Trees and Equity in Cincinnati, Ohio

The city of Cincinnati, Ohio is expanding tree canopy coverage in underserved neighborhoods.

Cincinnati's Heat Profile

Local officials in Cincinnati, Ohio, are seeking to preserve the city's tree canopy to reduce the impacts of extreme heat. Although Cincinnati's winters are cold, the city can be up to 17ºF hotter than surrounding areas due to the heat island effect.[i] Within the city, some areas are up to 12ºF hotter than others.[ii]

Cincinnati officials recognize that—in addition to reducing urban heat—trees also save energy, filter air pollution, improve quality of life, manage stormwater flows, and help minimize risks of floods and landslides. Officials stress the importance of ensuring these benefits are shared equally throughout the city.

Historic Tree Canopy Policies

Cincinnati established an Urban Tree Canopy Assessment Fund and Urban Forestry Division in 1981. The fund draws on property taxes from public, private, nonprofit, and government landowners. The fund pays for planting and maintenance of shade trees throughout the city, in addition to a city-wide tree census every 10 years.

Over the past 40 years, the city has raised the assessment from its original level of $0.05 per linear foot of property to $0.21 per foot. These increases account for inflation, tree damage caused by invasive insects, and higher rates of tree plantings. The average property owner in Cincinnati pays $15.00 per year. Based in a state law guiding municipal taxes, this financial strategy is unique to Ohio.[iii]

Neighborhood-Level Tree Canopy Focus

Cincinnati has a city-wide goal of 40% tree canopy coverage. The city measures its progress through an Urban Tree Canopy Analysis every 10 years, paid for by the Assessment Fund.[iv] The analysis combines U.S. Census data with spatial data on canopy distribution. As of 2023, the city had reached 40% coverage, but unpacking neighborhood-level data informed a new goal.[v] Officials discovered that some neighborhoods enjoy much more tree cover than others. The *Green Cincinnati Plan* now seeks a minimum of 40.0% canopy cover in each residential neighborhood, 25% in mixed-use areas, and 10% in the Central Business District while maintaining 40% city-wide coverage.[vi]

To help reach this new goal, Cincinnati has partnered with the nonprofits Groundwork Ohio River Valley and Green Umbrella to conduct a project called Climate Safe Neighborhoods, which gathers community input on neighborhood-level climate resiliency planning. The project is rooted in the environmental justice principle that residents closest to a problem often have solutions. For example, Climate Safe Neighborhoods workshops allow residents to mark on a map where they have personally experienced elevated heat and fewer trees, showing precise locations where tree planting, a cooling center, and/or a splash park might be most effective.

Using Data to Identify Hot Spots

In 2020, Cincinnati partnered with the National Oceanic and Atmospheric Administration (NOAA) to conduct a heat island assessment and identify the hottest areas of the city. This assessment also showed the modern-day impacts of historic decisions about zoning and highway siting. In conjunction with the 2021 Cincinnati Office of Environment & Sustainability Climate Equity Indicators report, the city is using this data to prioritize sustainability programs in neighborhoods with the highest level of environmental risks. For example, a more vulnerable neighborhood might have elevated heat levels and high asthma incidence. Thanks to the Assessment Fund, urban heat has become one of the key criteria in guiding the city's climate equity indicators.

Emphasizing Equity in Urban Forestry

The city's current climate and sustainability plan, *2023 Green Cincinnati Plan*, emphasizes equity. The plan's steering committee includes leaders dedicated to acknowledging the city's history, including equity from the outset, and working toward a more equitable future.

Equity actions are already underway: residents of neighborhoods with less than 40% tree canopy coverage have priority access to ReLeaf, the city's tree giveaway program that is almost 35 years old. Moving forward, the city will continue to leverage its partnerships with federal agencies, nonprofits, and private foundations in pursuit of its environmental equity goals.

Acknowledgements

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More Information

Cincinnati Parks Foundation – ReLeaf

City of Cincinnati – Climate Equity Indicators

City of Cincinnati – Green Cincinnati Plan

City of Cincinnati – Tree Canopy Assessment

City of Cincinnati/NOAA – Heat Watch Cincinnati

Groundwork – Climate Safe Neighborhoods

U.S. EPA – Heat Island Reduction Program

U.S. EPA – Using Trees and Vegetation to Reduce Heat Islands

[i] Urban Land Institute. 2019. Urban Canopy Policy: Cincinnati, Ohio. Accessed September 2022.
[ii] CAPA Strategies. 2020. Cincinnati, OH Heat Watch Report. Accessed June 2023.
[iii] Ohio Revised Code. Chapter 727 | Assessments – Generally. Accessed September 2022.
[iv] Ibid., i.
[v] Cincinnati Park Board. 2023. Cincinnati Tree Inventory. Accessed June 2023.
[vi] City of Cincinnati. 2023. Green Cincinnati Plan 2023. Accessed June 2023.