Catalyzing a Movement to Produce Greater Public, Private, and Civil Resources to Improve Housing Conditions Through Home Repair Programs

AUGUST 2024 | CARLOS MARTÍN, ALAN MALLACH, TODD SWANSTROM, AUSTIN HARRISON, SOPHIA WEDEEN

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Harvard University

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Carlos Martín
Joint Center for Housing Studies of Harvard University

Alan Mallach
Center for Community Progress

Todd Swanstrom
University of Missouri-St. Louis

Austin Harrison
Rhodes College

Sophia Wedeen
Joint Center for Housing Studies of Harvard University

August 2024

 This report was made possible through funding by the Robert Wood Johnson Foundation. The findings, conclusions, and recommendations presented here are those of the authors alone, and do not necessarily reflect the opinions of the Foundation.

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Executive Summary[1]

The deterioration and loss of America's housing is a threat to the health, safety, security, and financial well-being of millions of low-income residents. Researchers link substandard housing to health problems, as well as to financial hardship, energy insecurity, disaster vulnerability, social isolation, and neighborhood instability. Today, housing quality is even more urgent given the national housing affordability crisis. To explore whether and when home repair and improvement programs interact with each other and how they can align to better serve eligible households, the authors have partnered to prepare this white paper and host a series of invitation-only, virtual convenings in May 2024.

This paper reviews the range of evidence regarding contemporary US housing conditions and physical performance, the effectiveness of home repairs, and the current landscape of public- and civil-sector programs that provide repairs and the evolving advocacy that has established these programs.

- Housing deterioration persists in the US. However, commonly used measures and indices for the quality of physical housing conditions are inadequate and likely undercount the range of needs. This holds particularly true for the activities required for home performance beyond basic structural adequacy, habitability, and occupancy definitions, such as accessibility for aging residents and those with physical disabilities, energy performance, and hazard mitigation functions.
- The cost of inaction is overwhelming. Housing deterioration affects individuals, households, and whole neighborhoods, as demonstrated by financial, housing, and health-based research. Further, it disproportionately affects households in working-class neighborhoods, especially non-white ones.
- The ecosystems of local home repair programs that emerge from federal, state, and civil-sector budgetary support and technical assistance are as complex and far ranging as the homes that they repair—varying by population eligibility, repair type, and operations. Consequently, the presence and robustness of programs for low-income households and others with distinct housing performance needs are widely variable across the country, oftentimes confusing, but uniformly under-resourced. In some rare cases, there have been intentional attempts to align programs.

[1] The authors are grateful for the reviews by Dr. Robin Bartram at the University of Chicago and Abbe Will at the Joint Center for Housing Studies.

- There is significant evidence that home repairs produce positive outcomes and that investments in home repair programs that assist low-income households yield positive social returns. Though the magnitude of the effect varies between studies and their respective focus on different repair types and outcomes, the effect is consistently positive. More rigorous research is needed, including inquiry into non-monetizable benefits.
- The persistent challenges of capacity and funding have forced many local programs, including those with federal funding, to limit repair types and eligible populations and have disincentivized cross-program collaboration and alignment. For different reasons, homeowners have also underutilized national loan programs. Statutory and operational alignment and local capacity building can help expand current programs' efficacy. But ultimately, more resources, research, and constituents are required to expand programs and, in turn, reduce inadequate housing by all measures.

In addition to the reviews of the state and quality of home repair assistance programs, the authors hosted three virtual workshops for federal program officials, state and local government program implementers, and national and local civil-sector actors in May 2024. The purpose of these workshops was to convene stakeholders in each group to discuss and document their practical perceptions of program rules, operational limitations, and other challenges in relation to potential cross-program collaborations and program expansion. The participants highlighted several recent pilots for collaborations instigated by state or local government executive actions, primarily around:

- sharing of lists and referrals of households that have been served or of households that an individual program could not serve due to statutory or budgetary limitations
- creating universal applications or shared entry and screening protocols
- braiding of public funding to better case manage individual households

There were also innovations—though significantly rarer—for addressing fundamental program challenges such as contractor and workforce availability (such as through direct worker training programs), pre- and post-service assessment quality (through shared inspectors or inspections), the use of additional gap financing (such as home equity loans), or long-term project monitoring and evaluation. Ultimately, participants concluded that there is much work to be done—and a significant increase in resources required—to better align home repair and improvement programs to serve the needs of the

individual households that stand to benefit financially and in health outcomes and the communities in which they live.

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Introduction

The deterioration and underperformance of America's existing housing is a major threat to the health, safety, security, and financial well-being of millions of lower-income residents. Researchers have linked substandard housing to a broad range of physical and mental health problems, as well as to financial hardship, social isolation, and neighborhood instability. Negative spillovers also accrue in the form of neighborhood abandonment, higher disaster damages, and increasing utility bills. Households that are low-income, female-headed with children, older, with disabilities, and of color suffer these effects disproportionately. Consequently, the variability of housing quality amplifies racial, environmental, and economic injustices. Home repairs (that is, interventions addressing physical deterioration or obsolescence required to maintain basic occupancy and safety) as well as improvements (modifications that increase a home's performance for other societal goals) are needed to address these concerns.

In today's housing affordability crisis, housing quality is an even more urgent concern; poor quality housing increases maintenance and improvement costs. The US housing stock is older than at any time in history. Following the War on Poverty in the 1960s, the public commitment to existing housing's quality waned due to the assumption that inadequate homes would be replaced with newer homes built to higher codes. Yet, the Federal Reserve estimates the cost of needed home repairs nationwide at $149.3 billion—beyond the collective means of low-income owners or the patchwork of public and charitable programs.[2] Federal resources are available but limited. New state efforts have emerged; in 2022, Pennsylvania's Whole-Home Repairs Program became the first statewide program to subsidize repairs for income-eligible homeowners and rental property owners. One reason for the lack of policy attention is the limited quantity of housing quality data, and the lack of a more robust effort to monitor and evaluate different interventions. Another reason is that many aspects of housing deterioration are largely invisible to the public. More research and awareness are needed to build political will and spur greater investments that improve housing conditions.

To advance discussion of the problem and its solutions, a group of scholars supported by the Robert Wood Johnson Foundation and coordinated by the Joint Center for Housing Studies of Harvard

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[2] E. Divringi, E. Wallace, K. Wardrip, and E. Nash, "Measuring and Understanding Home Repair Costs," Federal Reserve Bank of Philadelphia (2019), https://www.philadelphiafed.org/community-development/housing-and-neighborhoods/measuring-and-understanding-home-repair-costs; E. Divringi, "Research Brief: Updated Estimates of Home Repair Needs and Costs," Federal Reserve Bank of Philadelphia, 2023, https://www.philadelphiafed.org/-/media/frbp/assets/community-development/reports/23-02-home-repairs-update.pdf.

University is currently: 1) reviewing the state of scholarship on housing deterioration and repair programs; 2) involving practitioners of repair programs to qualitatively understand their organizational challenges ; and 3) producing a set of recommendations for a revised national and local policy framework. The broader goal is to catalyze a movement around housing conditions and repair programs to spark new tools, program designs, and greater public, private, and civil resources. The following paper reviews the state of housing conditions and repair needs, the household outcomes from not addressing these needs, the range of interventions intended to address the needs, the interventions' effectiveness, and the overall policy context, lessons, and opportunities to ensure that interventions can be more effective, comprehensive, and accessible.

1. Housing Conditions and the Need for Repair Intervention

Sophia Wedeen

The US housing stock is older than at any time ever recorded. Despite improvements in building codes and construction standards as well as upgrades and repairs to the existing housing stock, many homes fall short of safety and suitability standards. Housing quality issues vary widely by building age, structure type, and geography, and disproportionately impact renters, households with lower incomes, and households of color. Even among homes that meet the criteria for basic physical adequacy, many have critical repair needs that are beyond the means of homeowners and rental property owners. Moreover, much of the housing stock is minimally accessible for people with disabilities and falls short of contemporary energy performance standards.

The Dimensions of Substandard Housing

The repair needs of the housing stock are diverse, even when using the few nationally rigorous surveys available. Sponsored by the US Department of Housing and Urban Development (HUD) and conducted since 1973, the American Housing Survey (AHS) is the most comprehensive nationally representative longitudinal survey of housing units. HUD developed a physical adequacy measure to evaluate units' basic safety and suitability standards established in the Housing Act of 1949. HUD classifies housing units as moderately or severely inadequate depending on the number and type of physical problems.

Research suggests that the AHS physical inadequacy measure is inconsistent, incomplete, and likely underestimates deficiencies.[3] According to the most recent American Housing Survey, in 2021, 7.5 percent of occupied homes had structural problems such as large holes in the floor, open holes or cracks in interior walls or ceilings, or large areas of peeling paint or broken plaster. 6.4 percent of homes had pests at least monthly, suggesting a structural issue. 15.2 percent of units had at least one water leak in the last 12 months, including outside water leaking in from the roof, basement, walls, or windows or doors or interior water leaks resulting from broken pipes, plumbing, water heaters, or other equipment. 3.0 percent of homes had mold in one or more rooms or basements. Many homes also had physical problems with plumbing, electricity, and heat. 5.4 percent of units had plumbing problems such as multiple sewer or toilet breakdowns, multiple instances of the unit being completely without running water or lacking either hot or cold running water. 5.6 percent of units had electrical problems such as exposed or missing electrical wiring, repeated blown fuses or tripped circuit breakers, or missing or broken electrical outlets. 3.9 percent of housing units had heating issues such as the unit being uncomfortably cold due to equipment breakdowns, inadequate capacity, or inadequate insulation.

The number of US households living in physically inadequate homes has remained largely unchanged over the past twenty years, but its persistence is noteworthy. In 2021, 6.7 million households lived in moderately or severely inadequate housing, including 2.8 million homeowners and 3.9 million renters. The number of renter households living in deficient homes increased by 153,000 in the past two decades, while the number of homeowner households in inadequate housing declined by 147,000, for a net increase of 6,000 households.

[3] One analysis of the AHS found that physical housing problems did not always persist across reinterviews and further found that measures of moderate and severe inadequacy do not distinguish well between lower-quality units (S. Newman and P. Garboden, "Psychometrics of Housing Quality Measurement in the American Housing Survey," *Cityscape* 15, no. 1 (2013): 293–306). Another analysis expanded the measure of physical inadequacy by incorporating additional variables from the AHS, producing a substantially larger estimate of homes with physical problems (P. Emrath and H. Taylor, "Housing Value, Costs, and Measures of Physical Adequacy," *Cityscape* 14, no. 1 (2012): 99–125). In addition, a study prepared for HUD proposed a Poor Quality Index by reweighting the housing problems in the AHS to create a more comprehensive measure of housing problems (F. Eggers and F. Moumen, "American Housing Survey: A Measure of (Poor) Housing Quality," US Department of Housing and Urban Development (2013)). Devringi et al., "Measuring and Understanding Home Repair Costs," also noted changes in AHS reported observations between survey interviews of the same units. Some differences across interviews may reflect actual changes in conditions due to improvement or repair work. Consequently, current measures of housing inadequacy are still considered works in progress.

Even as the number of households exposed to substandard housing remains persistently high, growth in the overall population has somewhat reduced the share of households living in such units over the last two decades. The share of renters living in inadequate housing declined by 2.5 percent since 2001, while the share of homeowners living in inadequate housing fell by 0.7 percent. Still, 3.4 percent of homeowners lived in inadequate housing in 2021, as did 8.4 percent of renters.

Housing inadequacy varies by the age of homes, type of structure, and tenure. Housing inadequacy is far more common in older homes. In 2021, 9.0 percent of occupied homes built before 1940 were classified as inadequate, triple the 3.1 percent share of homes built between 2000 and 2021. Older rental units were particularly likely to be classified as inadequate, at 12.7 percent of units. Although manufactured housing accounts for a small share of the stock, these units have higher rates of physical inadequacy than other building types. Among the renter-occupied stock, 11.7 percent of manufactured homes were classified as inadequate, well above the rates for multifamily (8.4-9.4 percent) and single-family (7.2 percent) units. Among the owner-occupied stock, 7.9 percent of manufactured homes were classified as inadequate. Still, 87.9 percent of homeowners live in single-family homes, of which just 3.1 percent were found inadequate.

Housing quality varies geographically, reflecting differences in the age and composition of the housing stock and differing economic conditions. The region with the highest rate of housing inadequacy is the Northeast, where the housing stock is oldest. 6.5 percent of units in the Northeast were classified as inadequate, followed by the South (5.8 percent), Midwest (4.3 percent), and West (4.1 percent). Rental units in the Northeast had an especially high rate of inadequacy, at 11.1 percent, well above that of the South (8.9 percent), Midwest (7.1 percent) and West (6.6 percent). Owner-occupied homes in the South had the highest rates of inadequacy at 4.2 percent. Housing inadequacy is somewhat higher outside of metropolitan areas, at 6.7 percent of units, compared to 4.9 percent of units within metro areas. Housing inadequacy varies across large metros, from as much as 9.8 percent of units in Houston to as little as 2.6 percent in Las Vegas.

Poor housing quality does not affect households equally, and households with lower incomes are the most vulnerable to housing disrepair. In 2021, 11.7 percent of renters earning less than $15,000 annually lived in inadequate housing, almost double the 6.4 percent of renter households earning $75,000 or more. Renters with lower incomes typically have limited housing choices, and much of the housing available to them is in poor condition. In 2021, units renting for less than $600 monthly accounted for just 19 percent of the rental stock but 24 percent of all inadequate units.

As lower-income renters are cost-burdened, many households may sacrifice housing quality to secure a unit at a lower rent level. Renters receiving housing subsidies are also somewhat more likely to live in inadequate conditions. Although most subsidized housing units are in good shape, 10.8 percent of renters with Housing Choice Vouchers lived in inadequate conditions in 2021, above the 8.2 percent of renter households without vouchers. Severe underfunding of project-based assistance programs has also left 10.2 percent of renters living in public housing or HUD-assisted private multifamily housing with inadequate conditions.

Maintaining safe and suitable living conditions presents a distinct challenge for homeowners with lower incomes,[4] many of whom lack the resources to remediate deficient housing conditions. In 2021, 8.1 percent of homeowners earning less than $15,000 annually lived in inadequate housing, compared to just 2.2 percent of homeowners with annual incomes of $75,000 or more. An analysis by the Joint Center for Housing Studies found that homeowners in the lowest income quintile spent less than a third as much on home improvement and repair projects as homeowners in the highest income quintile.[5]

Among homeowners and renters alike, Black and Hispanic households are disproportionately exposed to substandard housing. Racial disparities in housing conditions reflect centuries of racially discriminatory policies and practices that have excluded households of color from neighborhoods and often limited their housing choices to those in dilapidating neighborhoods.[6] Discriminatory real estate practices also steered Black homebuyers to neighborhoods with older and less adequate housing stock.[7] Low-income, older Black women in particular are more likely to live in older housing with repair needs they cannot afford.[8]

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[4] L. Acquaye, "Low-Income Homeowners and the Challenges of Home Maintenance," *Community Development* 42, no. 1 (2011): 16–33, https://doi.org/10.1080/15575330.2010.491154.

[5] S. Wedeen, "Home Repairs and Updates Pose Considerable Burdens for Lower-Income Homeowners," *Housing Perspectives* (blog), Joint Center for Housing Studies of Harvard University, June 16, 2022, https://www.jchs.harvard.edu/blog/home-repairs-and-updates-pose-considerable-burdens-lower-income-homeowners.

[6] R. Rothstein, *The Color of Law: A Forgotten History of How Our Government Segregated America* (New York: Liveright, 2022); R. Bartram, *Stacked Decks: Building Inspectors and the Reproduction of Urban Inequality* (Chicago: University of Chicago Press, 2022).

