

Housing Affordability 101

Background and Overview

The Building Electrification Institute (BEI) supports leading cities across the country on their equitable building electrification programs, policies, and strategies. BEI helps city staff work across multiple sectors to accelerate equitable building electrification, including community development, public health, resiliency, housing, workforce, labor, and other sectors. BEI brings a strong commitment to equity to ensure that the transition away from fossil fuels lifts up all communities and helps mitigate harm from past policies. For more information on BEI and our partner cities, visit www.beicities.org.

Throughout BEI's direct work with cities and their partners, housing affordability concerns and rising unaffordability in cities repeatedly come up as major obstacles to enabling an equitable transition to building electrification. Because city staff who are focused on climate and sustainability issues may not always have a strong background or expertise in housing policy, BEI developed this resource to help build a foundational understanding of housing affordability issues. The goal is to help city staff successfully engage with local and regional partners on more comprehensive solutions that will achieve their dual goals of enabling building electrification and improving housing affordability.

Defining Affordable Housing

While there is no single definition of affordable housing, based on BEI's research and understanding of the literature, BEI defines affordable housing as such:

***Affordable housing** means high-quality, healthy homes in which all-in costs fit within a household's budget and do not force residents to make choices between other critical needs (such as food, utilities, medicine, childcare, etc.).*

Why it Matters: The key measurement of housing affordability should be based on residents' ability to pay for good quality housing (outcome-focused), rather than the specific policies or restrictions in place (process or policy-focused). BEI's definition intentionally takes an expansive view to define affordable housing based on whether residents can afford to live in their housing and based on the quality of housing, rather than limiting the definition only to housing that is subsidized or regulated by local, state, or federal policies.

However, there are many definitions of "affordable housing" that are used by governments, advocates, nonprofits, and service organizations. One particularly common way to define affordable housing is based on whether all-in housing costs (whether officially regulated or not) fall below a certain percentage of the residents' income. Typically, this is divided into:

- **"Housing Cost Burden,"** which is typically defined as households **paying more than 30% of their income** on rental and housing costs.
- **"Extreme Housing Cost Burden,"** which is typically defined as households **paying more than 50% of income** on rental and housing costs.

There are pros and cons of using "housing cost burden" as part of the definition of affordable housing.

- **Pro:** Governments and advocates need a standard and measurable definition to be able to track and make progress toward affordable housing goals.

- **Con:** This approach to is a blunt instrument that underestimates the disproportionate impacts on low-income people. For many low-income families, spending 30% of income on housing does not leave enough left over for other vital necessities.
 - For example, for a family making \$30,000 per year, spending one-third of income on housing would leave \$21,000 for remaining essentials. Meanwhile, for a family making \$100,000 per year, the same proportion would leave \$70,000 for these essentials.

To help alleviate the challenges of the current definition of housing cost burden, some housing advocates are advocating to use lower percentages on income spent on housing as the cutoffs for lower-income individuals and families.

Regulated Affordable Housing (or “Deed-restricted Affordable Housing”)

Within the definition of “affordable housing,” BEI further breaks the housing stock down into “regulated affordable housing” and “unregulated affordable housing.”

Regulated affordable housing is housing that is regulated by a government program to restrict rents and/or restrict allowable resident incomes to maintain affordability.

For cities in the United States, regulated affordable housing can include:

- **Subsidized affordable housing:** Housing that receives federal, state, and/or local tax credits, grants, and/or loans in exchange for restrictions on rents. Often, these programs also include restrictions on the allowable income levels for residents living in this housing to ensure it is serving low- and moderate-income populations.
- **Rental assistance housing:** Housing that receives funding for rent payment assistance, which is typically provided directly to tenants in the form of housing cost vouchers that they can use to pay for a portion of their housing costs (at the federal level, this is known as Section 8 housing).
- **Rent-controlled housing:*** Housing that is subject to restrictions on how much rents can be increased, regardless of subsidy. This may be applied to all buildings of a certain age and/or within a designated jurisdiction. This may or may not include restrictions on the allowable income levels for residents of this housing and/or may be tied to specific tenants. In some cases, limits are placed on certain units within upzoned areas, which is also known as “inclusionary housing.”
- **Public housing:** Housing that is publicly owned and operated (typically by local governments) for income-qualified residents.

