting shade and cooling sidewalks.

Tree canopy shades streets, sidewalks, parking lots, and homes, making urban locations cooler and more pleasant for outdoor activities, such as hiking, gardening and playing in City parks. Multiple studies have found significant cooling (2-7°F) and energy savings from shade trees in cities (McPherson et al. 1997, Akbari et al. 2001). Individual trees can transpire hundreds of liters of water per day, creating a cooling effect equivalent to the energy needed to power two average household central air-conditioning units (Ellison et al. 2017). Proper tree placement can reduce summer air conditioning costs by up to 35% (Arbor Day Foundation 2025). Pavement shaded by trees has a longer lifespan than pavement in full sun, reducing maintenance costs associated with roadways and sidewalks (McPherson and Muchnick 2005).

Trees Improve Cognitive Function

Exposure to green spaces such as parks or treed landscapes for just 20 minutes a day can significantly improve cognitive function, emphasizing the need for green spaces around schools to allow children to learn to their best ability. Children with Attention Deficit Hyperactivity Disorder (ADHD) benefit from exposure to greenspace. Children who regularly play in green spaces have milder symptoms of ADHD (Faber Taylor and Kuo 2011).



Neighborhoods with more trees have better air quality. Image provided by Sass & Frass Photography.



Well-treed sidewalks are more appealing for walking.



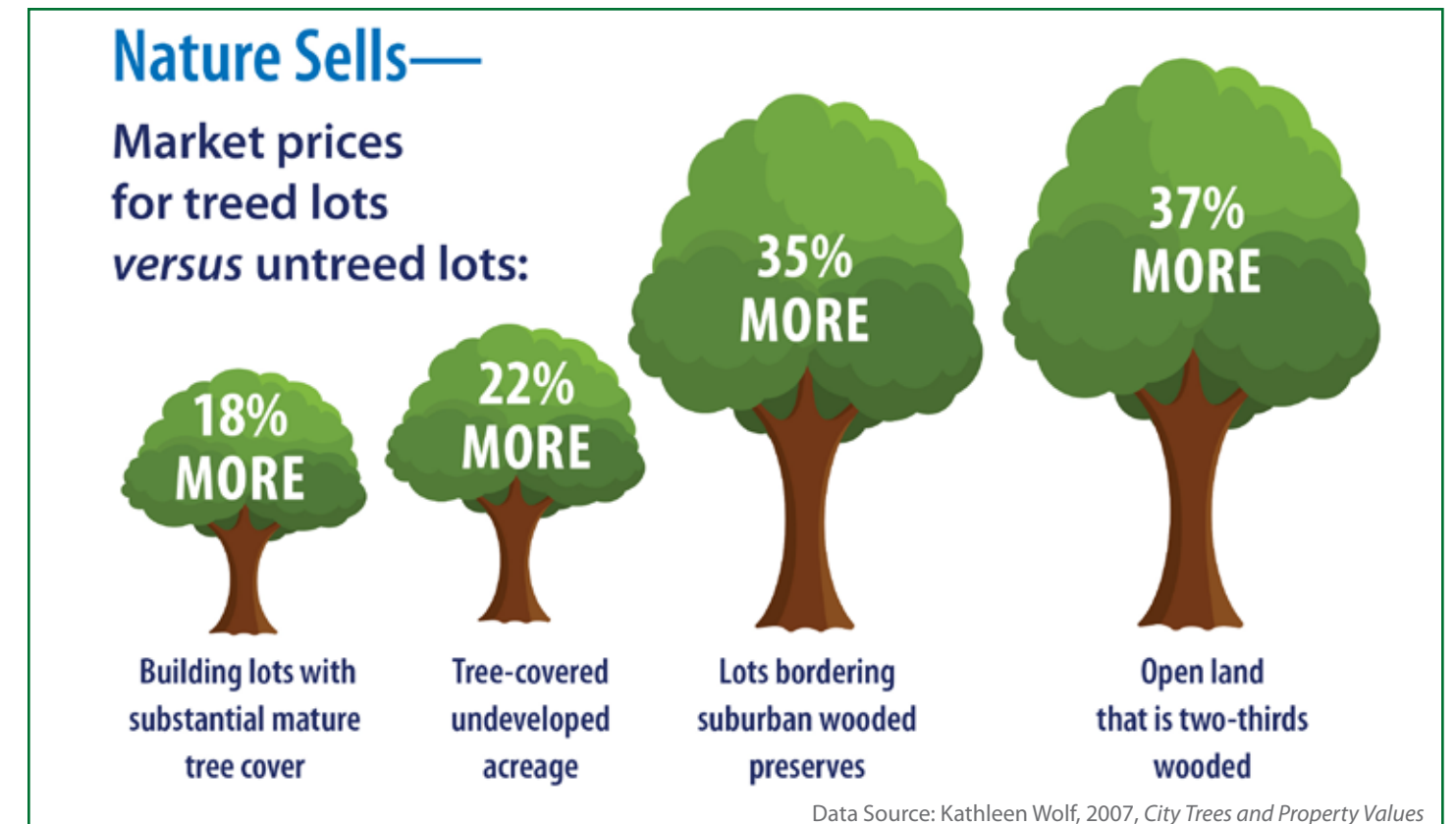
Home buyers will pay more for homes with mature trees.

Trees Improve Walkability

Trees result in people walking more and walking farther. The cooler temperatures, aesthetics, and traffic calming effect increase a community's walkability. When trees are not present on a street, people perceive distances to be longer, hotter, and less pleasant, making pedestrians less inclined to walk than if streets are well-treed (Tilt, Unfried, and Roca 2007).

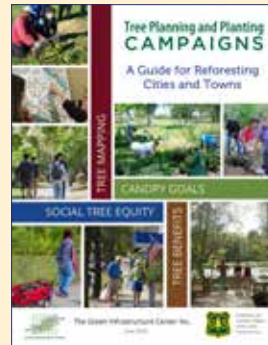
Trees Increase Property Values

Developments that include green space or natural areas in their plans sell homes faster and for higher profits than those that take the more traditional approach of building over an entire area without conserving natural space (Benedict and McMahon 2006). Individual trees and forested open spaces make lots more valuable. Trees on developed lots add about 18% to property assessments and real estate value (Wolf 2007). [See the Nature Sells graphic, below.]



Preventing “Green Gentrification”

Gentrification is a reasonable concern when it comes to community planting projects in lower-income neighborhoods. The concern is that beautifying a neighborhood with numerous shade trees, adding street medians with more trees, planting trees in front yards, and having more parks and other open spaces nearby will raise property values and make houses unaffordable, spur landlords to raise rents and result in property tax increases. This is a legitimate concern and warrants a comprehensive approach that minimizes the negative consequences of green gentrification through policies that encourage residents to stay in their homes while enjoying the many benefits of trees and green space, such as cleaner air, cooler summers, less flooding, lower energy costs and the general social well-being. To learn more about how to prevent “green gentrification”, see the GIC’s *Tree Campaign Guide* <https://gicinc.org/books/tree-planning-and-planting-campaigns/>



Instead of holding back on greening projects, cities should address the sources of affordability problems. One example would be an agreement with landlords not to raise rents within five years of a planting project; another would be to engage the community housing and development staff in providing more affordable housing. The City of Greenville, South Carolina for example, spent a decade and millions of dollars purchasing land around a future park development, Unity Park, that was to be built on City-owned land in historically black neighborhoods that experienced discrimination and disinvestment. The City created a housing fund to build a thousand affordable housing units around the new park, allowing low-income residents to remain in the adjacent neighborhoods and reduce the risk of gentrification. The desire for more affordable housing in the area surrounding the park was an idea driven by local residents and community activists during the planning of the park.

People shop longer and spend more in treed commercial shopping districts.

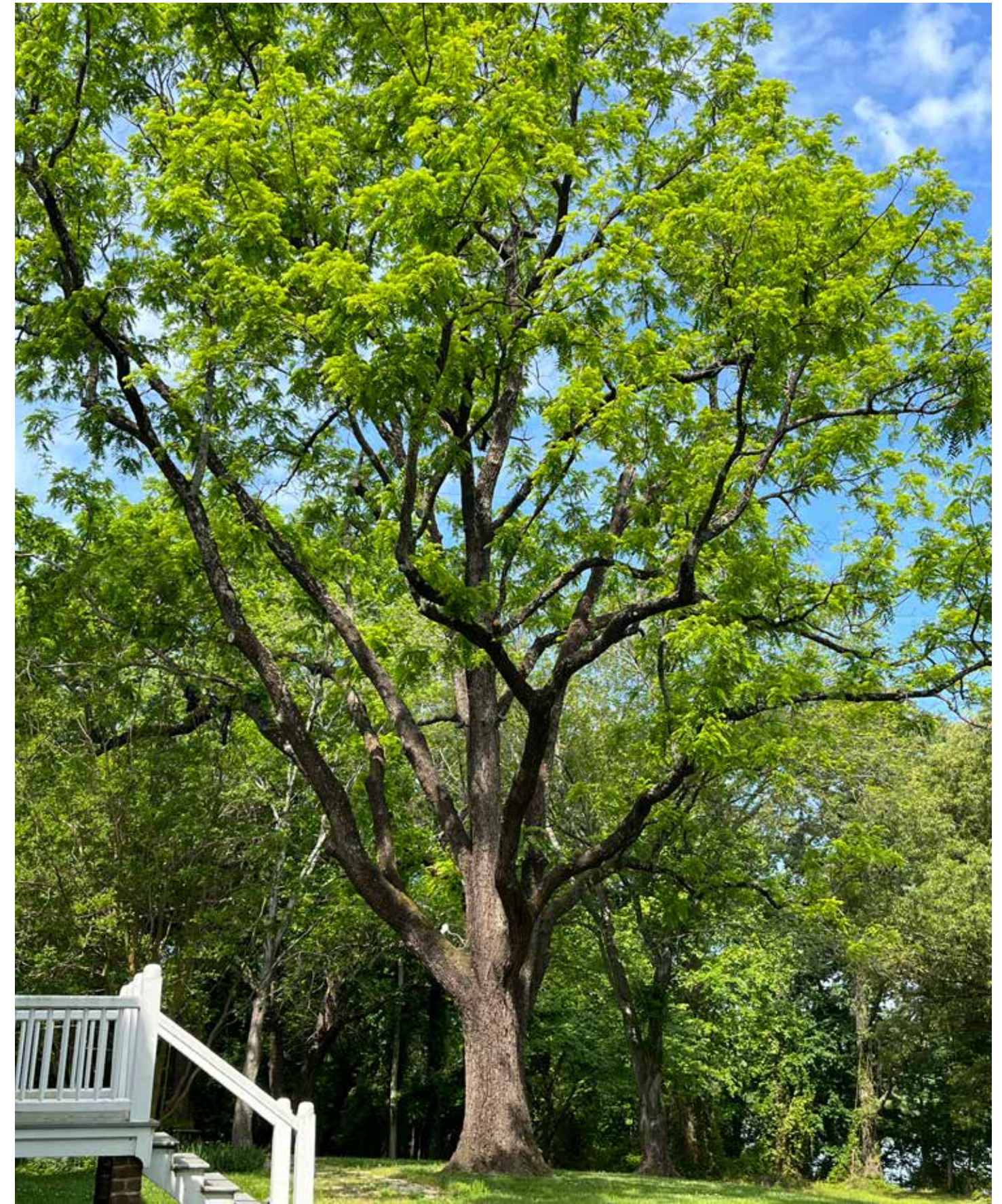


Trees provide shade and cooler temperatures in shopping districts.

Trees Pay Us Back

As the City considers the cost of planting and caring for more trees, it’s important to note that “every dollar invested in planting a tree results in an average return on investment of \$2.25” (Endreny 2018). In fact, even a newly planted tree will immediately begin to provide benefits. So, while the City will need to expend more funds to increase and maintain its canopy coverage, those trees will more than pay their way. This includes increases in property values and thus property tax revenue, the rejuvenation of business districts, tourism revenue, and makes the City more attractive to new businesses. For example, people were seen to shop longer and spend more in treed commercial shopping districts, which benefits the City through increased sales revenues (Wolf 2007).

Planting trees should not be seen in isolation, but as part of a wider cycle of urban renewal and growth, in which trees spur development and raise incomes, business sales and that ‘feel-good factor’, which can, in turn, lead to a desire for more trees, parks, and outdoor leisure facilities. Trees help turn a downward spiral into an upward spiral, as part of a City’s renewed sense of pride and prosperity.



Trees at Weston Manor add to the character of this historic site.

Tree Canopy Analysis Methods

The tree canopy analysis was performed to map current tree canopy, quantify the ecosystem services these trees provide, map potential planting areas, and estimate potential future canopy based on plantable areas. These new tree canopy data can be used to analyze urban cooling, walkability, and street tree plantings or to inform area plans, urban forestry planning, and the City's Comprehensive Plan updates.

Satellite imagery from the National Agricultural Imagery Program (NAIP) distributed by the USDA Farm Service Agency was classified to determine the types and extent of different land covers in Hopewell. The land cover map was created at 1-meter resolution using NAIP imagery from October 13, 2023. An ArcGIS Pro extension named Feature Analyst was used to classify the image using a supervised classification approach. In addition, various vector data were used where possible (e.g. sidewalks, driveways, and other impervious surfaces). The tree canopy was mapped at 91% accuracy, with an overall land cover accuracy of 86%.



NAIP Aerial Image

Determining Plantable Acreage

Potential Planting Areas

In urban areas, a realistic goal for expanding urban canopy depends on an accurate assessment of the total plantable open area. A Potential Planting Area (PPA) map estimates areas where it may be feasible to plant trees. The PPA is estimated by selecting land cover types that have space available for planting trees and accounts for the overlap of canopy (canopy that is intermingled or a large canopy tree that partially covers an understory tree).

Of the nine land cover types mapped, only pervious and bare earth were considered for the PPA. However, some paved areas could be removed or reduced, soils conditioned, and then used to plant new trees. For example, a parking lot could be redesigned in order to accommodate more tree canopy to absorb and clean stormwater runoff and provide shade for cars.

Eligible planting areas are also limited by their proximity to features that interfere with a tree's natural growth (such as buildings) or where a tree might affect the feature, such as power lines, street signs, or road junctions. The GIC buffers potential planting areas to exclude trees from these features.



