

CLIMATE CHANGE AND AFFORDABLE HOUSING

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What is Climate Change?

Climate Change, as [defined](https://www.un.org/en/climatechange/what-is-climate-change) (<https://www.un.org/en/climatechange/what-is-climate-change>) by the United Nations, is the long-term shift in temperature and weather patterns. While some of these changes are natural, in the past few centuries humans have been the main cause behind climate change due to the greenhouse gases generated by burning fossil fuels such as coal, oil, and natural gas. Greenhouse gas emissions have caused global warming at a faster rate than could be produced naturally and has led to the highest global temperatures in the past 100,000 years.

However, climate change is not limited to hotter temperatures; it can also lead to the intensification of disasters. Increased droughts, fires, melting polar ice, floods, and severe storms are all possible effects of climate change, depending on the region. According to the National Oceanic and Atmospheric Administration (NOAA), in 2024 alone there have been 24 confirmed disasters with [losses](https://www.ncei.noaa.gov/access/billions/) (<https://www.ncei.noaa.gov/access/billions/>) exceeding \$1 billion each. Since 1980, the US has been impacted by 400 disasters with overall damages/costs that reached or exceeded \$1 billion. Overall, the cost of these 400 disasters exceeds \$2.785 trillion.

How is Climate Change Impacting Disaster?

As disasters become more common and intense, the effort to mitigate potential harms and increase community resilience is an absolute necessity. People with the lowest incomes and from historically marginalized groups are more likely to be in the path of a disaster as government policies have led

to their homes being located in high-risk areas and policymakers have failed to invest in the infrastructure needed to prevent harm. As a result, these people's homes are more likely to be unsafe, in disrepair, and have much higher energy costs. Their homes are also more likely to be built to less stringent codes and have outdated systems and building materials, which could make them more susceptible to [disasters](https://tr.ee/D3qnhX) (<https://tr.ee/D3qnhX>) compared to newer properties. When homes are in this condition, it is much more difficult for households to take advantage of the few resiliency programs the government does offer to better prepare the community for future disasters.

Compounding these issues, federal funding for flood-mitigation projects are typically based on a cost-benefit analysis that emphasizes property values. This advantages more affluent, and often whiter, communities over harder-to-measure indirect costs, like job loss and displacement that impact communities of color at higher rates. As a result, Black, Latino, and indigenous households are less [likely](https://tr.ee/ZZxMXt) (<https://tr.ee/ZZxMXt>) to benefit from federally funded flood mitigation projects, even after controlling for flood risk. Once again, this leaves them more vulnerable to disasters. Additionally, many marginalized communities are already living with additional challenges before a disaster super-charges pre-existing inequalities.

Even when households with low incomes and from marginalized groups can access resiliency measures, their return on investment is minimal. Black and Hispanic homeowners who benefit from flood mitigation investments receive [smaller](https://tr.ee/XDCR7e) (<https://tr.ee/XDCR7e>) flood buyouts relative to the value of their property, which is driven by systemic racism in the application process, making it more challenging to relocate before the next disaster. Contributing to these disparities, renters and landlords have fewer resources and incentives to [invest](https://tr.ee/04L0Ea) (<https://tr.ee/04L0Ea>) in long-term mitigations to protect their properties.

The need to invest in and build more resilient communities is growing as disasters continue to increase in quantity and severity. In their 2024 Atlantic Hurricane Season Outlook on May 23, the National Oceanic and Atmospheric Administration (NOAA) predicted an “above average” year of hurricane activity. At the close of hurricane season 2024, NOAA [reported](https://tr.ee/5CQzPJ) that this above average prediction was correct, with “record-breaking” storms across the Atlantic basin. Hurricane Beryl was the earliest category-5 hurricane reported in the Atlantic, Hurricane Milton saw the highest rate of rapid intensification ever recorded, and Hurricane Helene was the deadliest hurricane to hit the continental United States since Hurricane Katrina in 2005.