**A note on rent control: There is no single way to define “regulated affordable housing,” and some might disagree with including rent-controlled buildings in this category. With this definition BEI is also not counting recent “rent control” laws that create protections against rent gouging, such as California’s AB 1482 (passed in 2019).¹ These laws are meant to control dramatic rent spikes and are generally not stringent enough to make a meaningful impact on substantially improving housing affordability.*

The first three types of regulated affordable housing listed above (subsidized housing, rental assistance housing, and rent-controlled housing) could be owned by either private or non-profit building owners. Public housing is specifically owned by a governmental entity, and typically by local governments. There are many mission-driven non-profit housing owners and developers of regulated affordable housing in the U.S., who are often interested in sustainability and health outcomes as part of their mission.

¹ California’s AB 1482 prevents most California landlords from increasing rents by more than 5% annually, plus inflation—which means that rent increases of anywhere between 7-15% annually could be possible and allowable in today’s economy.

Unregulated Affordable Housing (or “Naturally-Occurring Affordable Housing”)

While the majority of policy discussions about affordable housing tend to focus on regulated affordable housing, the vast majority of affordable housing is actually what BEI defines as “unregulated affordable housing.”

Unregulated affordable housing is housing that is currently priced below the local or regional average market rates and/or is affordable for its existing residents, but is not subject to regulations restricting rents or incomes.

Unregulated affordable housing:

- **May be located in lower-income areas**, often those that were historically redlined,² and have access to fewer social services, such as high-quality public schools or community spaces. This can create and exacerbate existing inequities for residents who live in these areas.
- **May also be located in higher-income or gentrifying areas** and may offer low-quality housing and/or be undervalued, which poses a potential threat to continued affordability as wealthier residents who can afford higher rents move in and begin to displace lower-income residents.
- **Generally makes up a substantial portion of a city’s housing stock**, although there is a lack of good data on these buildings. A recent study of Los Angeles’ multifamily housing stock, for example, found that at least 50% of units in multifamily buildings (residential buildings with five or more units) could be considered “unsubsidized lower cost” housing, while subsidized affordable housing units made up just 11% of total units in LA’s multifamily buildings.³

Unregulated affordable housing is at particular risk for housing and rental cost increases. Without regulation to control the cost of this housing, rents can be changed at any time and often without warning. In gentrifying areas (areas of the city where housing costs are rising more quickly than other areas due to increased demand from residents), unregulated affordable units are often the first to be targeted for sale to new owners or upgraded with amenities that are meant to attract new, often wealthier residents. Unregulated affordable housing also usually lacks strong restrictions and enforcement for housing quality and tenant protection issues, which can lead to poor quality housing that may be unsafe and not up to code. Some landlords may even harass or unfairly evict their tenants in unregulated affordable housing, which may cause tenants to be fearful of calling their landlords to fix housing quality issues or other concerns.

Overall, addressing housing affordability challenges in cities must include developing solutions for both regulated and unregulated affordable housing, and unregulated affordable housing is at particular risk when it comes to any new policies that will require upgrades to buildings.

The Current Housing Affordability Crisis

Housing affordability has become a crisis in many parts of the United States, with unaffordability on the rise in nearly all cities and metro areas. This is the result of many factors, including the lack of development of new housing to keep pace with demand as well as the stagnation of wages of the average U.S. worker.

Overall, at least 40% of renters are housing cost-burdened in most metro areas across the country. In some cities, this figure can be as high as 60-70%.

