Extreme heat and homelessness

Risks and realities in Las Vegas, Nevada

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NEVADA HOMELESS ALLIANCE

Southern Nevada Lived X Team

Executive summary

- Homelessness and climate change are deeply connected in Las Vegas, where extreme heat and flooding are already causing fatalities among people experiencing homelessness. In 2024, 147 individuals who were experiencing homelessness passed away due to heat-associated causes, a 39% increase compared to the previous record-high of 106 losses in 2023.
- Currently, 7,468 people experiencing homelessness across 87 census tracts on the East Side of Las Vegas endure higher-than-average hot days (≥100°F) in the summer and throughout the year, increasing their risk of heat-related illness and mortality. Extreme heat has and will continue to disproportionately affect the East Side, where there are more communities of people experiencing homelessness.
- By 2030, all homeless shelters in Las Vegas will face 70–80 hot summer days (≥100°F), rising to nearly every summer day by 2080. Very hot summer days (≥110°F) are expected to increase from an average of nine to as many as 48–60 days by 2080 in the most affected areas. Most homeless shelters and 7,191 people experiencing homelessness today across 79 census tracts are already exposed to above-average hot nights (≥80°F), compounding the danger by preventing overnight relief from heat.
- Temperature conditions for excessive heat warnings are projected to occur twice as often by 2030 and seven times as often by 2080, requiring cooling stations to transition from occasional, daytime-only operations to near-continuous, 24-hour service throughout the extended summer season.
- Interim solutions like cooling stations, mobile cooling units, and shade structures are necessary for the immediate safety and health of people experiencing homelessness. However, the most effective solution to reduce extreme heat risk for people experiencing homelessness is to end homelessness through permanent supportive housing.

Introduction

Las Vegas, Nevada is known for its oppressively hot, dry climate with multiple weeks per year exceeding 100°F. It is the second-fastest warming city in the United States with an overall 5.9°F increase in annual average temperature from 1970 to 2024.[1] Over that time, the population in Clark County—which includes Las Vegas—grew 778%, reaching 2.4 million people today.[2] This population growth occurred alongside extensive urban sprawl in the Las Vegas Valley as desert landscapes were converted to separated residential, commercial, and recreational spaces that promote car-dependency. The spread of low-density neighborhoods, loss of natural vegetation, and increase in impervious surfaces such as buildings, roads, and parking lots have contributed to the urban heat island effect in the valley, leading to higher temperatures and creating significant disparities in heat exposure across neighborhoods. These same impervious surfaces also prevent rainfall from being absorbed into the ground, resulting in greater stormwater runoff and an increased risk of flooding. However, there is a pervasive, systemic socio-economic issue that is becoming increasingly connected to the climate crisis: homelessness.

Co-authored with Nevada Homeless Alliance and Southern Nevada Lived X Team, this report is the first of a two-part series that weaves together the lived realities of extreme heat and flooding among people who have experienced homelessness, and examines how these risks are projected to change in the future due to climate change.[3] Nevada Homeless Alliance is a nonprofit organization dedicated to ending homelessness in Southern Nevada through

[1] Climate Central (https://www.climatecentral.org/climate-matters/earth-day-fastest-warming-us-cities-and-states)

[2] City of Las Vegas (https://files.lasvegasnevada.gov/transparency/Annual-Population-Estimates.pdf), Southern Nevada Homelessness Continuum of Care Census Report (https://helphopehome.org/wp-content/uploads/2024/09/2024-PIT-Count-Executive-Summary-Final-Report.pdf)

[3] Nevada Homeless Alliance (https://nevadahomelessalliance.org), Southern Nevada Lived X Team (https://nevadahomelessalliance.org/livedx)

advocacy at all levels of government, public and provider education, cross-sector coordination, and direct service. Working closely with Nevada Homeless Alliance, Southern Nevada Lived X Team is a group of individuals with lived experience of homelessness who serve as consultants, advocates, and advisors within the region's homelessness response system. Their mission is to ensure that the perspectives of people who have experienced homelessness are meaningfully integrated into policies, strategies, and community initiatives.

This report examines different metrics of extreme heat, while the next installment will spotlight flooding. In this series, projections of climate risks are enriched with experiences and stories from Lived X members. These firsthand accounts bring to light the real and consequential impacts of climate change and extreme weather on people who have experienced, or are currently experiencing, homelessness. Throughout this report, we use the person-first language of "people experiencing homelessness" to emphasize people's humanity and recognize homelessness as a temporary situation a person is experiencing, not their defining identity.

> **Homelessness in Las Vegas quote by Brian Begay, Lived X Member**
> *"People think of Las Vegas as this glamorous place, but on the streets, it's a different world. The city sparkles for tourists, but it scorches those who don't have keys to a door. When you're out there with nowhere to go, the sun becomes a predator. And all you can do is hope you can make it to tomorrow."*

Homelessness in Las Vegas

Across the United States, the Department of Housing and Urban Development quantifies homelessness using the Point-in-Time (PIT) Count. The PIT Count occurs over one day in January when teams of government employees, homeless service providers, and volunteers count and survey the number of people experiencing homelessness in each Continuum of Care (CoC) community. In 2024, the most recent Southern Nevada CoC PIT Count reported that 7,906 people were experiencing homelessness on a single night in Clark County.[4] This represented a 20% increase, or 1,340 more people, compared to the previous year, continuing a recent trend of rising homelessness (Figure 1). Of those counted, 4,202 individuals, or approximately 53%, were experiencing unsheltered homelessness, meaning they were living on the street, in the desert, or in other places not suitable for human habitation.

[4] Southern Nevada Homelessness Continuum of Care Census Report (https://helphopehome.org/wp-content/uploads/2024/09/2024-PIT-Count-Executive-Summary-Final-Report.pdf)

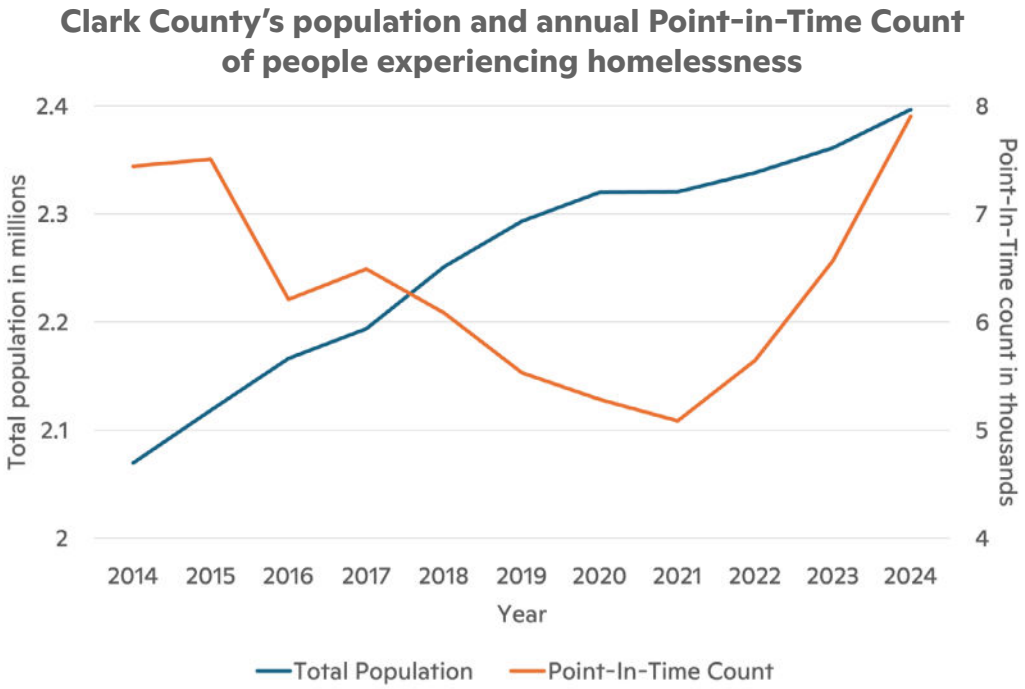

Figure 1: Total annual population (blue line graph) and number of people experiencing homelessness accounted for in the Point-In-Time Count (orange line graph) in Clark County from 2014 to 2024.

Throughout the year, several local social service agencies deploy Homeless Response Teams across Clark County to conduct interventions, abatements, and health and safety checks, encouraging people experiencing homelessness to connect with available services. One of these agencies is HELP of Southern Nevada, a local nonprofit and member of the Southern Nevada CoC.[5] Over 12 months between January 2024 and April 2025, their direct outreach showed 9,189 individuals were experiencing homelessness throughout the Las Vegas Valley (Figure 2). Aggregating individuals' point locations by census tract revealed that 90 out of 112 census tracts with high homelessness rates and densities are located on the East Side, defined broadly as the region east of the I-15. Four out of every five census tracts with high levels of homelessness face high social vulnerability according to The Centers for Disease Control and Prevention and Agency for Toxic Substances and Disease Registry (CDC/ATSDR) Social Vulnerability Index.[6] This means these communities are more likely to experience negative impacts from disasters or public health emergencies due to factors such as high poverty rates, limited access to transportation, crowded or unstable housing, and higher proportions of Black, Native, Hispanic, Latino, and Asian populations. Mapping the geographic distribution of where people are experiencing homelessness is necessary to assess climate risk exposure. However, these data are subject to several limitations, including undercounting due to the often transient and at times hidden nature of people experiencing homelessness.

