Strategic Tree Canopy Plan

Kershaw
South Carolina

OCTOBER 2025

Town of Kershaw
https://www.townofkershawsc.gov/

Plan by the Green Infrastructure Center Inc. for the Town of Kershaw
https://gicinc.org

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

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

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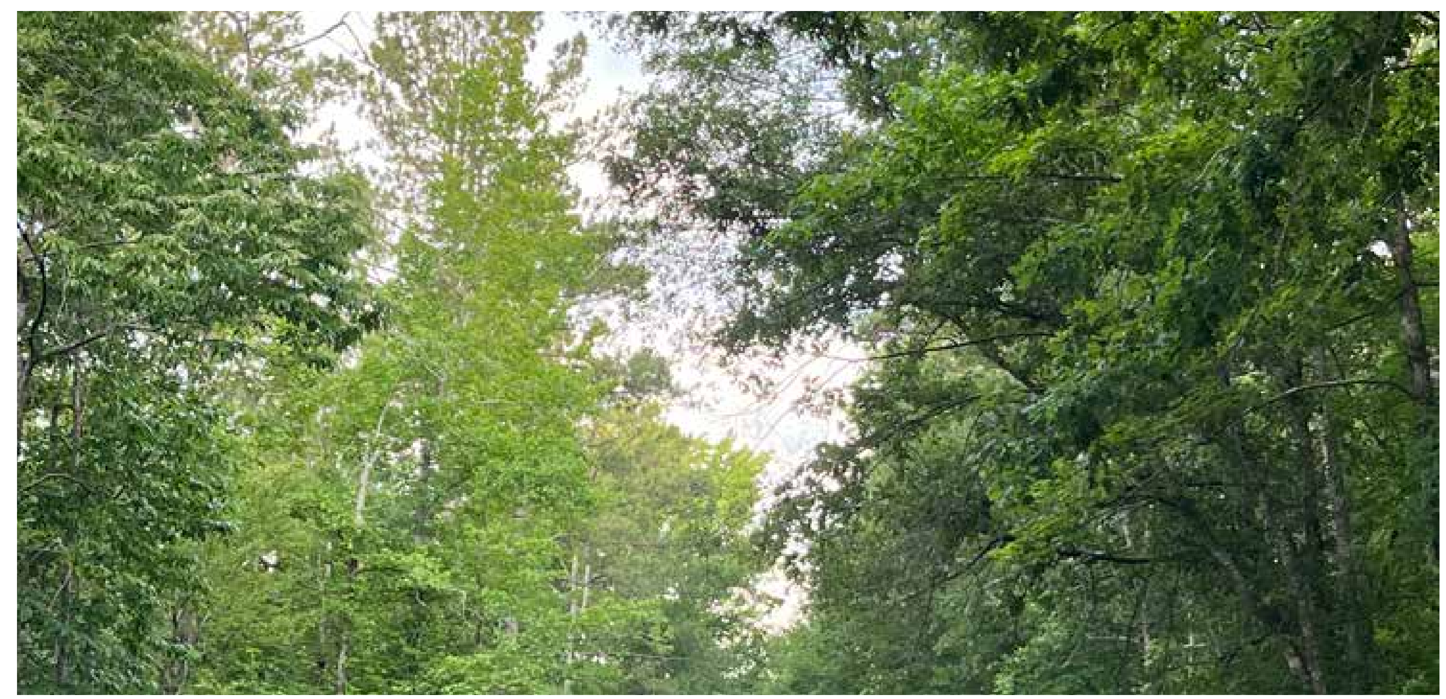


Executive Summary

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

This plan is the culmination of a nine-month planning process that included workshops and strategic planning sessions led by the Green Infrastructure Center Inc. (GIC) with town staff and community members. The public was engaged in this process through outreach events and a community open house. The extent of urban forest cover was determined by analyzing aerial imagery to map the Town's land cover. Open space was evaluated to determine the Potential Planting Area where future trees might be planted, along with assessments of the environmental and social benefits the Town's trees provide. Strategies for retaining, protecting, and restoring tree canopy coverage were created.

Town Goal

The Town of Kershaw currently has 42% tree canopy coverage town-wide. To commemorate the Town's founding year of 1888, the town has plans to increase their canopy cover by 1,888 trees, or approximately 1.5%, over the next ten years. Tree planting will be needed to increase canopy and account for canopy losses due to pests, storms, landowner removals, additional development, or old age. Top strategies identified by the tree advisory committee and feedback from the public to achieve this goal are:

1. Plant trees at Richards Park.
2. Plant trees along Welsh, Church, and Cleveland Streets.
3. Plant trees at the three Kershaw welcome signs.
4. Remove and replace hazardous trees on Matson St.
5. Redesign Marion St Park with the community to include new additional trees.
6. Plant trees by the tennis courts at the community golf course.

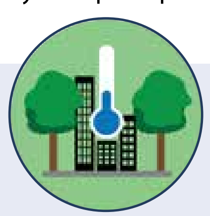
How Trees Benefit the Town

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

Air Quality

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

- 2,978 metric tons of carbon
- 15,650 lbs. of ground-level ozone (O_3)
- 6,576 lbs. of airborne particulate matter



Urban Cooling

Excessive pavement and lack of shade often results in the creation of urban heat islands. Kershaw's trees counter urban heating by shading hot areas. Tree canopy cover lowers surface temperatures and cools the town.

Stormwater Uptake

Trees capture rainfall and filter pollutants. During a ten-year/24-hour rainfall event (5.29 inches) the Town's trees:

- soak up 4.1 million gallons of water
- reduce runoff pollution loads for nitrogen by 18%, phosphorus by 7%, and sediment by 20%

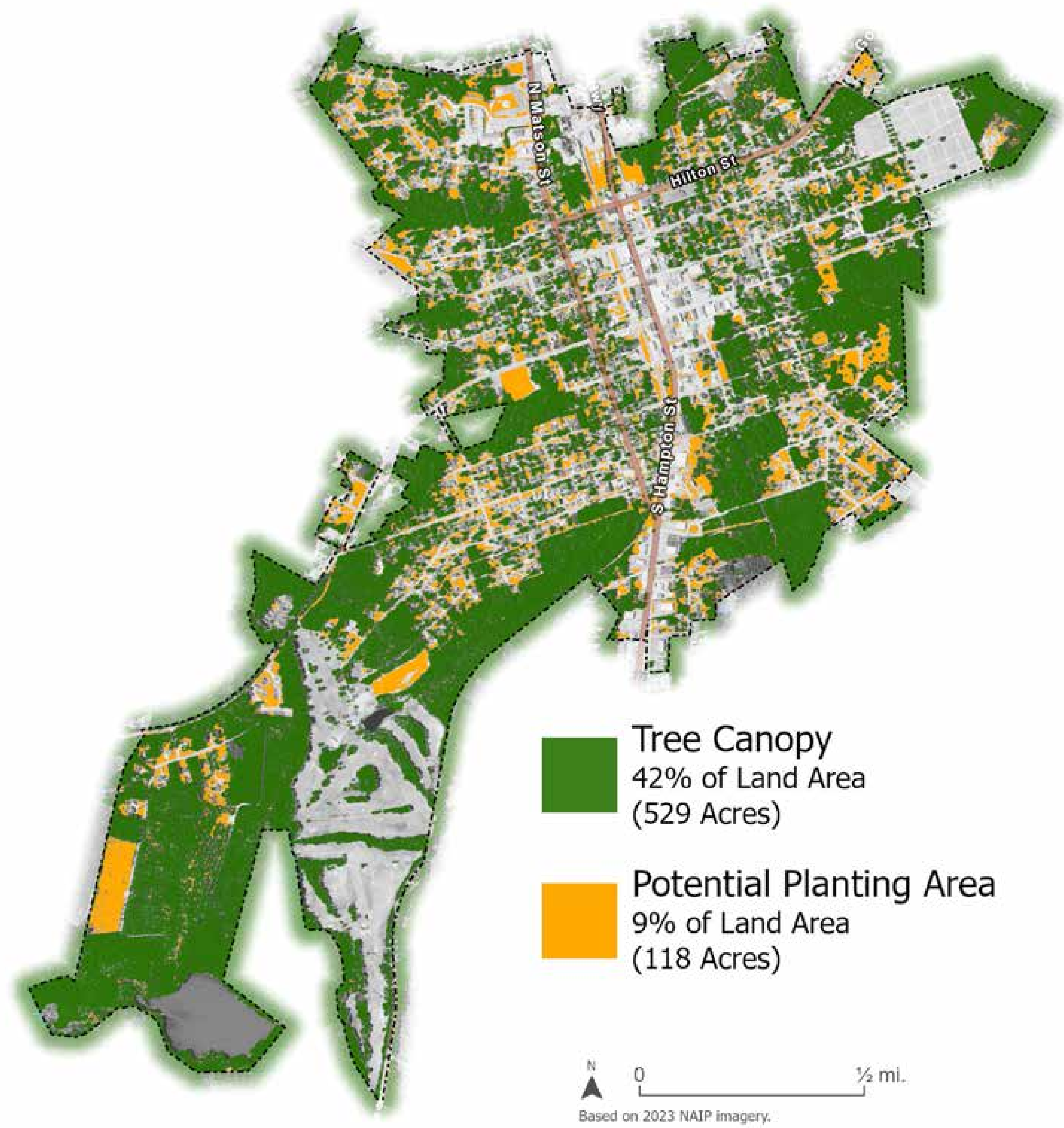
Canopy Goals

Kershaw's goal is to increase canopy by 1,888 trees, which is an approximate increase of 1.5%, over the next ten years. This goal requires planting:

- 55 trees on town-owned land annually
- 134 additional trees on private property through education, tree giveaways, and voluntary planting.

Tree Canopy and Potential Planting Area

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



Introduction

The Town of Kershaw was founded in 1888 as a stop on the railroad between Camden and Lancaster. The railroad served to transport lumber, turpentine, and farming trade, but also served the local gold mine (Town of Kershaw n.d.). The Haile Gold Mine was established in 1827 by Benjamin Haile and has now been in production on and off for nearly 200 years. In the late 19th century, it was the most productive gold mine east of the Mississippi River (Haile Gold Mine 2025). It is said that one may find gold in the soils of Kershaw.

The town is named after Major General Joesph B. Kershaw, who was a Confederate general and state senator of Camden. The town experienced prosperous growth between 1890 and 1940. The Kershaw Oil Mill was established in 1902 and later the Kershaw Cotton Mill was established in 1912. Kershaw's storied past can be experienced today through its two National Register Historic Districts, the East Richland Street-East Church Street District and the Matson Street District. Among these districts are homes dating back to 1895 and the First Presbyterian Church dating back to 1916 (Town of Kershaw n.d.).

This Town also has lovely natural features including town trees, parks, forests, wetlands, and ponds that provide social, economic, and ecological benefits to residents while creating a sense of place. By protecting and restoring its natural features and historic sites, Kershaw can ensure a healthy, green, and vibrant future.

This Strategic Tree Canopy Plan supports the County's Comprehensive Plan 2040, by encouraging economic growth while conserving the Town's natural assets through the preservation and expansion of the Town's tree canopy. Additionally, this plan will support and protect the local ecosystem and make the Town more resilient to climate change by addressing urban heat islands and stormwater runoff.

> **Lancaster2040:**
> ***"…the consequences of a changing and more volatile climate should be at the forefront for Lancaster County."***
>
> **Resiliency – Key Observations:**
> ***"The majority of community survey participants believe that Lancaster County should develop policies to provide accessible green spaces, conserve forested land, and conserve farmland."***

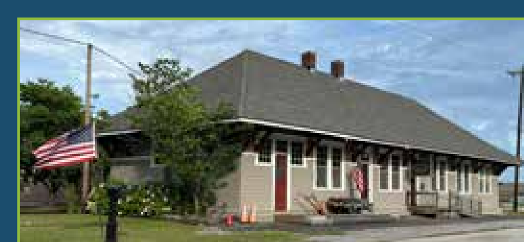
FAST FACTS

Kershaw

Population: 1,693 people*

65.68% White,
28.23% Black/African Americans,
0.35% Asian,
1.77% Hispanic or Latino,
0.70% American Indian or Alaska Native, and
0.35% other races

Total Town Area: 1,274.31 acres
Land Area: 1,250.89 acres
Lakes/Ponds: 22 acres
Wetlands & Marshes: 20.59 acres
Streams: 4.7 miles
Tree Canopy: 529 acres
Potential Planting Area: 122 acres
Impervious Surfaces: 284 acres
Potential Planting Area: 2,040 acres
Impervious Surfaces: 3,555 acres



The Haile Gold Mine Museum is the town's former train station

**(U.S. Census 2020 estimate)*

Tree Benefits

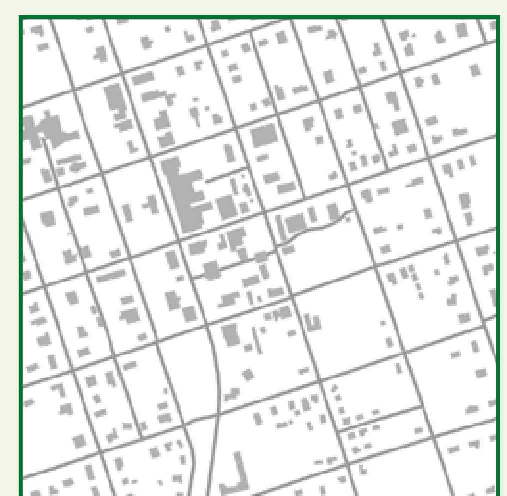
Trees benefit communities ecologically, economically, and socially. Some of the many benefits include:

