# **CITY OF CANDEN**

Management Plan for Forests and Trees

Third Edition: 2022 - 2032









#### The Delaware Valley Regional Planning Commission

is the federally designated Metropolitan Planning Organization for the Greater Philadelphia region, established by an Interstate Compact between the Commonwealth of Pennsylvania and the State of New Jersey. Members include Bucks, Chester, Delaware, Montgomery, and Philadelphia counties, plus the City of Chester, in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer counties, plus the cities of Camden and Trenton, in New Jersey.

DVRPC serves strictly as an advisory agency. Any planning or design concepts as prepared by DVRPC are conceptual and may require engineering design and feasibility analysis. Actual authority for carrying out any planning proposals rest solely with the governing bodies of the states, local governments or authorities that have the primary responsibility to own, manage or maintain any transportation facility.



**DVRPC's vision** for the Greater Philadelphia Region is a prosperous, innovative, equitable, resilient, and sustainable region that increases mobility choices by investing in a safe and modern transportation system; that protects and preserves our natural resources while creating healthy communities; and that fosters greater opportunities for all.

**DVRPC's mission** is to achieve this vision by convening the widest array of partners to inform and facilitate data-driven decision-making. We are engaged across the region, and strive to be leaders and innovators, exploring new ideas and creating best practices.

**TITLE VI COMPLIANCE** | DVRPC fully complies with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, Executive Order 12898 on Environmental Justice, and related nondiscrimination mandates in all programs and activities. DVRPC's website, www.dvrpc.org, may be translated into multiple languages. Publications and other public documents can usually be made available in alternative languages and formats, if requested. DVRPC's public meetings are always held in ADA-accessible facilities, and held in transit-accessible locations whenever possible. Translation, interpretation, or other auxiliary services can be provided to individuals who submit a request at least seven days prior to a public meeting. Translation and interpretation services for DVRPC's projects, products, and planning processes are available, generally free of charge, by calling (215) 592-1800. All requests will be accommodated to the greatest extent possible. Any person who believes they have been aggrieved by an unlawful discriminatory practice by DVRPC under Title VI has a right to file a formal complaint. Any such complaint must be in writing and filed with DVRPC's Title VI Compliance Manager and/or the appropriate state or federal agency within 180 days of the alleged discriminatory occurrence. For more information on DVRPC's Title VI program or to obtain a Title VI Complaint Form, please visit: www.dvrpc.org/GetInvolved/TitleVI, call (215) 592-1800, or email public\_affairs@dvrpc.org.

DVRPC is funded through a variety of funding sources including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), the Pennsylvania and New Jersey departments of transportation, as well as by DVRPC's state and local member governments. The authors, however, are solely responsible for the findings and conclusions herein, which may not represent the official views or policies of the funding agencies.

# **Table of Contents**

Acknowledgments	1
Executive Summary	3
CHAPTER 1: Introduction	5
Mission Statement	5
Community Forestry Management Plan Overview	5
Benefits of the Plan	5
Planning Process	6
CHAPTER 2: Community Forest Overview and Background	7
Addressing Community Challenges with Trees	9
Available Land for Planting and Maintaining Trees	
CHAPTER 3: Community Forestry Management	24
2016 Community Forestry Management Plan	24
Program Administration	25
Care of Public Trees	
Tree Planting	
Tree Regulations and Compliance	
Professional and/or Partner Training	
Private Property Tree Care	
Current Budget and Resources	
CHAPTER 4: Tree Program SWOT Analysis	33
Strengths	
Weaknesses	
Opportunities	
Threats	
CHAPTER 5: Goals and Actions	35
Summary of Prioritized Goals and Actions	35
Full List of Prioritized Goals and Actions	
CHAPTER 6: Next Steps	46
Future Budget and Resources	46

Timeline	
Ongoing Review and Adaptation of Program	
CHAPTER 7: References	

# Figures

•	Figure 1: Tree Canopy and Neighborhoods	8
•	Figure 2: Tree Cover Density near Schools	. 10
•	Figure 3: Tree Cover Density near Healthcare Facilities	. 11
•	Figure 4: Tree Cover Density near Childcare Facilities	. 12
٠	Figure 5: Potential Urban Heat Island Effect	. 15
•	Figure 6: Asthma Prevalence	. 17
•	Figure 7: Shaded Topography	. 19
•	Figure 8: Impervious Surfaces	. 20
•	Figure 9: Floodplains	. 21
•	Figure 10: Tree Cover in Preserved Open Space and Along Circuit Trails	. 23

# **Tables**

•	Table 1: Land Cover in Camden	. 7
•	Table 2: Tree Cover in Relation to Schools, Healthcare Facilities, and Childcare Facilities	. 9
•	Table 3: Tree Program Support	25

# Appendices

Appendix A: Notes from Outreach A	<b>\-2</b>
TreeKeepers Meeting June 15, 2019A	۱-2
Camden Community Forestry Stakeholder Workshop August 28, 2019	۰-5
Appendix B: Results of the Goals and Actions SurveyB	3-2
Results of Camden CFMP Goal Prioritization SurveyB	3-2
Appendix C: "Right Tree in the Right Place" Guidance C	;-2
Climate Factors C	;-2
Pest-Vulnerable SpeciesC	;-2
Site-Specific FactorsC	;-2
Tree Characteristics Affecting Maintenance C	)-3
Appropriate SpeciesC	2-5

Appendix D: Municipal Training Resources	<b>D-2</b>
Appendix E: Strengthening Relationships with Utility Companies	E-2
Appendix F: Resources for Educators	F-2
Appendix G: Funding Programs	G-2

# Acknowledgments

The following people contributed their time and skills to the development of this plan:

- Bob Brant, Rutgers University
- Sarah Bryant, Cooper's Ferry Partnership
- Erin Crean, Camden City Planning Board
- Danielle Denk, Trust for Public Land
- Tim Feeney, Camden County Municipal Utilities Authority
- David Fennimore, Subaru
- Josh Fisher, Campbell Soup Company
- Valeria Galarza, Cooper's Ferry Partnership
- Victor Golding, Camden Shade Tree Advisory Board
- Candace Jefferson, City of Camden
- Jean Kehner, Camden Shade Tree Advisory Board
- Andy Kricun, Camden County Municipal Utilities Authority
- Jonathon Latko, Camden Shade Tree Advisory Board
- Christoff Lindsey, Camden Shade Tree Advisory Board
- Maggie McCann Johns, Camden County Parks
- Lara Miller, Trust for Public Land
- Matt Moffa, Trust for Public Land
- June Morton, City of Camden
- Sandy Newhall, Camden Shade Tree Advisory Board
- Nicole Oliveri, Hopeworks Camden
- Meredith Pichini, New Jersey Tree Foundation
- Luis Quinones, Camden Shade Tree Advisory Board
- Julia Raskin, New Jersey Conservation Foundation
- Sheila Roberts, Camden Shade Tree Advisory Board
- Norma Ruiz, City of Camden
- Kenneth Sanchez, Camden Shade Tree Advisory Board
- Benjamin Sarracco, Camden Shade Tree Advisory Board
- Latosha Scott, Camden Shade Tree Advisory Board
- Lisa Simms, New Jersey Tree Federation
- Joe Thomas, City of Camden
- Keith Walker, City of Camden
- Luke Wallace, Camden Shade Tree Advisory Board

Thank you also to the residents of the City of Camden who also donated their time and skills to the plan during its information-gathering phases.

Thank you to the following people who contributed to the plan content and development process as a whole under the USDA Forest Service Landscape Scale Restoration grant:

- Levon Bigelow, NYC Parks Department
- Bill Brash, Shelterwood Forest Managers, LLC
- Paul Cowie and colleagues, Paul Cowie & Associates
- Donna Drewes, Sustainable Jersey
- Yvonne Favaro, Society of Municipal Arborists/Shade Tree Commission, Englewood Cliffs

- Jason Grabosky, Rutgers University
- Jay Kaplan, PSE&G
- Vinh Lang, Pine Creek Forestry
- Melanie McDermott, Rutgers University
- Carrie Sargeant, New Jersey Forest Service
- Matt Simons, Atlantic City Electric
- Pam Zipse, Rutgers University

# **Executive Summary**

The City of Camden's Management Plan for Forests and Trees outlines the City's vision and prioritized goals to protect and grow its tree cover or "community forest." It describes the current structure of the forest, the function these trees provide to the surrounding community, and goals and actions for the management of these trees. This plan is an important tool for Camden municipal officials, nonprofit staff, private business owners, and the general public as it identifies the challenges and opportunities of the community forest and prioritizes actions for future improvement.

The plan was created in partnership with municipal officials and staff, county and state staff, environmental organizations, local business owners, and private residents, as well the Camden Shade Tree Advisory Board. Documents used to prepare this plan include the Camden City Code, multiple Camden citywide plans, and several Camden neighborhood plans. The maps contained in this plan illustrate the extent of tree cover throughout the City and how this tree cover relates to a wide variety of community factors such as healthcare facilities, schools, demographic information, and flood prone areas. The plan concludes with goals and actions of the community to improve the quality of the community forest over the next ten years. The top three goals and actions selected through public outreach are taking care of public trees, developing and implementing a tree-planting plan, and enforcing and expanding tree regulations and compliance.

This plan still awaits the inclusion of the Camden tree inventory which will give more detailed information on the species, health, and number of trees in the City.

This plan is the third version of Camden's community forestry management plan. The first was approved in 2011. The second was approved in 2016.

# CHAPTER 1: Introduction

# **Mission Statement**

This plan seeks to promote a healthy, safe, and resilient community forest that improves the environment and quality-of-life for all residents of Camden.

# **Community Forestry Management Plan Overview**

In New Jersey, community forestry management plans are enabled under the New Jersey Shade Tree and Community Forestry Assistance Act of 1996.<sup>1</sup> The New Jersey State Forest Service Urban and Community Forestry Program (NJUCF) and the Community Forestry Management Plan Guidelines Committee oversee the development of the plans and ensure that they meet basic requirements.

# **Benefits of the Plan**

When a community forestry management plan is approved by NJUCF, the municipality becomes eligible for liability protection from legal action related to tree risks, and for grant funding to implement the plan.<sup>2</sup> To continue to be eligible for these benefits, municipalities must update their community forestry management plans regularly, provide annual updates on progress, and undergo continuing education on tree topics.

# **A Healthy Community Forest**

Community forestry management plans lay a foundation for healthy trees. Trees that are well-maintained offer the following benefits to a municipality over their lifetimes:

#### What is a community forest?

A community forest, also known as an urban forest, includes all of the trees in a municipality. These trees are found in such areas as parks and protected lands, along streets, and in privately owned properties. Together, these individual trees or clusters of trees make up a collective "green infrastructure" in the municipality that is also connected to green infrastructure in the region where the municipality resides. This green infrastructure benefits people and wildlife. Healthy trees in a community forest can help filter air and water, absorb stormwater, cool people and property, provide habitat, increase property values, and provide a calming and beautiful presence to a landscape. Unlike many examples of infrastructure created by humans, these benefits frequently increase over time.

- **Improved Air Quality**: Trees remove pollutants through absorbing particles via stomata— structures on their leaves—or by retaining pollutants on the leaf surface which are later washed off by rain.
- **Stormwater Management**: Trees reduce stormwater runoff in several ways. Leaves intercept rainfall before it hits the ground. Tree roots absorb water from the soil and return it to the air via transpiration. Roots, as they grow in the soil, also increase the ability of soil to absorb water. Planting a tree in an

<sup>2</sup> New Jersey Department of Environmental Protection, "Community Forestry Management Plans,"

<sup>&</sup>lt;sup>1</sup> New Jersey Shade Tree and Community Forestry Assistance Act of 1996.

nj.gov/dep/parks and forests/forest/docs/community-forestry-management-plan-guidelines.pdf

enhanced tree pit that is connected to drainage pipes and supported by other stormwater infrastructure, such as permeable pavement, can yield a healthier tree and the absorption of more stormwater.

- **Improved Water Quality**: By reducing the volume of stormwater runoff, trees also protect water quality by reducing soil erosion and the transfer of pollutants into waterways during storms. Tree roots can also absorb trace amounts of harmful chemicals in the soil, which reduces the chance of the chemicals entering waterways.
- **Cooling Effects**: Buildings shaded by trees can have less need for air conditioning, resulting in lower energy requirements. A community's tree cover can reduce its heat island effect, a condition of raised temperature that can cause respiratory difficulties, heat exhaustion, heat stroke, and in some instances death.
- **Psychological Well-being**: Walking through a park or tree-lined area can help quiet and focus mental activity.
- Carbon Sequestration: Trees take in carbon from the atmosphere as they grow.
- Wildlife Protection: Countless species of wildlife rely on trees throughout their lifecycle (both of the wildlife and the trees) for food and shelter.
- **Increased Property Values**: Trees, as well as parks and open space, can cause property values to increase in neighborhoods, although the degree of increase varies widely.

# **Planning Process**

This version of the community forestry management plan outlines Camden's vision, goals, and implementation for 2022–2032. The update process began with two kickoff meetings in Camden: one with Camden SMART and one with the Camden Shade Tree Advisory Board, both in March 2019. The Shade Tree Advisory Board was the main point of contact during the planning process, but representatives from both groups were involved in the development of the plan.

## **Plan Outreach and Development**

Initial outreach to the public and stakeholders included a visit to important tree sites in May 2019, a guided discussion at New Jersey Tree Foundation's Camden TreeKeeper workshop in June 2019, and a stakeholder workshop at the Camden County Municipal Utilities Authority building in August 2019. These meetings formed the basis for the first draft of the plan. (See Appendix A for the content of these meetings.)

Following the completion of the first draft, the plan underwent a second draft writing phase to include more data, analysis, and a prioritized list of plan goals and actions, which was facilitated by an additional round of outreach. In this round of outreach, a SurveyMonkey survey of goals and actions was submitted to key project partners in May 2020, and the results were presented to some of the City's key tree advocates on a Zoom webinar in July 2020. A video of the presentation was created and sent to additional project partners who could not attend the Zoom webinar. (See Appendix B for the full survey results.)

The second draft was completed in November of 2020. Following the completion of this draft, the plan was put on hold awaiting completion of the Camden tree inventory. However, due to delays in execution of the inventory, a decision was made to formally publish the plan without the completed inventory in mid-2022.

#### CHAPTER 2:

# **Community Forest Overview and Background**

This section outlines information about the City of Camden's tree cover challenges.

## **Tree Cover**

According to high-resolution landcover data developed by the University of Vermont Spatial Analysis Lab,<sup>3</sup> the City of Camden has 1,086 acres of tree canopy, or 16 percent of the City's total area (about 6,624 acres, or 10.4 square miles). This area includes canopy cover over structures, roads, and other impervious surfaces. Table 1 and Figure 1 provide an overview of tree canopy area in relation to other land cover types.