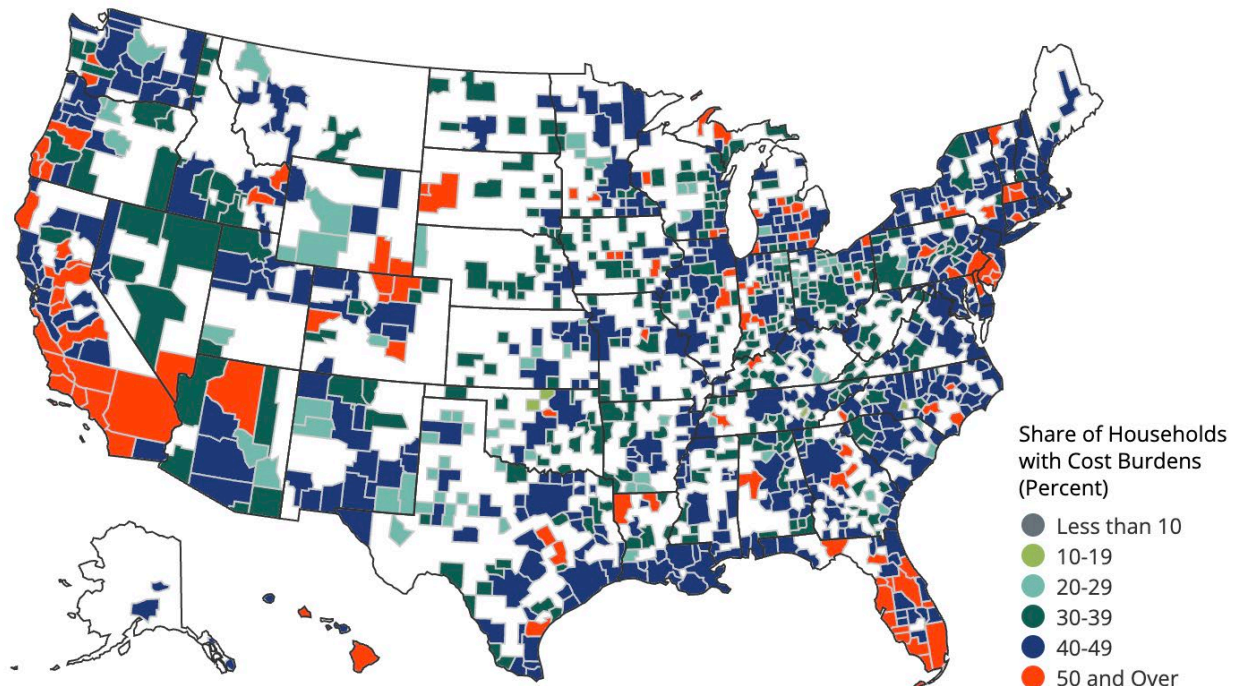
² See page 5-6 for more detailed information on the history of redlining in the United States.

³ Energy Efficiency for All, *Advancing a Green New Deal for Los Angeles Renters*.

<https://www.energyefficiencyforall.org/resources/advancing-a-green-new-deal-for-los-angeles-renters/>

Based on the map below, areas with the highest rental housing cost burdens are concentrated in coastal and urban areas, although few areas of the U.S. remain truly affordable. Between 2011-2019, every state in the United States lost low-rent housing stock (defined as units with rents under \$600, in 2019 dollars), with some states losing as much as 40% of their affordable rental housing stock in this time period (see map on page 5).

Share of Renter Households with Housing Cost Burden, 2021 (defined as paying 30% or more of income on rent, utilities, and other housing-related costs)



