BEAT THE HEAT

NORFOLK, VIRGINIA

Green Cities = Cool Cities

Demographics

Top Five Racial and Ethnic Groups*

43.5%	White (Non-Hispanic)
40.9%	Black (Non-Hispanic)
3.57%	Asian (Non-Hispanic)
3.55%	White (Hispanic)
3.53%	Two+ Races (Non-Hispanic)
$49,146	Median Household Income

*Source: 2018 Data USA, at: https://datausa.io/profile/geo/norfolk-va

Urban Forest

25.8%	Current tree canopy
35.5%	Potential tree canopy
9.7%	Potential canopy increase
47.6%	Impervious surfaces
1,604	Acres of Potential Planting Area (PPA)

Urban Heat

98°F Average surface temperature*

Projected future days above 100°F**

8 days	Historically	(1971 – 2000)
41 days	Mid-century	(2036 – 2065)
71 days	Late century	(2070 – 2099)

*across study area on June 9, 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

In the analysis of the City of Norfolk, the general trend is communities of color are more likely to experience higher average surface temperatures and are more likely to have lower tree canopy in their neighborhoods than white residents. The data also show Census Block Groups with the greatest potential for adding new tree canopy in the city are located in neighborhoods almost entirely comprised of people of color (see Figure-1). In order to address inequities in tree canopy and urban heat, data tools that analyze and examine areas of opportunity across the city are necessary. The following strategy example below was developed using heat data, existing tree canopy and potential planting areas and analysis of Census data with a focus on maximizing tree canopy in marginalized and vulnerable populations.

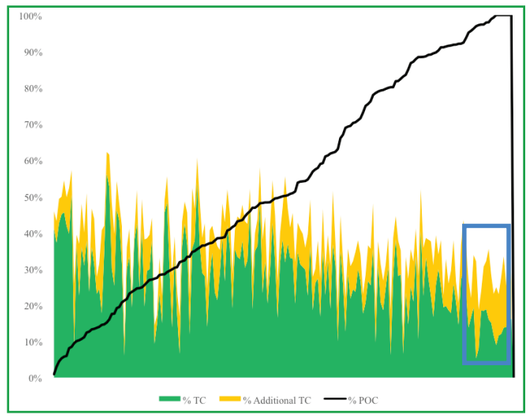


Figure-1: Green areas show existing tree canopy while orange areas show the amount of tree canopy that could be added within the Census Block Groups (CBGs). The highest potential for adding new canopy exists in CBGs with the highest percentages of People of Color (POC) – blue box.

Heat, Existing and Potential Tree Canopy, Race and Vulnerable Populations

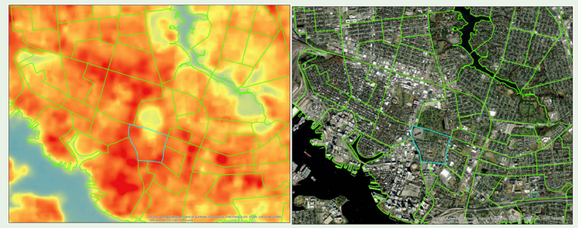
Using these data, a city or organization can develop an effective outreach strategy to identify opportunity areas to engage residents to increase canopy cover and reduce urban heating in order to maximize potential health benefits for vulnerable populations. For example, Terrace Young, the largest neighborhood managed by the Norfolk Regional Housing Authority (NRHA) is also one of the hottest residential housing areas in the city, with an average temperature of 105°F. The closest nearby greenspace is a series of cemeteries to the north which provide most of the cooling effects for the surrounding area. The average tree canopy is 13%. This neighborhood also contains P.B. Young Sr. Elementary School, a community center and a family health center. These facilities are used by children, the elderly and people with various health conditions, all vulnerable populations which if exposed to high temperatures can cause significant health impacts. This neighborhood is also 90% black and has one of the lowest median household incomes in the city, highlighting a real equity issue with regards to access to tree canopy, green space and impacts of urban heat.

As a first step, the city, in partnership with the NRHA, community organizations and residents could discuss the health impacts of heat and solutions to mitigate heat within the neighborhood. The neighborhood's tree canopy has the potential to double to 26% if all available spaces were planted with trees. In addition, the data identifies best places to plant trees to reduce heat affecting housing (see Figure-7 at right). The data have also been mapped to show which streets in the neighborhood have low canopy cover. Planting trees along sidewalks and streets will lessen heat impacts on people who are walking and biking, particularly the children who walk to the local elementary school. Knowing how many trees can be fitted into the neighborhood allows the city and its partners to determine potential needs and costs for implementing a planting campaign and to work collaboratively to raise funds to do this work.

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.

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 areas within the neighborhood.**

6. **Identify all planting spots.**

7. **Strategically identify planting spots that will cool buildings.**

GIC has developed a tool to show the most advantageous places to plant trees to cool buildings. Contact GIC at www.gicinc.org to learn more.