

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

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Executive Summary

Property improvement assistance programs often benefit renters last and least. Low-income renters, especially those living in small multifamily properties (those with 2-4 units) that are the least energy-efficient of residences, continue to be underserved by energy programs administered at all levels of government. This holds true for the national Weatherization Assistance Program (WAP) managed through the US Department of Energy (DOE), though the program has been authorized to serve both renter households and multifamily housing types since its 1976 launch.

The latest \$3.5 billion one-time additional infusion of funds into this important social safety net and national decarbonization program from the 2021 Infrastructure Investment and Jobs Act (IIJA) and its removal of prevailing wage requirements for buildings with fewer than five units could provide an opportunity to rectify this oversight. Furthermore, the 2022 Inflation Reduction Act (IRA) supports tax credits, rebates, and related programs that could further spread the benefits of energy efficiency to low- and moderate-income households and the property owners that house them. However, both investments' effectiveness is likely to suffer from implementation challenges.

This paper explores these challenges by revisiting past WAP policy and program actions, discussing current plans for expanding multifamily services through state WAP offices and related officials, and synthesizing these findings into the following recommendations for each level of implementation:

- **National Program.** DOE officials are statutorily permitted to define and support state and local WAP activities through program rules and technical assistance (TA). For the former, DOE could continue partnerships with other federal agencies such as the US Department of Housing and Urban Development (HUD) to identify eligible small multifamily properties under HUD's direct purview as well as to provide analytical guidance on state and local rental registries and property databases that could be integrated into TA content. This technical content could also highlight the methods of state offices and local implementers that successfully served this stock.

- **State Offices.** State weatherization offices could perform housing and demographic analysis—again, coordinated with peer state agencies and commissions overseeing housing and energy programs—to quantify the small multifamily properties in their jurisdictions and map their spatial concentration. Incorporating these data into annual plans with targets to serve this population and apportioning budgetary and TA resources to the respective local implementers near these homes could ensure that DOE’s intentions are translated on the ground.
- **Local Implementers,** including Community Action Agencies and their contractors. Most local implementers have limited capacity for identifying properties, recruiting and coordinating property owners and tenants, and implementing the unique technological fixes needed for this housing type. State offices, in partnership with local public- and civil-sector housing or energy groups and private workforce trainers, could deliver knowledge and funds that fill these gaps.

If conducted thoughtfully, WAP’s small multifamily rental service delivery through IJJA’s budgetary infusion and relaxed workforce rules could be a model for all energy programs—and provide the desperately needed services to these households while helping meet the nation’s climate goals.

Need

Although energy and climate policy stakeholders have been focused mainly on the 2022 Inflation Reduction Act (IRA) this past year, one of the more understudied and complicated opportunities for improving the nation’s home energy performance became law nine months earlier. The Infrastructure Investment and Jobs Act (IIJA) of November 2021 included a \$3.5 billion one-time infusion into the federal Weatherization Assistance Program (WAP). With IIJA, the national investment in the long-term energy efficiency of housing units occupied by low-income households modestly approaches the federal expenditures for the companion Low-Income Home Energy Assistance Program (LIHEAP).¹ With no major appropriations for

¹ Martín (2017a).

affordable housing from the past year's historic legislation, opportunities such as the IIJA's WAP supplement need to be harnessed.²

The last and only other time the federal government invested at this magnitude was through the 2009 American Recovery and Reinvestment Act (ARRA) and its \$5 billion appropriation. The ARRA-supported WAP attempted to increase service delivery to multifamily properties while scaling to ten times its normal delivery capacity in two years included new statutory provisions such as higher per unit project dollar caps and prevailing wage requirements. Yet, several implementation challenges were identified in subsequent program evaluations, including ARRA growing and scaling pains; the lack of comprehensive monitoring and reporting; limitations on the allowable technological interventions in relation to each home's individual energy-saving potential; and eligibility screening and outreach procedures. In aggregate, these challenges fell on providers with variable capacity.³

The authors reviewed pre-ARRA and ARRA documentation from DOE sources and conducted interviews with current WAP stakeholders in federal and state government as well as WAP advocacy organizations. This brief identifies past challenges to WAP implementation in small multifamily rental buildings, which house a significant share of the nation's low-income households. The analysis presented here will help affordable rental housing advocates and federal, state, and local WAP administrators see opportunity in IIJA and potentially in IRA.

Disparities

There are two basic eligibility criteria for WAP depending on the state. Federal statutes allow households whose annual income is below 200 percent of the federal poverty guidelines to be eligible, though some states included even wider populations by making eligible any households earning less than 60 percent of the state's median income. In theory, this broad population overlaps significantly with the population that currently receives or qualifies to receive rental

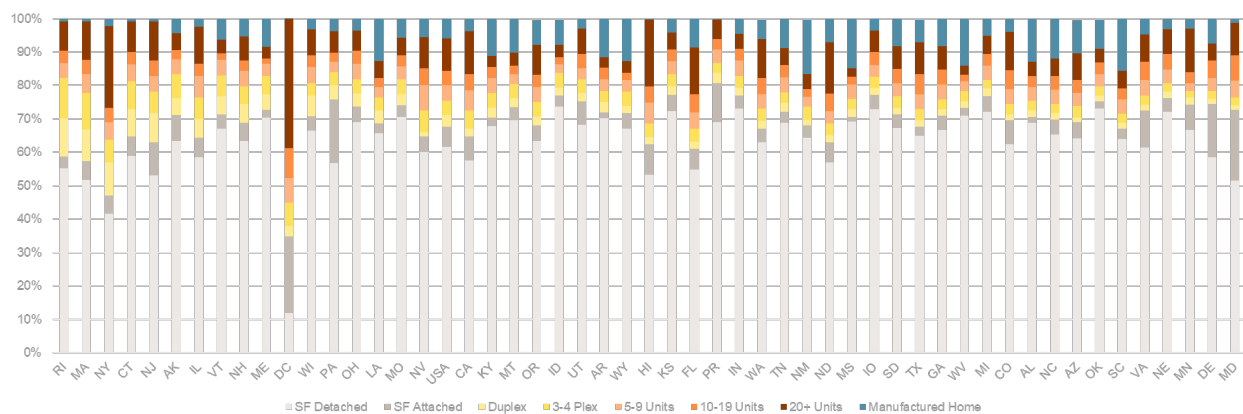
² The authors acknowledge many states' and municipalities' use of the \$1.9 trillion from the American Rescue Plan Act of 2021 (ARPA) for rental assistance, including local utility shutoff moratoria. However, there were few mentions of housing statutorily or in appropriations across the signature laws passed under the current administration.

