

Addressing the “Complexity Tax” in Weatherization and Housing Assistance Programs

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ABSTRACT

Weatherization and critical home repair programs provide crucial assistance for low-income households, enabling vulnerable residents to access long-term energy and bill savings as well as non-energy benefits like improved health. Despite these advantages, participation is often limited by complex application requirements, which can create a high administrative burden, or “complexity tax.” These barriers can result in program underutilization and inconsistent uptake rates or may require significant application support. This paper assesses the complexity tax and its consequences for low-income households in the Southeast United States. Drawing on a review of regulatory filings, program data, and emerging research on home repair ecosystems, this paper examines the current state of low-income weatherization and home repair program uptake and identifies key barriers to participation. To address these barriers, it reviews best practices from coordinated programs nationally that have demonstrated success in reducing barriers and reaching households with the deepest needs. The paper concludes with lessons from a pilot program developed by the Southeast Energy Efficiency Alliance (SEEA), which distributed microgrants to six community-based organizations and local governments to provide case management assistance and coordinate stacked funding for low-income households. The pilot reached more than 10,000 households and facilitated almost 900 program applications, providing insights into effective outreach strategies, case management models, and the systemic barriers that navigator programs cannot address. Together, these findings point to a scalable, community-led model for reducing the complexity tax and connecting households with the critical repair resources they need.

Aging Housing and Deferred Maintenance

Housing in the United States is aging. According to the U.S. Census Bureau’s American Community Survey (2024a), the median age of housing in the United States is 45 years old, as indicated in Figure 1. One third of all housing in the nation was built before 1970. As housing has aged, the pace of construction has not kept up with demand, so that only a quarter of all households live in housing units built since 2000 (U.S. Census Bureau 2024b).

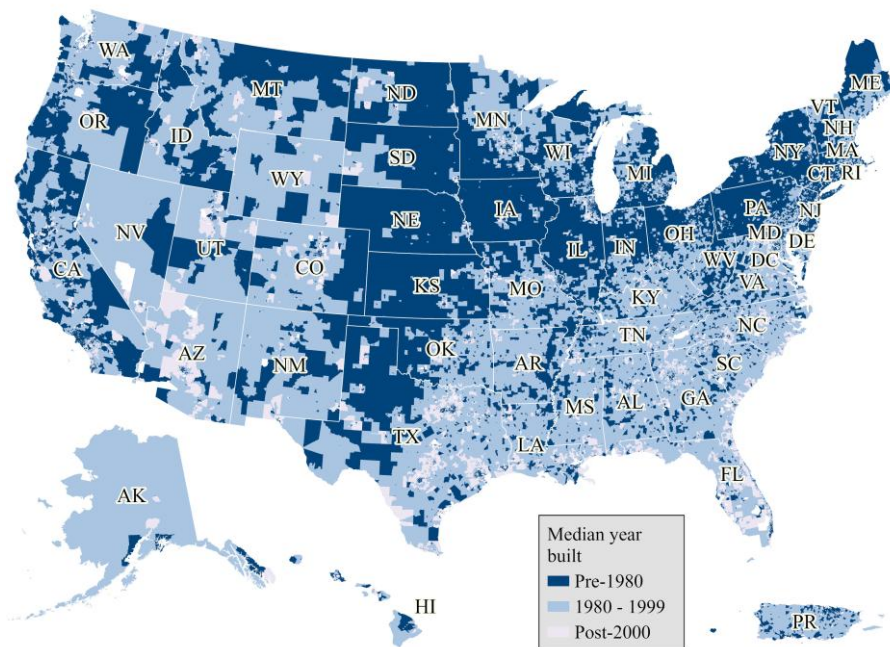


Figure 1. Median year of construction for U.S. housing (pre-1980, 1980–1999, post-2000). Values are estimated at the census tract level. *Source:* U.S. Census Bureau, American Community Survey (ACS), 2024b.

As homes age, critical home components approach the end of their lifespan and must be replaced or upgraded. According to the National Association of Home Builders (NAHB), major home systems such as HVAC units and water heaters have an expected lifespan of only 10 to 15 years, while even durable asphalt roofing typically needs to be replaced after 20 years (Seiders et al. 2007; InterNACHI n.d.). With a median age of 45 years old, systems for millions of homes throughout the country are in their third round of potential failure if they have been regularly upgraded, though many have not. Additionally, most homes built before 1980 were constructed before modern building energy codes were implemented and may lack key elements (i.e. insulation) that are critical to the affordability, comfort, and health of occupants. Indeed, homes built before 1980 have energy use intensities that average 30% more energy used per square foot than homes built after 1980 (Joint Center for Housing Studies 2025).

