EXTREME HEAT

Extreme heat is an extended period of at least two to three days of above-average temperatures and humidity and a threshold of 95.2 degrees Fahrenheit, or 35.1 degrees Celsius, based on 30-year averages.

RISK AND VULNERABILITY

Vulnerable communities identified and targeted in this study are those communities that are most exposed to climate hazards with the least amount of and access to resources to offset the impacts from that exposure.

Population

Neighborhoods with lower incomes and less green space experience more heat-related emergency room visits than neighborhoods with more green spaces and higher incomes.

Communities

All areas of the City are likely to experience impacts from extreme heat. The areas with a higher exposure and social vulnerability include Boyle Heights, Southeast Los Angeles, South Los Angeles, Wilmington, and Northeast Los Angeles.

WHAT ARE THE ANTICPATED IMPACTS OF EXTREME HEAT?

Heat is severely harming people's health and affecting their ability to work, go places, and perform daily activities. Air quality harmed by fumes, smoke, and pollution combines with heat to make health issues worse.

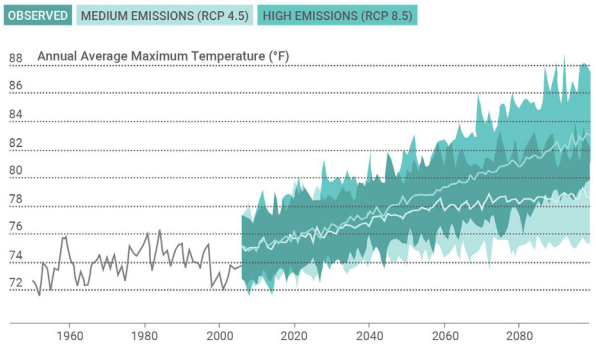
CLIMATE PROJECTIONS

Temperature Increases

By 2050, there may be 9 to 14 extreme heat days each year citywide. By 2100, that may rise to 15 to 30 days annually. In the past, these types of events would last about two days. By 2050, the average extreme heat event may last four to five days. By 2100, a typical extreme heat event could span five to eight days.

Annual Average Maximum Temperature

Average of all the hottest daily temperatures in a year.



Cal-Adapt. 2018. "Local Climate Change Snapshot for Los Angeles."

Understanding Urban Heat Island

Urban Heat Island is a demonstrated effect where built up portions of cities produce and retain more heat, leading to higher daytime and nighttime temperatures in the areas where the most people live and work. Denser, more urban land uses correlate with higher temperatures, while parks and open space can decrease the effect

PRIORITIZED STRATEGIES

- Increase the amount of green space and tree canopy in areas impacted by the urban heat island effect.
- Use a variety of approaches to reduce the heat impacts on vulnerable populations that are unable to remain indoors to conduct necessary daily activities (e.g., outdoor workers, transit users, etc.).
- Encourage the use of building design elements to cool buildings using traditional methods.
- Enhance tree care through expanding tree maintenance programs and public education campaigns around valuing trees and maintenance.
- Upgrade spaces used for play and cooling off by adding shade, updated hydration stations, and cooler surfaces to replace pavement.

EXTREME PRECIPITATION AND FLOODING

LOS ANGELES CITY PLANNING

Extreme precipitation and flooding includes heavy rainfall in a short period that threatens flooding and the resulting temporary overflow of excess water in normally dry urban areas.

RISK AND VULNERABILITY

Vulnerable communities identified and targeted in this study are those communities that are most exposed to climate hazards with the least amount of and access to resources to offset the impacts from that exposure.

Population

Flooding disproportionately impacts lower income and under resourced populations. People with disabilities or access and functional needs may have challenges if they need to evacuate or move to higher places within their homes to avoid floodwaters.

Communities

The areas most vulnerable to extreme precipitation and flooding include Central City, South Los Angeles, Sun Valley - La Tuna Canyon, Westlake, and Wilshire.

