Tree Canopy Assessment
Greenville County, South Carolina

Key Stats

Current Tree Canopy is 38%

Potential Planting Area is 25,304 acres

2,144,327 more small trees (20 ft diameter crowns) can be planted

1,416,139 more large trees (40 ft diameter crowns) can be planted

Potential Tree Canopy could be 46%

The County's goal is to minimize loss of canopy and forested open space with policy, planning and tree plantings.

Key Strategies

- Bolster tree protections within the current draft of the Unified Development Ordinance.

- Support reforestation plantings on floodplains.

- Apply for technical assistance to model the impacts of stormwater runoff from canopy loss.

- Continue to collaborate with regional tree nonprofits to plant trees on public and private land.

- Establish specific measurements and requirements for preserving and/or replacing heritage trees.

April 2024

SOUTH CAROLINA FORESTRY COMMISSION

Green Infrastructure Center

Executive Summary

Located in the Upstate Region of South Carolina, the County of Greenville is the most populous county and an area of intense new urban development. The county's landscape is characterized by an urban-rural gradient, with dense urban development in the south to more rural, mountainous and forested terrain in the north. Greenville county's tree canopy is currently 38%. Due to variable land uses the tree canopy is unevenly distributed making setting a county-wide goal challenging. However, the county is committed to an overarching goal of reducing tree and forest loss.

Greenville County's Tree Canopy Goal is to minimize tree canopy and forested open space loss through policy, planning and strategic tree plantings. The county plans to refine and set its canopy goals to better reflect the urban-rural gradient within the county.

With recent development pressure and an increase in population growth, being able to maintain its current tree canopy and forests will be difficult. The best goal moving forward will be to minimize forest loss and ensure connectivity as new developments continue. A top strategy approach is to strengthen ordinances related to tree protection and replacement during development. The county is working on a Unified Development Code (UDO) that has many new provisions to better protect trees. These provisions ensure that more forest patches or trees are saved on sites, or will require that when impacts are unavoidable, enough trees are planted to recover lost canopy. These measures will also help more equitably distribute trees in priority neighborhoods, along stream banks and in floodplains. Partnerships with municipalities within the county, especially the City of Greenville and nonprofits such as TreesUpstate will also be crucial to get trees planted where they are most needed.

Engaging the community through non-governmental organizations can maximize tree plantings on both public and private land.

Strategies for the Tree Canopy

Strengthen the Unified Development Ordinance to ensure robust tree protections are included.

Strategy 1: Require tree save areas during development and create incentives for developers to save more trees.

Strategy 2: Make penalties more severe when land is cleared under the guise of silviculture but then proceeds to development.

Strategy 3: Increase open space requirements within developments and make cluster developments more advantageous when possible.

Strategy 4: Establish specific standards for saving, protecting and replacing Heritage trees during development.

Strategy 5: Create a tree mitigation bank that can be used when tree replacement requirements cannot be met on site.
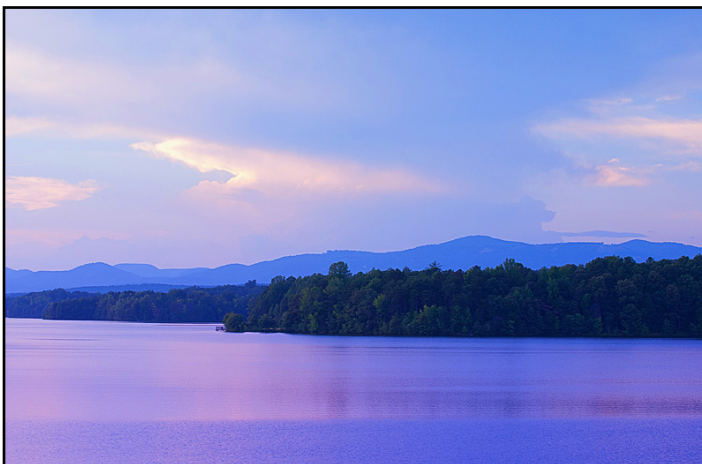
Apply data analysis to understand current tree canopy conditions and benefits.

Strategy 1: Present data to county leadership and the public on benefits of trees in the county.

Strategy 2: Apply for technical assistance with the South Carolina Forestry Commission for the Trees and Stormwater calculator.

Partner with tree-focused local organizations

Strategy 1: Focus tree planting along stream banks in priority watersheds to capture and filter nonpoint source nutrient runoff.