Aging housing can be a drag on affordability, health, and resilience of occupants, especially for low-income households. Leaky building envelopes and inefficient equipment can require more energy for occupants to heat and cool their homes, exacerbate underlying issues like moisture and mold that can cause respiratory distress, and undercut the ability of residents to shelter in place in times of crisis (Drehobl, Ross, and Ayala 2020; Franconi 2023). These issues disproportionately impact low-income residents, who are more likely to live in older homes with deferred maintenance. According to Harvard University’s Joint Center for Housing Studies (JCHS), 40% of households in the lowest income bracket live in homes built before 1970 (Martín et al. 2024). The Federal Reserve Bank of Philadelphia finds that while low-income households were 29% of all housing units in the nation, they made up nearly 38% of all estimated repair costs in the nation (Divringi 2025). The result is that housing quality disparities most severely impact low-income households, who typically live in older homes that may be approaching the end of life for critical, and expensive, building components.

Given this context, retrofitting households is essential to prevent the deterioration and loss of housing as well as negative impacts resulting from living in substandard housing. Yet retrofits are out of reach for millions of households. Although about one third of homeowners carry out a home renovation each year, retrofitting housing is expensive and higher-income households are more likely to renovate and address deferred maintenance (Goodman and Choi 2026). Many income- or capital-constrained homeowners forgo critical repairs and maintenance because of the cost. The Federal Reserve Bank of Philadelphia estimates that 36.7% of the nation's housing units (48.8 million units) have unmet repair needs. The most common needs include leaks and mold, structural needs, electrical upgrades, heating systems, pest infiltration, and plumbing. The same study estimates that it will require \$198.4 billion to address these issues across the affected housing stock. 16 million of these households are considered low-income, or below 200% of the federal poverty level (FPL), with a repair bill totaling \$74.6 billion to address their unmet needs (Divringi 2025). According to Martín et al. (2024), even these figures likely understate the need because the data used to make these assessments cannot fully capture existing housing conditions.

The money needed to make critical home repairs is beyond the savings capacity of many low-income and capital-constrained households. Divringi (2025) estimates that the home repairs needed in very low-income households (less than 100% of FPL) average \$4,920, while repairs for low-to-moderate income households (100-199% of FPL) average \$3,725 (Divringi 2025). This is beyond the reach of most low-income households, who often already struggle to make monthly energy and housing payments. According to the Federal Reserve's 2024 Survey of Household Economics and Decisionmaking (SHED), 37% of all households could not cover a \$400 emergency expense with their savings. Additionally, 7% of homeowners reported forgoing home insurance because of the cost (Board of Governors 2025). The result of these financial strains is that many households cannot make upgrades on their own and require financial assistance to prevent deferred maintenance.

Yet low-income households also have less access to outside capital to undertake home repairs or renovations. In 2024 more than a third of all households that applied for a home improvement loan in the United States made less than \$50,000 a year, but only 27% of these households were approved for lending—a far lower rate than households with higher incomes (Goodman and Choi 2026).

Currently, there are few policy mechanisms that reach housing with critical repair issues or provide support for addressing deferred maintenance. Building codes provide minimum standards for the construction of new housing and can drive meaningful improvements in quality and efficiency over time, but they apply to existing housing only in cases of substantial retrofits. Aside from code enforcement, which can vary in effectiveness and can have negative impacts on low-income households (Bartram 2022), few jurisdictions have policies that would touch the quality of existing housing. In this context, voluntary programs like weatherization assistance, critical home repair, and financing tools are the primary pathway for improving conditions in aging homes, and their design is critical in reaching households that need the most support.

Weatherization and Home Rehabilitation Programs

Given this context, weatherization and critical home repair programs are essential to improving housing quality and providing missing capital for home upgrades that can drive affordability, resilience, and health improvements. In every community, there is a patchwork of

programs offered by government agencies, utilities, and nonprofit organizations that support home retrofits, but these programs have little connective tissue and applicants can face steep barriers in accessing them. The following landscape overview highlights the complexity and diversity of agencies and funders providing services to support with home rehabilitation.

