

LA County Climate Vulnerability Assessment

Social Sensitivity Indicators

October 2021

LA County CVA Social Sensitivity Indicators

A population's sensitivity to climate hazards is influenced by a range of social, economic, and cultural factors. The County included 29 indicators in its Social Sensitivity Index. Some indicators, like age for example, are individual characteristics tied to higher health risks and more specific accessibility considerations. Other indicators, particularly race and ethnicity, are included due to years of discriminatory systems and policies that perpetuate lower quality of life outcomes. Black, Indigenous, and other People of Color (BIPOC) communities experience higher rates of illness, higher rates of poverty, and lower quality infrastructure that make these communities more vulnerable to climate change.

Climate vulnerability is not an indication of an individual's weakness or lack of agency. Vulnerable communities and related organizations display great community resilience in the face of rising climate hazards. Understanding social sensitivity to climate change in Los Angeles County will help to inform the actions needed to better support climate resilience among vulnerable groups, whether that means equip them with the tools they need or supporting and uplifting existing work.

Age

Children

Children are incredibly sensitive to changes to their physical, social, and cultural environments. Their cardiovascular and respiratory systems are especially vulnerable to air pollution and extreme heat. Exposure to air pollutants and heat stress during pregnancy can increase health risks for the baby, including low birth weight and pre-term birth.¹² During a climate event, working households without access to proper childcare can face difficulties evacuating.

Older Adults

Normal body changes associated with aging, like muscle and bone loss, can limit mobility over time. Older adults are more likely to have chronic illnesses, which can require medications that increase sensitivity to prolonged heat or pollution exposure. Dependence on electrically-powered medical equipment and elevators can pose evacuation concerns during climate-related power outages.

Older Adults Living Alone

Living alone can exacerbate existing vulnerabilities for older adults. Without a robust support network, access to necessary amenities like groceries and medication can be difficult during an emergency. Additionally, social isolation for aging populations can have profound impacts on mental health.

Community + Language

Limited English Proficiency

Proper access to up-to-date hazard information is crucial in preparing for a climate event. Residents with limited English proficiency are at risk of missing the messaging they need, especially if they rely on word-of-mouth communication. Working with emergency responders can prove difficult when cultural norms or practices are difficult to translate.

Foreign-Born

Los Angeles is known all over the world for its diverse community of residents. Foreign-born residents make up 34% of the county's population.³ For those with limited English proficiency, accessing up-to-date information during a climate emergency can be difficult. Undocumented individuals may hesitate to interact with emergency responders or seek out government services for fear of deportation. These vulnerable conditions can also be exploited by employers or landlords, leaving limited options for recourse.

Female

Existing gender inequalities are exaggerated during moments of crisis. The domestic responsibilities disproportionately placed on women, like childcare, family caregiving, and managing daily household upkeep, add extra concerns while navigating a climate event. These responsibilities can place large time and mobility constraints

on female-led households, especially. Women balancing multiple roles may be forced to take lower-paying positions in exchange for more flexible schedules. Women make up the majority of essential workers: workers who are on the frontlines of health and environmental crises who are often paid less than \$30,000 a year for their long hours of work.⁴

Female Householder (No Spouse Present)

Children who live in single parent households, particularly with single mothers, are shown to be at higher risk of health consequences like obesity and asthma. This is partly due to socioeconomic correlations, including lower educational attainment, higher unemployment rate, and lower income.⁵

Voter Turnout Rate

Voter turnout rate is often used as a proxy for civic participation and social cohesion. In the United States, voter turnout rates are not evenly distributed across race and ethnicity and socioeconomic status. Those who are underrepresented in the political decision-making process can lose access to resources and targeted programs and policies. Low voter turnout may also reflect a distrust in government, creating additional barriers in preparedness, response, and recovery from climate events and changes.

Library Access

Libraries are a critical form of social infrastructure, especially during times of crisis. Information regarding public services, including translated versions, are often housed at libraries for easy accessibility. For some, a library is the only place they are able to access the internet. During the summers, libraries can be converted to cooling centers for those without access to air conditioning.