[7] K. Taylor, *Race for Profit: How Banks and the Real Estate Industry Undermined Black Homeownership* (Chapel Hill: University of North Carolina Press, 2019).

[8] R. Bartram, "Routine Dilapidation: How Homeownership Creates Environmental Injustice," *City & Community* 22, no. 4 (December 1, 2023): 266–85, https://doi.org/10.1177/15356841231172524.

In 2021, Black and Hispanic renters were much more likely to occupy inadequate housing (at 10.2 percent and 9.7 percent) than white renters (7.0 percent) and Asian renters (5.9 percent). Similarly, 5.7 percent of Black homeowners and 4.7 percent of Hispanic homeowners lived in inadequate housing, above the 2.9 percent of white homeowners and 1.9 percent of Asian homeowners. These racial disparities in housing conditions persist even after accounting for household incomes; among households in the lowest third of incomes, 10.4 percent of Hispanic households and 10.0 percent of Black households lived in inadequate housing in 2021, well above the 6.3 percent share for white households. A HUD report found that American Indian and Alaska Native households are disproportionately exposed to housing quality issues, including structural and system deficiencies.[9]

Many of those living in physically inadequate conditions are households with children. Physically inadequate housing puts occupants' health and safety at risk, and substandard conditions can be especially damaging to children's physical and emotional development. In 2021, 5.9 percent of households with a child under six years old lived in physically inadequate housing, including 3.8 percent of homeowners and 9.0 percent of renters. Reflecting the significantly higher median incomes of households with two earners, single-parent households were twice as likely as two-adult households with children to live in inadequate housing. 10.0 percent of single-parent renter households and 5.6 percent of single-parent homeowner households lived in inadequate housing in 2021.

Broader Repair Needs

As the housing stock is the oldest on record, many homes that meet basic habitability standards still have substantial unmet repair needs. The housing stock requires continuous investment, including in routine maintenance, repairs, and replacements, to prevent deterioration and depreciation. A Federal Reserve Bank of Philadelphia study found that an estimated 44.5 million housing units—35 percent of the occupied stock—had repair needs in 2022. Among units with repair needs, the median cost to repair these needs was $1,560 per unit, with a total cost of $149.3 billion to address physical deficiencies in the housing stock. This included $97.9 billion for the owner-occupied stock and $51.5 billion for the renter-occupied stock.[10]

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[9] N. Pindus, T. Kingsley, J. Biess, D. Levy, J. Simington, and C. Hayes, "Housing Needs of American Indians and Alaska Natives in Tribal Areas," US Department of Housing and Urban Development (2017).
[10] Divringi, "Research Brief: Updated Estimates of Home Repair Needs and Costs."

Older homes, manufactured housing, as well as homes occupied by renters, households with lower incomes, and households of color had the highest incidence of repair needs and the steepest repair costs. In 2022, 45.2 percent of homes built before 1940 had unmet repair needs, well above the 26.1 percent rate for homes built in 2000 or later. Among units with at least some repair needs, homes built before 1940 had a median estimated repair cost of $1,800, well above the $1,500 median for newer homes. Manufactured homes had the highest incidence of repair needs of any building type, at 43.5 percent, compared to 32-34 percent of multifamily and single-family units. Manufactured homes also had the highest median repair costs, at $1,900 per unit, compared to $1,300-$1,400 for multifamily homes and $1,700 for single-family homes. Renter households, households living below the poverty level, and single-parent households with children were also more likely to live in homes in need of repair. Homes occupied by a person who is Native American (48.0 percent), multiracial (46.8 percent), or Black (39.8 percent) had an especially high incidence of repair needs.

The extent of repair needs depends on multiple overlapping characteristics of households and housing units. A 2019 Federal Reserve Bank of Philadelphia study found that repair costs among rental properties were especially high for low-income households in older single-family units, low-income households living in moderate-age multifamily units, and middle- or upper-income households in older single-family units.[11] Among homeowners, middle- and upper-income households accounted for most total repair costs—though the median costs for repairs among low-income households are higher. These findings suggest that variability in home repair needs is complex, reflecting intersecting physical characteristics of the housing stock and socioeconomic characteristics of households.

Emerging Challenges

Currently, the AHS measures indicators of housing quality across a range of residential systems and issues. For example, deficiencies in plumbing are assessed in terms of functioning toilets, water supply stoppages, water leaks, and sewage disposal breakdowns. Heating deficiencies are measured in terms of uncomfortable cold exposure and its probable causes such as equipment breakdowns or poor insulation; no adequacy measure exists for air cooling, though this equipment is captured in the AHS. Functioning fuses and breakers and exposed wiring are the AHS's indicators for electrical inadequacy.

[11] Divringi et al., "Measuring and Understanding Home Repair Costs."

But general upkeep measures as defined by the AHS include a catchall of disrepair ranging from building interior and exterior penetrations (e.g., broken windows or holes in walls), peeling plaster or paint, structural damages (such as sagging roofs or crumbling foundations), pests and rodents, the presence of visible mold, and the frequency of tobacco smoking. All these conditions could be repaired in some way, though several imply occupant behaviors or cleanliness more than general maintenance and product expiration. Further, these indicators are not weighted by either occupant health risk or costs for their repair in AHS' adequacy measures. Consequently, there are some questions about how they should be prioritized.[12]

In addition to basic quality problems, many homes fall short of contemporary energy performance standards. The US housing stock needs significant investment to improve home energy efficiency and reduce fossil fuel-based energy consumption and expenditures. According to the 2020 Residential Energy Consumption Survey, older housing units, units in small multifamily buildings, and manufactured homes had higher energy intensities (energy use per square foot) and were therefore the least efficient. Homes built before 1950 consumed an average of 51,000 btu per square foot compared to just 31,000 btu per square foot for homes built between 2016 and 2020. Older homes also consume more energy per household compared to newer homes.

Apartments in small multifamily buildings with 2-4 units had the highest energy intensities of any structure type (at 55,000 btu per square foot), followed closely by manufactured homes at 50,000 btu per square foot. This was above that of single-family homes (41,000 btu per square foot) and units in large multifamily buildings with five or more units (37,000 btu per square foot). Still, detached single-family homes were the most energy-intensive on a per-household basis, consuming 95 million btu per household, well above that of manufactured homes (63 million btu/household), units in small multifamily buildings (54 million btu/household), or units in large multifamily buildings (34 million btu/household).

Differences in energy consumption reflect differences in household resources. Homes occupied by lower-income households had higher energy intensities per square foot than those occupied by households with higher incomes. Despite consuming less energy per household overall, lower-income households have a higher rate of energy cost burden, reflecting both resources and housing conditions.[13]

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[12] Eggers and Moumen, "American Housing Survey: A Measure of (Poor) Housing Quality."
[13] C. Kontokosta, V. Reina, and B. Bonczak, "Energy Cost Burdens for Low-Income and Minority Households," *Journal of the American Planning Association* 86, no. 1 (2020): 89–105, https://doi.org/10.1080/01944363.2019.1647446.

The accessibility of the housing stock is another important dimension of housing quality and safety. Much of the housing stock is not accessible for people with disabilities. According to tabulations of the 2019 American Housing Survey, only 54 percent of homes had no-step entries. About 73 percent of homes had a bedroom and bathroom on the first floor, had only one floor, or had a chair lift in the instance of multiple floors. As rental units are typically on a single floor, they were more likely to meet these conditions than owner-occupied units (at 81 percent versus 68 percent). However, in total, just 42 percent of homes enabled single-floor living in 2019, with both a no-step entry and a bedroom and bathroom on an accessible floor. Apartments in buildings with at least 50 units were the most likely to enable single-floor living, at 71 percent of units.

Given that so many units lack basic accessibility features, many households report difficulties using and navigating their homes. In 2019, 4.2 million households (3.5 percent of US households) reported difficulties entering their homes because of a physical condition, while 5.2 million (4.1 percent of households) reported difficulties navigating their homes. As the incidence of disability and mobility difficulties increases with age, older adults were more likely to experience difficulties entering or navigating their homes, with 12 percent of households aged 65–79 and 23 percent of households age 80 and over reporting some difficulties.

Among households with at least one person using a mobility aid, 16 percent reported that their home's layout and features did not support the accessibility needs of someone in their household. Households experienced difficulties moving from room to room, and making use of kitchens, bedrooms, and bathrooms. As the population of older adults is expected to grow substantially in coming years, the need to modify existing units to ensure accessibility and safety is becoming an urgent priority.

2. Effects of Housing Deterioration

Austin Harrison, PhD

This section considers the literature on the effects of poor housing conditions, or "the cost of doing nothing." We consider this issue at two levels. First is the individual or household level, focusing predominantly on the health implications of poor housing but also on household income, wealth, and housing stability. Secondly, we review the neighborhood-level effects, which include community outcomes. This section builds on the national statistics in the previous section by exploring the impacts and experiences of living with poor housing conditions and unmet repair needs.

Individual and Household Effects

Much of the current research on the individual effects of poor housing conditions focuses on the health impacts. This research is largely from the health field, adopting a housing lens to understand health effects. While research from housing researchers exists, it is dwarfed by the broader health discourse that links a variety of health outcomes to housing deterioration.

These intersectional health and housing studies, while less common, often point to ways poor housing condition is associated with poorer self-reported health status and higher hospitalization.[14] When considering specific health outcomes experienced at the individual level due to poor housing, the health literature has identified four broad categories: lead poisoning, asthma and other respiratory illnesses, physical injuries, and mental health. The first two categories, lead and asthma, receive the most attention and the literature is so broad this brief section cannot capture it all. However, the intersection of health and housing conditions related to lead poisoning is worth further discussion.

The 2014 Flint Water Crisis drew the public's attention to old infrastructure in predominantly Black neighborhoods as a source of lead poisoning.[15] In fact, any home built before 1976 is likely to have lead-based paint that children can could ingest or inhale.[16] A Chicago study that used blood lead level data to identify "high-risk" buildings found that two-thirds of the high-risk buildings had two or more code enforcement referrals per unit.[17] Not only does lead poisoning create severe cognitive challenges for children and adults, but lead exposure has also been linked to poor education outcomes.[18] Moreover, buildings with lead exposure often have other issues such as mold, asbestos, and the like compounding the health impacts for residents.

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[14] S. Boch, D. Taylor, M. Danielson, D. Chisolm, and K. Kelleher, "'Home Is Where the Health Is': Housing Quality and Adult Health Outcomes in the Survey of Income and Program Participation," *Preventive Medicine* 132 (2020): 105990, https://doi.org/10.1016/j.ypmed.2020.105990.

[15] A. Nickels, *Power, Participation, and Protest in Flint, Michigan: Unpacking the Policy Paradox of Municipal Takeovers* (Philadelphia: Temple University Press, 2019).

[16] T. Dignam, R. Kaufmann, L. LeStourgeon, and M. Brown, "Control of Lead Sources in the United States, 1970–2017: Public Health Progress and Current Challenges to Eliminating Lead Exposure," *Journal of Public Health Management and Practice* 25 (2019): S13–22; T. Whitehead, C. Metayer, M. Ward, J. Colt, R. Gunier, N. Deziel, S. Rappaport, and P. Buffler, "Persistent Organic Pollutants in Dust from Older Homes: Learning from Lead," *American Journal of Public Health* 104, no. 7 (2014): 1320–26.

[17] N. Reyes, L. Wong, P. MacRoy, G. Curtis, P. Meyer, A. Evens, and M. Brown, "Identifying Housing That Poisons: A Critical Step in Eliminating Childhood Lead Poisoning," *Journal of Public Health Management and Practice* 12, no. 6 (2006): 563-69.

[18] A. Aizer, J. Currie, P. Simon, and P. Vivier, "Do Low Levels of Blood Lead Reduce Children's Future Test Scores?" *American Economic Journal: Applied Economics* 10, no. 1 (2018): 307–41, https://doi.org/10.1257/app.20160404.

Housing deterioration is also linked to asthma. Researchers in Memphis found a relationship between a higher density of housing vacancy and abandonment and pediatric asthma hospitalizations.[19] One New Haven, Connecticut study found that emergency room visits are predictive of failed housing inspections.[20] The relationship between asthma and poor housing holds at the national level. A study based on American Housing Survey data found that poor housing quality increased the likelihood of asthma diagnoses; bronchitis and other respiratory issues in children are also linked to a variety of housing condition issues such as poor ventilation and overall structural quality.[21] Interestingly, homeownership decreased asthma-related hospital visits in this study, which speaks to the relationship between condition and ownership type, possibly further evidence for programs aimed at income-constrained homeowners as well.[22]

Increased chance of individual injury from trips and falls, for example, is another cost of "doing nothing" to address America's housing condition problem. Research on fire risks found that the age of housing, vacancy rate, and overcrowding were all related to increased fire risk.[23] One study quantified the health impacts of poor housing by calculating the decrease in life expectancy for children living in these conditions. Issues like chronic pain or behavioral problems commonly observed in connection with elevated lead blood levels led to the greatest decrease in life expectancy of children, ranging from 2-4 years for each condition.[24]

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[19] E. Shin and A. Shaban-Nejad, "Urban Decay and Pediatric Asthma Prevalence in Memphis, Tennessee: Urban Data Integration for Efficient Population Health Surveillance," *IEEE Access* 6 (2018): 46281–89.

[20] E. Samuels, R. Taylor, A. Pendyal, A. Shojaee, A. Mainardi, E. Lemire, A. Venkatesh, S. Bernstein, and A. Haber, "Mapping Emergency Department Asthma Visits to Identify Poor-Quality Housing in New Haven, CT, USA: A Retrospective Cohort Study," *The Lancet Public Health* 7, no. 8 (2022): e694–704, https://doi.org/10.1016/S2468-2667(22)00143-8.

[21] M. Weitzman, A. Baten, D. Rosenthal, R. Hoshino, E. Tohn, and D. Jacobs, "Housing and Child Health," *Current Problems in Pediatric and Adolescent Health Care* 43, no. 8 (2013): 187–224, https://doi.org/10.1016/j.cppeds.2013.06.001.

[22] H. Hughes, E. Matsui, M. Tschudy, C. Pollack, and C. Keet, "Pediatric Asthma Health Disparities: Race, Hardship, Housing, and Asthma in a National Survey," *Academic Pediatrics* 17, no. 2 (2017): 127–34, https://doi.org/10.1016/j.acap.2016.11.011.

[23] R. Fahy and R. Maheshwari, "Poverty and the Risk of Fire," National Fire Protection Association, 2021.

[24] B. Craig, J. Hartman, M. Owens, and D. Brown, "Prevalence and Losses in Quality-Adjusted Life Years of Child Health Conditions: A Burden of Disease Analysis," *Maternal and Child Health Journal* 20, no. 4 (2016): 862–69, https://doi.org/10.1007/s10995-015-1874-z.

When homes become hazardous places to live due to substandard quality, it is not just physical health that suffers. Housing quality also impacts mental health.[25] One study found that physical housing deficiencies contribute to family stress and are a strong predictor of behavioral and emotional problems in children and adolescents.[26] Neighborhood-level factors, such as high rates of evictions and abandoned property, also impact mental health.[27] Impacts are highest in majority-Black neighborhoods. In sum, the evidence is clear: the cost of "doing nothing" includes a toll on the mental well-being of residents in homes and neighborhoods with higher rates of housing deterioration.

In addition to the health and safety realities of poor housing, repair needs cause financial strain.[28] Previous research found that many low-income homeowners who participated in a homebuying assistance program encountered unexpected home repair costs they could not afford.[29] These strains worsen the financial burdens associated with treating poor health. Poor families disproportionately deal with overlapping costs of home repairs and health care, within the mostly privatized US housing market and health care system.