Federal programs like the Weatherization Assistance Program (WAP) and utility-administered whole home retrofit programs provide free efficiency upgrades to qualifying low-income households, including air sealing, insulation, duct repairs, and HVAC upgrades. In some states, federal funds are supporting efficiency upgrades through the Home Energy Rebates (HER) and Home Electrification and Appliance Rebates (HEAR) programs. These programs provide point-of-sale rebates for key efficiency upgrades—including efficient systems like heat pumps and heat pump water heaters as well as building envelope upgrades like insulation and air sealing—with specific carveouts up to \$14,000 for low- to moderate-income households (0-80% of the area median income) that can cover the full cost of qualifying retrofits.

Certain municipalities and nonprofits also offer whole home weatherization programs. The City of Atlanta, Georgia, for instance, runs WeatherRise ATL, which uses American Rescue Plan Act (ARPA) funding to provide free energy audits and up to \$6,000 in efficiency and healthy home retrofits. WeatherRise ATL is focused on LMI (0-80% of AMI), owner-occupied, single-family homes located in neighborhoods with high energy burdens. In Louisville, Kentucky, nonprofit Project Warm provides free home weatherization and education on energy efficiency to low-income households, including door and window repair, weather stripping, caulking, air sealing, and minor repairs to drywall and floors (Bryan et al. 2025). These programs typically have less funding and reach than federal, state, or utility programs, but nonetheless provide critical place-based pathways to upgrade housing.

Besides weatherization programs—which are focused on measures that will improve the efficiency of housing—many municipalities and nonprofits offer home repair programs. Community development block grant (CDBG) funding from the U.S. Department of Housing and Urban Development (HUD) provides formula funding to state and local governments that can be used to support home renovations. In FY23, Martín et al. (2024) note that home repair initiatives comprised 17% of all CDBG allocations. This equated to \$487M in funding for home repairs, which that year supported 35,000 single-family households, with another \$104 million for multifamily upgrades (Martín et al. 2024). HUD also provides funding for home repairs through its HOME Investment Partnerships Program. HOME funding supports the upgrade of around 12,000 owner-occupied and rental units each year, with a requirement that all residents meet income qualifications (less than 80% or 60%, depending on circumstances). Additional funding streams are available to support various critical repair initiatives, including the United States Department of Agriculture (USDA) Section 504 Home Repair Program, focused on rural communities, and HUD’s Lead Control and Healthy Homes allocations, which address environmental triggers like lead-based paint. At the community level, nonprofit organizations like Habitat for Humanity and Rebuilding Together leverage private and philanthropic support to provide repairs (Martín et al. 2024).

Lastly, community development financial institutions (CDFIs) and burgeoning green banks provide loans and other financial instruments to facilitate home upgrades to households who would not be able to access capital from traditional lenders. CDFIs like the Solar and Energy Loan Fund (SELF) specialize in unsecured, low-interest loans for homeowners with low credit scores or no credit or home equity. Since 2012, SELF has loaned \$60 million, with 74% of projects benefiting LMI households. This has provided capital for retrofitting more than 4,000

homes through projects that range from HVAC replacements to pre-weatherization needs like roof repairs (Solar and Energy Loan Fund 2026). Lenders like SELF play a key role in helping residents to braid program funding with other sources of capital to cover projects fully.

Each of these programs provide pathways to bridge the capital gaps that often prevent low-income households from making upgrades to their housing, and they can bring real cost savings and non-energy benefits for residents. Despite the clear benefits that such programs bring, the options for homeowners and renters can be overwhelming. In any given jurisdiction, there is a complex and fragmented mix of programs that can provide some capital to fund various upgrades to aging homes. For the homeowner or renter trying to navigate this landscape, the challenge is twofold: learning that a program exists and having time and capacity to apply. Participation, despite the benefits, can bring its own burdens including gathering required documentation, attending appointments, and coordinating with contractors and/or program administrators. These tasks can be difficult for any household with little extra capacity due to work, family caregiving, financial precarity, and other needs (Brown et al. 2020; APPRISE 2017). As Martín et al. (2024) note, local home repair ecosystems are “as complex and far-ranging as the homes they repair,” and are often siloed by non-overlapping eligibility requirements, specific repair focuses, and distinct operations and/or contractor networks. The lack of coordination between these programs creates a significant barrier to stacking funding from multiple sources, which is necessary for deep retrofits that most weatherization and repair programs cannot address on their own.