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

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

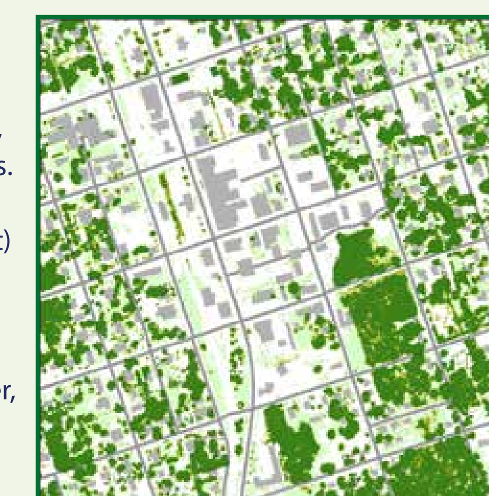
Trees Are Green Infrastructure

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



Gray vs. Green

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



Reducing Stormwater Runoff and Filtering Pollutants

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

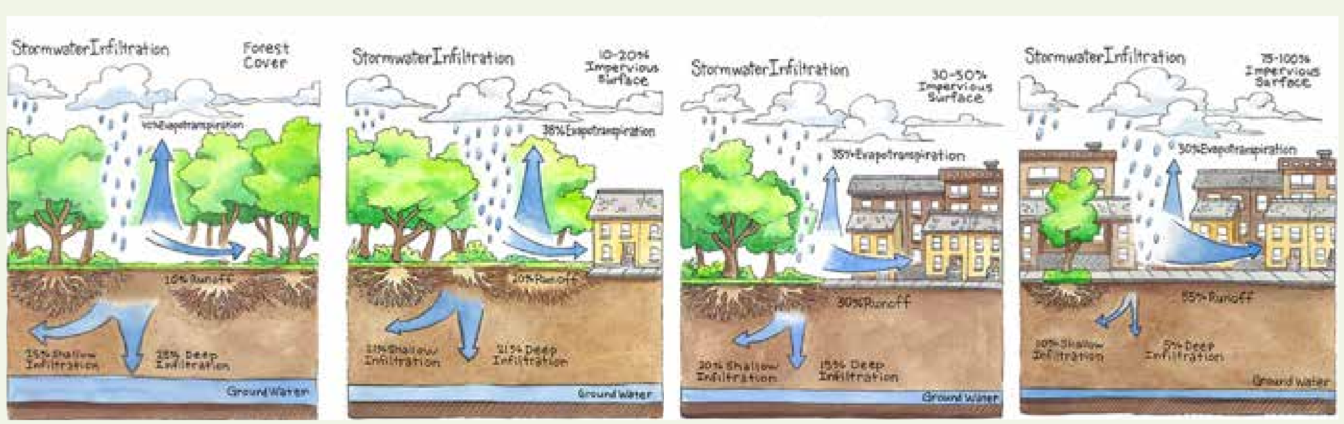
Trees reduce nitrogen, phosphorus, and sediment in stormwater by filtering runoff of these pollutants. Increased loads of nutrients in stormwater runoff reduce oxygen in surface water, causing harm to fish and other aquatic life. Nitrogen and phosphorus can cause harmful algal blooms, while sediment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

The average annual precipitation in Kershaw is 30.47 inches (National Weather Service 2025). Much of this runoff flows into the Combined Sewer Overflow (CSO) system transporting surface pollutants from the land to local waterways. Large paved areas contribute significant volumes to this runoff. While stormwater ponds and other best management practices (BMPs) are designed to mimic natural land cover rainfall release by detaining and filtering runoff, they do not fully replicate pre-development hydrology. In addition, older parts of the town may lack updated stormwater management practices required for new developments, so not all runoff is captured or treated before it flows into open waterways.

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

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

Infiltration Rates with Development



Runoff increases as land is developed. *Graphic adapted by GIC. Data Source: U.S. EPA Watershed Academy 2025.*

Trees planted in medians help capture rain and reduce stormwater runoff in highly impervious areas of town such as downtown.

Since trees filter stormwater and reduce overall flows, planting or conserving trees is a natural, cost-effective way to mitigate stormwater. Each tree plays an important role in stormwater management. Based on the GIC's review of canopy rainfall interception studies, a typical street tree's crown can intercept between 760 and 4,000 gallons of water per year, depending on the tree's species and age.

These pine trees provide stormwater management benefits for the golf course and the Hanging Rock Creek watershed which experiences flooding.

Buffering Storm Damage with Green Infrastructure – Trees!

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

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

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

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

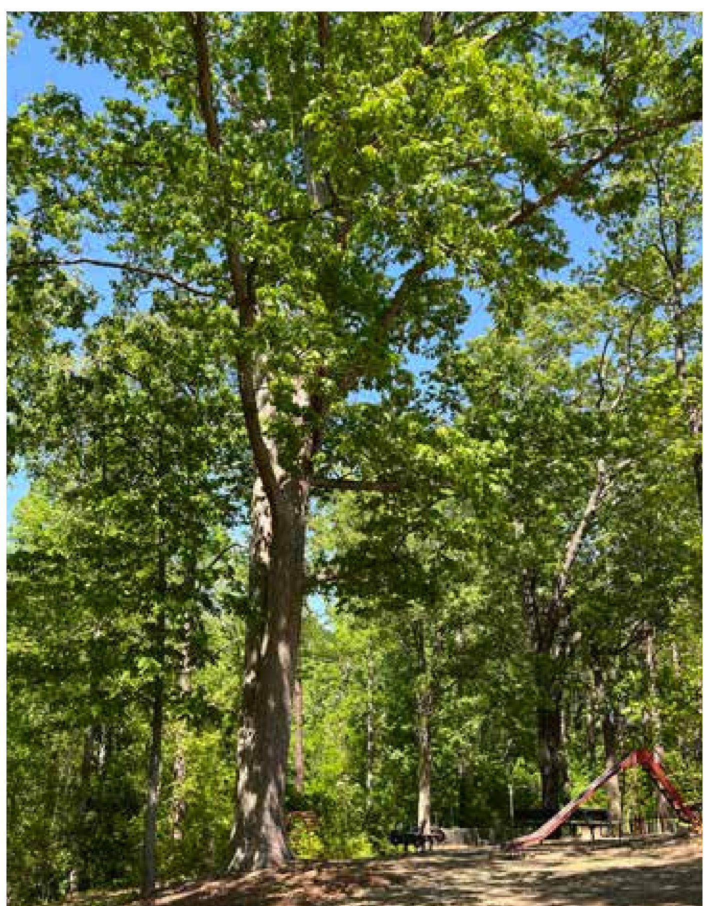
Improving Air Quality, Public Health, and Economic Values

Trees Clean the Air

Higher tree canopy cover is correlated with better air quality. Trees reduce ground-level ozone (O_3) while filtering out fine particulate matter, which can damage lungs and lead to respiratory distress and conditions such as asthma. In fact, well-treed neighborhoods have lower rates of respiratory illness (Rao et al. 2014). Trees capture such greenhouse gases as sulfur dioxide and carbon dioxide. These gases contribute to a warming planet and are associated with health problems from excessive heat. Trees also sequester carbon by storing it as wood, preventing its release into the atmosphere and mitigating the impact of climate change.

Trees Cool the City

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



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

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

Trees Improve Cognitive Function

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

The Town's trees reduce temperatures during hot summers through evapotranspiration and by casting shade.

Well-treed sidewalks encourage people to walk and shop.

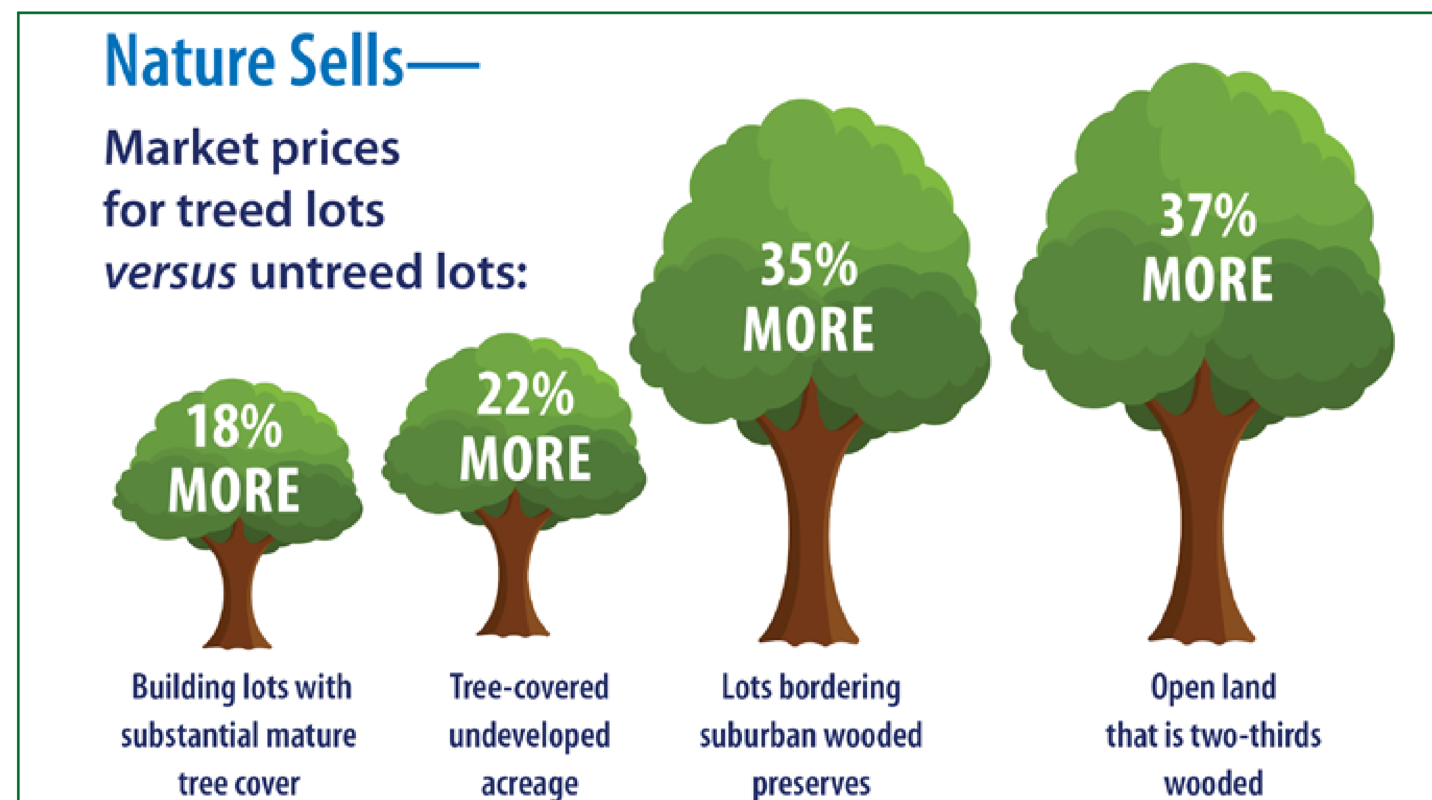
Home buyers will pay more for homes with mature trees.

Trees Improve Walkability

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

Trees Increase Property Values

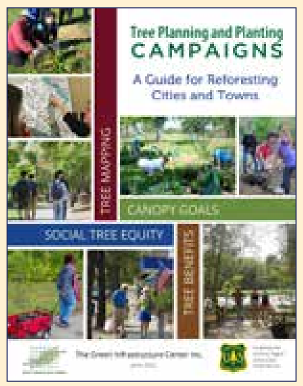
Developments that include green space or natural areas in their plans sell homes faster and for higher profits than those that take the more traditional approach of building over an entire area without conserving natural space (Benedict and McMahon 2006). Individual trees and forested open spaces make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



Data Source: Kathleen Wolf, 2007, *City Trees and Property Values*

Preventing "Green Gentrification"

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



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

Town staff and Haile Gold Mine volunteers worked hard in the bitter cold to plant 38 trees at Richards Park.

Trees Pay Us Back

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

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

Trees add to the historic character of established neighborhoods.

Tree Canopy Analysis Methods

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

Satellite imagery from the National Agricultural Imagery Program (NAIP) distributed by the USDA Farm Service Agency was classified to determine the types and extent of different land covers in Kershaw. The land cover map was created at 1-meter resolution using NAIP imagery from April 2, 2023. LiDAR (light detection and ranging) data were used to determine height, in order to distinguish between large shrubs and trees.[1] This allows the GIS analyst to separate bushes from trees and other vegetation. This distinction of tree/non-tree vegetation is very important when modeling tree benefits, since the modeled pollution-removal benefits are based on trees, and do not necessarily translate to smaller, non-woody vegetation. In addition, various vector data were used where possible (e.g. sidewalks, driveways, and other impervious surfaces). The tree canopy was mapped at 97% accuracy, with an overall land cover accuracy of 90%.

Determining Plantable Acreage

Potential Planting Areas

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

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

[1] LiDAR is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the top of the vegetation, compared to the underlying surface of the Earth. The farther the laser beam travels, the shorter the vegetation.

NAIP Aerial Image

Potential Planting Area (PPA)

There are many places where new trees can be planted in the Town such as along North Cleveland St. and at Mullinax Park.

Eligible planting areas are also limited by their proximity to features that interfere with a tree's natural growth (such as buildings) or where a tree might affect the feature, such as power lines, street signs, or road junctions. The GIC buffers potential planting areas to exclude trees from these features. The tree workgroup members and the GIC reviewed the draft PPA map and removed playing fields, cemeteries, and other land uses where trees would not be appropriate. The resulting PPA represents the maximum potential places trees can be planted and grow to full size.