> **Nomadic lifestyle excerpt by Martin Castro, Lived X Member**
> *"Living on the streets of Southern Nevada for three years, there are countless times I had to rely on sleeping in bushes and similar measures to escape the heat. I wasn't the type to build an encampment in one set location. I'm not even sure I knew how to do that, nor did I meet anyone that favored that lifestyle versus always being on the move. Being nomadic in a sense is what kept me going for survival, but that same walking lifestyle is what made me rely on drug use to keep me awake."*

[5] HELP of Southern Nevada (https://www.helpsonv.org)

[6] CDC/ATSDR Social Vulnerability Index (https://www.atsdr.cdc.gov/place-health/php/svi/index.html)

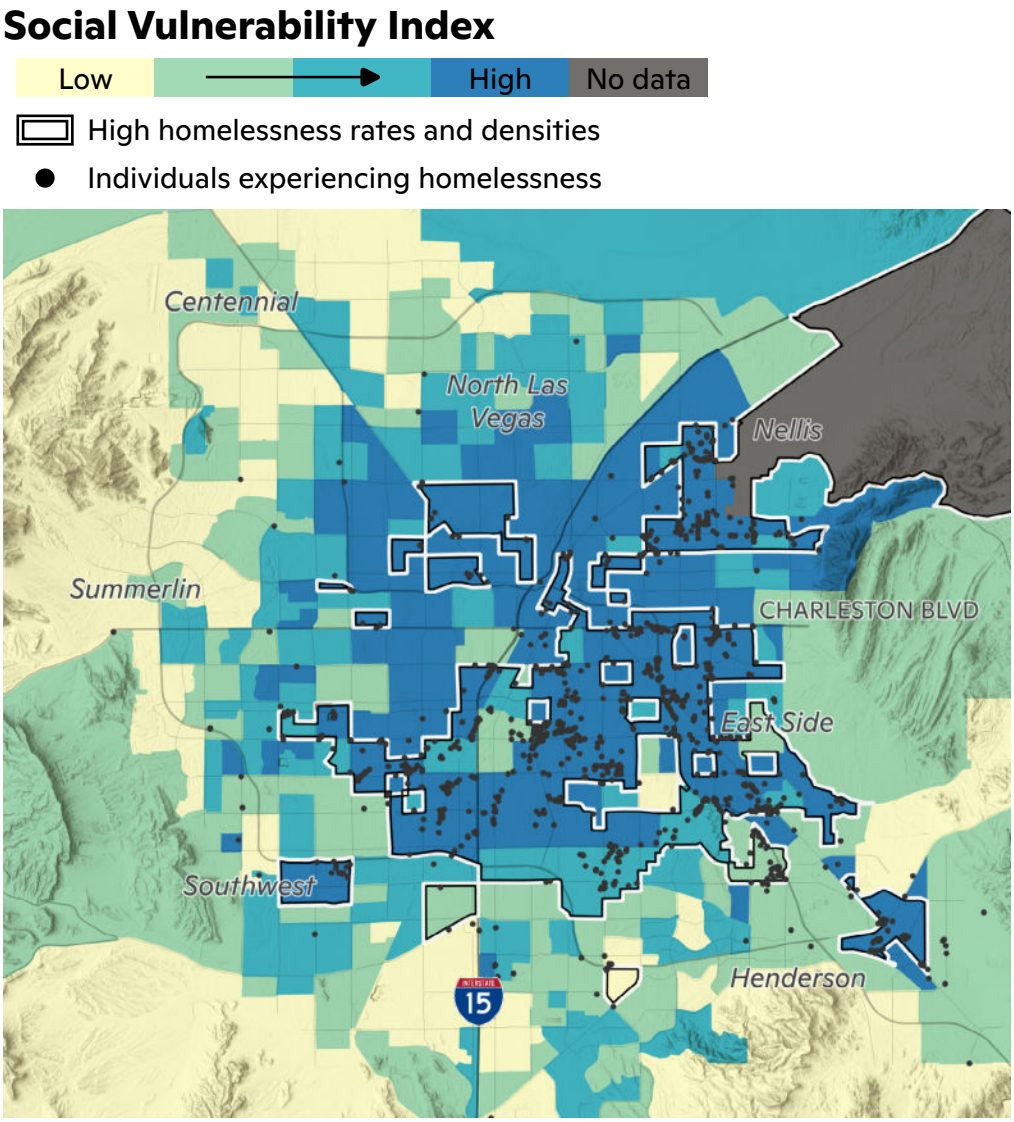

Figure 2: 2022 CDC/ATSDR Social Vulnerability Index, where high social vulnerability is shown in deep blue. Black dots show point locations of where HELP of Southern Nevada Homeless Response Teams interacted with individuals experiencing homelessness. Outlined in white, census tracts with high homelessness rates and densities were calculated from point locations. Neighboring census tracts with high levels of homelessness are combined into one area.

With limited options to shelter, people experiencing homelessness are at the forefront of environmental risks, especially during extreme weather events. In Las Vegas, people experiencing homelessness live both at street level and underground. Communities of people experiencing homelessness live inside stormwater infrastructure in washes, channels, and tunnels throughout the valley to escape the heat and have more private shelter. On average, Las Vegas receives 4.18 inches of annual precipitation, making stormwater infrastructure a dry, shaded refuge, particularly in the summer.[7] Shifting precipitation patterns due to climate change are likely to affect the viability of these spaces as shelter.

Already, extreme weather and climate change are fatally impacting communities experiencing homelessness in Las Vegas. Underground communities are exposed to flooding risks, especially during monsoon season from late June to mid-September. At least four of the seven flood

[7] National Weather Service Las Vegas Climate Book (https://www.weather.gov/vef/lasvegas_climate_book)

losses in Clark County over the past decade were individuals experiencing homelessness.[8] In 2022, Las Vegas experienced its wettest monsoon season in over ten years, receiving 1.77 inches of rain and resulting in two flood losses inside tunnels (Figure 3). The following year's monsoon season in 2023 became the ninth-wettest on record, receiving 2.88 inches of rain. One person whose housing status was unknown passed away due to flooding that year. Over the past ten years, the number of heat-associated losses has steadily increased, reaching an all-time high last summer in 2024.

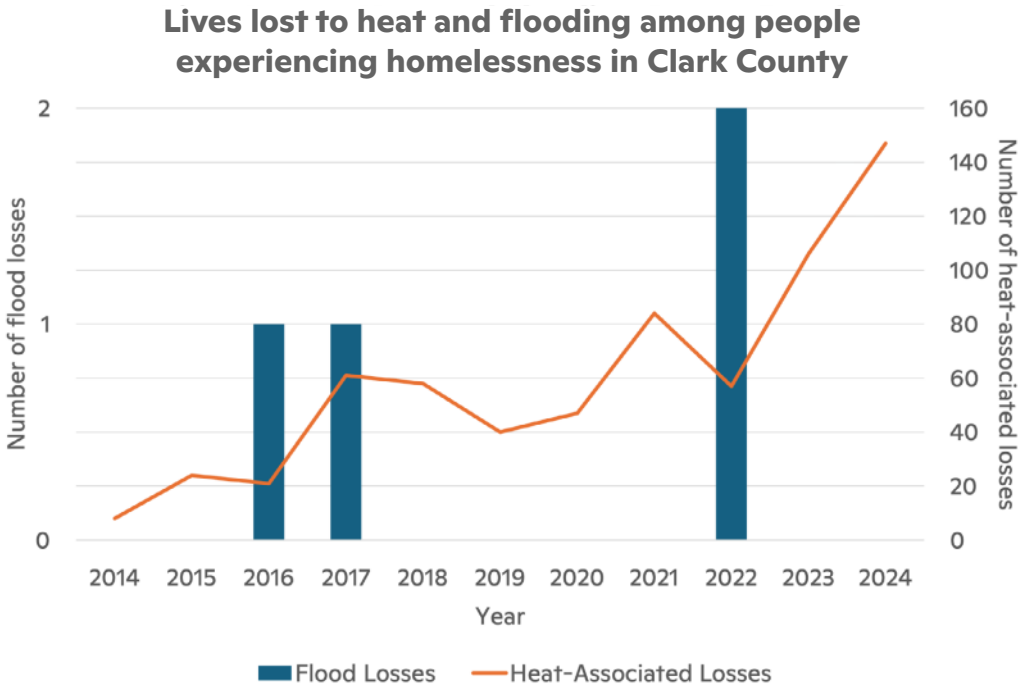

Figure 3: Number of heat-associated losses among people experiencing homelessness (orange line graph) and flood losses among people experiencing homelessness (blue bar graph) in Clark County from 2014 to 2024.

> **Loss of community member excerpt by Edwin Santiago-Colon, Lived X Member**
> *"A few years ago, during one of the hottest summers in Las Vegas, a homeless man we knew passed away from heat stroke. He had been lying in his usual spot. At first, everyone assumed he was just sleeping, something not uncommon in the hot afternoons. No one thought to check. By the time someone realized something was wrong, it was too late.*
>
> *The news spread quickly. We were devastated. The idea that he might've been suffering while we carried on with our day haunted many of us. We couldn't help but wonder if things would've been different had we just noticed sooner—if someone had checked on him, offered water, or called for help. That kind of guilt doesn't go away easily.*
>
> *His death was a crucial reminder of how fragile life is when you live on the streets, and how easy it is for someone to be overlooked. His passing became a quiet lesson about awareness, compassion, and how important it is to truly see each other."*

The summer of 2024 broke several heat records for the Las Vegas Valley.[9] The average summer temperature reached 96.2°F, surpassing the previous record of 93.7°F set in 2018. In July 2024, the all-time high temperature at Harry Reid International Airport was recorded

[8] Southern Nevada Health District (https://www.southernnevadahealthdistrict.org/)

[9] National Weather Service Las Vegas Climate Book (https://www.weather.gov/vef/lasvegas_climate_book), News 3 Las Vegas (https://news3lv.com/news/local/las-vegas-shatters-heat-records-with-the-hottest-summer-ever)

at 120°F. The valley experienced seven consecutive days with a high temperature of 115°F or higher, 43 consecutive days of 105°F or higher, and 63 consecutive days with low temperatures of 80°F or higher. During this record-breaking year of extreme heat, 147 individuals who were experiencing homelessness passed away due to heat-associated causes, a 39% increase compared to the previous record-high of 106 losses in 2023 (Figure 3). These unprecedented temperatures underscore the escalating risks posed by extreme heat, highlighting the urgent need for targeted interventions to protect the region's most vulnerable populations.