Yet critical home repairs and weatherization are deeply intertwined. According to Harvard’s Joint Center for Housing Studies (2025), at least one out of every three home improvements impact a home’s total energy use. Coordination of overlapping programs provides pathways to address pre-weatherization housing needs that may facilitate later weatherization upgrades. In this sense, critical home repair programs and weatherization must work in tandem to more fully address the full needs of our aging housing stock and provide access to capital to those communities who have to defer maintenance.

Program Uptake

The uptake of each program varies considerably, with some programs leaving potential impact on the table. In 2016, the Southeast Energy Efficiency Alliance (SEEA) reviewed 15 low-income energy efficiency programs offered by investor-owned utilities in the region. Across all programs, the median participation rate was 69% of initial programs goals, with participation ranging from 8% of stated goals to 158% of goals, depending on the program (Fox 2016).

A review of updated regulatory filing data from 2024 shows a marked improvement in the uptake of utility whole home or direct install programs. In FY24, most of 14 major programs reached their initial program goals, with 13 out of 14 programs exceeding these goals.¹ The median participation rate across all programs was 114% of program targets, a substantial improvement from 2016. Only one direct install residential program underperformed, reaching 82% of anticipated households. Most programs (12) were over budget, and only two programs came in under budget. The median ratio of actual expenditures to budgeted expenses was 1.2

¹ Assessed programs include programs available from Georgia Power Company, Duke Energy Florida, Dominion Energy South Carolina, Duke Energy Carolinas, and Mississippi Power.

across all programs, a consequence of exceeding program targets as well as rising costs for building materials and labor.

This is a function of improved program design and execution, including more robust targeting criteria, easier access, and streamlined intake practices. A good example is Duke Energy Carolina's Neighborhood Energy Saver program, which pre-qualifies entire neighborhoods based on median income and notifies households via mailer. This kind of proactive outreach and minimal paperwork is a best practice for driving engagement and avoiding the "complexity tax," though it must also be paired with community trust building.

High program uptake relative to stated targets does not mean that the underlying need is being met. Rather, it reflects the limited scale of program funding relative to unmet repair and efficiency needs in the region. In the Southeast, energy efficiency spending, particularly for low-income households, has lagged the rest of the nation (Specian et al. 2023). Many utility programs designed for low-income households use wide income bands and are accessible to customers with a wide range of incomes (0-200% of the federal poverty level). While this allows the program to serve a range of customers, it also means that these programs have reduced capacity to serve the lowest income households who have the highest energy burdens (Bryan et al. 2025). Even when programs are fully subscribed, they can only reach a small proportion of households that need assistance.

Another critical barrier is the narrow scope of interventions. Most utility programs are limited by regulation to energy-specific measures and cannot address the deep and expensive structural repairs required in aging housing stock. Too often these programs do not coordinate funding and upgrade pathways with other relevant funders or program administrators. What is true in the utility sector is true for many other programs, where siloed programs may be subscribed but cannot address the whole home, leaving vulnerable households behind. Additionally, households with the most severe deferred maintenance, especially those that require pre-weatherization support before efficiency work can proceed, are often the least likely to be reached because their needs exceed program scope or because the complexity tax prevents them from applying at all.

The "Complexity Tax" and Barriers to Access

Even where programs are fully subscribed, they may not be able to address the full range of deferred maintenance due to a lack of program coordination and the "complexity tax," which Moore (2025) defines as "wasted time and money on the regulations, paperwork, permits and shifting policies that stand between Washington and people paying bills at the kitchen table." At the core, the complexity tax is all of the extra time and effort required to navigate the complex mix of funding, programmatic requirements, contractors, and household needs to secure program-driven capital for addressing home maintenance needs. This tax is a barrier for households that do not have the time or resources to navigate the complex ecosystem of potential funding to address critical home repair needs.

The complexity tax manifests in several ways. For one, due to the fragmented landscape of programs, applicants often face multiple, siloed applications for different services, requiring them to provide multiple forms of documentation to different program administrators. Program participation by renters is also limited by the split-incentive issue, where landlords must provide permissions and/or capital for upgrades even if renters are reaping the benefits in bill savings (Bird and Hernández 2012). Research has also demonstrated that knowledge of available

programs is often limited among communities who could benefit due to a lack of trust in the utility and/or provider as well as ineffective communication strategies (Brown et al. 2020). As our review of utility programs indicates, many of these and other repair programs have limited funding and reach. In rural communities, there may be a lack of qualified contractors to carry out upgrades as well as the work time and costs derived from long commutes to projects (Shoemaker, Gilleo, and Ferguson 2018).