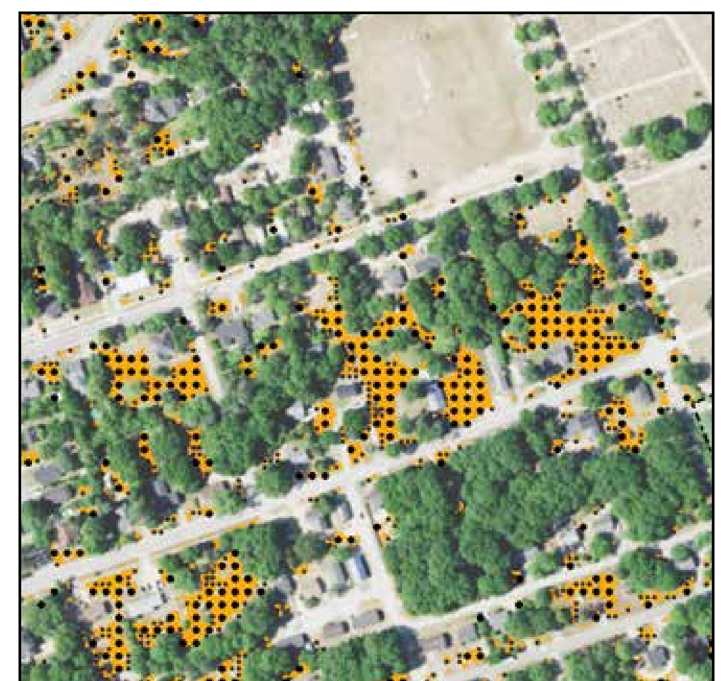
Based on an analysis of existing pervious surfaces, 9.5% of the Town's land area, or 118 acres, could be planted with additional trees. The GIC recommends that no more than half the available PPA, 4.75% or 59 acres, is realistic to plant, since many other uses, such as vegetable gardens or swimming pools, require full sun.

Potential Planting Spots

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

Potential Canopy Area

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



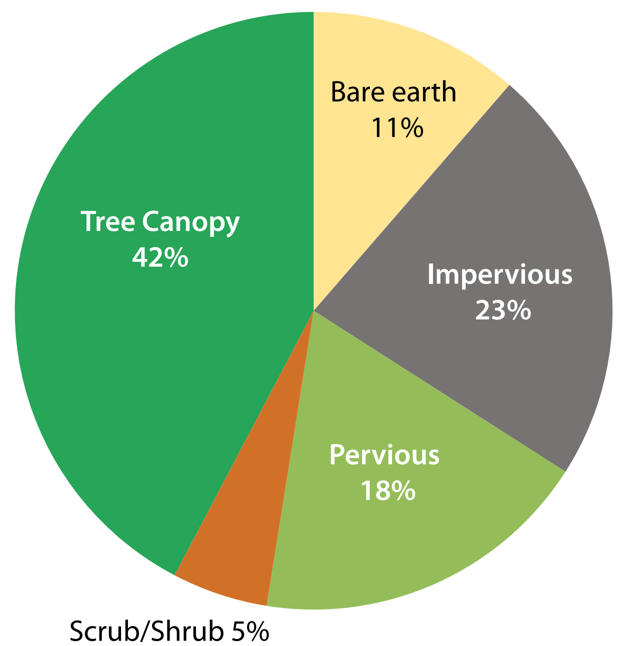
Potential Planting Spots (PPS)

Potential Canopy Area (PCA)

Canopy Analysis Maps and Findings

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

Kershaw Percent Land Cover



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

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

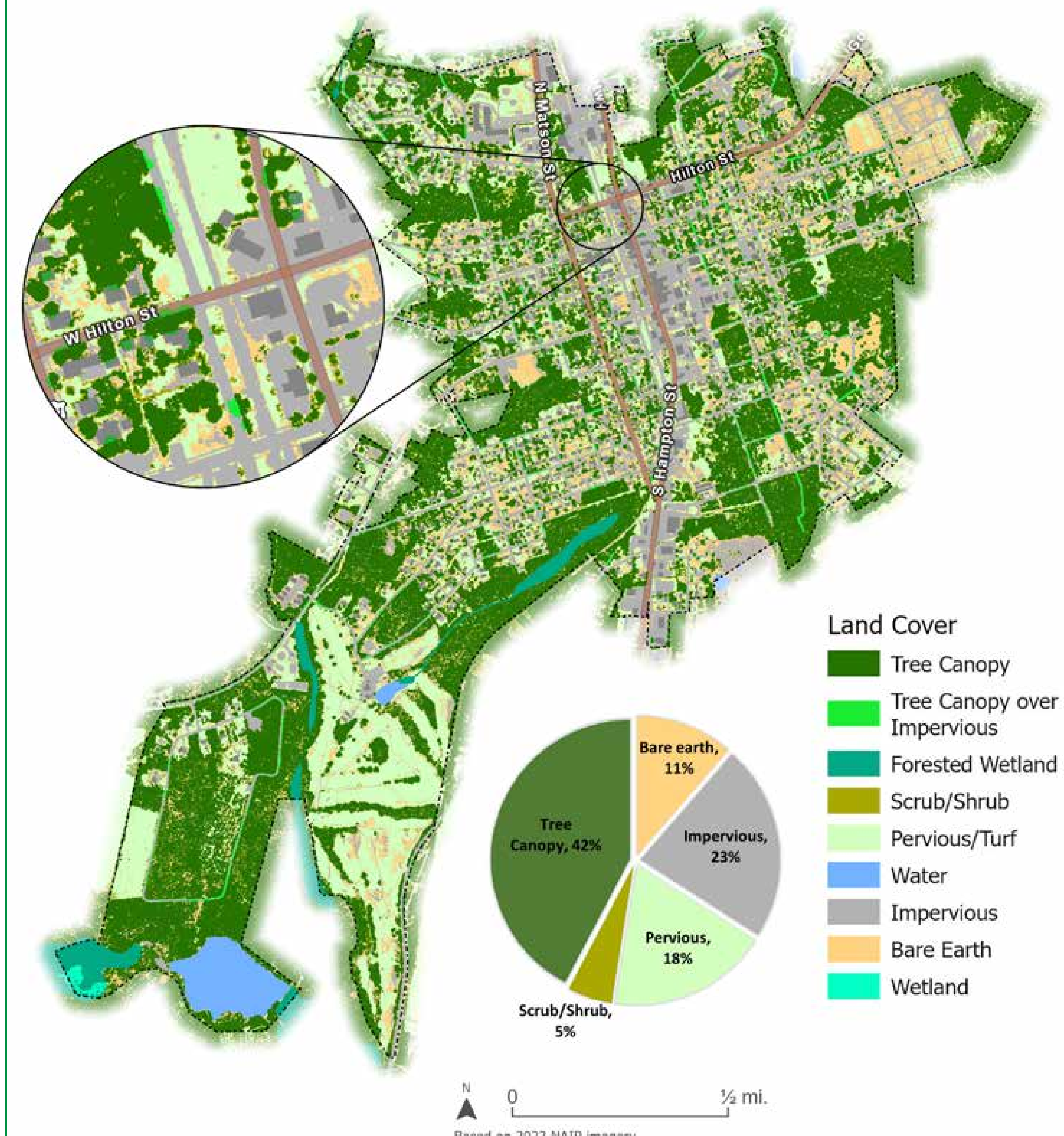
- Parcels
- Town Points of Interest
- Streets
- Census Block Groups (CBGs)
- Watersheds

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

The following five pages contain Kershaw's *Tree Canopy Analysis* Maps.

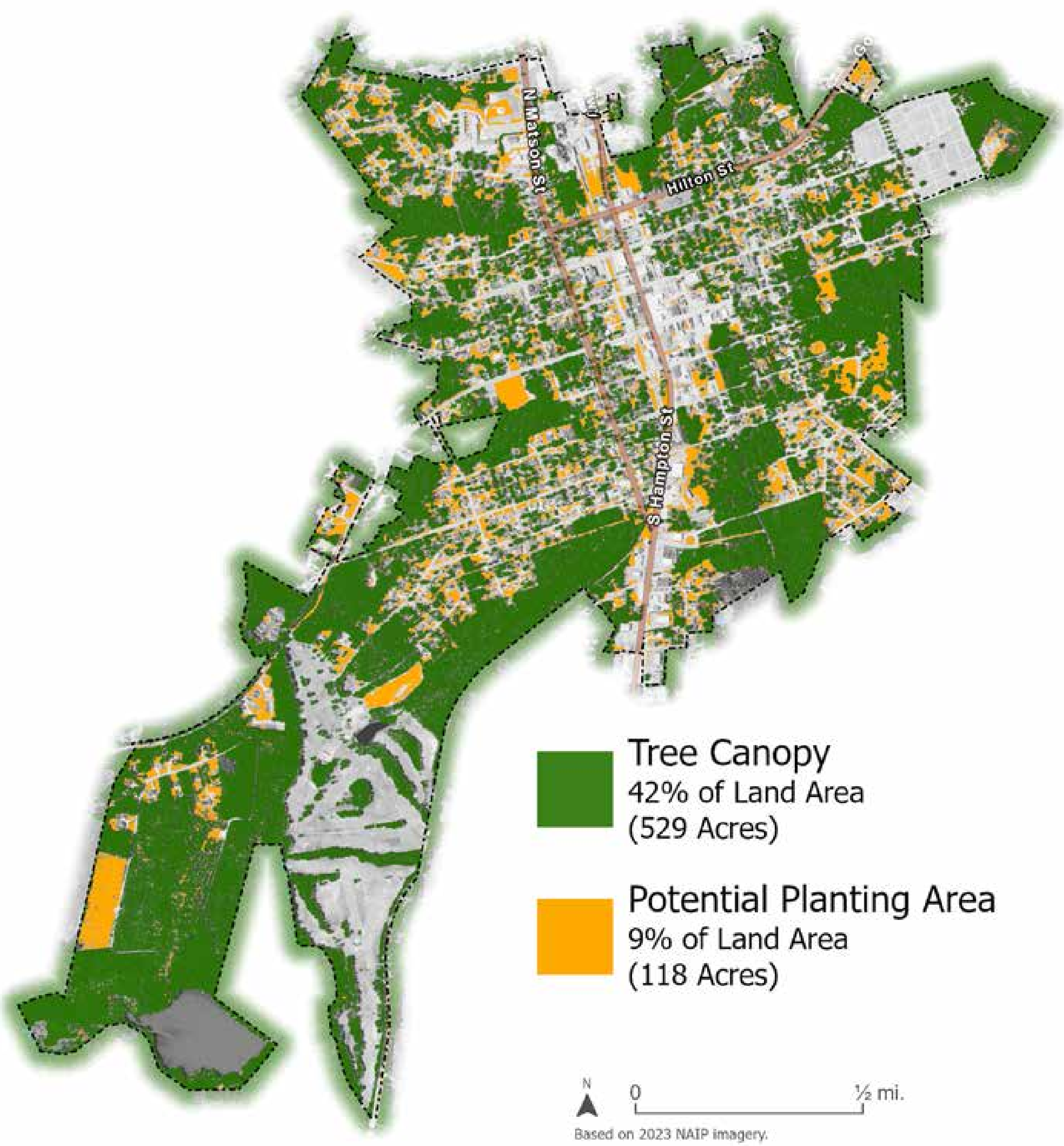
Town Land Cover

GIC classified 9 land cover types for the Town of Kershaw from 2023 NAIP aerial imagery.



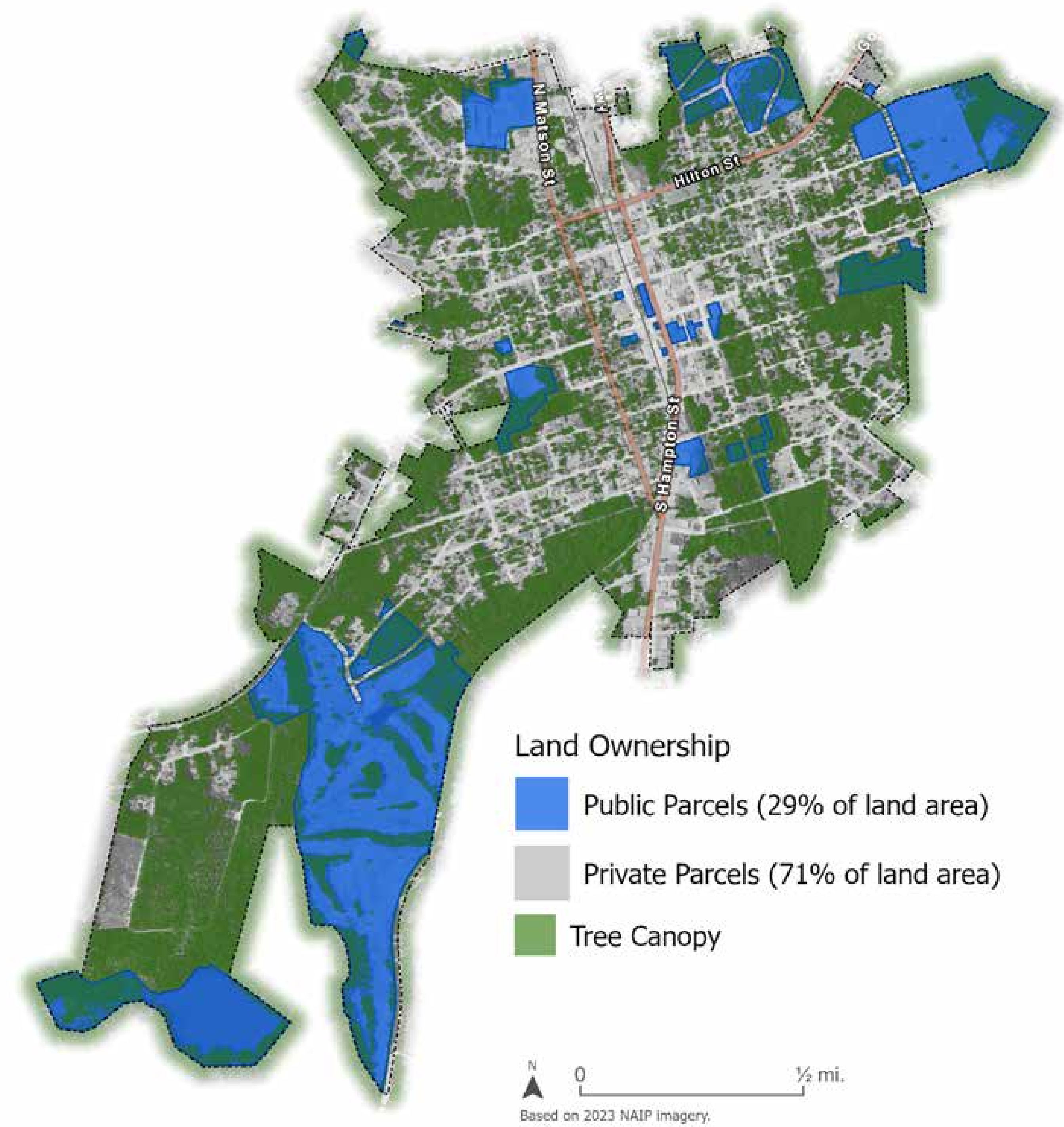
Tree Canopy and Potential Planting Areas

