



# BEAT THE HEAT

LYNCHBURG, VIRGINIA

## Green Cities = Cool Cities



### Demographics

#### Top Five Racial and Ethnic Groups\*

- 62.3% White (Non-Hispanic)
- 28.4% Black (Non-Hispanic)
- 2.71% Asian (Non-Hispanic)
- 2.66% White (Hispanic)
- 2.03% Two+ Races (Non-Hispanic)
- \$43,374 Median Household Income



\*Source: 2018 Data USA, at: <https://datausa.io/profile/geo/lynchburg-va>

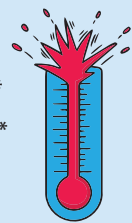
### Urban Forest

- 50.2% Current tree canopy
- 57.8% Potential tree canopy
- 5.6% Potential canopy increase
- 20.8% Impervious surfaces
- 1,948 Acres of Potential Planting Area (PPA)



### Urban Heat

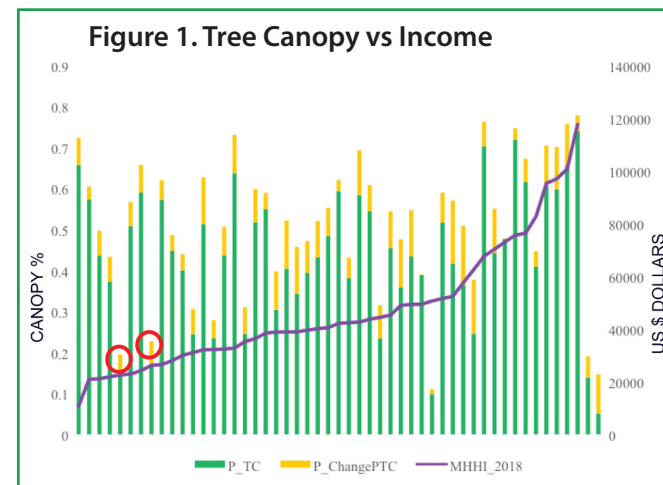
- 78°F Average surface temperature\*
- Projected future days above 100°F\*\*
- 4 days Historically (1971 – 2000)
- 35 days Mid-century (2036 – 2065)
- 66 days Late century (2070 – 2099)



\*across study area on July 12, 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

The City of Lynchburg showed considerable variability in the relationship between its demographics, urban heat and tree canopy, which resulted in no statistical relationship shown between tree cover and race. However, there was a relationship shown between income and tree canopy. So, this a very good example of how the lack of correlation or general trends in the data can mask real inequities within a city. In particular, when looking at the data, two low-income neighborhoods (Diamond Hill and Miller Park circled in red in Figure 1) stand out for having low tree canopy, high surface temperatures relative to other Census Block Groups (CBG) and a majority of people of color as residents. This highlights existing disparities among neighborhoods, despite little derivation between demographics and existing environmental conditions at the city scale.



A graph of tree canopy versus increasing median household income. By sorting the data, low-income and low-canopied neighborhoods (circled in red) can be identified and engaged in increasing tree canopy.

One factor that may contribute to the city's overall high rate of canopy cover citywide, at 51%, is that it contains several large city parks and greenways. Yet the city does have lower income neighborhoods that lack tree canopy. Examining the data reveals where canopy gaps exist and for which populations. In the Diamond Hill and Miller Park communities, for example, while the overall potential canopy gains are smaller compared to other CBGs, the low-canopy and low-income metrics suggest that they may need more engagement and support to plant trees for urban heat mitigation. Reviewing spatial data in conjunction with the demographics can help direct the flow of limited public resources towards underserved and higher-need communities.

GIC has developed a tool to show the most advantageous places to plant trees to cool buildings. Contact GIC at [www.gicinc.org](http://www.gicinc.org) to learn more.



Some older neighborhoods may lack adequate planting spaces because of topography or small building setbacks. In these situations, it can be important to have conversations around tree selection with local residents.



### 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 plantable hotspots within the neighborhood.
6. Identify all planting spots.
7. Strategically identify planting spots that will cool buildings.