Strategy 2: Focus tree plantings in floodplains to control storm runoff.

Strategy 3: Continue to partner with TreesUpstate on future planting plans.

Strategy 4: Use a percentage of stormwater utility fees to support forest preservation and new tree plantings.

Green spaces serve many purposes in a community. Forests provide access to recreation opportunities, habitat for wildlife and act as water filtration sources and carbon sinks.

The "Roots Tree" is a famous tree in the Reedy River Park located in downtown Greenville, SC. It is one of many landmarks in the busy downtown that has become famous for its green rejuvination. This American Beech was awarded the Heritage Tree designation by TreesSC for 2023.

TreesUpstate has been and will continue to be an important partner for Greenville County to help manage their tree canopy .

Greenville County, South Carolina
Classified Land Cover

Caesars Head
State Park

Travelers Rest

Taylors

Wade Hampton

Berea

Greenville

Five Forks

Gantt

Simpsonville

Fo

Travelers Rest

Legend:
- Tree Canopy
- Tree Canopy over Impervious
- Scrub/Shrub
- Pervious/Turf
- Water
- Impervious
- Bare
- Wetland
- Forested Wetland

Base data (roads and labels) from ESRI base maps web service, Land Cover, Potential Planting Areas, and other Green Infrastructure data from GIC, unless otherwise stated. Created by The Green Infrastructure Center based on 2023 NAIP Aerial Imagery, and 2019 LiDAR from USGS.

0   2.5   5   10
Miles

N

Figure-1: A map of land cover of Greenville County based on the National Agriculture Imagery Program (NAIP) 2021.

Greenville County Tree Canopy Assessment

Greenville County, South Carolina
Potential Planting Areas (PPA)

Caesars Head
State Park

Travelers Rest

Taylors

Wade Hampton

Berea

Greenville

Five Forks

Gantt

Simpsonville

Fount

**Potential Planting
Area (PPA)**
5% of Land Area
(25304 acres)

Land Cover included:
-Pervious Surfaces
-Bare Earth
PPA Exclusions:
-Cemeteries
-Sports Fields
-Golf Courses
-Solar Fields
-Powerline Corridors
-Airports
-Agriculture (from
NLCD)

Simpsonville

Base data (roads and labels) from ESRI base maps web service. Land Cover, Potential Planting Areas, and other Green Infrastructure data from GIC unless otherwise stated. Created by The Green Infrastructure Center based on 2021 NAIP Aerial Imagery, and 2019 LiDAR from USGS.

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Figure-2: A map of Potential Planting Areas (PPA) in Greenville County.