Education

No High School Diploma

Educational attainment is frequently an indication of socioeconomic status. Those without a high school diploma can face greater challenges in the job market, making them more vulnerable to the effects of climate-related economic instability. Low educational attainment is also associated with greater sensitivity to air pollution and heat exposure.⁶

Health

Disability

The disabled community make up 10% of the Los Angeles County population.⁷ Disability is multidimensional, and the effects of a person's condition on their ability to adapt during a climate event can vary greatly. This means that any comprehensive climate resilience strategy must incorporate resources and services to accommodate a range of abilities. People with disabilities can experience restricted mobility, greater isolation from necessary amenities, and discrimination when seeking proper care. Many people with disabilities are likely to experience the high-risk socioeconomic factors that contribute to instability during a climate crisis, including poverty, unemployment, and low educational attainment.

Asthma

Asthma is a chronic lung condition characterized by inflamed airways, difficulty breathing, and chest pain. Water and air pollution associated with dependence on greenhouse gases can aggravate these symptoms.⁸ Increased high-heat days can lead to increased ground-level ozone, which can cause increased airway constriction and lung damage. During these days, people with asthma may experience increased emergency room visits and increased school absences.⁹ Children, former smokers, and obese individuals are most at-risk of the extreme health effects associated with asthma.¹⁰

Cardiovascular Disease

Cardiovascular disease encompasses all illnesses related to the body's heart or blood vessels, including stroke, heart attack, and renal disease. Until the COVID-19 pandemic, heart disease was the leading cause of death in Los Angeles County.¹¹ During extreme heat days, emergency room visits for people with cardiovascular disease rise significantly.¹² Without proper treatment, the symptoms exacerbated by heat stress (shortness of breath, stroke, chest pain) can

result in death. Air pollution, both in the short-term and long-term, can increase risk of heart attack and stroke especially in those with pre-existing heart conditions.¹³

No Health Insurance

An unexpected trip to the emergency room is stressful for anyone, especially those without health insurance. Nearly 10% of Los Angeles County residents are uninsured.¹⁴ Fear of overwhelming medical debt can prevent people from seeking the care they need, increasing the risks of serious injury or mortality from climate-related illnesses.

Housing

Living in Group Quarters

Overcrowded housing is defined as more than 1 person per room, and severe overcrowding is more than 1.5 people per room. Over 11% of housing units are overcrowded in Los Angeles County.¹⁵ Minority and low-income households are more likely to live in crowded conditions than their white peers, tied to histories of housing discrimination and high cost of housing.¹⁶ As exemplified through the COVID-19 pandemic, overcrowding increases the risk of respiratory illness, psychological trauma, and heat-related stress.

Mobile Homes

In a county where affordable housing stock is limited, mobile homes can offer a more cost-effective options for households fighting displacement. However, mobile home residents do not own the land underneath their home, making them vulnerable to lease increases. Extreme heat events, like fires and floods, can destroy entire communities of mobile homes with limited options for residents to recoup their investments. Additionally, mobile homes can lack the proper insulation to maintain indoor environments free from air pollution or extreme heat. More than 56% of mobile home residents are in high heat exposure areas, and 31% are in flood prone areas. This is compared to 38% and 23% of all County residents, respectively.

Cost-Burdened

25% of households in Los Angeles County are cost-burdened, meaning they pay over 30% of their income on housing costs.¹⁷ Another 30% of households are severely cost-burdened, meaning they pay over 50%. When the majority of your income goes towards housing, limited resources are left to pay for other critical amenities like childcare, healthcare, or food. These households often face housing instability with a sudden rent increase leading to force moves, eviction, or homelessness.