Potential Planting Area (PPA)

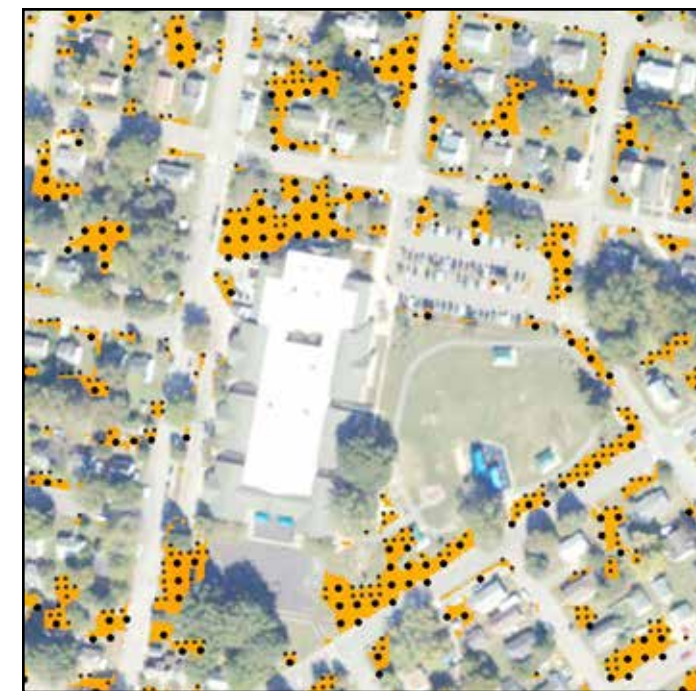


City staff and the GIC reviewed the draft PPA map and removed playing fields, cemeteries, and other land uses where trees would not be appropriate. The resulting PPA represents the maximum potential places trees can be planted and grow to full size.

Based on an analysis of existing pervious surfaces, 10% of the City's land area, or 668 acres, could be planted with additional trees. The GIC recommends that no more than half the available PPA, 5% or 334 acres, is realistic to plant, since many other uses, such as vegetable gardens or swimming pools, require full sun.

Potential Planting Spots

Potential Planting Spots (PPS) are created from the PPA. A GIS modeling process is applied to select spots where a tree can be planted, depending on the desired mature size. For this analysis, expected canopy spreads of 20ft. and 40ft. diameter for individual mature trees were used, with priority given to 40 ft. diameter trees, since larger trees provide more benefits.



Potential Planting Spots (PPS)



There are many places where new trees could be planted in the City, such as at private industry land, Hopewell High School, and City parks.



Potential Canopy Area

The Potential Canopy Area (PCA) is created from the PPS. Once the PPS are selected, a buffer around each point is created to represent the mature canopy spread. For this analysis, the buffer radius is either 10 ft. or 20 ft. which represents a 20 ft. or 40ft. diameter canopy. These individual tree canopies are then merged to form a Potential Canopy Area.



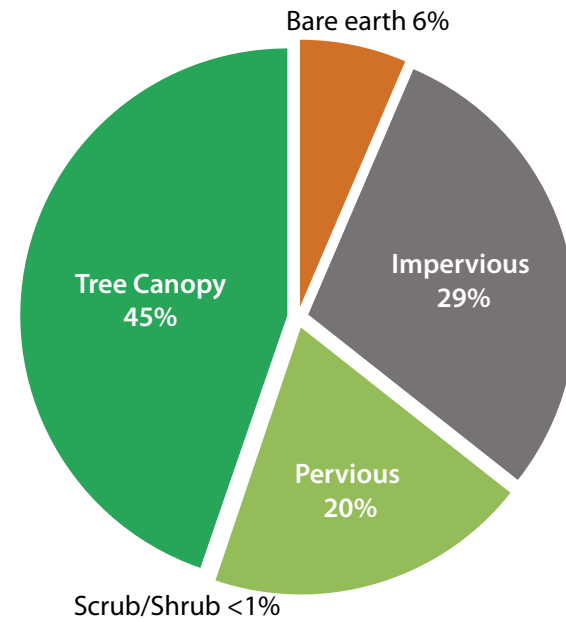
Potential Canopy Area (PCA)

Canopy Analysis Maps and Findings



One mature tree can absorb thousands of gallons of water per year.

Hopewell Land Cover



The Tree Canopy Analysis has been used to plan the City's target tree canopy goal and will act as a benchmark to gauge the future status of the City's tree canopy. An ArcGIS geodatabase with digital shape files produced during the study has been provided to the City.

In addition, the City received tree canopy statistics for the following areas:

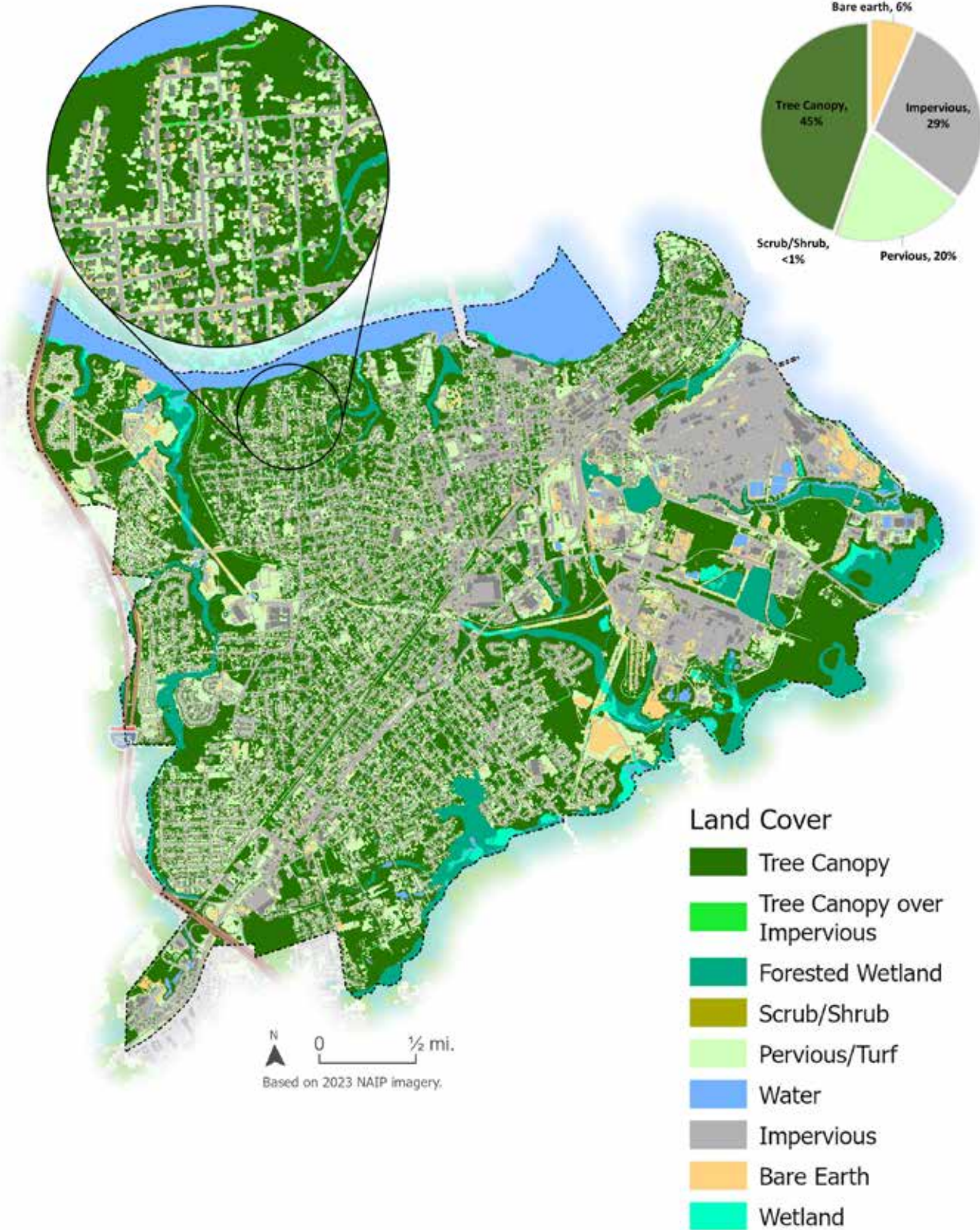
- Streets
- Parks
- Schools
- Subdivisions
- Census Block Groups
- Watersheds

The Tree Canopy Analysis can inform tree planting decisions to meet many goals, such as walkability, greenhouse gas emission reduction, energy savings, urban heat reduction, and economic revitalization.

The following pages contain Hopewell's Tree Canopy Analysis Maps.

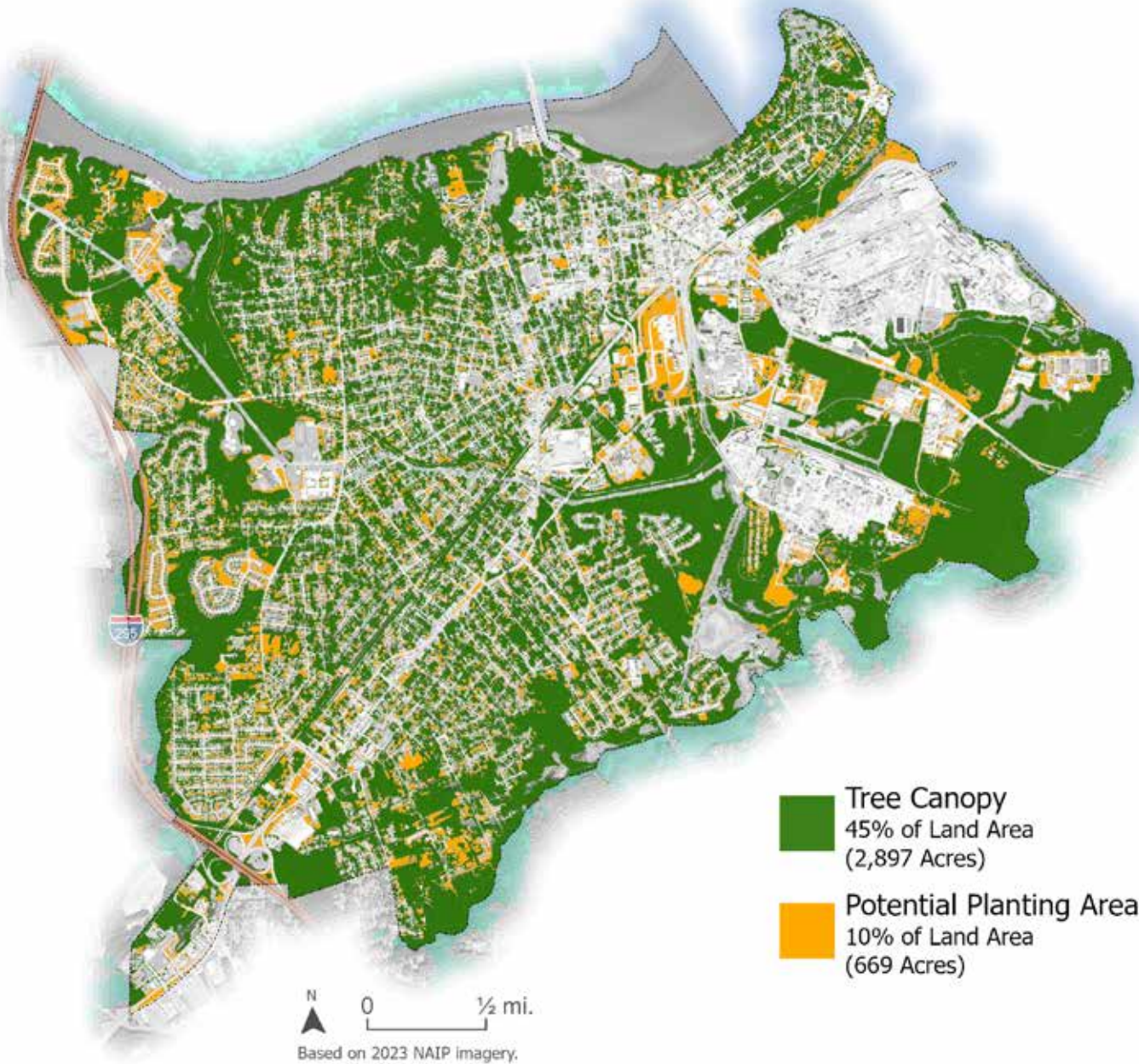
City Land Cover

GIC classified nine land cover types for the City of Hopewell from 2023 NAIP aerial imagery.



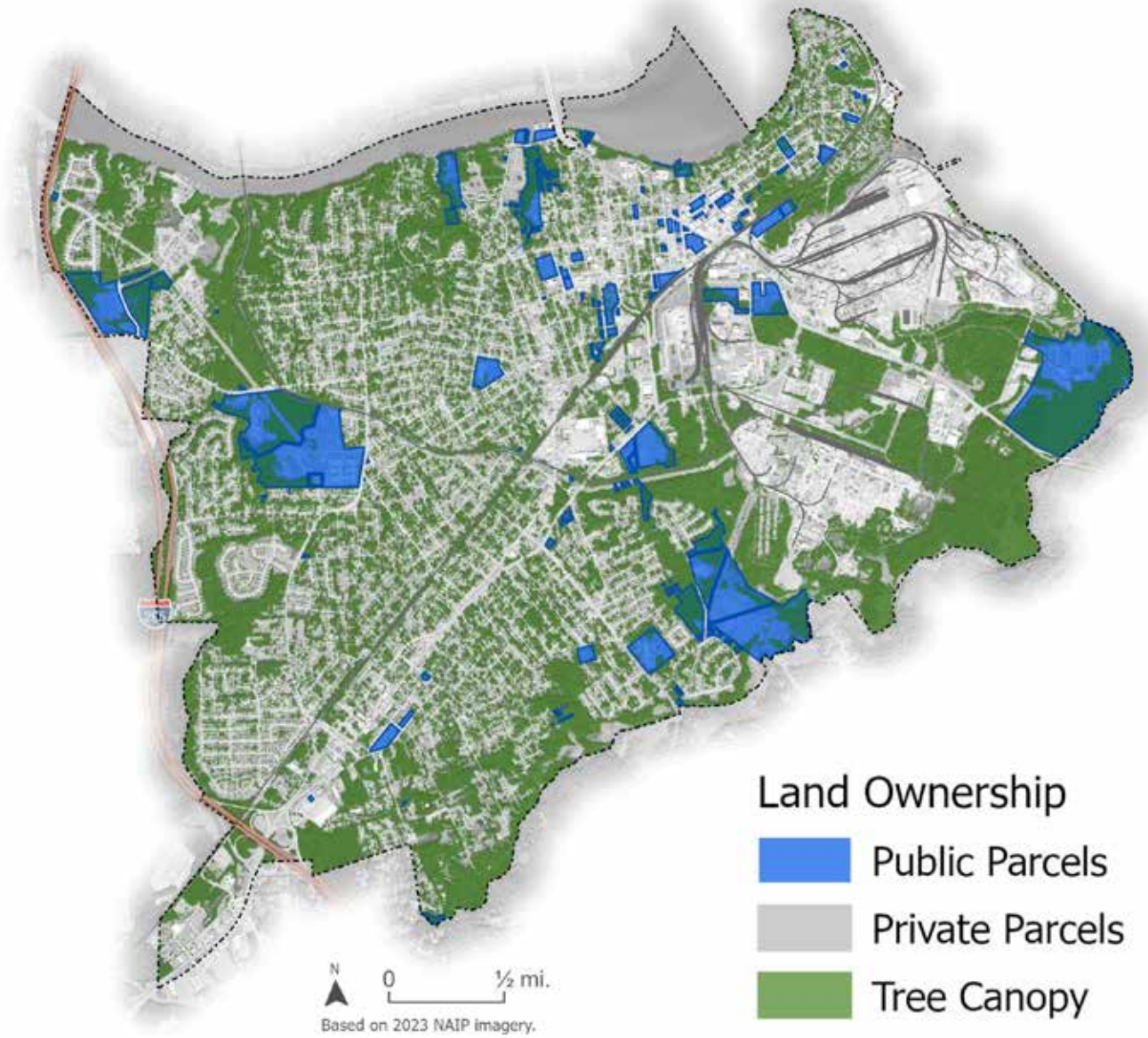
City Tree Canopy and Potential Planting Areas

Existing tree canopy (green) and potential planting area (orange) were determined based on land cover data and input from the City. Potential planting areas (PPA) depict areas where it may be possible to plant trees. All sites would need to be confirmed in the field prior to planting. The map shows PPA on both private and public lands.