Greenville County Tree Canopy Assessment
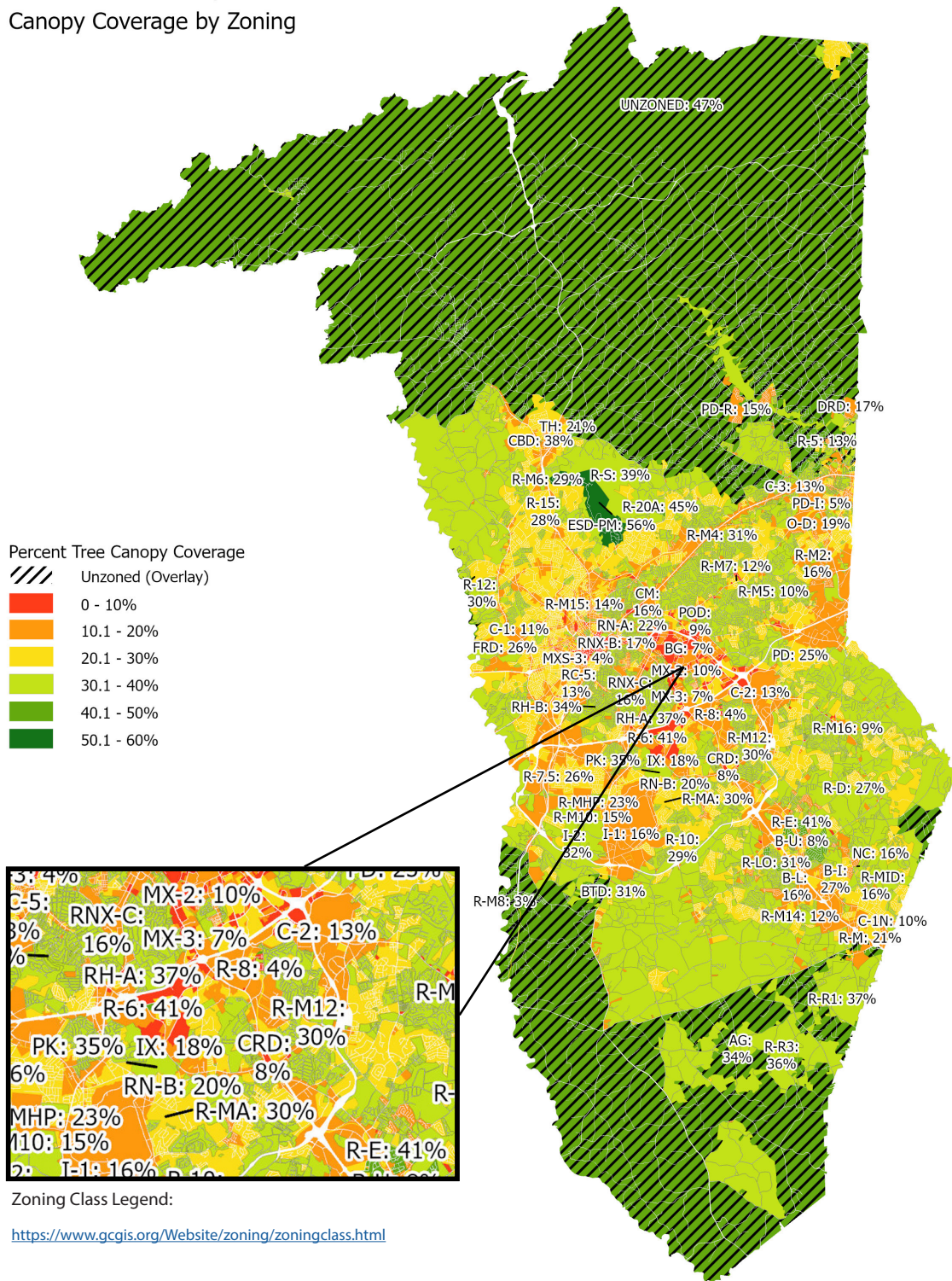
Figure-3: A map of tree canopy by zoning class in Greenville County.

Greenville County Tree Canopy Assessment

Greenville County, South Carolina
Canopy Coverage and Impervious Surface
by HUC12 Watersheds

Upper North Saluda River: 72% TC,5% Impervious

Upper North Pacolet River: 68% TC,3% Impervious

Upper South Pacolet River: 54% TC,3% Impervious

Middle Saluda River: 56% TC, 4% Impervious

Lower North Saluda River: 51% TC,5% Impervious

Upper South Saluda River: 51% TC,6% Impervious

Upper Middle Tyger River: 40% TC, 3% Impervious

Headwaters South Tyger River: 46% TC,4% Impervious

Beaverdam Creek-Middle Tyger River: 30% TC,5% Impervious

Lower South Saluda River: 46% TC, 3% Impervious

Upper South Tyger River: 29% TC,9% Impervious

Headwaters Enoree River: 37% TC,10% Impervious

Middle South Tyger River: 20% TC,25% Impervious

Doddies Creek-Saluda River: 37% TC, 6% Impervious

Headwaters Reedy River: 27% TC,15% Impervious

Brushy Creek-Enoree River: 22% TC, 26% Impervious

Brushy Creek-Reedy River: 20% TC, 27% Impervious

Peters Creek-Enoree River: 26% TC, 15% Impervious

Craven Creek-Saluda River: 33% TC,10% Impervious

Gilder Creek: 27% TC,18% Impervious

Boggy Creek-Enoree River: 38% TC,6% Impervious

Laurel Creek-Reedy River: 27% TC, 17% Impervious

Durbin Creek: 28% TC,12% Impervious

Grove Creek: 32% TC,8% Impervious

Huff Creek: 29% TC,7% Impervious

North Rabon Creek: 24% TC,15% Impervious

South Rabon Creek: 33% TC,11% Impervious

Martin Creek-Reedy River: 47% TC, 2% Impervious

Mountain Creek-Saluda River: 40% TC, 2% Impervious

Little Creek-Saluda River: 36% TC,2% Impervious

Horse Creek-Reedy River: 39% TC,2% Impervious

Percent Tree Canopy Coverage
- 15 - 25%
- 25.01 - 35%
- 35.01 - 45%
- 45.01 - 55%
- 55.01 - 65%
- 65.01 - 75%