> **Summer 2024 excerpt by Ronnie Doak, Lived X Member**
> *"It was a sweltering hot day, last year [2024] in July. I was at a Walgreens on Las Vegas Blvd [which runs along the I-15] and Charleston Blvd. The sky was clear, and the sun was like a fireball in the sky. I was browsing the candy section looking for a snack when a homeless woman toting a couple bags could barely talk or breathe. I watched as I saw her signal the cashier the universal sign of water, barely able to utter the words that she was gonna pass out. The cashier was very rude, as most of my experience as being homeless I've had similar encounters. She was told that if she couldn't pay for the water she would have to leave because she was causing a commotion to the customers.*
>
> *I immediately approached the woman and took out my phone to dial 911. As a prior first responder (fire-fighter), I recognized she was experiencing symptoms of heat stroke, dizziness, slurred, and jumbled words and cyanosis of the lips (blue in color). I purchased the water and laid her on the floor. I had assistance with some good samaritans to conceal her for privacy as I asked her to remove her shirt. Her core body temperature needed to be addressed and I poured water on her chest, neck, and head. They had her take small sips of water. I engaged her verbally to gauge her progress.*
>
> *She expressed she had been walking for miles as she was homeless and had no place to go, new to Vegas, and didn't know where to seek shelter. By then, paramedics arrived and were able to stabilize and transport the patient to the hospital for further evaluation.*
>
> *The weather played so much of a factor as most people don't know how important it is to stay hydrated. Even worse, the homeless continue to be harassed by the public if they try to sit down at buildings that offer shade. The stigma continues to affect the way we treat the disadvantage[d], which in my opinion is a stain on humanity. We should all strive to show compassion especially to the unsheltered in extreme heat conditions.*
>
> *She almost died, but the truth is she didn't have to, a small act of kindness can make all the difference. I continue to hope that one day the stigma of homelessness is addressed and that we continue to increase in love as ignorance dissipates. Las Vegas in the summer can kill the unsheltered. This is a fact, however, on this day humanity won the bout."*

Clark County has undertaken a comprehensive approach to address the growing threats of climate change through a series of strategic plans and initiatives. The All-In Clark County Community Sustainability and Climate Action Plan outlines the county's commitment to reducing greenhouse gas emissions, building resilience to climate hazards, and prioritizing the health and safety of its residents. Additionally, the Regional Transportation Commission (RTC) of Southern Nevada's Extreme Heat Vulnerability Analysis used a multidimensional framework informed by community input to identify and map present extreme heat vulnerability across the valley. Here we present the first local climate risk assessment on present and future extreme heat risks for people experiencing homelessness in partnership with Nevada Homeless Alliance and Southern Nevada Lived X Team.

Extreme Heat Risk

We assess projections of extreme heat for the present, 2030, 2050, and 2080 across three metrics:

1. Hot days, defined as days with maximum temperature ≥ 100°F
2. Very hot days, defined as days with maximum temperature ≥ 110°F
3. Hot nights, defined as days with minimum temperature ≥ 80°F

Temperature thresholds of 100°F and 110°F were selected due to the familiarity and ease to recall what a 100°F degree day feels like among homeless service providers and people who have experienced homelessness. Prioritizing temperature thresholds that are relatable fosters a more intuitive understanding of how extreme heat will change in the future. Additional details on the methodology used to project extreme heat risk are provided at the end of this report in the Supplementary Information section, under Extreme Heat Methodology.

Hot Days

Historically, Las Vegas experiences an average of 78 hot days per year, with 67 of those days occurring in the summer months of June, July, and August.[10] On the East Side, many areas already experience more hot days in the summer and throughout the year than the historical average (Figures 4 and 5). This impacts 78% of census tracts with high homelessness rates and densities, representing 7,468 people experiencing homelessness and 87 tracts. Compared to the opposite side of the valley in Summerlin where there are no census tracts with high levels of homelessness, the same level of heat will not be experienced until 2050 or later. Due to its relatively higher elevation, temperatures in Summerlin are often cooler—by up to ten degrees in the summer—than in the central valley and on the East Side. Additionally, social vulnerability is relatively lower in Summerlin as household incomes tend to be higher, highlighting the mix of socio-economic and environmental privilege on the far western side of the valley (Figure 2). In the upcoming decades, hot days will occur more frequently due to climate change, impacting the entire valley.

By 2030, all homeless shelters in the Las Vegas Valley will experience an average of 70–80 hot days in the summer (Figure 4). This means the temperature will meet or exceed 100°F at least once every four days. By 2050, 80–90 days in the summer will reach 100°F or higher across the East Side, Nellis, and parts of North Las Vegas, affecting all shelters. The 85 hot days from the record-breaking summer of 2024 represents the future normal for these neighborhoods in 2050. By 2080, all neighborhoods in the Las Vegas Valley will experience summers with temperatures meeting or exceeding 100°F nearly every day. The exact number of hot days each shelter and cooling station will experience is provided at the end of this report in the Supplementary Information section, under Daytime Heat Tables. As the valley warms up under a changing climate, hot days reaching 100°F or higher will extend beyond the summer months.

[10] National Weather Service Las Vegas Climate Book (https://www.weather.gov/vef/lasvegas_climate_book)

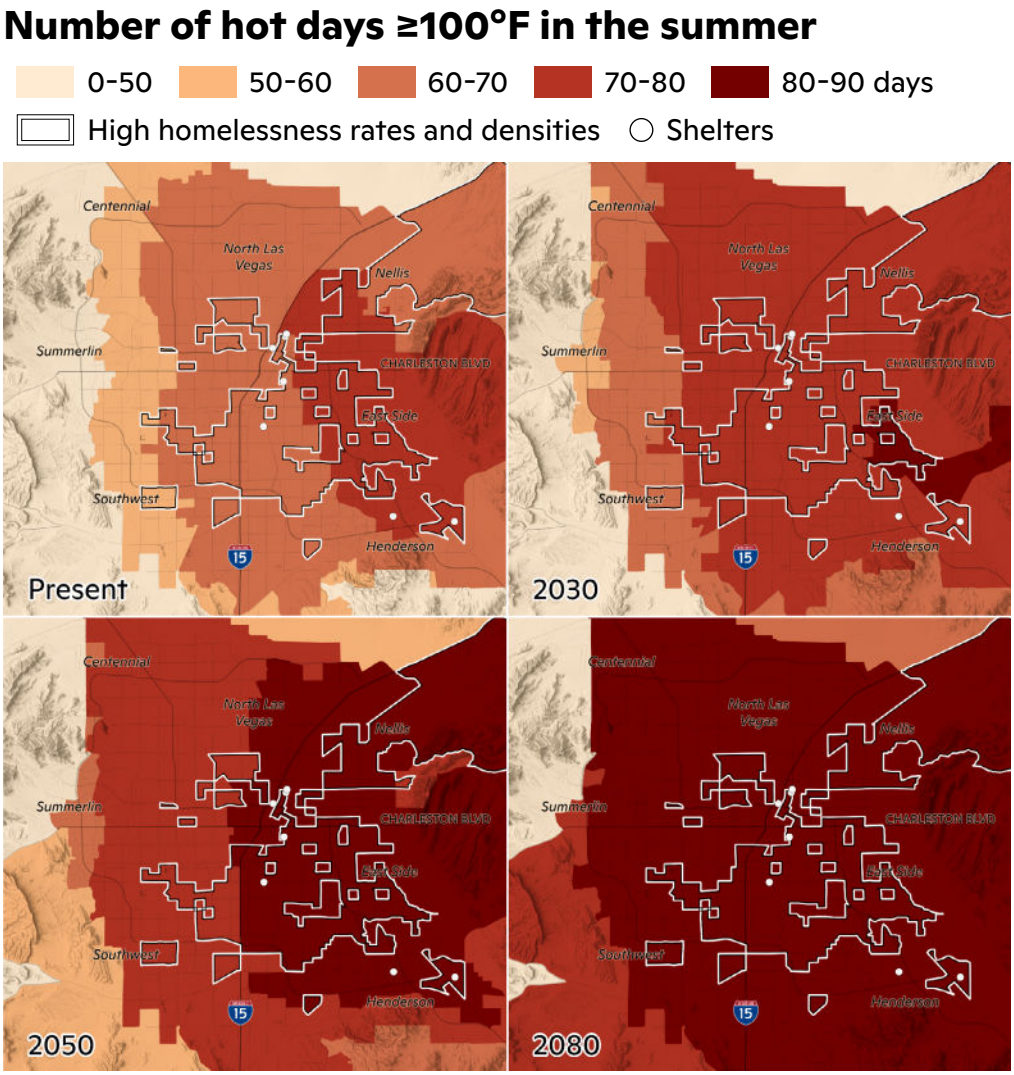

Figure 4: Number of hot days in the summer (June, July, August) when daily maximum temperature is greater than or equal to 100°F in the present, 2030, 2050, and 2080. White dots indicate homeless shelters. The combined area of census tracts with high homelessness rates and densities is outlined in white. Each successive time period shows darker colors spreading across more areas, indicating that the number of summer days reaching 100°F or higher is projected to increase to 80–90 days across nearly the entire Las Vegas Valley by 2080.