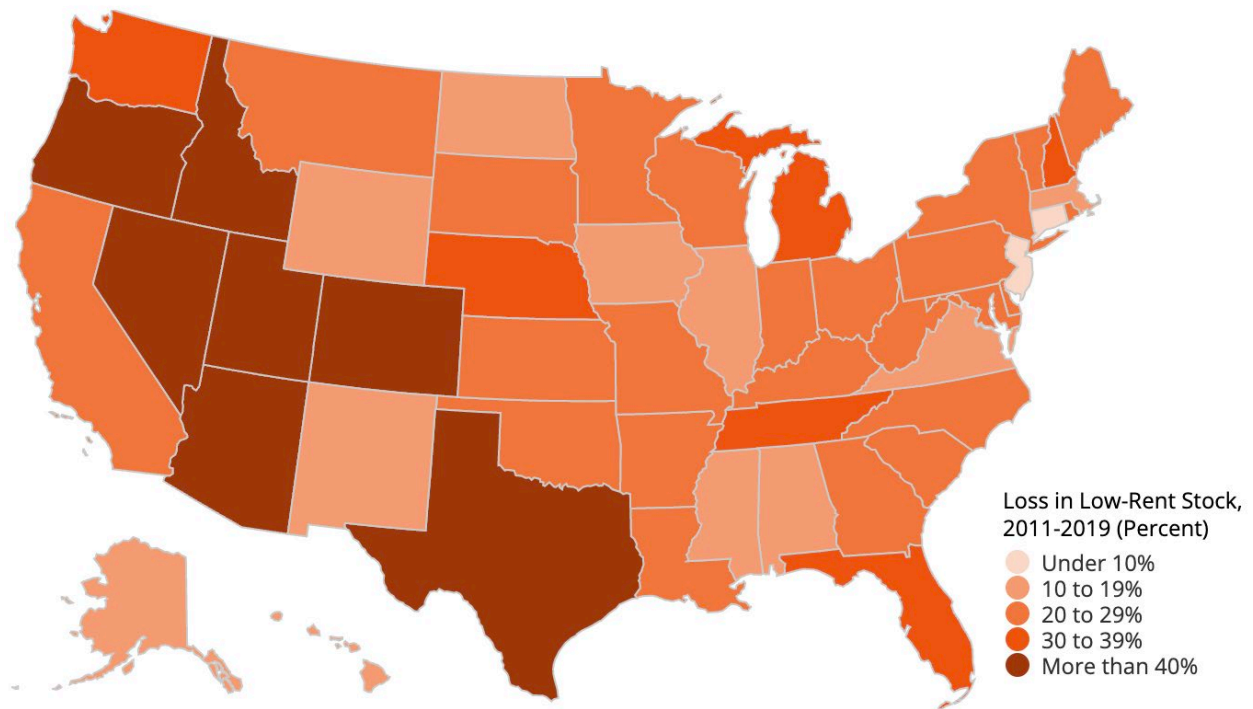
Map Source: Harvard University, Joint Center for Housing Studies⁴

The impacts of rising housing unaffordability are magnified for low-income communities and communities of color. These communities tend to have large shares of unregulated affordable housing units, which are now facing rising market pressures and accelerating housing costs that are displacing tens of thousands of individuals.

This trend is not by accident, as areas now facing substantial upward pressure on rents are often the same areas that were historically redlined and suffered from years of disinvestment. Homes in these neighborhoods were intentionally undervalued, located near areas of environmental pollution, and cut off from good quality services. However, as new housing supply has not kept pace with demand in recent years, higher income individuals in search of lower housing costs have begun moving into these historically redlined neighborhoods and are able to pay substantially more than existing tenants, putting pressure on rents and home prices. More information about the process of gentrification and displacement is included on pages 6-7.

⁴ Joint Center for Housing Studies at Harvard University. <https://www.jchs.harvard.edu/son-2021-cost-burdens-map>

Loss of Low-Rent Housing Stock, 2011-2019 (defined as units with rents under \$600, in 2019 dollars)



Map Source: Harvard University, Joint Center for Housing Studies⁵

A Brief History of Redlining

To understand the current state of housing in the U.S., it is critical to understand the history of redlining. Redlining is a practice in which federal lending agencies assigned neighborhoods in major cities a race-based classification system to encourage investment in predominantly white communities, and to discourage or prohibit investment in communities of color. This system was intentionally used to segregate communities of color from white communities by prohibiting government-subsidized home loans to people of color, and therefore homeownership, in areas with mostly white residents. This forced residents of color to move into disinvested areas, often located near industrial sites, power plants, and other sources of pollution.⁶

For example, the map below shows redlining in San José. In the northeast D10 section that is coded red, the description records state that this is where the largest Latinx community lived, and explicitly remarks, “From a racial standpoint, this area is extremely undesirable.” Additional notes about the “detrimental influences” of this redlined section include that the area is subject to flooding. However, in the southern B7 section coded green, the description states “favorable influences” that include: “Homogeneous development. Zoned single family residential. No social or racial hazards. Sewers in process of installation.”⁷

⁵ Joint Center for Housing Studies at Harvard University. <https://www.jchs.harvard.edu/loss-low-rent-units>

⁶ CalEPA. “Pollution and Prejudice: Redlining and Environmental Injustice in California.” <https://storymaps.arcgis.com/stories/f167b251809c43778a2f9f040f43d2f5>.