Renters

Over half of the county's population rent their homes.¹⁸ Renters can be vulnerable to unexpected price increases. Renters living in older housing stock may lack the proper insulation or air conditioning to manage extreme climactic events and may not have permission from their landlords to retrofit their living spaces. A third of renters live in areas with high heat exposure. By mid-century, this number will almost double to two-thirds. Homeowners in flood or fire-prone areas are informed of the risks by mortgage lenders, while renters may not receive the same notice. If they do not have insurance, they can suffer major losses during an extreme climactic event that are difficult to recover from. The nation's history of housing discrimination means people of color disproportionately make up the renter population, meaning climate vulnerabilities can exacerbate existing racial inequities.

Income + Wealth

Median income

In 2019, the median household income for Los Angeles County was \$68,044.¹⁹ However, disaggregating this figure by race highlights the income inequities experienced by people of color. Median household incomes for White (\$75,422) and Asian (\$80,046) householders are higher than those for Black (\$48,823) and Latino (\$56,076) householders.²⁰ Median income is a strong indication of a household's ability to navigate a climate crisis. Low-income households are more likely to experience housing instability, lack housing or health insurance, rely on public transportation, and have difficulties cover utility bills.

Poverty

Over 13% of the county's population lives in poverty, which is higher than the national rate of 10.5%.²¹ People experiencing poverty can have limited access to amenities and resources, like internet or mobile phone data, necessary for communicating information during a climate emergency. Limited income means greater financial instability and related stress when faced with unexpected expenses. One fire or flood could lead to a forced move or living on the street. Balancing multiple payment can lead to avoiding air conditioning or seeking medical care, increasing risk of mortality and morbidity during extreme heat events.

Transportation

Households without vehicle access

During a climate emergency, access to a vehicle can be critical to a household's evacuation plan. Those without a vehicle may find themselves unable to leave at-risk areas when necessary or limit the number of items they are able to take with them. 8.8% of the county's households lack access to a vehicle.²² Across LA County, more than 54% of people who lack access to transit currently live in high extreme heat exposure areas. Comparatively, only 38% of all residents live within these high hazard regions.

Transit access

5.8% of county residents rely on public transit to get to work. In the Urban Informatics Lab's analysis of transit access in major metropolitan regions, researchers found that 7% of residents live in a "transit desert."²³ A transit desert is defined as an area where the demand for public transportation exceeds the supply of transit services. Restricted mobility access limits the ability of households to respond quickly to changing climate events, requiring municipalities to incorporate targeted outreach to those neighborhoods.

Occupation

Outdoor Workers

With temperatures across the county projected to rise over the next decades, prolonged time spent in the outdoors will be a growing concern. Outdoor workers face increased exposure to extreme heat, air pollution, insects carrying infectious diseases, and other industrial hazards. The effects of these risks are compounded by any pre-existing cardiovascular or respiratory diseases workers may have. Non-unionized outdoor workers may lack the ability to advocate for greater protections for themselves without fear of retaliation from their employer.

Unemployment

The Los Angeles-Long Beach-Anaheim statistical area experienced the highest unemployment rate in the nation during the pandemic, reaching 18.1% in June 2020.²⁴ Unemployment in Los Angeles follows existing income inequality patterns, with Black and Latino residents hit the hardest. Those experiencing unemployment are extremely vulnerable to financial shocks and can find themselves at risk of losing housing and access to healthcare.

Access to Information

No Internet Subscription

As exemplified during the COVID-19 pandemic, access to internet is critical for employment, education, and disseminating information. The digital divide mimics existing racial and income inequalities, with communities of color the most underserved.²⁵ In the future, redundancies in communication modalities will be necessary to ensure all households across the county are well-prepared for a climate emergency.

Race and Ethnicity

Over 70% of Los Angeles County residents are people of color.²⁶ Institutionalized discrimination related to housing and employment created disparities between households of color and their white peers. Greater housing insecurity can lead to displacement, eviction, and homelessness in the aftermath of a climate emergency. Constrained financial resources limit the funds available to cover increased utility bills or health care visits during extreme

weather events. People of color, particularly Black and Indigenous communities, have higher rates of chronic illnesses that are exacerbated by extreme heat and poor air quality.²⁷

Endnotes

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