³ Abramson (2017).

assistance—typically defined in relation to area median income. However, any intervention seeking to improve the physical functioning of lower-income renter households’ homes must first acknowledge the general construction parameters of those units. Indeed, a home’s energy performance is a product of several factors, not the least of which are the physical quality of the home (e.g., its structural characteristics and energy-consuming equipment) and the nature of the energy it uses (i.e., carbon-based or renewable).

These qualities are overwhelmingly dictated by housing type, or the size of building and the number of units it provides for housing. In the US, these terms define the ownership and tenure relations that an intervention provider needs to navigate in addition to the physical distribution of electrical and mechanical systems that consume energy. At last count, every US state’s and state equivalent’s housing stocks except for New York’s and the District of Columbia’s is composed largely of single-family detached homes: 62 percent of all homes nationally fall in this physical and planning type (**Figure 1**). The historical rate of WAP receipt by building type—approximately 65 percent of served homes—generally matches this overall rate.⁴

Figure 1. Share of all 2021 housing stock by building type in order of highest small multifamily share to least among US states, DC, PR, and nationally



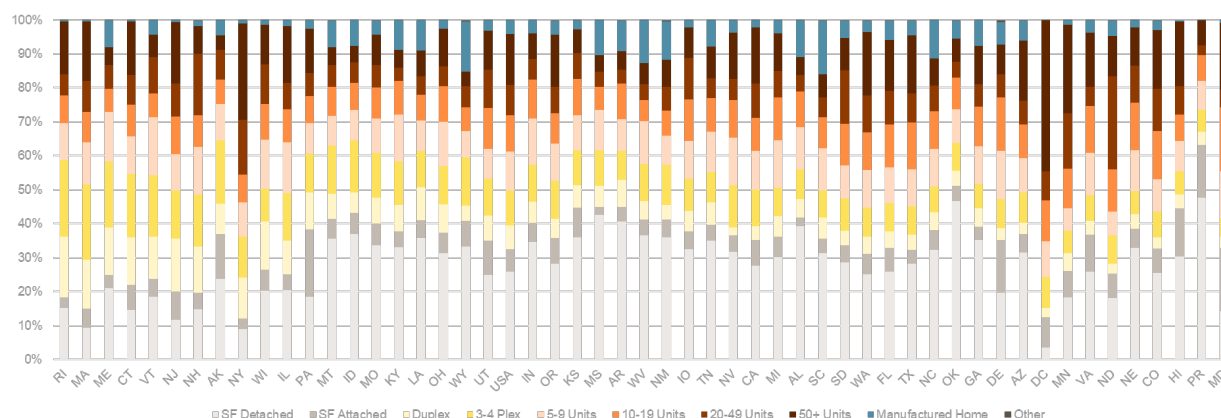
Source: Author tabulations of 2021 American Community Survey 5-Year Estimates

By following the general distribution of all housing, the WAP program stays true to some of its historical roots as a homeowner repair program. However, this delivery pattern is challenging in

⁴ Office of Weatherization and Intergovernmental Programs (2017).

those places where other housing types—specifically multifamily housing of all sizes and manufactured housing—dominate or form an important part of the local housing stock. For example, small multifamily properties—defined as buildings with 2-4 units such as duplexes and “triple-deckers”—form up to one-quarter of the housing stock in Northeastern states, Alaska, Illinois, and Wisconsin, despite making up only 8 percent of the overall national stock (or 11 million homes). A similar pattern can be found with larger multifamily properties, though they tend to be found in more states and thus make up 19 percent of the national stock (26 million homes).

Figure 2. Share of 2021 state rental housing stock by building type in order of highest small multifamily rental share to least



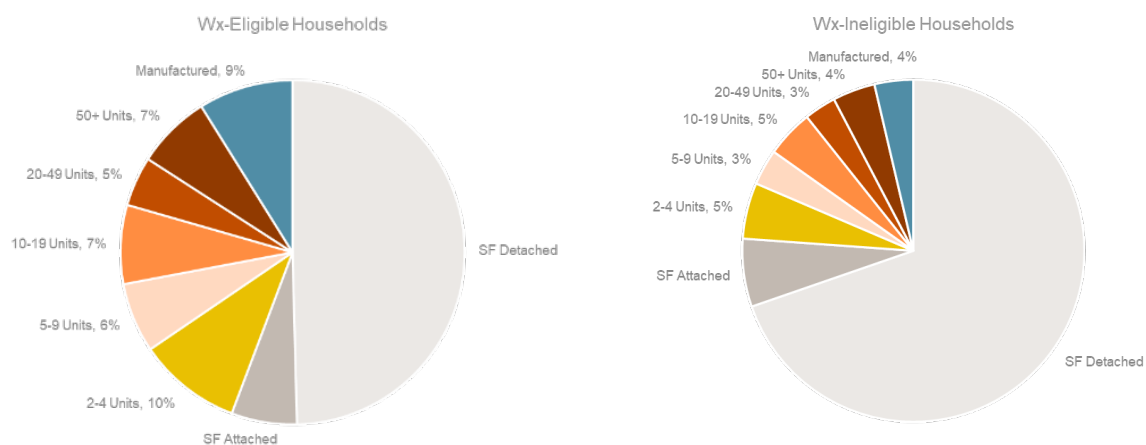
Source: Author tabulations of 2021 American Community Survey 5-Year Estimates

Note: Other homes include boat homes and RVs. Small multifamily housing is 2–4-unit buildings as defined in Weatherization program uses, which includes duplexes, triplexes, and quadplexes.

WAP’s delivery pattern is also challenging for specific housing types. This disparity is especially true in rental housing. When looking solely at the distribution of building types for renter-occupied homes, the WAP program’s historical emphasis on single-family homes overlooked the 63 percent of renters that live in multifamily properties, divided between those living in small multifamily buildings (17 percent) and large multifamily properties (46 percent) (**Figure 2**). This distribution varies widely across states. For example, 40 percent of Rhode Island’s renters live in small multifamily properties. Only in less than a dozen states—states located mostly in the South, states with largely rural populations, as well as Puerto Rico—do more renters live in single-family homes.

Households that are eligible for WAP assistance are also more likely to live in multifamily and manufactured housing than their wealthier, WAP-ineligible counterparts (**Figure 3**). This holds true for small (2-4 units) as well as larger multifamily housing types. For example, twice as many WAP-eligible households (10 percent) as WAP-ineligible households (5 percent) live in small multifamily buildings. The importance of this building type for renters—and especially for low-income ones that could receive WAP aid—is a critical parameter for serving the 38.8 million US households that currently qualify.