Over the course of 2024, President Biden [issued](https://tr.ee/P6mhfj) 98 major disaster declarations, nearly 30 more than 2023. In addition to catastrophic hurricanes, floods, tornados, and wildfires have swept the country. Rising temperatures (and the growing acknowledgement of extreme heat as a disaster event) have increased the severity of disasters and vulnerability of communities to their effects.

What Does This Mean for Affordable Housing?

CLIMATE REFUGEES

Managed Retreat or Relocation. A growing number of communities are being forced to reckon with the impacts of extreme weather and rising seas. Communities facing existential safety risks from these threats will need to participate in managed retreat. [Managed retreat](https://tr.ee/mHEwOV), also called Managed Relocation, is the voluntary movement and transition of people and ecosystems away from vulnerable coastal areas. Managed retreat should be an absolute last resort when other mitigation strategies fail. If carried out in an equitable manner, this strategy can protect and even strengthen communities and conserve important local resources. If done without substantial and significant community participation and an emphasis on equity, we risk creating forced climate migration.

Minority and low-income communities are often disproportionately located in disinvested disaster-prone locations due to historic discrimination. Segregated cities often force Black and indigenous households into [environmentally insecure neighborhoods](https://tr.ee/ZNVWj8) with “hazardous land uses” or areas experiencing frequent flooding, as in Kingston, South Carolina. Indigenous Tribes in that area were forced to relocate to less desired areas that were more susceptible to disasters.

Many communities who may need to consider managed retreat in the future have already been affected by past relocation efforts. Such a drastic movement—even when voluntary—can be an emotionally taxing process, especially if a community has intergenerational trauma from forced displacement.

Such an endeavor is also costly. Relocation projects are 150-200% [more expensive](https://tr.ee/NPBEm) than buyout programs. A number of studies prove that participants in buyout programs often move to places with “[equal or higher climate risk](https://tr.ee/loANn3)” than their current home. Moving under that plan puts financial and emotional burdens on community members but does not mitigate against future damage and costs. Especially for low-income individuals, if relocation is necessary, people deserve to move to places unlikely to be affected by severe weather events, as these programs intend.

While they are not responsible for rising sea levels, indigenous communities often pay the price. For the last decade, indigenous communities from [Louisiana to Alaska](https://tr.ee/b65eMR) have been slowly losing their land due to coastal erosion and permafrost melt. At the same time, these Tribes often cannot qualify for many types of government aid nor have the capacity to directly administer mitigation funding. Despite these challenges, several relocation programs have been implemented in the past several years.

Buyouts. Voluntary buyouts are the [main](https://tr.ee/42WUG8) form of managed retreat in the U.S. and are becoming more prevalent due to the increasing number of disasters. Because the program targets homeowners, low-income renters are almost always left out of this conversation. A buyout occurs when a

government agency—typically a state or local entity—purchases private property, relocates, or demolishes any structures on it, and preserves the land as open space to restore and conserve natural floodplain functions. Both homeowners and landlords can apply for a flood buyout.

Although buyouts remain an important option in the storm recovery toolkit, the model’s exclusion of renters of any income makes it difficult to endorse. However, with a broadening of the program to include renter households, along with greater transparency and funding, this program could be a huge asset in getting low- and moderate-income families to safer areas and saving local governments valuable resources.

Buyout programs commonly do not have a requirement that landlords enrolling in a program consult their tenants when participating in and agreeing to take a buyout. This can displace renters already dealing with flooding impacts. Compounding this issue, there is no requirement for renters to receive any relocation assistance, financial counseling, or real estate services from the landlord or the government administering the buyout program. Without this assistance, renters can face even greater housing instability.

Additionally, building more affordable housing is not a component of the buyout program. We already have a housing stock supply shortage, especially when it comes to affordable housing for the lowest-income renters. In the aftermath of a large disaster, what little affordable housing supply that does exist can be damaged or eliminated via the buyout program. When rental properties are bought out and no additional affordable housing is constructed in safer locations, it is even more likely that rent will increase for what little housing supply is left, low-income renters will be displaced, and, in the worst cases, low-income renters will fall into homelessness.