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



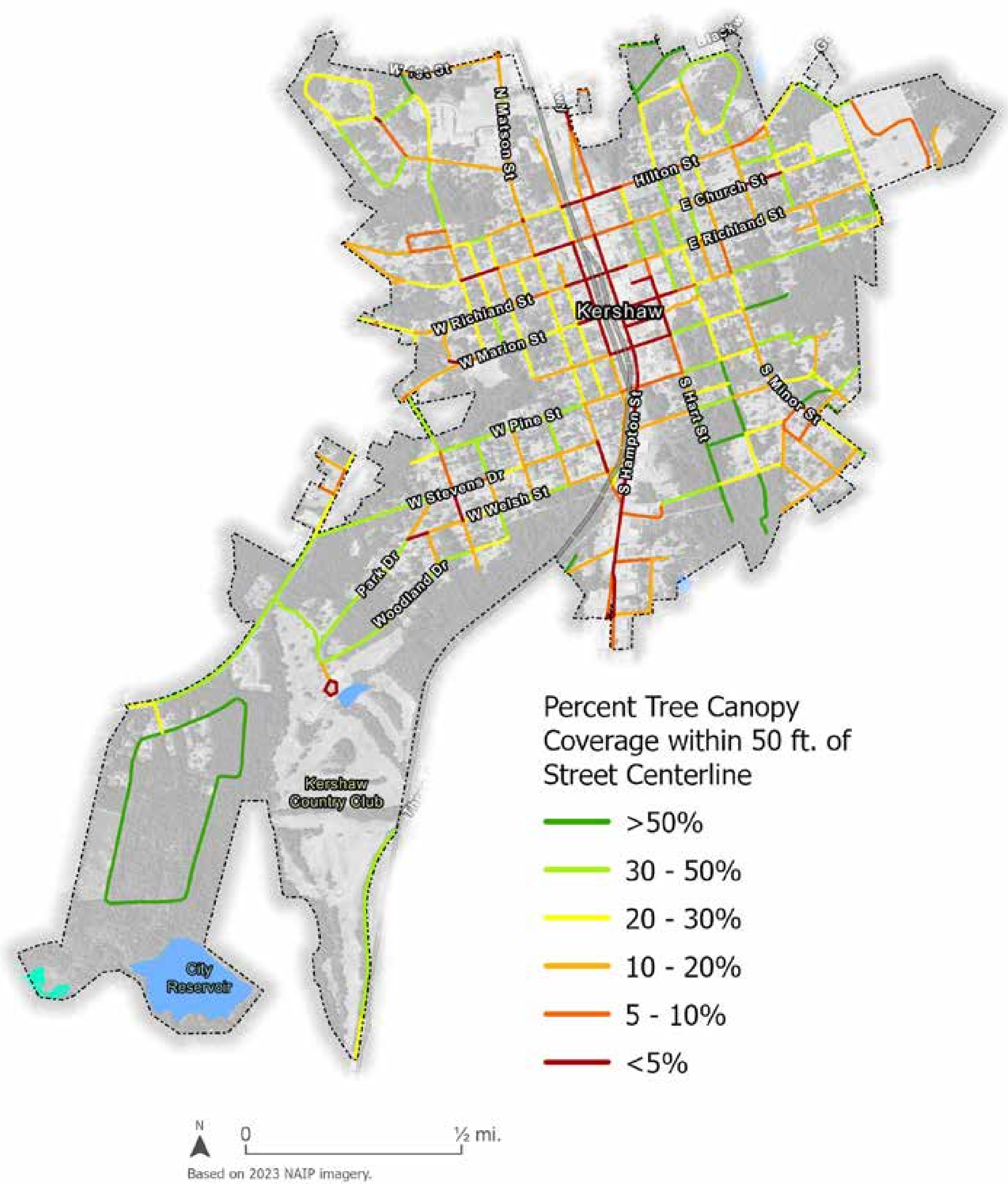
Public and Private Land

Publicly owned land makes up 29%, while privately owned land makes up 71% of total land in the community. This map shows a breakout of public and private land in Kershaw. To successfully meet Kershaw's tree canopy goal to increase the canopy by 1,888 trees, saving existing trees and planting trees must occur on both public and private land.



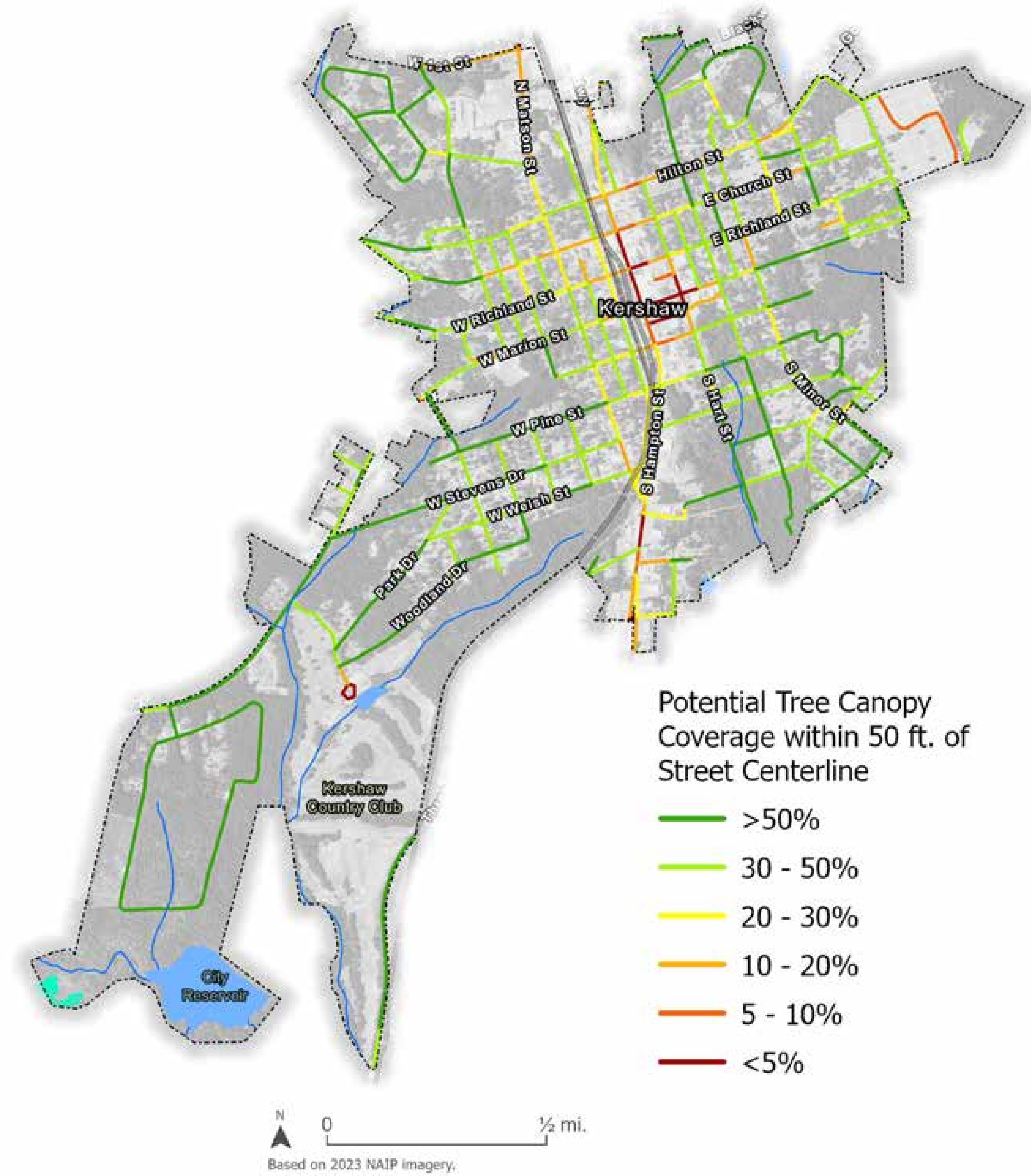
Existing Tree Canopy Coverage Along Streets

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



Potential Tree Canopy Coverage Along Streets

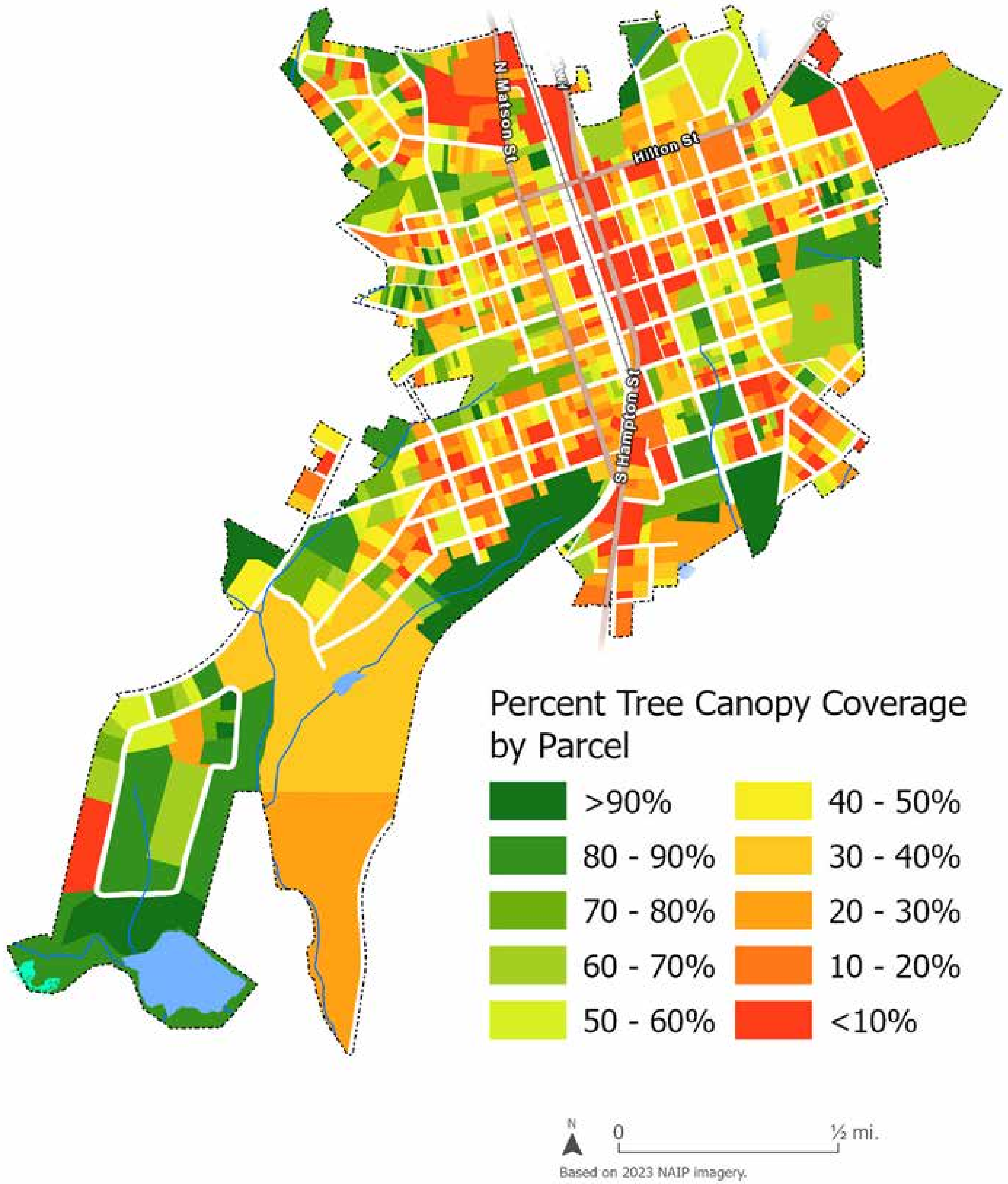
If all potential planting areas within 50ft. of every road's center line were planted, this is what the canopy coverage along streets would look like.