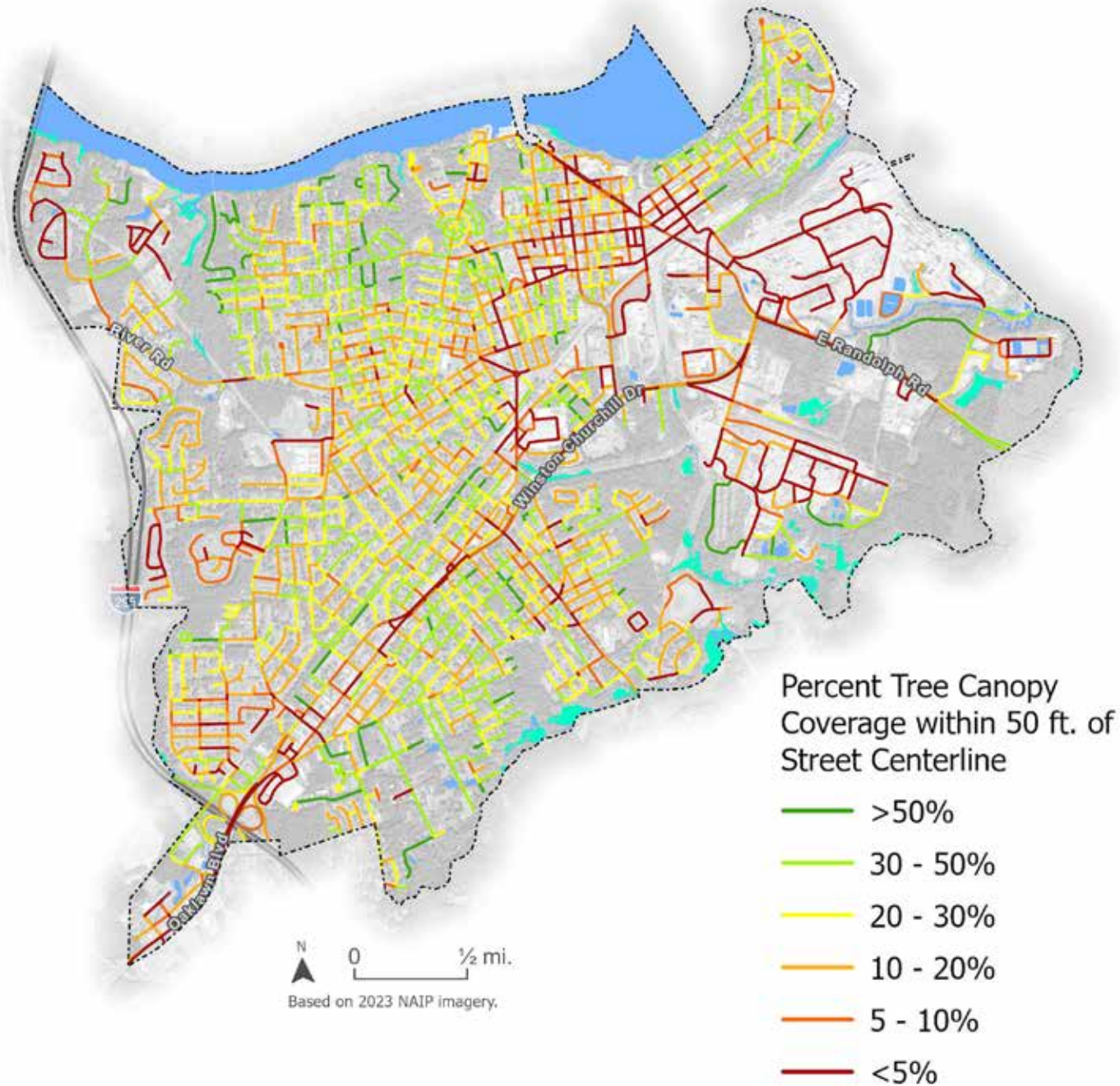
Public and Private Land

Publicly owned land makes up about 9%, while privately owned land makes up about 91% of the total land in a city. This map shows a breakout of public and private land in Hopewell. To successfully meet Hopewell's tree canopy goal of maintaining a no-net-loss of tree canopy (45%), preserving existing trees and planting new trees must occur on both public and private land.



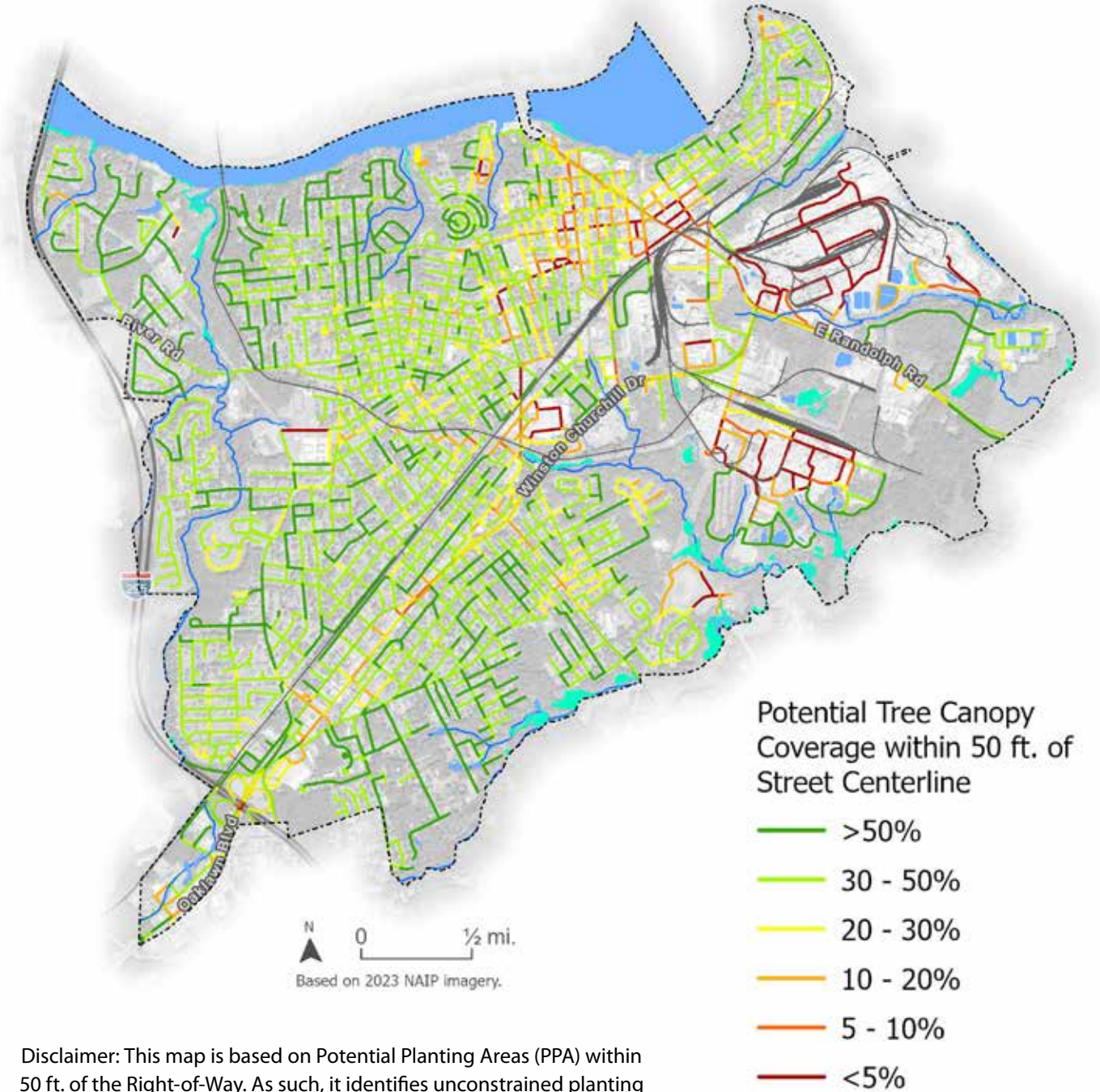
Existing Tree Canopy Coverage Along Streets

Streets that have the most canopy (dark green) and those that have the least canopy (red). Streets that lack good tree coverage can be targeted as appropriate for planting to facilitate specific City goals, such as safe routes to school or beautifying a shopping district.



Potential Tree Canopy Coverage Along Streets

If all potential planting areas within 50 ft. of every road's center line were planted, this is what the canopy coverage along streets would look like.



Disclaimer: This map is based on Potential Planting Areas (PPA) within 50 ft. of the Right-of-Way. As such, it identifies unconstrained planting sites based on the best available GIS data, meaning that existing underground tree wells or narrow landscape strips (under 6 ft.) are not included in this analysis. As with the overall PPA map, it does not account for utilities, and all locations must be field verified.

Tree Canopy Coverage by Park

Tree canopy for each City park. Parks with trees promote physical and mental health and provide shaded areas for children to play.

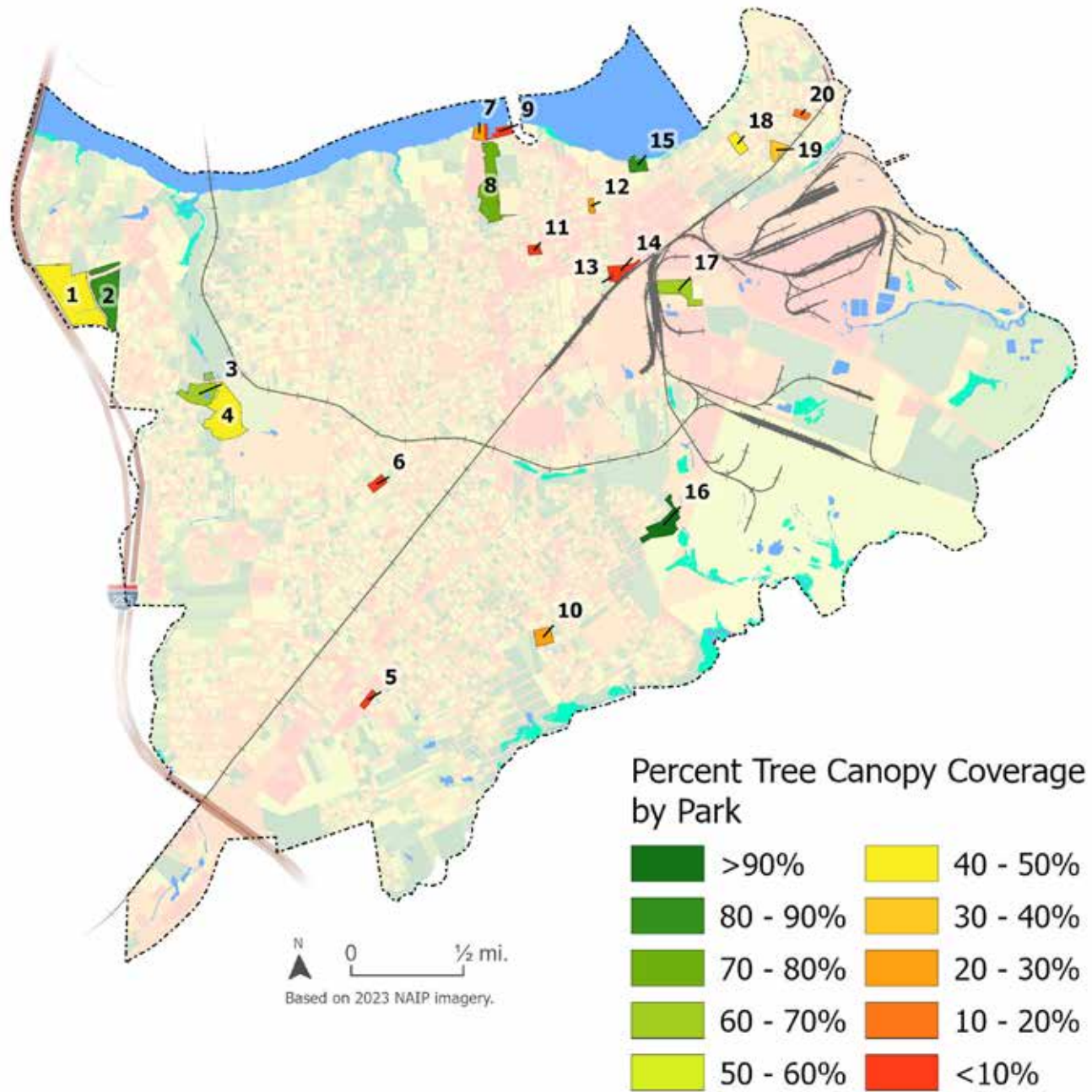


Table 1. Hopewell City Parks

Mapcode #	Name	Address	Percent Tree Canopy (Current)	Potential Tree Canopy Coverage	PPA Acres	Small Trees That Could Be Planted	Large Trees That Could Be Planted	Total Potential To Plant Trees
1	Atwater Soccer Complex	200 Atwater Rd	46%	76%	7.06	371	387	758
2	Atwater Park	101 Atwater Rd	85%	96%	1.30	118	74	192
3	Crystal Lake	3502 River Rd	61%	81%	1.18	102	69	171
4	Mathias Park	3500 River Rd	42%	49%	0.82	71	47	118
5	Woodlawn Park	3509 Boston St	7%	8%	None	None	None	None
6	Westwood Park	501 Jefferson Ave	7%	7%	None	None	None	None
7	Riverside Harbor Park	910 N 21st Ave	22%	42%	0.25	28	15	43
8	Riverside Park	500 N 12th Ave	73%	79%	0.80	26	49	75
9	City Marina	1051 Riverside Ave	6%	22%	0.24	36	13	49
10	Arlington Park	2700 Courthouse Rd	26%	68%	1.16	64	60	124
11	Union Hall Park	905 W Poythress St	7%	97%	1.29	24	70	94
12	3 1/2 Street Park	400 N 3 1/2 Ave	20%	20%	None	None	None	None
13	Skate Park	107 City Point Rd	2%	68%	0.24	14	8	22
14	Community Center	100 City Point Rd	5%	32%	0.62	59	31	90
15	City Park	205 Appomattox St	83%	94%	0.25	23	12	35
16	King Court Park	1900 Waverly St	95%	98%	0.21	12	13	25
17	Davisville Park	211 Rev C W Harris St	67%	90%	1.71	28	97	125
18	Union Fort	700 Appomattox St	41%	64%	0.56	59	28	87
19	Heritage Gardens	900 E Broadway	32%	92%	1.50	71	83	154
20	Virginia Avenue Playground	1000 Diamond St.	0%	75%	1.4	16	85	101

Tree Canopy Coverage by School

Planting at school sites can save energy costs for cooling and boost student concentration and learning.