Figure 3. Share of WAP-eligible and WAP-ineligible households by housing type, 2021.

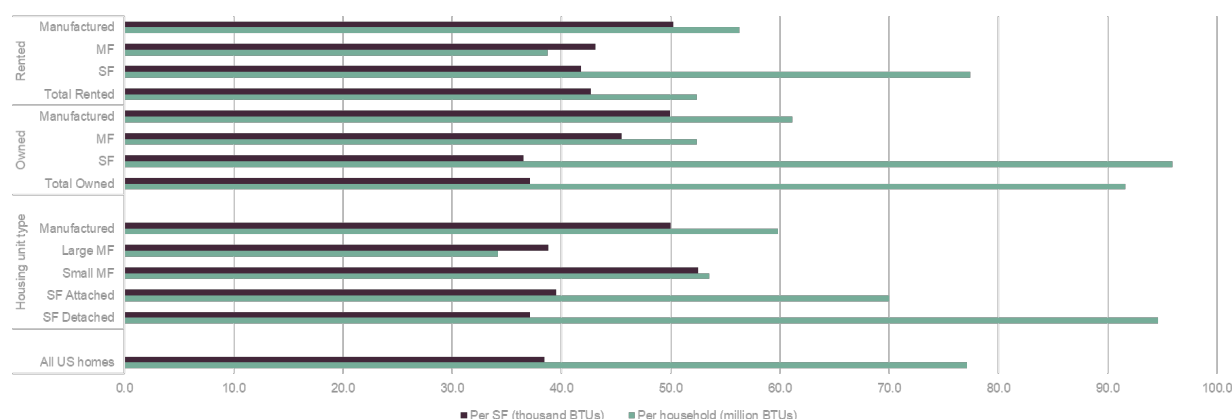


Source: Author tabulations of 2021 American Housing Survey.

Multifamily buildings are a particular concern not only because they house many low-income households but also because they include rental units. If renters pay for their utility usage but owners control the physical property, they have different motivations and different levels of information for reducing energy consumption. Like other rental units, multifamily units matter for weatherization implementation due to this “split incentive” challenge. This challenge perpetuates information asymmetries and deters owners’ investments in building improvements for which they might not reap the financial rewards. However, in addition to the challenges faced by all rental and multifamily units, there are two other reasons why small multifamily buildings with 2-4 units are the strongest candidates for interventions.

First, though rented multifamily homes overall consume less energy per home and per household, residential energy intensity (or energy use per square footage of the housing unit) is highest for small multifamily homes. On a square footage basis, small multifamily homes consume more energy than all other housing types—consuming 52,500 British thermal units per square foot compared to the famously energy-intensive manufactured housing stock’s 50,000 BTUs per square foot (**Figure 4**). Both types are much higher than the average intensities for large multifamily and single-family detached homes, while intensity differences between rented and owned units are modest. However, small multifamily properties on average—that is, per household as opposed to per square foot—consume more energy per unit (53.5 million BTUs but significantly less than single-family detached homes (94.6 million BTUs).

Figure 4. Average energy consumed by US homes per household (million BTUs) and per home square footage (thousand BTUs) by housing type and tenure, 2015

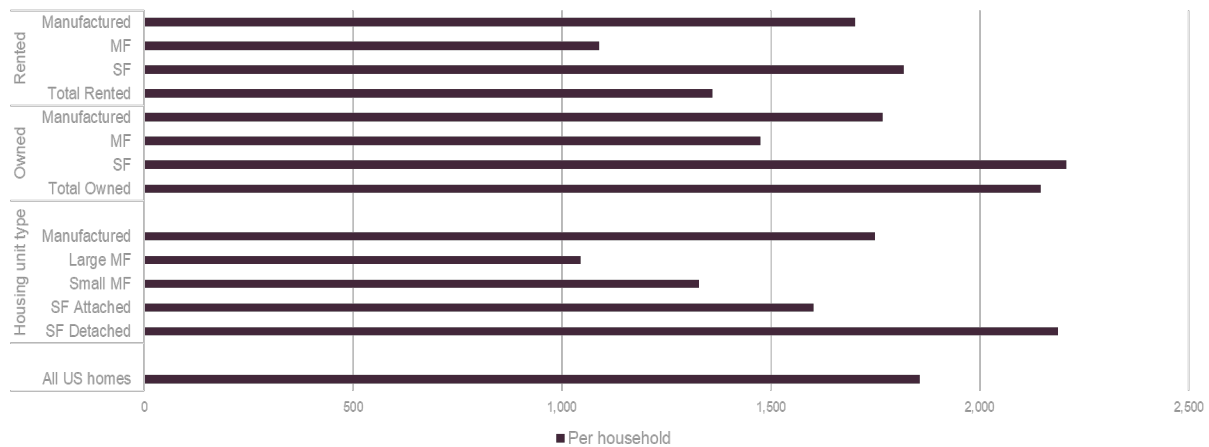


Source: Author tabulations of 2015 Residential Energy Consumption Survey.

Note: Average per household energy consumption is measured in millions of British thermal units (BTUs), whereas per square foot consumption is in thousands of BTUs.

These two patterns suggest that small multifamily homes are, with manufactured homes, the two most energy-inefficient components of our housing stock. Consequently, households living in small multifamily homes are spending more of their annual budgets on energy bills (\$1,329) than large multifamily occupants (\$1,045) though both spend less than occupants of single-family homes (**Figure 5**).

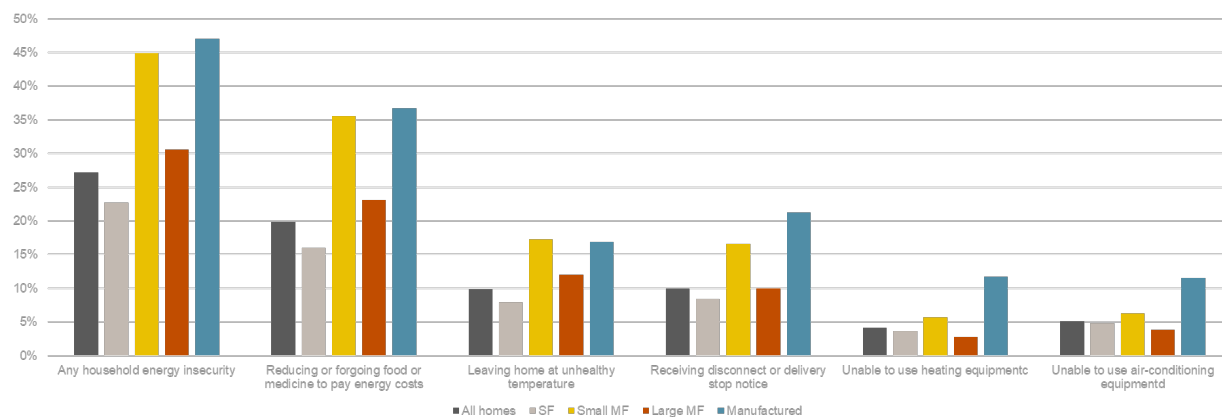
Figure 5. Average annual household energy expenditure by housing type & tenure, 2015 (\$)



Source: Author tabulations of 2015 Residential Energy Consumption Survey.

