



BEAT THE HEAT

CHARLESTON METRO AREA, SC

Green Cities = Cool Cities



Demographics

Top Five Racial and Ethnic Groups*

71.2%	White (Non-Hispanic)
22.3%	Black (Non-Hispanic)
2.55%	White (Hispanic)
1.88%	Asian (Non-Hispanic)
1.45%	Two+ Races (Non-Hispanic)
\$64,599	Median Household Income



*Source: 2018 Data USA, at: <https://datausa.io/profile/geo/charleston-sc>

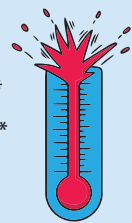
Urban Forest

59.1%	Current tree canopy
64.6%	Potential tree canopy
5.5%	Potential canopy increase
20.4%	Impervious surfaces
10,253	Acres of Potential Planting Area (PPA)



Urban Heat

95°F	Average surface temperature*
Projected future days above 100°F**	
14 days	Historically (1971 – 2000)
68 days	Mid-century (2036 – 2065)
102 days	Late century (2070 – 2099)



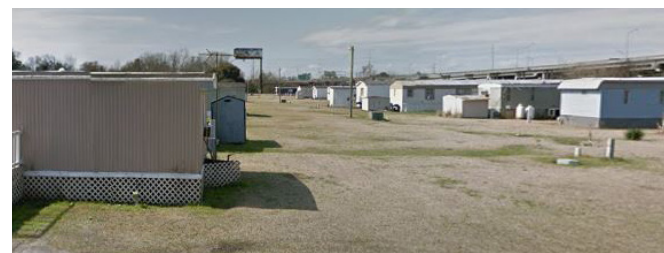
*across study area on June 23, 2016
** Data source: Union of Concerned Scientists, Killer Heat in the United States, at: <https://www.ucsusa.org/resources/killer-heat-united-states-0>

Overview

Some of the hottest neighborhoods in the Charleston Metropolitan Area are also some of the poorest. One of those low-income neighborhoods in North Charleston is in Charleston County and has a median household income of \$18,938 (the average for the Charleston area is \$64,599) and is also the hottest in the metro area at 115°F. Since cooling and weatherproofing can be expensive, lower income residents may be less able to afford the costs of energy-saving measures that maintain cooler temperatures. On the hottest days, some poorer residents may also lack transportation to reach cooling centers. In this particular neighborhood (see Step-wise strategy to the right), the majority of the houses are mobile homes and doublewides, which are more vulnerable to heat exposure because they have less ventilation, insulation and



Mobile home park properties throughout the studied cities have very little tree canopy, making them ideal opportunities to develop partnerships and achieve greater tree equity



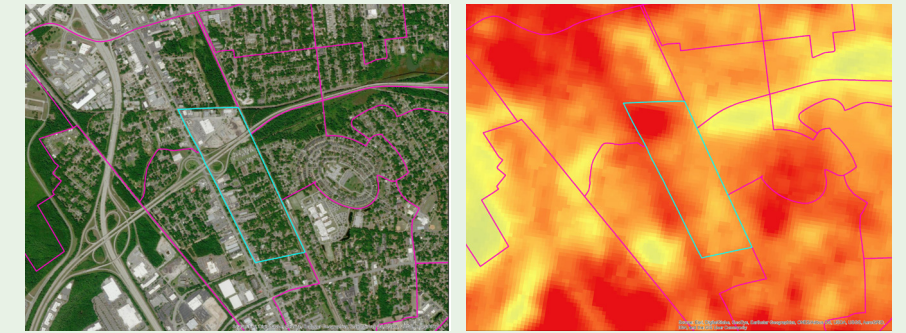
central air cooling systems. The most vulnerable of these mobile parks is one adjacent to Interstate 526. The interior of the park has minimal tree canopy and the residents are subjected to additional health risks from exposure to air pollution generated by traffic exhaust coming from the interstate. Strategies to mitigate heat impacts could include tree plantings in the mobile home park, specifically on the southern and western sides of each home and creating a thick forest buffer between the elevated interstate and the northern side of the property.

A further challenge is that many mobile home residents own their homes but not the land on which they live. Since residents lease the land from a third party, they may lack the ability to make decisions about landscaping and need permission to plant trees. Other barriers to consider include costs to maintain trees, such as watering, leaf raking and pruning. Costs, time and labor are barriers that should be addressed when implementing any tree planting strategy.

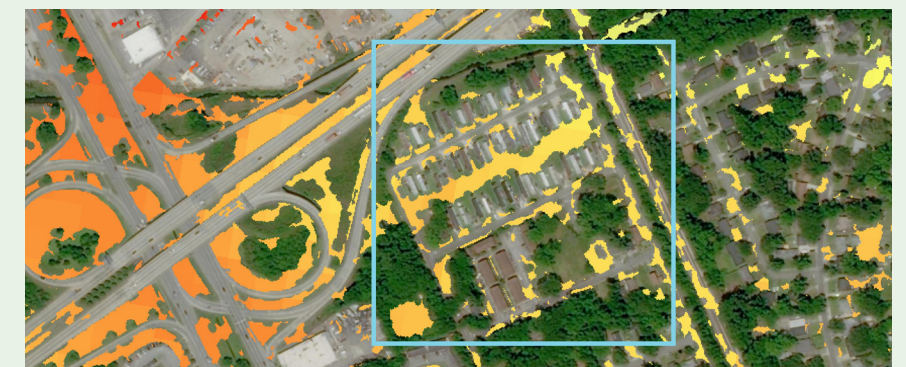
Strategies that engage the community around multiple issues can be more successful. For example, if food insecurity is an issue (often the case in low-income communities), working with landlords to plant fruit trees in a designated communal area or provide a tree giveaway of shade trees for residents to plant around their homes could create both good-will and healthier people. And, having an attractive and shaded mobile home park can result in lower vacancy rates for the land owner and better profits. Investing in trees is also investing in both healthy residents and more secure financial returns for land owners.

GIC developed a tool to identify the hottest areas and to show where to strategically plant trees to cool buildings. To learn more, contact GIC at www.gicinc.org

Step-Wise Strategy to Identify Communities and Mitigation Opportunities



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



5. Identify the hottest planting spots within the neighborhood.



6. Strategically identify planting spots that will cool buildings.