Neighborhood-Level Effects

The differential effects of poor housing conditions by race and class are just as stark at the neighborhood level. America's current residential segregation is a result of over a century of policies like racial covenants, redlining, urban renewal, federal interstate construction and subsidized sprawl.[30] Segregation exacerbates health disparities: people of color have higher rates of children with asthma, respiratory

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[25] D. Pevalin, A. Reeves, E. Baker, and R. Bentley, "The Impact of Persistent Poor Housing Conditions on Mental Health: A Longitudinal Population-Based Study," *Preventive Medicine* 105 (2017): 304–10, https://doi.org/10.1016/j.ypmed.2017.09.020.

[26] R. Coley, T. Leventhal, A. Doyle Lynch, and M. Kull, "Relations between Housing Characteristics and the Well-Being of Low-Income Children and Adolescents," *Developmental Psychology* 49, no. 9 (September 2013): 1775–89.

[27] A. Shlay and G. Whitman, "Research for Democracy: Linking Community Organizing and Research to Leverage Blight Policy," *City & Community* 5, no. 2 (2006): 153–71; C. Melton-Fant, A. Harrison, and K. Ramsey Mason, "Race, Mental Health, and Evictions Filings in Memphis, TN, USA," *Preventive Medicine Reports* 26 (2022): 101736.

[28] Divringi et al., "Measuring and Understanding Home Repair Costs."

[29] S. Van Zandt and W. Rohe, "The Sustainability of Low-Income Homeownership: The Incidence of Unexpected Costs and Needed Repairs among Low-Income Home Buyers," *Housing Policy Debate* 21, no. 2 (2011): 317–41.

[30] A. Sood and K. Ehrman-Solberg, "The Long Shadow of Housing Discrimination: Evidence from Racial Covenants," 2023, http://dx.doi.org/10.2139/ssrn.4606234; P. Dantzler, "The Urban Process under Racial Capitalism: Race, Anti-Blackness, and Capital Accumulation," *Journal of Race, Ethnicity and the City* 2, no. 2 (2021): 113–34.

challenges, and higher stress levels.[31] Housing decline, environmental hazards, and health outcomes map onto racial geographies across the country.[32] Therefore, "doing something" around housing decline is an issue of racial equity as much as health equity.

Much of the intersection between housing decline and race and class inequities can be attributed to the disproportionate share of working-class people, especially people of color, that rent instead of own their homes.[33] Given the lack of publicly funded housing, many rely on the private market as rentership spikes across the country, fueled by increased financialization of single-family rentals in the wake of the late 2000s' subprime mortgage crisis and the recent COVID-19 pandemic, coupled with rising unaffordability further locking people out of homeownership.[34] Financialized landlords are less likely to invest in key maintenance issues, a process some scholars call "milking."[35] This lack of critical repairs exacerbate health disparities, so much so that multiple recent papers have linked renting instable, poorly maintained properties to mortality in statistically significant ways both before and during the COVID-19 pandemic.[36] In short, housing deterioration is increasingly viewed as a matter of life and death.

This consistent instability is a result of substandard housing, and this makes it hard to build wealth for homeownership. Housing deterioration depreciates the value of surrounding properties,[37] due to property condition but also, importantly, because of the structural devaluation of property in

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[31] T. Bryant-Stephens, D. Strane, E. Robinson, S. Bhambhani, and C. Kenyon, "Housing and Asthma Disparities," *Journal of Allergy and Clinical Immunology* 148, no. 5 (2021): 1121–29; I. Ellen and S. Glied, "Housing, Neighborhoods, and Children's Health," *The Future of Children* 25, no. 1 (2015): 135–53.

[32] K. Harris, "Mapping Inequality: Childhood Asthma and Environmental Injustice, a Case Study of St. Louis, Missouri," *Social Science & Medicine* 230 (2019): 91–110, https://doi.org/10.1016/j.socscimed.2019.03.040.

[33] J. Choi, A. McCargo, M. Neal, L. Goodman, and C. Young, "Explaining the Black-White Homeownership Gap" (Washington, DC: Urban Institute, 2019).

[34] B. Christophers, "The Role of the State in the Transfer of Value from Main Street to Wall Street: US Single-Family Housing after the Financial Crisis," *Antipode* 54, no. 1 (2022): 130–52.

[35] A. Mallach, "Lessons From Las Vegas: Housing Markets, Neighborhoods, and Distressed Single-Family Property Investors," *Housing Policy Debate* 24, no. 4 (2014): 769–801, https://doi.org/10.1080/10511482.2013.872160; A. Travis, "The Organization of Neglect: Limited Liability Companies and Housing Disinvestment," *American Sociological Review* 84, no. 1 (2019): 142-70.

[36] N. Graetz, C. Gershenson, S. Porter, D. Sandler, E. Lemmerman, and M. Desmond, "The Impacts of Rent Burden and Eviction on Mortality in the United States, 2000–2019," *Social Science & Medicine* 340 (2024): 116398; N. Graetz, P. Hepburn, C. Gershenson, S. Porter, D. Sandler, E. Lemmerman, and M. Desmond, "Examining Excess Mortality Associated with the COVID-19 Pandemic for Renters Threatened with Eviction," *JAMA* 331, no. 7 (2024): 592–600.

[37] R. Bartram, "The Cost of Code Violations: How Building Codes Shape Residential Sales Prices and Rents," *Housing Policy Debate* 29, no. 6 (2019): 931-46.

non-white neighborhoods irrespective of property condition.[38] The upshot is a an "appraisal gap," which hurts the economics of property rehabilitation because the cost to repair the decades of deferred maintenance is greater than what the property would be worth post-repair.

The compound effects of housing decline, home devaluation, and structural disinvestment at the neighborhood level create a feedback loop.[39] In fact, research shows that much like the displacement found in areas experiencing "gentrification pressures," neighborhood decline encourages or forces households to leave a neighborhood, a process scholars call "decline-induced-displacement."[40] This means that the feedback loop started by depopulation and decline loops back to encourage additional neighborhood decline. In all these processes, property deterioration is a critical element.

Summary of Evidence

This brief section summarized studies that show the "costs of doing nothing" about housing deterioration in the US. The evidence is overwhelming. Housing deterioration is a problem with effects at individual, household, and neighborhood levels. It disproportionately affects working-class neighborhoods, especially non-white working-class neighborhoods, and hinders a person's ability to build intergenerational wealth while also exposing their family to a litany of environmental factors that lead to poor health outcomes and ultimately shorter life spans. The next section will show how we can address these urgent issues and how much programmatic activity is already underway in the home repair space.

3. Programs, Providers, and Budgets

Carlos Martín, PhD

Many of the challenges coming from not addressing deteriorating housing conditions have been the targets of intentional intervention over the last half-century in the US. From one-time emergency repair

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[38] G. Squires and I. Goldstein, "Property Valuation, Appraisals, and Racial Wealth Disparities," *Poverty & Race* 30, no. 2 (2021).

[39] S. Cornelissen and C. Jang-Trettien, "Housing in the Context of Neighborhood Decline," in *The Sociology of Housing: How Homes Shape Our Social Lives*, ed. B. McCabe and E. Rosen (Chicago: University of Illinois Press, 2021), 203-212.

[40] E. Seymour and J. Akers, "Decline-Induced Displacement: The Case of Detroit," *Urban Geography* 44, no. 4 (2023): 591–617, https://doi.org/10.1080/02723638.2021.2008716.

actions, pilots and demonstrations to longer-standing initiatives, these efforts have evolved into the various formalized public- and civil-sector programs that exist today. In aggregate, this evolution has resulted in a broad range of programs at the local level addressing a wide range of home repair and improvement needs for a wide range of income and demographic groups—though rarely in full or even partial alignment with each other. While home repair needs are an age-old household and societal challenge, advocates, policymakers, and program implementers differ widely on 1) who requires repairs and needs assistance; 2) what home performance or quality target the repairs will meet; and 3) how programs should administer services and manage their operational capacity.

In this section, we review the contemporary national landscape of home repair programs as they manifest at the scale of individual homes and households.[41] The review starts with the first of these key distinguishing factors between repair programs: the population that they intend to serve—that is, the mix of income, demography, and geography that determine eligibility for local assistance. On the whole, income is a primary driver for almost all programs, with income eligibility requirements varying from poverty rate thresholds to proportions of area median income, or AMI (typically at 80 percent or below).

In some of the federally supported programs that are noted below, the age of the head of household, the presence of an occupant with a disability, or veteran status are also factored into eligibility or preference criteria, though usually in combination with financial need. For some municipally funded programs, additional criteria such as neighborhood location or proximity of the home in question to a defined hazard or historical site are also considered. Housing tenure is widely variable as an eligibility category; state or local programs receiving federal funding have occasionally defined separate budgets and programs between renter and homeowner beneficiaries, conscious of the additional burdens and costs of coordinating with rental property owners. However, far more local implementers of federal programs and civil-sector providers focus exclusively on homeowners than on renters and landlords; there are relatively few providers with rental assistance lines of service.

Beyond household characteristics, the physical condition of the housing unit at the time of recruitment or application is a fundamental criterion for all repair programs. For all programs, there is some pre-defined structural damage, system failure, or performance absence that a qualifying household's home must present. But the need is defined variously across programs. Each program was

[41] This review is of home repair assistance programs only and does not include local programs intended to regulate or be punitive of property owners for disrepairs such as municipal housing or health inspectors, fire marshals, rental registries, or blight and "physical incivility" ordinance enforcers.

created to meet a different need, be it a checklist of physical inadequacies from deferred maintenance, health hazards, energy-consumption inefficiencies and fossil fuel-reliance, accessibility and mobility constraints, damages from a hazard event, or preparations to mitigate losses from a future event. Because the bar for basic performance of new housing has risen in the last half-century, we see a similarly higher bar for existing homes.[42] This inclusion of wider performance needs ostensibly ranks many more homes as subpar while increasing the costs of repairs.

Practically, though, we now have many programs and services filling different needs within the same potential home—and often with overlapping jurisdictions. In some cases, that overlap results in disqualification from eligibility—for example, homes with structural deficiencies that make energy improvements untenable are put on Weatherization Assistance Program (WAP) deferral lists by local community agencies. Recent WAP innovations and state programs such as the Pennsylvania's Whole-Home Repairs Program have attempted to fill this gap.

Operations, finally, also vary, though not necessarily because of household eligibility, home repair specificity, or program focus as defined statutorily for public-sector programs or by mission-driven criteria for civil-sector ones. Among the public programs, for example, home repair assistance programs in the US are typically funded through federal appropriations and administered at the subnational level, either by states directly or through states delegating to local government entities such as regions, counties, or municipalities. Consequently, jurisdictions across programs vary widely. Further, depending on the original statutory authorization language for each program as well as its funding administration (i.e., competitive grant versus formula allocations in addition to the overall annual budgets), program outputs will also vary. Administrative structure, staffing, workforce skill, and implementing entities (whether they are other public officials or civil- and, in some cases, private-sector entities) are also variably defined, resulting in further differences. National civil-sector efforts have also employed varying operational structures, often relying on local chapters or branches for which technical assistance and general guidance are provided but fundraising is decentralized. In the cases of federally or state-supported financial tools such as home improvement loans, mortgages with home improvement

[42] For example, recent debates over cooking stoves that combust natural gas and release particulate pollutants focus on minimum indoor air quality standards, calling into question both ventilation requirements as well as fossil fuel-based appliances. See J. MacMahon, C. Unkel, and P. Lein, "Out of the Frying Pan and Into the Fire: The Gas Stove Toxicity Debate," UC Davis Environmental Health Sciences Center, April 17, 2023, https://environmentalhealth.ucdavis.edu/air-quality/out-frying-pan-and-fire-gas-stove-toxicity-debate.

provisions, and loan or mortgage insurance and guarantees, operations and implementing entities are less well documented.

Another fundamental operational difference among repair programs has been their overall budgets over time. Home repair programs, both public and civil, lack sufficient funds to meet local or national needs. In some cases, spikes in funding have occurred; the 2009 American Recovery and Reinvestment Act (ARRA), the 2021 American Rescue Plan Act (ARPA), the 2021 Infrastructure Investment and Jobs Act (IIJA), and the 2022 Inflation Reduction Act (IRA) provided multi-year appropriations that, if sustained, could have or could still produce annual outputs that would make big dents among the federally supported programs. Additional charitable donations after catastrophes such as major disaster declarations or local fires or health events have supported many civil-sector repair programs as well as local government funding.

However, inconsistent funding has negative operational consequences, leading to swings in hiring and laying off staff, ad hoc procedures, and middling repair quality. The resource gap—and its inconsistent supply—is an apparent and unfortunately consistent trait. Ultimately, the contemporary composition of the local ecosystem of repair programs varies widely due to this still evolving national framework; consequently, the mix of providers, eligibility criteria, and program performance is highly dependent on local context. Though these vary by place, there are often complex ecosystems of public- and civil-sector programs that make outreach, application, and physical implementation inconsistent, inaccessible, or redundant for some households. This reality is further complicated by poor overall funding rates for all programs and consequently modest annual outputs. The incentives are weak for collaboration, for household-centered universal assistance between programs, and for seeking locally derived waivers from established practice within these programs.

Fortunately, there is some consistency within each repair program that can set a baseline for reconsideration. Decades of program rules and technical assistance have ensured that national programs maintain relatively standardized recruitment, intake, and service provision for the need under their specific purview. The following list reviews major national funding streams and program rules for those repair programs for which there is some level of uniformity, as well as programs sponsored by various state and local governments, civil society (at both national and local levels), and private philanthropy.

Federally Supported Programs

The largest source of funds and guidance for home repair programs comes from the federal government. Across all agencies, the largest appropriated programs are the Community Development Block Grant

(CDBG) and HOME Investment Partnerships Program (HOME) entitlement funds administered by HUD's Office of Community Planning and Development (CPD).[43] The next largest comes from the US Department of Energy's (DOE) Weatherization Assistance Program.[44] Home repairs of many physical systems for both single-family and multifamily properties are eligible activities within CDBG and HOME funds' rehabilitation category, and energy-related home improvements are the purview of WAP, though special pilots have also included health and other structural improvements related to an energy upgrade. The funding that is ultimately available for beneficiary households, including the administrative costs for federal, state, and local stakeholders, is approximately $13,000 on average for both programs. After subtracting those administrative costs, most homes receive the equivalent of $4,000 to $8,000—constraining projects to repairs rather than extensive retrofits.[45]

A plethora of other federal programs and funding streams are available beyond CDBG, HOME, and WAP that in some way permit physical interventions into existing homes through repairs, improvements, retrofits, upgrades, or replaced and added equipment and systems for the wide range of home performance categories described earlier. However, all have substantially less funding and consequently fewer beneficiaries than these three programs. Summaries for federally supported programs are below, including highlights of state and local government programs, civil-sector organizations (national and local), and private-sector efforts to increase home repair assistance.

HUD CDBG

State, territory, and local governments have relied on annual formula CDBG funds for a range of housing, economic development, and other community needs since CDBG first took effect in 1975—though most recently with half of its effective budget since its start and almost twice as many local formula

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[43] See HUD, "Communicty Development Block Grant Program," https://www.hud.gov/program_offices/comm_planning/cdbg#eligibleactivities and HUD, "Home Investment Partnerships Program," https://www.hud.gov/program_offices/comm_planning/home for program details.

[44] DOE, "Weatherization Assistance Program," https://www.energy.gov/scep/wap/weatherization-assistance-program.

[45] For a comparative derivation of per project costs, see C. Martín, M. Bueno, M. Johnson, F. Montes, and R. Frost, "Targeting Weatherization: Supporting Low-Income Renters in Multifamily Properties through the Infrastructure Investment and Jobs Act's Funding of the Weatherization Assistance Program and Beyond," Joint Center for Housing Studies of Harvard University, 2023; and National Academies of Sciences, Engineering, and Medicine, *Accelerating Decarbonization in the United States: Technology, Policy, and Societal Dimensions* (Washington, DC: The National Academies Press, 2024).

grantees.[46] With CDGB's unique flexibility, jurisdictions have created a wide range of repair programs for existing housing as eligible activities. Though the proportion of HUD CPD funds used by state and local governments for home repairs varies considerably, almost every state, entitlement community, and territory receiving these funds includes home repairs in plans and reports on the numbers of homes served. These activities represented roughly one-sixth of all CDBG funds in FY2023 (with an enacted total budget of $4 billion). That year, receiving jurisdictions spent $487 million in CDBG funds for single-family housing rehabilitation (aiding nearly 35,000 households, potentially including vacant properties) and $104 million for multifamily rehabilitation (assisting an additional 7,800 households).