Another key issue preventing full uptake, particularly of federal or utility programs, is deferrals due to health and safety issues. Because weatherization programs can typically only address measures that are related to energy use, they are unable to support health and safety needs that might disqualify a household from the program. Farrell et al. (2025) find that 19% of households that were eligible for WAP were initially deferred in 2023 because of critical repairs that were needed to address health and safety issues before weatherization could proceed. The key issues were roof leaks, floor damage, and unsafe or outdated electric service panels, and the median cost of these repairs was estimated at \$15,000 per home—an impossible outlay for most low-income households. Of households that were deferred, 40% could not be repaired and were unable to proceed with weatherization work (Farrell et al. 2025).

Best Practices: Case Management and Funding Coordination

These issues all have the same root: a lack of program coordination and case management. As we explain, better coordination and engagement can facilitate access to crucial programs by reducing the complexity tax facing low-income households.

The key tenets to designing successful low-income energy efficiency and critical home repair programs, according to Gilleo, Nowak, and Drehoobl (2017), include coordination across multiple programs, providing a single point of entry for participants and contractors, drawing on multiple funding sources to address health and safety needs in the housing stock, and deep community partnerships to build trust. The emerging programmatic examples below reflect each of these principles in practice, illustrating how braided funding, coordinated intake, and community-led delivery can reduce the complexity tax facing applicants.

Pennsylvania's Whole Home Repair Program, which was enacted by the General Assembly in 2022 with \$125M in ARPA funding, provides up to \$50,000 per housing unit (homeowners at or below 80% of AMI, or landlords who house renters at or below 60% of AMI) for critical repairs, improvements in energy and water efficiency, and disability access. These include issues that commonly lead to deferrals, such as roof repair and replacement, as well as water efficiency upgrades, replacement of HVAC systems, wiring, weatherization, and more. Funding from this program is provided to local governments or nonprofits, who direct intake and work with contractors (Lovell et al. 2025).

Some WAP providers have developed robust program designs that draw on federal weatherization and readiness funding as well as utility and outside funding to serve more customers and address common issues of deferrals. Some of these programs have also developed program infrastructure to coordinate multiple funding streams and simplify access. As Farrell et al. (2025) note, the state of Washington's Weatherization Plus Health program braids funding from WAP and LIHEAP along with utility and state funding to go beyond traditional weatherization measures. Along with braided funding, this program required local weatherization providers to incorporate comprehensive case management. This included partnerships with public health organizations or clinics that have community health workers who can make home

visits to assess conditions and recommend critical needs to WAP providers (Schueler 2018; Farrell et al. 2025).

The Mass Save Program in Massachusetts coordinates delivery of utility ratepayer funding in combination with WAP, the federal Heating System Repair and Replacement (HEARTWAP), and a variety of other private and municipal funds. Upgrades are coordinated by a statewide network of community action agencies that standardize eligibility and procedures across multiple funding streams. Through this approach to stacking funding, this initiative is able to address common health and safety issues, including knob-and-tube wiring as well as abatement of asbestos, mold, and vermiculite (Guidehouse 2025). In Virginia, Community Housing Partners (CHP) offers a weatherization program that braids utility and WAP funding for deep retrofits, while also providing potential applicants with a program assessment to help identify all programs and/or funding that they may qualify for (Farrell et al. 2025; CHP 2026).

Improving Case Management: A Southeast Pilot Initiative

What is lacking from many programs is a one-stop-shop or centralized coordination of aid that prioritizes local engagement and works through existing place-based relationships. This kind of approach can require a great deal of funding, time and infrastructure. However, a recent initiative developed and led by the Southeast Energy Efficiency Alliance (SEEA), provides a window into how even informal case management and fund stacking can be used to address key barriers to program access without requiring the infrastructure required for larger programs.