Exposure to green spaces for 20 minutes a day can improve childrens' cognitive function.

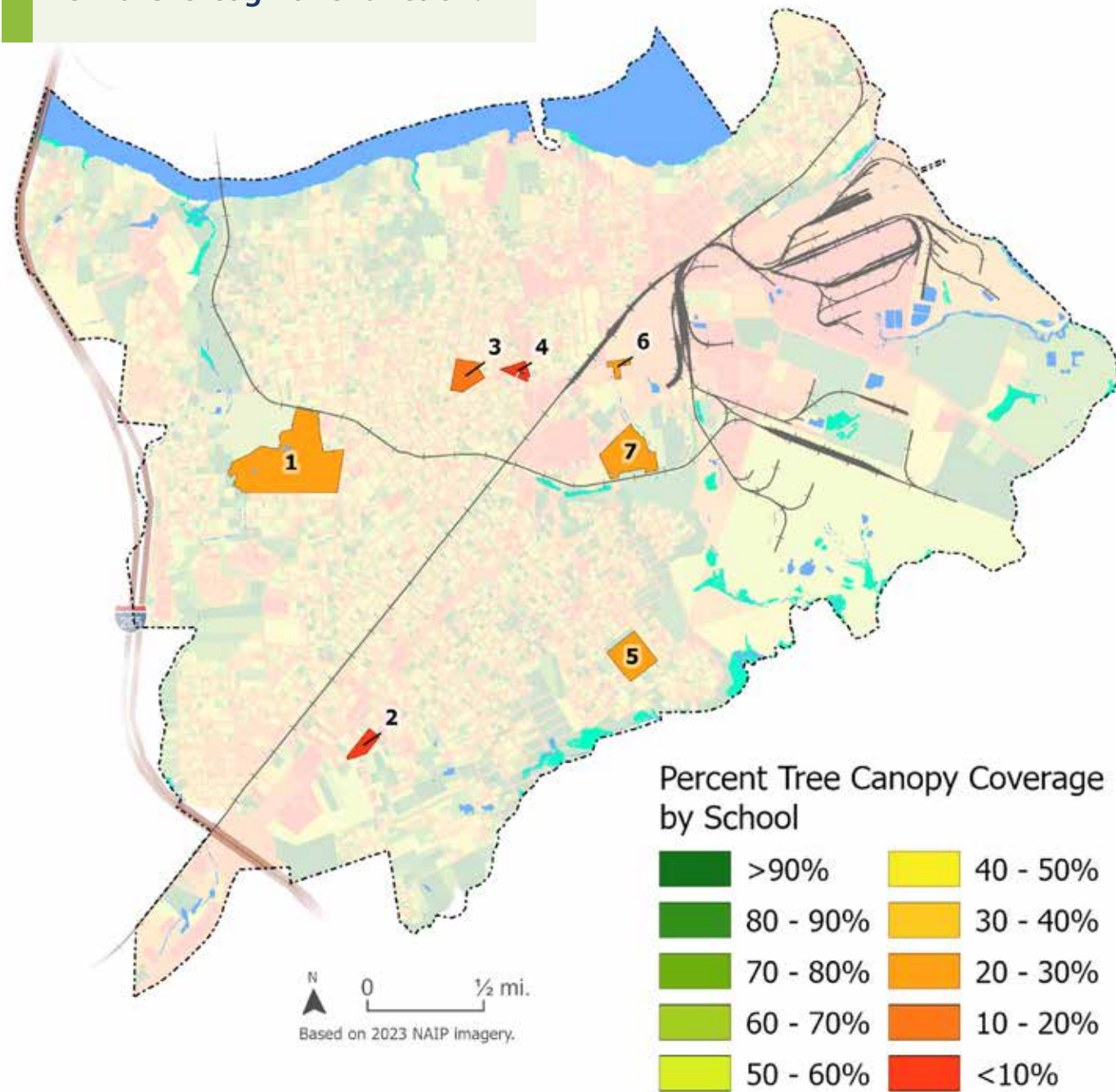


Table 2. Hopewell City Schools

Mapcode #	Name	Percent Tree Canopy (Current)	Potential Tree Canopy Coverage	PPA Acres	Small Trees That Could Be Planted	Large Trees That Could Be Planted	Total Potential To Plant Trees
1	Hopewell High School and Patrick Copeland Elementary	23%	39%	7.49	501	423	924
2	Woodlawn Learning Center	10%	30%	0.73	46	37	83
3	Dupont Elementary	15%	32%	1.10	111	58	169
4	West End Christian	6%	26%	0.55	38	30	68
5	Harry E. James Elementary	30%	52%	2.40	211	137	348
6	Lead Center	29%	60%	0.49	46	31	77
7	Carter G. Woodson Middle	22%	49%	4.14	296	218	514



There is room for more trees to be planted at Hopewell High School.

Tree Canopy Coverage by Subdivision

Plantings in subdivisions with lower tree canopy expand the benefits of trees in communities where there is more need for trees.

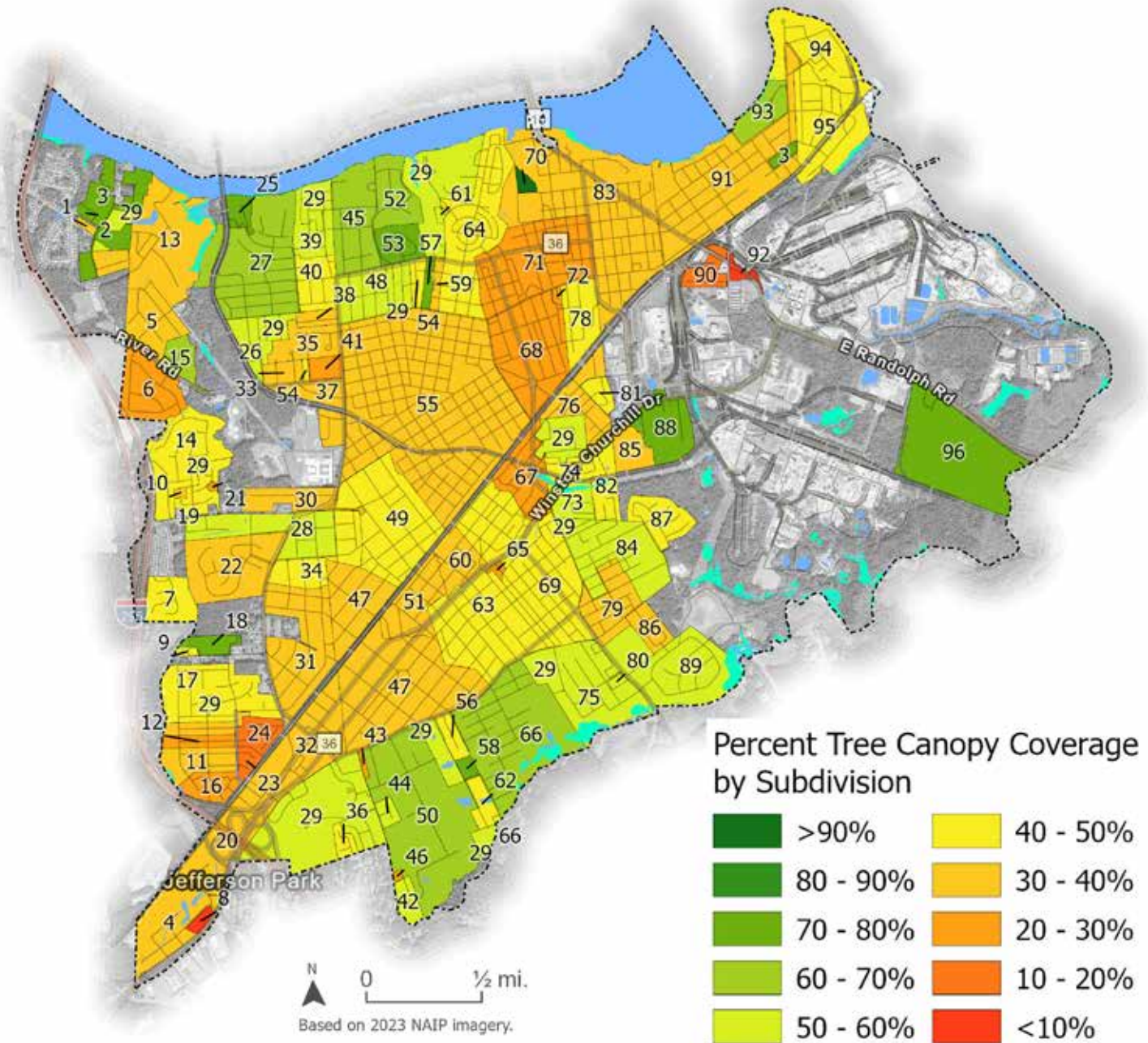


Table 3. Hopewell Subdivisions

Mapcode #	Name	Percent Tree Canopy (Current)	Percent Tree Canopy (Potential)	Potential Planting Area (Acres)	Total Potential Trees To Plant
1	Tusculum Forest	30%	94%	0.3	27
2	Atwater	74%	62%	0.3	35
3	Broadway	71%	66%	4.1	515
4	Crossings	37%	78%	2.7	449
5	Prince George Court	38%	96%	7.4	1041
6	Pleasant Hill	30%	81%	9.0	1348
7	Parkview Farm	47%	59%	4.3	554
8	Boulevard Heights	5%	71%	0.2	38
9	R B Moody	46%	84%	0.5	61
10	Jackson Home Place	34%	73%	0.4	59
11	Colonial Manor	40%	65%	4.4	759
12	Fieldstone	29%	67%	1.6	242
13	Anchorpoint	38%	91%	17.0	1747
14	Shady Oaks	49%	59%	5.9	999
15	River Road Park	61%	64%	2.6	363
16	Canterbury	28%	52%	2.5	348
17	Kippax Estates & Farms	42%	66%	7.4	1318
18	Joy Fellowship	75%	36%	1.2	104
19	Planters Mill	43%	54%	1.9	344
20	Columbia Park	33%	53%	6.5	802
21	City Creek	23%	53%	0.4	56
22	Cobblestone	38%	39%	11.4	1332
23	Cambridge Estates	17%	80%	1.2	187
24	Herticks Heights	18%	15%	3.4	475
25	Laurel Ridge	79%	83%	0.8	92
26	Edwin Sims Property	52%	64%	1.9	249
27	Appomattox Heights	63%	39%	5.5	977
28	Forest Hill	54%	62%	5.5	827
29	Miscellaneous Acreage	54%	60%	25.1	3249
30	Sunset Hills	38%	46%	3.2	547
31	Farmingdale	38%	45%	10.0	1604
32	Cedar Level	31%	51%	12.4	1437

Table 3. Hopewell Subdivisions *(continued)*

Mapcode #	Name	Percent Tree Canopy (Current)	Percent Tree Canopy (Potential)	Potential Planting Area (Acres)	Total Potential Trees To Plant
33	Norman Phillips Property	39%	57%	1.7	269
34	Elder Manor	47%	46%	4.0	685
35	Westmoreland	33%	79%	5.9	703
36	Autumn Woods	50%	50%	0.4	69
37	Buren Gardens	38%	63%	4.2	651
38	Kenilworth	36%	57%	1.3	178
39	Mansion Terrace	51%	56%	2.4	373
40	Broadway Crest	48%	65%	2.4	449
41	Holman	27%	57%	3.0	302
42	Stratford Woods	50%	66%	1.9	357
43	James Bennett Estates	25%	50%	0.2	41
44	Huntington	56%	63%	0.6	117
45	Mansion Hills	64%	85%	5.0	786
46	Spring Woods	26%	23%	0.2	37
47	Woodlawn	34%	64%	23.1	3601
48	Crescent Hills	55%	34%	2.6	429
49	Westwood Park	44%	37%	13.2	1957
50	Roselawn	66%	57%	27.0	3038
51	Kenwood Heights	39%	58%	3.2	528
52	Mansion Hills	64%	56%	2.4	387
53	Westover Hills	73%	66%	0.9	175
54	Mitchell's	48%	73%	0.9	142
55	Battleground	37%	75%	30.4	5152
56	Piner	40%	80%	1.4	190
57	Woodland	71%	25%	0.4	71
58	Duvall Estates	71%	71%	0.2	51
59	Battery Park	38%	66%	0.5	82
60	High Point	39%	64%	3.0	440
61	Woodbine Court	54%	59%	0.1	27
62	Hanks	46%	60%	2.2	304
63	West Hopewell	46%	72%	12.7	2099
64	Dolin	42%	59%	7.9	1194

Table 3. Hopewell Subdivisions *(continued)*

Mapcode #	Name	Percent Tree Canopy (Current)	Percent Tree Canopy (Potential)	Potential Planting Area (Acres)	Total Potential Trees To Plant
65	Churchill Court	26%	61%	0.2	39
66	Belmont	70%	24%	7.7	1267
67	Hopewell Heights	29%	53%	2.3	396
68	Buren	28%	75%	6.5	1003
69	Dupont Annex	41%	64%	6.9	1205
70	National View	91%	81%	0.0	5
71	Day	27%	72%	6.6	928
72	Moody	24%	89%	0.2	32
73	Arlington Court & Heights	59%	73%	0.7	107
74	B Plant Heights	44%	53%	1.4	218
75	Dupont Gardens	50%	59%	8.2	1206
76	Highland Park	39%	53%	3.0	418
78	Hopewell Park	43%	40%	3.0	471
79	Washington Heights, Court, & Plaza	37%	58%	4.4	662
80	William Brown Estate	52%	72%	0.3	48
81	Hyatt Industrial Park	50%	68%	1.1	131
82	Oak Hill & Oak Ridge Park	48%	89%	2.1	285
83	B Village	33%	66%	13.2	2065
84	Virginia Heights	59%	24%	5.1	851
85	South Hopewell	31%	77%	3.4	403
86	Lincoln Park & Square	35%	46%	2.0	323
87	King Court	46%	89%	1.1	224
88	South B Village	74%	63%	1.2	195
89	Rosedale	51%	53%	5.3	871
90	Industrial Area	11%	54%	1.2	166
91	West City Point	36%	56%	9.3	1467
92	East Davisville	9%	47%	0.4	61
93	Appomattox	61%	44%	2.4	363
94	City Point	41%	59%	4.0	575
95	A Village	43%	56%	8.8	1230
96	Wilson Industrial Park	72%	51%	6.8	929

Calculating Environmental Benefits

Stormwater Uptake

Trees and forests are the best land cover for taking up urban stormwater and are recognized as such by forestry scientists and civil engineers (Kuehler 2017, 2016). Tree canopy stormwater interception varies from 100% at the beginning of a rainfall event to about 3% at maximum rain intensity (Xiao et al. 2000).