Technically, 70 percent of CDBG funds must be used for activities that benefit low- and moderate-income persons, though virtually all recipients of home repair assistance fall in this category. As operationalized at the state or local level, these funds are provided either as a grant or forgivable loan with tenancy requirements. A recent Joint Center for Housing Studies scan of home repair programs in major cities indicates that the typical loan or grant funding ranges from $10,000 to $25,000 per home, though a few go up to $50,000.[47]

HUD HOME

HOME is the largest federal block grant to state and local governments designed exclusively for affordable housing for low- and moderate-income residents. Like CDBG, HOME funds can be used for repairs to owner-occupied homes, rental properties, and vacant properties. HOME funds are also awarded annually as formula grants to participating jurisdictions and in FY2023 totaled $1.5 billion, but the jurisdictions are required to provide a 25 percent match. In contrast to CDBG, the funds used for rehab activity are more evenly divided between owner- and renter-occupied units, with approximately 6,000 homes of each kind served annually. Further, all program beneficiaries must have incomes under 80 percent of AMI, with rental properties having 90 percent of beneficiaries with incomes under 60 percent of AMI.

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[46] The Indian Housing Block Grant Program is an equivalent source for tribal governments for similar repairs.

[47] T. Mayes and C. Martín, "Home Repair Programs Serve Critical Needs for Low-Income and Vulnerable Homeowners," *Housing Perspectives* (blog), Joint Center for Housing Studies of Harvard University, June 27, 2022, https://www.jchs.harvard.edu/blog/home-repair-programs-serve-critical-needs-low-income-and-vulnerable-homeowners.

DOE WAP

Weatherization Assistance Program funds are exclusively dedicated to residential improvements, but within specific program energy-related performance constraints such as air sealing, insulation, weatherstripping, and occasional equipment replacements. WAP funds are also allocated by formula to states that in turn pass funds to local units of government or community action agencies that administer and implement services. States, territories, and certain tribal governments received a total of $326 million in WAP formula funding in FY2023 after administrative costs and supplemented with competitive grant funds, along with the Low-Income Home Energy Assistance Program (LIHEAP) reallocations and state supplemental funds. States may also divert up to 15 percent of their LIHEAP—allocated by the US Department of Health and Human Services' Office of Community Services at $4.4 billion in FY2023 alone—to their WAP programs.[48] The IIJA appropriated an additional $3.5 billion to DOE's WAP funds to be distributed over ten years starting in 2022. But, ultimately, WAP served an estimated 46,000 low-income households in FY2023 with residential energy retrofits, primarily among owner-occupied single-family homes.

HUD Lead Hazard Control and Healthy Homes

HUD's Office of Lead Hazard Control and Healthy Homes provides funds to state and local governments to develop cost-effective ways to reduce lead-based paint hazards and to address housing-related health and safety hazards. In addition to funding research, local assessments, and awareness campaigns in these areas, the office has sponsored several competitive grant programs focused on lead hazard reduction and demonstration grants (appropriated in FY2023 at $290 million) and healthy homes grants (FY2023 at $55 million), the latter including lead hazard supplemental grants, healthy homes and weatherization pilots, and aging-in-place modifications that all involve direct household repair interventions. Approximately 22,000 households annually receive lead hazard reduction repairs, and an additional 50,000 households receive the broad range of other interventions (including about 6,000 older households for aging-in-place modifications and 1,000 for health weatherization interventions).

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[48] See C. Martín, "Eliminating LIHEAP Would Leave Poor Families in the Cold," *Urban Wire* (blog), Urban Institute, September 19, 2017, https://www.urban.org/urban-wire/eliminating-liheap-would-leave-poor-families-cold and https://liheapch.acf.hhs.gov/Funding/funding.htm.

FHA 203(k) Rehabilitation Mortgage Insurance

The Federal Housing Administration (FHA) provides mortgage insurance up to $35,000 to the base mortgage for repairs and improvements. The insurance is structured between the "limited" program (which permits the integration of the repair costs into the mortgage to later pay for them) and the "standard" program (which insures the repair costs alone of at least $5,000 up to the FHA area mortgage limit). A borrower household must work with an FHA-approved lender who in turn selects a 203(k) HUD-approved consultant to process the loan, insurance, and release. The 203(k) program has averaged fewer than 5,000 loans per year in contrast to the well over 1 million home purchase and refinance loans that it touched annually otherwise. To improve the financial products' reach, HUD has proposed significant enhancements to the loan values and terms.[49] The availability of trained consultants and contractors to make consumers aware and to coordinate the loan with repairs remains a bottleneck.

FHA Title 1 Loans

FHA also insures private lenders against losses for their property improvement loans. The maximum loan amount that would be covered by this insurance, referred to as Title 1, for home repair loans varies based on the property size (e.g., up to $25,000 for single-family homes and up to $60,000 for multifamily properties for twenty years). Title 1 home repair loans have more flexible terms than the equivalent 203(k), but not a lower interest rate. For the last three fiscal years, the average annual number of Title 1 loans insured by FHA has been barely 1,000 nationally. In states like Pennsylvania, Title 1 homes have been leveraged for particularly costly repairs, such as water and stormwater upgrades.

USDA Section 504

The US Department of Agriculture's (USDA) Section 504 Home Repair program is the only federal grant program explicitly dedicated to home repairs. Section 504 provides loans to very low-income homeowners of $10,000 to $40,000 and grants of up to $10,000 to older very low-income homeowners in designated rural areas. Loans carry a 1 percent interest rate and are for twenty years. Grants must be repaid if the house is sold within three years. In FY2023, USDA made 4,100 grants under the program and 1,900 loans.

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[49] HUD, "FHA Proposes Enhancements to Make Home Rehabilitation Program More Effecitve for Homebuyers and Homeowners" (press release), November 29, 2023, https://www.hud.gov/press/press_releases_media_advisories/hud_no_23_266.

VA HISA and Disability Housing Grants

One benefit from the US Department of Veterans Affairs (VA) includes direct grants from the Home Improvements and Structural Alterations (HISA) program to cover medically necessary improvements for accessibility and mobility within and to a veteran's residence, as well as plumbing or electrical improvements for home medical equipment. The value of the assistance varies between $2,000 and $6,800, depending on whether the disability that triggers the alteration was service connected. Veterans obtain HISA grants by applying through local VA offices, a process estimated to take an average of three to six months in application alone.[50] Approximately, 10,000 veteran households were served annually based on a previous study.[51] Other VA benefits include the Specially Adapted Housing (SAH) and Special Home Adaptation (SHA) grants, available to homeowners with specific service-connected qualifying disabilities, such as loss or loss of use of hands or a limb, blindness, severe burns, or respiratory injuries. Grants for the SAH go up to $117,014 per household and SHA grants are capped at $23,444 per household for FY2024. Both can be used up to three times per household. VA home repair benefits received a total FY2023 budget of approximately $136 million in grants, with 2,232 SAH grantees and 94 SHA grantees.[52]

HHS ACL

The US Department of Health and Human Services' (HHS) Administration for Community Living (ACL) provides extensive technical support through the National Resource Center on Supportive Housing and Home Modifications, as well as approximately $1 billion in direct formula and competitive funding to state and local governments including Older Americans Act funds, some of which has been used for home modification services for older households. Many of these resources pass through State Units on Aging to local Area Agencies on Aging for a range of services, including home modifications or repairs, to older residents, their families, and adults with physical disabilities. In a 2019 survey, 61 percent of Area

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[50] L. Semeah et al., "Improving Health through a Home Modification Service for Veterans," in *Three Facets of Public Health and Paths to Improvements*, ed. B.A. Fielder (London: Academic Press, 2020), 381–416.

[51] L. Semeah et al., "Home Modifications for Rural Veterans with Disabilities," *Federal Practitioner* 38, no. 7 (2021): 300–310.

[52] See US Department of Veterans Affairs, "FY2025 Budget Submission: Burial and Benefit Programs and Department Administration," 2024, https://www.va.gov/opa/docs/remediation-required/management/fy2025-va-budget-volume-iii.pdf and Congressional Research Service, "Benefits for Service-Disabled Veterans," July 18, 2022 (updated version), https://crsreports.congress.gov/product/pdf/R/R44837.

Agencies on Aging provided home modifications directly or through contracted providers, 94 percent of which provided minor modifications (e.g., grab bars), 56 percent provided repairs (including roofing, electrical, flooring, and stairs), and 52 percent provided major home modifications, such as remodeled bathrooms and widening of doorways.[53]

FEMA IA

After presidentially declared disasters, the Federal Emergency Management Administration (FEMA) may be authorized to issue Individual Assistance (IA) to survivor households. In FY2023, FEMA provided $1.3 billion in IA.[54] Typically, IA covers the costs of immediate needs but can include minor repairs for owners that bring homes back to habitability thresholds (not full restoration or rebuilding). Housing assistance caps vary by year, not exceeding $41,000 in FY2023. That year, over 3 million approved homeowner IA beneficiaries received an average of $3,820 for their housing damages.[55] The resources come out of the Disaster Relief Fund which receives an annual appropriation (typically through the Major Disasters Allocation, which was almost $20 billion in FY2023) but is regularly supplemented when the quantity of disaster damages exceeds it. An important program change for housing habitability was recently announced, allowing pre-disaster inadequacies to be covered by IA.[56] This change allows homes with pre-disaster needs—likely occupied by vulnerable households—to be made fully habitable and better able to withstand future disasters. This expansion increases the role that post-disaster funds play in serving pre-existing needs.

SBA Disaster Loans

Along with FEMA IA, the Small Business Administration (SBA) also funds low-interest, long-term loans for losses that are not fully covered by insurance or other recoveries. Homeowners are eligible for up to $500,000 in loans to repair or replace their primary residence that was damaged or destroyed in a

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[53] National Association of Area Agencies on Aging and USC Leonard Davis School of Gerontology, "Building Community Capacity to Serve Older Adults: The Role of Area Agencies on Aging in Home Modification and Repairs: A Data Brief of the 2019 Survey of Area Agencies on Aging," https://www.usaging.org/Files/DataReport-Home-mod-508.pdf.

[54] FEMA, "2023 by the Numbers," December 29, 2023, https://www.fema.gov/blog/2023-numbers.

[55] Author tabulations of FEMA Housing Assistance Program Data for Owners for FY2023 declarations.

[56] FEMA, "Biden-Harris Administration Reforms Disaster Assistance Program to Help Survivors Recover Faster" (press release), January 19, 2024, https://www.fema.gov/press-release/20240119/biden-harris-administration-reforms-disaster-assistance-program-help.

declared disaster event.[57] SBA is also able to refinance all or part of a previous mortgage up to the cap for credit-challenged owners and may also increase the loan by up to 20 percent of verified losses to mitigate damages from possible future disasters. In FY2023, SBA was appropriated $143 million in funds across both their business and home disaster loans.

HUD CDBG-DR

If households' needs persist after insurance claims, FEMA IA, and SBA loans have been provided, Congress often provides supplemental appropriation to HUD's CDBG for Disaster Recovery (CDBG-DR) to the units of government where survivor households reside. CDBG-DR is the second biggest fund source for post-disaster recovery after FEMA IA and the largest for post-disaster home repairs.[58] For FY2023, Congress appropriated $3 billion for recovery from 2022 disasters and later. HUD is implementing a range of reforms so home repairs can exceed rebuilding to previous standards and include mitigation for future hazards, though implementation rests on grantees.

HUD has also allocated funds for larger hazard mitigation efforts for these same grantees that recently suffered hazard events (CDBG for Mitigation, or CDBG-MIT), most of whose funds are going to larger regional infrastructure and household relocation activities but also include some home retrofits.

FEMA Hazard Mitigation Assistance Grants

Like CDBG-MIT, FEMA also provides a large range of competitive mitigation assistance grant programs whose funds have been used for individual home repairs related to hazard proofing, such as home elevations. Some, including Building Resilient Infrastructure and Communities (BRIC) and the Flood Mitigation Assistance (FMA) grant programs, are available to a wider pool than those having experienced a recent disaster, while the others, the Hazard Mitigation Grant and Post Fire Grant programs, are available only under those conditions. These funds also have been provided to states primarily for infrastructure projects but have increasingly been used to fund pre-disaster home retrofits. For example,

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[57] US Small Business Administration, "SBA Announces Major Changes to Its Disaster Lending Program" (press release), July 31, 2023, https://www.sba.gov/article/2023/07/31/sba-announces-major-changes-its-disaster-lending-program.

[58] C. Martín et al., "Housing Recovery and CDBG-DR: A Review of the Timing and Factors Associated with Housing Activities in HUD's Community Development Block Grant for Disaster Recovery Program," US Department of Housing and Urban Development, January 2021, https://www.huduser.gov/portal/publications/HousingRecovery-CDBG-DR.html.

California has received BRIC grants to retrofit multifamily buildings in low-income, disadvantaged communities in eight counties and to retrofit homes with ignition-resistant materials at the wildland-urban interface, while Florida has received multiple FMA grants to elevate homes above flood levels.

DOE IRA Rebates

The 2022 IRA established two major housing improvement rebate programs[59] for renters and homeowners and appropriated $8.8 billion over the next ten years: Home Efficiency Rebates (HER)[60] and Home Electrification and Appliance Rebates (HEAR).[61] To date, four states have submitted plans to the DOE for how they intend to target populations and distribute their IRA resources since DOE's release of guidelines in 2023. DOE has also issued program guidance documents that make important requirements for equity considerations (namely, the mandatory provision to allocate a percentage of each state's rebate funding in line with its percentage of low-income households, defined as those with incomes under 80 percent AMI). Though still a work in progress, these rebates will have considerable bearing on home improvements for the 68.6 million low-income households that will be eligible.[62]

EPA GGRF

Finally, also through the 2022 IRA, the Environmental Protection Agency (EPA) is administering $27 billion through three programs associated with the Greenhouse Gas Reduction Fund (GGRF). Funding for two of the programs—the $14 billion National Clean Investment Fund and the $6 billion Clean Communities Investment Accelerator—was just released to recipient financial institutions who will leverage the funds to finance a wide range of energy projects particularly focused in low-income and

[59] Note that the IRA also expands individual household tax credits for energy efficiency upgrades of residential properties, which are more likely to be accessed by higher-income households with tax liability and resources to front energy repair and improvement costs.
[60] Formerly known as the Home Owner Managing Energy Savings program, or HOMES.
[61] Formerly known as the High-Efficiency Electric Home Rebate Program, or HEEHR.
[62] DOE, "Inflation Reduction Act Home Energy Rebates: Program Requirements and Application Instructions," July 27, 2023; updated October 13, 2023, https://www.energy.gov/sites/default/files/2023-10/home-energy-rebate-programs-requirements-and-application-instructions_10-13-2023.pdf.

disadvantaged communities.[63] Community-wide home energy retrofits for both renters and homeowners are expected to be eligible, which may also include repair and improvement activities beyond energy performance that are necessary for achieving energy benefits.