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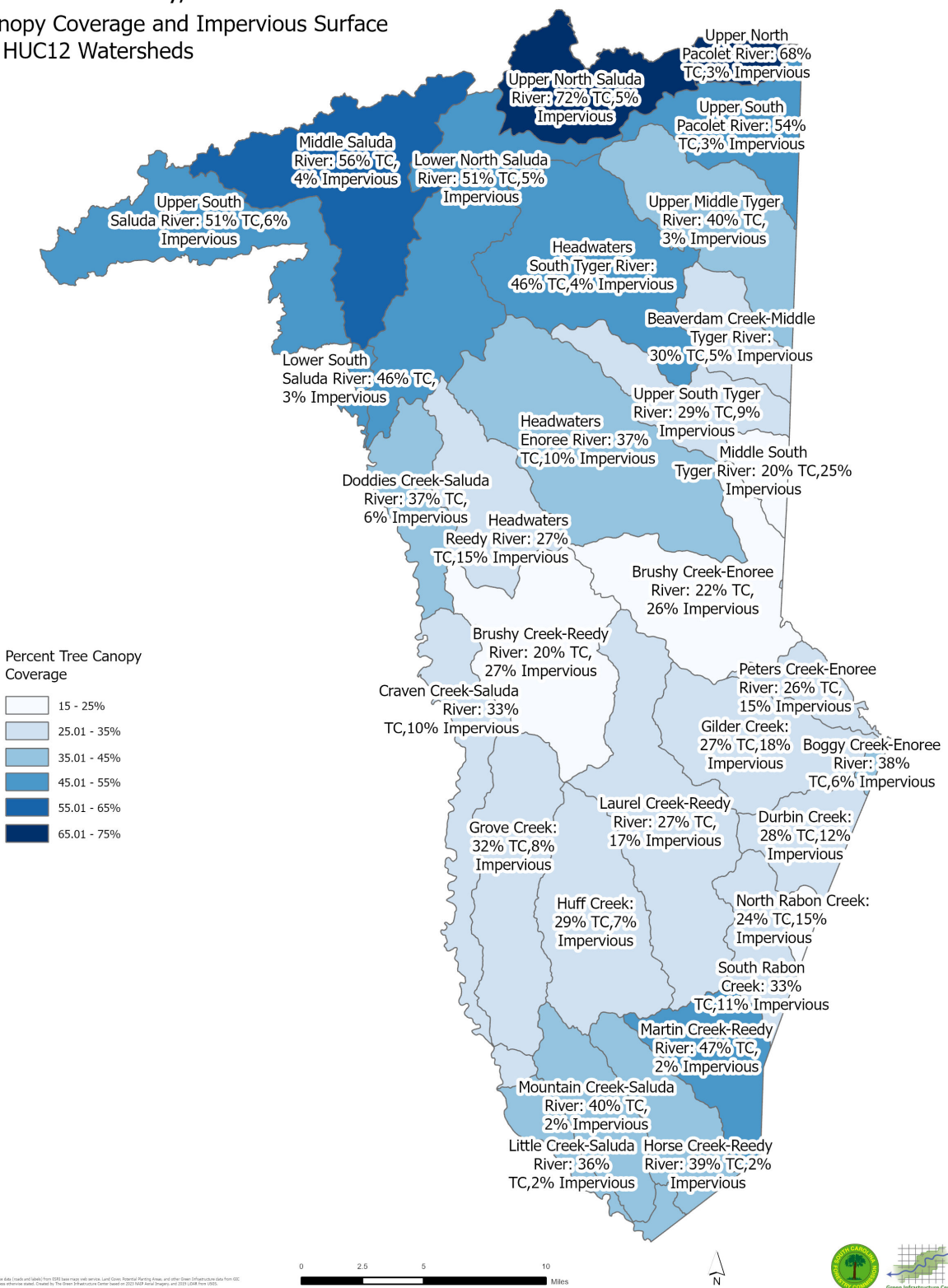Greenville County Tree Canopy Assessment

Figure-4: A map of percent tree canopy and percent impervious surfaces by Hydrologic Unit Code 12 watershed in Greenville County.