Table	1:	Land	Cover	in	Camden
-------	----	------	-------	----	--------

Camden				
Land Cover Type	Area (acres)	Percent of Total Area		
Water	891	13.5%		
Wetlands	101.7	1.5%		
Tree Canopy	911.3	13.8%		
Scrub-Shrub	8.6	0.1%		
Low Vegetation	1,055.9	16%		
Barren	234.7	3.5%		
Structures	881.6	13.3%		
Other Impervious Surfaces	1,383.6	20.9%		
Roads	981	14.8%		
Tree Canopy Over Structures	3.1	0.05%		
Tree Canopy Over Other Impervious Surfaces	63.9	1%		
Tree Canopy Over Roads	108.2	1.6%		
Total	6,624.6	100%		

Source: University of Vermont Spatial Analysis Lab, 2016

<sup>&</sup>lt;sup>3</sup> University of Vermont Spatial Analysis Lab, 2016. drbproject.org/products/





# Addressing Community Challenges with Trees

## Schools, Healthcare Facilities, and Childcare Facilities

The following three figures (Figure 2, Figure 3, and Figure 4) illustrate the density of tree canopy cover within a quarter-mile radius of school, healthcare facilities, and childcare in the City of Camden. The maps were created using land cover data from the University of Vermont (UVM) Spatial Analysis Laboratory (SAL).<sup>4</sup> For the purposes of this analysis, several land cover types were combined and classified as 'Other Land Cover Types' as displayed in the legend of each map; these include pervious surfaces like emergent wetlands, scrub-shrub, barren, and low-vegetation land as well as impervious surfaces such as roads, structures, and parking lots. The tree canopy classification includes all types of tree cover, i.e., tree canopy, tree canopy over structures, tree canopy over roads, and tree canopy over other impervious surfaces.

These figures show that tree cover density near these facilities is unevenly distributed. Some areas near these facilities have parks that are well-forested, some have nearby streets lined with trees, but other areas have few to no trees. Because they often serve populations that are especially vulnerable to adverse health outcomes due to environmental factors, school, childcare, and healthcare facilities that exist in areas with low tree cover are ideal locations for focused tree planting.

Table 2 provides the total percentage of tree canopy cover along with the density of tree cover near schools, childcare facilities, and healthcare facilities (within a quarter-mile radius):

Table 2:	Tree Cover	in Relatio	n to Schools,	Healthcare	Facilities, ar	nd Child	care Facilities	
				1				_

Total Tree Cover	Average Tree Cover Density	Average Tree Cover Density near Healthcare Facilities (%)	Average Tree Cover Density
(% of total land area)	near Schools (%)		near Childcare Facilities (%)
16.4%	18.6%	17.1%	17.%

. . . . .

....

Sources: University of Vermont Spatial Analysis Lab, 2016; DVRPC

. ..

According to our analysis, the average density of tree cover relative to school, childcare, and healthcare facilities is similar to the overall City average. However, there is a significant range between the lowest and highest densities, with certain areas and facilities having more tree canopy than others. Unsurprisingly, facilities with the lowest density of tree cover (for each respective facility type) exist in neighborhoods with more limited tree cover such as North Camden and Central Waterfront. Facilities with the highest tree cover density are located in Fairview, Parkside, Whitman Park, and Stockton.

<sup>&</sup>lt;sup>4</sup> University of Vermont Spatial Analysis Lab, 2016. drbproject.org/products/



Figure 2: Tree Cover Density near Schools



![](_page_16_Figure_1.jpeg)

![](_page_17_Figure_0.jpeg)

![](_page_17_Figure_1.jpeg)

#### **Heat Island Effect**

Figure 5 illustrates the potential urban heat island effect (HIE) in Camden City. The urban HIE categories ('Low,' 'Low-Medium,' 'Medium-High,' 'High') were created based on grid cell values that were developed using the NJDEP's 2012 Land Use/Land Cover dataset. Each cell in a 100-meter grid covering the map area was populated with a point value based on the percent of impervious surface in that cell, where the amount of impervious surface was assumed based on the type of land use/land cover that NJDEP mapped. Comparison of this map with the tree cover map reveals that in general, areas with a higher density of tree canopy have lower potential for urban heat island effect. This trend is especially apparent along the Cooper River in Parkside and Gateway and along the North Branch of Newton Creek in Morgan Village and Fairview. Tree canopy along the I-676 corridor corresponds with lower HIE potential as well. Neighborhoods with the highest potential HIE (which correspond to lowest density of tree canopy cover) include Marlton, Stockton, Whitman Park, and Downtown Camden.

Recent studies focused on Camden highlight the importance of reducing potential HIE by increasing and/or improving tree canopy cover and overall green space. Some of these studies also identify specific target areas for planting trees:

In their EnviroAtlas community map and corresponding fact sheet, the EPA stresses the importance of reducing daytime surface and air temperatures by cultivating green spaces, especially in urban and suburban communities. According to their research, green spaces with trees and other vegetation reduce stress, hospital admissions, and mortality due to extreme heat.<sup>5</sup>

The Trust for Public Land's (TPL's) Climate-Smart Cities project includes the Green + Healthy Camden initiative, which focuses in part on cultivating shaded green spaces in order to reduce urban HIE, protecting people from adverse health outcomes due to extreme heat. TPL's web map for Camden City displays the results of their data analysis, which combines Landsat surface temperature data with low-canopy and high-impervious surface cover data in order to identify high-priority areas for reducing urban heating.<sup>6</sup> TPL's map highlights many of the same neighborhoods identified in our analysis as target areas for increasing tree canopy cover to reduce urban heating. These target neighborhoods include Central and South Waterfront, Marlton, Dudley, Centerville, and Downtown Camden. The southeast portion of Whitman Park and the northern part of Gateway are also highlighted in TPL's analysis.<sup>7</sup>

In addition to the Green + Healthy Camden initiative, TPL co-authored the *Greening Camden* report, which evaluates opportunities to implement green infrastructure in urban communities. The report focuses on Camden City and identifies high-priority areas for reduction of heat island potential using a service gap score, which was developed via statistical analysis of tree cover, impervious cover, and population density data. Data sources include the USDA's National Land Cover Dataset (NLCD), CDM Smith's Drainage Subbasin Statistics, and the Census 2010 TIGER Census Blocks dataset, respectively. A map of high-priority areas for heat island reduction was created based on the service gap score of each census block in Camden. These areas include parts of North Camden, Whitman Park, and Stockton. Two specific sites were identified as part of a larger analysis that combined heat island reduction scores with service gap scores for Combined Sewer

<sup>&</sup>lt;sup>5</sup> enviroatlas.epa.gov/enviroatlas/DataFactSheets/pdf/ESC/Averagereductionindaytimeambienttemperature.pdf

<sup>&</sup>lt;sup>6</sup> web.tplgis.org/camden\_csc/

<sup>&</sup>lt;sup>7</sup> site.tplgis.org/camdensecure/pdfs/maps/CamdenCSC\_CoolPriorities\_34x44\_20191127.pdf

Overflow (CSO) reduction, stress reduction, urban agricultural expansion, and capacity building expansion. These sites include Alberta Woods Park in Stockton and the vacant lots at Vine Street and Willard Street in North Camden.<sup>8</sup>

A recently published report by Samain Sabrin from Rowan University and Dr. Maryam Karimi from the University of Alabama at Birmingham also highlights neighborhoods in Camden that are particularly vulnerable to urban HIE.<sup>9</sup> Their research includes several heatmaps created using Landsat 8 land-surface temperature data from 2014, 2016, 2017, and 2018. As of 2018, the areas highlighted as the most vulnerable to urban HIE are similar to those identified in TPL's reports and in our own analysis. The heatmaps are also used to identify specific sites and neighborhoods for tree planting based on which areas are most in need of heat mitigation. The report identifies a total of 20 recommended locations, including several schools. Three selected schools that are highlighted as ideal candidates for increased tree planting are:

- Washington Elementary School in East Camden
- Molina School & Molina Annex in North Camden
- Bonsall Elementary School in Liberty Park.

Neighborhoods identified for tree planting include:

- Lanning Square
- Bergen Square
- Central Waterfront
- Gateway
- Liberty Park
- Parkside.

<sup>&</sup>lt;sup>8</sup> tpl.org/sites/default/files/files\_upload/Greening%20Camden%20report.pdf

<sup>&</sup>lt;sup>9</sup> S. Sabrin et al., "Developing Vulnerability Index to Quantify Urban Heat Islands Effects Coupled with Air Pollution: A Case Study of Camden, NJ," 2020.

researchgate.net/publication/341684041\_Developing\_Vulnerability\_Index\_to\_Quantify\_Urban\_Heat\_Islands\_Effects\_Coupled\_with\_Air\_Pollution\_A\_Case\_Study\_of\_Camden\_NJ

![](_page_20_Figure_0.jpeg)

![](_page_20_Figure_1.jpeg)

## Asthma

An important vulnerability to consider when assessing the air quality benefits of increased tree cover is asthma, which is extremely prevalent in Camden County as a whole, but especially in the City of Camden. According to the New Jersey Department of Health (NJDOH), as of 2014 the rate of asthma prevalence among adults in Camden County was ~3.4 percent higher than the state average of 8.8 percent.<sup>10</sup> In Camden City, asthma-related emergency department visits were more than 150 percent higher than the state average.<sup>11</sup> Figure 6 provides a closer look at asthma prevalence in the City of Camden, with percentages displayed at the census-tract level. The highest rates of asthma prevalence are in the area of Liberty Park, Centerville, and Morgan Village, along the Southern portion of the I-676 corridor. Parkside and Whitman Park also exhibit higher rates of asthma compared to surrounding communities and the state overall. Because trees are proven to improve air quality, increasing the tree canopy cover in these areas may benefit community members that suffer from asthma.

<sup>&</sup>lt;sup>10</sup> nj.gov/health/fhs/chronic/documents/asthma\_profiles/camden.pdf

<sup>&</sup>lt;sup>11</sup> ibid.

![](_page_22_Figure_0.jpeg)

# Figure 6: Asthma Prevalence

#### Stormwater

Due to increased amounts of impervious surfaces, overwhelmed drainage systems, runoff from other places, and changing weather conditions, managing stormwater runoff is a challenge for urban areas. Located alongside the Delaware River and divided by the Cooper River, approximately 50 percent of the City is covered in impervious surfaces and much of the sewage infrastructure is made up of an aging combined sewer system which has difficulty handling heavy rain storms. These factors result in billions of gallons of water every year flooding different parts of the City including roads such as U.S. Highway 30, neighborhoods such as Downtown, Waterfront South, and Cramer Hill, and the infrastructure housed at the Walter Rand Transportation Center. Dozens of recent projects throughout the City utilizing rain gardens, porous pavement, downspout disconnections, and community gardens have served to help address this problem, but significant issues remain.

Although solving stormwater runoff issues is a substantial undertaking beyond the scope of any one solution, trees are an important part of any stormwater mitigation strategy. Most useful during periods of slow and steady rainfall where water sits long enough to absorb into the ground, a single tree can consume thousands of gallons of water per year. Trees also help during heavy rainstorms because they slow down the flow of water and because their roots reduce the amount of soil erosion.

Illustrating the topography, distribution of impervious surfaces, and location of floodplains are Figures 7, 8, and 9. These three maps define areas where trees could potentially be more impactful. Mapping the topography, distribution of impervious surfaces, and location of floodplains can help establish priority areas of the City for tree planting. Much of the low-lying lands in Camden are concentrated along the Delaware River waterfront, on both sides of Cooper River, and in Liberty Park, Gateway, and Parkside neighborhoods. The floodplains follow very similar patterns with most of the floodplains located close to water and in some areas crossing I-676 between Atlantic and Kaighn Avenues. The level of impervious surfaces is fairly evenly spread throughout the City, but there are large parking lots in the downtown area and in South Camden. Trees should also be planted in areas with relatively steeper slopes to reduce erosion and slow the rate of runoff. This combination of factors can help prioritize tree plantings in areas where they might help mitigate stormwater most effectively.

![](_page_24_Figure_0.jpeg)

Figure 7: Shaded Topography

![](_page_25_Figure_0.jpeg)

![](_page_25_Figure_1.jpeg)

# Figure 9: Floodplains

![](_page_26_Figure_1.jpeg)

# **Available Land for Planting and Maintaining Trees**

# **Protected Open Space and Trail Corridors**

Illustrated in Figure 10, Camden has 493 acres of protected open space as well as 7.2 miles of existing trails and 8.75 miles of planned trails that are part of the regional Circuit trail network. These parks and trails make up a major portion of Camden's outdoor recreational resources. Although they do not cover all recreation amenities or local trails (or bike lanes) in Camden, they are prime areas for trees to be planted and maintained to provide cooling shade and appealing views for walkers, runners, cyclists, and other park visitors.

According to the tree cover data from the University of Vermont (UVM) Spatial Analysis Laboratory (SAL), Camden has a range of density of tree cover in its parks and along its regional trails. Parks such as Cramer Hill Park, Reverend Evers Park, have relatively abundant tree cover that requires continued maintenance. Whereas other parks, such as Phoenix Park and Pyne Point Park could benefit from having more trees to provide additional shade. Substantial tree cover already exists along the Farnham Park trail segments and is planned for the Cooper River Trail between State Street and Admiral Wilson Boulevard, as well as the planned Gloucester Light Rail with Trail (between Chelton Avenue and Mount Vernon Street). Other segments, such as the existing Pine Street bike lanes and the Martin Luther King, Jr. Boulevard bike lanes, are candidate segments for more street trees to provide shade.

![](_page_28_Figure_0.jpeg)

![](_page_28_Figure_1.jpeg)

### CHAPTER 3:

# **Community Forestry Management**

# 2016 Community Forestry Management Plan

The 2016 community forestry management plan describes Camden's community forest as "diverse in species, age, and health."<sup>12</sup> The plan highlights the City's "gorgeous shade and ornamental trees" and its fruit trees in its "streets, parks, and gardens."<sup>13</sup> These statements still hold true for Camden today. At the Camden TreeKeeper workshop, residents overall felt positive about trees in their neighborhood, commenting that "*they beautify the area and bring life to the neighborhood, provide shade as well as animal habitat and food, and help improve air quality.*"

Nevertheless, Camden's trees—particularly its older stock—also struggle. The 2016 plan mentions that "many of Camden's old trees, especially along the public-right-of-way, are declining and in need of attention," while "the City's moderately aged trees also require care, such as dead-wood pruning, crown-raising, and pruning conflicting branches that may become future risks."<sup>14</sup> These observations are still accurate.

Camden benefits, however, from the presence of many partners— public-sector, nongovernmental, residents, and businesses— who care about the City's trees and are dedicated to supporting the old stock while growing the City's new tree cover. They are trying to preserve what is already here while thinking about a strategy to continue to improve Camden's urban forest.

This plan must acknowledge the role of the pandemic in the care of the City's community forest. Although this coronavirus does not directly affect trees, it will undeniably affect the City's community forestry program. Because the pandemic has taken a toll on economies at all scales, municipalities have been forced to reduce their budgets, reallocate their funding, and rely on volunteers and alternative funding sources to run a variety of programs and community forestry is no exception. Much of this plan was developed before COVID-19, and it remains to be seen to what degree and how quickly municipal operations and finances will recover from the pandemic.

<sup>&</sup>lt;sup>12</sup> City of Camden, Community Forestry Management Plan, 2016, p. 7.

<sup>&</sup>lt;sup>13</sup> Ibid.

<sup>&</sup>lt;sup>14</sup> Ibid.

# **Program Administration**

Table 3 outlines the City groups and individuals that provide support to the City's trees.