Trees help capture and filter stormwater runoff. The Trees and Stormwater (TSW) Tool, developed by the GIC, estimates the stormwater interception, infiltration, and runoff of different land cover types. This methodology uses a modified version of the "curve number" approach, originally developed by the Natural Resources Conservation Service (NRCS), which factors in impacts of hydrologic soil groups, land cover types, hydrologic condition, and design/management practices that impact runoff. The modified TR55 curve numbers (CN) provided by GIC include a factor for canopy interception. This approach allows for more detailed assessments of stormwater uptake based on the landscape conditions of the City's forests. It distinguishes whether the trees are within a forest, a lawn setting, a forested wetland, or over pavement, such as streets or sidewalks. This is because the conditions and the soils in which the tree is living affect the amount of water the tree can intercept. For more about this methodology, please visit: <https://gicinc.org/projects/resiliency/trees-and-stormwater/>

The GIC used its TSW Tool to model stormwater and pollution reductions by the City's tree canopy. The model shows that,

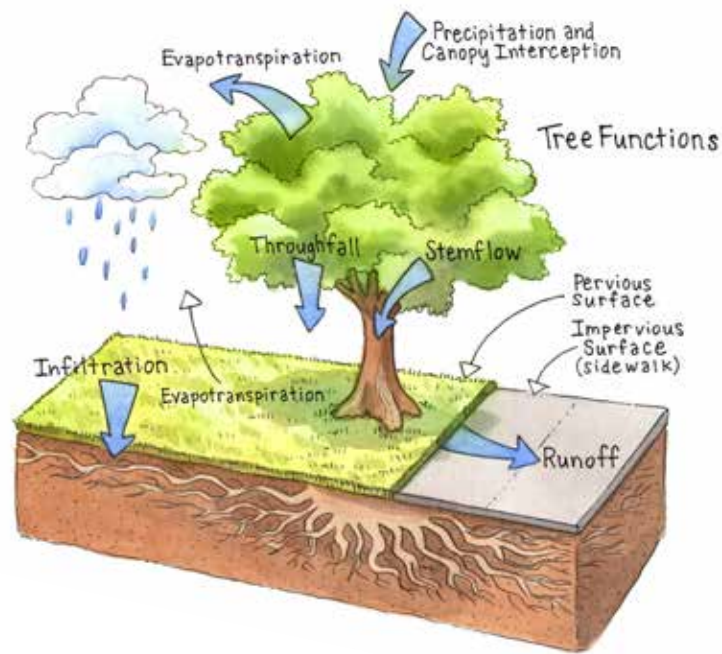


Lawn trees in a park soak up more stormwater than trees over pavement.

during a 10-year/24-hour rainfall event (5.14 inches), trees take up 27.7 million gallons of runoff, or about 42 Olympic swimming pools of water. Hopewell's trees capture:

- 21,586 nitrogen lbs. annually
- 1,758 phosphorus lbs. annually
- 1,200 sediment tons annually

The TSW Tool takes into account the interaction of land cover and hydrologic soil conditions within each watershed. The TSW Tool can also be used to run 'what-if' scenarios, specifically losses of tree canopy from development or storm damage, or increases in tree canopy from additional tree planting at the watershed scale.



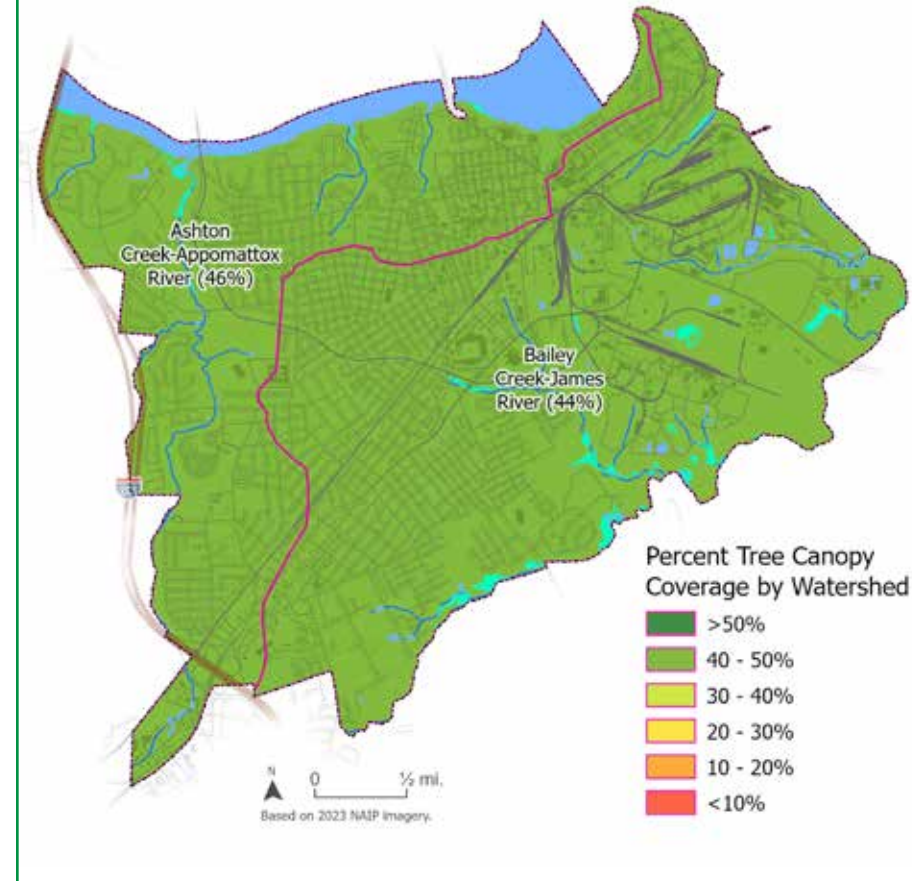
Tree Canopy Coverage by Watershed

The conditions under and around a tree, such as the size of its planting box, the amount and type of open space, surface soils, drainage, and root spread, affect the infiltration of water. The TSW Tool uses plantable open spaces to determine how many more trees could be planted and how much additional nitrogen, phosphorus, and sediment pollutants new trees and their surrounding soils could absorb.

Removal of mature trees and existing forest results in the greatest increase in stormwater runoff. As more land is developed, the City should maximize tree conservation and encourage new tree plantings to maintain surface water quality and groundwater recharge. The following maps use soil types and tree cover to show the areas where it is most important to retain trees for stormwater uptake and areas where tree planting will have the most benefits for stormwater uptake.

Tree Canopy Coverage by Watershed

The City can use the TSW Tool for running scenarios and setting goals at the watershed scale, for planting trees, and for evaluating consequences of tree loss, as it pertains to stormwater runoff.



Forests are the best land cover type for stormwater uptake.



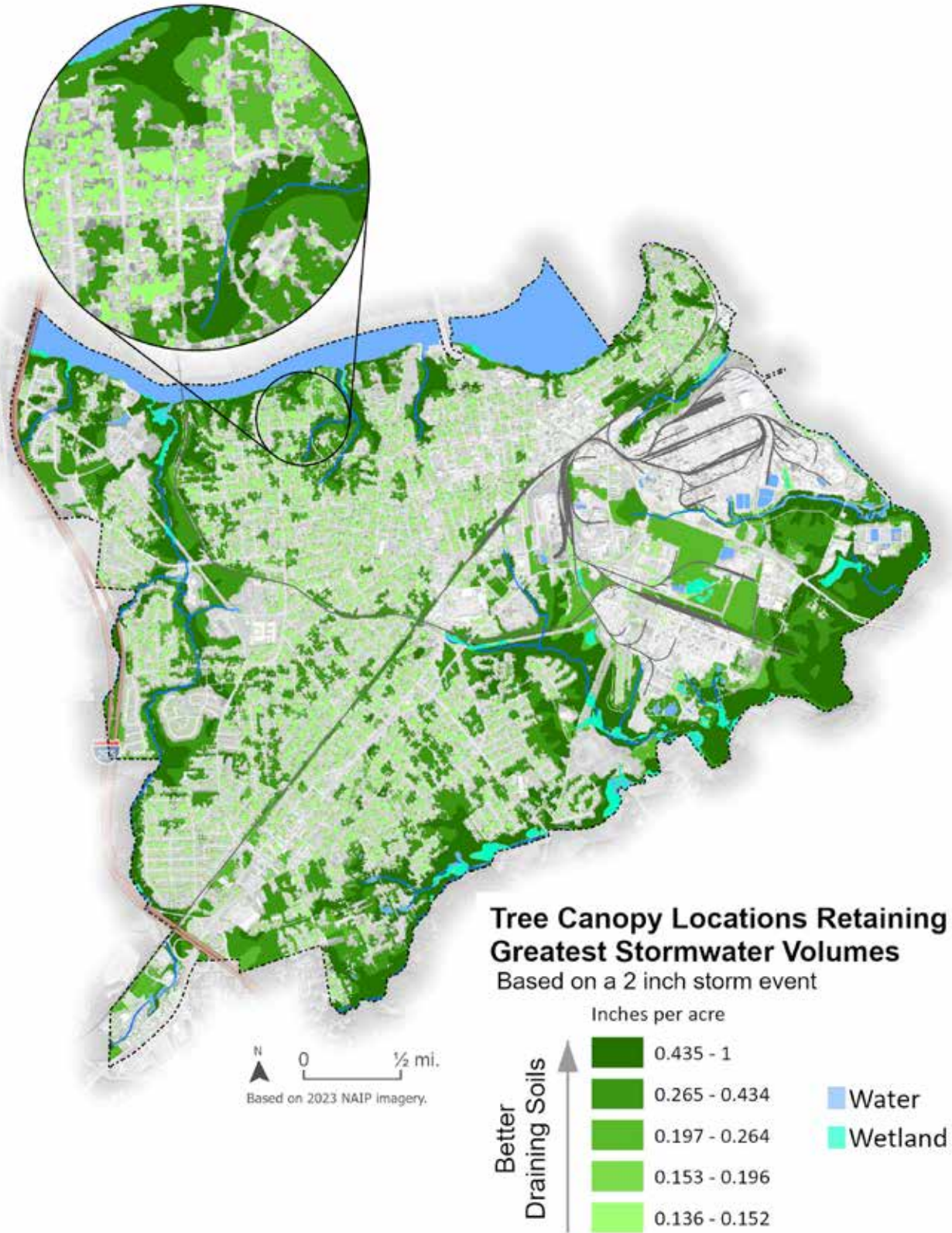
The TSW tool is for seeing the stormwater impacts of adding or losing tree canopy and the resulting pollution increases or decreases.

Area	Current Conditions				Potential Conditions				Pollution Load (lbs/yr)															
	Current Tree Cover	Current Impervious Cover	Tree H2O Capture	Increased H2O Infiltration	Added H2O Capture	Reduced Tree Cover from loss and gain	Flow in Event	Risk Assessment	Corrected Level	Canopy Added	% of PCA achieved	N (lbs/yr)	N (TOD)	P (lbs/yr)	P (TOD)	SED (lbs/yr)	SED (TOD)	N (lbs/yr)	N (TOD)	P (lbs/yr)	P (TOD)	SED (lbs/yr)	SED (TOD)	
Ashton Creek-Appomattox River	46.0%	26.3%	2.7	46%	46%	46%	10,240 gal	Low	Low	10,240 gal	100%	1,000	1,000	100	100	100	100	100	100	100	100	100	100	100
Bailey Creek-James River	44.0%	19.5%	8.1	44%	44%	44%	10,240 gal	Low	Low	10,240 gal	100%	1,000	1,000	100	100	100	100	100	100	100	100	100	100	100

The TSW Tool allows the City to model water uptake by the existing canopy and impacts from changes, whether positive (adding trees) or negative (removing trees).

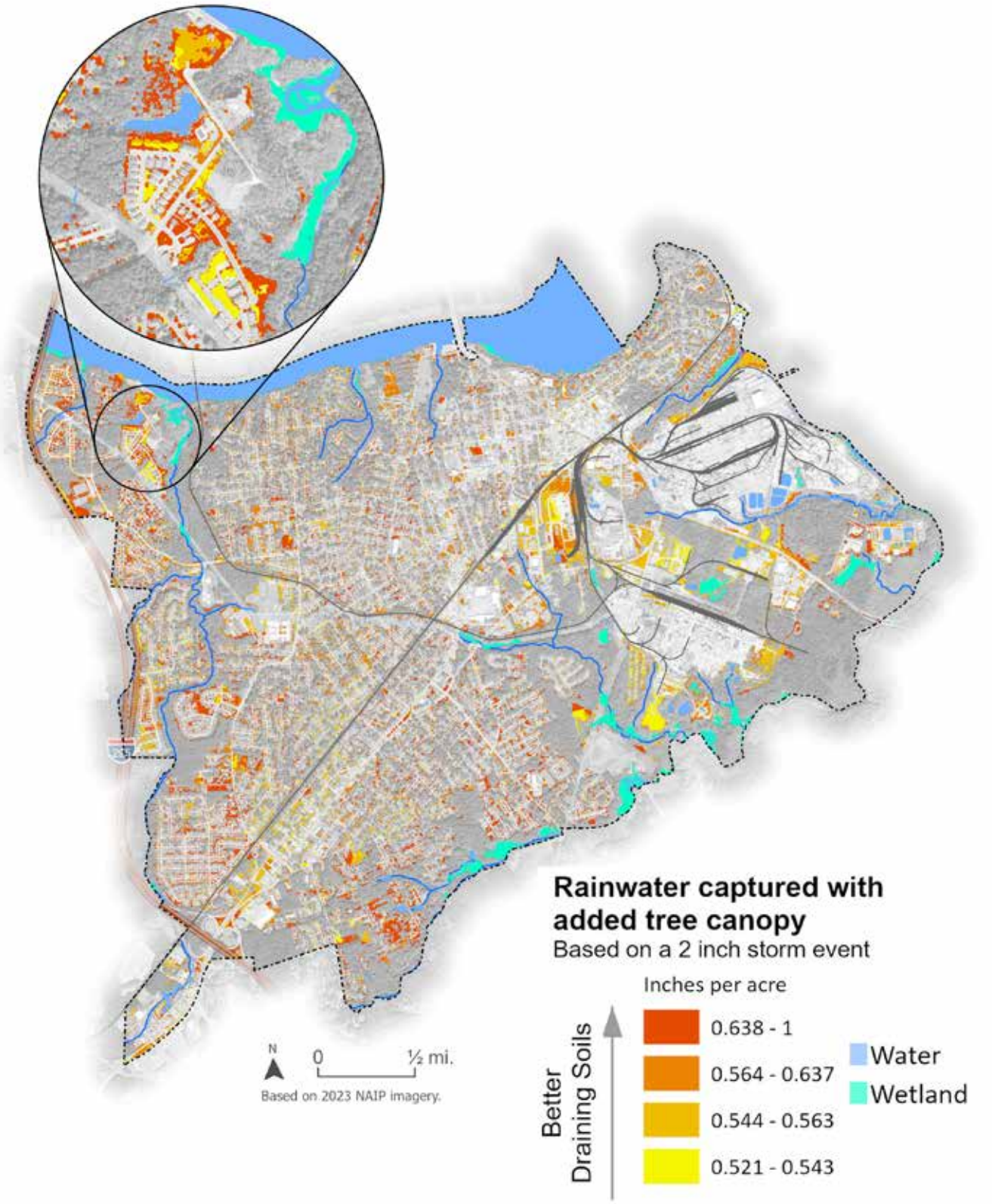
Best Tree Canopy to Save for Stormwater Infiltration

The TSW Tool was applied to map the locations where tree conservation will result in the greatest amount of stormwater capture and infiltration (dark green).