The Southeast Equitable Energy through Community-Driven Solutions (SEEDS) initiative started as a pilot of the Southeast Energy Insecurity Project (SEIP), which was established in 2022 as a successor to an initiative started by Duke University's Nicholas Institute. The goal of SEIP was to implement 24 regional recommendations for mitigating energy insecurity developed during the original year-long stakeholder-led process. Several of the initial findings focused on better coordination between existing programs. These included developing a one-stop-shop to coordinate entry into multiple programs, developing a public database of programs, compiling a centralized application for aid covering all weatherization and critical repair programs, and using community engagement to raise awareness of programs (Garrett, Washington, and Bryan 2022).

Recognizing that the most effective solutions are rooted in local needs, SEIP offered a series of microgrants to implement and test local solutions. These grants were between \$10,000 and \$15,000 and had minimal reporting requirements to lower barriers for participation, with a focus on projects that would advance one or more of the 24 recommendations outlined in the first phase of the study (Garrett, Washington, and Bryan 2022). The SEIP project team awarded microgrants to the City of Savannah and Athens-Clarke County (Georgia), which funded efforts to help residents access Georgia Power Company's Energy Assistance for Savings and Efficiency (EASE) program, a whole-home, income-qualified weatherization program.

During this pilot, city staff in Savannah and Athens coordinated community outreach to provide application assistance and case management to residents who were struggling with energy costs. In Savannah, the project team held 16 workshops, speaking to more than 200 people to advertise the program's benefits. Athens took a similar approach and partnered with local NGOs like the Athens Land Trust to reach more than 100 residents with program information. Outreach strategies included providing information via local television news, targeted newspaper advertisements, door hangers, social media campaigns, providing flyers to

nonprofit partners and community centers, postcards to energy burdened households, tabling at local libraries, and speaking at neighborhood association meetings (Brown and Hall 2023).

City staff also provided case management assistance to residents who were applying for the program, helping them to navigate program requirements, gather required documentation, fill out applications, and craft an appeal if they were deferred. Overall, the 6-month pilot resulted in at least 70 paper program applications completed, significantly more than had participated previously in either jurisdiction (Brown and Hall 2023).

This initial project helped to identify and address key barriers to accessing these programs. One barrier was a lack of trust over home assessments, and local municipal staff worked with communities to understand what was being measured and how it would be helpful. Additionally, many community members were more familiar with bill assistance than energy efficiency, and the project team was able to explain the long-term benefits that could be realized through home efficiency upgrades (Brown and Hall 2023).

Overall, the pilot initiative showcased the need for direct engagement and coordinated case management, even if that effort was managed by a trusted third party like the municipal government who was positioned to support residents as they navigated utility program requirements. Although successful in enrolling new households in relevant programs, this initiative also indicated that many households had needs that could not be met by focusing on a single utility program, including HVAC repairs or replacements, pre-weatherization home repairs, and multifamily upgrades (Brown and Hall 2023).

Lessons From the SEEDS Pilot

In 2025, SEEA expanded this pilot model to 10 cities and 7 states to provide continued case management as well as to facilitate robust capital stacks that could address these unmet needs. This program provides a new model for incorporating case management and funding stacking through greater project coordination, without requiring the slate of resources often required to build a full one-stop-shop or coordinated entry system.

With funding from the Arthur M. Blank Family Foundation, SEEA launched the SEEDS initiative. After stakeholder mapping and engagement, SEEDS distributed between \$15,000 - \$30,000 to subgrantees to leverage their position as either a trusted CBO or local government to break down key barriers to program participation. Through these microgrants, SEEDS supported local initiatives in Alabama, Florida, Georgia, North Carolina, South Carolina, and Tennessee. Local partners utilized place-based strategies to engage and educate residents around home repair and energy programs, provide hands-on case management to enroll households in one or more programs, and collaborate with SEEA and local partners on how government, utility, and local programs can be stacked to maximize benefits.

The first SEEDS cohort has concluded, with results that exceeded initial program targets. Through six partner organizations—a mix of CBOs and municipal governments—in Alabama, Florida, North Carolina, South Carolina, and Tennessee, this initiative collectively reached more than 10,000 individuals and supported over 890 applications for energy efficiency, weatherization, and home repair programs during a five-month period. This was more than double the initial target of reaching 5,000 households and submitting 500 applications. Community demand consistently exceeded program capacity, with several partners generating multiple times their anticipated number of applicants, underscoring both the continued unmet need in these communities and the effectiveness of trusted CBOs in supporting community

members in accessing programs. These outcomes also reflect the diversity of organizations and approaches, ranging from established organizations with deep energy program expertise to organizations looking to build case management capacity to organizations that are new to energy but have deep community connections.