State and Locally Supported Programs

Many of the federal programs noted above deliver resources that are managed and monitored at the state and local level, but many state and local governments administer home repair programs beyond these national streams. In some cases, these programs are designed to address the basic structural and system repairs needed for home occupancy beyond habitability. For example, Pennsylvania's Whole-Home Repairs Program has received significant national attention both for its scale and because it serves as a bridge between existing programs and homes on WAP's deferral lists. The commonwealth used $125 million of ARPA funding to launch the program and is now seeking new resources. Some city programs also relied on temporary ARPA funds, such as those in Detroit ($27.7 million in ARPA for roof and window repairs for low-income and older households) and Dallas ($11.25 million in three neighborhoods).

Many jurisdictions have used local tax structure (specifically, property abatements) to incentivize voluntary but usually extensive repair and rehabilitation work in homes—a structure that is often out of reach for most low-income households that lack the savings or credit to front repair costs or financial capacity to manage and take on debt. A few jurisdictions, such as Richardson, Texas, propose providing upfront funding to circumvent the former challenge—a structure like many of the local home energy retrofit financing programs, for example property assessed clean energy (PACE) financing. We include programs common to many jurisdictions, highlighting unique programs that have emerged.

State and Local Home Modification Loans and Grants for Target Populations

A few jurisdictions have created independent funding streams (typically loan programs), distinct from federal funding streams, for older adults, households of children with disabilities, or other designated underserved populations. The Massachusetts Rehabilitation Commission's Home Modification Loan

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[63] The White House, "Biden-Harris Administration Announces Historic $20 Billion in Awards to Expand Access to Clean Energy and Climate Solutions and Lower Energy Costs for Communities Across the Nation" (press release), April 4, 2024, https://www.whitehouse.gov/briefing-room/statements-releases/2024/04/04/biden-harris-administration-announces-historic-20-billion-in-awards-to-expand-access-to-clean-energy-and-climate-solutions-and-lower-energy-costs-for-communities-across-the-nation/.

Program provides interest-free, deferred payment loans up to $50,000 for older adults. More states offer emergency funding for home deteriorations that may cause health hazards, but also for specific demographic groups. For example, The Homes & Community Renewal funds in the State of New York's Housing Trust Fund Corporation offers grants of up to $20,000 to older single-family homeowners through its Residential Emergency Services to Offer Repairs to the Elderly (RESTORE) program for emergency home repairs or code violations. RESTORE was appropriated $7 million in the FY2023 state budget. Michigan's State Emergency Relief assists with home repairs to correct unsafe furnaces, hot water heaters, or septic systems and restore essential services. There, households in need of emergency furnace repairs are given a lifetime maximum grant of $4,000 and other repairs are granted $1,500. With ARPA funding, the Illinois Housing Development Authority created the Illinois Homeowner Assistance Fund Home Repair Program, offering emergency repairs up to $60,000 per home.

HFA Home Repair Loans

Many state housing finance agencies (HFA) offer direct homeowner loans or a line of credit for lenders to offer low-interest loans to low- and moderate-income households for home repairs distinct from FHA 203(k). For example, MassHousing (the HFA for the Commonwealth of Massachusetts) offers three direct loan programs: general home improvement loans (currently between $7,500 to $50,000 at 5 percent for 15 years); lead paint removal loans (up to $30,000 for a single-family home interest-free and repayment deferred until property sale); and septic system repair loans ($1,000 to $25,000 at 0–2.5 percent for 15 years) for households with incomes under $127,700. Minnesota Housing offers "fix up" loans ($2,000 to $75,000 for fifteen years but forgivable with no sale) and "rehab" loans (up to $37,500 for fifteen years, also forgivable) with similar income caps but the latter for households with non-property assets valued at less than $25,000.

HFA Energy Retrofit Loans and Rebate Programs

Similarly, many state housing finance agencies have developed energy upgrade loan programs. Some, such as the Alaska Housing Finance Corporation, operated a home energy rebate program from 2008 to 2018 that served over 26,000 homeowners with rebates averaging $7,000. Many anticipate using new IRA funding streams (both DOE rebates and EPA GGRF) to provide additional loans.

State Energy Commission Utility Incentive Programs

Separate from state housing finance agencies, many states' energy commissions have mandated that private and public utilities operating within their states must maintain home energy repair and upgrade assistance programs for low-income households.[64] These programs are typically funded through utility consumer fees. The Pennsylvania Public Utility Commission's Bureau of Consumer Services administers the Low-Income Usage Reduction Program, for example, which requires all major regulated electric and gas companies to participate and provide weatherization installations to customers that have utility-supplied space or water heating in their homes and have incomes at or below 150 percent of poverty level. In some states, these programs are administered by distinct nonprofits or quasi-state agencies that work in partnership with utilities and state regulators to administer financial incentives (typically, direct rebates are the industry's most effective incentive) to low-income households, as is the case with the Energy Trust of Oregon or Efficiency Maine.

PACE and Other Local Financing Programs

Residential property assessed clean energy (PACE) financing is a tool used by local jurisdictions to finance owner-occupied home energy upgrades and improvements by providing upfront costs and requiring later payment through a voluntary property tax assessment attached to the property. PACE is enabled through the special assessment district capacity allowed for some municipalities, depending on state laws. In states including California, Florida, and Missouri, some municipalities administer PACE programs directly or in partnership with private-sector intermediaries.

Pennsylvania's WHRP

Pennsylvania's Whole-Home Repairs Program, funded through the one-time ARPA grant to the state, provides aid to low-income households (under 80 percent AMI) through county governments for basic habitability and safety repairs, accessibility modifications for individuals with disabilities, and energy and water efficiency upgrades in anticipation of other programs such as WAP and, now, the IRA rebates. State money also went to counties for workforce training and development in support of the program.

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[64] American Council for an Energy-Efficient Economy, "Supporting Low-Income Energy Efficienty: A Guide for Utility Regulators," April 28, 2021, https://www.aceee.org/toolkit/2021/04/supporting-low-income-energy-efficiency-guide-utility-regulators.

Qualifying homeowners receive grants while small-property landlords receive loans up to $50,000 per unit.

Richardson, Texas HIIP

The City of Richardson's Home Improvement Incentive Program (HIIP) provides single-family homeowners regardless of income (except those who are tax delinquent) funding for repairs of at least $20,000. Similar in concept to PACE programs, the city provides the homeowner a one-time incentive equal to ten times the expected increase in city taxes based on the home's pre-construction and post-construction appraised values.

Philadelphia, Pennsylvania BSRP

Like many state emergency repair programs, the City of Philadelphia's Basic Systems Repair Program (BSRP) provides free repairs to correct electrical, plumbing, heating, limited structural and carpentry, and roofing emergencies for low-income homeowners (defined with income limits based on household size). These municipal programs often exist absent statewide emergency repair programs.

Civil-Sector Programs

A broad range of national organizations have also been at the forefront of establishing methods for outreach and home repair service delivery—in some cases serving as models for the establishment of public programs and even being the local provider for them. Like public-sector programs, these organizations were largely formed in the last half-century but have entered the space due to widely different catalysts. They have different organizational models, but often rely on local chapters or branches for service implementation.

Rebuilding Together

The largest organization focused exclusively on home repairs, Rebuilding Together, began as a volunteer organizing effort in Texas as "Christmas in April" in 1973. Expanding nationally with over one hundred affiliates that have individual nonprofit status, Rebuilding Together's national leadership provides training, technical assistance, and data collection. Annual costs and outputs across all affiliates are not available, but studies suggest that the equivalent average home intervention performed by the program

is $7,900, and that over 100,000 households have benefited to date.[65] The program also has special lines of operations for older households and households in need of disaster repair.

Green and Healthy Homes Initiative

The Green and Healthy Homes Initiative (GHHI) originally focused on lead prevention at its launch in 1986 in the Baltimore area. Since that time, the group has expanded to a wider range of home repair and upgrade interventions focused on health outcomes with direct service delivery in four cities (Baltimore; Jackson, Mississippi; Providence, Rhode Island; and Memphis, Tennessee) and a range of partnerships in a dozen more cities and states.[66] GHHI has also invested in pilot programs to coordinate health-related repairs with weatherization and other energy upgrades.

Habitat for Humanity

Founded in 1976 with a core mission of new homebuilding, Habitat for Humanity began a wide range of home preservation and repair programs in the early 2000s through its network of local chapters.[67] For smaller-capacity chapters, interventions typically include painting, landscaping, weatherization, and minor exterior repairs valued at $3,000-$4,000. For higher capacity chapters that may also have fewer new homebuilding opportunities, significant repair and rehabilitation projects have been implemented; in one chapter, at least one project's costs were equivalent to $150,000.[68] Many offer a "no-profit" repair loan equivalent to Habitat's more widely known "no-profit," sweat-equity mortgage up to the equivalent of $15,000.[69] Several chapters also maintain distinct aging-in-place home modification programs or "Repair Corps" programs for the repair of veterans' homes.[70] Habitat volunteers have also been involved extensively in home repair and debris removal in many post-disaster scenarios.

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[65] Rebuilding Together, "Social Return on Investment," https://rebuildingtogether.org/social-return-investment.
[66] Green and Healthy Homes Initiative, "Direct Services," https://www.greenandhealthyhomes.org/directservices/.
[67] Habitat for Humanity, "Home Improvement Before and After," https://www.habitat.org/stories/home-improvement-before-and-after-photos.
[68] Habitat for Humanity East Bay/Silicon Valley, "How to Apply for Home Repairs with Habitat," March 16, 2023, https://www.habitatebsv.org/blog/home-repair-program.
[69] Habitat for Humanity North Central Massachusetts, "Critical Home Repair Program," https://ncmhabitat.org/critical-repair/.
[70] Habitat for Humanity, "Aging in Place with Habitat for Humanity," https://www.habitat.org/our-work/aging-in-place; Habitat for Humanity, "Habitat for Humanity's Repair Corps Program," https://www.habitat.org/volunteer/near-you/veterans-build/home-depot-repair-corps-program.

SBP

Founded by Hurricane Katrina recovery volunteers working in Saint Bernard Parish, Louisiana, SBP has expanded to provide a range of both pre-disaster mitigation and post-disaster home repair services in a larger number of disaster-affected areas throughout the US, serving at least 1,500 households to date. Consequently, the group has become an active advocacy and policy voice in home quality and repair work as the frequency of disaster events has increased.

State and Local Civil-Sector Programs

In addition to the more formalized public-sector and national civil-sector programs, a wide range of local civil society organizations and efforts have evolved. These provide widely varying scales of home repairs, for various purposes from basic structural adequacy through advanced energy performance, and with vast differences in budgets, professional staffing levels, and productivity. In many cases, they are volunteer-driven and housed in neighborhood faith-based or community development organizations and are therefore often aligned or in partnership with trusted local groups in communities. The number of local organizations is large but difficult to quantify because of their variable duration and institutionalization.

In the Kansas City metro area, for example, the nonprofit HopeBUILDERS has provided home modifications for over 150 households with older adults and people with disabilities.[71] Atlanta's Nehemiah Project also provides home repairs for older adults in addition to the other services it performs as a community economic development organization.[72] Home Works of America is a faith-based volunteer-run organization in Columbia, South Carolina that provides home repairs to low-income households.[73] Elevate in Chicago has supported home energy retrofits and related health hazard repairs for thousands of low-income renter and homeowner households since its founding out of the Center for Neighborhood Technology in the early 2000s.[74] Due to its success with energy-related repairs, Elevate was also charged with running the State of Illinois' ARPA-funded home repair program, described above, and has expanded in deeper energy improvements and electrification.

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[71] HopeBUILDERS, "About HopeBUILDERS," https://hopebuilders-kc.org/about-hopebuilders/.

[72] Nehemiah Project CDC, "Senior Home Repair Program," https://nehemiahprojectcdc.org/senior-home-repair-program.

[73] Home Works of America, "About Home Works of America," https://homeworksofamerica.org/about/.

[74] Elevate, "About Elevate," https://www.elevatenp.org/about/.

Private-Sector Philanthropy

Finally, a range of national and local companies and corporations have also provided either assistance, direct material and technical support, or corporate volunteers for low-income households' home repairs over the last several decades. This range of companies includes several homebuilders and remodelers, and construction product retailers such as Home Depot and Lowe's. In many cases, these private donations and charitable efforts are partnered with the local civil-sector organizations that provide home repair assistance.

In sum, there are many programs that exist variably across the country and not always in alignment within their ecosystems or with the broader local housing policy context. Though not the purpose of this paper, additional archival documentation and synthesizing is needed to track all these programs' operations (budgets, staff, administrative structures, and mission or home repair focus), beneficiaries and clients (by eligibility characteristics such as income, age, physical ability, home location, and veteran status), and activities (recruitment, assessment, budgeting, repair installation, and quality control) for these beneficiaries. Further, we also need to explore fundamentally how many households they serve and to what effect. Ultimately, understanding the causes of deferred home repairs and improvements, the households' experiences in navigating home repair providers, and households' potential capacity to undertake repairs independently are among the critical gaps that need to be filled.

4. Repair and Repair Program Outcomes

Todd Swanstrom, PhD

This section reviews what we know about the outcomes of home repairs as variably assessed for the home repair programs including some of those noted above, whether administered by governments or nonprofits.[75] For this discussion, "repairs" refer to physical design and construction interventions. Repairs must be understood, however, as addressing not only the physical condition of the house but

[75] We caution that many of the programs administer different kinds of repairs across beneficiary homes depending on the individual home needs, and likely at varying levels of construction or repair quality. This variability in explicit and implicit repair types is likely even broader among programs with large geographic coverage (such as the national civil-sector programs) or with permitted local implementation (such as CDBG). Consequently, it is challenging to distinguish the structural or clinical outcomes from a physical repair from the outcomes of specific program in question in most evaluations, as these evaluations focus on program interventions. In this chapter, the outcomes of repairs are distinguished from the outcomes of repair programs as much as possible. Note further that we do not examine here, however, the effectiveness of housing code enforcement at stimulating needed repairs.

also how the house *functions* for its inhabitants. For example, if an older couple moves into a housing unit, it may instantly require a "repair," such as the installation of grab bars in the shower to make the home safer and more functional for its inhabitants. Whether a home requires a repair or modification also depends on its location and the surrounding environment; for example, a home in Alaska is not deficient if it lacks air conditioning, whereas one in Florida without air conditioning would be considered deficient.

In 1983 David Listokin wrote the introductory chapter, "Housing Rehabilitation: A Strategy and Literature Comes of Age," for an edited volume on the topic.[76] Listokin points out that there is little consensus on what is meant by "rehabilitation" because it varies all the way from cosmetic preservation to moderate rehab to "gut" rehab—consequently, there has been little consistent evaluation across programs that address these multiple activities. In recent decades, much of the research on housing deterioration and home repairs has been conducted by public health researchers. As we discussed in the earlier section, public health researchers have accumulated a great deal of information on the effects of *not* repairing housing deterioration. We know a great deal about how housing conditions negatively affect health; we know much less about the efficacy of home repair programs to address conditions that cause ill health.

A few specific housing interventions, however, are well studied. For example, well-designed studies have evaluated the effects of home modifications, such as grab bars, and specific interventions to address issues like mold, lead poisoning, and air leakage causing uncomfortable temperatures (weatherization). Much less evaluation research has been conducted on broader home repairs and their effects on outcomes other than health, such as property values and housing stability. One of the challenges of evaluating the outcomes of home repairs is that they vary considerably from minor repairs, such as fixing a porch, to major replacements of core home components and systems, such as roofing, plumbing, electrical, or HVAC. Here, we focus on repair programs that fall short of full-scale rehabilitation. In most cases, the repairs discussed can be completed while the house is still occupied.

The gold standard in program evaluation is the randomized control trial. Under such a methodology, homes would be randomly assigned to an experimental group that received repairs and a control group that did not, and the outcomes of both groups would be followed over time. Controlled

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[76] D. Listokin, *Housing Rehabilitation: Economic, Social, and Policy Perspectives* (New Brunswick, NJ: Rutgers University Press, 1983).

experiments in the field of home repairs are rare. They are expensive and can be viewed as unethical (arguably, it would be wrong to deliberately withhold needed repairs from some households for many years). Besides experiments, evaluations of repair programs rely on reports from those who received repairs before and after, or on other measurable outcomes such as property values or disease.