As the annual number of hot days reaching 100°F or higher increases throughout the valley, unequal heat exposure between the East Side and the far western part of the valley will continue to persist in the future. By 2030, parts of the East Side, including 30 census tracts with high levels of homelessness, will begin to see 100–125 hot days per year (Figure 5). At the same time, areas in Summerlin will experience only 50–75 hot days per year. By 2050, 100–125 hot days per year will be normal for all shelters and across the East Side, North Las Vegas, Nellis, and parts of Henderson, including all homeless shelters. This level of extreme heat is similar to 2024 when 112 days of the year reached at least 100°F. Meanwhile, areas of Summerlin, Centennial, and the Southwest will experience between 75–100 hot days per year by 2050. Though some parts of Summerlin will experience a greater increase in annual hot days over time, the East Side will be exposed to more total hot days per year in 2080. All but the three westernmost census tracts with high levels of homelessness will experience up to 125 days of 100°F in 2080.

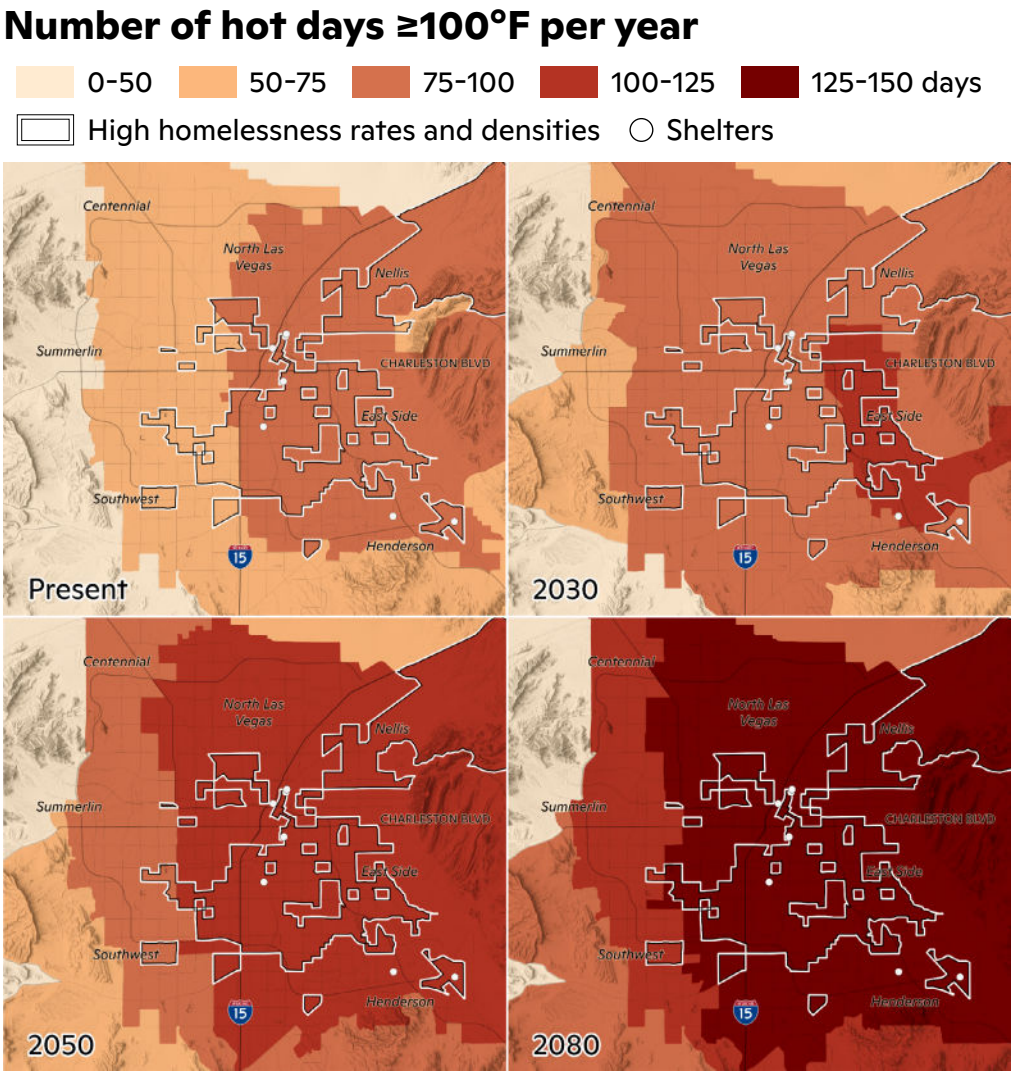

Figure 5: Number of hot days throughout the year when daily maximum temperature is greater than or equal to 100°F in the present, 2030, 2050, and 2080. White dots indicate homeless shelters. The combined area of census tracts with high homelessness rates and densities is outlined in white. Each successive time period shows darker colors spreading across more areas, indicating that the annual number of hot days reaching 100°F or higher is projected to increase over time across the region.

Very Hot Days

Historically, Las Vegas experiences an average of nine very hot days reaching 110°F or higher per year, all occurring in the summer.[11] On the East Side, 69% of census tracts with high levels of homelessness, representing 7,431 people experiencing homelessness and 77 tracts, already endure more very hot days than the historical average. In 2024, there were 30 very hot days, breaking the records for most days above 110°F as well as consecutive days above 110°F over an 11-day stretch in July. Similar to changes in hot days, the East Side will be the first to experience more very hot days in the summer.

By 2030, 37 census tracts with high levels of homelessness on the East Side will be the first areas in the valley exposed to an average of 24–36 very hot days in the summer (Figure 6). By 2050, this level of very hot days will be normal for North Las Vegas, Nellis, and parts of the East Side and Henderson. Meanwhile, nine census tracts with high levels of homelessness on

[11] National Weather Service Las Vegas Climate Book (https://www.weather.gov/vef/lasvegas_climate_book)

the East Side will begin seeing an average of 36-48 very hot days by 2050. By 2080, all census tracts with high levels of homelessness are projected to experience at least 36-48 very hot days in the summer. Those on the East Side, in North Las Vegas, and in Henderson—as well as all homeless shelters—are expected to experience 48-60 very hot days in 2080. The exact number of very hot days each shelter and cooling station will experience is provided at the end of this report in the Supplementary Information section, under Daytime Heat Tables.

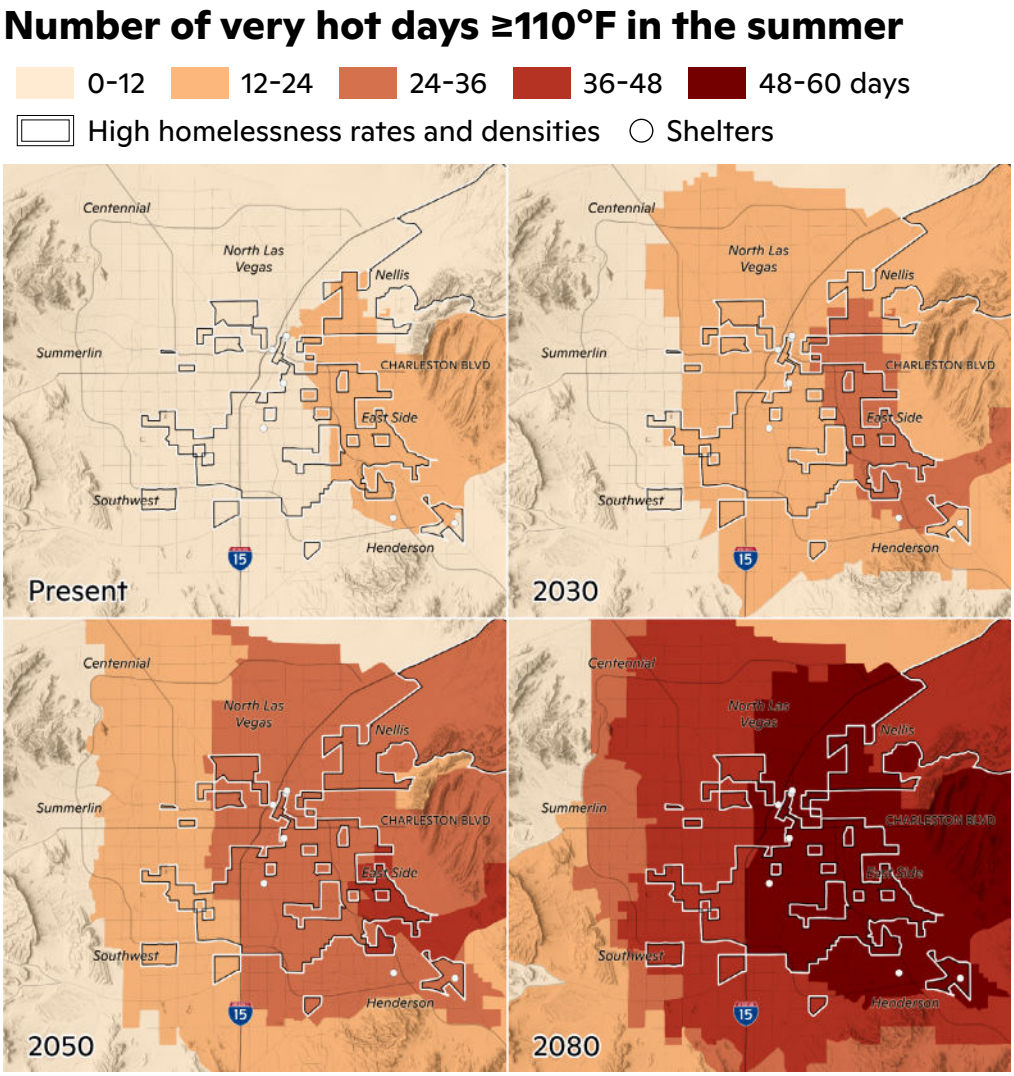

Figure 6: Number of very hot days in the summer (June, July, August) when daily maximum temperature is greater than or equal to 110°F in the present, 2030, 2050, and 2080. White dots indicate homeless shelters. The combined area of census tracts with high homelessness rates and densities is outlined in white. Each successive time period shows darker colors spreading across more areas, indicating that the number of summer days reaching 110°F or higher is projected to increase over time across the region.

