LOS ANGELES COUNTY HEAT ACTION PLAN
Data Viewer User Guide

Overview

Extreme Heat is a critical hazard affecting all of LA County's communities, infrastructure, and ecosystems. Elevated heat corresponds with over 200 excess deaths annually in LA County. As global temperatures rise, the increasing intensity and duration of the heat season threatens to disrupt the region's social and economic stability.

The County Heat Action Plan (CHAP) Data Viewer is a map-based decision-support tool designed to support County Departments, cities, and other CHAP implementation partners with identifying localized heat vulnerabilities and tailoring solutions to the unique needs of their specific communities across LA County. Rather than prescribing specific projects, the Data Viewer helps users ask better questions—such as where heat exposure is most acute, which populations are most affected, and which types of interventions are likely to be most effective in different contexts.

The CHAP Data Viewer is distinct from other map-based tools, such as the LA County Climate Vulnerability Assessment Mapping Tool or the Community Forestry Management Plan Data Viewer, in its comprehensive integration of heat-specific indicators and overlays, including some layers that can be found on other tools and some unique layers developed specifically for the CHAP.

The tool is most powerful when layers are used together. Cities are encouraged to start by identifying priority communities using health and susceptibility indicators, then use site- and community-level layers to determine which cooling strategies are most appropriate in different contexts.

Layers: Relevance & Use

Subregional Boundaries

The CHAP Data Viewer is designed to enable users to easily zoom into specific communities and view/download community-level data, based on community boundaries shown in the below layer.

- **Communities:** this layer contains the boundaries of Countywide Statistical Areas, contiguous geographic areas whose borders roughly represent neighborhoods, small cities, or unincorporated communities. Small cities typically consist of just one CSA, whereas larger cities have multiple CSAs. CSAs can be used as a consistent unit of analysis for comparing conditions across communities or summarizing data for plans or grant applications. Additional details here.

Cool Assets

The below layers show the locations of community assets that can help residents stay cool and identify gaps in access.

- **Cooling Centers:** this layer, made available by the LA County Office of Emergency Management, shows the locations of all County-recognized cooling centers, based on data provided by County Departments and by 34 participating cities. Most cooling centers are located within existing public facilities, such as libraries, senior centers, and community recreational spaces. Additional details here.

- **Parks and Open Space:** this layer, made available by LA County Parks and updated regularly, displays polygons of accessible parks and open areas across LA County. Additional details here.

Site-Level Conditions

The following layers show site-level conditions that affect heat exposure, and can help users determine which sites may benefit from specific interventions. These layers are most useful once a priority community, corridor, or facility has already been identified. They help translate high-level needs into place-based action.

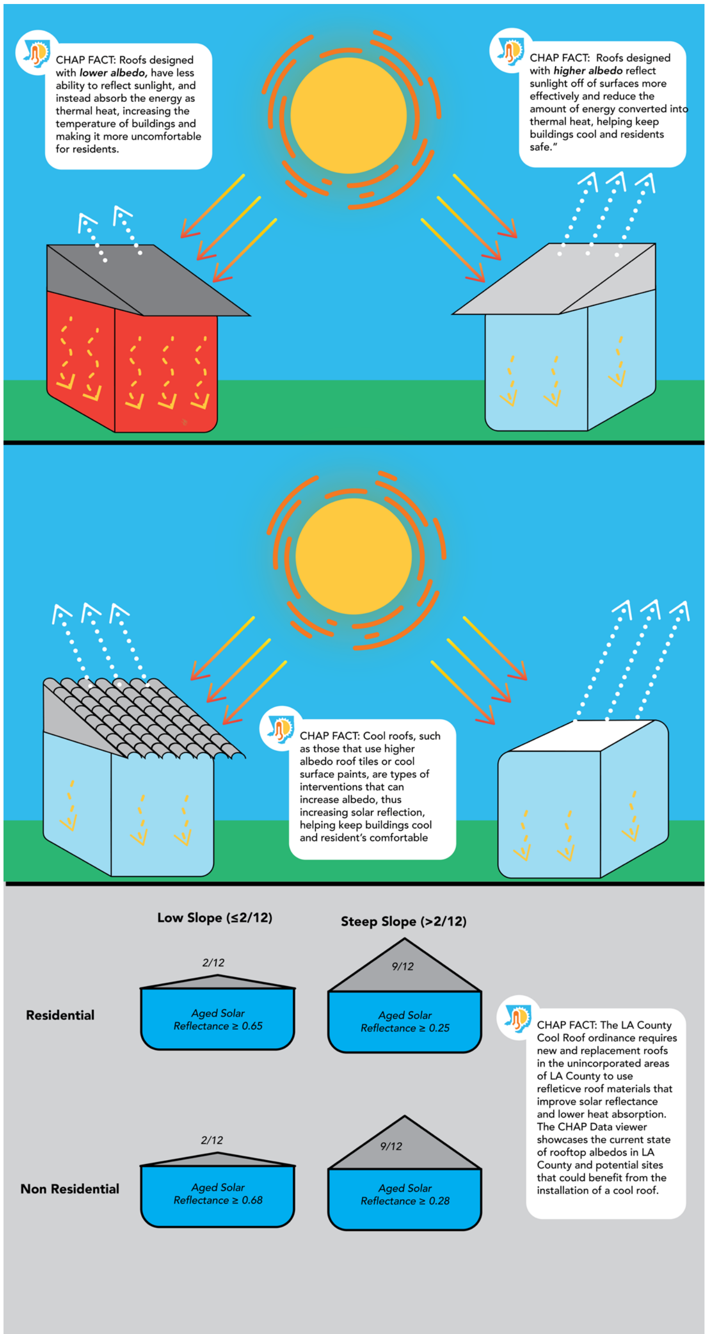
- **Shade at Bus Stops:** this layer indicates the total amount of shade in square feet that is cast on the ground at 3pm near known bus stops. The polygon around each bus stop is colored yellow if the stop has at least 20 square feet of shade, and white if it has less than that. Additional details here.
    - *How to use: Identify which stops lack shade to determine where shade installation would be an effective cooling solution, and overlay this layer with the high pedestrian traffic layer to identify stops where shade installation may benefit a large number of people.*
    - *Data considerations: The bus stop location data is not currently complete for incorporated areas that are primarily served by transit systems other than Metro, such as parts of Long Beach and the Antelope Valley.*