Second, this housing type also houses households with the highest rates of energy cost burden. Since renters spend less on energy bills than owners for all housing types, there are likely other structural and behavioral factors at play for this energy-underserved community. Energy hardships of all kinds are more pronounced for the low-income households that WAP targets. But these conditions are even starker for the WAP-eligible households that live in small multifamily properties. For example, the households in these homes are more likely to forego medicine or food, keep their homes at unhealthy temperatures, or be in other circumstances that lead to an energy hardship than households living in any other housing type except for manufactured housing (**Figure 6**). Almost half of households in these two categories of housing experience energy insecurity.

Figure 6. Rates of energy insecurity by housing type, 2020



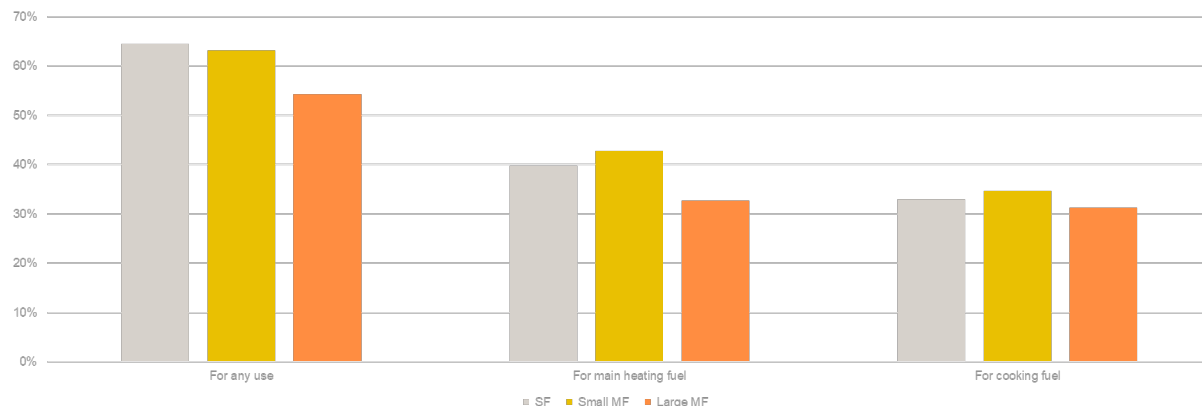
Source: Author tabulations of 2020 Residential Energy Consumption Survey.

Compared to all households living in small, multifamily buildings, WAP-eligible households living in those buildings are more likely to be energy cost burdened. According to the latest American Housing Survey, their mean monthly utility expenditures (\$125) are the equivalent of 12 percent of their mean monthly housing costs (\$1,016). The wealthier, ineligible population's mean utility expenditures are only modestly higher (\$141).

A final concern for the almost 4 million WAP-eligible households living in small multifamily homes is the health effects from their energy use. The health hazards from combusting natural gas for heating and cooking are increasingly documented.⁵ They have also been a primary justification for WAP's continued political and budgetary support. Small multifamily households are more likely to use natural gas for heating and cooking than other eligible households (Figure 7).

⁵ Michanowicz et al. (2022).

Figure 7. Share of housing type occupied by WAP-eligible households that rely on natural gas as fuel for any use, heating, or cooking, 2021 (%)



Source: Author tabulations of 2021 American Housing Survey.

In short, the large share of WAP-eligible households living in small multifamily properties has been underserved in many ways. Reviews of WAP-eligible populations have identified the need to target small multifamily housing rental units as an important “potential efficiency opportunity.”⁶ With its large infusion of funds, modestly more flexible operational requirements, and the potential to electrify homes in addition to improving their energy efficiency, the IIJA opens this important building performance conduit up for a wider segment of the affordable rental housing inventory.

The program

Congress first authorized the US Department of Energy (DOE) to provide formula grants to states and territories for modest energy retrofits of homes occupied by low-income households in 1976.⁷ WAP officially began before LIHEAP’s 1981 authorization, though both programs have their roots in the federal response to the 1970s oil crisis and were modeled after state pilot programs.⁸ LIHEAP directly pays low-income households’ energy bills during energy hardship emergencies (typically, a utility customer’s inability to pay) and when access to energy becomes

⁶ Eisenberg (2014).

⁷ In WAP’s early years, a household was eligible if its income was below 150 percent of the federal poverty guidelines based on household size or as a function of state median wage. Today, eligibility is 200 percent of poverty guidelines.

⁸ LIHEAP Clearinghouse (n.d.). For a summary of WAP, see: DOE (2019).

a physical necessity (e.g., the coldest days in winter or when households rely on medical equipment).⁹

In contrast, WAP is intended to improve the long-term energy performance of the home—a much more costly but ultimately more cost-effective strategy for each home and household served. The formula used by DOE for states’ allocations, then, calculates the eligible low-income population, local average cold and hot weather extremes, and an energy expenditures factor that approximates the cost of energy across a state’s low-income residents.¹⁰ Due in part to LIHEAP’s status as an emergency assistance, the federal government has invested significantly more in its services than in WAP; WAP appropriations over the last decade averaged \$200 million per annum (Figure 8). In comparison, LIHEAP’s average annual appropriation over the same period has been \$3.2 billion.

Figure 8. DOE appropriations and resulting production for WAP, 1977-2022



Source: For \$ and units in 1977-2018, author tabulations of DOE (2019) ; for units in 2019-2020, NASCSP 2020 and 2021 Weatherization Assistance Program Funding Report PY 2019 & PY2020; for \$ in 2019-2021, CRS (2022); for \$ in 2022, DOE (2022c). Units in 2021 are estimated from DOE (2021).

Note: Units include only those supported by DOE appropriations and not additional leveraged funds.

Most states now use LIHEAP funding to complement their WAP resources along with additional state- and utility-generated funds for energy efficiency programs that leverage DOE

⁹ In contrast to WAP, LIHEAP eligibility today is the greater of 150 percent of the federal poverty guideline or 60 percent of a state’s median income level, creating some confusion when the funds are braided.