Buyouts are funded by multiple different sources and chief among them is FEMA [grants](https://www.fema.gov/grants/mitigation) (<https://www.fema.gov/grants/mitigation>) including the Hazard Mitigation Grant Program (HMGP), the Flood Mitigation Assistance Program, the Building Resilient Infrastructure and Communities (BRIC) program, and the Pre-Disaster Mitigation (PDM) Program. In particular, the HMGP grant

provides the [majority](https://pmc.ncbi.nlm.nih.gov/articles/PMC6785245/) (<https://pmc.ncbi.nlm.nih.gov/articles/PMC6785245/>) of funding for buyouts in the U.S. (70% of all federal buyouts).

Sadly, these FEMA programs [favor](https://www.tandfonline.com/doi/full/10.1080/10511482.2021.1938172) (<https://www.tandfonline.com/doi/full/10.1080/10511482.2021.1938172>) “single-family homeowners, nuclear households with a single head of household, and those with a clear mortgage, ownership documentation, U.S. citizenship, and the ability to engage in a lengthy, burdensome process.” Thus, once again, leaving renters with the lowest incomes [behind](https://www.tandfonline.com/doi/full/10.1080/17477891.2020.1804819) (<https://www.tandfonline.com/doi/full/10.1080/17477891.2020.1804819>).

CLIMATE GENTRIFICATION

As stated, managed retreat and buyouts can also be used to wipe low-income and marginalized communities off the map. Whereas white, wealthy communities are seen as too valuable to buy out and relocate, disasters can present the perfect opportunity to further marginalize low-income and minority communities.

When disaster survivors can’t access funds to rebuild and don’t have access to a just and equitable managed retreat process, they stay. As a result, people who cannot afford to pay tens of thousands of dollars to fund their own recovery will either be forced to leave, and risk housing instability, or stay without rebuilding and mitigating. As discussed previously, a large amount of low-income housing units are in disaster-prone areas. Thus, either option, staying or leaving, leaves low-income households vulnerable to future disasters.

Meanwhile, those with the resources to pay for their recovery out of pocket will mitigate and stay regardless, creating a sharp economic divide in the options different families have available to them for stability and safety.

This bias is built into FEMA grants that fund buyouts. In all FEMA grant programs, homes must undergo a cost benefit analysis, creating significant burdens for lower-income households whose homes typically have a lower value.

Any managed retreat plans and buyout processes must also work to create more affordable housing options

in destination communities so that these programs can work as intended to get low-income families out of harm's way and create resilient communities.

DISASTER DAMAGE

Weatherization. As a result of historic disinvestment, low-income households are more likely to be unsafe, in disrepair, have much higher energy costs, and be vulnerable to disasters. The average U.S. household spends about 2.3% of their annual income on energy bills compared to the 8.1% low- and moderate-income households spend. This means that people with low incomes have a much higher energy burden than the average household. Energy bills above 6% of household income are considered a high energy burden, placing these families well above the threshold. Approximately [51% of households](https://docs.nrel.gov/docs/fy24osti/88519.pdf) (<https://docs.nrel.gov/docs/fy24osti/88519.pdf>) with an annual income of \$25,000 or less needed to cut back on basic necessities, such as food or medicine, to pay an energy bill at least once in the prior year.

Home weatherization, the process of making a home more energy efficient with the goal of reducing energy bills and creating safe and healthy homes for families, could change this. Home [weatherization](https://tr.ee/mCdNlb) (<https://tr.ee/mCdNlb>) includes roof repairs, mold remediation, heating and cooling system repairs and upgrades, and more.

When houses are in poor condition, households cannot take advantage of mitigation opportunities that would lower their energy costs and improve resiliency overall. Under current Weatherization Assistance Program (WAP) stipulations, households cannot receive weatherization assistance if their home has significant repair needs. This means many low-income applicants are [deferred](https://tr.ee/KY2Hfz) (<https://tr.ee/KY2Hfz>) because weatherization programs believe that energy retrofits would be ineffective without infrastructure repair.

Households often apply to WAP programs because they cannot afford home improvements on their own. Furthermore, damages that result in WAP deferrals include structural issues, water leaks, and mold—all issues that should be included in weatherization programs. While fixing all of the problems at once

seems like an obvious solution, many current weatherization programs fail to do this.