Best Tree Planting Locations for Stormwater Infiltration

The TSW Tool was applied to map locations where planting trees will result in the greatest amount of stormwater capture and infiltration (red).



Air Quality

Air pollution removal values were calculated by applying the pollution removal values for each acre of tree cover from the i-Tree model. i-Tree is a peer-reviewed software suite from the USDA Forest Service that provides urban and rural forestry assessment tools.

Trees mitigate climate change by storing carbon in their tissue and sequestering atmospheric carbon from carbon dioxide (CO₂) in new tree growth. Current trees in the city are storing

91,776 metric tons of carbon that would otherwise accumulate in the atmosphere and further exacerbate climate change. Trees also capture particulate matter, ground-level ozone (O₃), nitrogen dioxide (NO₂), and sulfur dioxide (SO₂) from the air, resulting in better air quality and healthier neighborhoods. This is especially significant to community health in Hopewell due to the prevalence of industrial plants in the City. Trees bordering these industrial complexes can filter out the pollutants produced and clean the air around the surrounding neighborhoods.

Air pollution and greenhouse gases removed annually by trees in Hopewell						
CO (carbon monoxide)	NO ₂ (nitrogen dioxide)	O ₃ (ozone)	PM ₁₀ (particulate matter 10 microns)	PM _{2.5} (particulate matter 2.5 microns)	SO ₂ (sulphur dioxide)	C seq (carbon sequestered)
1,269 lbs	4,017 lbs	53,821 lbs	8,301 lbs	2,329 lbs	3,415 lbs	13,063 Metric Tons



Investments in canopy at the neighborhood level can improve the respiratory health of residents.

Well-treed neighborhoods have cleaner air and lower rates of asthma in young children.

Image provided by Sass and Frass Photography

Urban Heat and Equity

Urban heat is a growing concern as extreme heat continues to increase in Virginia with the changing climate. In Hopewell, the number of days above 100°F is projected to rise from the historic average of 19 per year to 95 per year by the year 2070 (see *Extreme Heat table at right*). To reduce temperatures, the City can plant trees to cool the landscape. Inequities in the distribution of tree canopy and opportunities to correct them can be identified through tree canopy data, surface temperature data, and U.S. Census data that provides race and income statistics.



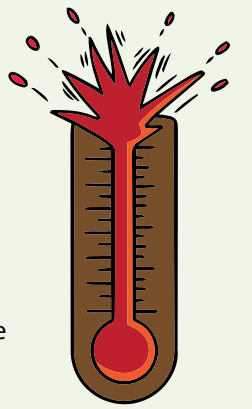
Trees providing shade in downtown Hopewell.

What is tree equity?

Tree equity ensures all communities have access to the benefits that trees provide. Areas that have been under-resourced, having fewer trees and more heat than the rest of the city, are the focus of tree-planting efforts.



How much hotter is your hometown now than when you were born?



This interactive online tool allows a user to put in their hometown and birthdate to see how their hometown has changed since then and how much hotter it may get. The tool provides the average number of days over 90°F.

<https://www.nytimes.com/interactive/2018/08/30/climate/how-much-hotter-is-your-hometown.html>

Extreme Heat

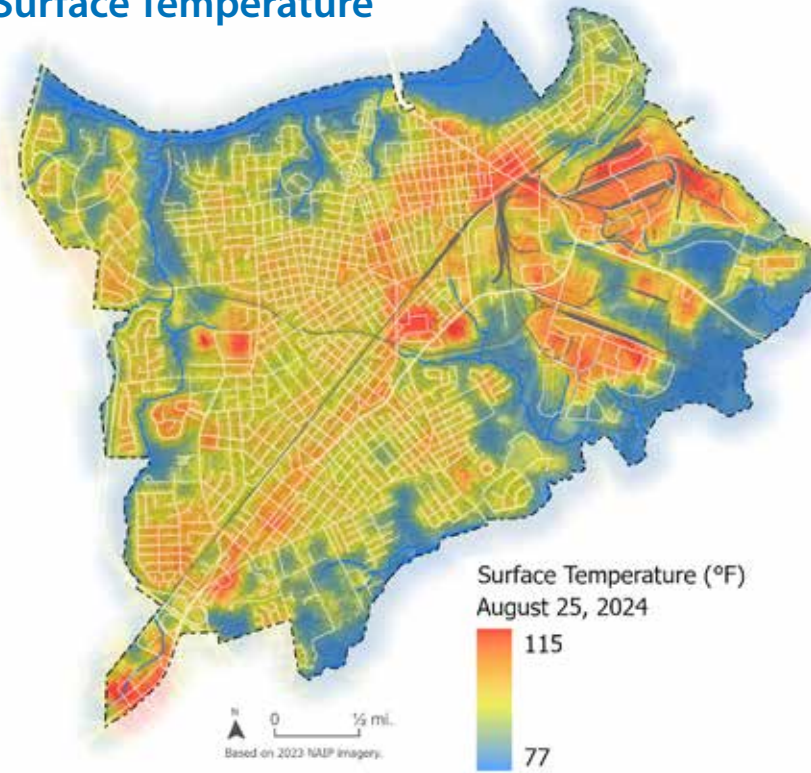
Average days per year with temperatures over 100°F

Where we are now	Where we are currently headed		If bold action is taken
Historically 1971-2000	Midcentury 2036-2065	Late Century 2070-2099	Extreme heat limited to
19 days	66 days	95 days	53 days

In this table "bold action" refers to reductions in greenhouse gases through energy conservation. It does not consider the effects of planting more trees. Source: Union of Concerned Scientists. 2019, *Killer Heat Interactive Tool*.

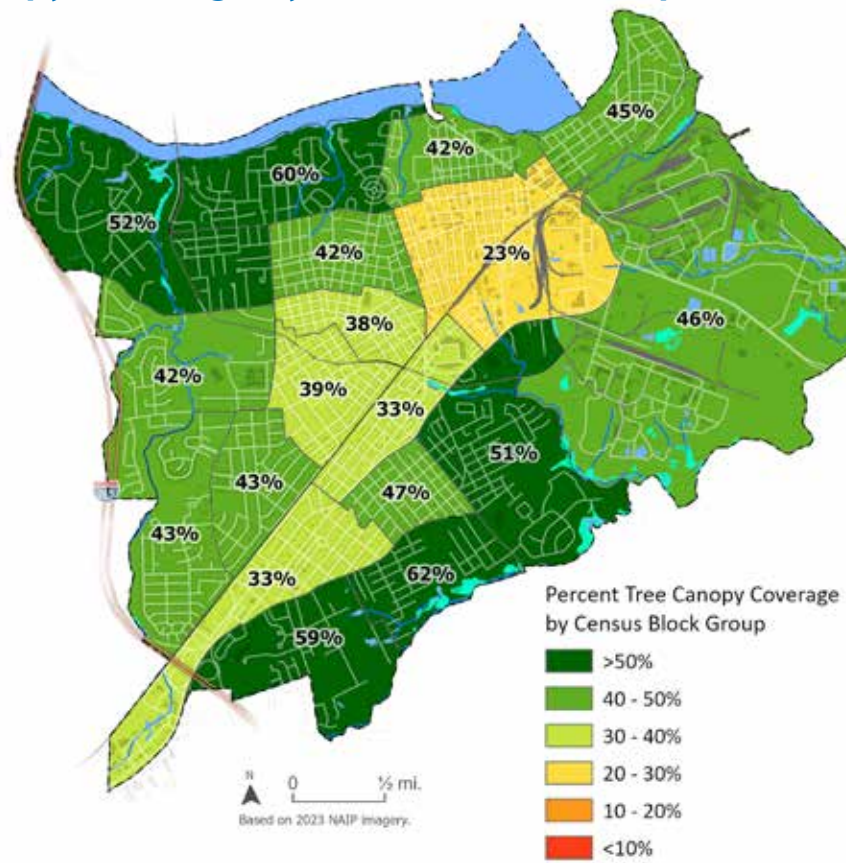
Surface Temperature

The surface temperature map captures the hottest to coolest places in the city on a typical summer day.



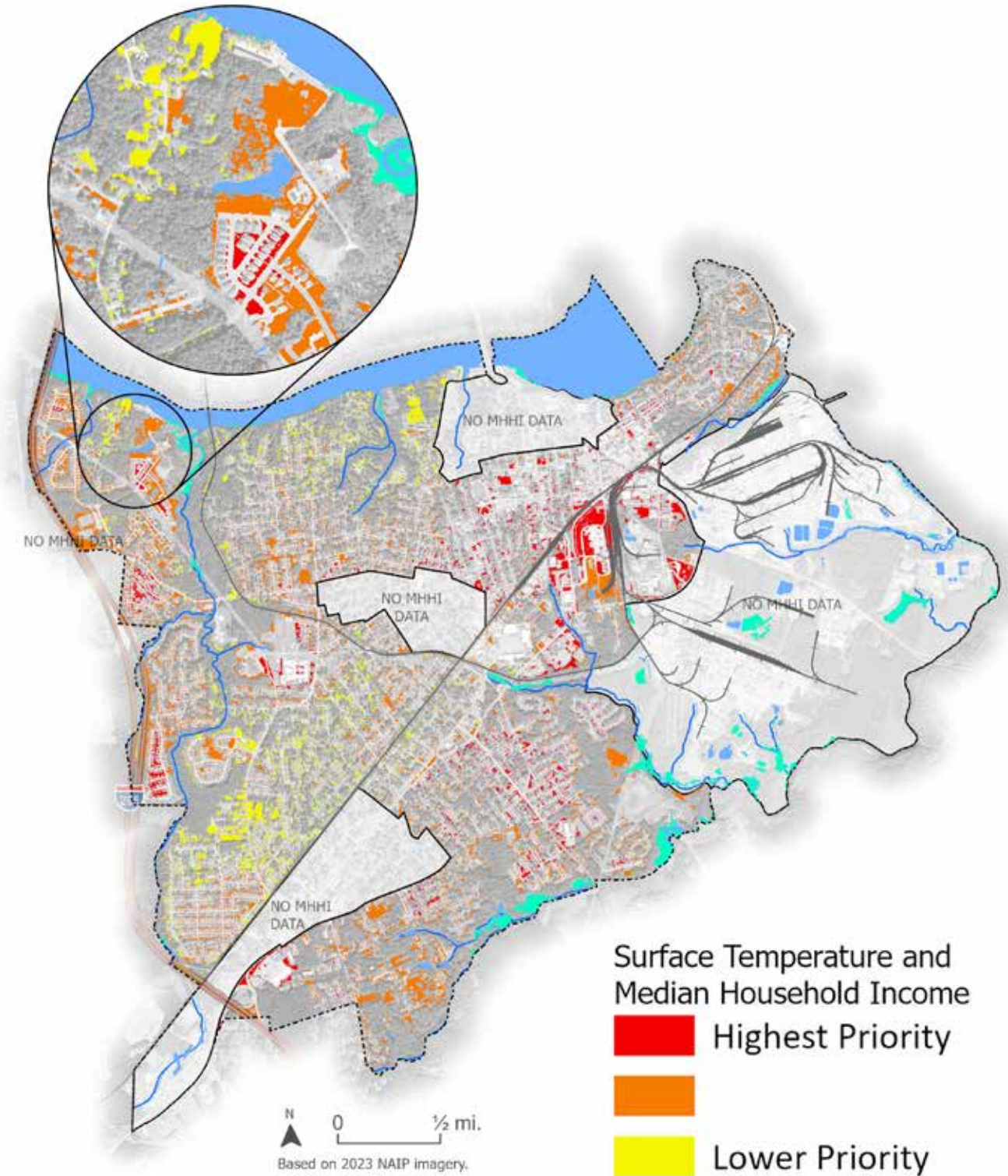
Tree Canopy Coverage by Census Block Group

Tree canopy cover percentages by Census Block Group. By combining U.S. Census and tree canopy data, the City can identify equity-based tree planting opportunities.



Heat and Income Priority Tree Planting Locations

This map uses surface temperature data and median household income data to prioritize potential tree planting areas. Areas labeled "No MHHI Data" means that no median household income data was provided for that census block group.



Planning and Engagement Process

The City of Hopewell and the GIC partnered in a year-long effort to create this Strategic Tree Canopy Plan. The advisory committee made up of representatives from City staff and local community partners met to discuss priorities. They engaged in a series of eight workshops from spring of 2024 to spring of 2025 to evaluate tree canopy cover, determine plantable areas, set a canopy goal, and evaluate policies and practices that support tree canopy cover. To share this information with the public, the City maintained a project website (www.hopewellva.gov/trees) where workshop materials, event information, and maps were published.

Maps beginning on page 17 show the results of the Tree Canopy Analysis. An assessment of the ecosystem services provided by City trees included:

- A stormwater analysis
- A surface temperature map
- An air quality analysis

Results of these analyses are found on pages 26-33. They were then used to identify opportunities to maximize benefits from future tree planting and retention. In addition, GIC staff conducted a code and ordinances audit to evaluate the impact of City policies and ordinances on trees, tree care, and tree protection. The audit, developed by GIC and used across the U.S., shows which policies contribute to a healthy tree cover and which lead to excessive imperviousness and less green space. Results of the audit were used to inform the final tree canopy cover strategies.