¹⁰ Congressional Research Service (2020).

allocations.¹¹ The national program also requires that multifamily property owners contribute funds to cover a portion of intervention costs.

The WAP annual production rate has varied not just by the appropriations amount but also by the challenges associated with variable project costs (e.g., workforce and materials) as well as the operational costs and learning curves from repeated and frequent ramping up and down. Consequently, only about 0.2 percent of all eligible low-income households in the US live in units that have received WAP assistance. Questions have been raised about the program's project-level and societal cost effectiveness, with likely variable energy consumption and unit quality outcomes having played out during past infusions of resources such as from ARRA.¹² Despite its resource limitations, however, WAP remains the largest energy efficiency assistance program in the country.

The program is reported to have served over 7 million households since its inception, saving them an average \$372 a year in energy bills.¹³ The program is also defined as cost-effective by federal guidelines, generating \$1.72 in energy benefits and \$2.78 in non-energy benefits such as household health improvements and housing cost affordability for every \$1 spent.¹⁴ The program has been a central pillar of policy platforms among activists for both low-income housing assistance and energy and climate reform. The WAP program provides stories of the household and community benefits that residential energy advocates seek—benefits including health improvements and local job training and employment opportunities in both the program's traditional services and its innovation pilots.¹⁵ Many also describe it as a model

¹¹ Until the mid-2000s, the federal government also supplemented WAP appropriations with proceeds from the Petroleum Violation Escrow, a 1980s court-ordered fund paid by oil and gas companies that had been gouging customers during the 1970s energy crisis.

¹² Findings from one study suggest that the upfront investment costs are about twice the actual energy savings as projected over the weatherization measure's functional lifespan. Further, the model-projected savings are roughly 2.5 times the actual savings. See Fowlie, Greenstone, Wolfram (2018). This research ensued a debate among WAP advocates who pointed to other evaluations, including: Tonn, Rose, and Hawkins (2015); Kushler (2015).

¹³ DOE (2022b).

¹⁴ The last estimated average expenditure per housing unit is \$4,695. For program year 2022, however, the average adjusted average expenditure limit is \$8,009, an average that is imputed across units for multifamily buildings. See DOE (2021).

¹⁵ Whillans (2022).

for leveraging federal funding.¹⁶ However, a range of mission gaps and operations challenges have surfaced in the past two decades.

ARRA

Historical problems with the WAP program publicly surfaced a decade ago with the infusion of \$5 billion from 2009's ARRA. These funds led to an additional 800,000 units being weatherized within a three-year timeframe beyond the program's average service delivery, but still using the program's existing service delivery structure. Congress also statutorily tweaked the program's rules by increasing the income eligibility threshold for the program to 200 percent of poverty guidelines and increasing the per-unit project funding cap to meet cost changes (\$6,500 at the time).¹⁷

Ostensibly, ARRA's investment in WAP was used to expand the program's effectiveness in addressing needs at the housing-energy nexus across different communities and building types as well as in improving the performance of individual homes since the program's new rules allowed for higher income eligibility and expanded project spending caps. Therefore, and because a large portion of low-income households live in multifamily buildings both large and small, weatherization of this building stock was a point of emphasis during the ARRA period. Nonetheless, federal, state, and local implementers of WAP initially struggled to identify and ultimately weatherize multifamily rental properties at the start of ARRA in 2009. DOE encouraged states and territories to allow and support local providers' work targeting multifamily buildings.

However, a single action changed the game, at least for the households in large multifamily properties: DOE entered into agreements to allow the weatherization of public housing and of US Department of Housing and Urban Development (HUD)-assisted properties. In February 2009, HUD and DOE established a partnership to support coordination across a broader range of \$16 billion in ARRA funds. These included HUD's capital funds for public and Indian housing and a program to retrofit privately owned, federally assisted housing in addition

¹⁶ See, for example, Alliance to Save Energy (2021).

¹⁷ Tonn, Rose, and Hawkins (2015).

to DOE's Energy Efficiency and Conservation Block Grants, State Energy Program, and the \$5 billion for WAP. By May 6, 2009, HUD and DOE published a memorandum of understanding (MOU) that outlined commitments by both agencies for lowering the barriers to the use of WAP funds in public and assisted multifamily housing. The MOU intended to streamline the eligibility process for residents in assisted units.

DOE published a subsequent Notice of Proposed Rulemaking (NOPR) intended to reduce the review and verification burden related to income verification, rent increases and property enhancement criteria under the WAP for certain properties identified by HUD. The NOPR focused on the weatherization of public housing, project-based Section 8 assisted housing, Section 202 Supportive Housing for the Elderly, Section 811 Supportive Housing for Persons with Disabilities, and certain Low-Income Housing Tax Credit (LIHTC) properties. Properties explicitly not addressed in the NOPR included Section 221(d)3 and (d)5; Section 236 Below-Market Interest Rate properties without project-based assistance; and Section 8 with tenant-based rental vouchers. In the following two years, HUD and DOE issued updated program requirements and processes for WAP uses along with extensive technical support for states and implementing providers.¹⁸

This shift resulted in 88 percent of WAP agencies tackling large multifamily buildings by PY 2010. Among those weatherized multifamily units, 60 percent were found in privately owned large buildings, but the remaining 40 percent were served directly from the new agreements: 15 percent in public housing and 25 percent in HUD-assisted private housing. Ultimately, the program tripled overall production and, more significantly, entered this previously underserved sectors during those years.¹⁹ The distribution of this effort varied: three

¹⁸ Several key program notices were issued in relation to multifamily properties: [WPN 10-15: Final Rule on Amending Eligibility Provisions to Multifamily Buildings for the Weatherization Assistance Program](#), which allowed HUD housing with a majority of covered occupants to meet eligibility; [WPN 11-4: Guidance Regarding Prioritizing Weatherization Work Based on Housing Type](#), which noted that DOE's review of future state plans would include multifamily targets; and [WPN 10-15a: Guidance Regarding Accrual of Benefits to Low-Income Tenants in Multifamily Buildings Under the Weatherization Assistance Program](#), which required grantees to provide detailed information quantifying tenants' benefits. These were in addition to a large number of program notices for changing reporting requirements, training and technical assistance, and fund uses or re-obligations.

