Southern California Association of Government's Tree Planting Suitability Webtool

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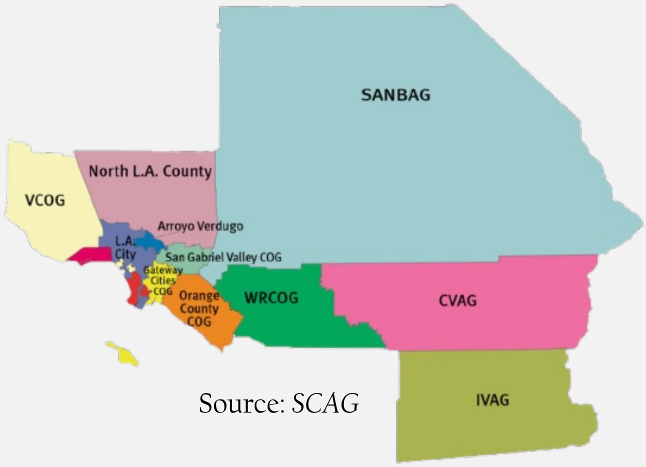
The SCAG Region

SCAG, the Southern California Association of Governments, encompasses a six-county region—Ventura, Los Angeles, Orange, Riverside, San Bernardino, and Imperial Counties—that spans over 38,000 square miles and is home to over 19 million people in over 190 cities.



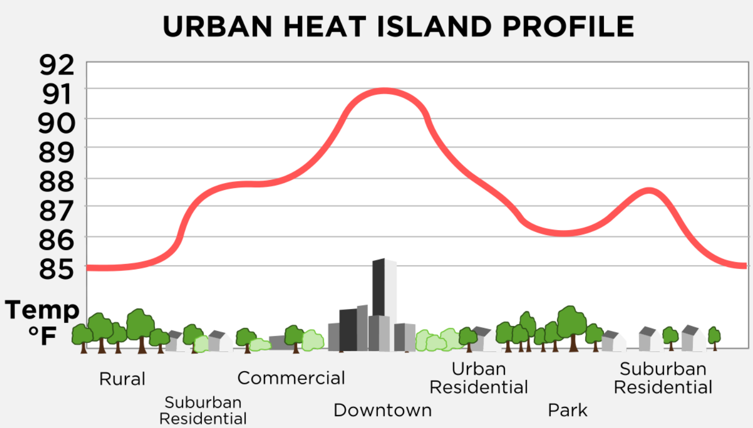
Source: *SCAG*

Social Determinants of Health and the Built Environment

According to the US Department of Health and Human Services' Office of Disease Prevention and Health Promotion (ODPHP), there are five social determinants of health—economic stability, education access and quality, healthcare access and quality, neighborhood and built environment, and social and community context–which refer to the "conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks" (ODPHP 2022). Due to exclusionary planning practices in the 20th century, lower income communities of color are more likely to be in neighborhoods with less access to jobs and healthcare, unsafe drinking water, poor air quality, and **higher temperatures**.

Urban Heat Island Effect

Urban heat island (UHI) effect occurs when cities replace native vegetation and other land cover with pavement, buildings, and other surfaces that inadvertently trap heat and increase surface and air temperatures to levels high enough to impact community health.



Source: *U.S. National Oceanic and Atmospheric Administration*

Methods

To strengthen data accuracy, I conducted an in-depth literature review on the effect of urban heat on public health, heat mitigation through the built environment, tree planting best practices, and the nexus of urban tree canopy cover and equity. After acquiring the data, our team developed a system to score communities on a variety of factors. The suitability score considers sociodemographic makeup—population density, age, sex, income, and poverty—land cover, and urban heat severity data to produce a score for each community at the block group level.

Planning and Development Process

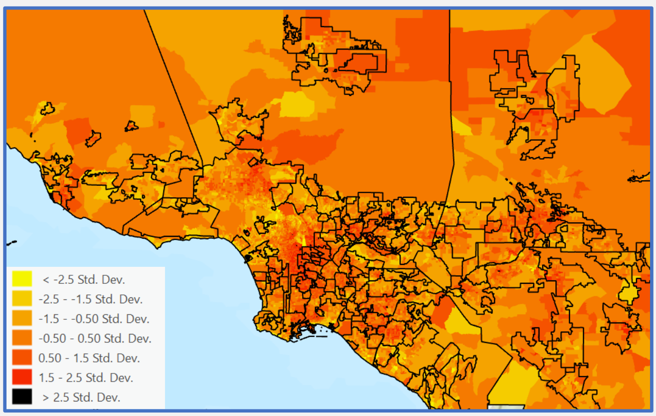
Data Collection
- Review literature on UHI to identify communities most vulnerable to urban heat
- Create a tree-planting suitability scoring system

Tool Development
- Integrate interactive maps into GIS Experience Builder
- Include information on effects of UHI on public health, list of existing programs, and tree-planting best practices

Local Application
- Partner with cities, counties, and nonprofits and share the webtool
- Aid jurisdictions in crafting tree-planting and urban greening programs

Conclusion

This webtool, once complete, is one way to allow jurisdictions to prioritize these communities by offering the co-benefits of urban trees for mental health, carbon capture, and UHI effect mitigation. Urban trees require strategic placement that depends on climate, maintenance, and public rights of way. By adding this to the toolbox forestry departments regionwide, jurisdictions can avoid the guesswork and focus on providing more shade for its communities in need.



Source: *SCAG, Sustainability Department*

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