

Supplementary Materials

Community Survey Questions: The survey was open to adults. To ensure all participants had an adequate understanding of the research topic, we included explanation paragraphs to provide background on the subject matter. We also created a fact sheet about UHI and green infrastructure (GI) to accompany the survey. The survey was organized into the following sections:

1. Participant information
 - 1.1. Your affiliation with Camden — Live, work, live and work, visit often
 - 1.2. Your primary affiliation with a Camden neighborhood
2. Perception of climate change and UHI
 - 2.1. The level of heat you feel inside Camden on a typical summer day
 - 2.2. The level of heat you feel in the suburbs on a typical summer day
 - 2.3. The connection between feeling hot and experiencing the UHI effect in Camden
 - 2.4. Specific locations, if any, you experience UHI effects in Camden (with an option to indicate no effects felt)
 - 2.5. Your opinion on the connection between UHI and climate change, with an optional follow-up question to explain the reason
 - 2.6. Emotions about UHI effect (with an option to indicate no emotions felt)), with an optional follow-up question to explain the reason
3. Perception of GI as a UHI mitigation strategy
 - 3.1. Types of GI present in your neighborhood and visible to you
 - 3.2. Types of GI that can mitigate UHI effect in Camden
 - 3.3. Types of urban vegetation and shade trees present in your neighborhood and visible to you
 - 3.4. The role of urban vegetation and shade trees in mitigating UHI effects
 - 3.5. Recommendations for GI in your neighborhood
4. Optional open-ended question for additional remarks related to UHI and GI

X Data Mining – Keywords: We used the following 50 keywords to search for tweets posted in English:

{urban heat island OR green infrastructure OR climate change OR green space OR shade tree OR hot summer OR temperature OR high temperature OR temperature rise OR temperature increase OR heat index OR hot outside OR hottest OR Hottest time OR hottest neighborhoods OR hottest neighborhood OR extreme heat OR extreme events OR heat island OR heat islands OR hot weather OR hot days OR sunny days OR warm OR hot summer OR warmest summer OR heat wave OR heat waves OR hot season OR air conditioning OR power outage OR power grid OR heat stroke OR heat-related OR smog OR sweating OR Sweat OR humid OR high humidity OR cooling OR uncomfot weather OR climate crisis OR global warming OR heat release OR urban temperature OR atmospheric heat island OR record-warm temperature, OR radiating OR hotter-than-usual OR cool off}.

X Data Analysis – Work Network Diagram: For the work network diagram analysis, we developed a count vector matrix among words from tweets based on a unigram contiguous sequence. The degree of words is used to determine the relative size of nodes in the network diagram. The degree of a word

represents the number of connections it has with other words. In our analysis, any word with less than 35 connections was discarded for clearer visualizations of important words. The connection between two words is determined by the frequency of the appearance of these words in the same tweet. Thus, the thickness of the edge in the network diagram is determined by the connection between two words. The colors of nodes and edges are determined by modularity, which clusters similar words together. A cluster of color shows nodes that have dense connections between the nodes within modules but sparse connections between nodes in different modules.

X Data Analysis – Text Sentiment: For the text sentiment analysis, we used the VADER model from the Python NLTK package based on the strength (compound score) of emotion for each tweet. The compound score ranged from -1.0 to +1.0; it was remapped as positive (>0.05), neutral (-0.05 to 0.05), and negative (<-0.05). The positive and negative sentiments were then subdivided into five categories—very weak, weak, moderate, strong, and very strong—using equal intervals. A total of 270 tweets were selected from the original 367 that contained at least one of the following keywords: "climate change," "global warming," "green space," "heat island," "park," "tree," "open space," "garden," "hot," "heat," "warm," and "humid." Tweets about "climate change" and "global warming" were regrouped again as "climate change." "Heat island," "hot," "heat," and "humid" were regrouped as "urban heat." "Park," "tree," "open space," and "garden" were regrouped as "GI." The sentiments related to the tweets that contained these broad categories of keywords were reported as percentages. Similarly, we also analyzed the percentage of keyword pairs using these broad categories.