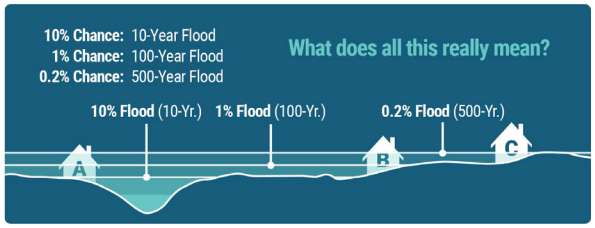
CLIMATE PROJECTIONS

Precipitation Increases

The forecasts for 2100 indicate the Los Angeles region will receive 4% to 5% more rainfall during the fall and winter. Increased precipitation and increasing temperatures during winter months may lead to increased flooding.

WHAT ARE THE ANTICIPATED IMPACTS OF EXTREME PRECIPITATION AND FLOODING?

Heavy precipitation events flood streets and other parts of communities as drains get clogged and rainfall overwhelms drains. The ability to safely evacuate is a concern.



FEMA Region 3. 2021. "Reducing Risk in the Floodplain (Version 1)."

Understanding Flood Risk

10-Year Flood: A home in a 10-year flood area has a 10% chance of flooding in a single year and a 95% chance of flooding during a 30-year period.

100-Year Flood: A home in a 100-year flood area has a 1% chance of flooding in a single year and a 26% chance of flooding during a 30-year period.

500-Year Flood: A home in a 500-year flood area has a 0.2% chance of flooding in a single year and a 6% chance of flooding during a 30-year period.

PRIORITIZED STRATEGIES

- Make improvements to stormwater systems to mitigate urban flooding and major rainfall events.
- Provide more tools for community members to prepare for, respond to, and recover from flooding.
- Use natural and new constructed infrastructure to reduce the amount of flooding in densely populated urban areas.
- Reduce the potential health impacts from flooding through public awareness and reduced exposure.
- Use types of surfaces and paving that allow water to drain into the soil and reduce runoff.

DROUGHT

A drought is a period of abnormally dry weather and little precipitation that causes water shortages and/or affects everyday life.

RISK AND VULNERABILITY

Vulnerable communities identified and targeted in this study are those communities that are most exposed to climate hazards with the least amount of and access to resources to offset the impacts from that exposure.

Population

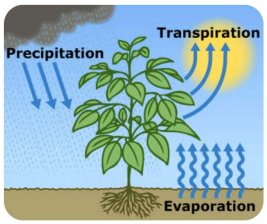
Drought can have critical impacts because of dependence on and use of water. Individuals with health complications are more vulnerable because of worsened air quality and compromised nutritious food resulting from drought conditions.

Communities

All areas of the City are likely to experience drought impacts.

Understanding Drought

Rising temperatures accelerate how quickly precipitation evaporates into the atmosphere, called evapotranspiration. Higher temperatures cause less water to be absorbed by soil, vegetation, etc., worsening dry conditions.



U.S. Geological Survey Water Science School. "Evapotranspiration."

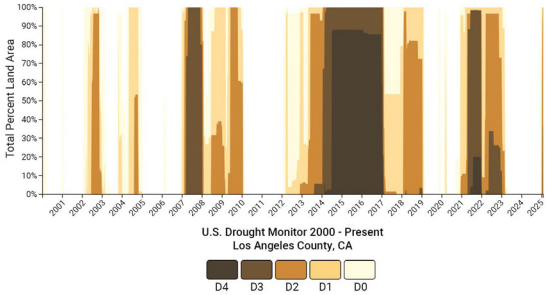
WHAT ARE THE ANTICIPATED IMPACTS OF DROUGHT?

Drought can increase the cost of water, and many communities worry about future shortages. Drought contributes to increasing wildfire risk.

CLIMATE PROJECTIONS

Temperature Increases

Climate projections show droughts will occur more often and increase in length and severity because of hotter temperatures and changes to seasonal precipitation trends.



National Integrated Drought Information System. 2024. "U.S. Drought Monitor: Los Angeles, California."

Historic Conditions

The U.S. Drought Monitor depicts the location and intensity of drought. Five categories of drought are used: Abnormally Dry (D0), showing areas that may be going into or are coming out of drought, and four levels of drought (D1–D4).