# Table 3: Tree Program Support

Person/Organization	Role
	Local Government
Mayor	<ol> <li>Responsible for enforcing the charter and all ordinances of the City.</li> <li>Supervises all City departments and all publicity and public relations functions of the City.</li> <li>Exercises any act of legislation empowered to preserve and protect public health, safety, and welfare.</li> <li>With the consent of City Council, appoints members of various boards and commissions and authorities created by ordinance.</li> </ol>
City Council	<ol> <li>Approve the City's Master Plan and zoning regulations.</li> <li>Approve contracts, fee schedules, and the sale/lease of City-owned property.</li> <li>Consent to Mayor's appointments to various boards and commissions.</li> <li>Approve regulations concerning licenses, streets and sidewalks, public right- of-way and various other City properties.</li> <li>Create and approve legislation for the City.</li> </ol>
Business Administrator	<ol> <li>Responsible for the daily supervision of all departments and department directors.</li> <li>Assists the Mayor in preparation of the budget and securing appropriate public liability insurance, while preserving and maintaining the financial integrity of the City.</li> </ol>
Public Works	<ol> <li>Responsible for care of all public trees and plants within municipal parks, City property, and parking strips upon any and all of the public highways in the City.</li> <li>Responsible for all trees and plants that may affect the lawful use of highways or streets in the City.</li> <li>Responsible for supervising all municipal tree contractors.</li> <li>Responsible for planting trees in parks and within municipal property, pruning trees along busy corridors for traffic and sign safety, and removing hazardous trees within City property.</li> <li>Responsible for providing emergency tree removal services, in-house and with contractors.</li> </ol>
Code Enforcement	1.) Responsible for enforcement and fines, as directly related to the <i>Camden Code Book</i> .
Municipal Clerk	<ol> <li>Responsible for maintaining records, including minutes of the various boards and commissions within the City.</li> <li>Responsible for providing support to the council through legislative and legal support, advisement, and filing municipal resolutions and ordinances.</li> </ol>
	Private Organizations
Camden Shade Tree Advisory Board	<ol> <li>Resident volunteer group appointed to guide the implementation of the Community Forestry Management Plan. Members are listed in the Acknowledgments section on page 1.</li> <li>Established in 2006 to advise the City on tree-related issues and engage the community in forestry education and proper tree management.</li> </ol>

Camden Collaborative Initiative	1.) Launched in 2013, includes multiple partners that work together to address environmental issues in Camden. There are seven working groups that make up the Camden Collaborative Initiative. This plan was created with input from Camden SMART, which focuses on stormwater management. The other working groups include Air Quality, Environmental Education, Camden Green Team, Get Healthy Camden, Land and Brownfields, and Waste and Recycling.
Camden Green Team	1.) Multi-stakeholder group established in 2009 that works on a variety of sustainability projects in Camden.
Camden Business Improvement District	1.) Business Improvement District staff maintain tree pits in the District, the core of which is bounded by Elm Street to the north, Cooper River to the east, Clinton Street to the south, and the Delaware River to the west.
Tree Contractors	1.) Hired as needed for municipal tree maintenance and emergency removal support.
Public Utilities	<ol> <li>Responsible for maintaining utilities and utility connections in the City.</li> <li>Responsibilities include tree maintenance and removal as necessary.</li> </ol>
Property Owners	1.) Responsible for all trees within their property.
Residents	1.) Residents contact Public Works and the Shade Tree Advisory Board about tree concerns and community forestry issues.
Volunteers and Community Organizations	1.) Volunteers and community organizations provide a valuable resource to the City by assisting with tree plantings, Shade Tree Advisory Board meetings, and other activities pertinent to forest management. There are various community organizations that serve as a support system to the community forestry program in Camden, including New Jersey Tree Foundation.

Source: City of Camden, 2016

# **Care of Public Trees**

## **Division of Responsibility**

The Camden Department of Public Works is the main division responsible for Camden's tree management. It is responsible for maintaining park trees and responding to hazard tree situations on municipal owned land. However, the Camden City Municipal Code considers maintenance of street trees to be the responsibility of the property owner that is adjacent to the tree.<sup>15</sup> At the discretion of the City, property owners may have to address risks from trees adjacent to their property, such as tree-sidewalk conflicts. If the Camden Department of Public Works removes a street tree in front of someone's property, it can put a lien on that property if the owner does not pay for the cost of the removal.<sup>16</sup>

The City Code also puts restrictions on property owners. They cannot cut down or otherwise interfere with a tree on City property without submitting a permit to the Director of the Department of Public Works.<sup>17</sup> They can, however, remove trees with a hired contractor.

This division of responsibility helps remove some maintenance burden from the City of Camden, but it results in varying degrees of maintenance citywide. Some residents do not have the financial or physical capacity to prune mature trees or remove dead trees on or near their property and if the parcel is abandoned then it is unlikely that any maintenance is occurring. Finally, and perhaps most important, our outreach indicated that

<sup>&</sup>lt;sup>15</sup> City of Camden, municipal code, Chapter 796, Trees and Shrubs, ecode360.com/28339746

<sup>&</sup>lt;sup>16</sup> City of Camden, municipal code, Chapter 796, Trees and Shrubs, ecode360.com/28339746

<sup>&</sup>lt;sup>17</sup> ecode360.com/28339753

few people knew the details of the code, which indicates that many residents—as well as City personnel themselves—are waiting for another person to maintain neighborhood trees within public rights-of-way.

#### **Camden Department of Public Works**

Currently, the Public Works Department has three staff dedicated to municipal tree work.

The Department of Public Works uses the following equipment in order to conduct tree maintenance and removals: two bucket trucks, two wood-chippers, four chainsaws, pruning saws and pole-pruners, and all related and essential personal protective equipment and safety gear.

With its current budget and staffing, the department is primarily occupied with trimming and clearing trees and tree limbs that have fallen during storms. It also responds to property owner requests as time allows.

As of the previous community forestry management plan, the Public Works Director reviews all requests and the requests are handled as follows:

1. For all calls regarding municipal trees: Personnel are directed to inspect the tree within three to five days. If feasible, personnel are able to conduct the necessary corrective action to fulfill the request.

2. For all privately owned trees and trees within the sidewalk: Personnel are directed to inspect the tree for any public safety concerns within three to five days and will recommend action to the property owner. If the property owner takes no action to remediate tree safety concerns within the allotted time period, then Public Works may complete the necessary tree work in order to improve public safety and the cost of said work will be charged against the property owner. Price varies by the personnel and tools needed and the time it takes to complete the work. The Department of Public Works tries to help seniors at no cost when possible.

3. For all tree emergency work: Public Works personnel will respond within one to two hours of notification. Occasionally, a tree contractor will be on site to assist, as needed.

All tree inspections are recorded and the records are maintained within the Public Works Department.

Because the City's current budget and staffing for tree maintenance limits the Department of Public Works to responsive rather than proactive work, it cannot do everything it wants or everything requested of it regarding tree care. As a result, other partners and residents gave it mixed reviews in its success with managing trees. One stakeholder noted that the Department of Public Works is responsive after a storm. Another said that "*the public doesn't feel that the City is taking care of its trees.*"

#### **Other Partners**

Several additional groups also maintain trees in Camden, typically in partnership with New Jersey Tree Foundation after staff have planted trees. The list of community partners who are maintaining trees is extensive and includes Camden's downtown Business Improvement District (a public-private partnership with the City), Concerned Citizens of North Camden, The Lanning Square West Residents Association, Cooper-Grant Neighborhood Association, and the Block Supporters Initiative, Center for Environmental Transformation, Camden Lutheran Housing, Hopeworks, Heart of Camden, Parkside Business in Community in Partnership, St. Joseph's Carpenter Society, BSI (part of Camden Lutheran Housing), NJ Conservation Foundation, Cooper's Ferry Partnership, Trust for Public Land, Camden Urban Agriculture Collaborative, PowerCorps Camden, St. Joseph's Carpenter Society, PBCIP, Camden Historical Society, Camden Shipyard Museum, St. Joseph's Catholic Church, Camden Day School, Masijun-Nur Islamic Learning Center, Iglesia Tesalonica Church, Kaighn Ave Baptist Church, and Superior Arts Institute.

Residents and business owners play an important role in tree maintenance and many take part in regular maintenance work year after year. Community groups also help with small cleanup efforts after storms. The 2016 community forestry management plan observes that younger trees, especially those planted in front of residents' homes, are performing better.

New Jersey Tree Foundation maintains trees it has planted throughout the City during the first several years after planting. Because of this organization's long-standing involvement in Camden, one community member observed that "*Camden essentially has a relatively complete tree inventory via New Jersey Tree Foundation's planting records.*" The New Jersey Tree Foundation provides residents and organizations with free trees, and in some cases, free concrete removal. In exchange, the tree recipient agrees to care for and maintain the trees for the first two years after planting. This partnership increases the chance that the trees will survive and become established. New Jersey Tree Foundation also provides guidance to tree recipients and other interested community members on how to maintain trees.

The Department of Public Works also occasionally relies on additional City and county personnel to assist with tree maintenance and planting on an as-needed basis. The Camden County Parks Department stays in frequent contact about tree issues and emergencies to maintain trees. The Shade Tree Advisory Board also participates in maintenance activities.

Some additional groups maintain the City's trees, but in a way that has yielded mixed results, according to stakeholders. The Camden County Police Department trims trees to maintain views for security cameras, but a stakeholder considered "*the extent of their trimming to be aggressive.*"

Private-sector contractors also receive mixed reviews. One resident commented that the utilities use contractors "*who don't comply with its own* regulations." As the 2016 community forestry management plan notes, the quality of trees planted by contractors also varies, both on public and private properties. The 2016 community forestry management plan attributed "low tree survival rates and many struggling trees on public property requiring removal and replacement" by the City to "poor species selection and no maintenance plan" on behalf of contractors.<sup>18</sup> This is still a concern in the City.

# **Tree Planting**

New trees each year are primarily provided by the New Jersey Tree Foundation. Recent planting locations include Cramer Hill Nature Preserve, 25th and Howell Street Park, York Street, Waldorf Street, St. Joe's Catholic Church, Gateway Park, and New Camden Park.

PowerCorps Camden, a program of AmeriCorps that supports youth members in addressing local environmental issues, is another planting partner.<sup>19</sup> PowerCorps members assist with maintenance of green infrastructure sites throughout Camden, and tree planting and maintenance activities are one part of that work. New Jersey Tree Foundation has trained PowerCorps cohorts on tree maintenance and care. Recently,

<sup>&</sup>lt;sup>18</sup> City of Camden, Community Forestry Management Plan, 2016, p. 7.

<sup>&</sup>lt;sup>19</sup> centerffs.org/powercorps-camden

New Jersey Tree Foundation ran a maintenance workday with PowerCorps at Gateway Park and Liney Ditch Park.

The Department of Public Works will do occasional tree planting. Staff identify appropriate trees to replace in the fall, but they must first confirm with the adjacent landowner that a replanting is acceptable.

## **Tree Regulations and Compliance**

The following City plans and ordinances were reviewed for tree-related content:

- Camden Municipal Code
- General Reexamination of the Master Plan, February 2018
- Green and Complete Streets: Building Blocks for Sustainable Communities, 2016
- Connecting Communities: Cooper Grant/Central Waterfront Plan, 2015
- City of Camden Sustainability Ordinance, 2015
- City of Camden Emergency Management Plan, 2014
- Mt Ephraim: Moving Our Neighborhood Forward, 2014
- My East Camden Plan, 2013
- Camden Green Infrastructure Design Guidebook, 2012
- Community-Based Green Infrastructure Feasibility Study, 2011
- Cramer Hill NOW, 2009
- North Camden Neighborhood Plan, 2008
- Morgan Village Strategic Plan, 2007
- Parkside Neighborhood Strategic Plan, 2005
- Liberty Park Strategic Plan, 2005
- Centerville Neighborhood Strategic Plan, 2005
- Fairview Village, 2006
- Future Camden Master Plan, 2002
- Stockton Neighborhood Plan, 1993

The City of Camden has an extensive list of City and neighborhood plans. Through these plans and the City's Municipal Code, there is support and guidance for Camden's trees and clearly defined goals to integrate trees and environmental resources throughout the City.

Within the City's Master Plan and Municipal Code, information about trees is adequately placed within the larger environmental planning context and are regulated in a clearly written manner. For example, attendees noted that developers are "*required to replace a tree for each one displaced and new development must include tree plantings.*"

Furthermore, the subject-specific and neighborhood-specific plans also give special mention to trees, especially the ones that cover green infrastructure and stormwater design. Notably, the neighborhood plans exhibit an evolution in how trees are included in the City. Approximately speaking, plans created before 2010 mention trees as another green infrastructure piece to be included in a larger list, whereas in plans created after 2010, trees are considered a catalyst for community revitalization and as providing extensive environmental benefits. The 2015 Sustainability Ordinance for the City of Camden lists tree plantings as their first suggestion for "environmental mitigation initiatives within the City of Camden…" and the 2016 Green and Complete Streets Memo identifies next steps and priorities to integrate trees and other green infrastructure into their street maintenance standard operations.

During the Camden TreeKeeper presentation, residents were nearly all in agreement that the increased focus on trees and the environment in the City's community plans had changed perceptions or practice in the community itself; one attendee noted a specific improvement, that landscaping is now included in site plans.

The City has a strong planning and regulatory framework for increasing the number and quality of trees, but it has seen some challenges in the implementation of that framework. Stakeholders commented that "the zoning board has a precedent of granting waivers and permitting developers to avoid complying with tree regulations, and of allowing trees removed during construction to be replaced with lower-quality specimens." According to some stakeholders, "tree planting considerations are not consistently part of the zoning and planning board review of environmental impacts that is required in the City's environmental ordinance."

The Shade Tree Advisory Board, as the entity that is charged to advocate to other City organizations on behalf of trees, is also challenged to fulfill its directive because it has an advisory role only. As of the writing of this plan, the Advisory Board is investigating a merger with the City's vacant Environmental Commission in order to broaden the scope of the board and attract more participation.

### **Professional and/or Partner Training**

The New Jersey Community Forestry Council requires ongoing in-house training for municipal workers and volunteers on trees, community forests, and related issues as an aspect of participating in the community forestry management plan program. This training ensures that City staff and residents are familiar with the best practices for planting and maintaining trees.

As of 2020, New Jersey Forest Service's records of accreditation status listed one elected official, two municipal employees, and nine volunteers as being Core-trained community representatives.<sup>20</sup> Core training is the New Jersey Community Forestry Council Training and Accreditation Program, an eight-hour training program that gives participants an overview of the New Jersey Shade Tree and Community Forestry Assistance Act, background on community forestry and shade tree committees, legal aspects of managing trees, and recognition of hazardous situations.

The City meets its state-mandated training requirements for Continuing Education Units (CEUs) using New Jersey Tree Foundation's annual TreeKeepers workshops, which the organization hosts regularly in Camden at no cost to Camden residents and professionals working with trees. New Jersey Tree Foundation and the Shade Tree Advisory Board encourage new members of the Board and other residents to attend this training to learn the basics of tree planting and care.