SEEDS afforded partners the flexibility to utilize whatever marketing strategies were at their disposal. By not dictating the methods required for engagement, CBOs were able to leverage their local relationships and use approaches that they knew could reach households and individuals. SEEA's local partners drew on a wide range of approaches, using canvassing, social media campaigns, phone banks, hosting pancake dinners, speaking to congregations, co-hosting events with local cooperative utilities, and the local news, among others. This underscored that when potential program participants are engaged frequently and have direct contact with trusted partners, they have more confidence in the program opportunity. In this way, trusted community partners broke down trust barriers which frequently stand in the way of program enrollment.

Once grantees were successful in generating interest and reaching their target populations, their role transitioned to that of a case manager. Successful case management is critical to overcoming barriers to participation. As we have noted, one of the leading causes of program interest drop off is cited as overly complex and burdensome application processes (APPRISE 2017). A workshop of program experts convened by Penn State also identified that some households may think they do not qualify for programs when they actually do (Azari et al. 2023). This kind of lack of information is evident in the Low Income Home Energy Assistance Program (LIHEAP), where a study found that households eligible for federal assistance may not know they are eligible due to confusion over income, employment, or immigration requirements or a misunderstanding of how the program operates (APPRISE 2008).

Effective case management seeks to address these issues through hands-on support. Case managers, sometimes dubbed navigators, support potential enrollees as they navigate the various programs available to them, match them with programs that meet their needs, assist in filling out applications, and otherwise support them throughout the lifecycle of a program.

In northwest North Carolina, for instance, the Center for Energy Education (C4EE), operates as a resource center which accepts walk-in clients looking for energy and housing support. There they fill out intake forms and are led through the process of submitting necessary information to enroll in programs. C4EE works closely with the state energy office, the North Carolina Department of Environmental Quality (NCDEQ), to enroll households in their state home energy rebate programs. C4EE also partners with other local-community-based organizations (CBOs), rural cooperatives, and county commissioners to host local events that educate and enroll individuals on-site in programs. Hands-on in-person support is critical to educating households and providing effective case management which alleviates application confusion.

Unfortunately, it is rare that one program solves all of a household's home repair and energy assistance needs. Rather, it is typical that a program addresses just a few needs and other pressing needs in the home are left unresolved. By creating pathways to stack program offerings from utilities, governmental agencies, and local opportunities, our intent was to maximize the number of improvements that can be made to the home.

In the instance that there are still gaps in a household's needs that bundling does not address or preexisting conditions in the home result in program ineligibility, partnerships with green banks or CDFIs is critical. Building partnerships with financing institutions like SELF or the Clean Energy Fund of the Carolinas (CEFC) can support local grantees and residents through

low-interest flexible loans for health and safety repairs, major replacements like roofs, rooftop solar panels, and more. Their structure is intentionally built not to exclude low-income underserved households who may otherwise be turned away from more traditional financial institutions. When households are rejected from key weatherization programs due to mold in the home or a leaky roof, these funding partners step in so that people have the opportunity to live in healthy, affordable, and efficient housing. Through SEEDS, SEEA worked to pair CBO and municipal partners with local CDFIs or green banks, ensuring that there was funding infrastructure to fill the gaps between existing programs.

SEEA's cohort calls and partner engagement/reporting identified several key lessons that shaped implementation and will inform future program design. First, across all grantees in-person, side-by-side application support substantially outperformed phone or email outreach and assistance. This was especially true for older and rural residents who had limited digital literacy or lacked reliable access to broadband. Many residents were unfamiliar or uncomfortable with online application portals, struggled to upload documents from their phone, or could not reliably access an email account. Partners found that walking residents through applications in person reduced confusion, shortened the time required per applicant, and improved completion rates compared to residents who tried to apply on their own. The North Carolina League of Conservation Voters Foundation (NCLCVF) even noted that sitting beside residents to complete applications, rather than across from them, enabled case managers to share their screen and input documents with prospective participants, a key step in building trust.