Current pre-weatherization programs are administered on a state-by-state basis. While some states have effective solutions, often funded through [LIHEAP or local providers](https://tr.ee/ytGRjR) (<https://tr.ee/ytGRjR>), aid opportunities vary across the country.

If low-income individuals were able to receive weatherization assistance, they would receive a wide array of benefits. Not only can [green buildings](https://www.southface.org/the-impact-of-green-affordable-housing/) (<https://www.southface.org/the-impact-of-green-affordable-housing/>) lower utility costs by more than 14%, but improved energy systems can also improve residents' [physical health](https://tr.ee/FJ5fxk) (<https://tr.ee/FJ5fxk>). Children living in homes with gas stoves and other natural gas utilities are more likely to experience asthma. Switching these appliances not only decreases the risk of asthma, but also means the family does not have to pay the medical costs associated with the disease.

Areas with high risk of environmental hazards often contain the most affordable housing options of a region. As extreme weather worsens, these areas will continue to see worse impacts from disasters and hazardous events. Home upgrades, including [resilience measures](https://tr.ee/U9o9n3) (<https://tr.ee/U9o9n3>) such as heavy-duty roofs and property elevation in floodplains, improve the ability of a house to weather a storm. Energy-efficient homes would not only save households money in the short term through reduced energy bills, but also in the long term through mitigation and fewer damage repairs from extreme weather events.

Renewable Energy. Renewable energy is energy created from natural and infinitely replenishable sources like sun, water, and wind. Used to generate electricity, heat and cool houses and water, and for transportation, renewable energy [reduces](https://www.energy.gov/cmei/renewable-energy-pillar) (<https://www.energy.gov/cmei/renewable-energy-pillar>) carbon emissions and air pollution. While adaptation projects are a great defense to extreme weather and sea level rise, we need to start playing offense. Renewable energy is that offense.

Unfortunately, renewable energy hasn't been adequately invested in to benefit our communities. Big corporations and the rich spread misinformation and

purposefully fight investments in renewable energy to preserve their money and power while sacrificing low- and moderate-income communities. Conversely, investing in renewable energy gives us a unique opportunity to reimagine the way we live and how our communities thrive.

Renters with the lowest incomes and those from the most marginalized groups disproportionately feel the effects of the U.S.'s lack of investment in renewable energy. Costly energy bills can result in families being forced to trade off basic necessities or put themselves in unsafe situations. A little [over one-third](https://www.eia.gov/consumption/residential/reports/2015/energybills/) of all U.S. households have faced a challenge in paying energy bills or sustaining adequate heating and cooling in their home.

Additionally, apartments [consume](https://www.aceee.org/energy-equity-for-renters) 15% more energy per square foot than owner-occupied homes. Low-income households represent a [disproportionate percentage](https://www.osti.gov/servlets/purl/10119240) of renter-occupied housing units—up to 74% in some regions. Rental units often do not utilize energy efficiency strategies, as the landlord would need to pay (or oversee) implementation. While programs can incentivize homeowners into energy efficiency, renters are often unable to make such decisions themselves. Many renewable energy programs also require a steep initial payment. While this investment eventually pays itself off through future savings, low-income households who struggle to pay current monthly bills cannot afford this initial cost.

Environmental Justice. [Environmental racism](https://www.nrdc.org/stories/what-environmental-racism) is the pollution and intentional location of waste facilities predominantly in communities of color. More than half (56%) of communities of color are [located](https://tr.ee/qtSYQm) less than two miles from a carcinogenic-producing waste site. These neighborhoods face large financial burdens as they are forced to pay the price of pollution.

Within regions that see increased risk of cancer due to pollutants, disadvantaged and racial minority communities face [disproportionate](https://pmc.ncbi.nlm.nih.gov/articles/PMC3546767/) risk.

[Cancer risk](https://tr.ee/YEbQko) in predominantly Black communities can reach 105 cases per million people, whereas predominantly white areas average 68 cases per million. Native American communities are disproportionately exposed to uranium mining, which can cause adverse health effects. Residents who could not afford to move away often cannot afford expensive medical treatments, leading to higher mortality rates.