Advisory Committee

During the planning process, a Tree Canopy Advisory Committee was established. This committee consisted of representatives from several City departments, including Stormwater Management, Planning & Development, Recreation & Parks, Economic Development and Tourism, and Communications/Media. Community partners included the Crater Planning District Commission, Chesapeake Bay Foundation, Keep Hopewell Beautiful, and other local community groups. Committee members attended workshops and check-in meetings throughout the planning process and assisted with event organization, information gathering, and a public open house event. The advisory committee also



Advisory committee member, Kit Friedman, educates citizens on the importance of trees and clean air at the Downtown Hopewell Partnership's Farmers Market

reviewed the maps, data, and community input to develop the Strategic Tree Canopy Plan goal and strategies for Hopewell.

Community Partners

Throughout the planning process, the City and the GIC staff met with key community partners to discuss current initiatives and opportunities to work together for a healthier, greener city. Community partners provided support with input, stewardship, plantings, funding, and outreach. Community partner organizations included:

- AdvanSix
- Chesapeake Bay Foundation
- Crater Planning District Commission
- Friends of the Lower Appomattox River
- Hopewell City Public Schools
- Hopewell Downtown Partnership
- Hopewell Tree Stewards
- James River Association
- Keep Hopewell Beautiful
- Virginia Department of Forestry

Public Engagement

Community input and feedback are foundational to the *Strategic Tree Canopy Plan*. In addition to the planning work undertaken by the advisory committee, this planning process included public opportunities for learning, engagement, and feedback.

In March 2025, the Hopewell City Public Schools (HCPS) hosted the Family Resource GALA along with the HCPS Fine Arts Festival and Maker's Faire. The event took place at the Hopewell High School Gymnasium. The City of Hopewell, in partnership with the Virginia Department of Forestry, hosted a table that included Hopewell's tree canopy maps, tree educational material, the draft tree strategies, and questions for public input. In addition to the educational materials, the Department of Forestry offered several free trees for interested community members.

For further community outreach, the City displayed the tree canopy maps and questions for community input at the municipal building and community center. The displays were shown for a couple of months, providing passive community engagement for those unable to attend the GALA. During the spring and summer of 2025, GIC continued outreach and education by attending local festivals and community events.

- Hopewell Juneteenth Park Jam– June 21st
- Rivers and Roads Festival – September 12th
- Downtown Hopewell Farmers Market – various dates



Community members were shown Hopewell's tree canopy maps and asked where they would like to see more trees during the HCPS Family Resource GALA.

Summary of Community Findings

The City of Hopewell received important feedback on where to focus tree planting efforts and which goal and strategies to prioritize. This summary captures the feedback from the HCPS Family Resource GALA event and the passive poster board questions. Additional outreach at public events by the GIC reinforces the community findings captured here.

The following is a summary of public input, while a complete report of the findings can be found in Appendix C.

Q1: Where should more trees be planted?

There were five options for this question: parks, schools, streets/sidewalks, neighborhoods, and businesses. Schools and parks were noted as important for the public, with eight votes each. Streets and sidewalks received 7 votes, with additional comments noting a desire for planting trees near bus stops. Lastly, neighborhoods and businesses received 5 votes each.

Q2: Where would you like to see more trees (subdivisions)?

This question referred to areas on a subdivision map (in Appendix C). The subdivisions with the most votes were West City Point, Woodlawn, and Anchor Point, with three votes each. Cobblestone Neighborhood and Westwood Park had two votes each, and the remaining indicated on the map in Appendix C had one vote each.

Q3. Which six strategies do you find most important to achieve Hopewell's tree canopy goal?

The six objectives and their strategies were displayed on poster boards. Each voter was asked to place six dots on strategies they found the most important to prioritize. Overall, objectives regarding stewardship of publicly owned trees and encouraging more tree plantings on private property were the most popular. The objective regarding code updates had general support, but there was a lack of understanding regarding specific ordinances. This suggests that while community members would like to see more tree conservation, they are not aware of what ordinances exist and what details future ordinances should include.



Goal and Implementation Strategies

The City of Hopewell's goal is to maintain a no-net-loss of tree canopy coverage (45%) over the next 10 years.



Recent national data show urban and suburban tree canopy cover is trending downwards at a rate of **175,000 acres lost per year** – approximately 36 million trees lost annually (Nowack and Greenfield 2012). Trees are lost due to development, disease, storms, and old age. Hopewell is no exception. Fortunately, this loss can be reversed, and this plan outlines strategies to do so.

The City of Hopewell's goal maintain a no-net-loss of tree canopy coverage (45%) over the next 10 years.

Currently, Hopewell's urban tree canopy is 45%. The City's goal to maintain this tree canopy coverage over the next 10 years will require proactive tree planting and conservation of forested land during development. As development increases and mature trees decline, canopy will continue to decrease. For each acre of canopy cover lost, the GIC estimates 50 replacement trees will need to be planted (35 large trees and 15 small trees). The local government only owns around 9% of the total land in the city, so the GIC recommends planting at least 9% of the trees lost on city-owned land and working with the community to plant the remaining trees on private land. Since replacement trees are expensive and take many years to provide the same benefits as mature trees, conserving existing forests is integral to achieving this goal.

As this is a new program, the first few years of planting may be less, and then a gradual increase in effort will be needed. As the City's capacity and the urban forestry program expand, the number of trees planted each year is expected to increase. However, before a planting campaign, increased educational outreach is needed. This will help increase public engagement and awareness of the importance of trees in the community. The recently awarded grant, funding an arborist for one year, should help to frame the tree outreach and planting campaign.

The tree canopy goal, objectives, and action items for Hopewell's urban forest are on pages 41-44. These, and other practices, will provide long-term care, protection, and best planting practices for the urban forest, and will ensure that investments in city trees pay dividends by reducing stormwater runoff, cleaning the air and water, lowering energy bills, raising property values, and providing natural beauty long into the future.



Newly planted trees at schools promote access to healthy green spaces for children.



Many streets and public properties, such as this bus stop, median, and home, have room for more trees to add shade, beauty, and improve air quality.

Goal: Maintain a no-net-loss of tree canopy cover at 45% over the next 10 years.

1 OBJECTIVE 1: Increase tree canopy equity within all wards to ensure residents have equitable access to trees in public spaces.

- **Action 1.1:** Create more opportunities for tree plantings in schools and parks. – *Short Term*
- **Action 1.2:** Replace existing Downtown street and court parking lot trees, ensuring proper planting standards. – *Short Term*
- **Action 1.3:** Complete projects on City-owned properties to plant climate-resilient tree species and reduce turf grass and other non-biodiverse spaces. – *On-going*
- **Action 1.4:** Create appropriate spaces for tree plantings in the public rights-of-way. – *Medium Term*
- **Action 1.5:** Implement Poythress Streetscape Master Plan to increase tree canopy Downtown. – *Long Term*



There are great spaces for new tree plantings such as this recent cherry tree planted in front of the Social Services Building.



2 OBJECTIVE 2: Encourage more tree planting on private property.

- **Action 2.1:** Increase tree plantings surrounding industrial plants to improve air quality.
 - Medium Term
- **Action 2.2:** Host native tree giveaway events in neighborhoods with lower canopy.
 - Short Term
- **Action 2.3:** Offer equipment and supply resources to support community planting events.
 - Ongoing
- **Action 2.4:** Partner with homeowner associations and property managers to increase tree canopy in neighborhoods.
 - Medium Term
- **Action 2.5:** Establish a landscaping grant program to incentivize tree planting along gateways and commercial corridors.
 - Long Term



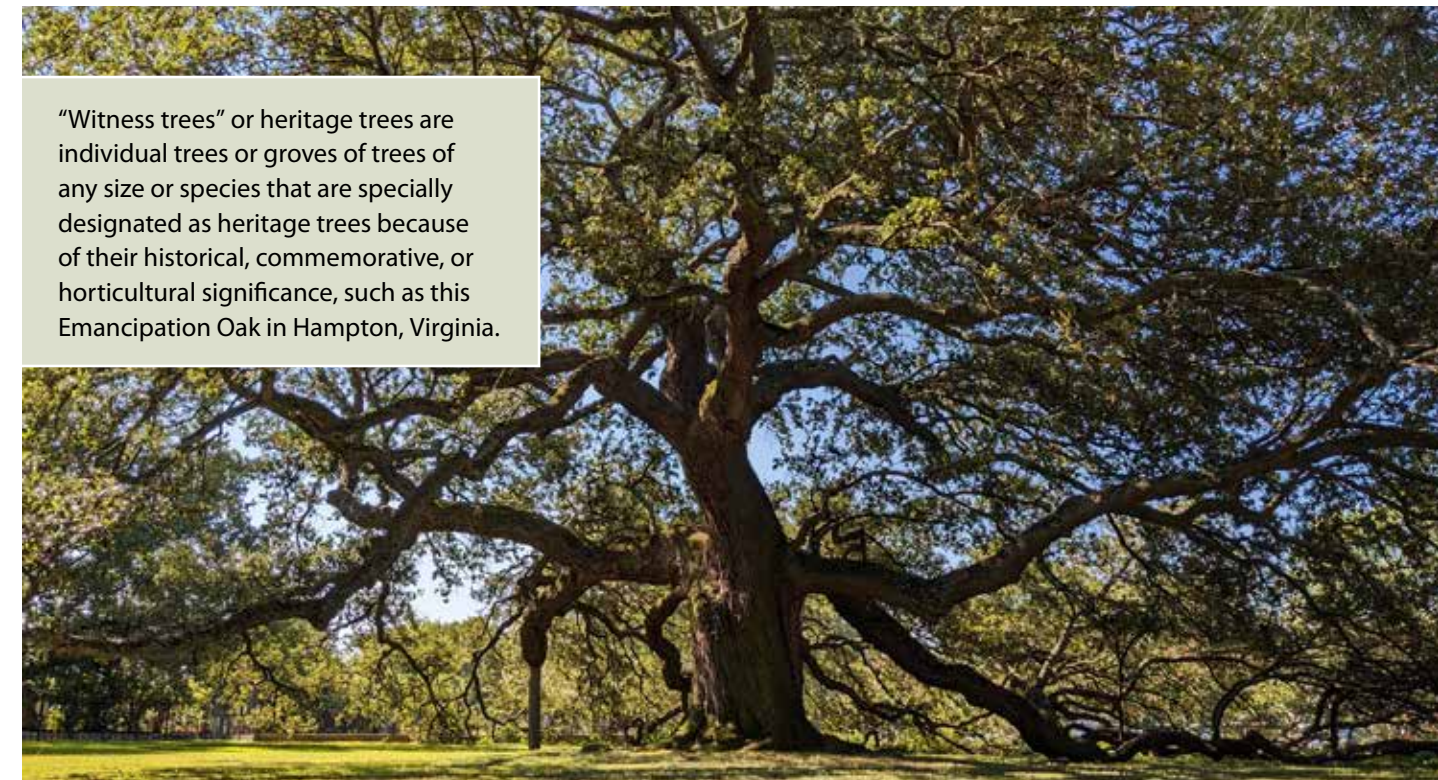
In older neighborhoods with existing mature tree canopy, it is important to plant the next generation of trees, such as this young oak, to ensure future tree canopy.

3 OBJECTIVE 3: Build capacity for community involvement, education, and outreach.

- **Action 3.1:** Establish a Tree Canopy Advisory Board to advise and promote the City’s urban forestry program.
 - Short Term
- **Action 3.2:** Explore partnerships with community organizations (e.g. James River Association, Chesapeake Bay Foundation, Friends of the Lower Appomattox River) and institutions (e.g. Brightpoint, Christopher Newport University) for mentorship and project-based learning programs.
 - Short Term
- **Action 3.3:** Connect and reinforce the value of urban trees through existing health initiatives (e.g. Healthy Eating Active Living (HEAL City) and Health Equity in All Policies (HEIAP)).
 - Medium Term
- **Action 3.4:** Hold an Arbor Day Celebration.
 - Ongoing
- **Action 3.5:** Develop awareness campaigns and education programs.
 - Medium Term
- **Action 3.6:** Share the City’s urban forestry information and GIS resources through the City website.
 - Medium Term
- **Action 3.7:** Incorporate tree literacy and planting into school curricula, such as during intersession or environmental science classes.
 - Medium Term
- **Action 3.8:** Partner with community members to capture personal narratives about Hopewell’s trees and to document stories about “witness trees”.
 - Long Term



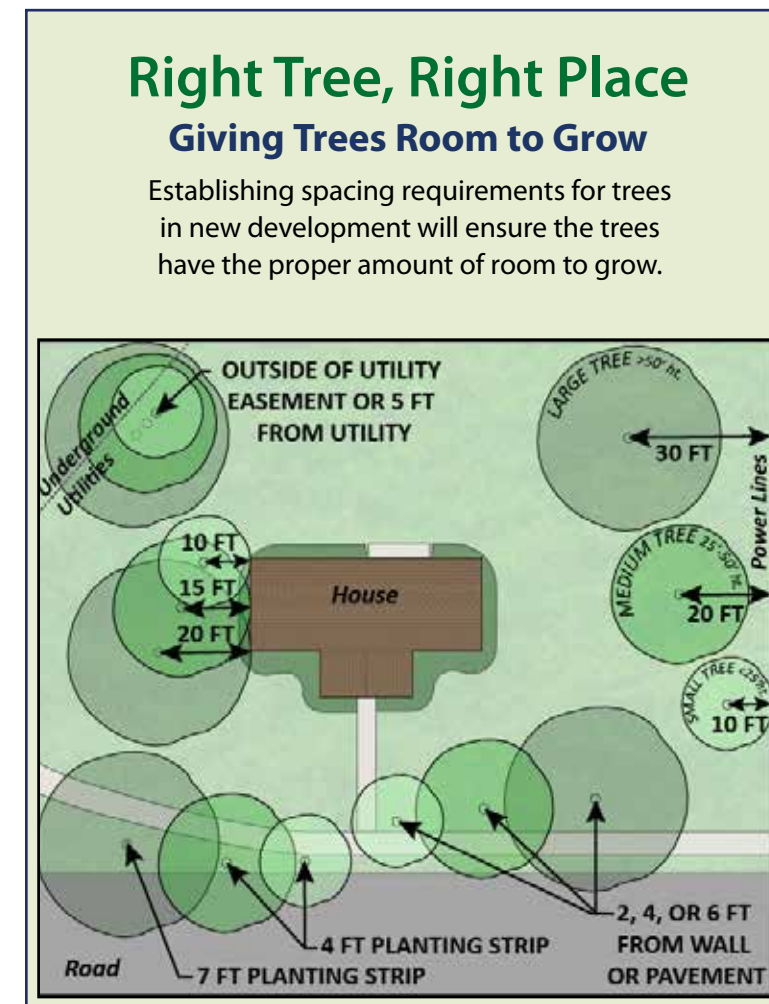
Outreach at established events, such as Juneteenth Park Jam, allows public awareness and educational campaigns to reach a larger audience.



“Witness trees” or heritage trees are individual trees or groves of trees of any size or species that are specially designated as heritage trees because of their historical, commemorative, or horticultural significance, such as this Emancipation Oak in Hampton, Virginia.