Greenville County, South Carolina
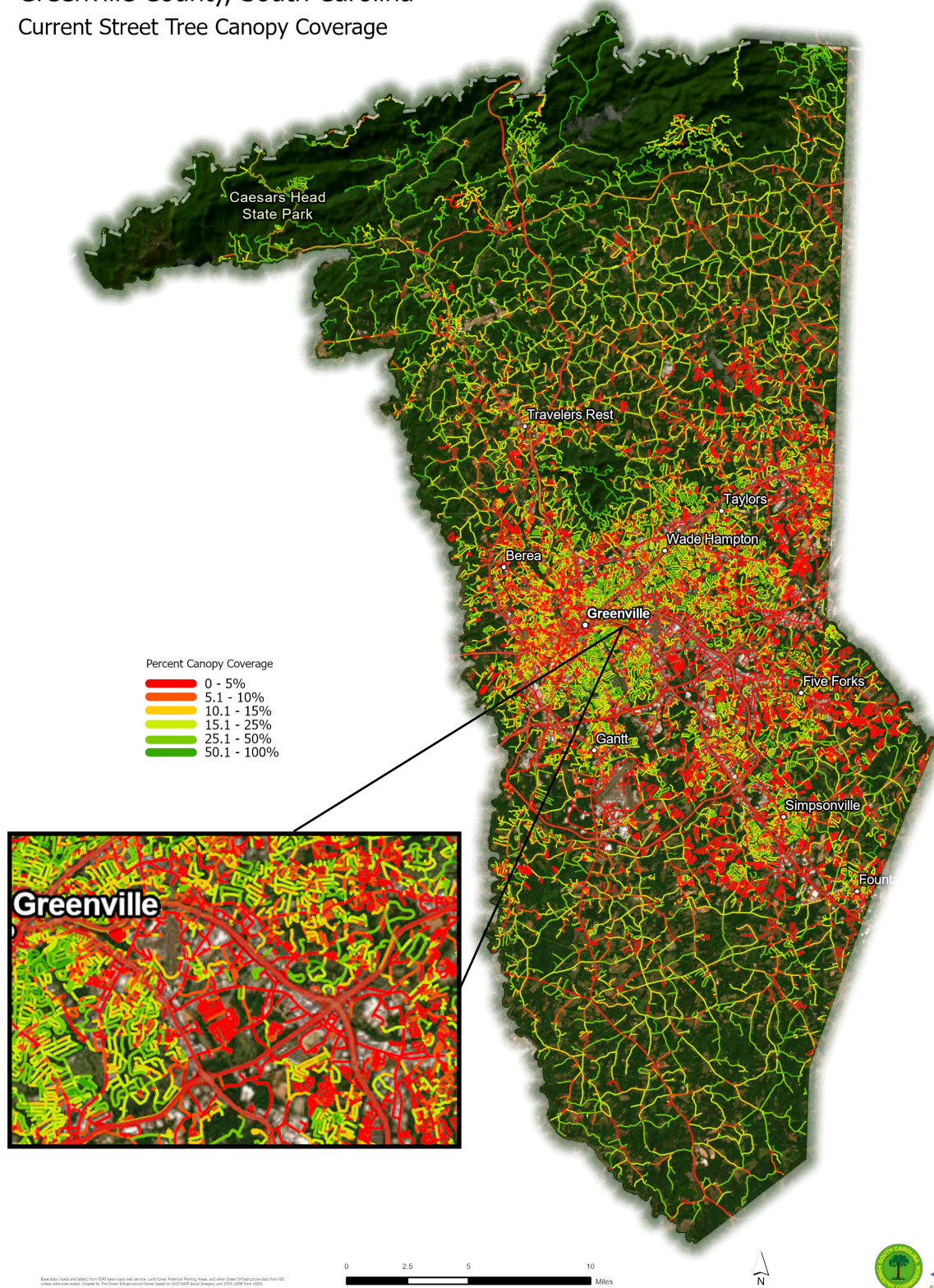### Current Street Tree Canopy Coverage

Caesars Head
State Park

Travelers Rest

Taylors

Wade Hampton

Berea

Greenville

Five Forks

Gantt

Simpsonville

Fount

Percent Canopy Coverage

- 0 - 5%
- 5.1 - 10%
- 10.1 - 15%
- 15.1 - 25%
- 25.1 - 50%
- 50.1 - 100%

Greenville

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Miles

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Figure-5: A map of tree canopy within 50 feet of street centerlines in Greenville County.