Further, more than 9,000 federally subsidized housing properties are located [within a mile](https://tr.ee/IVOqMq) of Superfund sites. These properties, which can contain hundreds of units and house thousands of low-income individuals, are spread across 49 states and territories. The EPA acknowledges that Superfund sites likely produce adverse health effects, yet neither the EPA nor HUD informs residents when their federal housing units are in proximity to these sites, placing low-income households at risk.

The EPA Superfund program is intended to clean up the hazardous waste sites. However, this process is often quite slow. When the program was introduced, the EPA [estimated](https://www.gao.gov/assets/t-rced-98-74.pdf) sites would be fixed within five years of being identified. Since then, the timeline has expanded to eight years, which is still often an underestimation. The process has been slowed further by [declining](https://tr.ee/w0h9my) funding and opposition from chemical companies.

The petrochemical industry tends to focus their [expansion efforts](https://earthjustice.org/feature/cancer-alley-rises-up) in low-income communities, especially in Appalachia and along the Gulf Coast. While these projects often promise job opportunities to residents, the opportunities tend to be limited, and industry facilities result in significant local health effects from pollution.

Food sovereignty is another aspect of Environmental Justice that disproportionately affects marginalized and often low-income communities. Hawai'i, Puerto Rico, and other US territories get up to 90% of their food imported. However, disasters and major global events can [disrupt](https://tr.ee/6qtbjw) the supply of food to these locations. This lack of food access can not only

pose health risks, but also lead to significant increases in prices, which can pose a large burden to low-income households. Furthermore, many of these areas have the resources and space to become [self-sustaining \(https://tr.ee/qhV9Yc\)](https://tr.ee/qhV9Yc) and produce their own food (as they did before Western influence).

EXTREME HEAT

According to FEMA, extreme heat is a long period (two to three days) of high heat and humidity with temperatures above 90 degrees. Unhoused and housing insecure people are [extremely vulnerable to heat events \(https://tr.ee/IJWM6y\)](https://tr.ee/IJWM6y). If a person does not have reliable shelter, they have no way to be shielded from the elements or keep themselves cool as temperatures rise. Cooling centers, shelters, and supply donations are often unable to keep up as the [number of days over 105°F looks to quadruple \(https://tr.ee/KbNLLx\)](https://tr.ee/KbNLLx) by midcentury.

Historically redlined communities report temperatures up to [13°F higher \(https://tr.ee/NE5oll\)](https://tr.ee/NE5oll) than other neighborhoods in their cities. These neighborhoods have fewer greenspaces with trees and shade cover,

and more heat retaining surfaces like asphalt. This phenomenon is called the micro-urban heat island effect. These neighborhoods experience warmer temperatures than other areas within the same city, and therefore are less desirable to live in. This means that many affordable housing options are located in micro-urban heat islands. Many of the residents of these areas have [low incomes and are people of color \(https://www.epa.gov/heat-islands/people-and-heat-islands\)](https://www.epa.gov/heat-islands/people-and-heat-islands) and face a [disproportionate energy burden \(https://tr.ee/VydZ3T\)](https://tr.ee/VydZ3T), which is likely to grow as extreme heat events will require more cooling mechanisms.

Low- and moderate-income families are [three times as likely \(https://www.osti.gov/servlets/purl/10119240\)](https://www.osti.gov/servlets/purl/10119240) to live in mobile homes as other households. Mobile homes tend to heat up quickly, and therefore require more energy—and higher energy bills—to stay cool.

In rural communities, affordable housing often uses outdated and inefficient cooling technologies that rely on expensive and higher polluting fuels (<https://tr.ee/Z7UbTO>). As cooling systems become increasingly necessary and utilized, price and pollution will increase, harming households' finances and health.

Many links and resources may have been changed or removed from federal websites before this guide was finalized. As a response, this guide provides full URLs to support your web-based research. Please utilize a web archival tool like <https://archive.org> to view links that may not currently be working and research any recent changes and funding cuts to ensure that you have the most current information.

Please contact outreach@nlihc.org with any questions.