⁷ Nelson, et al., “Mapping Inequality: Redlining in New Deal America.” Hosted by the University of Richmond. <https://dsl.richmond.edu/panorama/redlining/#loc=5/39.1/-94.58>

Redlining Map in San José, 1940

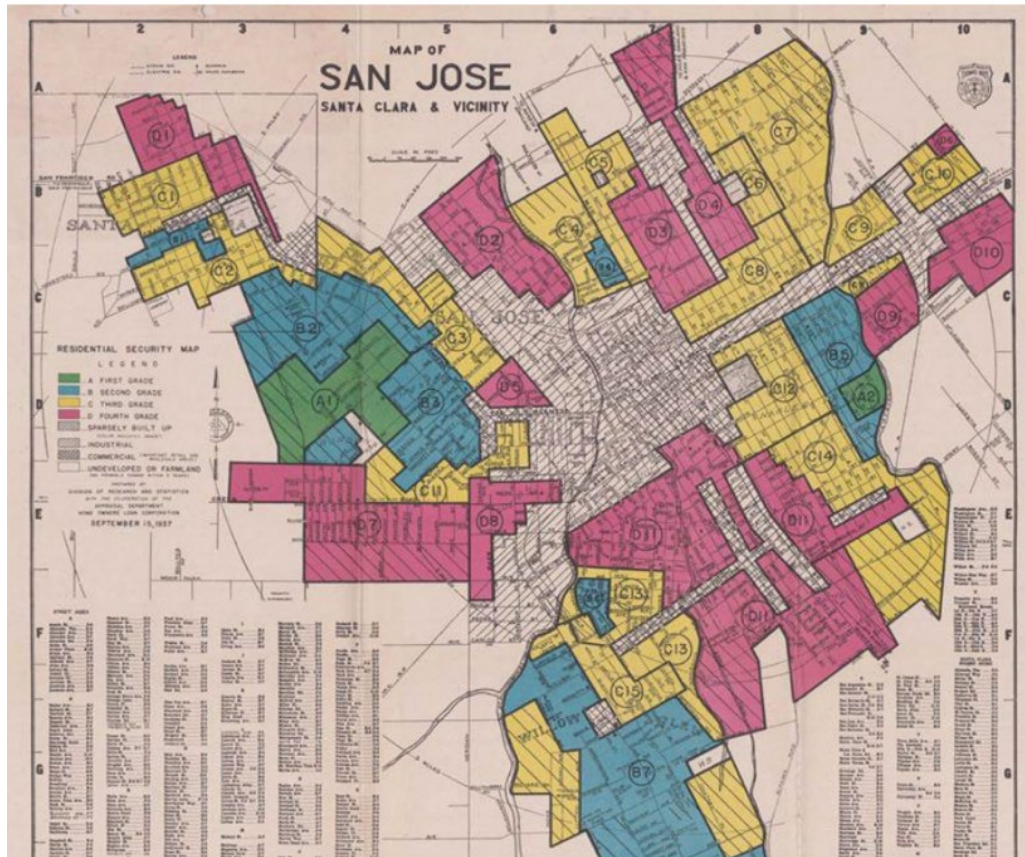


Image Source: "Mapping Inequality: Redlining in New Deal America." (See above).

The federal government developed this rating system in the 1930s and used it to inform the provision of government-subsidized home loans through the 1960s. Beginning in the 1950s and lasting well into the 1990s, there was a compounding trend of "suburban white flight" as white people moved out of cities and into new, more racially homogenous suburbs. Until 1968, these new suburban developments could explicitly bar people of color from moving in, and this trend drained cities of their tax base and further starved historically redlined areas of needed resources. The use of race-based classifications in housing was outlawed with the passage of the federal Fair Housing Act of 1968, but the federal government's risk classification maps continued to inform investments by private lenders well into the 1980s. The impact of redlining is inescapable today, as the historically redlined neighborhoods still highly correlate with social inequality, including disparities in income, health outcomes, property values, and pollution burden.⁸

Gentrification and Displacement

Today, new demographic trends combined with rising housing costs are exacerbating historical inequities by causing widespread gentrification and displacement, which are disproportionately impacting low-income communities of color. While racist policies locked people of color out of the housing market for decades and intentionally concentrated these communities in disinvested areas, in recent years, cities