Hot Nights

High nighttime temperatures pose a severe threat to people experiencing homelessness, especially unsheltered homelessness, as the lack of relief from heat overnight prevents the body from properly cooling down. Continuous exposure to extreme heat throughout the day and night increases the risk of heat-related illnesses and mortality, especially in areas where the urban

heat island effect can keep nighttime temperatures dangerously high. This persistent exposure elevates the risk of heat exhaustion, heat stroke, dehydration, and exacerbation of chronic health conditions such as cardiovascular and respiratory diseases. Hot nights also disrupt sleep, compounding stress and worsening mental health and substance use conditions.

Historically, the Las Vegas Valley experiences an average of 47 hot nights per year when the minimum temperature does not drop below 80°F, 44 of of which occur during the summer.[12] Areas on the East Side and parts of Henderson and Nellis already experience more summer hot nights than the historical average, including 79 census tracts with high levels of homelessness representing 7,191 people experiencing homelessness (Figure 7). These areas also already experience above-average summer hot days and very hot days, amplifying their present extreme heat exposure. As the number of hot nights increases throughout the valley in the upcoming decades due to climate change, these areas will continue to be the most vulnerable to extreme heat risk.

When areas experience above average hot nights ≥80°F in the summer

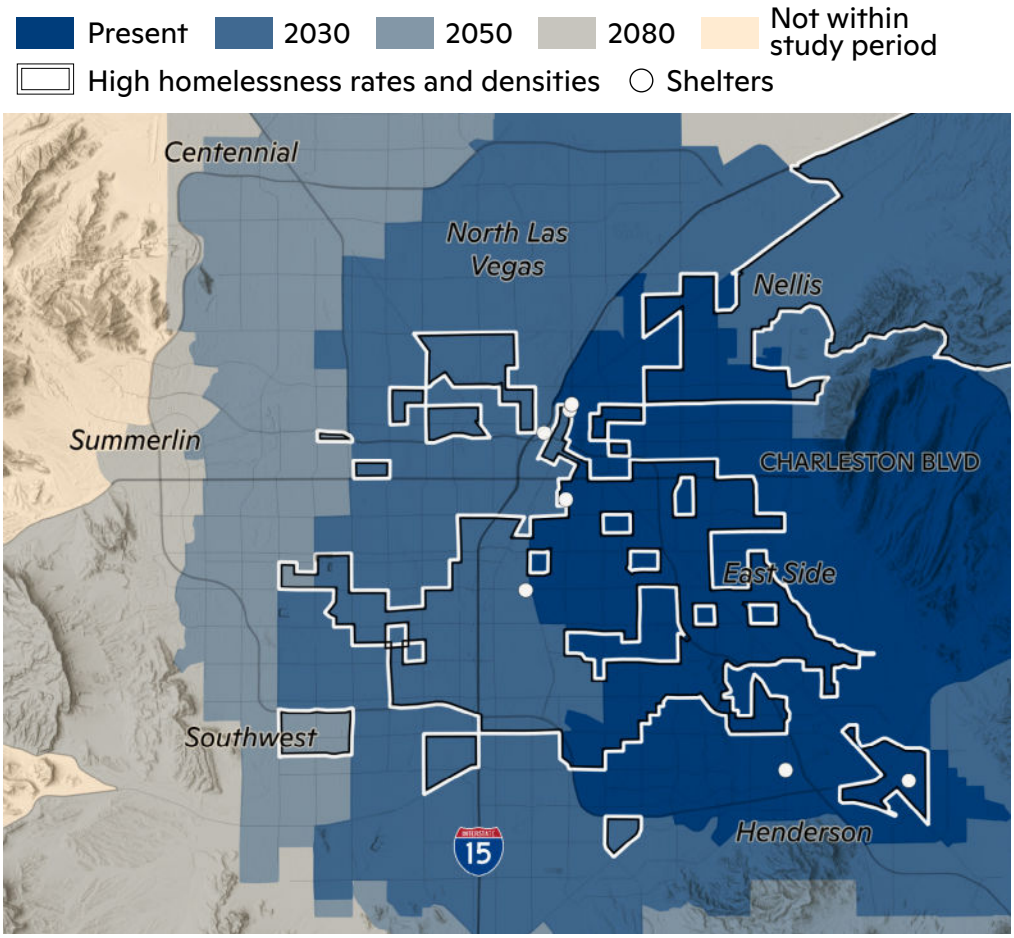

Figure 7: When areas experience an above-average number of hot nights in the summer (June, July, August), or more than 44 hot nights, based on the 1991–2020 average reported by the Las Vegas National Weather Service. White dots indicate homeless shelters. The combined area of census tracts with high homelessness rates and densities is outlined in white. The darkest blue areas are already experiencing above-average hot nights, reflecting the urban heat island effect where dense development and pavement trap and radiate heat.

[12]National Weather Service Las Vegas Climate Book (https://www.weather.gov/vef/lasvegas_climate_book)

Heat Adaptation Strategies

Excessive Heat Warnings & Cooling Stations

The primary government heat adaptation strategy in Clark County is to activate cooling stations whenever an excessive heat warning is issued by the Las Vegas National Weather Service (NWS). Excessive heat warnings are issued following the experimental NWS HeatRisk Index as well as daily graduated temperature thresholds for May through September.[13] Once issued, Clark County publicly releases flyers listing available cooling stations throughout the region. Cooling stations are open to anyone in the community in need of cool, indoor spaces during various daytime operational hours as early as 6 AM and as late as 8 PM. Direct outreach workers and homeless service providers distribute the flyers to people experiencing homelessness, guiding them to these resources.

In 2024, excessive heat warnings were issued ten times, and the 43 cooling stations across Clark County were activated for a total of 30 days. From May through September 2024, an excessive heat warning was in place and cooling stations were activated 20% of the time. Based on the daily temperatures thresholds in May through September, conditions for issuing excessive heat warnings are projected to occur twice as frequently in 2030 and seven times as frequently in 2080 compared to the present (Figure 8). By 2030, an excessive heat warning is expected to be in place an average of 15–30% of the time across the eastern half of Las Vegas, including Harry Reid International Airport where the city's official temperature is recorded.

As excessive heat warnings become more frequent, what is currently considered an emergency response will become a routine part of the extended summer (May–September) in Las Vegas. The projected increase in frequency means that cooling stations and related services will need to shift from occasional event response to near-continuous operation throughout the season. The current model of daytime-only cooling stations will become less effective as hot nights become more common throughout the valley, leaving people without safe options for overnight relief. Presently, the Courtyard Homeless Resource Center is the only cooling station that operates 24-hours daily. Establishing more 24-hour cooling centers will become increasingly important as overnight temperatures will likely rise. The doubling of excessive heat warning frequency by 2030 highlights the urgency of expanding infrastructure and services in the near term to keep pace with rapidly changing conditions.

> **Cooling station quote by Brian Begay, Lived X Member**
> *"Cooling stations were few and far between, and when you're dehydrated, exhausted, and overheated, they feel miles away even when they're only blocks. I saw the heat take strong people down to their knees. That kind of heat doesn't care how tough you are. If you're out there too long, it'll take everything from you."*

[13] National Weather Service Las Vegas (https://www.weather.gov/vef/), Clark County Social Services (https://www.clarkcountynv.gov/residents/assistance_programs/)

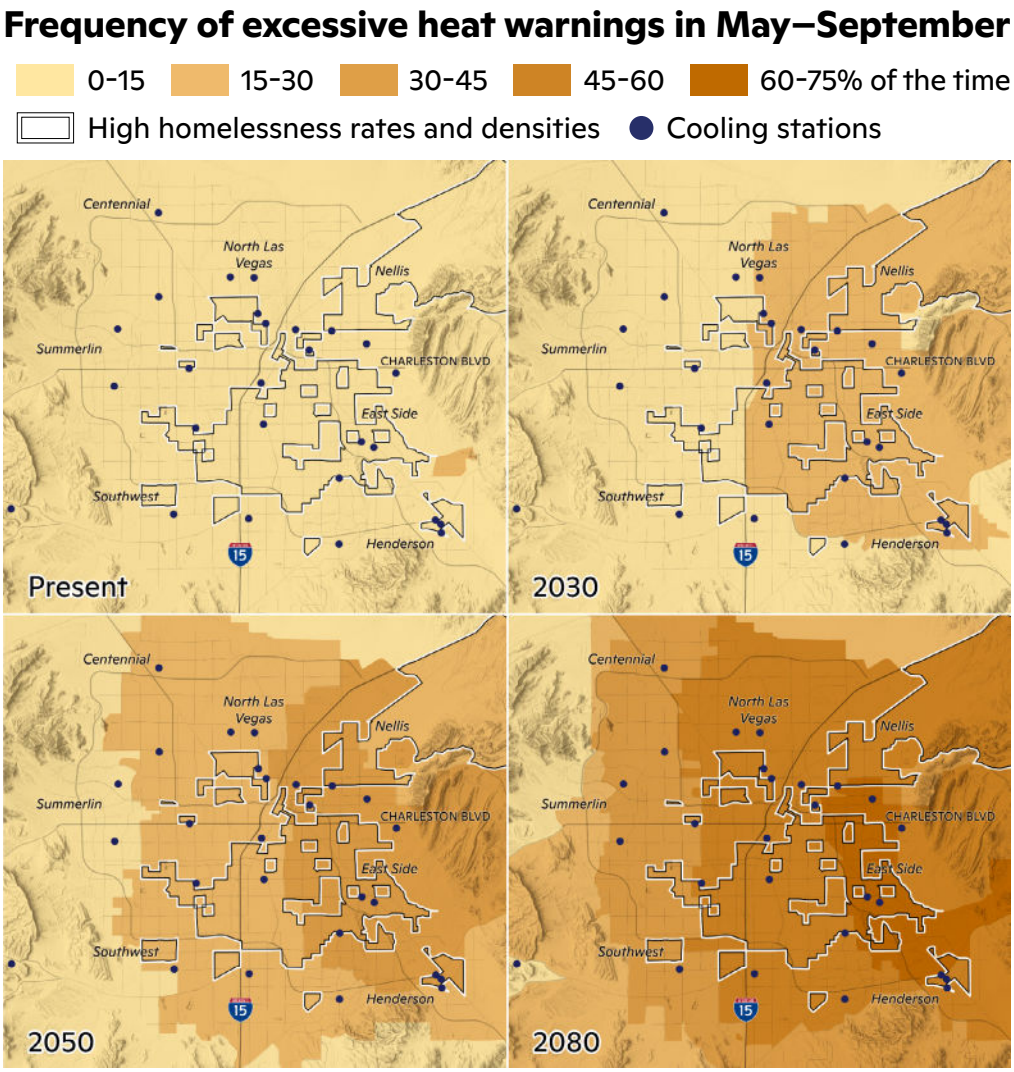

Figure 8: How often excessive heat warnings are projected to be issued during May–September in the present, 2030, 2050, and 2080. Dark blue dots are cooling stations. White dots indicate homeless shelters. The combined area of census tracts with high homelessness rates and densities is outlined in white. Each successive time period shows darker colors spreading across more areas, indicating what are currently considered excessive heat conditions will become more routine.