- **Shade Over Sidewalks:** this layer shows select sidewalks, color-coded based on the percent of land area that is shaded at 3pm. Sidewalks with a low percent of shade are shown as yellow, and sidewalks with higher shade are white. Additional details are here.
  - o *How to use: Identify which sidewalks lack shade to determine where trees or shade structures would be an effective cooling solution; overlay with Foot Traffic in the Right of Way to find high-pedestrian areas where shade could benefit a large number of people, or low-pedestrian areas where shade might encourage more pedestrian activity.*

- **Foot Traffic on Sidewalks:** this layer categorizes select sidewalks based on how many people have used them (walking or rolling) within an hour on a typical day. Areas with high foot traffic may include bus stops and other mobility stations with high ridership or commercial corridors. Additional details are here.
  - o *How to use: Identify which sidewalks have lots of foot traffic, and then overlay with shade or tree canopy layers to determine where additional shade features would benefit large numbers of people.*

- **Shade at Parks:** this layer shows parks, color-coded based on the percent of land area that is shaded at 3pm. Parks with a low percent of shade are shown as yellow, and parks with higher shade are white. Additional details are here.
  - o *How to use: Identify which parks lack shade to determine where trees or shade structures would be an effective cooling solution and overlay with Foot Traffic in Parks to find highly used parks where shade could benefit a large number of people.*

Figure 1: Rooftop Albedo Overview & Cool Roofs



- **Foot Traffic at Parks:** this layer categorizes parks based on how many people have used them (walking or rolling) within an hour on a typical day. Additional details are here.
  - o *How to use: Identify highly-used parks, and then overlay with shade or tree canopy layers to determine where additional shade features would benefit large numbers of people.*

- **Rooftop Albedo – Buildings*:** this layer shows the reflectivity of building rooftops across the county as of 2023. Albedo refers to the reflectivity of sunlight off a surface. Surfaces with a higher albedo reflect more solar energy, while surfaces with a lower albedo absorb more energy and convert it into heat. Buildings with low-albedo rooftops have higher indoor temperatures or require more air conditioning use to offset the heat absorption. Additional details here.
  - o *How to use: Identify buildings that could benefit from roof upgrades, such as cool roofing materials or installation of solar panels.*
  - o *Data considerations: This layer has a high level of detail, and may not load quickly or at all until it the map is zoomed in to a sub-regional or community level.*

Community-Level Conditions

The following layers can help users how neighborhood-scale physical characteristics shape heat exposure and where large-scale or programmatic interventions may be most effective. These layers are particularly useful for identifying patterns across a community rather than targeting individual sites.