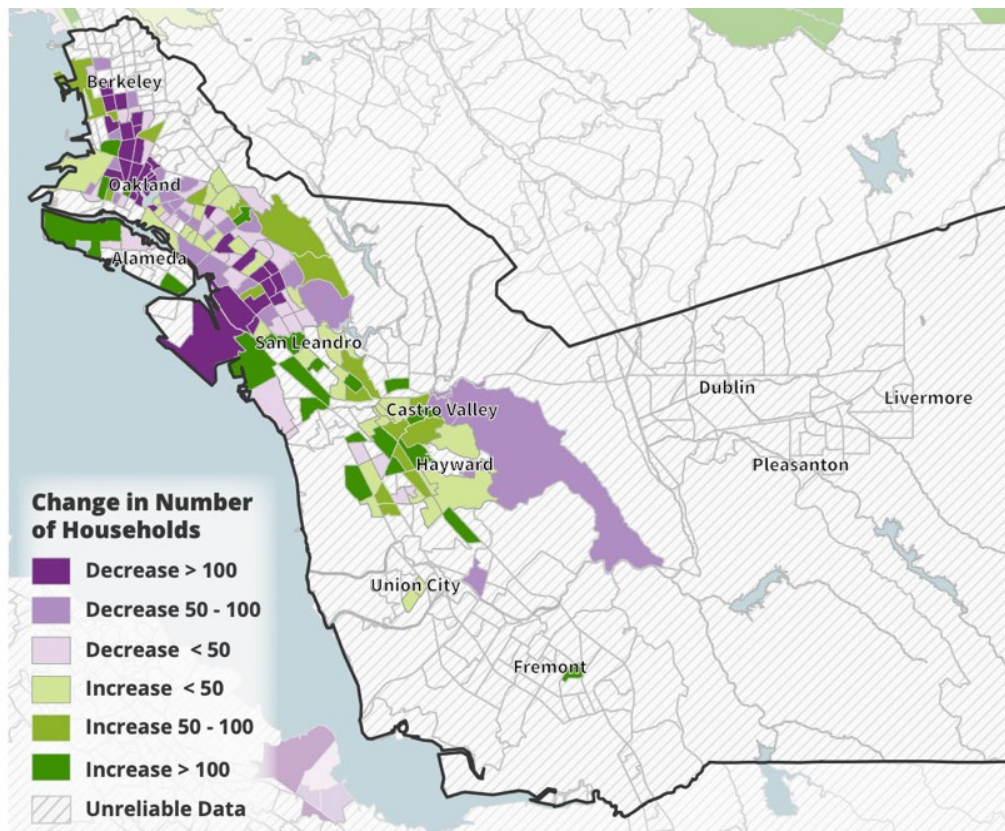
⁸ CalEPA. "Pollution and Prejudice: Redlining and Environmental Injustice in California." <https://storymaps.arcgis.com/stories/f167b251809c43778a2f9f040f43d2f5>.

have experienced major population growth that have brought an influx of wealthier and often predominantly white people back into cities. Over the last decade, most cities have not built enough housing to accommodate these new residents, and this is leading to substantial market pressure and a dramatic rise in housing costs, particularly in lower-cost areas—which are often the very same areas that people of color were forced to live in as a result of redlining.

This process is often called “gentrification,” which refers to the influx of new, higher income residents into lower-income communities who can afford to pay higher housing costs. These residents may bring new economic growth and development to these areas, but the benefits are not always equitably distributed to existing local businesses, who may not be able to compete with larger and more wealthy business owners or corporate retailers. Because many cities lack protections for existing tenants and residents of these neighborhoods, gentrification is leading to widespread displacement of residents across cities.

For example, in Alameda County, located in San Francisco’s East Bay, at least 60,000 African Americans were displaced between 2000-2015. The City of Berkeley estimates that South and West Berkeley lost 40% of its African American population in roughly the same time period.⁹ Across the San Francisco Bay Area, the largest proportional decreases in the proportion of Black residents occurred in the cities of Oakland, Richmond, East Palo Alto, and Berkeley.