## **Private Property Tree Care**

### **Residents' Experiences**

At the Camden TreeKeeper workshop, residents discussed maintenance of their own trees. Most either maintained the trees at their home or property or let nature take care of them. A few residents had landlords who took care of their trees and a few others used professional services, although they commented that cost was an issue. Only in one case did someone comment that the City took care of their trees. Residents also

<sup>&</sup>lt;sup>20</sup> NJ Forest Service, 2019 Accreditation Status, NJ Urban and Community Forestry Program, May 5, 2020, p. 269.
noted that community groups like church congregations also volunteer to care for trees. Attendees shared that they did not want PSE&G or its contractors to take care of the trees.

Some attendees voiced confusion about who was responsible for maintaining street trees: residents or the City. This gap in information is one reason why some trees go unmaintained.

Residents face challenges with maintaining their trees, citing the cost that is needed to do so; especially for "*serious maintenance*," as one attendee described it. Roots close to the sidewalk, concerns about tree root growth into sewer laterals, and other examples of "*wrong tree in the wrong place*" also disincentivize residents to plant new trees on their properties or have the City plant new trees. These concerns and a desire to prevent future problems also cause residents to cut down trees, sometimes well before the end of the trees' normal life.

The residents at the Camden TreeKeepers meeting emphasized the value of educating their neighbors to encourage them to plant and protect trees on their property. Suggestions that came from this outreach and the other stakeholder outreach for this plan are included in the Goals and Actions Chapter.

#### **Resident Outreach and Engagement**

The 2016 community forestry management plan notes that the City "recognizes the importance of educating and connecting their residents to the urban Forest."<sup>21</sup> This assertion is demonstrated through the City's ongoing participation in two outreach programs, annual certification in the Tree City USA program and annual celebrations of Arbor Day and Earth Day. These programs emphasize an appreciation for the City's tree cover and engaging residents in that appreciation. Recent events include Camden City (represented by a City employee or community partner) acknowledging Arbor Day through a City proclamation read at a New Jersey Tree Foundation planting. In 2019, for example, New Jersey Tree Foundation hosted the event during its April 28th planting at St. Joseph's Catholic church.

New Jersey Tree Foundation holds its Earth Day celebrations in conjunction with Arbor Day. Other Earth Day events in the City include Camden County's Green Fair and Rutgers—Camden's Earth Day Festival. Various organizations host special programming at their facilities or in the community, such as scavenger hunts, cleanups, and demonstrations of environmentally friendly practices.

Arbor Day and tree education is ongoing in schools. Because the responsibility is on individual teachers to put in requests and conduct the events, these events vary by school and year.

Other outreach efforts happen periodically through the year. The New Jersey Tree Foundation engages residents in plantings and leads free Camden TreeKeepers workshops for residents. The Shade Tree Advisory Board also conducts plantings. Furthermore, the Shade Tree Advisory Board attends public events and distributes educational brochures, including at Arbor Day events and meetings of community groups like Concerned Citizens of North Camden, Cooper-Grant Neighborhood Association, and Lanning Square West Civic Association. The Shade Tree Advisory Board is in the process of increasing its outreach using its Facebook page, calling for resident engagement there and on the City's Facebook page. Shade Tree

<sup>&</sup>lt;sup>21</sup> City of Camden, Community Forestry Management Plan, 2016, p. 27.

Advisory Board staff also connect with a regional group of community-based workers and activists through participation in DVRPC's Public Participation Task Force.

#### Large Private Property Owners' Experiences

Camden is home to a variety of institutions and companies that own large parcels with planted trees, and the parcel owners are involved with tree care and monitoring to varying degrees. As part of this plan, we interviewed representatives from Subaru, Campbell Soup Company, Crestbury Apartments, Cooper University Hospital, and Rutgers-Camden.

The majority of these landowners hire contractors to maintain their trees. Crestbury Apartments, an affordable housing provider, hires a landscaping company with a trained arborist to trim trees. Subaru contracts with Pennsylvania Horticultural Society to design the landscape of its Camden headquarters, where native, drought-tolerant and bird-friendly plant species were planted, including 280 trees. Subaru continues to use a private contractor for maintenance and have committed to not using fertilizers, pesticides, or herbicides.

Campbell Soup Company takes a similar approach to Subaru. Campbell staff members keep track of possible tree issues, but use a contractor for day-to-day and recurring seasonal maintenance. They are guided by their stormwater runoff and landscaping plan, also created by a contractor, and use the plan to guide their tree-planting decisions. Campbell staff participate in community greening initiatives, sitting on the Camden Collaborative Initiative and the Haddon Avenue Gateway Project advisory group, as well as participating in tree-planting projects like the Triangle Park 2 project at Haddon Avenue and Mt. Ephraim Avenue.

Rutgers University-Camden Campus is maintained mostly in-house, by dedicated university staff who tour the campus each day to find and respond to possible tree hazards. The university uses a contractor for occasional intensive trimming and pruning. With the New Jersey Forest Service, staff also conduct outreach to students on Rutgers Day by providing *tubelings* (small saplings) to students and their parents, and talking to them about maintenance.

Many of these landowners, and others not interviewed, have abundant paved surface as well, which is an issue found throughout Camden. Some major property owners have the space to plant and maintain trees to address this problem, but are not necessarily doing so.

#### **Current Budget and Resources**

At this time, there is no dedicated budget for Camden's urban forest, although funding does come out of the Department of Public Works budget for tree maintenance. In the past, the Shade Tree Advisory Board has used Community Stewardship Incentive Program (CSIP) funds for trainings and public education campaigns. The Department of Public Works has also relied on individual grants to support their work.

#### **CHAPTER 4:**

## **Tree Program SWOT Analysis**

During the research and outreach for this plan, many important lessons and points of information were collected. Several of these have already been listed in previous chapters, but are covered here in a traditional SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis to show a more comprehensive picture of the community forestry system in Camden. The points below should not be considered as exhaustive, but as a compilation of the information that was highlighted during research and outreach.

#### **Strengths**

- The involvement and oversight of the Shade Tree Advisory Board.
- The Shade Tree Advisory Board and other community groups have close ties and mutually understand the value of trees, resulting in greater support for Camden's community forestry program.
- There is abundant energy and creativity to improve the community forestry program.
- There are historically significant, unique, and large trees; healthy older and middle-aged trees; and well-maintained young trees.
- A variety of organizations have put money and time into improving Camden's green infrastructure, especially for stormwater mitigation, over the past decade.

#### Weaknesses

- Inconsistent support from City elected officials and staff from year to year.
- Lack of communication and collaboration between all potential tree partners reduces the overall effectiveness of the program.
- Lack of personnel or funding to proactively maintain the community forest.
- Liability issues may place individual property owners at fault.
- Advisory nature of the Shade Tree Advisory Board limits its role in the City.
- Negative perceptions about tree maintenance from private property owners.

#### **Opportunities**

- Residents and stakeholders are enthusiastic about the positive impact of trees for challenges such as stormwater management, food access, air quality, and urban heat islands.
- Expansion of public outreach and engagement programs can foster increased appreciation for Camden's trees and increase the number of people helping to steward them.
- Strong connections with New Jersey Tree Foundation and other community groups can help fill labor and funding shortfalls.
- Access to data-driven management of the community's trees.

- Availability of funding, educational materials, and guidance from New Jersey Forest Service.
- Support for open space and trees in the City's Municipal Codes and plans.
- The variety of institutions and organizations in Camden provide opportunity for future partnerships.

#### **Threats**

- Leadership transition will leave gaps in tree experience and knowledge.
- Camden's current tree maintenance program may result in the City losing more trees.
- External threats such as the effects of climate change (heat, flooding) and new pests will require attention.

#### CHAPTER 5:

## **Goals and Actions**

This section describes the Goals and Actions for the next ten years to fulfill the Mission Statement for this plan laid out in Chapter 1. It is informed by the observations and brainstormed ideas of residents and professional stakeholders from public outreach sessions that were held over the course of two years and provides a blueprint of action for municipal officials, tree related organizations, and private individuals (See Appendix A).

The five Goals of this plan were created by organizing comments from interviews and public meetings into common themes. They are listed in order of priority (See Appendix B) and are:

#### **Summary of Prioritized Goals and Actions**

- 1. Care of Public Trees
  - Proactively maintain community forest.
  - Coordinate routine tree maintenance.
  - Identify priority sites for maintaining trees or resolving tree-infrastructure conflicts.
  - Expand staff capacity of the City for maintaining trees.
  - Conduct a tree inventory and risk assessment.
  - Use, distribute, and dispose of tree products.
  - Coordinate tree risk actions and policies.
  - Streamline tree risk reporting.
- 2. Tree Planting
  - Develop a tree-planting plan for the City.
  - Implement planting plan.
  - Support and grow planting partnerships.
- 3. Tree Regulations and Compliance
  - Enforce existing regulations.
  - Expand role of Shade Tree Advisory Board.
  - Include trees when updating municipal plans.
  - Remain in compliance.
  - Clearly communicate regulations on tree maintenance responsibility.
  - Create new ordinances or amend current ones to further protect trees.
- 4. Internal Training
  - Conduct ongoing training of City staff and officials.
  - Complete required credential maintenance.
- 5. Engagement of Partners for Planting and Maintenance
  - Get more residents and private property owners interested in trees.
  - Increase the capacity of the Shade Tree Advisory Board.
  - Help residents and private property owners better maintain trees.

- Create partnerships with other municipalities.
- Coordinate partner efforts.

#### **Full List of Prioritized Goals and Actions**

#### **Goal 1: Care of Public Trees**

#### Proactively maintain community forest.

1. On a rotating basis by section of the City, conduct proactive maintenance of street trees and park trees.

2. Create a maintenance plan for young and mature trees.

- Utilize the seven maintenance zones the City already uses for snow removal, sweeping, and waste collection.
- Decide on a method of recording monitoring and inventory data, where data will be stored, who will receive it, and how it will be updated.
- Determine planting and pruning locations through inventory data.
- Prioritize maintenance actions based on available funds and staff time.

#### Coordinate routine tree maintenance.

1. Reach out to community groups to learn about their maintenance concerns and priorities.

2. Look for ways to support residents in maintaining their trees.

3. Host regular meetings with City staff, county staff, and neighborhood representatives to discuss ongoing tree issues.

4. Solicit support from private property owners to help maintain trees in the neighborhood.

5. Regularly revisit policies on street tree maintenance responsibilities to determine if they are appropriate based on City funding and personnel, as well as resident capacity.

#### Identify priority sites for maintaining trees or resolving tree-infrastructure conflicts.

1. Attendees at the outreach sessions for this plan mentioned a variety of potentially problematic sites. Refer to Appendix A for the specific sites and areas.

#### Expand staff capacity of the City for maintaining trees.

1. Hire or train a certified arborist or forester in the City.

- The roles and responsibilities for this position include:
  - Citywide tree inventory and risk assessment
  - $\circ$   $\,$  Monitor citywide tree canopy for disease, insect damage, and other threats.
  - Making recommendations to partners to best manage the urban forest.
  - Responsive to tree-related issues.
  - Continue monitoring of City tree canopy.
- Consider a shared agreement with other municipalities or the County.
- 2. Expand the capacity of the Department of Public Works.

- Create citywide training and employment program for tree maintenance.
  - Find partners such as the Camden County Parks Department or Camden County Municipal Utilities Authority.
  - Develop a maintenance initiative that provides training and jobs for Camden residents while improving the
    - health of Camden trees.
  - Search for funding.
- Discuss a maintenance partnership with PowerCorps Camden and other organizations.

3. Increase the Department of Public Works personnel.

- Examine the additional costs and benefits of hiring more staff.
- Consider dividing personnel between maintaining residential neighborhoods and maintaining parks.

## Conduct a tree inventory and risk assessment.

1. Conduct full census of the City's public tree species, health, and maintenance needs, using divided sections of the City and rotating through them from year to year.

#### What are Food Forests?

Food forests are woodland ecosystems that are created by people, designed and managed with the goal of long-term food production. Typically planted in layers, food forests generally consist of trees, shrubs, and ground plantings such as herbs and root crops that produce fruit or are themselves edible. Food forests can enhance soil fertility, water quality, wildlife habitats, and the overall health of a community, and can be community hubs where residents interact with one another and their environment.

One nearby food forest is at the Horticulture Center in Fairmount Park, Philadelphia. The City Parks & Recreation Department and Philadelphia Master Gardeners, together with the Philadelphia Orchard Project, seek to use this site to educate visitors about the ecological and economic benefits of food forests, expand local access to healthy food, and foster community engagement in and around Fairmount Park. For more information, see phillyorchards.org/orchards.

While food forests have benefits, soils within cities carry a risk of contamination and communities looking to plant a food forest must consider this possibility when choosing a site. Harmful chemical elements and compounds such as lead, arsenic, and hydrocarbons commonly end up in soil due to the use of lead-based paint, pesticides, wood preservatives, and the burning of fossil fuels. Fruit- and vegetable-bearing plants can absorb these substances during water uptake, making them potentially dangerous for consumption, but not all of them do. Soil can be tested for lead at the Rutgers Soil Testing Laboratory. For more information, see njaes.rutgers.edu/soil-testinglab.

- Prioritize public trees over private
- 2. Regularly evaluate data to update maintenance trends, needs, and opportunities.

#### Use, distribute, and dispose of tree products.

1. Create a citywide composting program and drop-off site for tree debris.

- This will also serve to reduce industrial air pollutants by diverting waste from Camden's trash incinerator.
- 2. Distribute resulting compost or tree mulch to residents.

#### Coordinate tree risk actions and policies.

- 1. Conduct public and stakeholder outreach to establish a citywide risk tolerance policy.
  - Facilitate conversations between community members to gain consensus on the benefits of trees.
- 2. Create an action plan to mitigate potential risks posed by trees and other information.
  - Coordinate with City and county emergency response and management personnel.
  - Use data gathered from tree risk reporting and tree inventory.
  - Establish protocols for tree-related storm risks, responding to downed trees, and storm recovery.
  - Determine priority locations or neighborhoods using tree risk reporting and inventory data.

#### Streamline tree risk reporting.

1. Expand Camden Reports<sup>22</sup> to include tree risks.

2. Enable Department of Public Works to have access to the report and merge this list with the list that the Department of Public Works manages on hazardous trees.

#### **Major Goal 2: Tree Planting**

#### Develop a tree-planting plan for the City.

1. Create a tree-planting schedule using prioritized tree-planting list.

- Plant a diverse species mix.
- Utilize guidance from right tree in the right place (see Appendix C) and tree planting with a purpose.

2. Develop specifications for tree planting, using New Jersey Shade Tree Federation's "Trees for NJ Streets" (latest edition) and other available publications.

• Incorporate specifications on correct tree pit design and construction.

3. Use existing data to determine priority areas.

- Identify gaps in canopy and reach the neighborhoods and streets with:
  - The least canopy,
  - The greatest amount of impervious surface coverage,
  - The highest surface temperature (heat islands), and
  - Vacant lots that can accommodate trees.

<sup>&</sup>lt;sup>22</sup> camdenreports.com

#### Implement a planting plan.

- 1. Construct enhanced tree pits to capture stormwater runoff in areas that flood.
- 2. Streamline tree plantings with ongoing right-of-way reconstruction projects.
  - Communicate with Camden County Public Works Department and the Camden County Municipal Utilities Authority about timelines for upgrading water infrastructure and county-owned road resurfacing.