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

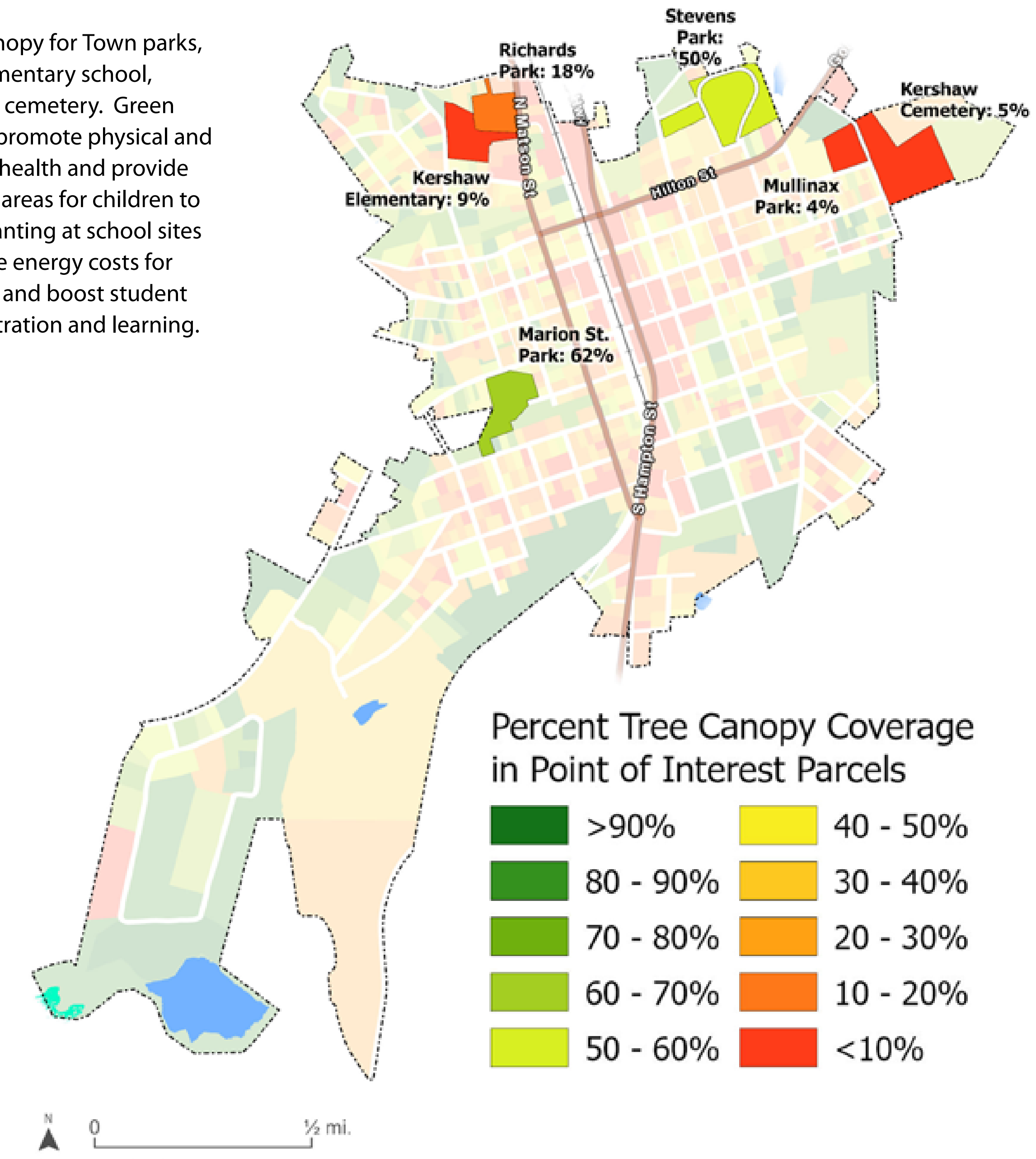
Tree Canopy Coverage by Parcels

Tree canopy data at the parcel level can help the city and local partners identify and engage with private property owners who need trees and may be willing to plant one on their land.



Tree Canopy by Parcels of Interest in the Town

Tree canopy for Town parks, the elementary school, and the cemetery. Green spaces promote physical and mental health and provide shaded areas for children to play. Planting at school sites can save energy costs for cooling and boost student concentration and learning.



Kershaw Points of Interest

Public Space	Percent Tree Canopy (Current)	Potential Tree Canopy Coverage	Total Potential Tree Plantings	Large Trees That Could Be Planted	Small Trees That Could Be Plante
Stevens Park	50%	63%	188	127	61
Richards Park	18%	55%	158	65	93
Mullinax Park	4%	4%	5	5	0
Marion Street Park	62%	92%	173	38	135
Kershaw Elementary	9%	27%	97	53	44
Kershaw Cemetery	5%	6%	5	2	3

Calculating Environmental Benefits

Stormwater Uptake

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

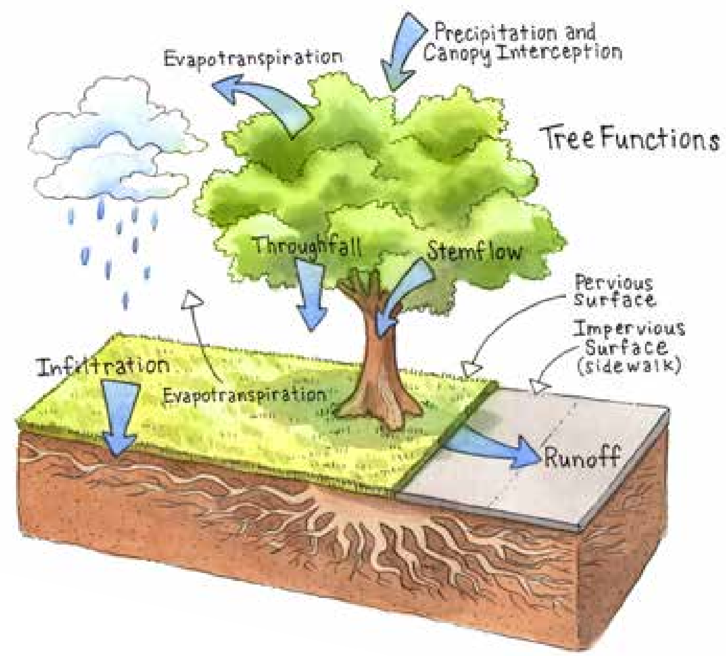
Trees help capture and filter stormwater runoff. The Trees and Stormwater (TSW) Tool developed by the GIC estimates the stormwater interception, infiltration, and runoff of different land cover types. This methodology uses a modified version of the "curve number" approach, originally developed by the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

The GIC used its TSW Tool to model stormwater and pollution reductions by Town tree canopy. The model shows that, during a 10-year/24-hour rainfall event (5.29 inches), trees take up 4.1 million gallons of runoff, or about 6 Olympic swimming pools of water. Kershaw's trees capture:

- **3,367 nitrogen lbs. annually**
- **273 phosphorus lbs. annually**
- **215 sediment tons annually**

Trees in a lawn soak up more stormwater than trees over pavement.

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



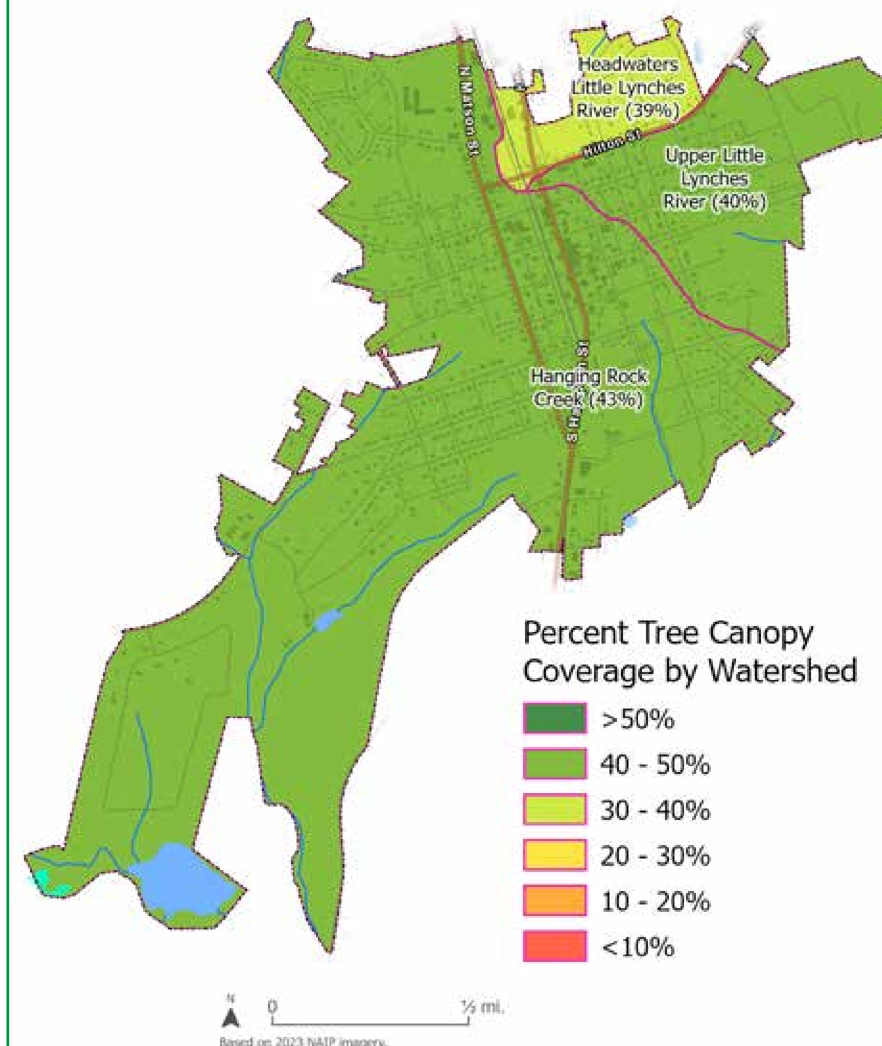
Tree Canopy Coverage by Watershed

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

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

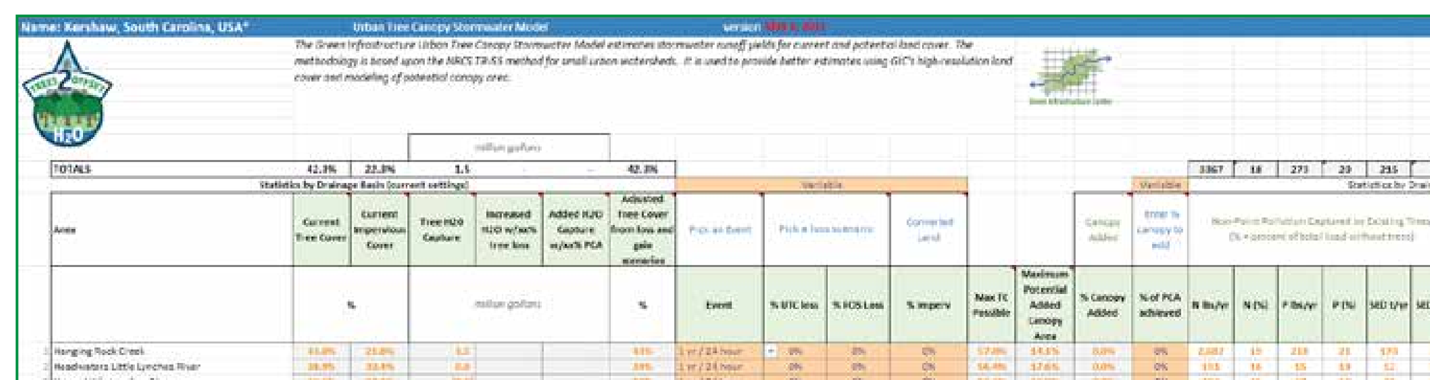
Tree Canopy Coverage by Watershed

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



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

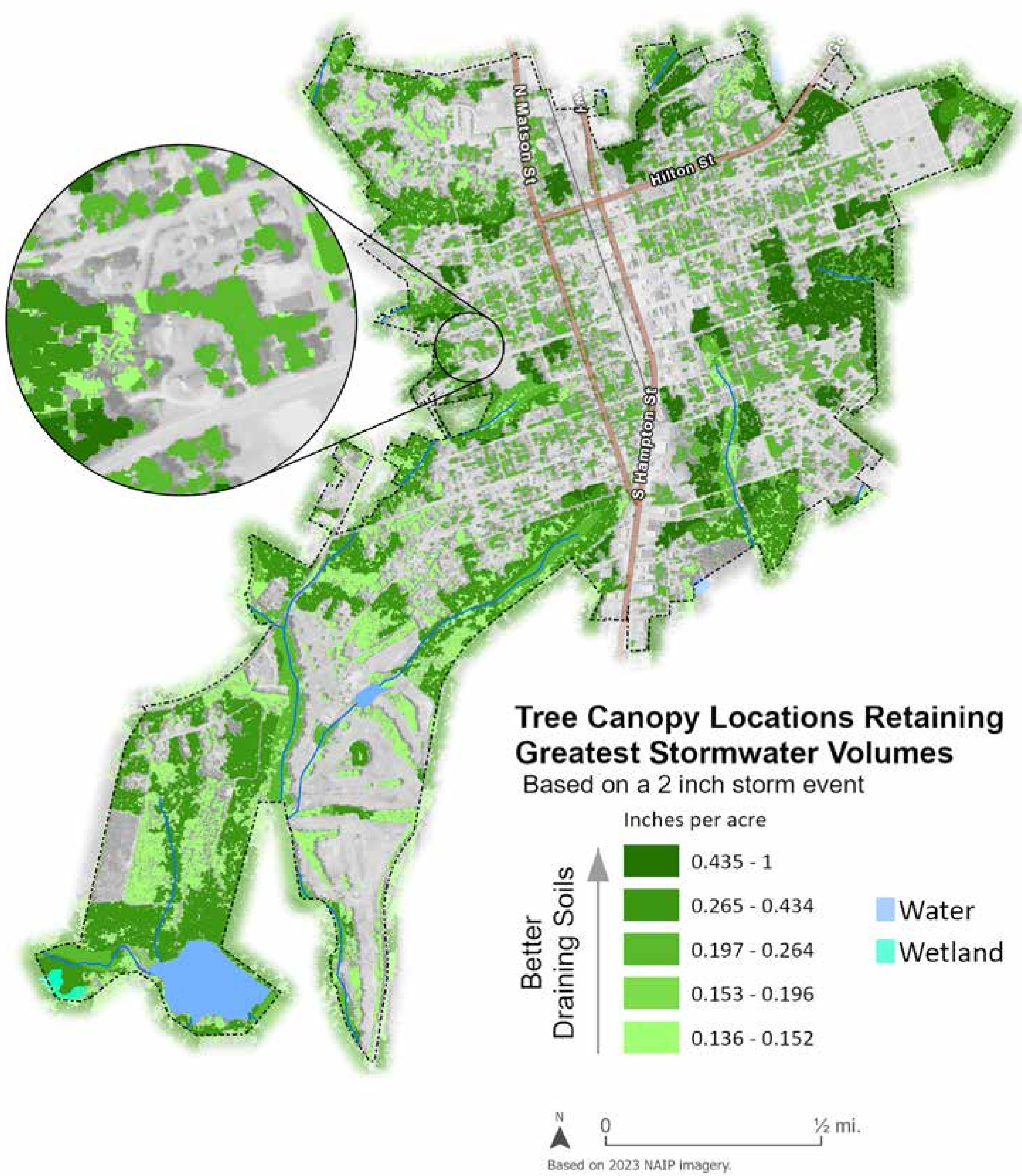
Natural forested areas are the best landcover type for stormwater uptake.