Decrease in Low-income African American Households, Alameda County, 2000-2015 (defined as less than 80% of area median income, or AMI)



Map Source: Urban Displacement Project¹⁰

⁹ City of Berkeley, *Resilience for All: Applying an Equity Lens to Berkeley’s Seismic Retrofit Rebate Program*.

¹⁰ Urban Displacement Project, “Rising Housing Costs and Re-segregation in Alameda County.”

https://www.urbandisplacement.org/wp-content/uploads/2021/08/alameda_final.pdf

The displacement of low-income communities and communities of color causes many intersecting and compounding social and environmental problems. These impacts include:

- **Public Health Ramifications:** Displacement may cause disruptions to availability and access to health care; direct health issues due to relocation to poor quality housing or overcrowded conditions; as well as mental health issues due to stress and social dislocation.
- **Financial Distress:** Displacement also causes financial distress as individuals and families must pay for relocation costs, as well as increased housing costs and cost burdens if new affordable housing options cannot be secured.
- **Fragmentation of Social Stability and Community:** Displacement can also cause the loss of longstanding community support systems, community services, and institutions that many people and families rely on. It also causes disruption in education and childhood development as children are forced to switch schools. Moreover, as these communities disperse, they may lose political and voting power that inhibits them from advocating for political solutions.
- **Climate and Environmental Impacts:** In addition to the social and political implications described above, displacement can also lead to climate and environmental impacts as former residents are forced to take longer commutes to work, increasing vehicle miles traveled, which is a primary source of greenhouse gas emissions. Residents may also look for lower cost housing in suburban or exurban areas that are in greater danger of environmental risks, such as wildfires.

Health and Safety in Affordable Housing

For the dwindling supply of housing that is affordable for residents, unfortunately in many cases health and safety conditions of the housing are tradeoffs for affordability. Affordable housing often has higher instances of health and safety violations and maintenance deficiencies (see chart below). This is in part because owners of affordable housing may lack the necessary capital to invest in needed upgrades and maintenance needs, forcing deferred maintenance and a reliance on outdated systems.

Prevalence of 3+ Maintenance Deficiencies by Housing Type in New York City



Chart Source: 2017 NYC Housing Vacancy Survey, via Where we Live NYC: Fair Housing Together¹¹

¹¹ New York City, *Where we Live NYC: Fair Housing Together*. <https://wherewelive.cityofnewyork.us/the-plan/read-the-plan/>

This trend plays out when it comes to access to clean energy technologies. The current structure of typical energy efficiency incentive programs requires building or homeowners to make investments upfront and receive a rebate later, which disadvantages low-income building or homeowners and outright prevents the participation of many renters. As a result, clean energy programs tend to benefit wealthy homeowners at the expense of lower income residents. This results in a wealth transfer where public investments in clean energy that are paid by all are flowing primarily to those who are already most able to afford these technologies.¹²

From a public health standpoint, low-income and affordable housing often stands to gain most from the health and safety improvements that will result from the transition to clean energy. For example, gas appliances are linked to a 42% increased likelihood of childhood asthma, and the impact is greatest in smaller homes.^{13, 14} On top of this, low-income housing is often located in areas with the greatest environmental and outdoor air quality burdens.¹⁵ In some studies, energy retrofits have shown a 50% reduction in asthma-related outcomes in children, but incentives for these upgrades are still primarily going toward higher income homes.¹⁶

The Potential Impacts of Building Upgrades on Affordable Housing

Fixing housing deficiencies, improving energy efficiency, or investing in building electrification all come with a cost – and this may be the biggest risk of all for affordable housing.

Building upgrades can improve housing quality and health outcomes, however they can also lead to increased housing or energy costs, which could further exacerbate housing unaffordability issues and displace low-income families and individuals.

The costs of building upgrades must be borne by someone. In a typical building owner’s business model, the owner passes on any required upgrade costs to renters in the form of rent increases. Low-income homeowners or building owners who do not have access to sufficient capital for upgrades may choose to defer upgrades or maintenance rather than raise rents, but this may simply exacerbate potential health and safety problems in the building.