PRIORITIZED STRATEGIES

- Modify drought management approaches and water billing policies to reduce impacts from drought on low-income and vulnerable communities.
- Upgrade water collection and stormwater infrastructure to replenish groundwater and recycle water.
- Provide education and support for water conservation and landscaping techniques that retain water.

WILDFIRE

LOS ANGELES CITY PLANNING

A wildfire is an uncontrolled fire occurring on undeveloped land that requires extinguishing. Wildfires become a hazard when they threaten people, buildings, and assets, and wildfire smoke presents serious public health risks.

RISK AND VULNERABILITY

Vulnerable communities identified and targeted in this study are those communities that are most exposed to climate hazards with the least amount of and access to resources to offset the impacts from that exposure.

Population

People with underlying or preexisting health conditions, such as asthma, may be especially sensitive to wildfire smoke.

Communities

Areas designated as wildland-urban interface (WUI) areas are the most vulnerable. These are the areas where development is adjacent to densely vegetated areas. Many of the City's communities face severe wildfire exposure.

WHAT ARE THE ANTICIPATED IMPACTS OF WILDFIRE?

In addition to the risk of damage or loss of structures in WUI areas, wildfires create smoke, toxic waste, and debris in burn areas that can result in the release of air pollutants that makes health issues worse. Communities are concerned about fire impacts related to air quality, the displacement of people, damage to land and property, and loss of employment such as service workers including food service industry, domestic services, and outdoor workers including landscaping services and street vendors.

CLIMATE PROJECTIONS

Increasing Temperatures

Rising temperatures will result in more water evaporating and the soil and vegetation becoming drier, contributing to wildfire risk.

Community Planning Assistance for Wildfire. "Continuum of Wildland to Urban Densities."

Understanding Wildfire Risk

Cities exist within a landscape spectrum from wildland with little to no human development, to urban cores, with little to no wildland, and everything in between. When more urban and suburban development encroach on existing wildland, wildfires have the opportunity to grow larger and cause more damage to lives and property.

PRIORITIZED STRATEGIES

- Reduce the risk of wildfire impacts on structures and people, including the unhoused, and infrastructure.
- Help people connect with information to reduce exposure to harmful air from natural and human-caused sources of air pollution.
- Work with communities to reduce the risk and impacts of wildfire.
- Use a variety of approaches to reduce the number of fires caused by people.
- Make buildings less vulnerable to fire risk by limiting new development in the wildland-urban interface (WUI), requiring building codes that include use of fire-resistant materials in high hazard areas, requiring regular brush/vegetation maintenance and clearance, and recommending regular home maintenance.

SEA LEVEL RISE

LOS ANGELES CITY PLANNING

Sea level rise is the increase in the ocean's surface height relative to the height of nearby land.

RISK AND VULNERABILITY

Vulnerable communities identified and targeted in this study are those communities that are most exposed to climate hazards with the least amount of and access to resources to offset the impacts from that exposure.

Population

Renters may face restrictions to make essential repairs or renovations that help mitigate sea level rise exposure and must rely on landlords. Additionally, individuals with limited financial resources or capital may find it challenging to afford essential repairs or renovations to their homes, which can be necessary to mitigate these impacts. Secondary impacts include potential loss of jobs for individuals employed in the coastal tourism and service industries.

Communities

Coastal low-lying areas are the most vulnerable. However, exposure will be increased for tidal and upstream waterbodies. The Port of Los Angeles, Venice, and Wilmington - Harbor City will become more exposed to flooding resulting from sea level rise.

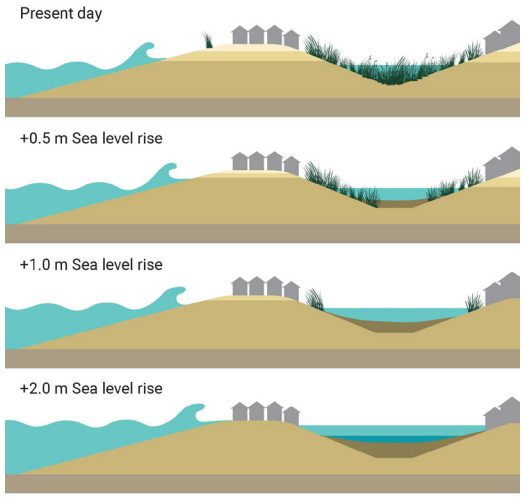
WHAT ARE THE ANTICIPATED IMPACTS OF SEA LEVEL RISE?