3. Conduct education along with tree planting.

• Add signage next to the tree describing the tree species and benefits that the tree provides.

4. Use a contractor, volunteers, or Department of Public Works employees or the New Jersey Tree Foundation to implement the planting plan.

#### Support and grow planting partnerships.

1. Continue supporting the New Jersey Tree Foundation's planting and maintenance efforts in Camden.

#### **Major Goal 3: Tree Regulations and Compliance**

#### Enforce existing regulations.

1. Work with Code Enforcement to ensure that tree ordinance violations are consistently reported and cited.

• Ensure that existing trees are replaced with same-quality or higher-quality trees.

2. Work with the zoning and planning boards to consistently evaluate site development projects for compliance with existing tree-related ordinances.

#### Expand role of the Shade Tree Advisory Board.

1. Establish a timeline for an outreach process to gather support from residents and City officials for all of the actions below.

2. Consider changing the role of the Shade Tree Advisory Board to a formal commission to enable oversight of tree-related activities in the City.<sup>23</sup>

• Learn how other municipal shade tree groups became designated as commissions

#### Include trees when updating municipal plans.

1. Ensure that tree care is added into plan updates.

<sup>&</sup>lt;sup>23</sup> NJAC, 40:64-5, "Powers of Commission," law.justia.com/codes/new-jersey/2009/title-40/40-64/40-64-5/, accessed October 21, 2019.

#### Remain in compliance.

1. Maintain compliance with the New Jersey Shade Tree and Community Forestry Assistance Act by updating the community forestry management plan regularly. This process includes applying for plan development funding at least a year ahead of the deadline, submitting annual reports, and undergoing continuing education (see Major Goal 4: Internal Training).

#### Clearly communicate regulations on tree maintenance responsibility.

1. Create a program to support low-income residents in maintaining public trees for which they are currently responsible (see the goal and actions of Major Goal 5: Engagement of Partners for Planning and Maintenance).

2. Update tree responsibility regulations to be written more clearly, and/or create a graphic depicting the location of trees relative to houses, yards, sidewalks, streets, etc. to clarify when trees are in the public right-of-way versus privately-owned space.

#### Create new ordinances or amend current ones to further protect trees.

1. Review best practices.

2. Through outreach, educate residents and municipal staff and officials about the positive effects of new or updated ordinances and determine the citywide level of support.

3. Consider ordinances or ordinance amendments such as:

- A No Net Loss ordinance to replace trees lost to development.
  - Potential content could include:
    - A tree fund that is supplemented by those businesses taking down, removing or destroying trees; or when they ask for a waiver and it is granted.
    - Requirement in site development process that developers have to replace trees removed with new trees of the same or better quality.
- A standardized tree pits policy to prevent sidewalk damage while also allowing for the proper growth of street trees
- An update to the City's Adopt-a-Lot ordinance to allow fruit trees and orchards
- Allowance for rooftop beekeeping to help with pollination and community garden yields
- A utilization ordinance to enable the recycling of urban wood
- A list of recommended street trees, along with specification on planting and maintenance for treeplanting work

#### **Major Goal 4: Internal Training**

Conduct ongoing training of City staff and officials.

1. Provide information on tree benefits to elected officials and other decision-making City staff.

• Conduct outreach to Camden County Police Department on tree trimming strategies around their camera locations.

2. Engage planning and zoning board members in yearly or biannual training sessions on tree-related ordinances to keep them informed.

- Topics could include:
  - Tree and power line conflicts
  - When to approve?
  - Issues beyond aesthetics.

3. Hire or train a certified forester or arborist.

- In addition to the hiring of a certified arborist or forester, train key City personnel in forestry practices.
- Discuss with Camden County Parks about the need for additional training.

#### Complete required credential maintenance.

1. As required by the New Jersey Shade Tree and Community Forestry Assistance Act, the City should continue to send up to two individuals to obtain credits (Training resources are located in Appendix D).

2. The following individuals and groups should be prioritized for training opportunities: Shade Tree Advisory Board members, tree-planting volunteers, Department of Public Works employees responsible for tree maintenance, and at least two Core trained individuals.

3. One municipal official must complete Core certified training.

4. Recommended training topics include:

- Legal Rights and Responsibilities of Shade Tree Commissions
- Best Practices of Shade Tree Commissions in New Jersey
- Budgeting/ Money Concerns/ Fundraising for Trees
- Conducting Tree Inventories with Volunteers
- Capacity Building for Tree Management
- Technical Training as follows:
  - Emerald Ash Borer Identification
  - Chainsaw Safety
  - Proper Tree Planting
  - Proper Tree Pruning
  - Urban Soils
  - Hazard Tree Identification
  - Tree Care Disaster Planning
  - o Sidewalk/Tree Conflicts
  - Watershed Management Practices
  - Writing Specifications for Bidding Proposals
  - Tree Selection (Right Tree, Right Place)

5. Continue annual participation in the Shade Tree Federation Conference.

Major Goal 5: Engagement of Partners for Planting and Maintenance Increase the number of residents and private property owners interested in trees. 1. Continue Camden's annual Arbor Day celebration, working with the Department of Public Works, community organizations, and residents. Work with local media, volunteers, and community groups to spread the word about the celebration and ensure public attendance and participation.

2. Maintain Camden's Tree City USA status.

- Prepare and submit the Tree City USA application annually to the New Jersey State Forester for approval.
- Advertise Tree City USA status by posting provided signs and other materials throughout the City.

3. Conduct education and outreach to schoolchildren.

- There is a large population of youth and younger residents in Camden that should be part of conversations on tree planting and maintenance.
- Conduct outreach at public schools and libraries to talk about the benefits of trees, the City's goals around improving tree cover, and what students and their networks (families, friends, caretakers, and others) can do to help.
- Work with teachers in Camden City School District to find funding for tree-related curriculums and provide curriculum ideas. See Appendix F for lesson plan ideas.

4. Share information that connects to residents' concerns, such as how trees can help manage local stormwater issues.

5. Provide property owners with the opportunity and choice to plant a tree on their property.

6. More interface between City tree staff and residents is needed to demonstrate how the City is taking care of its trees.

#### Financial Assistance for Tree Maintenance

Several precedents exist for offering assistance to help residents maintain their trees. **Habitat for Humanity** provides no-interest loans and volunteer labor to families for home preservation needs. These loans are disbursed based on income, need, and willingness to help with the project, and can be used for tree trimming and hazardous tree removal. Each program is operated by the local chapter of Habitat for Humanity and so can vary, but some examples are Fauquier County (VA) Habitat for Humanity and North Central Iowa Habitat for Humanity.

The **City of Cleveland Department of Aging** partners with the City's **Department of Public Works** to provide hazardous tree and branch removal services to low-income seniors and adults with disabilities. This program is funded through the US Department of Housing and Urban Development and requires interested and eligible participants to submit a written application with income and home ownership verification. Charlotte NC, and New York City, NY also have municipal programs to help with tree repair, but funding is generally limited and repairs are prioritized based on severity of damage.

Further reading:

- fauquierhabitat.org/what-we-do/programs/home-repairservice.html
- nycgovparks.org/services/forestry/trees-sidewalksprogram
- city.cleveland.oh.us/sites/default/files/forms\_publication s/CTAPSTreeProgramApplication.pdf
- wbtv.com/2019/01/04/charlotte-testing-out-pilotprogram-that-helps-homeowners-with-trouble-trees

7. Expand on existing public outreach programs that may be ongoing through (for example) the City; local businesses; local media outlets; public or private schools; local organizations, groups, and clubs; and religious groups.

8. Continue celebrating Earth Day.

9. Run a table at community events to answer attendee questions and hand out flyers with basic information on trees.

10. Provide residents with education on how trees are helping them (as a resident) improve the City.

- 11. Make use of local media, both print and electronic, to promote tree activities.
  - Update the City's website and Shade Tree Advisory Board webpage to provide more information to readers.
    - Post the community forestry management plan on the Shade Tree Advisory webpage and with other municipal plans.
      - Distribute and publicize this plan and have meetings or conversations with residents about their suggestions for implementing it.
      - In the long-term, gather residents' thoughts regularly for plan updates.
    - Post tree forms and applications.
    - Advertise local tree-related meetings and activities.
    - Link to other tree care organizations, such as the International Society of Arboriculture, National Arbor Day Foundation, and the New Jersey State Forest Service Community Forestry bulletin board.
    - Provide tree care tips from the Arbor Day Foundation and International Society of Arboriculture, advertise City-approved tree species for planting.
  - Form a relationship with local media outlets.
    - Submit regular press releases about community tree events, educational workshops, and/or essential tree information to local media outlets, including newspapers, radio stations, and television.
    - Invite local media to attend Arbor Day events and all other tree-related programs and partnerships within the City of Camden.

12. Organize a tree pit decorating contest, something that has been done by other local shade tree organizations, according to New Jersey Tree Foundation.

#### Increase the capacity of the Shade Tree Advisory Board.

1. Recruit new members.

2. Advocate for a process, in partnership with City divisions, to have proposed tree plantings and tree removals shared with the Shade Tree Advisory Board before implementation.

3. Shade Tree Advisory Board members participate in other groups, and vice-versa.

- Examples include the Planning Board, the Camden County Municipal Utilities Authority, and the Camden Collaborative Initiative.
- Designate a City representative to sit on the Shade Tree Advisory Board.

4. Advocate to give Shade Tree Advisory Board the opportunity to review tree-related projects alongside the Planning Board.

5. Better coordinate the City's tree-related events, such as Team Up Green Up, with the Shade Tree Advisory Board

#### Help residents and private property owners better maintain trees.

1. Create an insurance or funding program for lower-income residents that will cover property costs for trees outside their homes that might damage property or need to be removed.

2. Provide educational resources for homeowners on the following topics:

- Tree identification
- Education/guidance on "right tree in the right place" so that the volume that new trees take up at full growth better fits their surroundings
- Strategies and procedures for the removal of trees, as well as who to call if the property owner cannot do this work on their own.
- How to protect against, identify, report, and respond to insect and disease threats like emerald ash borer.
- Give guidance on how to take care of a healthy tree so property owners can address potential issues before they become critical.

3. Communicate that residents are responsible for the care of street trees after they are planted.

• Education about these responsibilities may scare residents but is necessary.

4. Continue to support the New Jersey Tree Foundation in running educational workshops like TreeKeepers in Camden.

• Expand the reach of workshops to specific neighborhoods, business owners, or other groups that have not previously attended.

5. Organize resident maintenance days for street and park trees. For example, the New Jersey Tree Foundation has considered holding pruning parties in winter and summer with people who have planted trees.

6. Explore utilizing modern technologies such as a smartphone app that residents can use to inventory their trees, get tree maintenance help, and report tree concerns to the City.

7. Provide follow-up educational workshops *after* residents receive a tree.

- 8. Provide physical tools to residents who plant trees so they can do needed maintenance.
- 9. Training and jobs for residents
  - Camden Special Services District can learn tree maintenance if funding is provided (they are grantfunded). There are possible overlaps with Camden County Parks.
  - PowerCorps could be a resource for maintenance when trained.
  - See also: "Expand staff capacity of the City for maintaining trees" goal.

#### Create partnerships with other municipalities.

1. Continue to hold multi-municipal workshops on tree education, such as New Jersey Tree Foundation's TreeKeepers workshop.

2. As there is often no residential requirement to join a shade tree group, encourage Camden Shade Tree Committee members to join or interact with other shade tree groups in surrounding communities to build relationships and learn best practices.

3. Organize tours in surrounding municipalities to learn about local tree programs.

4. Establish a learning exchange among municipalities to learn what others have done to maintain and grow their tree cover; there is particular interest in learning how others have planned for and responded to pests like emerald ash borer.

#### Coordinate partner efforts.

1. Organize regular meetings of the Shade Tree Advisory Board, municipal and county staff from different divisions/departments, planning and zoning boards, nonprofit tree-planting or City greening partners, and local property owners and residents, as well as with public officials when relevant. Discuss implementation of the plan and coordination between countywide, citywide, and neighborhood efforts.

2. Nurture partnerships with Camden County Parks Department.

- Share inventory and map data to show how tree benefits are quantified, to help the Parks Department better prioritize or allocate funds.
- 3. Hold tree-planting and care workshops to share knowledge and coordinate approach.

4. Conduct outreach to property owners.

- Learn what tree care policies schools abide by and, if needed, work with the School District to provide proper guidance for planting trees.
- Provide educational materials for developers and project engineers on best practices for incorporating trees into the site design and construction process to ensure better outcomes for trees.
- Conduct outreach to property owners who could do more to plant trees or reduce the impermeability of their parking lots.
  - Encourage property owners with impermeable parking lots to plant trees in their parking lots.
- Provide ongoing support to property owners to increase the number dedicated to tree care.

5. Conduct regular outreach and engagement with utility companies. (See Appendix E for more guidance and resources from other communities.)

- Choose a City liaison (or liaising group) with a background in tree management to share utility updates with residents and other City staff as well as collect resident or elected official concerns.
- Conduct a tree audit with the utility company about tree and line conflicts, as well as priority areas where aesthetic appearances should be prioritized.
- Get City staff in the Department of Public Works to complete line clearance certification so they can do small-scale tree trimming work near power lines in the City.
- Pre-certify contractors for tree-related work.

#### CHAPTER 6:

## **Next Steps**

#### **Future Budget and Resources**

The majority of the work listed in the goals and actions above requires additional funding sources. As mentioned previously, the Department of Public Works is the main recipient of funding for tree maintenance, but does not have a dedicated budget for trees. There is also paid staff time for local and regional tree advocacy organizations, as well as in-kind work from local volunteer hours.

Rarely does a City have a large enough municipal budget to act on all of its goals for its community forest. Advocating for an increase in budget is itself an additional ongoing project that may require the work of a variety of residents and community groups. In the meantime, the City may be able to use grants, which provide temporary influxes of funding. See Appendix G for resources available as of the publication of this plan.

Stakeholders in the City should review available funding and personnel resources on an ongoing basis to see what goals and actions from the community forestry management plan are achievable with what is available, and continue to do so as circumstances change.

#### Timeline

The following is a general timeline of the goals and actions included in this plan. It is an estimate of what the City and its partners can do and depends on available funding and personnel, noting that the capacity of the City may change in unpredictable ways as grants are received, staff change, and budgets change.

The goals from Chapter 5 are divided into (1) short-term goals and actions that the City can focus on over the next ten years, and (2) aspirational long-term goals and actions for the City that may take more than ten years to complete, but which will further improve the City's program.

