AN ASSESSMENT OF PAST AND PRESENT
URBAN TREE CANOPY

-0.5%
Canopy Change (2018-2022)

47%
2022 Tree Canopy Cover

29%
Impervious Surfaces

18%
Plantable Space

In Charlotte, the urban forest isn't just about scenic views and shaded spaces; it actively contributes to the environment and economy while fostering a tight-knit community spirit among residents and visitors. This metropolitan area boasts an established urban forest with over 94,161 acres of canopy within the current city boundary. Charlotte's Extraterritorial Jurisdiction (ETJ) area adds approximately 39,791 to the City's area and serves multiple purposes for the municipality such as authority to enforce zoning and development ordinances. This study found that this extension of the City was heavily forested and had 63% of its land area covered with tree urban tree canopy (UTC) in 2022. Without the ETJ the City has a canopy cover of 47%; however, after averaging the canopy with the ETJ the combined canopy cover increases to 50%

The City's parkland and canopied greenways are a testament to Charlotte's commitment to its essential urban forest. Through strategic planning efforts, educational outreach programs, and continued community collaboration with organizations like TreesCharlotte, Charlotte can use the data from this assessment to help plan the creation of new urban green spaces and reach its goal of 50% canopy cover by 2050.

This assessment examined the distribution of canopy both past (2018) and present (2022) across Charlotte's current city boundary, its ETJ, city council districts, and other geographic scales. The results, based on the most recently available source aerial imagery from the USDA's National Agriculture Imagery Program (NAIP) collected in June of 2022, will help Charlotte revise existing, and develop new strategies to protect and expand its tree canopy resource.

CITYWIDE CANOPY DISTRIBUTION

91% Overhanging Pervious Surfaces

9% Overhanging Impervious Surfaces

CITY OF CHARLOTTE

Trees Charlotte
Plant, Preserve & Celebrate!

HOW DOES CHARLOTTE'S CANOPY COMPARE TO MECKLENBURG COUNTY?

52% UTC Canopy
20% Plantable Space
+0.1% Canopy Gain

2018

2022

Figure 1. Tree canopy losses from 2018 to 2022 due to residential development between the intersection of Grier Rd and E W.T. Harris Blvd.

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Tree Canopy by Place Types

The City of Charlotte has created a classification of 10 unique place types to describe the vision for future development practices of Charlotte. These categories describe the characteristics, buildings, and primary land uses of each area, and were created from Charlotte's Future 2040 Policy Map. Neighborhood 1, occupied a majority of the land area at 57%. This type is predominantly comprised of low-rise single-family homes. Neighborhood 1 had the most urban tree canopy by area, making up 63% of the total canopy within all place types.

Neighborhood 1 also contained the highest percentage of possible planting area (PPA) at 22%. This represents about two-thirds (66%) of the total plantable space within all Place Types. The Parks and Preserves type, where land is designated for open spaces, parks, and land set aside to protect natural spaces, had the highest percentage of urban tree canopy (UTC) with 78% or 11,891 acres within its boundaries.

Nine of the City's ten Place Types lost canopy during the study period. The only Place Type that gained canopy was Parks and Preserves. These areas gained 244 acres of canopy (increasing their canopy cover by 2%). The largest loss of trees occurred in Neighborhood 1, where there was a decline of more than 700 acres of canopy (about -1%). Although Neighborhood 1 had the largest amount of canopy, it also suffered the largest losses. This place type represents a prime area of focus for tree preservation in the midst of rapid economic and population growth.

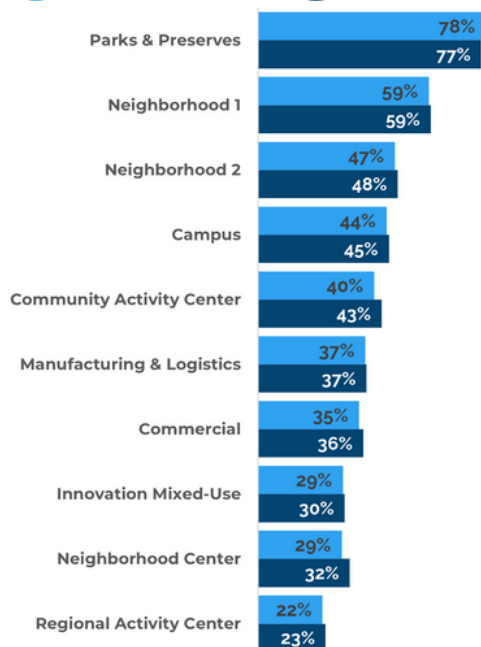**66%** of all PPA is within Neighborhood 1

UTC CHANGE BY PLACE TYPES

UTC % in 2022   UTC % in 2018

Place Type	2022	2018
Parks & Preserves	78%	77%
Neighborhood 1	59%	59%
Neighborhood 2	47%	48%
Campus	44%	45%
Community Activity Center	40%	43%
Manufacturing & Logistics	37%	37%
Commercial	35%	36%
Innovation Mixed-Use	29%	30%
Neighborhood Center	29%	32%
Regional Activity Center	22%	23%

FORECAST ANALYSIS OF POSSIBLE PLANTING SCENARIOS

If the City and other stakeholders continue with preexisting planting strategies (~6,500 trees per year), **canopy is projected to decline to 40% amidst natural mortality and losses to development.**

With urbanization occurring rapidly across the City, public and private stakeholders would need to collectively plant **847,056 individual trees (or 31,372 per year)** to maintain the existing canopy cover (47%). by the year 2050.

Implementing the "attainable" urban canopy growth option, meant to represent a realistic level of canopy increase would require the **planting of 1,092,465 total trees in 27 years** (40,462 trees per year), which would increase the citywide canopy cover to 50% in 2050.

3 out of 7 City Council Districts saw a decline in canopy in four years.

The City's **ETJ areas gained 323 acres (+1%)** of canopy in four years.

Charlotte contains **36,792 acres** of potential plantable space.

ECOSYSTEM BENEFIT VALUES

$52,131,770 Annual Benefits (air quality, stormwater, and carbon sequestration)

$612,306,880 Total Benefits (total annual benefits plus stored carbon)

$16,605,517 AIR QUALITY (6,987,708 lbs. of pollution removed annually)

$560,175,110 CARBON STORAGE (3,284,507 tons of carbon stored in the canopy)

$11,887,762 STORMWATER REDUCTION (34 million gallons of runoff prevented annually)

$23,638,491 CARBON SEQUESTRATION (138,600 tons of carbon sequestered annually)

Report prepared for TreesCharlotte and the City of Charlotte | Project conducted by PlanIT Geo, Inc.
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