Finally, it is important to distinguish between "outputs" and "outcomes." Home repairs have "outputs," namely, the changes in the physical structure. Rebuilding Together has a list of 25 Safe and Healthy Priorities for homes, such as "the roof is watertight" and "the home is free of active water leaks and moisture problems." Rebuilding Together conducts a before and after assessment to see whether the repairs have moved the home from "failure" to "passing" on each dimension. Ultimately, however, we are concerned here not with the *outputs* of home repairs but with the *outcomes*, that is, how the change in the physical condition of the home affects the people living in the home and the broader society. Exhibit 1 provides a typology of relevant outcomes.

Exhibit 1. Sample Outcome Measures from Home Repairs

Outcome	**Individual/Household**	**Neighborhood/Broader Society**
Physical Health	Asthma and Lead Poisoning Rates	Medicare and Medicaid Costs
Mental Health	Anxiety, Depression Rates	Mental Health Costs, Workforce Participation
Financial Health	Household Wealth, Property Values, Utility Costs	Neighborhood Property Values and Local Tax Base
Stability and Independence	Ability to Age in Place, Physical Mobility Capacity	Housing Vacancy and Cost of Demolition
Community	Relationships with Neighbors	Community Cohesion, Housing Affordability

Evaluations of Specific Repairs

A great deal of research has linked specific repairs to specific, usually health-related, outcomes. We review this research first before turning to the research on home repairs more generally. Generally, this research has been conducted by health policy researchers and demonstrates that interventions produce benefits that outweigh their costs. For example, repairs to address lead poisoning have been shown to have a huge positive return on investment, with individual and social benefits greatly exceeding costs. One of the main avenues of lead poisoning is when chips or dust of lead paint are inhaled by young children. The repair can be as simple as scraping the lead paint and sealing it with lead-free paint or replacing old windows with lead-free windows. One study found that lead-safe window replacement, including stabilization of any loose paint, in all pre-1960 housing would produce net benefits over costs

to society of $67 billion.[77] The benefits include reduced medical costs, increased lifetime earnings, and energy savings.

Many studies have evaluated repairs designed to address conditions that cause asthma, particularly mold. One randomized controlled trial compared two groups of children living in a home with indoor mold. One group received home cleaning information while the other received an individualized action plan along with "household repairs, including reduction of water infiltration, removal of water-damaged building materials, and heating/ventilation/air-conditioning alterations."[78] The group receiving repairs had a significant reduction in symptom days and use of health services.

Extensive research has also shown that safety modifications, such as grab bars and ramps, produce substantial savings. A study done for Rebuilding Together found that the benefits of these modifications, primarily due to reduced emergency room visits, hospitalizations, and deaths, averaged $5,870 per household.[79] Savings were calculated over a five-year period with a discount rate of 3 percent. As we will discuss later, the researchers drew on a wide range of studies to estimate how many falls are prevented by the modifications and how much each prevented fall would save in health care costs or premature deaths. The study did not document the costs of the safety modifications, but clearly the benefits greatly outweigh the costs of these relatively inexpensive home modifications.

Finally, home weatherization is a specific repair that has been thoroughly evaluated. Weatherization programs were not designed to address a specific health problem but to reduce energy usage. However, subsequent research has found that weatherization has extensive health and safety benefits. DOE conducted two major national evaluations of WAP. Led by the Oak Ridge National

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[77] R. Nevin et al. "Monetary Benefits of Preventing Childhood Lead Poisoning with Lead-Safe Window Replacement," *Science Direct* 106 (2008): 410–19.

[78] C. Kercsmar et al., "Reduction in Asthma Morbidity in Children as a Result of Home Remediation Aimed at Moisture Sources," *Environmental Health Perspectives* 114, no. 10 (2006): 1574–80. For a comprehensive literature review of the research linking housing interventions to control of asthma, see J. Krieger, "Housing Interventions and Control of Asthma-Related Indoor Biologic Agents: A Review of the Evidence," *Journal of Public Health Management Practices* 16, no. 50 (2010): S11–S20. It should be noted that many of the interventions included activities other than home repairs, such as mattress covers, air filters, and reductions in exposure to tobacco smoke. As with many evaluations of public health interventions, it is difficult to separate the effects of home repairs from those of other activities.

[79] W. Nielson et al., *Technical Document for Rebuilding Together*, November 19, 2021, 17.

Laboratory, researchers concluded that the benefit-cost ratio for energy savings alone was 1.4; if the health and safety benefits of the program are included, the ratio increases to 4.1.[80]

Evaluations of Home Repair Programs

We now turn to the outcomes of broader home repair programs that are not aimed at a specific health problem but at addressing a range of physical conditions in the home. While the outcomes of discrete physical interventions have been relatively robust and well documented, the outcomes of the programs that implement or fund these interventions have been less comprehensive. Few rigorous evaluations have been conducted at the program-level due, in part, to the challenges associated with comparing highly variable local implementation of programs as well as the variation in the programs' interventions across individual homes. Contributing to this complexity are the traditional programmatic outcomes that are of interest to policymakers related to administrative costs, recipient burdens, societal benefits, and operational efficiencies. Few rigorous evaluations have analyzed both these outcomes and the impacts of the repairs themselves on household well-being, as discussed previously. As the only consistent implementers of repairs, programs and program-level outcomes must be considered independently.

Broadly speaking, home repair program evaluations come in two types: 1) those based on surveys or interviews with households that received home repair services; and 2) those that estimate the benefits of home repairs by using existing studies establishing causal relationships between the physical characteristics of homes and desirable outcomes (such as prevention of disease or improved home values). In 2020-2021, for example, Rebuilding Together composed a survey that asked homeowners to retrospectively report their experiences before and after the repairs were conducted.[81] The survey asked residents to rank their home before and after repairs on a range of issues pertaining to their safety and security and their general quality of life. Rebuilding Together serves extremely low-income households, with households making less than 30 percent AMI representing 40 percent of clients served. Seventy percent of the households had someone age 65 or older. Rebuilding Together concentrates on basic repairs to make the home safe and secure. The median direct cost per household is $2,700, but that does not include the value of voluntary labor, which is considerable.

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[80] US Department of Energy Weatherization Assistance Programs, "National Evaluations: Summary of Results," https://weatherization.ornl.gov/wp-content/uploads/2018/06/WAPNationalEvaluationWxWorksv14blue8515.pdf.

[81] Actionable Insights, *Rebuilding Together: Impact Measurement Report, 2020–2021*, Rebuliding Together, 2021, https://rebuildingtogether.org/sites/default/files/images/ourimpact/2020-2021%20Evaluation%20Report.pdf.

On every one of the fourteen dimensions studied, there was a statistically significant improvement after the repairs. The biggest improvements were in "ease of bathing," "ease of ingress/egress," and "frequency of stress about home condition." The survey results also showed measurable gains in homeowners' mental and physical health. The number of falls reported fell by 50 percent compared to the six months before repairs. Homeowners also reported feeling a greater sense of pride in their homes and belonging in their community. They reported an increased likelihood that they would be able to age in place and indicated that they viewed their homes as more valuable financial assets that they could pass on to the next generation.

Researchers at the University of Missouri-St. Louis adapted the Rebuilding Together questionnaire and mailed it to 202 households that received repairs from four different agencies in St. Louis, receiving back 83 completed surveys. Like the Rebuilding Together study, the responses were overwhelmingly positive. For example, "nearly 71 percent reported that they were now 'a lot more likely' to stay in their home as a result of the home repairs, and 61 percent reported that it was 'somewhat' or 'a lot more' likely that they would pass their home on to another person later in life."[82] The St. Louis study followed up with 31 in-person interviews with those who filled out the questionnaire. The voices of the homeowners drive home the benefits of the repairs beyond what a survey questionnaire can capture. Interviewees described how the repairs greatly reduced their stress and anxiety, increased their pride in the home, and improved their relationships with friends and family. Many homeowners reported having to choose prior to any intervention between paying for essential needs, like prescription drugs, or paying for a basic repair. They also provided testimony that repairs enable residents to age in place and avoid foreclosure.[83]

Reports by the homeowners themselves of the outcomes of home repairs are potentially subject to bias. They may not accurately remember what life was like before the repairs and because the repairs were free, they may be motivated to report positive results. Other empirical research supports the positive outcomes of repair programs. This research links repairs to housing conditions that are in turn causally connected to outcomes, such as disease or the cost of utilities. Still other research compares outcomes for homes or neighborhoods that received repairs with outcomes for those that did not

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[82] Community Innovation and Action Center, University of Missouri-St. Louis, *No Place Like Home: The Need for and Effectiveness of Home Repairs Among Older Homeowners in St. Louis*, May 2023, 26.

[83] For additional qualitative evidence on the effects of home repairs, see Bartram, "Routine Dilapidation."

receive repairs.[84] These interventions ranged from simple repairs to extensive rehabilitation of vacant properties. Most studies showed that investments in older properties have positive spillover effects on nearby properties, although some studies did not find a statistically significant effect.

For decades, Philadelphia's Basic Systems Repair Program (BSRP) has provided grants of up to $20,000 to repair home systems including heating, plumbing, and roofs. On average BSRP invests $6,911 in each home repair. One study compared 6,732 block faces that received BSRP interventions with block faces that did not.[85] Controlling for a range of possible confounding factors, researchers found that the addition to a block face of one BSRP intervention resulted in a 21.9 percent reduction in total crime. The researchers speculate that the effect might have to do with the ways deteriorated homes contribute to the experience of stigma and undermine neighborly ties and collective efficacy. Examining 12,000 homes that received BSRP grants between 1995 and 2000, researchers found that less than 1 percent were abandoned in 2000, a rate of abandonment less than one-quarter of the rate for similar homes that did not receive BSRP loans.[86] In an analysis of BSRP, Black concludes that it is a cost-effective way to stop the abandonment of individual homes and provide affordable housing.[87]

Even if home repair programs cannot produce, by themselves, significant effects on surrounding property values and the local tax base, they may generate enough other positive outcomes to justify their costs. The most comprehensive cost-benefit analysis we are familiar with of a home repair program was conducted by Ecotone Analytics for Rebuilding Together in 2021.[88] The analysis concluded that every dollar invested by Rebuilding Together generated $2.84 in social value. The residents enjoyed $1.19 in benefits such as improved quality of life, prevented falls, improved respiratory health, and other outcomes. Benefits also accrued to the health care system. For every dollar invested by Rebuilding Together, Medicare and Medicaid received $1.32 in reduced costs from fewer falls, less lead exposure, less use of assisted-living facilities, and other health improvements.

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[84] K. Black, *The Power to Stabilize Neighborhoods: Research on the Impact of Policy Interventions on Low-Income and Middle Neighborhoods After a Macroeconomic Shock,* May 8 Consulting, 2021.

[85] E. South and J. MacDonald, "Association Between Structural Repairs for Low-Income Homeowners and Neighborhood Crime," *JAMA Network Open* 4, no. 7 (2021).

[86] G. Whitman, *Blight-Free Philadelphia: A Public-Private Strategy to Create and Enhance Neighborhood Values*, Research for Democracy, 2001.

[87] K. Black, *Issue Brief: Effectively Preserving Philadelphia's Workforce Housing Stock*, May 8 Consulting, March 2009, 10.

[88] Rebuilding Together, *See the Social Value: Technical Document for Rebuilding Together,* November 19, 2021.

Further, research on how home repair programs could be coordinated with other interventions to stabilize property values would be valuable. More research on when, where, and how home repair programs singly, and in conjunction with other investments, generate spillover effects on surrounding property values could motivate city governments to invest more.

Summary of Evidence

A strong case can be made for a positive social return on investment for home repairs for low-income homeowners. The evidence linking the outputs of the home repairs with valued outcomes is far from perfect, but it is backed up by considerable research. The researchers of the Rebuilding Together study cited in footnote 85 cite 71 scholarly studies with varying levels of evidence of causality. Recognizing the limits of the evidence, the researchers err on the conservative side in estimating benefits. More importantly, many important benefits cannot be monetized because of lack of data and because other outcomes are not in principle monetizable. For example, the Rebuilding Together study does not include the spillover effects of increased property values. It also ignores the benefits of improved hygiene, the ability to transfer wealth to the next generation (addressing the racial wealth gap), improvements to the workforce (less illness), the preservation of affordable housing, the cost of housing abandonment and demolition, and increased social cohesion. If all program benefits could be measured, the benefit-cost ratio would be much higher.

Evaluating home repair programs is challenging. They vary so much in magnitude and focus, and it is difficult to quantify the outcomes across five different domains (physical, mental, and financial health, independence and security, and community). Research has tended to focus on specific home repair interventions linked to specific health problems, such as repairs to eliminate the moisture and mold that cause asthma. This research makes a solid case for a positive rate of return for each dollar invested. Weatherization, which is the focus of one of the nation's largest subsidized home repair programs, was originally motivated by a concern to reduce energy costs. Research showed that energy savings justify costs. Now, however, researchers have significantly strengthened the case for weatherization programs by documenting a range of non-energy benefits.[89]

[89] M. Schweitzer and B. Tonn, "Non-Energy Benefits of the US Weatherization Assistance Program: A Summary of Their Scope and Magnitude," *Applied Energy* 76, no. 4 (2003): 321–35.

While the evidence for the benefits of specific home repairs that address lead, mold, safety, and air quality is strong, the evidence in support of broader home repair programs is weaker. This is due in part to the varied nature of the interventions but also to the fact that governments have invested relatively little in rigorous home repair evaluations. The most ambitious home repair evaluations we found were commissioned not by governments but by a national nonprofit, Rebuilding Together.

Despite the dearth of rigorous wide-ranging home repair program evaluations, evidence shows that the benefits including all social effects exceed the costs. Yet, it is worth noting that the case for public policies goes beyond the costs and benefits that accrue to society. The policy rationale is informed by calls for fairness and justice. Therefore, housing deterioration is a matter of economic, racial, and environmental injustice. The costs of deterioration fall disproportionately on low-income households, people of color, and women. Future evaluations should study the benefits of addressing such injustices.

5. Policies and Policy Levers

Alan Mallach

This section reviews the current state of public policy interventions to address housing deterioration and home repair needs, draws lessons from the policy framework, and explores the implications of those interventions for the future. The first part of this section provides a brief overview of the policy history and context of public sector home repair programs, followed by a discussion of lessons that can be learned from the existing programs and challenges for the future. The final section explores the potential for future policy change.

The Policy Evolution

Home repair programs and research on their outcomes began after World War II with the rise of a movement to repair older housing rather than tear it down; this movement was a reaction to "urban renewal" programs that favored demolition and redevelopment over preservation. It was not until 1954 that HUD's Urban Renewal program permitted any funds for home repairs. Home repair programs expanded rapidly in the 1970s as part of neighborhood revitalization strategies. In fact, the 1970s were the high point of federal concern with housing deterioration and of interventions to address it.

During that decade, Congress created the CDBG program, the FHA Section 203(k) mortgage insurance program, and the WAP, which still form the core of what limited federal commitment exists with respect to home repair. That era also saw the emergence of Neighborhood Housing Services (now

NeighborWorks), a federally chartered organization with a mission to support local home repair and homeownership promotion programs. By 1980, there were 126 local NHS programs around the United States. The focus on home repair during the 1970s reflected an emerging concern for sustaining neighborhoods, in part a reaction against the excesses of urban renewal and highway construction, and in part a grassroots social movement that was embraced by political leaders, including President Jimmy Carter. Subsequent administrations pushed housing policy in different directions.