4 OBJECTIVE 4: Strengthen codes and policies to preserve and enhance urban trees.

- **Action 4.1:** Adopt public tree ordinances to meet minimum requirements for Tree City USA.
 - Short Term
- **Action 4.2:** Update the zoning ordinance to maximize the required tree canopy coverage preserved during development, including single-home zoning.
 - Medium Term
- **Action 4.3:** Update City landscape ordinances to incorporate American National Standards Institute best management practices.
 - Medium Term
- **Action 4.4:** Identify heritage/witness trees in the community for education and enact stricter penalties for their removal, such as higher replacement requirements.
 - Medium Term
- **Action 4.5:** Establish a tree mitigation bank funded through development impact fees or fines to plant trees on public and private properties.
 - Long Term
- **Action 4.6:** Incorporate trees as green infrastructure in stormwater management.
 - Long Term



5 OBJECTIVE 5: Improve the stewardship of publicly owned trees.

- **Action 5.1:** Create a City urban forester position to support policy, planning, enforcement, and maintenance of city-owned trees.
– Short Term
- **Action 5.2:** Update maintenance contracts to incorporate tree protection and compensation for damage during mowing operations.
– Short Term
- **Action 5.3:** Train staff in proper tree care.
– Ongoing
- **Action 5.4:** Control and manage invasive plant species, tree pests, and tree diseases in an environmentally responsible manner.
– Ongoing
- **Action 5.5:** Establish and fund an annual Urban Forest Management Plan that determines projects and maintenance priorities.
– Medium Term



When managing landscapes, it is important to take precautions around trees to prevent harm and keep them healthy.

6 OBJECTIVE 6: Monitor and plan for the future tree canopy.

- **Action 6.1:** Obtain and maintain Tree City USA certification.
– Short Term
- **Action 6.2:** Review and update preferred plant material list prioritizing native, climate-resilient tree species.
– Short Term
- **Action 6.3:** Develop a process for tracking public tree removals and recording tree-related expenses.
– Short Term
- **Action 6.4:** Create an annual progress report on the Strategic Tree Canopy Plan goals.
– Ongoing
- **Action 6.5:** Develop a public tree inventory.
– Medium Term
- **Action 6.6:** Identify funding for a dedicated urban forestry program.
– Medium Term
- **Action 6.7:** Incorporate urban forestry goals in the city's comprehensive plans.
– Medium Term
- **Action 6.8:** Include tree removal and tree risk assessment in standing contracts in storm recovery.
– Long Term
- **Action 6.9:** Update tree canopy analysis maps every five years.
– Long Term
- **Action 6.10:** Update the Strategic Tree Canopy Plan every 10 years.
– Long Term



Historic eastern red cedars along Cedar Lane.

Tree City USA Requirements:

1. Establish a tree board or City department to oversee tree care.
2. Adopt a public tree care ordinance.
3. Allocate an annual budget for tree care and planting of at least \$2 per capita.
4. Host an annual Arbor Day event and pass and recite a proclamation.



TREE CITY USA®

Conclusion

Hopewell has new data and strategies in this plan to guide the management of its urban forest. Implementing these tree strategies will ensure that current and future residents continue to enjoy the benefits of trees and live in a healthy, sustainable, and beautiful City for all.

This plan is a living document that is intended to be integrated into ongoing staff work plans, annual budgets, grant proposals, and partnerships with outside agencies. It is recommended that an implementation committee or Tree Board meet at least quarterly to document the plan's progress and adapt its strategies as needed.



Heritage Gardens

Appendixes

Appendix A: Funding Opportunities

For tree campaigns to be successful, there must be dedicated funds. These funds can come from a variety of sources, including federal, state, local, and private resources. A few examples of these opportunities are listed below.

Virginia Department of Forestry

- Virginia Trees for Clean Water Grant Program
- Urban and Community Forestry Grant Program
- Emerald Ash Borer Cost-Share Program

For more information: <https://dof.virginia.gov/urban-community-forestry/urban-forestry-community-assistance/financial-assistance-for-urban-and-community-forestry-projects>

Virginia Environmental Endowment

- James River Water Quality Improvement Program
- Various grants, updated yearly

For more information: <https://www.vee.org>

Dominion Energy Charitable Foundation

- A yearly fund awarded to environmental stewardship, educational, and community renewal projects.

For more information: <https://www.dominionenergy.com/our-company/customers-and-community/charitable-foundation>

Chesapeake Bay Trust

- Distributes various grants to improve the environmental health of the Chesapeake Bay. Sources of funds are dependent on specific grants.

For more information: <https://cbtrust.org/grants>



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Appendix C: Community Feedback

The following questions were posed to the community at the HCPS Family Resource GALA event and passively with public poster boards at the municipal building and community centers. Comments from community members to City staff through additional emails and phone calls have been included as well. Below is a compilation of all questions and public input.

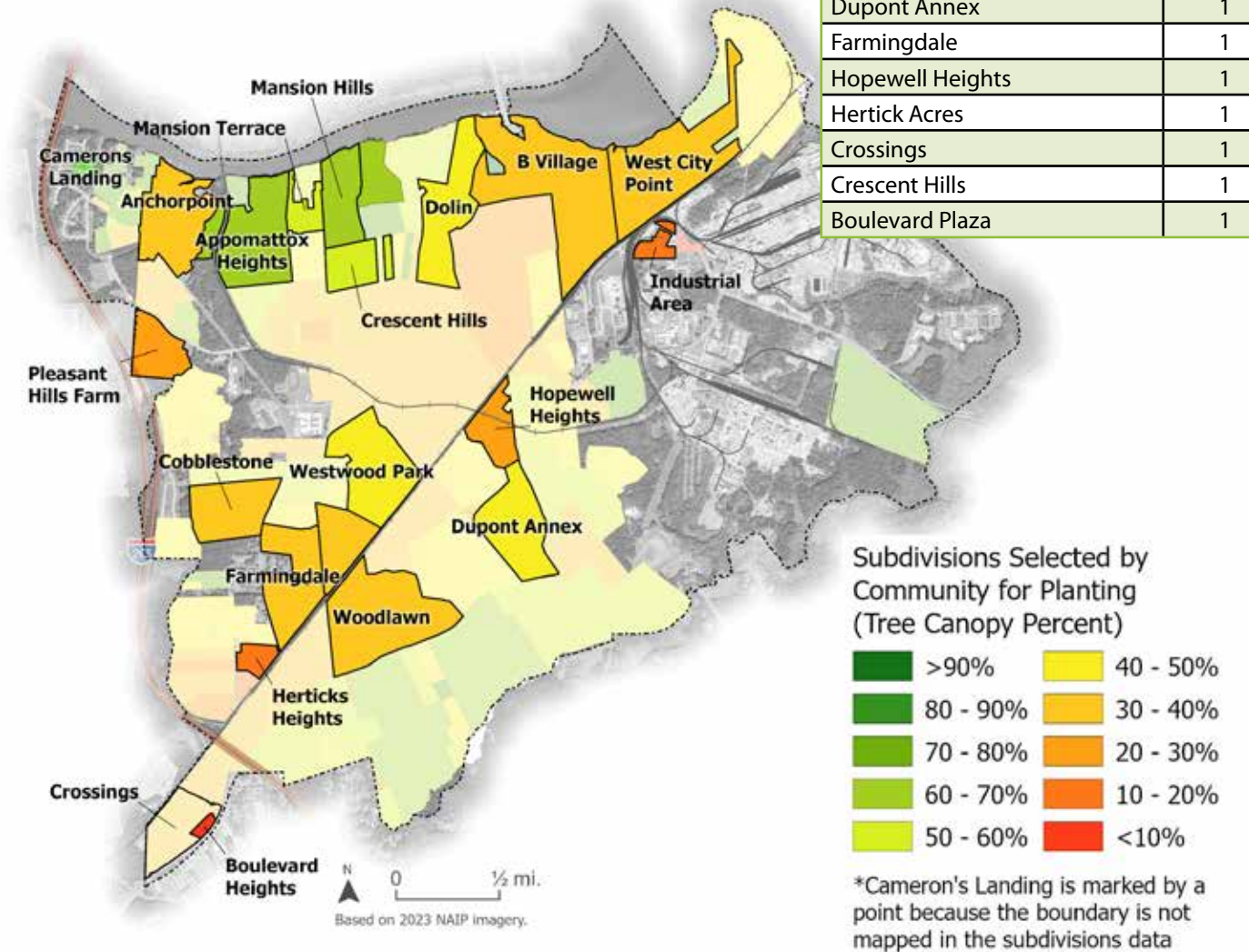
Q1: Where should more trees be planted (general)?

Places	Votes
Parks Public Comment: <i>In the interior of parks rather than around the edges.</i>	8
Schools Public Comment: <i>High school courtyard needs more shade.</i>	8
Streets and Sidewalks Public Comment: <i>Bus stops.</i>	7
In Neighborhoods Public Comment: <i>Crescent Hills.</i>	5
Around Businesses	5



Q2: Where would you like to see more trees? (subdivisions)

Subdivision	Votes
West City Point	3
Woodlawn	3
Anchor Point	3
Cobblestone Neighborhood	2
Westwood Park	2
Industrial Area	1
Appomattox Heights	1
B Village	1
Cameron's Landing	1
Dolin	1
Mansion Hills	1
Mansion Terrace	1
Pleasant Hills Farm	1
Dupont Annex	1
Farmingdale	1
Hopewell Heights	1
Hertick Acres	1
Crossings	1
Crescent Hills	1
Boulevard Plaza	1



Q3: Which six strategies do you find most important to achieve Hopewell's tree canopy goal?

Strategy	Votes
Objective 1: Increase tree canopy equity across wards to ensure all residents have equitable access to trees in public spaces.	
1.1 Create more opportunities for tree plantings in schools and parks.	5
1.2 Replace existing Downtown street and court parking lot trees, ensuring proper planting standards.	3
1.3 Complete projects on City-owned properties to plant climate-resilient tree species and reduce turf grass and other non-biodiverse spaces.	3
1.4 Create appropriate spaces for tree plantings in the public right-of-ways.	2
1.5 Implement Poythress Streetscape Master Plan to increase tree canopy Downtown.	3
Objective 2: Encourage more tree plantings on private property.	
2.1 Host native tree giveaway events in neighborhoods with a lower canopy.	3
2.2 Increase tree plantings surrounding industrial plants to improve air quality.	2
2.3 Partner with homeowner associations and property managers to increase tree canopy in neighborhoods.	1
2.4 Establish a landscaping grant program to incentivize tree planting along gateways and commercial corridors.	2
2.5 Offer equipment and supply resources to support community planting events.	5
Objective 3: Build capacity for community involvement, education, and outreach.	
3.1 Establish a Tree Canopy Advisory Board to advise and promote the City's urban forestry program.	3
3.2 Explore partnerships with community organizations and institutions for mentorship and project-based learning programs.	2
3.3 Connect and reinforce the value of urban trees through existing health initiatives.	1
3.4 Hold an annual Arbor Day celebration.	4
3.5 Develop awareness campaigns and education programs.	2
3.6 Share the City's urban forestry information and GIS resources through the City website.	1
3.7 Incorporate tree literacy and planting into school curricula, such as during intersession or environmental science classes.	2
3.8 Partner with community members to capture personal narratives about Hopewell's trees and to document stories about "witness trees".	1

Q3: Which six strategies do you find most important to achieve Hopewell's tree canopy goal? (continued)

Strategy	Votes
Objective 4: Strengthen codes and policies to preserve and enhance urban trees.	
4.1 Adopt public tree ordinances to meet minimum requirements for Tree City USA.	2
4.2 Update the zoning ordinance to maximize the required tree canopy coverage preserved during development, including single-home zoning.	3
4.3 Update City landscape ordinances to incorporate American National Standards Institute best management practices.	1
4.4 Identify heritage/witness trees in the community for education and enact harsher penalties when removed, such as higher replacement requirements.	1
4.5 Establish a tree mitigation bank funded through development impact fees or fines to plant trees on public and private properties.	1
4.6 Incorporate trees as green infrastructure in stormwater management.	1
Objective 5: Improve the stewardship of publicly owned trees.	
5.1 Create a City urban forester position to support policy, planning, enforcement, and maintenance of City-owned trees.	2
5.2 Update maintenance contracts to incorporate tree protection and compensation for damage during mowing operations.	1
5.3 Train staff in proper tree care.	2
5.4 Control and manage invasive plant species, tree pests, and tree disease in an environmentally responsible manner.	1
5.5 Establish and fund an annual Urban Forest Management Plan that determines projects and maintenance priorities.	1
Objective 6: Monitor and plan for future tree canopy.	
6.1 Obtain and maintain Tree City USA certification.	0
6.2 Review and update preferred plant material lists, prioritizing native, climate-resilient tree species.	1
6.3 Develop a process for recording tree-related expenses.	1
6.4 Create an annual progress report on the Strategic Tree Canopy Plan goals.	1
6.5 Develop a public tree inventory.	2
6.6 Identify funding for a dedicated urban forestry program.	2
6.7 Incorporate urban forestry goals in the City's comprehensive plans.	1
6.8 Include tree removal and tree risk assessment in standing contracts for storm recovery.	1
6.9 Update tree canopy analysis maps every five years.	1
6.10 Update the Strategic Tree Canopy Plan every 10 years.	1

Additional Comments Received by Email or Phone

(Subdivisions mentioned are listed in the table on page 51):

Comment

Crescent Hills- this neighborhood is approximately 100 years old. Over the past 6 years at least 15-20 mature 80+ year old trees have come down due to age, illness, or potential manager. This neighborhood, being a historic neighborhood, could really use additional trees.

Appomattox Heights (Norton, Luray, Ivor, Circle Dr., etc.) is a middle-class neighborhood that has seen decreased tree coverage over the past 10 years. There are a lot of walkers and bikers in this neighborhood who would benefit from additional trees.

Anchor Point, Cameron's Landing, and Cobblestone: their newer neighborhoods cleared a lot of trees and never planted many trees back in their place. The additional tree coverage would do these areas well.

Maybe we (the City) could look at establishing a "tree bank" where the City sets asides \$X of funds for tree give aways on a first come first serve basis for homeowners, landlords, and small business owners. Just free thinking here.

Cobblestone neighborhood. Would like to stay updated on the project.

Replace dying trees around City courthouse area.

Provide incentives for tree preservation – too many trees have been removed in commercial areas in Hopewell.

“

Crescent Hills... at least 15-20, 80+ year old trees have come down. This neighborhood, could really use additional trees.

“

There are a lot of walkers and bikers in the Appomattox Heights neighborhood who would benefit from additional trees.

“

Replace dying trees around City courthouse area.

“

Maybe we (the City) could look at establishing a "tree bank" where the City sets asides funds for tree give aways...

“

Provide incentives for tree preservation – too many trees have been removed in commercial areas in Hopewell.