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

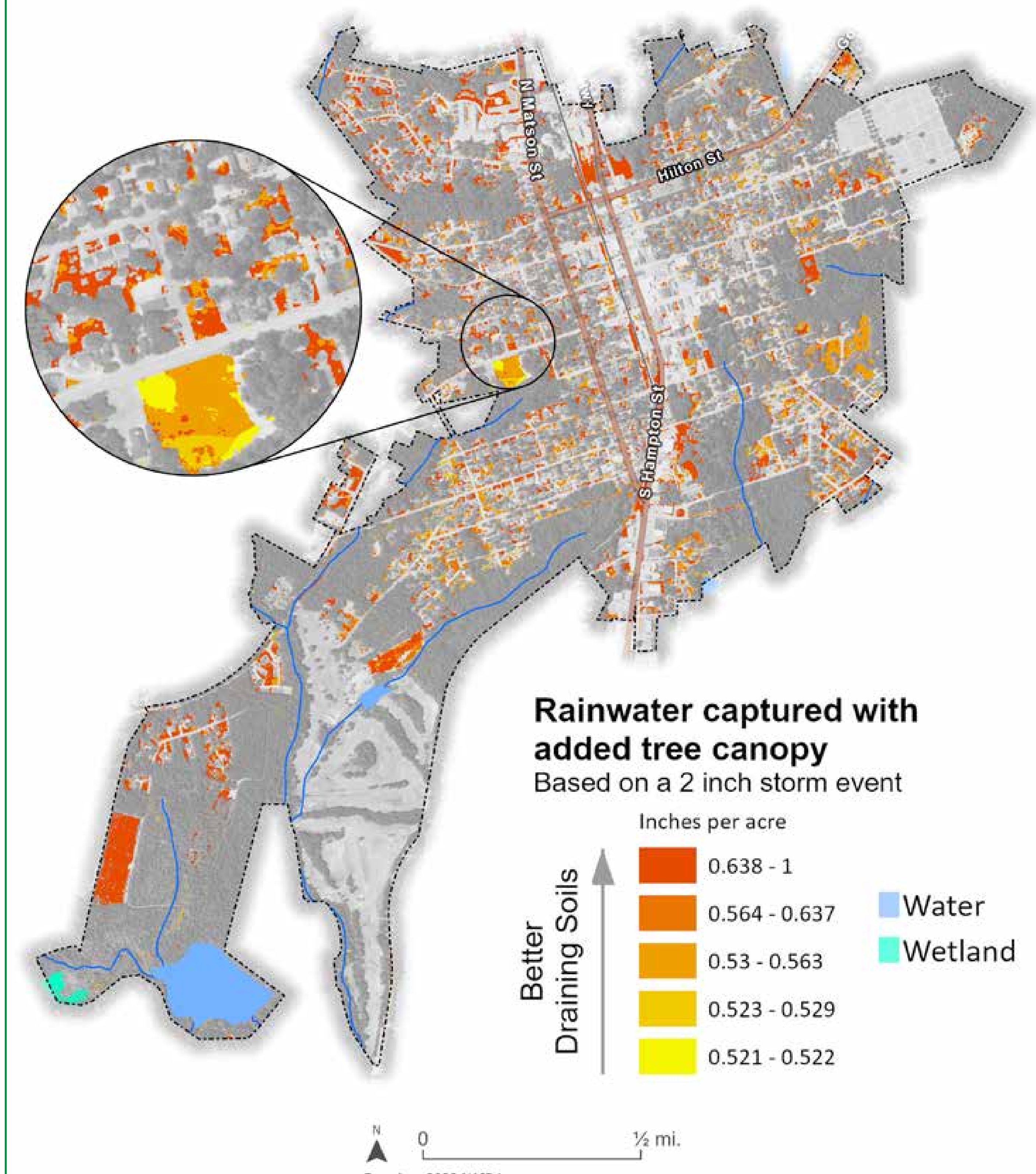
Best Tree Canopy to Save for Stormwater Infiltration

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



Best Tree Planting Locations for Stormwater Infiltration

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



Air Quality

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

Trees mitigate climate change by storing carbon in their tissue and sequestering atmospheric carbon from carbon dioxide (CO_2) in new tree growth. Current trees in the Town are storing 15,193 metric tons of carbon that will be released back into the atmosphere when these trees die. Trees also capture particulate matter, ground-level ozone (O_3), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) from the air, resulting in better air quality and healthier neighborhoods.

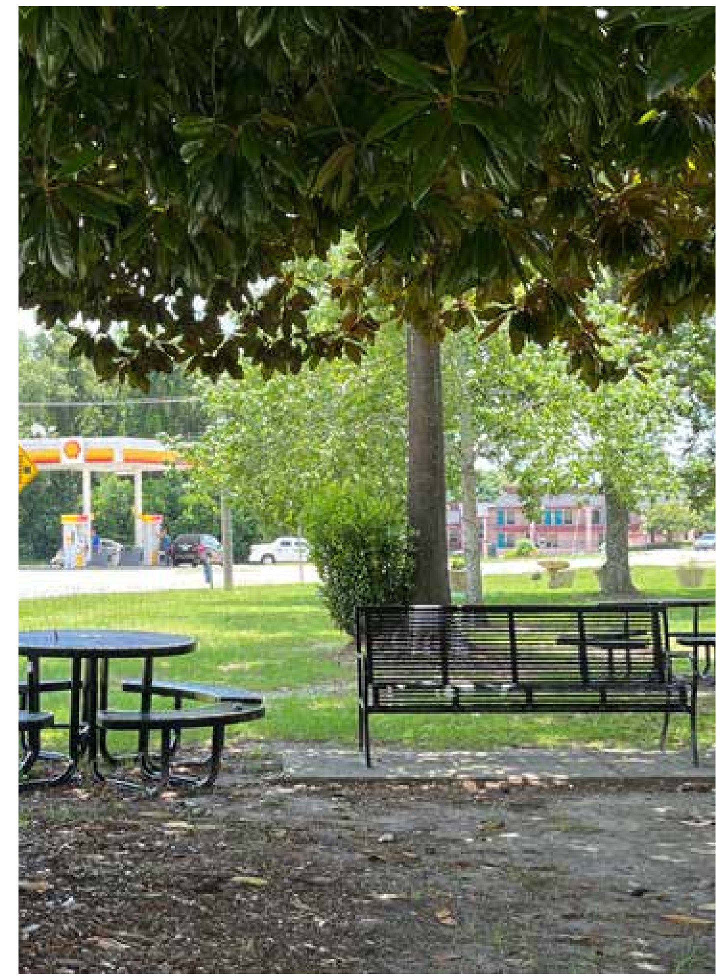
Air pollution and greenhouse gases removed annually by trees in Kershaw						
CO (carbon monoxide)	NO_2 (nitrogen dioxide)	O_3 (ozone)	PM_{10} (particulate matter 10 microns)	$PM_{2.5}$ (particulate matter 2.5 microns)	SO_2 (sulphur dioxide)	C seq (carbon sequestered)
476 lbs	**2,492 lbs**	**15,649 lbs**	**5,560 lbs**	**1,015 lbs**	**545 lbs**	**2,978 metric tons**

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

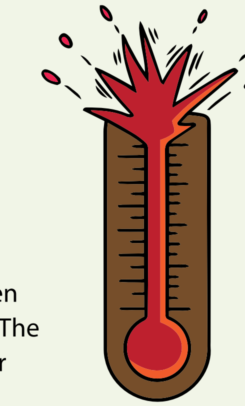
Well-treed neighborhoods have cleaner air and lower rates of asthma.

Urban Heat and Equity

Urban heat is a growing concern as extreme heat continues to increase in South Carolina with the changing climate. In Kershaw, the number of days above 100˚F is projected to rise from the historic average of 11 per year to 87 per year by the year 2070. To reduce temperatures, the Town can plant trees to cool the landscape. Inequities in the distribution of tree canopy and opportunities to correct them can be identified through tree canopy data, surface temperature data, and U.S. Census data that provides race and income statistics.



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



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

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

Extreme Heat

Where we are now	Where we are currently headed		If bold action is taken
Historically 1971-2000	Midcentury 2036-2065	Late Century 2070-2099	Extreme heat limited to
Average days per year temperatures over 100˚F			
11 days	**54** days	**87** days	**40** days

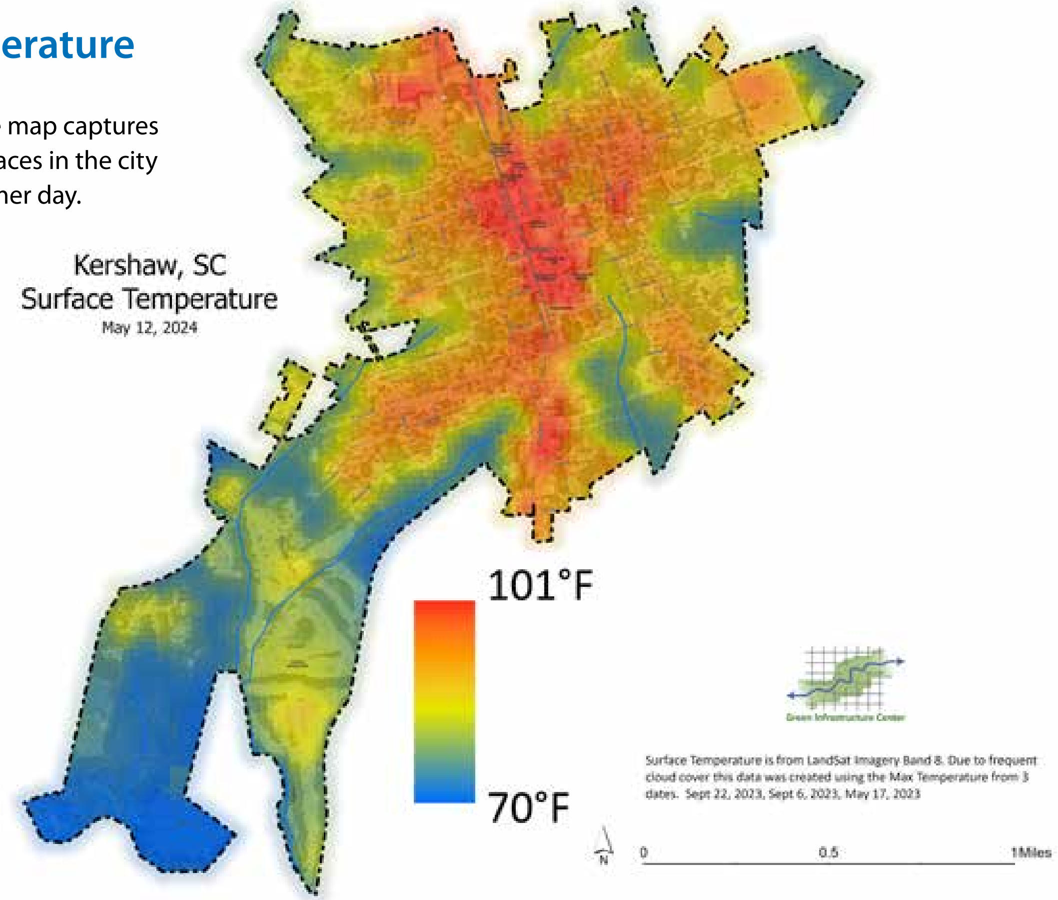
In this table "bold action" refers to reductions in greenhouse gases through energy conservation. It does not consider the effects of planting more trees. Source: Union of Concerned Scientists. *2019, Killer Heat Interactive Tool.*

What is tree equity?