The 1980s saw the creation of the Rental Rehabilitation Program, an effective program targeting small rental properties in need of repair rather than total rehabilitation.[90] It was, however, abolished when the HOME program was established in 1990 on the principle that rental rehabilitation was an eligible use of HOME funds. In practice, however, given many competing demands, available evidence suggests that little HOME money has been used for home repair.[91] Instead, HOME funds are largely used to subsidize new construction or substantial rehabilitation of vacant properties, in particular to fill funding gaps in LIHTC projects. While there have been some major housing initiatives since, most have no connection with home repair. The state of home repair policy is static despite the continuing variability across programs and, of course, the ongoing need. A critical reappraisal of the need for repairs and the availability of resources to address that need is long overdue.

Lessons and Challenges

As the overview of programs and providers above has shown, there are many home repair programs at the federal, state, and local level across the United States. Despite this proliferation, they tend to follow consistent patterns, providing certain overarching lessons and challenges.

Scale

Programs are generally very small in scale and reach only a small percentage of households in need. The modest level of funding for home repair grants dictates that they are likely to reach only a fraction of properties. The Little Rock home repair program, for example, provides forgivable loans to older or

[90] See "Rental Rehabilitation Program Review" (1990) prepared by the HUD Office of Policy Development and Research, available at https://www.huduser.gov/portal/sites/default/files/pdf/Rental-Rehabilitation-Program-Review.pdf.

[91] It is impossible to tell for sure, since HOME reporting collapses all rehabilitation, including gut rehabilitation of vacant properties, into a single category.

disabled homeowners with annual incomes of up to $35,000 or less (about 50 percent AMI for a family of two). Assuming all the program's single-family rehabilitation allocation is used for that purpose, and that the average loan is $25,000, that would provide for a total of 50 loans a year. Yet, there are nearly 8,000 homeowners with incomes of $35,000 or less in Little Rock, not to mention over 18,000 renter households in the same income range. Such a program, despite being allocated nearly two-thirds of the city's total CDBG funds, will never reach more than a minute share of the households in need. Most jurisdictions, however, allocate far less of their total CDBG funds to home repair programs than Little Rock, and reach even smaller shares of their households in need.

Funding

Limited funds often lead cities to target their resources to only a narrow segment of the population in need. Little Rock provides assistance only to those homeowners that are not only low-income, but also over age 62 or disabled. USDA offers Section 504 grants only to low-income owners age 62 or over. Despite the fact that a far larger share of low-income households live in rental housing, and evidence that the percentage of rental units in need of repair is considerably greater than that of owner-occupied units, few programs provide more than extremely limited funding, if any, for absentee-owned rental housing.[92]

While targeting resources as a response to funding constraints is not in itself inappropriate, the particular targeting approach that is widely used does not respond to the full range of existing needs; rather, it targets those who are considered the most 'deserving' subset of households in need. That choice is not entirely unreasonable. Older and disabled homeowners are less likely than younger ones to see their incomes increase in the future, while the limited amount of funds going to landlords reflects the fact that regulations ensuring that landlords do not increase rents or evict sitting tenants after

[92] A further problem with landlord repair programs is whether landlords will take the funds if they are tied to significant rent or occupancy restrictions. Pennsylvania found with its Whole-Home Repairs Program that "even when counties have opened their programs to landlords, some say they haven't received much interest. Landlords are often reluctant to agree to limit rent increases, which can restrict their ability to offset future property tax increases or higher mortgage costs." C. Keith, "Demand for Pennsylvania's Whole-Home Repairs program Has Been Overwhelming, but More Funding Is on Hold," *Spotlight PA*, December 11, 2023, https://www.spotlightpa.org/news/2023/12/pennsylvania-whole-home-repairs-program-shortage-budget-impasse-legislature/.

upgrading their properties are seen as complicated to enforce and difficult to implement.[93] While acknowledging those difficulties, it is critical for policymakers to recognize not only the magnitude of home repair needs in rental properties, but also that the economics of rental ownership in many communities make it difficult if not impossible for landlords to improve their properties without assistance.

Repair Type

Limited funds may lead cities to prioritize certain categories of repairs rather than address all the property's deficiencies, or the household's needs. While some programs offer grants or loans large enough to cover multiple repairs, many choose to spread their modest funds more widely by limiting the size or scope of individual grants. Some cities make funds available only for repairs designed to increase accessibility, or roof repair or replacement. Similarly, the maximum USDA Section 504 grant is $10,000, and while that is enough to replace a boiler or furnace, it is far from enough to make a house that needs new heating equipment, a new roof, and is infested by mold become safer and healthier. Thus, even among those households that benefit from programs, deficiencies may continue to go unrepaired.

Siloes

Programs are siloed rather than being integrated with larger housing or community development strategies. In light of the attention given in recent years to the idea of comprehensive community planning and development, and efforts (albeit with limited success) to link programs such as LIHTC with comprehensive neighborhood strategies, it is notable that home repair programs appear largely disconnected. Within the world of home repair programs, there is little coordination.

Weatherization programs, for example, are usually administered by Community Action Agencies (CAAs), which are principally social service organizations with few connections to other entities in the same jurisdiction working on programs to improve housing and physical environment conditions in low-income communities.[94] While some CAAs provide home repair loans and grants to qualified

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[93] This is likely to be exacerbated by political opposition, reflecting a widespread tendency to believe that providing repair funds for rental properties benefits landlords rather than their tenants; or, as the author was told at one point by a city council member, "bailing out slumlords."

[94] CAAs are usually organizations that were created as a result of the War on Poverty in the 1960s. The other major program widely administered by CAAs is the Head Start early childhood education program.

homeowners, many lack capacity to manage them. Further, most programs funded with CDBG dollars are administered by municipal governments, often by distinct, dedicated staff. Even when efforts at inter-program coordination are made, it is a difficult process. A corollary to these jurisdictional boundaries comes into play with regard to the ultimate institutional beneficiaries of home repair programs. Given repairs' positive returns on investment for health care providers, there are split incentives, what David Erickson from the San Francisco Federal Reserve Bank has informally called the "wrong pockets" syndrome: the fact that most of the benefits of home repair programs go to hospitals and federal health care programs, not to the local governments that often pay for and staff programs but have less motivation to fund them out of local taxes. Should these health care entities play a role, coordination may become even more complicated.

Ultimately, the interplay of the different types of assistance, the different requirements of the various funding sources, and different levels of availability of funds in different 'buckets' creates a complicated mixture of program requirements and conditions, which must be navigated by city staff on behalf of program applicants.[95] While repair programs remain small and limited, they are unlikely to be coordinated with housing or community development strategies.

Loan Programs

Loan programs are seriously underutilized, as reflected in the fact that most home repair and improvement spending is not financed. At last measure in 2021, almost 78 percent of improvement projects to owner-occupied homes in the US were primarily funded by cash from household savings.[96] Lower-income households may be particularly reluctant to apply for or take on additional debt, while those without a mortgage—for whom their home may be their sole significant asset—may be reluctant to take on new debt and encumber their property, even if doing so is within their financial means.

On its face, the FHA Section 203(k) mortgage program would appear to be an attractive product for both homebuyers and existing homeowners, since it allows for refinancing existing mortgages to receive up to an additional $35,000 for home repairs. In practice, however, the program is barely utilized. FHA has been insuring fewer than 5,000 203(k) mortgages annually in recent years, or only 0.5 percent of FHA-insured mortgages. Even more striking is the underutilization of the FHA Title 1 home repair loan

[95] A. Mallach, "Tackling the Challenge of Blight in Baltimore: An Evaluation of Baltimore's Vacants to Value Program," Center for Community Progress, 2017.

[96] Joint Center for Housing Studies of Harvard University, "Improving America's Housing 2023," 2023.

program. Although the loans carry a market-rate interest rate, the program appears to offer advantages over other loan products in terms of underwriting, such as the lack of an equity requirement, and carries a long 20-year term. Yet only about 1,000 Title 1 loans are insured by FHA each year. Today's relatively high interest rate environment may limit expansion of these programs.[97] Indeed, many homeowners now have mortgages with below-market interest rates, making refinancing costly.

In summary, the current home repair landscape is beset by a range of challenges from which many lessons can be derived. Financial resources to address the need for home repairs in units occupied by lower-income households are extremely limited, and wildly inadequate relative to the need for such resources. Home repair resources, to the extent that they exist, are disproportionately targeted to a single subset of the population in need, rather than to all households in need, or to those with the most serious or urgent needs. Significant amounts of home repair funds are being used to address only some of many properties' deficiencies, such as energy conservation or accessibility improvements, leaving 'repaired' properties with significant health and safety deficiencies. Home repair programs are rarely coordinated with larger community development plans or strategies, and often not with one another. Any significant expansion of home repair programs will have to confront issues of limited delivery capacity, including potential constraints on administrative capacity, contractor capacity, and skilled workforce availability. Finally, no organized constituency or base of support appears to exist for significant restructuring or expansion of public sector home repair programs.

Recommendations

A range of possible strategies could be employed based on the lessons and challenges noted above.

Align Federal Programs

We must eliminate federal program barriers to greater use and integration of home repair resources. Two major areas where federal program barriers appear to impede effective use of home repair resources stand out: 1) program criteria and qualification requirements which lead to underutilization of key programs, most notably the FHA Section 203(k) and Title 1 programs; and 2) conflicting and

[97] It is worth noting that today's mortgage interest rates, although high compared to those experienced over the decade preceding 2022, are comparable to or lower than the mortgage interest rates in effect prior to 2000.

inconsistent standards and requirements which make it difficult to integrate and leverage programs such as combining weatherization with CDBG home repair funds or mixing loan and grant programs.

Build Local Capacity

We must expand and foster collaboration for stronger city and regional systems to develop the most effective ways of addressing housing deterioration and home repair needs. Home repair programs are often siloed from one another and from other community development initiatives taking place in the neighborhoods where home repair programs are likely to be most active. While this is clearly affected by the multiplicity of programs with varying and even conflicting requirements, it also reflects siloing at the local level. As part of any push for significant increases in resources for home repairs, efforts need to be made to create administrative systems in local governments, as well as partnerships between local governments and nonprofit organizations, to ensure that funds are used strategically for maximum benefit to homeowners, tenants, and neighborhoods.

Informal reports indicate severe deficiencies in the infrastructure needed to implement an effective, large-scale home repair program, particularly in urban lower-income neighborhoods.[98] These deficiencies include most notably the shortage of qualified, professional contractors and a skilled workforce, but may also include shortages of qualified cost estimators and inspectors in local government or nonprofit agencies, loan underwriters knowledgeable about government programs and the needs of lower-income property owners, and more.

Any strategy to significantly expand home repair activities that fails to ensure that a strong base of contractors, workers, and program staff is in place is likely to be at best less than fully effective, and at worst a failure. By its nature, this is an issue that can only be addressed locally, within a city or its region. Local stakeholders need first to assess the extent and nature of shortages in their communities, and second, develop a plan for addressing the shortages. Some strategies that might be pursued include:

- Programs to expand the capacity of contractors, including training or greater access to capital.
- Programs to train and support new contractors entering the field.
- Training programs to enhance the skills of workers or retrain people moving from other fields.

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[98] While the focus here is on urban lower-income neighborhoods, they are arguably just the tip of a much larger iceberg. Even in affluent communities, reports of difficulties in finding qualified contractors and in getting work done properly and on time are widespread. It is also worth noting that shortages of capable contractors, developers and skilled construction workers are widely seen in new construction and land development as well.

- Vocational and technical programs or apprenticeships to train entrants to the workforce.

Each of these areas requires a significant level of investment, which in many cases—particularly with respect to training programs—needs to be sustained over many years.

More Resources Are Needed

Simply, public and private actors must find ways to provide additional grant or forgivable loan resources as part of any meaningful strategy to address home repair needs. Whatever the findings of future research and the details of future funding models, it is clear that any serious effort to tackle the problem of housing deterioration in American communities, and preserve the older housing stock— both for the people who now live there and for future generations—will require not only more loan capital, but significant infusions of 'soft' funds, in the form of grants or forgivable loans, than is currently available. That in turn would demand a far greater investment of public funds in this area.

While the principal and most obvious source of additional funds is likely to be the federal budget, state governments also represent realistic sources of funds for home repair, and in some cases may be more readily enlisted in this effort. Other potential sources may be locally based or community foundations, and conceivably some developer or corporate sources.[99] To the extent that additional public or philanthropic resources become available, it is important to plan carefully how they can be used most effectively to leverage private funds and to have the greatest impact on the quality of life of low-income families and their neighborhoods. The allocation of public funds is both a political and an economic process, and home repairs are only one of a seemingly infinite number of socially beneficial uses to which public funds can be put.

Increase the Evidence Base

We need to build a greater understanding of conditions, needs, and owner preferences to frame sound public policies. A review of the literature makes clear that in many respects we lack the information we need to frame sound public policies around housing deterioration and home repair needs. While some

[99] Inclusionary housing programs, under which developers are required to set aside a percentage of units in their projects for affordable housing, have become widespread in the United States. Many of these programs allow developers, under various circumstances, to substitute either off-site development of housing or a cash contribution to a housing trust fund in lieu of the set-aside. It is worth considering to what extent it may be appropriate to use such funds to repair existing housing rather than build new housing.

studies have been done, we have little reliable information on the number of residential properties in need of repair, the extent of repair needs in those properties, and the cost of those repairs.

While we know from anecdotal reports that there are significant shortages of qualified contractors and skilled workers providing home repair services in lower-income areas, we do not have enough information to quantify the gaps in order to identify where and how to intervene. This is critically important, not only because increasing resources without ensuring the supply of capable contractors and workers can be counterproductive, but also because building the necessary home repair infrastructure is likely to require substantial and sustained investment. Without better understanding the gaps in the system, much of the investment may be used unproductively.

Build the Constituency

Finally, there is no organized constituency for a significant national commitment to preserving America's aging and deteriorating housing stock or for significantly increasing public resources for repair and rehabilitation of single-family homes and multifamily buildings. Since the allocation of public funds is inherently a political process, and limited funds are subject to many competing demands, the result is that housing deterioration and home repair are on no one's political agenda compared to new affordable housing construction. The only significant federal funding dedicated to home repair is WAP, which benefits from the fact that it is seen primarily as an energy efficiency program—and thus linked to efforts to address climate change and fossil fuel use—rather than a home repair program.

How to build a home repair coalition that will be able to compete effectively for a fair share of available resources is beyond the scope of this paper. It is clear, however, that it will be challenging. The constituency for home repair is highly decentralized, with thousands of small stakeholders and few actors on a scale large enough to mobilize significant resources, like major developers and financial institutions who push for more new construction funding. It may be worth exploring whether the process of coalition-building should perhaps begin at the state level, perhaps in an older state where the need for home repair resources is particularly visible, and where the makings of an organized constituency may be already present. This issue will have to be addressed if the idea of a major national commitment to home repair and preservation is to be more than an academic exercise.

6. Workshop Discussions

Carlos Martín, PhD

To corroborate the complexities of contemporary US home repair programs identified in this review and produce recommendations for a revised national and local policy framework, the authors also sought input from the practitioners of the repair programs themselves. To that end, the Joint Center for Housing Studies coordinated and executed three virtual roundtables of two hours each on behalf of the research team. Though the overall project's purpose of understanding home repair program challenges remained consistent for all three workshops, the objective for each workshop varied slightly given that the focal audiences represented: 1) federal repair program administrators, including those from HUD's block grant programs, DOE's Weatherization Assistance Programs, and FEMA's housing mitigation programs; 2) state and municipal program implementers; and 3) civil-sector organizations that support home repairs through their own charitable funds or public resources as direct providers. The themes of cross-program collaborations and program expansion, however, surfaced in all workshops.