#### **Goals Summary**

#### Major Priorities and Goals (Listed in order of priority)

- 1. Care of Public Trees
  - Short Term
    - Proactively maintain community forest.
    - Coordinate routine tree maintenance.
    - Identify priority sites for maintaining trees or resolving tree-infrastructure conflicts.
    - Coordinate tree risk actions and policies.
    - Streamline tree risk reporting.
  - Long Term
    - Expand staff capacity of the City for maintaining trees.
    - Conduct a tree inventory and risk assessment.
    - Use, distribute, and dispose of tree products.
- 2. Tree Planting
  - Short Term

- Support and grow existing planting partnerships.
- Long Term
  - Develop a tree-planting plan for the City.
  - Implement planting plan.
- 3. Tree Regulations and Compliance
  - Short Term
    - Enforce existing regulations.
    - Update plans to include trees.
    - Remain in compliance.
    - Clearly communicate regulations on tree maintenance responsibility.
  - Long Term
    - Create or amend ordinances to protect trees.
    - Expand role of Shade Tree Advisory Board.
- 4. Internal Training
  - Short Term
    - Complete required credentialed maintenance.
  - Long Term
    - Conduct ongoing training of City staff and officials.
- 5. Engagement of Partners for Planting and Maintenance
  - Short Term
    - Get more residents and private property owners interested in trees.
    - Help residents and private property owners better maintain their trees.
    - Coordinate partner efforts.
  - Long Term
    - Get more residents and private property owners interested in trees.
    - Increase the capacity of the Shade Tree Advisory Board
    - Help residents and private property owners better maintain their trees.
    - Grow partnerships with other municipalities.
    - Coordinate partner efforts.

#### **Ongoing Review and Adaptation of Program**

The Camden Shade Tree Advisory Board and partners should continue to meet regularly to discuss the progress that is being made to implement this plan. Stakeholder partners would include members of the Shade Tree Advisory Board, municipal staff, planning and zoning boards, nonprofit tree-planting and City greening partners, and representative local property owners and residents. Elected officials and state or county officials would be asked to attend periodically when their input is needed.

The committee would use these meetings to get support for new projects, talk about ongoing or upcoming projects, reflect on the success of recently completed projects, and come to consensus on revisions to the plan or changes to future projects that may be needed. This committee would also be well-positioned to create the regular plan implementation updates that are required by the New Jersey Shade Tree and Community Forestry Assistance Act and conduct future updates to the community forestry management plan.

#### CHAPTER 7:

## References

Casey Trees, "Right Tree, Right Place: Obvious and Not So Obvious Factors to Consider When Planting," caseytrees.org/2018/07/right-tree-right-place-obvious-and-not-so-obvious-factors-to-consider-when-planting/

Forest Service U.S. Department of Agriculture, "Tree Owner's Manual for the Northeastern and Midwestern States," fs.usda.gov/Internet/FSE\_DOCUMENTS/fsbdev7\_013722.pdf

New Jersey Forest Service, "Tree pests," nj.gov/dep/parksandforests/forest/foresthealth/index.html

# **Appendix A** Notes from Outreach

## Appendix A: Notes from Outreach

#### TreeKeepers Meeting June 15, 2019

DVRPC Presentation at TreeKeepers Workshop

Camden, NJ – The Neighborhood Center

Saturday, June 15, 2019

Notes taken by Pamela Zipse, Rutgers Urban Forestry Outreach Program

Notes in blue taken by Melissa after conversation with Miles recapping meeting

#### General:

- □ Attendance shifted throughout meeting but was about 10-15 people
- □ Attendees mostly from Camden; only 3-4 from Gloucester City (and those that were from Gloucester were committed tree people who we already knew)
- No one had heard of CFMPs
- About ½ had heard of their shade tree committee
- $\hfill\square$  Major themes included education, cost, support for continued maintenance
- 1. How would you describe the impact of trees in your neighborhood?
  - a. Beautify
  - b. Good for environment
  - c. Squirrels and birds live in them (positive and negative)
  - d. Shade
  - e. Helps with pollination
- 2. What are the reasons you want to see more trees in your neighborhood?
  - a. Help with air quality
  - b. Trees are good
  - c. We just like trees
  - d. Beautiful
  - e. Adds to neighborhood character trees make neighborhood distinctive residents of the block
  - f. Brings life
  - g. Looks good
- 3. Who maintains the trees at your home
  - a. You do (5)
  - b. You do, with some help from professional tree services (2)
    - i. Cost is a problem with this
  - c. You rely on professional tree services (0)
  - d. Nature takes care of your trees (4)
  - e. Your landlord takes care of your trees (2)
  - f. The city takes care of your trees (1)
  - g. Community groups like church congregations also volunteer to take care of trees
  - h. No one wants PSE&G, or their contractors, to take care of the trees

- 4. What is a top reason you or your neighbors might choose to not to plant a new tree or remove a dead/declining tree on your property?
  - a. Cost
  - b. Roots to close to the sidewalk
  - c. Bad experience with a wrong tree in the wrong place
  - d. Tree hit by lightning
  - e. Bad experiences with hazardous tree/expensive to maintain
- 5. What do you think are some of the best ways to encourage others to plant and protect trees on their property?
  - a. Education very important to attendees
  - b. Workshops like this one in the community
  - c. Community fairs
    - i. Tabling at events, handing out flyers
    - ii. Mentioned church and school events
  - d. Knowledge of the storm water management issues and how trees can help
- 6. What are some of the most important things that you and your neighbors can do to better maintain the trees that are in your yard or neighborhood? What kind of support do you need to accomplish this?
  - a. Education
  - b. Tools (physical tools)
  - c. Insist on educational component with all planting grants
  - d. Earth Day/Arbor Day
  - e. Lead by example
    - i. Organize a tree pit decorating contest
      - 1. According to the NJ Tree Foundation, a local shade tree org used to do this
  - f. Get the community together to take care of tree the city plants
  - g. City needs to communicate that the resident is responsible for the care of the trees after they are planted
  - h. People do not know that they are allowed to help
- 7. What are some of the most important things that your municipality can do to better maintain the trees that are in your neighborhood?
  - a. Education
  - b. Communicate with PSE&G to follow the rules and hire good contractors
- 8. Trees can grow to obstruct streets and sidewalks. How often do you encounter this issue with trees in the public right of way
  - a. Daily (2)
  - b. Weekly (4)
  - c. Monthly (1)
- 9. For Camden residents: Has the increased focus on trees and the environment in the community
  - plans resulted in any changes in perception or practice in the community or government?
    - a. Yes (nearly all in agreement)

- b. Landscaping is now included in plans/drawings
- 10. How could property owners in neighboring municipalities (Camden, Gloucester City, and others) work together to share knowledge or other resources to maintain the region's trees?
  - a. Workshops like this one
  - b. Join other shade tree commissions
    - i. There is no requirement people have to live in the municipality of the shade tree commission
  - c. Tours of other town and their programs
    - According to one attendee, in a community near Camden, a shade tree commission has regulatory powers and can create ordinances and levee fees – would be helpful to look at their model

#### Camden Community Forestry Stakeholder Workshop August 28, 2019

#### Camden Community ForestryStakeholder Workshop August 28, 2019 at CCMUA Meeting Minutes

#### Icebreaker Conversation

If you could snap your fingers and do one project related to Camden's trees, what would it be?

- Reach the neighborhoods in Camden with lowest canopy.
- Maintenance.
- More trees, especially street trees.
- Identify gaps in the canopy.
- · Planting street trees in areas with lots of impervious surfaces.
- Address heat island.
- Maintenance in Farnham Park.
- For the residents to love the trees in front of their house.
- Letting people know how to take care of trees.
- Managing the destruction of fences by trees.
- Considering trees on private property not under the purview of the city.
- Economic development on Market St.
  - How to plant in a business corridor.
  - o Strategic planning for planting, maintenance wants nice appearance for corridor.
- Education and tree identification.
  - Teaching kids in school.
- Tree maintenance on the trails around Camden, the greenway, and Circuit.
  - Address buckling sidewalks.
- Tree inventory to do work more efficiently.

Additional comments during icebreaker:

- · What are strategies and procedures for the removal of trees?
- In Camden, street tree maintenance is the responsibility of the resident but DPW comes out in hazard tree situations.

#### Small Group Discussion

Group 1 - Sheila Roberts, Meredith Brown, Dave Fennimore, Tim Feeney Facilitator: Miles Owen

- o Need a maintenance plan for the entire city, not just specific neighborhoods.
- No net loss ordinance.
  - Revise it so developers have to replace trees with same quality of trees, not just evergreens or bushes.
- Haddon Ave and Atlantic around Donkeys

- Trees were improperly planted in cages.
- This is hurting the trees.
- One potential solution is to cut the cage.
- Residents and business owners don't like the trees though because the branches obscure the store fronts and the trees aren't maintained well.
  - Need pruning so you can see stores and allow light from the street lamps at night.
- Atlantic to Charles Brimm on Broadway
  - Bergen Square area is an area that needs trees.
  - Lots of barren land.
  - Vacant and abandoned land.
- Mission statement
  - Good to go.
  - All like it.
- Care of public trees
  - o DPW needs to maintain because the residents can't afford serious maintenance.
  - Or, if improperly planted, the burden to fix it is placed on the resident when it was DPW's fault.
  - Only way to solve the current problem is for DPW to own up to the mistakes of the past.
  - o 500 block of Trenton Ave
    - Large trees are currently damaging infrastructure like sidewalks and water pipes.
- Care and monitoring
  - Subaru
    - Uses private contractors.
    - Lots of asphalt.
    - 280 trees on HQ grounds.
    - 50 trees at training center.
    - PHS helped with design and tree selection.
- Managing tree risks
  - DPW will manage and is fairly responsive after a storm.
  - Community groups help with small clean-up efforts.
  - It would be nice for DPW to manage trees before they became a risk.
- Private property and education
  - Residents should have follow-up educational workshops from NJ Treekeepers after getting a tree.
  - Arbor Day and tree education happens in schools.
    - Teachers have to put in requests and conduct the event so these events vary by school and year.
  - Developers need the education more than schoolchildren.
  - Need to work with project engineers and have them meet with the community.
  - Also, need to enforce the ordinance.



- Regulatory compliance
  - Just enforce the ordinance and stop granting variances.
  - Need to convince Mayor and City Council to fight for the ordinance.
- Training
  - Shade Tree conference in Cherry Hill is a good place to get training.
  - Power Corps works with NJ Tree Foundation.
    - Trains each cohort in tree identification.
  - o There is a potential opportunity for Power Corps and DPW to partner together.
  - Could help to have shade tree group train city staff and get shade tree people on the planning board.
    - Need more shade tree members total as well.
  - NJ Tree Foundation has considered holding pruning parties in winter and summer with people who have planted trees.
  - NJ TF should train city staff and DPW to make sure they are fully and appropriately trained.
    - Could be a form of professional development for city staff and city politicians.
- Parking Lots
  - o How can we encourage businesses to plant trees in the parking lot?
  - Ordinance usually requires planting trees around the exterior as a buffer.
  - One potential idea would be for DPW to agree to maintain trees in the parking lot
    - if the business owner agrees to plant them.
- Inventory
  - Need one.
  - Potential sources and/or partners
    - Center for Environmental Transformation
    - Power Corps
    - Hope Works

Group 2 - Bob Brant, Carrie Sargeant, Erin Crean, Joe Thomas, Julia Raskin Facilitator: Chris Linn

- 1. Care of public trees
  - a. Nobody really seems to know what a public or private tree is, so this topic became fraught before we even got into it. In Camden, when people talk about "trees", they mostly think about street trees, and these are the exact kind of trees that can be thought of as public or private depending on one's perspective, knowledge of law and policy, or lack thereof.
  - b. If our understanding of current policy is correct, people need to know that it is their responsibility to take care of the "public trees" in front of their house. That said, everyone in the group acknowledged that when it comes to pruning (mature) and removing (mature) dead trees, residents don't have the capacity to do so, even if they are aware that it is their responsibility.

- i. It was also pointed out that not all street trees are in front of residential properties. Street trees are also in front of public, institutional, commercial, or tax-delinquent properties and this is a different situation than a tree in front of an active residential property.
- c. Currently care of trees is reactive. It would be better to move to pro-active maintenance. However, this is only an issue for trees that the City is supposed to take care of (which for most of the conversation, there was continued debate about)
  - i. We need to look at and understand what the ordinance says about street trees. If it is not clear as to what is a public vs. private responsibility regarding street trees, this understanding needs to be improved. If the ordinance language is too "legalistic", someone should re-write it in plain English.
  - CL Note: nobody in the group seemed to know what the City's tree regulations are (Also applicable to Action #7 – it's tough to ensure compliance with the regulations if folks in the city don't know what the regulations are).
  - iii. CL Note: it would be helpful to have a drawing depicting the location of trees relative to houses, yards, sidewalks, streets, etc. to clarify when trees are in the public right-of-way versus privately-owned space. Several participants, including myself, tried to create such a sketch during the session, but something more formal would be very useful.
- d. It would be helpful to have a licensed arborist on-staff, or be able to contract out this work at short notice, i.e., to have an arborist "on-call".
- e. It's important for the public to have the perception that the city is taking care of its trees. Currently, this is not the case, according to Joe Thomas.
- f. Someone commented that if DPW removes a street tree in front of someone's house, they might put a lien on that house if the owner does not pay for the cost of the removal. Everyone understood the logic that if the tree is the legal responsibility of the homeowner, than technically speaking, the homeowner needs to pay for the cost of the removal, regardless of who performs the removal. But this contradicted with the general sentiment among the group that homeowners can't (and shouldn't) be expected to pay for the cost to remove (high risk) street trees that are technically in the public right-of-way.
- g. CL's comment: most of the conversation focused on high-risk or dead trees. There was no talk about how to actually care for *healthy trees* and how to keep them healthy. In my experience, trees take care of themselves. That said, it would be useful to know what one is supposed to do to take care of a healthy, mature tree (pruning is about all I can think of). I don't know, nor did my group seem to know.
- 2. Monitoring
  - a. A certified arborist is needed to monitor trees (see 1d above)

- DPW has some sort of "list" of trees that they have received complaints about, but this isn't comprehensive
- Managing Tree Risks Note: most of this topic was covered under "care of public trees" above.
  - a. Typically, a city establishes a level of "risk tolerance" as a first step in managing tree risks. Nobody in the group was aware that the City has an established level of risk tolerance. From the conversation, it generally felt (to me) like the issue of risk tolerance is a point of confusion and an area where people tend to talk past one another i.e., there is a significant camp that wants to cut down trees as soon as they are perceived to be a threat, nuisance, or problem. There is also a camp that values trees and would only remove them in the most serious cases. This is an area where more education and dialogue (and professional guidance) is needed.
  - b. As with tree care, risk management is reactive, not pro-active. It should be pro-active.
  - c. NJDEP has a \$10,000 grant program for risk assessment. (I'm guessing Carrie probably knows something about this.)
- 4. Planting Trees
  - a. The City does not have an active tree planting program. Whether or not the City should have a tree planning program is an important topic for future discussion. The NJ Tree Foundation (which is not the city) is perceived to be the tree-planting arm of the city.
  - b. Several examples of planting the wrong tree in the wrong spot were given. "Maple trees" were primarily cited as the leading offender. While it felt like a tsunami of examples could have emerged from the group, this entire conversation was squelched when someone said "plant the right tree in the right spot." Problem solved! There was also mention of properly-size tree pits. Good point!
  - c. One participant talked about a project to re-design State Street. She highlighted that this is an obvious opportunity to include/incorporate new street trees. However, the consultant would not include street trees because nobody would agree to maintain them.
  - d. CL comment: It didn't really make sense that the consultant would refuse to incorporate street trees (after all, *they're* not going to have to maintain them). Nobody knew who was telling the consultant that they couldn't include street trees without a maintenance commitment. Cooper's Ferry is sponsoring the project, but everyone agreed they wouldn't be opposed to street trees either. In the end, we couldn't figure it out. Regardless, couldn't the DPW nominally agree to maintain the street trees to get over this hump? Also, since these are new trees, one would presume that not much "maintenance", beyond watering when the trees are first planted, is required.
- 5. General

- a. The city, or someone within the city or working with the city, needs to be trained in forestry practices. Engaging/hiring an existing forester would also work.
  - The city could have a "shared-services" agreement with some other entity (county, another municipality, etc.) if they wanted to share the services of a forester.
- b. This person (5a) needs to work closely with both the Shade Tree Advisory Board and the Planning Board. Similarly, the Shade Tree Advisory Board needs to be represented on the Planning Board and vice versa. Someone needs to speak for the trees!!
- c. Someone who knows, and is committed to enforcing, the city's tree regulations should be serving on the Planning Board.
- 6. Tree Inventory
  - a. The layperson (most of the folks in our group) doesn't really know what a tree inventory is. There seemed to be some indication from participants that NJDEP's land cover dataset is a "tree inventory". Carrie explained that a tree inventory consists of location, species, and (DBH) diameter at breast height. That simple explanation quickly brought clarity to what was becoming a confusing conversation.
  - b. Carrie also explained that the forester that DEP is hiring will only do a "sample inventory".
  - c. CL note: it would be useful to know how large of an area the forester will sample.