Second, the pilot reinforced how crucial it is to meet residents where they are. Partners who integrated program outreach and information into existing community events (e.g. health fairs, civic meetings, faith gatherings) consistently outperformed those who relied on standalone program-focused events. Residents already present in a familiar setting hosted by an organization that they trusted were more likely to engage with program information than those asked to seek out a new program on their own. Partners also found that hosting multiple events in close succession across the same territory significantly improved application conversion rates. Several local partners found that residents who attended an initial community event were often interested and engaged but arrived without the documentation needed to complete an application. Rather than losing these residents entirely, partners who returned to the same community within a short window were able to provide application support on a follow-up visit, since residents now understood what they needed to bring to complete an application. This suggests that program outreach in hard-to-reach communities should be designed with multiple touchpoints in each community, rather than relying on one event as the primary opportunity for enrollment.

Third, the gap between initial community interest and completed applications is substantial, and in future iterations outreach strategies should be evaluated not just by reach but by impact. Partners found that canvassing generated the largest pools of potential applicants but the lowest conversion rates, as residents were reluctant to commit to a lengthy application process at their front door and less likely to schedule a follow-up. Workshops with immediate on-site enrollment support were more effective because they created a dedicated setting where residents could ask questions, receive guidance, and complete applications in the same visit. Partners with a physical office presence found that walk-ins were a significant and consistent source of enrollment. C4EE, for instance, regularly saw 10-20 residents per day come to their office seeking application support, and word-of-mouth from applicants drove additional walk-ins. The upshot is that outreach methods should be selected not just for their ability to generate awareness but for their ability to create immediate opportunities for program enrollment.

Despite the pilot's successes, the program identified multiple gaps and systemic problems that continue to hinder program access for households that would potentially benefit. Even with technical assistance from SEEA, many partners found it burdensome to navigate multiple programs with overlapping but non-identical requirements and criteria. These partners suggested the need for a centralized matching or one-stop-shop clearinghouse that would connect residents to potential programs. Systemically, program backlogs, contractor shortages, and ineffective intake processes created barriers that used up the capacity of partners and, in some cases, eroded the confidence of potential applicants that they would actually be served by a program. These findings point to the need for parallel investment in program infrastructure, not just additional navigator support. SEEDS has shown that case management can significantly reduce the complexity tax, but it cannot compensate for under-resourced or poorly designed programs.

Conclusion

It is clear that millions of households nationally have critical home repair needs, particularly low-income households who lack the capital needed to address deferred maintenance and the time and resources to navigate a fragmented program landscape. Although there is an infrastructure of programs and funding to address these issues available in some communities—from weatherization to critical home repair initiatives—these programs are all too often siloed, have narrow scopes, and are difficult to access by households that could benefit the most. The result is a “complexity tax” that disproportionately burdens households who are already struggling with housing costs, keeping critical home repair needs under-addressed and contributing to deferred maintenance and the deterioration of the nation’s aging housing stock.

SEEA’s SEEDS pilot demonstrates that this complexity tax can be meaningfully reduced without requiring the full resources of a coordinated entry system. By distributing microgrants to trusted CBOs and local governments, SEEDS reached more than 10,000 households and facilitated nearly 900 program applications across six states, while generating key lessons about what strategies can drive enrollment in hard-to-reach communities. The pilot found that in-person application support, integration of outreach into existing trusted community events, and sustained engagement across multiple touchpoints all substantially improved conversion rates compared to other outreach approaches. Yet it also found that effective case management cannot fully make up for systemic program constraints like backlogs, contractor shortages, long wait times, and difficult intake processes. This suggests a need for parallel investment in, and honing of, program infrastructure along with the development of navigator-led enrollment approaches to make programs more accessible.

These findings have key implications for the design and operation of weatherization and critical home repair programs. For utilities, regulators, and program administrators, they suggest that outreach and enrollment strategies should be evaluated not just by the number of households reached but by whether programs create immediate, low-barrier enrollment opportunities. Additionally, they suggest that program design that prioritizes community-led outreach will be critical to bridging existing trust gaps between program operators and communities who would benefit. For utilities, policymakers, and funders, they underscore the value of investing in community-led navigator capacity as a cost-effective bridge between eligible households and existing programs, while also underscoring the systemic changes required to make programs truly accessible. Finally, the lessons from this approach reaffirm that braided funding,

comprehensive case management, and community trust are essential parts of any program that seeks to reach households with critical needs.

Building a full coordinated entry system for programs is a critical long-term goal, but the SEEDS model offers a practical short-term path. By leveraging relationships and trust that CBOs already have with their communities, it is possible to connect households with critical home repair resources, reduce the complexity tax, and begin to close the gap between the scale of housing need and reach of existing programs.

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