¹⁹ ARRA also provided funds for pilot projects, many of which included multifamily properties. Of those pilots, most focused on unique financing opportunities, such as Energy Service Companies (ESCOs) using carbon credits, but none were deemed successful because of implementation complexities. See Rose, Hawkins, and Tonn (2017).

quarters of WAP agencies reported weatherizing fewer than 1,000 multifamily units, 18 percent reported between 1,000 and 5,000 units, and 8 percent reported more than 5,000 units. By final ARRA expenditures, the number of multifamily housing units served by WAP had quadrupled compared to previous annual averages.

However, the share of large multifamily units increased only modestly with the new funding from ARRA (Table 1). The share of large multifamily units increased—almost entirely due to HUD’s intervention—from 18 percent of all WAP interventions in 2008 (one year before ARRA) to 20.5 percent in 2010 (one year after ARRA). This housing type’s share had already been increasing since the previous decade, going from 9 to 18 percent between 1989 and 2008. In contrast, small multifamily housing’s share appeared to be decreasing. But the shares of WAP-served households living in small or large multifamily housing still remained below the shares of such household in the eligible population—10 and 35 percent, respectively. The expansion of service to tenants of large multifamily properties during this time was not at the expense of small multifamily properties, but the opportunity to simultaneously advance protocols to serve those latter properties was certainly missed.

Table 1. Share of Small and Large Multifamily Homes Receiving WAP (1989, 2008, 2010) and Housing Type Status of Current WAP-Eligible Households

	<i>1989</i>	<i>2008 (Pre-ARRA)</i>	<i>2010 (Post-ARRA)</i>	<i>Distribution of the 2021 WAP- Eligible Population</i>
Small Multifamily	12%	5%	NA	10%
Large Multifamily	9%	18%	20.5%	35%

Sources: Compiled from MacDonald (1993) and Brown et al. (1993) (for 1989); Bensch et al. (2014) (for 2008); Rose and Hawkins (2020) (for 2010); and 2021 American Housing Survey (for 2021 distribution).

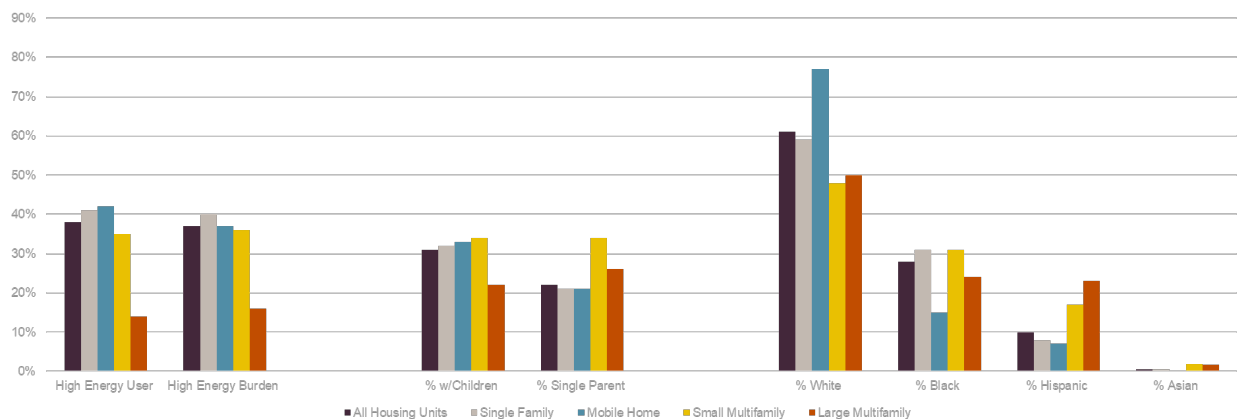
Note: Counts for small multifamily may be inaccurate as reporting varied over time with several agencies aggregating small multifamily into single-family counts, as noted later in this brief. For those observations, “NA” is listed.

Consequent analyses of ARRA’s WAP-recipient households confirmed some unique variations in energy use and demography between these two populations. WAP-recipient households in small multifamily housing were significantly higher energy users and had higher energy burdens

then those in large multifamily units. Small multifamily units also housed more households with children or led by a single parent and were more racially diverse than other unit types (Figure 9).²⁰ From the limited information on state production during ARRA, about two-thirds of the small multifamily units serviced were in five states: Wisconsin, Ohio, New York, Illinois, and Massachusetts.

Several challenges were identified during ARRA’s massive shepherding of resources both in relation to WAP’s operations overall and to its treatment of multifamily properties both large and small. The most documented challenged was ARRA’s requirement that state grantees and the subgrantee service providers had to adhere to the provisions of the Davis-Bacon Act with respect to prevailing wages and paperwork reporting for all WAP work. There were no prevailing wage guidelines established for WAP labor, however, and it took the Department of Labor six months to develop these county-by-county guidelines. Many states delayed WAP work altogether while waiting for this guidance and were then overwhelmed by the DOL-DOE guidance issued in July 2009, which allowed back wages to be paid for WAP work if prevailing wages ended up being higher than current wages. Overall, 94 percent of state grantees and 80 percent of subgrantees reported that Davis-Bacon increased their costs.

Figure 9. Share of 2010 (post-ARRA) WAP-recipient households by housing type, select energy and demographic characteristics (%)



Source: Tonn, Rose, and Hawkins (2015).

²⁰ Tonn et al. (2015).

The provisions also required specific and frequent reporting, which added to the administrative burden on grantees and subgrantees. DOE added further oversight rules through guidance that required states to conduct financial, program, and production reviews of WAP providers, reporting on oversight visits, training, and large purchases, and numbers of units weatherized with impacts to energy savings and job creation.²¹ This new federal oversight, combined with operational and organizational changes at the grantee state-level, heavily burdened providers with constrained capacity: these burdens included administrative processes, household outreach and case management, and subcontractor agreements.²² These challenges combined with the new political visibility and media attention that WAP received. By the third and final year of ARRA spending, most agencies still reported that the following activities were greatly or somewhat challenging:²³

- implementing new and changing program requirements
- balancing training and technical assistance with production targets
- meeting ARRA reporting requirements
- fulfilling certification and training requirements
- measuring long-term energy savings
- ensuring consistency in reporting

Further, if the ramp-up at ARRA's start had proven challenging, the "cliff effect"—that, is the decline in funding after 2012—would prove to be devastating. Indeed, 89 percent of agencies reported not planning for this event. DOE had provided extensive technical assistance for many of the additional requirements and resources, particularly through groups like the National Association of State Community Services Programs and its WAP Assistance Program Technical Assistance Center, and the National Community Action Foundation, which facilitated peer-to-peer discussion among community action agencies. Given the subsequent return to pre-ARRA production rates, the massive infrastructure assembled to produce three intensive years' worth of WAP units appears to have been dismantled.