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

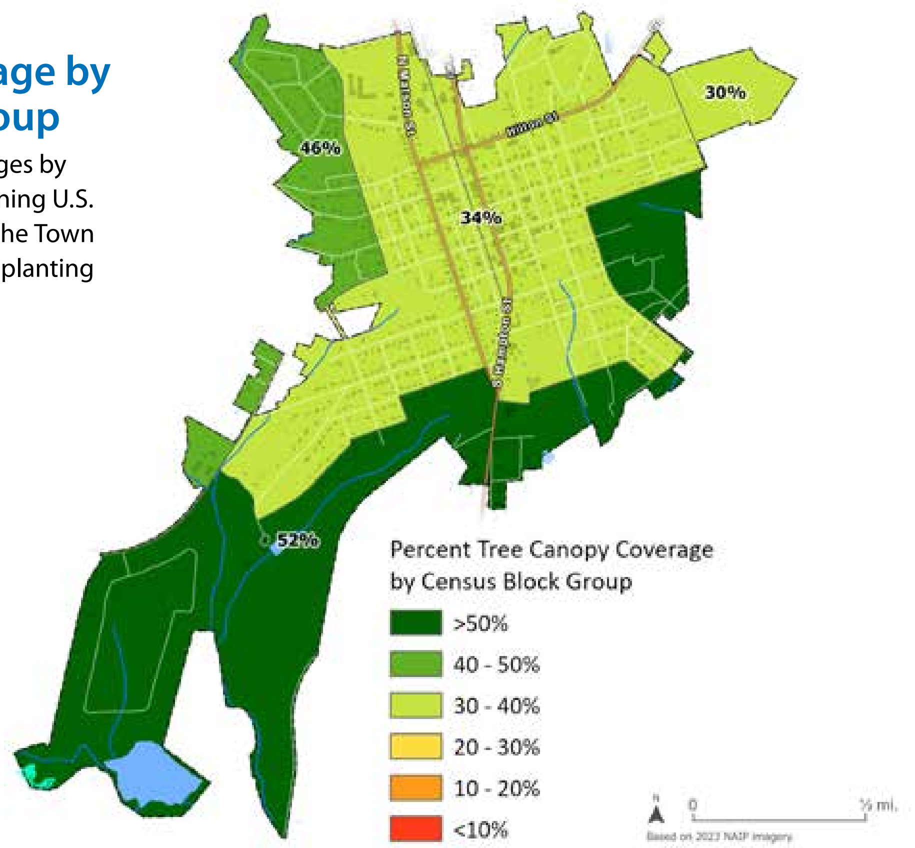
Surface Temperature

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



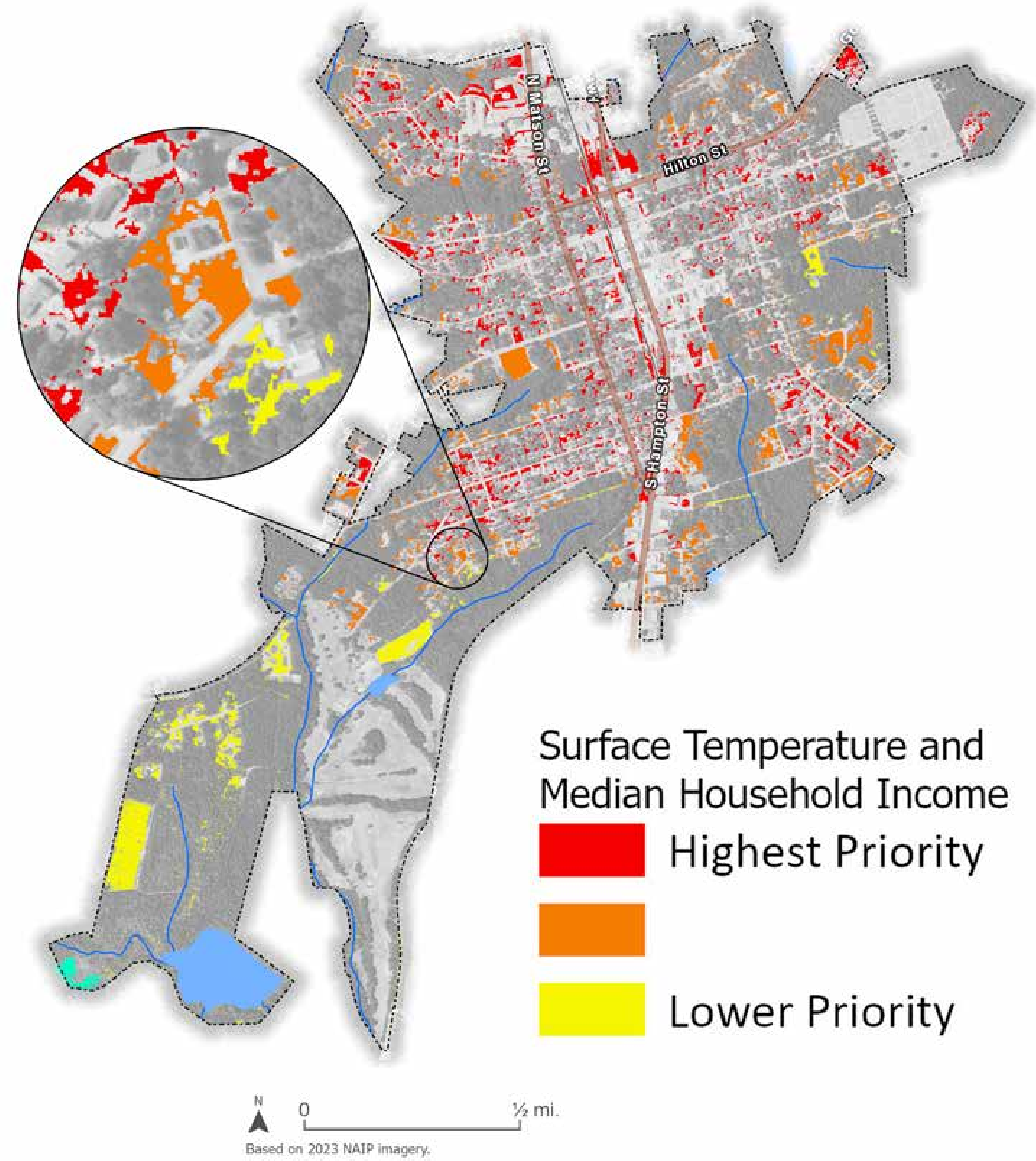
Tree Canopy Coverage by Census Block Group

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



Heat and Income Priority Tree Planting Locations

This map uses surface temperature data and median household income data to prioritize potential tree planting areas.



Planning and Engagement Process

The Town of Kershaw and the GIC partnered in a nine-month effort to create this *Strategic Tree Canopy Plan*. An advisory workgroup made up of representatives from Town staff, Councilmembers, Town Chamber of Commerce board members, local community partners, and Town residents met to discuss priorities. They engaged in a series of seven workshops from the spring of 2024 to the fall of 2024 to evaluate tree canopy cover, determine plantable areas, set a canopy goal and evaluate policies and practices that support tree canopy cover. In the fall of 2024, the GIC attended community events and held an open house to present strategies and goals to the public and elicit feedback.

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

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

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

Advisory workgroup members reviewing a map of Kershaw's potential planting areas.

Advisory Workgroup

During the planning process, a Town Advisory Workgroup was organized which consisted of Town staff members, councilmembers, Kershaw Chamber of Commerce board members, King Alfred Garden Club members, Kershaw Community Park Council members, and community residents. Workgroup members attended workshops throughout the planning process and assisted with event organization, information gatherings, and a public open house event. The advisory workgroup reviewed the maps, data, and community input to develop the *Strategic Tree Canopy Plan* goals and strategies for a healthier Kershaw.

Community Partners

During the planning process, the GIC met with key community partners to discuss current initiatives and opportunities to work together for a healthier, greener town. Community partners provided support with plantings and outreach. Community partner organizations included:

- **King Alfred Garden Club**
- **Kershaw Community Park Council**
- **Haile Gold Mine**
- **Andrew Jackson High School Agriculture Education Instructor**
- **KARE (Kershaw Area Resource Exchange)**

Public Engagement

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

In October 2024, the Town of Kershaw hosted an open house at the Baker Conference Center, which included a presentation from the GIC that introduced the project and asked attendees for feedback. The event had comment stations at which members could provide comments about tree canopy maps, ecosystem services, and potential planting areas. Additionally, attendees were asked to vote on which strategies they preferred for achieving the tree canopy goal and which ecosystem services provided by the trees is most important to them. The open house was organized with support from the advisory workgroup. The King Alfred Garden Club members provided refreshments and helped organize the event space.

In addition to the open house, the GIC gathered public input at events in town. The GIC attended Nature and Art Day in the Park to gather community feedback about tree planting locations and encourage community involvement in future projects. Tree giveaway events were held at Town Hall in spring 2025 with another one planned for the Nature and Art Day in the Park, in fall 2025. Handouts were distributed at all events informing residents about the work taking place as well as various informational materials about trees.

The public open house included a mix of information sharing, discussion, and opportunities for feedback.

Summary of Community Findings

During the Open House event community members were asked for their input about where trees should be planted around town. Nineteen community members attended the open house and provided input into the tree canopy planning efforts.

The following is a summary of public input, while a full suite of comments can be found in Appendix C.

Q1: Which benefit of trees is most important to you?

There were seven benefits community members could vote on. Community members were given three dots to vote for their three most valued benefits. The top-rated benefits trees provide to Kershaw residents were cooler temperatures, cleaner air and wildlife habitat.

Q2: Which strategies do you prefer to accomplish the Town's goal of increasing tree canopy by 1,888 trees?

There were fifteen strategies community members could vote on. Community members were given five dots to vote for their top five preferred strategies. See the complete list of strategies in the Implementation section or in Appendix C.

Top voted strategies were:

1. Plant trees at Richards Park. (13 votes)
2. Plant trees along Welsh, Church, and Cleveland Streets. (9 votes)
3. Plant trees at the three Kershaw welcome signs. (9 votes)
4. Remove and replace hazardous trees on Matson St. (9 votes)
5. Redesign Marion St Park with the community to include new additional trees. (8 votes)
6. Plant trees by the tennis courts at the community golf course. (8 votes)

Q3. Additional comments.

There were individual comments given regarding specific areas and concerns. Several individuals made comments about the need for trees along Cleveland Street. A few comments were left about the need for trees at the Ben Cook Tennis Center.

Goal and Implementation Strategies

The Town of Kershaw has a goal to increase tree canopy by 1,888 trees, or about 1.5%, over the next 10 years.

Newly planted trees at Richard's Park will help the town meet its goal of increasing tree canopy in Kershaw by 1,888 trees.

Recent national data show urban and suburban tree canopy cover is trending downwards at a rate of 175,000 acres lost per year – approximately 36 million trees lost annually (Nowack and Greenfield 2012). Trees are lost due to development, disease, storms, and old age. Kershaw is no exception. Even though there are no major development projects planned for the near future many of Kershaw's trees may be aging out, particularly along historical streets such as Matson Street. Additionally, the Town has many Bradford Pear trees which they would like to remove. Fortunately, this loss can be managed and Town tree canopy can be increased by 1,888 trees over ten years. This plan outlines strategies to do so.

The Town of Kershaw has a goal to increase tree canopy by 1,888 trees, or about 1.5%, over the next ten years.

Increasing overall town canopy coverage not only requires planting 1,888 trees but also replacing trees that are lost over time. Achieving this goal requires a coordinated effort by both the local government and private property owners. Since town-owned land makes up approximately 29% of the total land area with the remaining 71% on private property owned by residents, businesses, and developers, it is important that this effort is a public-private partnership. The town will need to plant 55 trees per year on town owned land while engaging with private landowners and businesses through outreach, education, and tree giveaways to encourage tree planting on private property.

As the community builds momentum for this initiative, the GIC will help the town launch its efforts through coordinated tree planting and tree giveaway events. As the Town's capacity and the urban forestry program expand, the number of trees planted each year is expected to increase. Town staff will be responsible for implementing these strategies and monitoring progress towards meeting its 2035 tree canopy coverage goal.

The tree canopy goal and objectives for Kershaw's urban forest are on the following pages. These practices will provide long-term care and protection of the urban forest and will ensure that investments in the Town's trees pay dividends by reducing stormwater runoff, cleaning the air and water, lowering energy bills, raising property values, and providing natural beauty long into the future.

Goal: Increase tree canopy by 1,888 trees, or approximately 1.5%, over ten years.

1 OBJECTIVE 1: Redesign Marion St Park with community input and plant new trees.

Marion Street Park was identified as an underdeveloped park which lacks amenities and contains large areas of open space without trees. Compared to other parks in the community, Marion Street Park is the least utilized. A community charette to redesign the park was held to get neighborhood residents involved in planning and beautifying a greenspace for a neglected park in town.

Marion St Park community charettes

2 OBJECTIVE 2: Plant trees along Welsh St., Church St., and Cleveland St.

Planting shade trees along streets reduces temperatures, encourages people to walk and increases the lifespan of the pavement making it cheaper to maintain over time. These streets were chosen because of their need for trees, the available space in the right-of-way (ROW) for large shade trees and feedback from the public that walkability in the town was an important value for the community.

Cleveland Street goes through the center of town. The street has little shade and is frequently used by residents to walk.

Planting shade trees along streets encourages people to walk. Feedback from the public indicated that walkability in the town was an important value for the community.

3 OBJECTIVE 3: Plant a tree at the corner of N Hampton St and E Richland St.

The corner of North Hampton Street and East Richland Street has a bench with no shade. This intersection is a part of Kershaw's downtown shopping area. The corner needed both beautification and shade. A Saucer Magnolia (*Magnolia x soulangeana*) was chosen to memorialize Rose Marie Baker (1936-2024) who owned the building on this corner and was a member of the King Alfred Garden Club.

The bench on the corner of N Hampton Street and E Richland Street without shade

4 OBJECTIVE 4: Plant trees at the Kershaw Community Golf Club to reduce flooding.

Parts of the Kershaw Community Golf Course experience flooding with heavy rain which causes damage to the public facility and increases erosion. Planting trees within and along the area affected will help to reduce localized flooding.

5 OBJECTIVE 5: Plant trees at the Ben Cook Tennis Center.

Bleachers at the Ben Cook Tennis Center sit directly in the sun. Planting trees to provide shade would make these bleachers more useable and make watching tennis matches a more enjoyable experience.

Trees planted around the bleachers at the Ben Cook Tennis Center to provide shade for those viewing tennis matches.

6 OBJECTIVE 6: Plant trees at the Town's three welcome signs.

Planting trees at the Town's welcome signs is intended to beautify the entrances into town and provide a positive impression for visitors.

In the spring of 2025 magnolia trees were planted around all three Kershaw Welcome signs.