Though most communities are not yet experiencing impacts, individuals understand future impacts could include displacement of people and damage to land and property. Communities are also concerned about sea level rise impacts related to loss of employment such as service workers including food service industry, domestic services, and outdoor workers including landscaping services and street vendors.

CLIMATE PROJECTIONS

Rising Seas

As air temperatures warm, the ocean also absorbs more heat. As ocean waters warm, they take up more space and begin encroaching on land. Projections estimate that in Los Angeles, there could be 1 to 2.6 feet of sea level rise by 2050 and 2.2 to 6.4 feet of sea level rise by 2080.



U.S. Geological Survey Pacific Coastal and Marine Science Center. 2021. "Santa Barbara coastal system with increasing sea level rise."

Understanding Sea Level Rise

Sea level rise presents hazards for communities abutting the coast, but also near the coast, as rising sea levels can make flooding and precipitation events more intense and more common. The loss of housing and employment along the coast can also exacerbate gentrification and economic insecurity.

PRIORITIZED STRATEGIES

- Invest in strategic relocation in the near term to avoid damage and disruption from sea level rise.
- Update any plans, policies, and procedures that could directly assist with responding to impacts from sea level rise.
- Additional nature-based solutions are needed to mitigate sea level rise.

CLIMATE-RELATED PUBLIC HEALTH

LOS ANGELES CITY PLANNING

Climate-related public health is an organized community effort aimed at the prevention of disease and the promotion of health through the mitigation of climate impacts, such as heat-related illness prevention and addressing climate-related diseases.

RISK AND VULNERABILITY

Vulnerable communities identified and targeted in this study are those communities that are most exposed to climate hazards with the least amount of and access to resources to offset the impacts from that exposure.

Population

External stressors, such as health disparities, will continue to exacerbate impacts on socially vulnerable populations.

Most Concerning Hazards

The hazards that pose the greatest impacts to public health include extreme heat, extreme precipitation and flooding, and wildfire smoke.

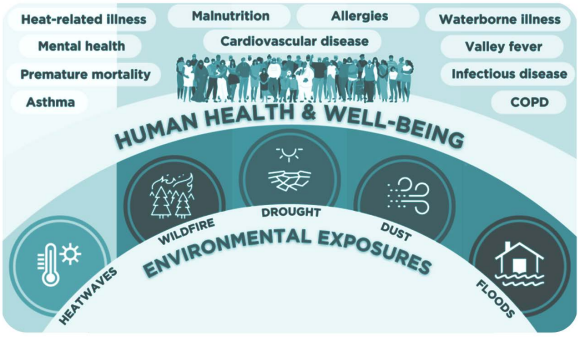
CLIMATE PROJECTIONS

Underlying Stressors

When people are already vulnerable, it is important to underline stressors that can make impacts from climate change additional burdens. This may include chronic health issues such as obesity, heart disease, and limited access to nutritious food and green spaces.

WHAT ARE THE ANTICIPATED IMPACTS ON PUBLIC HEALTH?

Individuals with limited or lack of access to resources and those facing existing health issues are greatly affected by heat, wildfire, flooding, and other climate events. Their health worsens and/or the events confine them to their homes. Events that cause a loss of power affect public health.



Health-Damaging Climate Events Highlight the Need for Interdisciplinary, Engaged Research (2024). GeoHealth. 8. 10.1029/2024GH001022.

PRIORITIZED STRATEGIES

- Create backup power solutions, preferably using renewable energy, to provide power to vulnerable populations during a loss of power.
- Reduce air quality issues through use of community tools such as localized air quality monitoring, nature based mitigation solutions, and community-based enforcement.
- Work with communities and transit users to reduce exposure to heat throughout the transit process (e.g., waiting for pathways from home to bus stops).
- Increase the overall amount of community green space to be more equitable when compared to other neighborhoods across the city.
- Use a coordinated set of targeted actions to clean up trash and reduce littering to reduce climate-related hazard stressors.