Public Transportation

Public transportation often functions as an informal heat adaptation strategy for people experiencing homelessness. Air-conditioned buses and transit vehicles offer temporary relief from the heat, especially when access to cooling stations or shelters is limited. Public transportation, provided by the RTC, is a vital resource year-round, as Nevada Homeless Alliance provides free bus passes to anyone who receives services at their biweekly Pop-Up Project Homeless Connect events. However, barriers such as limited service hours, route coverage, and the need for fare assistance can restrict access for the most vulnerable individuals. While not a comprehensive solution, access to public transit during heat emergencies helps reduce the health risks associated with prolonged heat exposure and can serve as a critical lifeline. Expanding transit access and more intentionally integrating public transportation into local heat response strategies could further strengthen community resilience and better protect people experiencing homelessness from the growing threat of extreme heat.

> **Bus adaptation quote by Martin Castro, Lived X Member**
> *"I remember when the heat was unbearable my first option was to ride the bus system aimlessly to get some reprieve. Riding the RTC buses was a means to cool off and to be in a new area to engage new individuals that could support my drug habit."*

> **Bus adaptation excerpt by Brian Begay, Lived X Member**
> *"When I was homeless during the summer in Las Vegas, I learned quickly that public transportation could mean the difference between life and death. I'd save every quarter, dime, and nickel I could find just to buy a day pass for the RTC bus. I wasn't trying to get anywhere. I just needed the A/C. It was the only place I could sit for a couple hours without the sun beating down on me. I'd ride from one end of the city to the other, then loop back around again—anything to keep moving and stay cool.*
>
> *The bus drivers got to know me after a while. Some were chill—they'd give me a nod or pretend they didn't notice if I didn't have the full fare. Others weren't so kind, but I didn't blame them. They had their own stuff going on. But I'll never forget the way that cold air felt when I stepped on board. It was like stepping into a temporary sanctuary. My whole body would finally relax, and I'd let myself rest for a moment, knowing I wouldn't pass out or get heat stroke—not yet.*
>
> *That routine became survival. I wasn't out there trying to loiter or "scam the system"—I was just trying to live through another day. Some people think unhoused folks are lazy, but they don't realize how much work it takes to stay alive when you've got no roof and the sidewalk feels like it's on fire. That bus wasn't a luxury. It was the only thing that kept my body from shutting down more than once."*

Conclusion and Implications

People experiencing homelessness in Las Vegas are already facing challenges from extreme heat and categorically face greater vulnerability to heat than the general population.[14] Climate change will only exacerbate these risks in the coming decades as the number of hot days and nights increases and conditions for issuing an excessive heat warning become more frequent. The East Side of Las Vegas has more individuals experiencing homelessness and census tracts with high homelessness rates and densities compared to other areas of the valley. This region is projected to experience the highest absolute heat exposure both day and night as temperatures continue to increase due to climate change. As temperatures rise, people experiencing homelessness will face more extreme heat risk in addition to existing challenges, like lack of affordable housing and access to healthcare, that stem from societal inequity.

During the 2025 Nevada legislative session, NV AB96 passed both chambers and was signed by the governor, requiring counties with populations of 100,000 or more to include heat mitigation plans in their master planning process.[15] Findings from this report can help support the development of Clark County's heat mitigation plan, particularly in addressing extreme heat exposure for people experiencing homelessness. Key strategies include expanding cooling stations and urban tree canopies in risk zones of areas with high levels of homelessness and extreme heat, as well as increasing shade structures or tree cover outside of shelters and around bus stops as people wait for services.

Ultimately, the most effective long-term solution to reducing extreme heat exposure for people experiencing homelessness is to end homelessness through permanent supportive housing.[16] Until housing-first initiatives are implemented and such housing is built, interim solutions like cooling stations, mobile cooling units, and shade structures are necessary for the immediate safety and health of people experiencing homelessness. This two-pronged approach is necessary to achieve the most just outcome with minimal loss of life, similar to the dual necessity of both adaptation and mitigation to address climate change.

[14] Lin et al. 2024 (https://doi.org/10.1093/aje/kwae084)
[15] Nevada State Legislature (https://www.leg.state.nv.us/App/NELIS/REL/83rd2025/Bill/11978/Overview)
[16] The Invading Sea (https://www.theinvadingsea.com/2025/05/13/heat-waves-warnings-illnesses-protections-outdoor-workers-homeless-pollution-electric-buses/), National Alliance to End Homelessness (https://endhomelessness.org/resources/sharable-graphics/data-visualization-the-evidence-on-housing-first/)

Homelessness is compounded by and inextricably linked with climate change. As extreme weather events intensify and become more frequent due to climate change, people experiencing homelessness will continue to be disproportionately harmed. At the same time, disasters like wildfires, floods, and hurricanes create new displacement and housing insecurity, thereby generating more homelessness in communities already struggling with inadequate shelter resources. Addressing climate change and homelessness together requires not only emergency interventions to protect people experiencing homelessness from climate impacts, but also long-term systemic transformation and comprehensive housing solutions that recognize safe and stable shelter for all as fundamental climate resilience infrastructure.

Supplementary Information

Daytime Heat Tables

The following Tables 1–3 provide detailed, location-specific data on the number of hot summer days, very hot summer days, and annual hot days each homeless shelter and cooling station is projected to experience in the present, 2030, 2050, and 2080. By providing this level of detail, the tables help homeless service providers and public health officials to identify which locations are most at risk, supporting targeted preparedness, resource allocation, and more informed planning and response efforts.

Table 1: Number of hot days in the summer when daily maximum temperature reaches 100°F or higher in the present, 2030, 2050, and 2080 for every homeless shelter and cooling station in Clark County.