²¹ GAO (2009).

²² Tonn et al. (2015).

²³ GAO (2011).

Beyond the general challenges related to ARRA, the expansion of service to households in multifamily homes created others. Most agencies reported a lack of expertise in conducting multifamily weatherization audits and in monitoring outcomes. Despite this, several reported feeling “compelled” to focus on this stock as a way “to quickly increase their production numbers.”²⁴ Several state offices also noted that they had differing levels of access to technical and auditing resources.²⁵ In interviews conducted for this paper, state WAP officials noted various interventions by state governments to overcome these wild swings.

For example, New York State supplemented federal WAP funds to help its state office ramp up multifamily capacity. Given the state’s extensive previous experience with multifamily housing, the state office and its local provides identified multifamily properties in state and city portfolios along with HUD’s list and coordinated with housing groups for pre-qualifications during ARRA—a set of activities that prepared them for ongoing service to multifamily properties afterwards. In its first ARRA year, then, New York completed 5,344 large multifamily interventions. Wisconsin, in slight contrast, contracted with large engineering and architectural firms for their ARRA large multifamily ramp-up, which included 1,950 units by ARRA’s end. This approach allowed the state to perform well operationally with changing funding streams, but it did not build up sustained in-house capacity.

Challenges

In short, WAP’s service size during ARRA did not overcome its previous challenges. Many challenges were in fact exacerbated by ARRA. DOE acknowledged the challenges for addressing multifamily properties going back at least thirty years—a time at which about one fifth of housing units served by WAP were in large or small multifamily buildings, though the share of the WAP-eligible population in these units was much higher.²⁶ Many of the challenges associated with this housing type, particularly the scoping challenges, were known at that time. Most WAP providers were unaccustomed to working in larger buildings with tenants and

²⁴ Ibid.

²⁵ GAO (2010).

²⁶ MacDonald (1993); Brown and Berry (1994).

negotiating with owners. Providers relied more on sending marketing materials to these properties than on in-person recruitment of owners and tenants.²⁷

Many local providers were challenged in identifying buildings with the 66 percent per-building threshold of eligible households and, in a few states, had too few multifamily buildings at all. Where there were clear opportunities in states like New York, WAP providers often resorted to improvements that they could readily install uniformly in the building such as window replacements. Recommendations to DOE for addressing the multifamily properties going back to 1993 suggested requirements that states use data to plan for and report on the distribution of their services by housing type. Further, DOE encouraged local program partnerships to identify tenant buildings, support more multifamily technical pilots, and showcase states and their providers that were successfully serving multifamily properties.

Today, there continue to be persistent challenges in bringing WAP to multifamily buildings even after the ARRA postmortem.²⁸ This report's authors identify five ongoing fundamental challenges for WAP's serving of multifamily housing: funding, monitoring and reporting, project scopes, outreach, and capacity.

Funding

A core challenge for WAP has been the wild swings in appropriations leading to a boom-and-bust cycle for state agencies as well as local providers, with few opportunities to retain knowledge or staff capacity.²⁹ The massive ARRA funding increase strained the capacity of the WAP network, from grantees to subgrantees to private contractors. The perception that WAP was "shovel-ready" and easy to scale up proved to be inaccurate, in part due to the additional administrative requirements placed on grantees and their implementers noted before.³⁰ New staff had to be hired for all aspects of work—including regulatory compliance—and the result was high staff turnover and a loss of experience among staff. There was also greater reliance on contractors, which made oversight and quality control more difficult.

²⁷ Brown et al. (1993).

²⁸ Tonn et al. (2017).

²⁹ Posner et al. (2013).

³⁰ Tonn, Hawkins, and Rose (2016).

The limited timeframe of three years to spend the \$5 billion was also a challenge for the WAP network, requiring it to scale up in short order before scaling back down. In its review during the ARRA WAP funding, GAO found that some state offices and local providers had done massive hiring only to later lay off staff.³¹ For example, approximately 1,000 WAP employees were laid off in the State of Illinois after it expended 82 percent of its ARRA funding by September of 2011. Decreased funding during the Trump administration further exaggerated these swings.³²

This inconsistency in resources has also affected the leveraged funding and relationships that WAP has enabled with states' LIHEAP offices, energy and public commissions overseeing utilities' energy efficiency offices, and other important partners.³³ For some states, these partnerships allow more households to be served than would be solely with DOE appropriations. According to some implementing states and providers, the swings in DOE funding and requirements permanently damaged these partnerships.

No state officials interviewed for this study specifically mentioned the wide resource variability as a reason not to conduct additional multifamily outreach and intervention. However, several mentioned capacity constraints forcing them to focus on existing workstreams. Because ARRA drove many state administrators to increase their production numbers quickly, serving multifamily housing has been viewed as a bespoke activity. Consequently, many places treat multifamily housing and all its complexities as a non-standard WAP intervention; states like New York and agencies working in cities like New York City are exceptions to this rule, as they have not only focused their resources on multifamily services but also maintained the capacity to continue doing so with their own resources and commitments. In other parts of the country, multifamily interventions may be a victim of continued WAP resource vagaries.

³¹ GAO (2011).

³² Martín (2017).

³³ Tonn et al. (2015).

Monitoring and reporting

Another program-wide challenge that plays out with unique effect on the multifamily stock has been the comprehensive recordkeeping of serviced properties in a transparent and accessible way. This documentation culminates in the program benefit monitoring that expanded during ARRA. In general, most community action agencies and other local implementers follow guidelines set forth by their administrating states which, in turn, have specific requirements from their DOE grantors.³⁴ DOE provides technical assistance to ensure some consistency in this reporting. Because WAP is a formula program, these requirements are minimal. Further, state programs' additional rules and partnerships have allowed them to create their own reporting streams—complicating any cross-state comparison or comprehensive analysis across the WAP universe.

One very basic way in which these reporting and monitoring inconsistencies shape the attention paid to multifamily housing is that they do not distinguish small multifamily properties. While detailed reporting of every treated unit would be most helpful from both an administrative as well as an analytical perspective, aggregating all multifamily properties separately from the single-family and manufactured housing stocks would be an alternative. However, WAP has aggregated small multifamily with single-family housing at the national level since the program's inception until very recently.³⁵ This decision was based largely on the fact that energy-consuming and energy-defining appliances—e.g., boilers and furnaces—are more comparable between these two housing types than between different multifamily buildings. Several states created their own reporting systems to distinguish at more granular levels.³⁶ Interviews with officials from these states confirmed their record-keeping and reporting, but they also noted regular transitions and updates to their reporting platforms, especially since many upgraded during the ARRA years. Consequently, the management systems have become more complex, potentially requiring special requests and even Freedom of Information Act-requests for access by possible local civil-sector and utility partners.

