

BEAT THE HEAT

Green Cities = Cool Cities



Demographics

Top Five Racial and Ethnic Groups*

57%	White (Non-Hispanic)
19.7%	Asian (Non-Hispanic)
11.7%	Black (Non-Hispanic)
6.72%	White (Hispanic)
1.94%	Two+ Races (Non-Hispanic)
\$105,908	Median Household Income



*Source: 2018 Data USA, <https://datausa.io/profile/geo/alpharetta-ga/>

Urban Forest

53.2%	Current tree canopy
61.3%	Potential tree canopy
8.1%	Potential canopy increase
31.3%	Impervious surfaces
5,311	Impervious acres
902	Acres of Potential Planting Area (PPA)

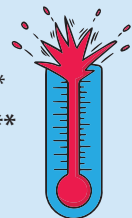


Urban Heat

101°F Average surface temperature*

Projected future days above 100°F**

5 days	Historically	(1971 – 2000)
44 days	Mid-century	(2036 – 2065)
80 days	Late century	(2070 – 2099)



*across study area on July 17th 2017
** Data source: Union of Concerned Scientists, Killer Heat in the United States, at: <https://www.ucsusa.org/resources/killer-heat-united-states-0>

Overview

As these studies have shown, community members with lower incomes and those who are minorities tend to have hotter neighborhoods and less canopy shade. Alpharetta, Georgia, illustrates this trend very well, with the wealthiest and majority white (76%) census block groups (CBGs) having cooler summer temperatures than poorer CBGs. The richer neighborhoods were interspersed with greenspace in the form of a large golf course with a lake in the middle, which acted as a thermal sink, attracting heat and thus cooling the surrounding neighborhoods (see Figure 1).



Regional Housing Authority properties throughout the studied cities have very little tree canopy, making them ideal opportunities to develop partnerships and achieve greater tree equity.



In comparison, the poorest and highest minority CBG in the study area is also the hottest and contains the most impervious surface area (see Figure 2). This CBG is a mix of multi-family housing that occupies a small section of the neighborhood, and is actually well-canopied, while most of the neighborhood feels the effects of large areas of impervious surfaces from surrounding commercial sites that radiate heat and impact the rest of the community. These impervious surfaces are a thermal source for the neighborhood and have multiple negative impacts on residents.

Concentrated urban heat sources in commercial areas can also significantly impact individuals who rely on active transportation (walking or biking) or public transit to get to and from work or schoolchildren on their way to and from school, as well as on neighboring parks where people recreate.

A lower income and minority, multi-family housing neighborhood with significant commercial development and pavement. Strategic actions that a city such as Alpharetta can take include:

- addressing codes and ordinances that reduce parking lot sizes by requiring fewer spaces or less square footage per space
- decreasing the number of spaces between tree islands
- making sure planting strips and tree islands are large enough to support large shade trees
- implementing pervious surfaces for parking lots
- planting buffers of shrubs and trees along the sides of parking lots, which can also act as bioswales

For example, Alpharetta's city code requires one parking space for every 200 square feet of gross floor area within a shopping center. The city could reduce this parking requirement to a ratio of 1:250 square feet, as suggested by the Center for Watershed Protection. For a shopping center of 200,000 gross square feet, this would reduce the parking spaces required from 1,000 to 800. Those 200 freed-up parking lots could then be retrofitted with treed islands or bioswales to provide shade and stormwater treatment.



Figure-1: A wealthier and whiter neighborhood with plenty of greenspace and water features that cool the surrounding landscape.

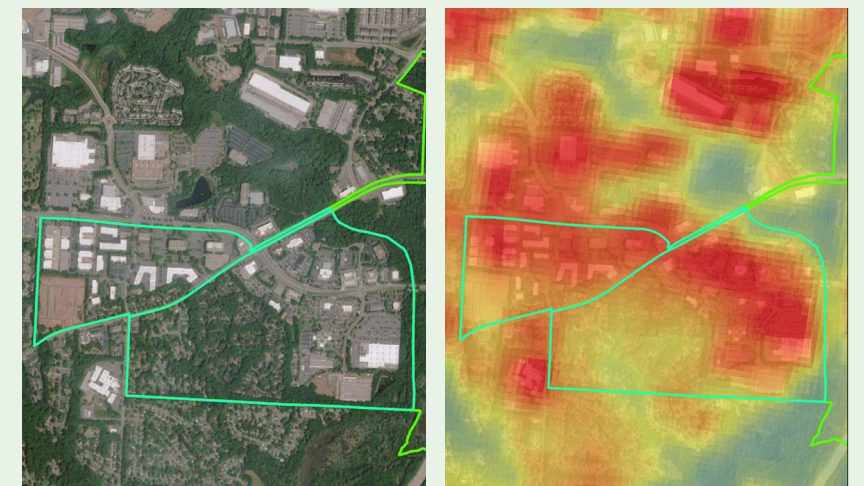


Figure-2: A lower income and minority, multi-family housing neighborhood with significant commercial development and pavement.

Step-Wise Strategy

to Identify Communities and Mitigation Opportunities

1. Use maps to identify hot spot(s).
2. Identify vulnerable or underserved populations of interest.
3. Prioritize areas that meet the first two criteria.
4. Outreach and engage with the community.

Several potential co-strategies:

5. Identify policies and codes that promote impervious surfaces.
6. The city currently works to preserve trees on site, but it could also collaborate with and incentivize developers to reduce impervious surfaces in the site design process.
7. Strategically amend city codes to add more pervious surfaces.
8. Prioritize and strategically plant the hottest low-canopied neighborhoods with trees to assist vulnerable populations.