- **Percent Total Shade:** this layer (mapped at the census block group level) indicates how much land area is shaded – i.e., protected from direct sunlight – at 3 PM from various sources. Shade may come from trees, buildings, canopies, or other structures. This data layer is important because direct sunlight can increase the "feels-like" temperature by 20 degrees or more above air temperature. Additional details here.
  - o *How to use: Identify low-shade neighborhoods (and consider overlaying with Foot Traffic in the Right of Way or Foot Traffic in Parks) to determine where multiple approaches to shade installation may be necessary to better protect people from sun exposure.*

- **Percent Tree Canopy:** this layer (mapped at the census tract level) indicates how much land area was sheltered by tree cover as of 2020. Trees reduce the "feels-like" temperature by providing shade and by cooling the air through evapotranspiration. Trees also provide numerous co-benefits, such as habitat creation and stormwater capture (which helps reduce the risk of flooding). Additional details here.
  - o *How to use: Identify tree-poor neighborhoods (and consider overlaying with Foot Traffic in the Right of Way or Foot Traffic in Parks) to determine where additional tree canopy might be particularly helpful for reducing direct sun exposure.*

- **Impermeable Surfaces:** this layer (mapped at the census tract level) indicates what percent of the land surface area is covered by impermeable material such as asphalt.

Impermeable surfaces inhibit the natural cooling function typically provided by soil or vegetated areas (also possible with pavers or other permeable surface materials). Pavement removal creates opportunities for vegetation and habitat, and can help reduce risk of flooding when accompanied by the creation of green stormwater infrastructure like bioswales. Additional details here.

  - o *How to use: Identify neighborhoods with extensive pavement (and consider overlaying with Local Heat Differential layer) to determine where pavement removal may be a valuable cooling strategy.*

- **Rooftop Albedo – Community Average:** This layer indicates the average albedo of all rooftops within a given community (aggregated at the CSA level). Additional details here.
  - o *How to use: Identify communities with lower-than-average rooftop albedo to determine where to prioritize programs that promote cool roofs at scale.*

- **Shade at Bus Stops – Community Level Coverage:** this layer (aggregated at the CSA level) indicates the percentage of known bus stops that have at least 20 square feet of shade within a 3-meter radius, or approximately enough shade for 1-2 people. Additional details here.
  - o *How to use: Identify communities with low average shade coverage at bus stops to support coordinated, community-wide approaches to transit shade rather than isolated installations.*

Community Susceptibility to Heat

The below layers can help users identify which communities and neighborhoods have higher or lower need for heat resilience investments. Once priority neighborhoods are identified, Site-Level Conditions and Community-Level conditions can help determine which types of heat resilience interventions/investments are more likely to be effective at which sites.

- **Heat Health Burden:** this layer (mapped at the zip code level) indicates the rate of excess emergency department (ED) visits for specific conditions – such as stroke, dehydration, and renal failure – above the expected baseline during hot days in LA County. This metric is a core equity indicator representing the direct impact of extreme heat on the health of the general population, and it should inform which communities are prioritized for investments. Every single strategy and action included in the CHAP can help to move the needle on this indicator, directly or indirectly. Additional details here.
  - o *How to use: Identify areas that have higher-than-average health problems due to heat (and consider overlaying with the Social Sensitivity Index) in order to determine what neighborhoods have greatest need for, and may benefit the most from, heat resilience investments. Engage with residents of these areas to identify top-priority cooling solutions.*

- **Social Sensitivity Index:** this layer (mapped at the census tract level) identifies social and economic characteristics of County residents that affect their susceptibility to climate impacts. This index aggregates data on health, education, income, and other factors. Communities with high social sensitivity often face overlapping issues that limit their ability to prepare for, respond to, and recover from extreme heat, making targeted intervention essential for regional equity. Additional details here.
    - *How to use: Identify areas where residents are more likely to be susceptible to heat impacts (and consider overlaying with Heat Health Burden) in order to determine what neighborhoods have greatest need for, and may benefit the most from, heat resilience investments. Engage with residents of these areas to identify top-priority cooling solutions.*

Temperature Data

The layers listed below can help users understand how hot the outdoor environment is, on average, in different communities across the County. Outdoor heat is one of several factors that influence heat risk and should be interpreted alongside other layers.

- **Average High Air Temperature:** this layer shows the average 95th percentile daily maximum temperature — that is, the typical maximum temperature on the hottest days of the year — for a historical baseline period and for mid- and late-century projections under a high greenhouse gas emissions scenario. Air temperature reflects broad climatic conditions but does not capture local variations in how hot conditions feel at street level, which is strongly influenced by factors such as surface material and shade; see below description of the Local Temperature Differential layer which helps to fill that gap. Additional details here.

- **Local Temperature Differential:** this layer, developed by the Trust for Public Land and also referred to as "relative heat severity," quantifies the intensity of highly localized variations in surface temperature as of 2025. Dark and impermeable surface materials like asphalt trap solar energy and re-release it as heat, contributing to the urban heat effect which can increase local "feels-like" temperatures. This layer can inform planning for interventions aimed at reducing the urban heat effect, such as the application of cool pavement materials or the removal of asphalt. Additional details here.

Figure 2: Temperature Overview