7 OBJECTIVE 7: Develop an arboretum (garden of trees) at Kershaw Elementary.

An arboretum is a diverse collection of trees and shrubs species. An arboretum can provide educational opportunities for those who want to learn about or just view different species of trees. Kershaw Elementary has space for an arboretum and could provide students with an opportunity to learn about trees and tree identification.

8 OBJECTIVE 8: Plant trees at Richards Park.

Richards Park is frequently used for town events but lacks trees for shade. Trees could provide relief from the summer heat for residents who attend events in the park as well as beautify the space.

Large shade trees can be planted in Richards Park.

9 OBJECTIVE 9: Create tree donation fund to honor the memory of loved ones with new tree plantings.

A tree donation fund can help generate money to plant new trees in town. Planting a tree to memorialize a loved one provides a lasting dedication to someone who has passed. A tree can live between 50 to several hundred years depending on species.

10 OBJECTIVE 10: Partner with Clemson Extension on the Bradford Pear Bounty and remove all Bradford Pear trees on public property.

There are several Bradford Pear trees along the train tracks running through the center of town. While the white blossoms are pretty in the spring, the trees have weak wood that often breaks during storms. Bradford Pear trees are considered an aggressively invasive tree in South Carolina. The state banned selling the tree through the nursery industry in October of 2024. Clemson University offers a program which provides a free replacement tree when a landowner submits a photo they have cut down and removed a Bradford Pear tree. The university partners with municipalities across the state to hold bounty events and encourage landowners to remove this invasive tree from their properties.

Bradford Pears behind the library need to be removed and replaced with a different tree species.

11 OBJECTIVE 11: Partner with local businesses to sponsor tree giveaway events.

Local businesses can contribute to increasing town tree canopy as well. Partnering with local businesses can ease the burden on the town to increase the tree canopy. Local businesses are offered the opportunity to give back to the community and get community exposure.

12 OBJECTIVE 12: Hold educational workshops and tree giveaways at Nature and Art Day in the Park.

Nature and Art Day in the Park is an annual event hosted by the Kershaw Community Park Council and the Town of Kershaw. The event highlights nature and art. This presents the perfect opportunity to equip the community with education about trees and give trees to community residents.

13 OBJECTIVE 13: Remove and replace hazardous trees on Matson St.

Matson Street is one of Kershaw's historical districts featuring homes built over 100 years ago. Just like the homes many of the trees along Matson Street have been there a long time. Several trees along the street have become hazardous in their old age and need to be removed for public safety. Replacing the trees will ensure that the community continues to benefit from the ecosystem services being provided by those trees.

Trees along Matson Street.

14 OBJECTIVE 14: Require trees that are cut down on public property to be replaced at a 2:1 ratio.

Tree removal is a major contributor to loss of canopy. However, sometimes it is necessary to remove trees if they are hazardous, diseased, dead, or when development is appropriate. Replacing trees that are lost will not provide the same benefits for many years but will ensure that canopy cover does not decline. Replacing a removed tree with two trees will support canopy growth.

15 OBJECTIVE 15: Define where cars can park at Mullinax Park and plant trees where they will not create a conflict.

Mullinax Park is a park consisting of soccer fields which would not be appropriate for tree cover. Tree shade around the field would benefit those watching the games though. However, cars are often parked around the perimeter of the field which would be detrimental to tree health. Parking cars on top of tree roots compacts the soil, eliminating oxygen and microorganisms from the soil and making it difficult for roots to grow. Cars can also damage exposed roots. Defining a designated parking space at the park could allow for trees to be planted in areas where cars will not encroach on their space.

Mullinax Park soccer fields.

Conclusion

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

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

Appendixes

Appendix A: Funding Opportunities

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

South Carolina Forestry Commission

https://scfc.gov

- Food Forest Project Grant
- Tree Inventory Grant
- Project Learning Tree

National Recreation and Park Association

https://www.nrpa.org/

- Grant and Fundraising Resources: https://www.nrpa.org/our-work/Grant-Fundraising-Resources/
  - Community Development Block Grant (CDBG) Program https://www.nrpa.org/our-work/Grant-Fundraising-Resources/other-opportunities2/national-park-service-21st-century-conservation-service-corps/

Clemson – Bradford Pear Bounty

https://www.clemson.edu/extension/bradford-pear

Palmetto Pride – Tree Grant

https://www.palmettopride.org/grants/tree-grant/

Duke Energy Foundation

https://foundation.duke-energy.com/grants

- Climate resiliency projects
- Natural disaster preparedness and response programs
- Green space access projects in historically underserved communities

Arras Foundation

https://arrasfoundation.org/

A foundation local to Lancaster County committed to growing a healthier community where all people thrive. They offer several opportunities to engage communities in collaboration, fund raising, and creating positive change.

The Springs Close Foundation

https://springsfnd.org/

Supports projects in Chester, York, and Lancaster counties.

John T. Stevens Foundation

A local community foundation.

Richards Family Foundation

A local family foundation in Kershaw that supports community projects.

Appendix B: Bibliography

Akbari, Hashem, Melvin Pomerantz, and Haider Taha. 2001. "Cool Surfaces and Shade Trees to Reduce Energy Use and Improve Air Quality in Urban Areas." *Solar Energy* 70 (3): 295-310. https://www.sciencedirect.com/science/article/abs/pii/S0038092X0000089X?via%3Dihub

Arbor Day Foundation. 2025. "How to Plant Trees to Conserve Energy for Summer Shade." Accessed March 17th, 2025. https://www.arborday.org/tree-resources/summer-shade

Benedict, Mark A., and Edward T. McMahon. 2006. *Green Infrastructure: Linking Landscapes and Communities*. Island Press.

Center for Disease Control. 2024. "Heat and Older Adults." Accessed March 17th, 2025. https://www.cdc.gov/heat-health/risk-factors/heat-and-older-adults-aged-65.html

Center for Urban Forest Research and Southern Center for Urban Forestry Research & Information. 2006. "The Large Tree Argument." Accessed March 17th, 2025. https://ctufc.org/wp-content/uploads/2018/03/The-Large-Tree-Argument.pdf

Ellison, David, Cindy E. Morris, Bruno Locatelli, Douglas Sheil, Jane Cohen, Daniel Murdiyarso, Victoria Gutierrez et al. 2017. "Trees, forests and water: Cool insights for a Hot world." *Global Environmental Change* 43: 51-61. https://www.sciencedirect.com/science/article/pii/S0959378017300134?via%3Dihub

Endreny, Theodore A. 2018. "Strategically Growing the Urban Forest Will Improve Our World." Nature Communications 9 (1160). https://doi.org/10.1038/s41467-018-03622-0

Faber Taylor, Andrea, and Frances E. Kuo. 2011. "Could Exposure to Everyday Green Spaces Help Treat ADHD? Evidence from Children's Play Settings." *Applied Psychology: Health and Well-Being* 3 (3): 281-303. https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/j.1758-0854.2011.01052.x

Haile Gold Mine. (2025). "200 Years in the History of U.S. Mining." Haile Gold Mine. https://hailegoldmine.com/about/history/

Kuehler, Eric, Jon Hathaway, and Andrew Tirpak. 2017. "Quantifying the Benefits of Urban Forest Systems as a Component of the Green Infrastructure Stormwater Treatment Network." *Ecohydrology* 10 (3).

McPherson, E. Gregory, and Jules Muchnick. 2005. "Effect of Street Tree Shade on Asphalt Concrete Pavement Performance." *Journal of Arboriculture* 31 (6): 303-310.

McPherson, E. Gregory, David Nowak, Gordon Heisler, Sue Grimmond, Catherine Souch, Rich Grant, and Rowan Rowntree. 1997. "Quantifying Urban Forest Structure, Function, And Value: The Chicago Urban Forest Climate Project." *Urban ecosystems* 1 (1): 49-61.

National Weather Service. 2025. "NWS Climate Information." Accessed March 3rd, 2025. https://www.weather.gov/wrh/Climate.

Nowak, David J., and Eric J. Greenfield. 2012. "Tree and Impervious Cover Change in U.S. Cities." *Urban Forestry & Urban Greening* 11: 21-30. https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1239&context=usdafsfacpub

Popovich, Nadia, Blacki Migliozzi, Rumsey Taylor, Josh Williams and Derek Watkins. 2018. "How Much Hotter Is Your Hometown Than When You Were Born?" *The New York Times*. https://www.nytimes.com/interactive/2018/08/30/climate/how-much-hotter-is-your-hometown.html

Rao, Meenakshi, Linda A. George, Todd N. Rosenstiel, Vivek Shandas, and Alexis Dinno. 2014. "Assessing the Relationship among Urban Trees, Nitrogen Dioxide, and Respiratory Health." *Environmental Pollution* 194: 96–104. https://www.sciencedirect.com/science/article/abs/pii/S0269749114003030

Town of Kershaw. (n.d.). "History of Kershaw." Town of Kershaw SC. https://www.townofkershawsc.gov/history

Tilt, Jenna H., Thomas M. Unfried, and Belen Roca. 2007. "Using Objective and Subjective Measures of Neighborhood Greenness and Accessible Destinations for Understanding Walking Trips and BMI in Seattle, Washington" *American Journal of Health Promotion* 21 (4): 371-379. https://journals.sagepub.com/doi/10.4278/0890-1171-21.4s.371

Union of Concerned Scientists. 2019, Killer Heat Interactive Tool. Accessed March 17th, 2025. https://www.ucsusa.org/resources/killer-heat-interactive-tool

U.S. Environmental Protection Agency, 2013. "Stormwater to Street Trees." Accessed March 17th, 2025. https://www.epa.gov/sites/production/files/2015-11/documents/stormwater2streettrees.pdf

U.S. EPA Watershed Academy. "Growth and Water Resources," Slide 10, Development and Runoff Graphic. Accessed March 17th, 2024. https://cfpub.epa.gov/watertrain/moduleFrame.cfm?parent_object_id=170

Wolf, Kathleen L. 2007. "City Trees and Property Values." *Arborist News* 16 (4): 34-36.

Xiao, Qingfu, E. Gregory McPherson, Susan L. Ustin, Mark E. Grismer, and James R. Simpson. 2000. "Winter Rainfall Interception by Two Mature Open-Grown Trees in Davis, California" *Hydrological Processes* 14 (4): 763-784.

Appendix C: Community Feedback

The following questions were posed to the community at four separate events in 2024: Greening Kershaw Open House, Trunk-or-Treat, a Virginia State University tree giveaway, and Pink and Red Walk. Below is a compilation of all questions and public input not included in the Summary of Community Findings.

Q1: Which benefit of trees is most important to you?

Responses	Votes
Cleaner Air	13
Cleaner Water	7
Less Flooding	0
Cooler Temperatures	14
Erosion Control	4
Wildlife Habitat	13
Beautification	7

Q3. Where should trees be planted?

Responses	Votes
Parks	0
Schools	0
Streets and Sidewalks	1
In Neighborhoods	1
Around Businesses	1
Around Churches	1

Q2: Which strategies do you prefer to accomplish the Town's goal of increasing tree canopy by 1,888 trees??

Responses	Votes
Redesign Marion St Park with community input and plant new trees.	8
Plant trees along Welsh St., Church St., and Cleveland St.	9
Plant a tree at the corner of N Hampton St and E Richland St.	2
Plant trees at the Kershaw Golf Club to reduce flooding.	7
Plant trees at the Ben Cook Tennis Center.	8
Plant trees at the Town's three entrance welcome signs.	9
Develop an arboretum (garden of trees) at Kershaw Elementary.	6
Plant trees at Richards Park.	13
Create tree donation fund to honor the memory of loved ones with new tree plantings.	7
Partner with Clemson Extension on the Bradford Pear Bounty and remove all Bradford Pear trees on public property.	5
Partner with local businesses to sponsor tree giveaway events.	3
Hold educational workshops and tree giveaways at Nature and Art Day in the Park.	6
Remove and replace hazardous trees on Matson St.	9
Require trees that are cut down on public property to be replaced with a 2:1 ratio.	3
Define where cars can park at Mullinax Park and plant trees where they will not conflict.	5

Q4: Which community spaces need more trees?

Responses	Votes
Richards Park	1
Kershaw Elementary	0
Steven's Park	0
Marion Street Park	1
Mullinax Park	0
Kershaw City Cemetery	2
Other*	8

*Other votes were placed at the Kershaw Country Club & Golf Course (1), MUSC Health Primary Care (1), along Cleveland St (2), along the train tracks (1), at the fork b/w Matson St and Cleveland St (1), and on private property parcels (2).

Additional comments left by the community.
No trees other than entrance of cemetery during funerals to provide shade.
Cleveland St
Ben Cook Tennis Center
Several trees around the bleachers at the Ben Cook Tennis Center.
Preschool – kids need trees.
Across from Pres. Church.
A tree or two needs to be planted in front of MUSC Medical office on East Marion St.

Q5: Which streets need more shade?

Responses	Votes
The corner of Cleveland St and Church St	2
Along Cleveland Street	3
Along Matson Street	2
Along Hampton Street	3
At the corner of N Hart St and E Marion St	1
At the corner of E Richland St and Hampton St	1
Along Sunshine Lane	3
Around Richards Park	3

Additional comments left by the community.
Children at KES need trees to play and learn.
Library – Read books in the shade.
Cleveland St at Richland.
Matson St – Remove trees needing removal and plant where can.
No shade at all on Cleveland St. Lots of walkers.
Sunshine Lane. Knollwood Drive.
Trees between Walmart and O'Reilly's

Q6: How would you like Kershaw to beat the heat?

Responses	Votes
Richards Park	1
E Church Street	1
E Stevens Street behind KARE	1

Additional comments left by the community.
Cleveland Street is very hot on a sunny day.
East Church St on North side had all trees cut by the town when new water line was installed. Could use new plantings.

Q7: Where is flooding an issue?

Responses	Votes
Along Clubhouse Drive	1