Name	Number of 100°F hot days in the summer				Type	Address
	Present	2030	2050	2080		
Colorado River Food Bank	84	87	88	89	Cooling Station	240 Laughlin Civic Dr, Laughlin, NV 89029
American Legion	83	86	88	89	Cooling Station	1510 Bruce Woodbury Dr, Laughlin, NV 89029
Laughlin Library	82	86	87	89	Cooling Station	2840 Needles Hwy, Laughlin, NV 89029
Moapa Valley Library	80	84	86	89	Cooling Station	350 N Moapa Valley Blvd, Overton, NV 89040
Bunkerville Library	78	83	85	88	Cooling Station	150 W Virgin St, Bunkerville, NV 89007
Mesquite Library Campus	77	82	85	88	Cooling Station	160 W 1st N St, Mesquite, NV 89027
The Salvation Army Mesquite	76	82	85	88	Shelter and Cooling Station	742 W Pioneer Blvd D, Mesquite, NV 89027
Moapa Town Library	76	81	85	88	Cooling Station	1340 NV-168, Moapa, NV 89025
Whitney Recreation Station	74	80	84	88	Cooling Station	5712 Missouri Ave, Las Vegas, NV 89122
Whitney Library	74	80	84	88	Cooling Station	5175 E Tropicana Ave, Las Vegas, NV 89122
Sunrise Library	73	79	83	88	Cooling Station	5400 E Harris Ave, Las Vegas, NV 89110
James I. Gibson Library	73	79	83	87	Cooling Station	100 W Lake Mead Pkwy, Henderson, NV 89015
Walnut Recreation Station	72	79	83	87	Cooling Station	3075 N Walnut Rd, Las Vegas, NV 89115
Hopelink of Southern Nevada FRC	72	79	83	87	Shelter	178 Westminster Way, Henderson, NV 89015
Living Grace Homes	72	79	83	87	Shelter	149 N Gibson Rd Suite J, Henderson, NV 89074
Hollywood Recreation Station	72	79	83	87	Cooling Station	1650 S Hollywood Blvd, Las Vegas, NV 89142
East Las Vegas Library	71	78	82	87	Cooling Station	2851 E Bonanza Rd, Las Vegas, NV 89101
Green Valley Library	71	78	82	87	Cooling Station	2797 N Green Valley Pkwy, Henderson, NV 89014
Neighborhood Recreation Station	70	78	82	87	Cooling Station	1638 N Bruce St, North Las Vegas, NV 89030
The Salvation Army Las Vegas	70	78	82	87	Shelter and Cooling Station	35 W Owens Ave, North Las Vegas, NV 89030
The Courtyard Homeless Resource Center	70	78	82	87	Shelter and Cooling Station	314 Foremaster Ln, Las Vegas, NV 89101
Catholic Charities	70	78	82	87	Shelter	1501 Las Vegas Blvd N, Las Vegas, NV 89101
The Shade Tree of Las Vegas	70	78	82	87	Shelter	1 W Owens Ave, North Las Vegas, NV 89030
Downtown Recreation Station	70	77	81	87	Cooling Station	50 E Van Wagenen St, Henderson, NV 89015
Downtown Senior Station	70	77	81	87	Cooling Station	27 E Texas Ave, Henderson, NV 89015
Family Promise	69	77	81	87	Shelter	1410 S Maryland Pkwy, Las Vegas, NV 89104
West Las Vegas Library	69	76	81	87	Cooling Station	951 W Lake Mead Blvd, Las Vegas, NV 89106
Las Vegas Rescue Mission	68	76	81	87	Shelter	480 W Bonanza Rd, Las Vegas, NV 89106
Meadows Library	68	76	81	86	Cooling Station	251 W Boston Ave, Las Vegas, NV 89102
Pearson Community Station	68	76	80	86	Cooling Station	1625 W Carey Ave, North Las Vegas, NV 89032
Clark County Library	67	75	81	86	Cooling Station	1401 E Flamingo Rd, Las Vegas, NV 89119
Shannon West Homeless Youth Center	67	75	81	86	Shelter	1640 E Flamingo Rd, Las Vegas, NV 89119
Alexander Library	67	75	80	86	Cooling Station	1755 W Alexander Rd, North Las Vegas, NV 89032
Enterprise Library	65	74	80	86	Cooling Station	8310 S Las Vegas Blvd, Las Vegas, NV 89123
Silver Mesa Recreation Station	65	74	80	86	Cooling Station	4025 Allen Ln, North Las Vegas, NV 89032
Paseo Verde Library	65	73	79	86	Cooling Station	280 S Green Valley Pkwy, Henderson, NV 89012
Spring Valley Library	63	72	78	85	Cooling Station	4280 S Jones Blvd, Las Vegas, NV 89103
West Charleston Library	63	72	78	85	Cooling Station	6301 W Charleston Blvd, Las Vegas, NV 89146
Rainbow Library	61	71	78	85	Cooling Station	3150 N Buffalo Dr, Las Vegas, NV 89128
Centennial Hills Library	61	71	77	85	Cooling Station	6711 N Buffalo Dr, Las Vegas, NV 89131
Windmill Library	58	68	76	84	Cooling Station	7060 W Windmill Ln, Las Vegas, NV 89113
Sandy Valley Library	57	66	75	83	Cooling Station	650 W Quartz Ave, Sandy Valley, NV 89019
West Henderson Library	56	66	75	84	Cooling Station	3243 Bicentennial Pkwy, Henderson, NV 89044
Summerlin Library	52	63	73	83	Cooling Station	1771 Inner Cir Drive, Las Vegas, NV 89134
Sahara West Library	50	62	72	82	Cooling Station	9600 W Sahara Ave, Las Vegas, NV 89117
Indian Springs Library	41	55	65	79	Cooling Station	715 Gretta Ln, Indian Springs, NV 89018
Blue Diamond Library	31	46	56	75	Cooling Station	16a Cottonwood Dr, Blue Diamond, NV 89004
Searchlight Library	23	37	49	71	Cooling Station	200 Michael Wendell Way, Searchlight, NV 89046
Goodsprings Library	26	39	51	71	Cooling Station	365 San Pedro St, Goodsprings, NV 89019
Mt. Charleston Library	0	0	0	0	Cooling Station	75 Ski Chalet Pl, Mt Charleston, NV 89124

Table 2: Number of very hot days in the summer when daily maximum temperature reaches 110°F or higher in the present, 2030, 2050, and 2080 for every homeless shelter and cooling station in Clark County.

Name	Number of 110°F very hot days in the summer				Type	Address
	Present	2030	2050	2080		
Colorado River Food Bank	38	48	56	67	Cooling Station	240 Laughlin Civic Dr, Laughlin, NV 89029
American Legion	34	44	53	65	Cooling Station	1510 Bruce Woodbury Dr, Laughlin, NV 89029
Laughlin Library	31	42	51	64	Cooling Station	2840 Needles Hwy, Laughlin, NV 89029
Moapa Valley Library	27	39	49	63	Cooling Station	350 N Moapa Valley Blvd, Overton, NV 89040
Bunkerville Library	22	35	45	61	Cooling Station	150 W Virgin St, Bunkerville, NV 89007
Mesquite Library Campus	20	34	44	60	Cooling Station	160 W 1st N St, Mesquite, NV 89027
The Salvation Army Mesquite	18	31	41	59	Shelter and Cooling Station	742 W Pioneer Blvd D, Mesquite, NV 89027
Moapa Town Library	18	30	40	59	Cooling Station	1340 NV-168, Moapa, NV 89025
Whitney Recreation Station	16	27	37	56	Cooling Station	5712 Missouri Ave, Las Vegas, NV 89122
Whitney Library	16	27	37	56	Cooling Station	5175 E Tropicana Ave, Las Vegas, NV 89122
Sunrise Library	14	26	35	55	Cooling Station	5400 E Harris Ave, Las Vegas, NV 89110
James I. Gibson Library	14	25	34	54	Cooling Station	100 W Lake Mead Pkwy, Henderson, NV 89015
Walnut Recreation Station	14	25	34	54	Cooling Station	3075 N Walnut Rd, Las Vegas, NV 89115
Hopelink of Southern Nevada FRC	13	24	33	54	Shelter	178 Westminster Way, Henderson, NV 89015
Living Grace Homes	13	24	33	54	Shelter	149 N Gibson Rd Suite J, Henderson, NV 89074
Hollywood Recreation Station	13	24	33	54	Cooling Station	1650 S Hollywood Blvd, Las Vegas, NV 89142
East Las Vegas Library	13	24	33	53	Cooling Station	2851 E Bonanza Rd, Las Vegas, NV 89101
Green Valley Library	12	22	32	52	Cooling Station	2797 N Green Valley Pkwy, Henderson, NV 89014
Neighborhood Recreation Station	12	22	32	52	Cooling Station	1638 N Bruce St, North Las Vegas, NV 89030
The Salvation Army Las Vegas	12	22	32	52	Shelter and Cooling Station	35 W Owens Ave, North Las Vegas, NV 89030
The Courtyard Homeless Resource Center	12	22	32	52	Shelter and Cooling Station	314 Foremaster Ln, Las Vegas, NV 89101
Catholic Charities	12	22	32	52	Shelter	1501 Las Vegas Blvd N, Las Vegas, NV 89101
The Shade Tree of Las Vegas	12	22	32	52	Shelter	1 W Owens Ave, North Las Vegas, NV 89030
Downtown Recreation Station	10	20	30	51	Cooling Station	50 E Van Wagenen St, Henderson, NV 89015
Downtown Senior Station	10	20	30	51	Cooling Station	27 E Texas Ave, Henderson, NV 89015
Family Promise	11	21	30	51	Shelter	1410 S Maryland Pkwy, Las Vegas, NV 89104
West Las Vegas Library	10	20	29	50	Cooling Station	951 W Lake Mead Blvd, Las Vegas, NV 89106
Las Vegas Rescue Mission	10	19	29	49	Shelter	480 W Bonanza Rd, Las Vegas, NV 89106
Meadows Library	10	19	28	49	Cooling Station	251 W Boston Ave, Las Vegas, NV 89102
Pearson Community Station	9	19	28	48	Cooling Station	1625 W Carey Ave, North Las Vegas, NV 89032
Clark County Library	9	18	27	48	Cooling Station	1401 E Flamingo Rd, Las Vegas, NV 89119
Shannon West Homeless Youth Center	9	18	27	48	Shelter	1640 E Flamingo Rd, Las Vegas, NV 89119
Alexander Library	9	18	27	48	Cooling Station	1755 W Alexander Rd, North Las Vegas, NV 89032
Enterprise Library	8	16	25	46	Cooling Station	8310 S Las Vegas Blvd, Las Vegas, NV 89123
Silver Mesa Recreation Station	8	16	25	46	Cooling Station	4025 Allen Ln, North Las Vegas, NV 89032
Paseo Verde Library	7	15	24	45	Cooling Station	280 S Green Valley Pkwy, Henderson, NV 89012
Spring Valley Library	7	14	23	44	Cooling Station	4280 S Jones Blvd, Las Vegas, NV 89103
West Charleston Library	7	14	23	43	Cooling Station	6301 W Charleston Blvd, Las Vegas, NV 89146
Rainbow Library	6	13	21	42	Cooling Station	3150 N Buffalo Dr, Las Vegas, NV 89128
Centennial Hills Library	6	12	21	41	Cooling Station	6711 N Buffalo Dr, Las Vegas, NV 89131
Windmill Library	4	10	18	38	Cooling Station	7060 W Windmill Ln, Las Vegas, NV 89113
Sandy Valley Library	4	9	17	35	Cooling Station	650 W Quartz Ave, Sandy Valley, NV 89019
West Henderson Library	4	8	16	35	Cooling Station	3243 Bicentennial Pkwy, Henderson, NV 89044
Summerlin Library	2	7	14	32	Cooling Station	1771 Inner Cir Drive, Las Vegas, NV 89134
Sahara West Library	2	6	13	31	Cooling Station	9600 W Sahara Ave, Las Vegas, NV 89117
Indian Springs Library	1	4	9	24	Cooling Station	715 Gretta Ln, Indian Springs, NV 89018
Blue Diamond Library	0	1	4	15	Cooling Station	16a Cottonwood Dr, Blue Diamond, NV 89004
Searchlight Library	0	1	2	10	Cooling Station	200 Michael Wendell Way, Searchlight, NV 89046
Goodsprings Library	0	1	3	12	Cooling Station	365 San Pedro St, Goodsprings, NV 89019
Mt. Charleston Library	0	0	0	0	Cooling Station	75 Ski Chalet Pl, Mt Charleston, NV 89124

Table 3: Number of hot days per year when daily maximum temperature reaches 100°F or higher in the present, 2030, 2050, and 2080 for every homeless shelter and cooling station in Clark County.