Group 3 - Ben Saracco, June Morton, Maggie McCann Johns, Val Galarza, Keith Walker Facilitator: Melissa Andrews

#### Care and Monitoring of Public Trees

- DPW would like to be more proactive with maintenance to prevent risks, use funding better.
- DPW has to maintain trees along street they have a sweeper service that needs to get against curb.
- DPW has 7 zones for snow removal, sweeping, street collection could use these zones for recurring maintenance/inventorying.
- Ideally, DPW would have two different sets of personnel for maintaining residential neighborhoods and maintaining parks. Would need more personnel for that scope.
- Camden County Park maintenance need to do more to be proactive. They are taking on diseased trees whose condition was previously ignored.
- Farnum Park questions on who is responsible for maintenance, city or county?
- Camden County Parks had an arborist 30 years ago, Camden at least that. Camden County Parks is trying to hire several arborists
  - · Could Camden bring an arborist to the city? How to "sell" that idea to the city?
  - · Finding the right angle address flooding or water quality, mitigate asthma
  - The arborist could serve both the city and county.
- · Camden County Parks is working on a draft plan.

- They want a plan that has continuity detailed instructions that others could follow even when personnel change.
- o It will address county park issues, where gaps exist.
- Camden County Parks is thinking about how to provide funds to communities in the county for their own work.
- They'd be interested in seeing how tree benefits are quantified so they can better prioritize/allocate funds, and also would make use of heat island data.
- Robert Wood Johnson Foundation county-based possible funder.
- Camden County Parks would like to get open space tax increased to 3% or maybe 4-5% to provide more funding resources. A 1 cent increase would provide an additional \$3 million for the county, and would cost households an average of \$18-36 per year.
- Composting and mulching no citywide or countywide infrastructure.
  - County uses wood chips but there isn't a centralized drop-off location for households.
  - County was working with Organic Diversion.

#### Planting Trees

- Desire for list of appropriate street trees NJ Tree Foundation provides that.
- Val is overseeing an air quality study data on heat islands pending working with doctoral students at Rowan. 10 sites in Camden. In the process of getting guidance on implementation of results (determining where to plant trees).
- Old trees have wide limbs, which can be problematic. At Donkey's at Haddon Ave, wide trees block the storefront.
  - Choose vertical trees instead.
- Camden County Parks has \$50K set aside for planting trees but want to think more strategically about where to plant.
- One possible option for Camden County Parks to fund tree projects outside of county parks is for trees on county roads.
- To help prioritize tree locations related to air quality/asthma...
  - Partner with Air work group in CCI.
  - Map air quality in Camden, looking at NJDEP's two monitoring stations. Several private-sector companies also monitor air and a request could be put in to see the data.
  - Asthma rates would also be helpful to map. Amy Verbofsky at DVRPC could point us to data sources. Camden-based hospitals would have information
- For mapping existing tree canopy to observe gaps, look at University of Vermont/Shippensburg University's LiDAR scan of Philadelphia/Camden
- Use of trees in large planters to beautify the street is done elsewhere in NJ and results in smaller trees.

#### Managing Tree Risks

· DPW mainly deals with dead, diseased, hazardous trees.



- DPW identifies areas where trees are knocked down, choose the right tree to replace. Residents have to buy in.
- DPW price charged per resident to manage trees varies a lot and is based on personnel, time to maintain, tools needed. But they try to help seniors for free whenever possible.
- DPW has its hands full with responding to storms. 24 trees down in 2 hours in past storm.
- · Residents have reported complaints about tree root growth into sewer laterals.
- Trees growing onto roofs and up against house cause mold/fungus problems.
- Site to report flooding and illegal dumping exists could trees be added as an option that people can report on?
- In emergencies, Camden County Parks and DPW work together closely and help each other maintain. Generally, they take care of their own emergencies and then coordinate when assistance is needed. They still are reactive because they don't know which trees will fall. They stay in constant contact about tree work.

#### Private Property Tree Care

- Provide residents with education on how trees are helping you (as a resident) improve city.
- Talk to schools and learn what property regulations they abide by do they have proper guidance for planting trees? Communication with schools needed.
- If urban fruit tree program was implemented, some administration would be needed of fruit trees to distribute fruit if it wasn't all used by property owner.
- By Camden regulations, residents own trees in front of their home this is an issue that DPW faces.
- · Neighbors cut down trees across the street from Ben frightened of roots growing.
- Education/guidance for residents on smaller, slower-growing trees needed.

#### Professional/Partner Training

- Camden County Parks could provide funding to train members of Camden City's DPW crew. New and engaged DPW staff could work with Parks staff and would learn what they would have to do to take their careers to the next level.
  - A civil service title to get a bump in their wage could be an additional incentive to participate.
- Camden Special Services District learn tree maintenance if funding is provided (they are grant-funded).
  - There are possible overlaps with Camden County Parks.
- PowerCorps could be a resource for maintenance when trained.
- Camden County Parks has been interested in working with Andy Kricun to create a WPA-like program, offering jobs and training to residents to maintain trees/parks.

Regulations and Regulatory Compliance

Planning/zoning applications cause existing trees to be replaced with lower-quality trees.



- Developers need to be under a no-net-loss style regulation where they will planting tree after removing tree - also use like kind
- Sustainability ordinance isn't being implemented zoning and planning board approval requires a review of environmental impacts and trees aren't part of that
- Training of planning and zoning boards is needed what to approve, what not to approve.
  - They don't have an environmental background and in that absence are mainly looking at aesthetics.
  - Who could provide training? League of Municipalities offers training and the group knows of at least one staff member who supports environmental courses.
    - It could be added to a "certified board management course."
    - Also: Rutgers Continuing Education Department, Cook College, Public
      - Works Association Conference, Department of Personnel at Camden
- Trees and addressing food scarcity Adopt-a-Lot program doesn't allow planting of trees right now, but if the regulations were changed, fruit trees could be added
- · Beekeeping regulations to enable beekeeping provide food and pollinate fruit trees

## **Appendix B** Results of the Goals and Actions Survey

## Appendix B: Results of the Goals and Actions Survey

### **Results of Camden CFMP Goal Prioritization Survey**

The Camden Goal Prioritization Survey was conducted by DVRPC from May to June of 2020. It was prepared using SurveyMonkey and the results were analyzed and presented by DVRPC to Camden Shade Tree Members on July 16, 2020 and are shown in Table B-1. Each Goal and Action was scored from one to five, with five being the highest priority level.

Goal	Score	Action	Score
Care for Public Trees	4.83	Proactively maintain community forest.	4.2
		Coordinate routine tree maintenance.	4.2
		<ul> <li>Identify priority sites for maintaining trees or resolving tree-infrastructure conflict</li> </ul>	4.2
		• Expand staff capacity of the City for maintaining trees.	4
		Conduct a tree inventory and risk assessment.	3.8
		•Use, distribute, and dispose of tree products.	3.8
		Coordinate tree risk actions and policies.	3.6
		Streamline tree risk reporting.	3.6
Plant New Trees	4.5	• Develop a tree-planting plan for the City.	4.4
		• Implement planting plan.	4
		• Support and grow planting partnerships.	4
Comply with and Enforce Regulations and Requirements	4.5	•Enforce existing regulations.	4.4
		•Expand role of Shade Tree Advisory Board.	4.4
		Update plans to include trees	4.4
		•Remain in compliance with tree related regulations.	4.2
		•Clearly communicate regulations on tree maintenance responsibility.	4
		•Create or amend ordinances to protect trees.	3.4
Conduct Internal Training	4.17	•Conduct ongoing training of City staff and officials.	4
		•Complete required credential maintenance.	3.6
Engage Partners in Planting and Maintenance	4.17	Get more residents and private property owners     interested in trees.	4.5
		<ul> <li>Increase the capacity of the Shade Tree Advisory Board.</li> </ul>	4.25
		Help residents and private property owners better maintain their trees.	3.75
		•Grow partnerships with other municipalities.	3.75
		Coordinate partner efforts.	3.25

### Table B-1: Results of Camden CFMP Goal Prioritization Survey
# **Appendix C** "Right Tree in the Right Place" Guidance

# Appendix C: "Right Tree in the Right Place" Guidance

Several state and regional organizations provide guidance to property owners for determining the tree species and varieties most likely to thrive on their properties or along a street right-of-way next to them. This appendix provides general guidelines, factors to consider, and recommended species for different situations.

# **Climate Factors**

The USDA Agricultural Research Service and Oregon State University's PRISM Climate Group jointly develop a plant hardiness zone map, which reflects the plants most likely to thrive in extreme cold temperatures in specific locations across the country.<sup>24</sup> The map was most recently updated in 2012 to reflect the current climate, based on temperature data from 1976–2005. According to this updated map, Camden is in zones 7a and 7b.<sup>25</sup> Tree species selections should use those zone guidelines. Tree nurseries and providers can provide information on which trees are appropriate for zone 7.

Climate change will likely cause the USDA to continue to shift its plant hardiness zones, and future decades may favor trees that currently live farther south. The Climate Change Response Framework, a multiorganizational research effort led by the Northern Institute of Applied Climate Science, used two climate change scenarios in combination with two forest impact models to predict how tree species may fare in the future.<sup>26</sup> They focused on the mid-Atlantic region, including the Coastal Plain subregion where Camden resides.<sup>27</sup> Based on their climate models, these researchers estimate that such tree species as Eastern redbud and Pin oak may have an increase of more than 20 percent in density in the region by 2100. The researchers do note, however, that the models don't show other factors that may reduce the future viability of those species, such as droughts or invasive species.

# **Pest-Vulnerable Species**

Check which tree-favoring pests are common or growing in population in order to avoid the trees they favor. Currently, pest species like emerald ash borer and hemlock wooly adelgid are prevalent in the area, while spotted lanternfly populations are growing, so it is inadvisable to plant their host species. Vulnerable species include ash for emerald ash borer and hemlock for the hemlock wooly adelgid. Unfortunately, spotted lanternflies favor a wide variety of trees, including tree of heaven, its preferred host, but also apple, plum, cherry, peach, apricot, grape, and pine species.

# **Site-Specific Factors**

Different trees are also more or less appropriate to highly local, site-specific factors.

<sup>&</sup>lt;sup>24</sup> planthardiness.ars.usda.gov/pages/about

<sup>&</sup>lt;sup>25</sup> planthardiness.ars.usda.gov/pages/view-maps

<sup>&</sup>lt;sup>26</sup> Butler-Leopold et al., "Mid-Atlantic forest ecosystem vulnerability assessment and synthesis: A report from the Mid-Atlantic Climate Change Response Framework Project," 2018. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. forestadaptation.org/mid-atlantic/vulnerability-assessment

<sup>&</sup>lt;sup>27</sup> forestadaptation.org/learn/resource-finder/climate-change-projections-individual-tree-species-mid-atlantic-region,

forestadaptation.org/sites/default/files/MidAtlantic\_tree\_species\_Coastal%20Plains.pdf

## **Soil Chemistry**

Soil testing kits to determine the soil's nutrients and pH can be purchased from the local county office of Rutgers New Jersey Agricultural Experiment Station (NJAES) Cooperative Extension.<sup>28</sup> Alternatively, pH meters can be purchased from various online retailers. Soil pH typically ranges from 5.5 (acidic) to 8.5 (alkaline).

#### Soil Drainage

To determine soil drainage rates, dig a hole 18 inches deep, fill with water, let drain completely, then refill with water and time how long it takes for the water to drain. If the soil drains in less than two hours, it is considered fast-draining, and if it drains in 18 hours or more, it is considered slow-draining.

#### **Sun Exposure**

Determining sun exposure is simple but time-intensive, and involves monitoring over the course of a day where your site gets full sun, partial sun/shade, and full shade.

# **Tree Characteristics Affecting Maintenance**

Property owners should be aware of the types of materials that their preferred tree species will produce in a given year. The volume of leaves, flowers, and fruits that a tree drops can vary greatly. Furthermore, some trees produce pollen that can affect air quality for people with allergies or other sensitivities.

Another consideration affecting long-term maintenance is a tree's growth rate. Slow-growing species typically live longer than fast-growing species and require fewer instances of replacement over time. If a property owner plans to own and maintain a property for decades or generations (such as a school or religious institution), this consolidation becomes more important.

#### **Spacing Guidelines**

Choose a planting spot at least three feet from pavement or fencing on all sides and 25 feet from overhead utilities if the tree will grow taller than 30 feet.

See Table C-1 for guidance on spacing trees away from buildings or "plant massings" (other trees).<sup>29</sup> Note that this guidance does not discuss buildings above one story.

<sup>&</sup>lt;sup>28</sup> njaes.rutgers.edu/soil-testing-lab/kits.php

<sup>&</sup>lt;sup>29</sup> arborday.org/trees/righttreeandplace/size.cfm

# Table C-1: Basic Spacing Guide

TREE SIZE	SPACING PLANT MASSINGS	MIN. SPACING FROM WALL OF 1-STORY BUILDING	MIN. SPACING FROM CORNER OF 1-STORY BUILDING
Small trees (30' or less)	6-15'	8-10'	6-8'
Medium trees (30-70')	30-40'	15'	12'
Large trees (70' or more)	40-50'	20'	15'

The basic spacing guide from various distances and various tree heights

#### Source: Arbor Day Foundation

The shape of a tree—whether it has a narrow or wide canopy spread—also further determines how close it should be planted to other structures or utilities. Trees that are column-shaped or oval, like the Lombardy poplar or sugar maple, may fit into tighter spaces than trees that are round or v-shaped, like the white oak or hackberry.<sup>30</sup>

Check with your local underground utility services to make sure that there are no buried wires or pipes carrying water, sewage, gas, or electricity where you want to plant. New Jersey law requires anyone conducting major digging work to call "811" or 800-272-1000 between three to ten business days before starting work. This communication system helps prevent loss of life or property from damaged utilities.