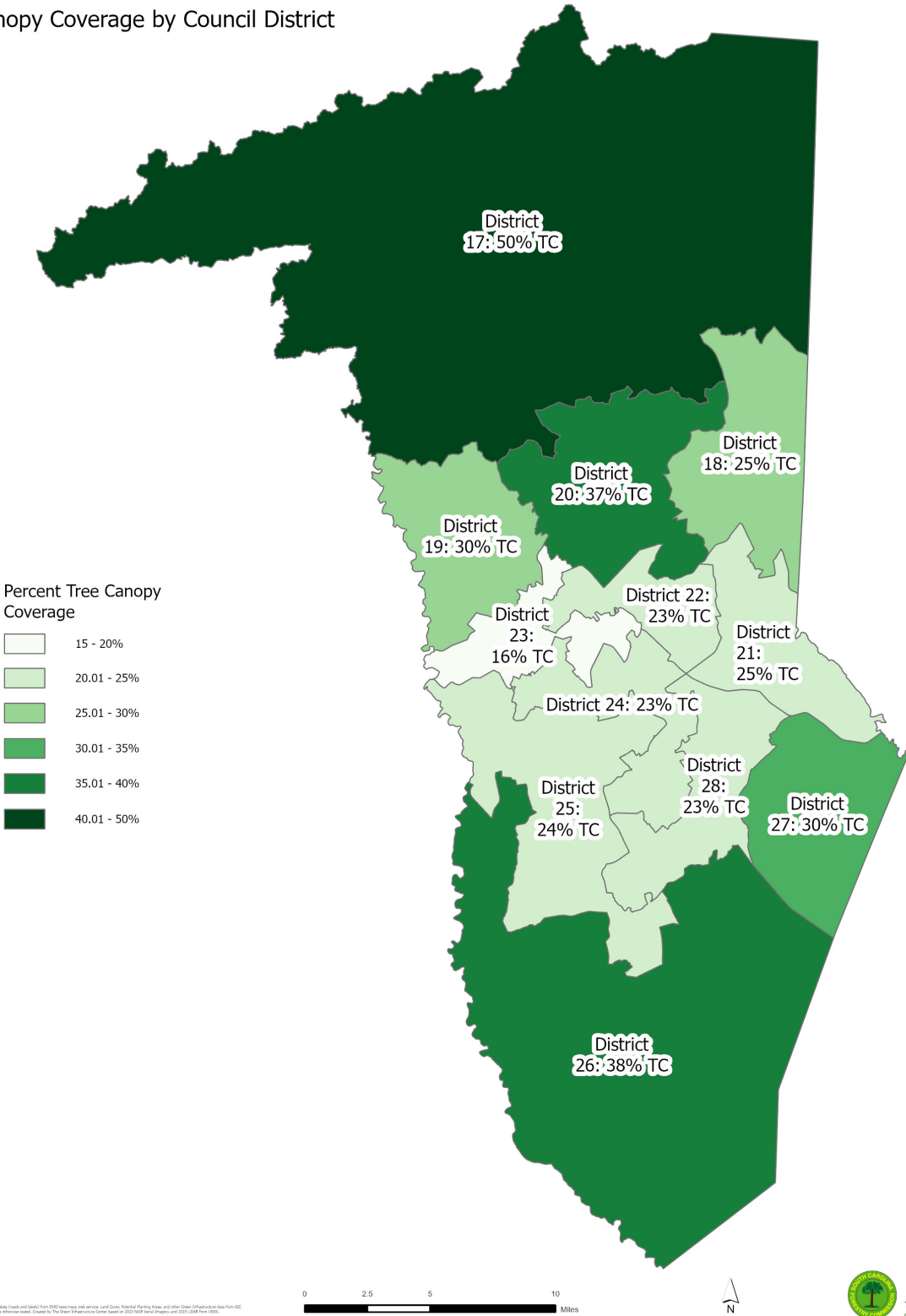Greenville County Tree Canopy Assessment

Figure-6: A map of percent tree canopy by Council Districts in Greenville County.

Greenville County, South Carolina
Canopy Coverage by Council District

District 17: 50% TC

District 18: 25% TC

District 20: 37% TC

District 19: 30% TC

District 22: 23% TC

District 23: 16% TC

District 21: 25% TC

District 24: 23% TC

District 28: 23% TC

District 27: 30% TC

District 25: 24% TC

District 26: 38% TC

Percent Tree Canopy Coverage

15 - 20%
20.01 - 25%
25.01 - 30%
30.01 - 35%
35.01 - 40%
40.01 - 50%

0   2.5   5   10
Miles

N

Greenville County Tree Canopy Assessment