Name	Number of 100°F hot days per year				Type	Address
	Present	2030	2050	2080		
Colorado River Food Bank	121	133	146	168	Cooling Station	240 Laughlin Civic Dr, Laughlin, NV 89029
American Legion	116	129	142	165	Cooling Station	1510 Bruce Woodbury Dr, Laughlin, NV 89029
Laughlin Library	114	125	140	162	Cooling Station	2840 Needles Hwy, Laughlin, NV 89029
Moapa Valley Library	103	115	129	152	Cooling Station	350 N Moapa Valley Blvd, Overton, NV 89040
Bunkerville Library	98	111	126	149	Cooling Station	150 W Virgin St, Bunkerville, NV 89007
Mesquite Library Campus	96	110	124	148	Cooling Station	160 W 1st N St, Mesquite, NV 89027
The Salvation Army Mesquite	93	106	122	146	Shelter and Cooling Station	742 W Pioneer Blvd D, Mesquite, NV 89027
Moapa Town Library	93	106	121	145	Cooling Station	1340 NV-168, Moapa, NV 89025
Whitney Recreation Station	90	103	118	141	Cooling Station	5712 Missouri Ave, Las Vegas, NV 89122
Whitney Library	90	103	118	141	Cooling Station	5175 E Tropicana Ave, Las Vegas, NV 89122
Sunrise Library	88	102	116	140	Cooling Station	5400 E Harris Ave, Las Vegas, NV 89110
James I. Gibson Library	88	101	116	140	Cooling Station	100 W Lake Mead Pkwy, Henderson, NV 89015
Walnut Recreation Station	87	100	115	139	Cooling Station	3075 N Walnut Rd, Las Vegas, NV 89115
Hopelink of Southern Nevada FRC	87	100	115	139	Shelter	178 Westminster Way, Henderson, NV 89015
Living Grace Homes	87	100	115	139	Shelter	149 N Gibson Rd Suite J, Henderson, NV 89074
Hollywood Recreation Station	86	100	115	139	Cooling Station	1650 S Hollywood Blvd, Las Vegas, NV 89142
East Las Vegas Library	85	99	114	138	Cooling Station	2851 E Bonanza Rd, Las Vegas, NV 89101
Green Valley Library	84	98	113	137	Cooling Station	2797 N Green Valley Pkwy, Henderson, NV 89014
Neighborhood Recreation Station	83	97	113	137	Cooling Station	1638 N Bruce St, North Las Vegas, NV 89030
The Salvation Army Las Vegas	83	97	113	137	Shelter and Cooling Station	35 W Owens Ave, North Las Vegas, NV 89030
The Courtyard Homeless Resource Center	83	97	113	137	Shelter and Cooling Station	314 Foremaster Ln, Las Vegas, NV 89101
Catholic Charities	83	97	113	137	Shelter	1501 Las Vegas Blvd N, Las Vegas, NV 89101
The Shade Tree of Las Vegas	83	97	113	137	Shelter	1 W Owens Ave, North Las Vegas, NV 89030
Downtown Recreation Station	82	97	112	136	Cooling Station	50 E Van Wagenen St, Henderson, NV 89015
Downtown Senior Station	82	97	112	136	Cooling Station	27 E Texas Ave, Henderson, NV 89015
Family Promise	82	96	112	135	Shelter	1410 S Maryland Pkwy, Las Vegas, NV 89104
West Las Vegas Library	80	95	110	135	Cooling Station	951 W Lake Mead Blvd, Las Vegas, NV 89106
Las Vegas Rescue Mission	80	95	110	134	Shelter	480 W Bonanza Rd, Las Vegas, NV 89106
Meadows Library	79	94	109	133	Cooling Station	251 W Boston Ave, Las Vegas, NV 89102
Pearson Community Station	78	93	108	133	Cooling Station	1625 W Carey Ave, North Las Vegas, NV 89032
Clark County Library	78	93	108	132	Cooling Station	1401 E Flamingo Rd, Las Vegas, NV 89119
Shannon West Homeless Youth Center	78	93	108	132	Shelter	1640 E Flamingo Rd, Las Vegas, NV 89119
Alexander Library	77	92	107	132	Cooling Station	1755 W Alexander Rd, North Las Vegas, NV 89032
Enterprise Library	75	90	106	131	Cooling Station	8310 S Las Vegas Blvd, Las Vegas, NV 89123
Silver Mesa Recreation Station	74	90	105	130	Cooling Station	4025 Allen Ln, North Las Vegas, NV 89032
Paseo Verde Library	73	89	104	130	Cooling Station	280 S Green Valley Pkwy, Henderson, NV 89012
Spring Valley Library	71	88	102	128	Cooling Station	4280 S Jones Blvd, Las Vegas, NV 89103
West Charleston Library	70	87	102	128	Cooling Station	6301 W Charleston Blvd, Las Vegas, NV 89146
Rainbow Library	69	85	100	126	Cooling Station	3150 N Buffalo Dr, Las Vegas, NV 89128
Centennial Hills Library	68	85	100	126	Cooling Station	6711 N Buffalo Dr, Las Vegas, NV 89131
Windmill Library	64	81	96	123	Cooling Station	7060 W Windmill Ln, Las Vegas, NV 89113
Sandy Valley Library	63	80	95	122	Cooling Station	650 W Quartz Ave, Sandy Valley, NV 89019
West Henderson Library	61	79	94	121	Cooling Station	3243 Bicentennial Pkwy, Henderson, NV 89044
Summerlin Library	55	74	90	117	Cooling Station	1771 Inner Cir Drive, Las Vegas, NV 89134
Sahara West Library	54	72	88	115	Cooling Station	9600 W Sahara Ave, Las Vegas, NV 89117
Indian Springs Library	43	63	77	106	Cooling Station	715 Gretta Ln, Indian Springs, NV 89018
Blue Diamond Library	31	51	65	95	Cooling Station	16a Cottonwood Dr, Blue Diamond, NV 89004
Searchlight Library	24	39	56	91	Cooling Station	200 Michael Wendell Way, Searchlight, NV 89046
Goodsprings Library	26	43	58	90	Cooling Station	365 San Pedro St, Goodsprings, NV 89019
Mt. Charleston Library	0	0	0	0	Cooling Station	75 Ski Chalet Pl, Mt Charleston, NV 89124

Extreme Heat Methodology

Daily temperature and precipitation data are retrieved from 19 climate models from the sixth Coupled Model Intercomparison Project (CMIP6) ensemble under the emissions scenario, SSP5-8.5. CMIP6 climate model data are the most current, scientifically robust, and internationally coordinated set of global climate model data available, utilized by the Intergovernmental Panel on Climate Change (IPCC) to provide rigorous scientific analysis and assessments of climate impacts, risks, and mitigation pathways. The emissions scenario SSP5-8.5 models a future with very high greenhouse gas emissions and minimal climate policy intervention, allowing scientists and policymakers to understand the potential consequences if current emissions trends continue unchecked.

CMIP6 climate model data are bilinearly interpolated to 2-km resolution and bias-adjusted using Daymet observation data and Inter-Sectoral Impact Model Intercomparison Project (ISIMIP) methodology.[17] Extreme heat metrics are calculated over four 21-year periods to account for natural variability in weather and capture meaningful long-term trends rather than short-term fluctuations in the climate system. The four time periods include: 2000–2020 (referred to as the present throughout the report), 2020–2040 (referred to as 2030), 2040–2060 (referred to as 2050), and 2070–2090 (referred to as 2080). After calculation, each extreme heat metric is bias-adjusted for the urban heat island effect by applying a scaling factor based on the 1991–2020 normal value from the National Weather Service Las Vegas office, and then aggregated to the census tract level.[18]

Extreme heat exposure among people experiencing homelessness is measured using population data collected by the HELP of Southern Nevada Homeless Response Teams over 12 months between January 2024 to April 2025. Their direct outreach identified 9,189 individuals experiencing homelessness—1,283 more than the 2024 Southern Nevada PIT Count, which reported 7,906 individuals. While the PIT Count is the official metric used by the United States Department of Housing and Urban Development, its publicly available reporting does not provide spatial data and therefore cannot be used to assess how heat exposure varies among people experiencing homelessness across the Las Vegas Valley. In contrast, the spatialized population data from the Homeless Response Teams (as shown in Figure 2) enables analysis of heat exposure in specific census tracts with high rates and densities of homelessness. These areas are defined as tracts with a rate or density of homelessness greater than the median among all tracts with at least one person experiencing homelessness. Notably, census tracts with high rates and densities of homelessness account for 97% of all individuals identified by the Homeless Response Teams (8,953 out of 9,189 individuals).

[17] Thornton et al. 2022 (https://doi.org/10.3334/ORNLDAAC/2129), Lange 2019 (https://doi.org/10.5194/gmd-12-3055-2019), Lange 2021 (https://zenodo.org/records/4686991)

[18] National Weather Service Las Vegas Climate Book (https://www.weather.gov/vef/lasvegas_climate_book)

Woodwell Climate Research Center

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Back cover: photo by Marc Watson

WOODWELL CLIMATE RESEARCH CENTER conducts science for solutions at the nexus of climate, people and nature. We partner with leaders and communities for just, meaningful impact to address the climate crisis. Our scientists helped to launch the United Nations Framework Convention on Climate Change in 1992, and in 2007, Woodwell scientists shared the Nobel Prize awarded to the Intergovernmental Panel on Climate Change. For 40 years, Woodwell has combined hands-on experience and policy impact to identify and support societal-scale solutions that can be put into immediate action. This includes working with municipalities on the frontlines of the climate crisis.

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