<sup>&</sup>lt;sup>30</sup> arborday.org/trees/rightTreeAndPlace/shape.cfm

# **Appropriate Species**

The New Jersey Tree Foundation keeps a list of tree species that adapt well to urban areas, shown in Table C-2, and a list of species that typically grow under utility lines, shown in Table C-3.

Latin Name	Common Name	Notes
	Large Species	
Ginkgo biloba	Gingko	
Quercus species	Oaks: Pin, Red, White, Swamp white, Chestnut, Willow	
Ulmus Americana	American elm	
Ulmus parvifolia	Lacebark elm	Can be invasive
Zelkova serrata	Zelkova	
	Medium-Sized Species	
Acer pseudoplatanus	Sycamore maple	
Acer rubrum	Red maple	
Acer x freemanii	Freeman maple	
Aesculus x carnea	Red horse-chestnut	
Carpinus betulus	European hornbeam	Tree form or branched up
Celtis occidentalis	Hackberry	
Cercidiphyllum japonicum	Katsura tree	
Cladrastis kentukea	Yellowwood	
Nyssa sylvatica	Blackgum	
Ostrya virginiana	American hophornbeam	
Tilia cordata	Littleleaf linden	
Small Species	(for most, you must specify single-ster	n, tree form)
Acer buergerianum	Trident maple	
Acer campestre	Hedge maple	
Acer tartaricum	Amur maple	
Amelanchier canadensis	Serviceberry	
Carpinus caroliniana	American hornbeam	
Cercis Canadensis	Eastern redbud	
Cotinus obovatus	American smoketree	
Crataegus viridis	Winter king hawthorn	
Parrotia persica	Persian parrotia	
Styrax japonica	Japanese snowbell	
Syringa reticulata	Japanese tree lilac	

# Table C-2: Urban-Tolerant Trees

Source: New Jersey Tree Foundation

# Table C-3: Utility-Friendly Trees

Latin Name	Common Name
Acer buergeranum	Trident maple
Acer campestre	Hedge maple
Acer ginnala	Amur maple
Acer Griseum	Paperbark maple
Acer Henryi	Henry maple
Acer leucoderme	Chalkbark maple
Acer nikoense	Nikko maple
Acer palmatum	Japanese maple
Acer tataricum	Tatarian maple
Acer truncatum	Purpleblow maple
Amelanchier Autumn Brilliance	Autumn brilliance serviceberry
Amelanchier Prince Charles	Prince Charles serviceberry
Amelanchier Princess Diana	Princess Diana serviceberry
Carpinus caroliniana	American hornbeam
Cercis can. Forest Pansy	Forest pansy red bud
Cercis reniformis Oklahome	Oklahoma redbud
Chionanthus virginicus	White fringetree
Cornus florida selections	American dogwoods
Cornus kousa selections	Kousa dogwood
Cornus Rutgers Selections	Rutgers dogwod
Cotinus obovatus	American smoketree
Crataegus Winter King	Winter king hawthorn
Halesia tetraptera	Carolina silverbell
Lagerstroemia spp.	Crapemyrtle
Maackia amurensis	Amur maackia
Malus selections	Crabapples
Parrotia persica	Persian parrotia
Prunus Autumnalis	Autumn flowering cherry
Prunus cerasifera	Cherry plum
Prunus Kwanzan	Kwanzan cherry
Prunus Okame	Okame cherry
Prunus sarg. Columnaris	Columnar sergeant cherry
Prunus Sargentii	Sargent cherry
Prunus virgiana 'Canada Red'	Chokecherry
Prunus yedoensis	Yoshino cherry
Styrax japonica	Japanese snowbell
Syringa reticulate	Japanese tree lilac

Source: New Jersey Tree Foundation

The Philadelphia Department of Parks and Recreation's list of approved street trees<sup>31</sup> is a similar source that provides some additional species. A somewhat different resource worth considering is the Arbor Day Foundation's online tree finder application,<sup>32</sup> which is a series of questions that uses many of the regional and site-specific factors that are described above to help

 <sup>&</sup>lt;sup>31</sup> phila.gov/media/20171115163232/PPR\_Approved\_Street\_Tree\_List.pdf
 <sup>32</sup> arborday.org/shopping/trees/treewizard/intro.cfm

# **Appendix D** Municipal Training Resources

# Appendix D: Municipal Training Resources

Table D-1 contains statewide and national sources that Camden's tree experts and advocates can use to build their skills in managing the community forest.

Organization	Webpages	Notes
International Society of Arboriculture	njaisa.com, isa-arbor.com/Credentials/ Maintaining-Credentials, isa-arbor.com/store/shop	Provides resources on maintaining credentials for a variety of forestry- related tracks. ISA also sells educational materials.
New Jersey Shade Tree Federation	njstf.org	Annual conference provides continuing education opportunities.
NJDEP Bureau of Compliance and Enforcement	nj.gov/dep/enforcement/cetraining.html	The Bureau of Compliance & Enforcement hosts trainings in state regulations that may be of use for staff or volunteers managing the City's urban forest.
NJDEP Division of Water Quality	nj.gov/dep/stormwater/training.htm	The Division of Water Quality hosts trainings on stormwater management regulations and best management practices.
Rutgers New Jersey Agricultural Experimental Station: Office of Continuing Professional Education	cpe.rutgers.edu	The Office of Continuing Education offers a wide range of courses, professional certificates, and special programs customized for your specific needs.
The Committee for the Advancement of Arboriculture	caanj.org/	Offering a range of professional skills courses, CAANJ works to promote excellence in the field of arboriculture.
Tree Care Industry Association	tcia.org/TCIA	Provides educational resources for its own Tree Care Academy training program, many of which could be applied to personnel involved with maintaining tree care equipment.

Table D-1: Resources for Training Municipal Staff

# **Appendix E** Strengthening Relationships with Utility Companies

# Appendix E: Strengthening Relationships with Utility Companies

Strengthening relationships between municipal officials, private citizens, and utility companies will help the quality of tree care around utility infrastructure. Table E-1 outlines sources and information on regulatory changes over the past decade that have influenced utilities' work in municipalities.

Organization	Webpages	Notes
Arbor Day Foundation: Tree Line USA	arborday.org/programs/treelineusa	A program to recognize best practices in utility arboriculture. Provides guidance for utilities and communities, and information for utilities interested in applying.
International Society of Arboriculture	treesaregood.org/Portals/0/TreesAreGood_Avoid%20U tility%20Conflict_0621.pdf	Introductory resource for residents, elected officials, or other tree "laypeople" on avoiding tree and utility conflicts.
National Public Radio	npr.org/2012/07/25/157342073/utilities-customers-at- odds-over-downed-trees	Radio transcript describing federal regulations that require public utilities to cut back trees around power lines. These were put in place after a 2003 power outage, caused by a tree hitting a major power line, that affected 55 million people throughout the Northeast and Canada. Utilities can be fined up to \$1 million per day for not cutting trees.
New Jersey State Legislature	legiscan.com/NJ/text/A2558/id/1821049/New_Jersey- 2018-A2558-Amended.html, njspotlight.com/2018/09/18-09-20-utilities-in-nj-to-be- allowed-get-more-aggressive-trimming-trees-clearing- vegetation/	Bill A-2558, passed in September 2019, allows public utilities to be more proactive in cutting back trees. It prevents homeowners and shade tree groups from interfering in or restricting an electric utility's removal, replacement, or maintenance of vegetation.
PSE&G: Right Tree, Right Place	nj.pseg.com/safetyandreliability/reliability/ treetrimming/righttreerightplace	Guidance on species that are less likely to cause conflicts with utility lines.
Utah State University Forestry Extension	forestry.usu.edu/files/knowledge-about-pruning.pdf	An academic article from USU about utility pruning; education and communication between partners is key.

# Table E-1: Strengthening Relationships with Utility Companies

# **Appendix F** Resources for Educators

# Appendix F: Resources for Educators

Table F-1 can be used to support Camden's schoolteachers in developing tree-related curriculums.

Organization	Webpages	Notes
Arbor Day Foundation: Carly's Kids Corner	arborday.org/kids	Carly's Kids Corner is an interactive website where kids and teachers can engage in interactive tree games, download and print activity sheets, and learn more about the resources of the Arbor Day Foundation. The interactive games help students learn about and identify trees around the world, while the activity sheets are designed for a younger audience and feature coloring and maze exercises.
<i>New York Times</i> Learning Network	nytimes.com/spotlight/learning-science- math, learning.blogs.nytimes.com/2010/04/14/a- lesson-lovely-as-a-tree-defining-and- appreciating-trees/, learning.blogs.nytimes.com/1999/04/06/its- a-jungle-out-there/, learning.blogs.nytimes.com/2004/08/03/bio nic-trees/, learning.blogs.nytimes.com/2010/01/20/nat ures-call-drawing-inspiration-from-avatar- to-study-and-create-organisms/	A long-running set of articles, created by <i>New York</i> <i>Times</i> staff, incorporating news and school subjects. Some of the sources may be dated or New York-specific and may require updating or customizing to local needs, but the lessons themselves remain relevant.
NJDEP: State Environmental Education Directory (SEEDS)	nj.gov/dep/seeds/syhart/ outclass.htm	SEEDS, which was developed by NJDEP, is an extensive resource list for educators to create and deliver lessons using outdoor classrooms. The site focuses on wildlife, plants, water, and fertilizers, and provides examples of programs that schools around the state and country have started in their classrooms.
Project Learning Tree	plt.org, plt.org/network/new-jersey/	Project Learning Tree is a nationwide program that helps educators design and deliver educational programs about trees and the environment. In New Jersey, educators can attend workshops where they learn environmental education skills and gain resources for instructing students on these topics. Part of this program also provides resources for students to be active participants, starting school "green teams" to create environmental improvement projects.
USDA Forest Service: Discover the Forest	discovertheforest.org	This campaign, created by USDA and Ad Council, seeks to provide resources to parents of tweens, as well as others in an educator role, to encourage appreciation for the outdoors. The resources page includes activities that could be used in a classroom setting.

# Table F-1: Resources for Educators

# Appendix G Funding Programs

# Appendix G: Funding Programs

Table G-1 describes ongoing funding programs, as well as unconventional sources, that can be used to implement some of the plan's actions.

# Table G-1: Funding Programs

Source	Webpage	Notes
New Jersey Urban and Community Forestry Stewardship Grant Program	nj.gov/dep/parksandforests/forest /urbanandcommunity/grants.html	Once communities and shade tree commissions have completed Community Forestry Management Plans and had them approved by the NJDEP, they are eligible for New Jersey Urban and Community Forestry Stewardship Grants. These competitive grants assist with implementing the plan through projects that strongly link best management practices with urban forestry goals and only projects that are carried out on public property owned or maintained by a municipal or county government are eligible. The two types of grants are Resiliency Planning Grants (up to \$10,000) and Reforestation and Tree-Planting Grants (up to \$30,000).
Robert Wood Johnson Foundation	rwjf.org/en/our-focus- areas/focus-areas/ healthy-communities.html	The Robert Wood Johnson Foundation is a public health- focused philanthropy that provides funds to a wide array of programs. It has three broad aims: discover and explore creative solutions, spread model interventions, and conduct research and evaluation. The focus areas of these grants are in health systems, healthy communities, healthy children and families, and leadership for better health. Since community forests have well-defined public health benefits, the foundation may provide multiple grant opportunities.
TREE (Tree Research and Education Endowment) Fund	treefund.org	The TREE Fund is a charitable grantmaking organization dedicated to supporting urban and community forests by providing funding to scientific research on urban tree care issues, education programs relating to trees, and scholarships for students aspiring to be tree care professionals. Since its founding in 2002, the TREE Fund has awarded \$4.4 million in research grants, education grants, and scholarships to better equip professional arborists and citizens to properly care for trees. They are currently prioritizing programs focusing on inquiry and exploration in order to advance the wider knowledge base about urban forests.
USDA/NRCS Regional Conservation Partnership Program	nrcs.usda.gov/wps/ portal/nrcs/main/national/ programs/financial/rcpp/	This grant program promotes innovative conservation programs related to land management/restoration, land rentals, easements, and public works/watersheds. The grant applications are evaluated based on impact, partner contributions, innovation, and partner qualifications and must be carried out on agricultural or non-industrial private forest land.

USDA: Recycling Municipal Trees	fs.usda.gov/naspf/publications/re cycling-municipal-trees	This resource is a guide for marketing sawlogs from street tree removals in municipalities. One innovative way for municipalities to supplement their tree maintenance and planting budgets make street tree removals available to artisans, construction professionals, and community groups. Often, the wood contained in trees that have been removed from the street has value to different groups depending on its type, quality, quantity, and size. As the report recognizes, selling a log "as is" exceeds to potential return of selling the log as firewood or mulch by two to four times. Creating a program like this requires flexibility, patience, and creativity (as well as access to a saw mill and industry professionals willing to partake), but it can result in a reliable revenue stream and a commercial industry engaged in the efficient management of street trees.
William Penn Foundation	williampennfoundation.org/what- we-fund-watershed-protection	The William Penn Foundation was founded in 1945 and is dedicated to improving the quality-of-life in the Greater Philadelphia region. In 2018, they provided over \$100 million in grant payments which are mostly divided into three main areas of Creative Communities, Great Learning, and Watershed Protection. Each of these areas may provide opportunities for groups seeking to plant trees and connect their neighborhoods to the community forest around them. Current grant recipients like the New Jersey Tree Foundation have used the Watershed Protection grant fund to plant trees along the Circuit Trail network.

# **City of Camden: Management Plan for Forests and Trees**

## Publication Number: 19045

Date Published: September 2022

### Geographic Area Covered: Camden, New Jersey

#### **Key Words:**

Forests, Trees, Community Forestry, Street Trees, Parks, Open Space, Stormwater Flooding, Urban Heat Island, Environmental Justice, Community Health

## **Abstract:**

This management plan is a municipal document that outlines the community's vision and prioritized goals to protect and grow the City's tree cover or "community forest." In this context, the "community forest" is within municipal boundaries and includes publicly managed trees along streets and in parks, as well as privately managed trees on private properties. Integrating data from a variety of local, state, and national government sources as well as private research organizations with several stakeholder meetings and on the ground assessments, this plan presents an in-depth existing conditions assessment of the condition of Camden's community forest as well as a series of goals which have been prioritized by local residents and organizations. The plan is intended to be proactive, and outlines the work that these varied partners want to accomplish to improve their forest cover.

# **Staff Project Team:**

Miles Owen, Environmental Planner Melissa Andrews, Senior Planner Keri Klinges, Intern, Office of Climate and Environment Chris Linn, Manager, Office of Climate and Environment

## **Staff Contact:**

Miles Owen Environmental Planner 215.238.2813 mowen@dvrpc.org



190 N Independence Mall West 8th Floor Philadelphia, PA 19106-1520 215.592.1800 | fax: 215.592.9125 www.dvrpc.org



190 N Independence Mall West 8th Floor Philadelphia, PA 19106-1520 215.592.1800 | fax: 215.592.9125 www.dvrpc.org

Connect With Us! 🖪 😏 🗐 🖬 📼