While the costs of minor upgrades may be low enough to be covered by existing capital reserves or very low pass-through costs to renters, achieving deep energy reductions and decarbonization will require potentially substantial upgrade costs. Based on BEI’s analysis, these costs pose the largest potential threat to housing affordability from the transition to building electrification.

For example, an analysis of retrofitting a typical multifamily building in a large city in the Northeast to all-electric equipment found that depending on how the building owner chooses to recoup their costs, the result could be a rent increase of anywhere between \$50-\$250 per unit per month—certainly enough to displace low-income families, especially for those who are already housing cost-burdened (see table below).

¹² Los Angeles Times, “California’s clean energy programs are mainly benefiting the rich, study finds.” <https://www.latimes.com/environment/newsletter/2020-06-25/will-the-rich-continue-to-be-the-main-beneficiaries-of-californias-clean-energy-future-boiling-point>

¹³ Lin, et. al. “Meta-analysis of the effects of indoor nitrogen dioxide and gas cooking on asthma and wheeze in children.” International Journal of Epidemiology. 2013. <https://academic.oup.com/ije/article/42/6/1724/737113?login=false>

¹⁴ Berkeley Lab, *Pollution in the Home: Kitchens Can Produce Hazardous Levels of Indoor Pollutants*. 2013. <https://ehp.niehs.nih.gov/doi/10.1289/ehp.1306673>.

¹⁵ Frosch, et. al. *The Climate Gap*. 2009. <https://dornsife.usc.edu/pere/climategap/>

¹⁶ Berdick, Chris. “The Fixer Uppers: A Partnership between Housing Authorities, Residents, and Researchers.” Harvard Public Health Magazine. https://www.hsph.harvard.edu/magazine/magazine_article/the-fixer-uppers/.

Example Costs: Retrofit to All-electric Building over 30 years (Northeast Climate)

	Total Installed Cost	Lifetime Bill Savings	Potential Rent Increase
Multifamily Building, High Energy User	\$4.8M	\$1.4M	\$50-\$250 per unit per month
Multifamily Building, Low Energy User	\$1.6M	No savings	

Table Source: Internal BEI analysis

Energy bill impacts from building upgrades are also important to consider. Protecting housing affordability will require ensuring that energy bills do not increase for low-income families, and ideally bills decrease as a result of the upgrades. In BEI’s research and analysis, this is generally achievable in all climates, particularly when weatherization or envelope upgrades are included to reduce energy loads and, depending on current state metering regulations, with the inclusion of on-site solar photovoltaic (PV) systems. However, including additional upgrades to ensure energy bill savings will increase the upfront costs of the retrofit. Updating electric and gas rate designs to be more supportive of building electrification can also help ensure energy bill savings.

In addition to the risks of capital costs and energy bill increases, there are other housing issues to consider that could be triggered by building upgrades. These may include:

- A building owner could pass on new utility costs (such as utility costs for cooling) or create new metering configurations for systems installed in the building that increase costs for tenants.
- A building owner may temporarily or permanently displace tenants while upgrades are under construction, and this could lead to unfair evictions.
- By simply improving the building conditions or amenities (such as adding cooling through building electrification), a building owner may be able to capitalize on new market demand for the building and to ask for higher rents.

Aligning Solutions with Affordable Housing Advocates

Housing advocates have been working for years on solutions to the housing affordability crisis and have developed frameworks that are useful for aligning policies that address both building electrification and housing affordability. The “Three Ps” of affordable housing are often referenced by these advocates to articulate what will be needed to holistically solve the current housing, gentrification, and displacement crisis.¹⁷ Aligning building electrification policy with the Three Ps of affordable housing can help ensure we achieve the dual goals of addressing climate change and ensuring greater housing affordability.

The Three Ps of Affordable Housing:

Solving housing affordability requires deploying all three strategies, listed in order of priority to help stabilize communities:

- **Protect tenants:** Ensure renters are not unnecessarily forced out of their homes.
- **Preserve existing affordable housing:** Ensure housing that is currently affordable remains affordable to those who live there.
- **Produce more affordable housing:** Build new housing that serves all income levels.

¹⁷ The Three Ps are referenced by groups including the Right to the City Alliance, AHF, CASA, Urban Habitat, and many others.