The authors designed the invitation and recruitment protocols, agendas with preparatory materials, and workshop facilitation as structured discussions given their nature as qualitative primary data collection. The group sought to limit the number of participants in each workshop to 25 organizations to maintain speaking opportunities and allow for conversation. We also sought to minimize the selection bias by including both a wider pool of places and respective stakeholders than those that are currently known to be innovating with their home repair programs, and to expand the pool of stakeholders in each of these places (i.e., both public- and civil-sector actors in the same place) to more accurately depict the complexity of local repair ecosystems that households may be facing and define the potential for collaborations therein.

In January 2024, the researchers contributed to a list of representatives that was supplemented by in-depth program staff identification. For the federal workshop, invitations were sent to at least one representative from each of the federal programs identified in Chapter 3. For the second workshop, state and local government representatives were invited from the regional implementers of the federal programs as well as known independently authorized and appropriate state, county, or municipal programs from a selected number of places. These places were meant to be purposively representative of various local repair program ecosystems and geographies and included the areas of: St. Louis, Missouri; Kansas City, Missouri; Philadelphia, Pennsylvania; Pittsburgh, Pennsylvania; Boston, Massachusetts; Chicago, Illinois; and Los Angeles City and County, California. Rural communities in

Pennsylvania and Tennessee were also included, along with the Commonwealth or State officials associated with both the urban and rural places listed. For the third workshop, local nonprofit entities in these same places were solicited, including charitable, faith-based, and private groups that do not participate in publicly funded home repair programs. The four national civil-sector providers of repair services listed in Chapter 3 were invited as well and, in some cases, complemented the representatives from their organizations' local branches in the selected places. All identified individuals were contacted in April, with reminders sent out later in the month, both containing links to register for the individual's designated virtual workshop.

All registrants were sent a preliminary draft of this white paper, along with an agenda. Again, though the approach to guided discussions varied slightly in each agenda, the general plan was consistent and involved: 1) a welcome, consent to record and take notes, review of workshop objectives and discussion terms, and brief introductions (time permitting); 2) a brief review of the repair programs in question either with regard to statutes, rules, appropriations, and administration or missions, budgets, and administration; 3) open discussions regarding any pilots, innovations, or collaborations between programs (including public-civil collaborations as well as intergovernmental ones); and 4) more detailed prompts for potential points of collaboration or program growth before 5) final open-ended discussions and closeout.[100] For the detailed prompts, the following potential collaborative activities and gap opportunities were provided before the workshops but participants were free to add other themes:

- Deferrals/non-approvals list-sharing or other data sharing
- Joint recruitment and household screening assessments (including income verification)
- Use of other municipal services for hard-to-reach populations (e.g., non-English proficient, mixed-immigration status, physically challenged, etc.)
- Property title discrepancies or legal clearance
- Universal applications
- Trust building with residents
- Layering statutorily required repair scopes or thresholds
- Overcoming benefits duplication restrictions

[100] The Joint Center for Housing Studies recorded the virtual meetings using platform software and took extemporaneous notes after receiving no objection when consent was requested. Participants were informed that discussions would follow Chatham House rules. Consequently, no individual or program is explicitly cited in the summary proceedings described in this white paper.

- Shared home inspections
- Household case management
- Fund-braiding coordination
- Shared project security, home access, and other construction management services
- Shared contractors
- Contractor legal agreements and expedited payment
- Labor training and wages (including prevailing wage requirements when applicable)
- Material bulk purchases
- Gap service financing tools (mortgage refinance, home equity, etc.)
- Gap program financing tools (philanthropic or charitable program operating funds)
- Project monitoring and centralized databases
- Outcome documentation
- Technical assistance (either from federal or national civic programs)

Variations on these themes and the additions of new ones are presented in the discussions below after transcription and synthesis. A final list of registered participants is provided in Appendix 1.

Federal Programs Workshop

Federal participants noted several fundamental challenges to aligning programs at the state and local levels with their program funds. Still, participants highlighted instances in which collaboration has not only been encouraged but made explicit, such as between HUD's Community Planning and Development block grants and housing assistance programs and the DOE's Weatherization Assistance Programs, or between HUD's and EPA's lead abatement efforts. Further, new program rule changes were highlighted (such as the revision of proof-of-property-title requirements in HUD HOME programs) that improved individual program effectiveness.

Among the challenges identified were the statutorily required limits for eligibility or for repair interventions. These limits slot some household repair needs of varying scale into one program with a lower threshold—for example, a more limited repair that could be funded by HUD's CDBG program instead of more comprehensive (and costly) repairs that might be required from the HOME program. For several programs, there was also very limited opportunity to share data at the national level because of statutory limitations on administrative data sharing, and not just program rules or operational bureaucracy. Combined with the federal overarching prohibitions on duplicating benefits for any

individual household beneficiary, these stipulations have ultimately incented smaller, discrete interventions within each program and strengthened program siloes.

The federal participants also noted the problems caused by the nature of state or local grantmaking under a federal framework. In many cases, and especially with the block grant programs that are the largest funders of home repair assistance locally, there is limited oversight of local implementation. Adding more oversight would inevitably create more burden on state and local government grantees, however, and would likely result in even fewer households benefitting because of those administrative requirements. Therefore, collaborative opportunities like the streamlining of contracting or sharing of contractors between programs are few and far between, and in-depth monitoring is limited to sporadic inspector general reviews rather than more constructive guidance. Given the overall pool of limited resources for home repair programs, there is little funding for substantive technical assistance between the federal government and their grantees and even less for coordination between federal programs. Consequently, complex ecosystems have flourished locally.

State and Local Programs Workshop

State and local implementers of federal programs echoed their federal counterparts in several key points, most notably the underinvestment in the programs as well as the statutory challenges to collaboration. But these participants also described the core operational challenges associated with underfunded local programs even when their state and local governments provide additional funding and resources through appropriations or bond issuance. These included the logistical challenges of dealing with the oversubscription from eligible applicants—both a technical concern for communities' perceptions of their local governments and an issue of morale for staff working in these public-facing governmental roles. Local governments also suffered from antiquated databases and information technology purchasing power caused by similar budget siloes. Not only are the programs separately funded federally and their staff and offices separately budgeted across home repair programs, but they also cannot purchase shared computer software to maintain common client data. Local programs struggle to identify and conduct outreach to income-eligible households with repair needs, a problem compounded by the challenges with sharing applicant data across programs. The lack of an established city-wide common application for home repairs also challenges the referral process, as applicant eligibility criteria varies across city programs.

Participants from a few cities noted how major philanthropy stepped in to help fund these basic supports, but similar logistical challenges come from hiring staff, contracting the remodelers or installers,

and paying them in a timely fashion. Unless other programs and offices in state and local government beyond those focused on home repair are also involved, the participants noted that coordination between home repair programs is restricted. The state and city staff noted that unless a government executive such as a governor, county manager, or mayor has intentionally sought to streamline services between programs, there is little ability to coordinate even when staff are otherwise anxious and empowered to do so. Participants noted that any operational challenges that result in service delays or hiccups have a disproportional effect on their capacity. For example, fewer qualified and certified contractors are willing to work for city programs. Of greater concern, households begin to distrust their government programs if they are put on waiting lists or not provided updates on their program applications. In turn, this reduces public support for the programs.

Another theme from this workshop was the ability of local government to comprehensively layer and coordinate services across city departments and agencies. Several procedures aim to improve coordination across city departments, including integrating housing and health violations with referrals to home repair programs or linking resources for legal aid or services for people with disabilities. Recent efforts have emerged to improve coordination across city departments, such as by developing a single point of entry via a common application for city-funded programs. The hyper-local nature of city and county government (and some state government) could be harnessed in many positive ways, though it might have some negative effects on citizen perceptions of government (i.e., the risk of punitive action rather than assistance) as well as operations (like local prevailing wage requirements).

Ultimately, participants noted that executive champions and increased resources would still be needed to make the current system bend. A final but important note that surfaced from these stakeholders regarding federal statutes and program rules: local programs felt that duplication of benefits was more of a perceived risk than a realized hazard since most household beneficiaries in the programs that they monitor were lucky to get just one service, let alone multiple services.

Civil-Sector Programs Workshop

Civil-sector programs differ from state and local government programs by engaging in more direct service provision that often involves volunteer labor and centralized operational staff. In contrast, state and local government programs mix different service delivery methods, such as providing funds to the household directly and letting them contract with their own remodeler, or letting the household choose from a program-selected group of remodelers, or having the program's own contractors conduct the work. The unique work methods of civil-sector programs present many distinct challenges that are just

as formidable. First, case management of households and technical oversight over construction and repair work were described as central dimensions of their work. Consequently, these stakeholders noted their greater nimbleness in providing a range of repair services (especially smaller ones), as well as in referring participants to financial education and counseling, intervening on behalf of private-sector remodelers' certifications and licensing, and developing and maintaining locally centralized databases.

However, given the federated nature of many of their organizations, the information on these databases is not always aggregated, nor is it shared with other organizations within their same ecosystems—though significant exceptions to this rule have occurred due to external philanthropic investment. These organizations are often more at liberty to partner with other private and civil organizations (such as health care providers) to align services when the programs themselves have the bandwidth and sophistication to do so and have developed special workforce training and contractor assessments and arrangements. Recent innovations, such as the creation of a shared application database across agencies, have enabled civil sector practitioners in some jurisdictions to reach households with the greatest needs. They are also more at liberty to fundraise for unique tools such as these shared intake and application platforms or rigorous program evaluations.

A fundamental component of civil-sector program service delivery, according to participants, is the trust that they build with households. Often community organizers themselves, the civil sector providers viewed the relationships with communities as their core asset and one that they leveraged for a wider range of interventions and fund development. However, their concerns about jeopardizing or abusing that trust through coordination with other services (such as financial tools that some applicants could benefit from) also surfaced. Many providers, however, established strong relationships with public and private partners who provide additional services or offerings to the nonprofit groups' beneficiaries. In jurisdictions with many overlapping home repair providers, civil-sector practitioners reported making efforts to clarify and simplify their organization's role in order to build trust among participants as they navigate the available home repair services in their area.

Further, civil-sector operations outside of public-sector programs (typically) also restricted full collaboration across the local ecosystem of providers, leaving them able to make referrals to other repair programs or to public services in other areas only when they encountered challenges such as clear title or property rights or lack of adequate insurance coverage. But all civil-sector program participants noted that collaboration with other programs, be they civil or public, was critical not just for the range of services that their clients needed but also because of the underpinning reality that they simply did not have resources to serve every eligible household in their territory. According to these stakeholder

respondents, this holds especially true for households and housing that falls outside of traditional public-sector programs, such as deteriorated manufactured housing.

Conclusion

Throughout all three workshops and through the extensive literature, practical, and policy review, the authors have identified several fundamental constraints within which the current provision of home repair assistance for low-income or other disadvantaged households exists. Along with the various challenges for managing programs and serving their eligible populations, and besides the current pilots and innovations that some entities are attempting that are described in the preceding discussions, there are other underlying barriers that the current framework for home repair programs must address.

The most fundamental is that there is simply an insufficient amount of resources available to meet the needs associated with current housing inadequacy or subpar performance. Virtually every representative from programs that participated in our discussions noted their oversubscription—often leading to the sporadic nature of application openings or the closing of applications altogether. The consistent underfunding necessitates a lottery system as part of the selection process, which can reduce trust as households face long wait times without a guarantee that services can be provided.

Though most social service delivery is underfunded, this aggregate underinvestment in repair programs has had the additional effect of reducing state and local implementers' interest in and capacity for innovating and seeking collaborations and partnerships that could help address their gaps. The civil-sector groups that have filled in many of these voids may inadvertently increase the complexity for households that are navigating between programs, many of whom are unfamiliar with the services for which they are eligible or unclear about the status of their applications and services. Though groups are certainly additive, the dilution across programs with varying purposes and household criteria without conscientious collaboration complicates the still limited resource and skill pools. Regardless of the complexity and inefficiencies in this ecosystem, more resources are needed.

Another important fact that must be considered is that a significant portion of households living in homes that are either physically inadequate or not performing to societally desirable standards are renters. While several programs have expanded to include small rental property owners with low-income tenants in addition to low-income single-family homeowners, the lack of consistent intervention plans across tenures creates a framework that is simultaneously punitive and assistive while still leaving many households in unsuitable conditions. Programs that can better identify households and understand their experiences and constraints are needed to provide comprehensive services regardless of tenure.

Further, many homeowners or small-rental property owners do not have the financial resources or financing capacity to make improvements on their own. This fact contributes to the persistence of home deterioration and underperformance. Workshop participants variably noted that beneficiary households may be distrustful of public or civil programs as a baseline, let alone when the programs' representatives attempt to steer households into home equity loans or related financing tools. Though this sentiment was not universally expressed, all participants noted that better attention to the household's capacity and constraints might lead to the provision of simultaneous services such as financial literacy and homeownership counseling that can help open a range of service and finance options.

Ultimately, a wide range of challenges persist in the ecosystem of public and civil programs designed to assist our most vulnerable neighbors in repairing and improving their living environments. Many challenges are operational and programmatic, while others are symptomatic of our policymaking patterns that are designed to solve a single problem rather than center the households in question through a holistic and comprehensive approach to home repair needs. The most fundamental and consistent of these challenges is the simple shortfall in investment. All the programs discussed in this review share a long-term goal of making our homes as whole as possible, in the physical sense of the word and beyond. That vision is a foundation from which to build.

Appendix 1. List of Final Registrants

In alphabetical order of last name, excluding authors and JCHS staff:

Abdelazim, Tarik Center for Community Progress
Allen, Keesha Home Repair Resource Center
Baker, Mona-Gail Washington Federal
Batkalin, Karina HUD/FHA
Beniston, Ian Youngstown Neighborhood Development Corporation
Black, Karen May 8 Consulting
Bonner, Jeff Rebuilding Together Boston
Broome-Walker, Marquetta Missouri Housing Development Commission
Carpenter, Jen HUD
Carr, Holly DOE
Carrasco, Emma Coalition for Home Repair
Cassidy, Maggie The Preservation Compact
Cohen, Jonathan DOE
Daniela, Zeeda Rebuilding Together of the City of Angels
Diaz, Zoraima Fannie Mae
Edelman, Sarah HUD
Erchul, Jim Dayton's Bluff Neighborhood Housing Services
Faux, Brian HUD/FHA
Garrison, Veronica HUD
Gibson, Regina City of Chicago
Gillam, Susan Community Economic Development Assistance Corp
Gooden-Patterson, Germaine Women for a Healthy Environment
Harris, Freyja Coalition for Home Repair
Hogan Closkey, Pilar Saint Joseph's Carpenter Society
Ivy, Lisa CRA
Kammenzind, Emily Habitat for Humanity of Greater Pittsburgh
Kendall-Morris, Derek URA of Pittsburgh
Kornegay, Cliff HUD
Lara de Morales, Irma City of Chicago, Department of Housing
Laz, Mike H.O.M.E.
Leonard, Jennifer Fannie Mae
Luyties, Stephanie Rebuilding Together Portland
Maia, Gretchen DOE
Maiden, Alice Fannie Mae
Marion, Flore City of Pittsburgh
Mond, Shadae DOE
Mulbry, Rachel Philadelphia Housing Development Corporation
Norton, Ruth Ann Green & Healthy Homes Initiative
O'Connor, Steph City of Chicago
O'Donnell, Kelly Homewise
Owusu, Henrietta HUD
Parikh, Mihir DOE
Payne, Samira Rebuilding Together
Powers, Elaine Rebuilding Together St. Louis
Rains, Amanda DOE
Reiner, Michael DOE
Romine, Julia Habitat for Humanity of Greater Memphis
Ross, Lauren DOE
Russell, George Philadelphia Housing Development Corporation
Schoeman, Laurie The White House
Siu, Constance North Newstead Association
Stofleth, Andy SBP
Togstad, Dulcie SBP
Turnham, Jennifer HUD
Walker, Janice Rebuilding Together Boston
Watts, Leon University of Southern California
Webster, Kyle ACTION-Housing, Inc.