³⁴ For DOE, this is the Performance and Accountability for Grants in Energy (or PAGE) system.

³⁵ WPN 22-12 described below now creates the opportunity to report on different housing types, though this is not required for states without targets in each type.

³⁶ Blasnik et al. (2014).

The most important challenge created by these monitoring and reporting practices is not for scholars or even policymakers but rather for recipient services. It is unclear whether the more expansive and detailed documentation undertaken by some states has led to significant program changes—for example, in the form of different household recruitment techniques, tailored eligibility and owner negotiations, or similar alterations unique to small multifamily households, owners, and business transactions beyond the technological differences that are associated with this stock. Having a clear sense of their housing stocks, including at least the shares of basic housing types, could help local providers to appropriately target resources and provide a range of service options suited to potential recipients.

Recent program changes in 2017 allowed for the identification of small multifamily units in service reporting, but the output changes have yet to be documented. However, improving reporting requirements creates the need for additional resources. For many states and agencies, changing systems is as onerous as expanding what the systems require. Some states with more involved reporting systems also note that they conduct additional compliance checks beyond federal requirements; both in-person site visits and fiscal monitoring were listed, including having external contractors for quality assurance. However, they also report providing additional technical assistance to implement these requirements. As the trend towards better documentation and monitoring continues, albeit slowly, the need for financial and human resources to support these efforts will increase.

Project scopes

The challenge of effectively addressing a household's energy hardship and their home's energy inefficiency with limited per unit caps has been noted since WAP's start, especially for multifamily housing. This limitation is even more constricting considering the additional analysis of cost-effectiveness and tenant benefits that WAP requires for rental and multifamily interventions. Since ARRA, WAP has made a few program alterations to address these challenges. For example, DOE invested in better multifamily building diagnostics and training.³⁷ Most recently, DOE issued two program notices to clarify and streamline the identification of

³⁷ Malhotra et al. (2018).

different properties and renter households and justify WAP intervention.³⁸ These clarifications will improve the delivery of services.

However, other challenges to the entire WAP program's delivery of services will play out uniquely among rental and multifamily properties. For example, the technical opportunities for improving energy efficiency in small multifamily properties may exceed the WAP program's usual offerings. Mass electrification of all building systems or the installation of on-site renewables may be more effective from a climate policy perspective for certain buildings. However, the program cannot currently justify those interventions' costs.

The best-known concern, though, is the "deferral" problem: households that are WAP-eligible may be essentially rejected from the program because other significant structural, plumbing, or related physical inadequacies would need to be remedied to make the WAP-specific intervention tenable or effective. Some agencies report a deferral rate of as high as 20 percent of their WAP applicants. The repairs needed to address those housing quality concerns may fall outside the program's permitted actions or may produce a project scope that exceeds the maximum per-project value. For multifamily tenants, these inadequacies may prompt a range of legal concerns and technological challenges—all of which increase the project costs or reduce the likelihood of owner consent and WAP participation.

The Commonwealth of Pennsylvania adopted a Whole Home Repairs Program last year that attempts to solve the deferral challenge, including by offering loans of up to \$50,000 to small multifamily landlords (with restrictions on how much they charge in rent).³⁹ As the program was just authorized by the Commonwealth's legislature, no evidence concerning its implementation or effectiveness is available yet. But the challenge of developing appropriate project interventions for multifamily homes within statutory caps remains for other parts of the country.

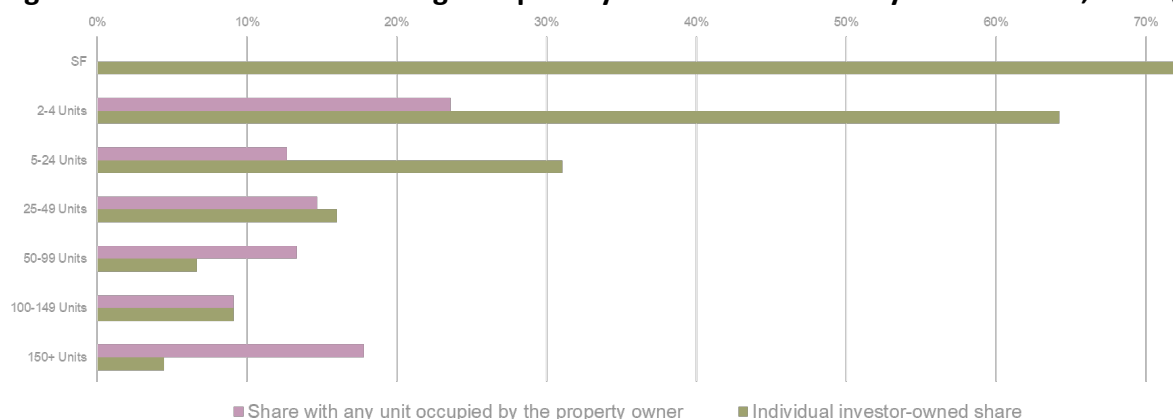
³⁸ DOE issued two notices on September 14, 2022, while this paper was being drafted. Weatherization Program Notice 22-12 clarifies and standardizes the eligibility thresholds for households living in multifamily properties, including small multifamily properties (www.energy.gov/eere/wap/articles/weatherization-program-notice-22-12-multifamily-weatherization). Weatherization Program Notice 22-13: Weatherization of Rental Units clarifies owner contribution and agreements requirements for rented units in different housing (www.energy.gov/eere/wap/articles/weatherization-program-notice-22-13-weatherization-rental-units).

³⁹ Meyer (2022); Pontecorvo (2022).

Outreach

One of the reasons suggested for the underrepresentation of small multifamily properties is that they tend to be owned by private individuals, many of whom reside in or nearby the property, rather than by large investors or housing development organizations. Because these owners are individual households and often in the same physical surroundings as their tenants, they may not have the resources to improve their buildings. They are also more challenging to identify and recruit compared to corporate owners with professional property managers. Property data show that, compared to large multifamily properties, higher shares of small multifamily properties are owner-occupied and individually owned (Figure 10). Sixty-four percent of small multifamily rental properties are owned by individuals, and 24 percent of these properties have units that the owners occupy.

Figure 10. Share of rental housing occupied by owner and owned by an individual, 2021 (%)



Source: 2021 Rental Housing Finance Survey

Note: No rented single-family property is occupied by the property owner.

More recent WAP evaluations continue to note that client communication and education are a challenge for local implementers.⁴⁰ In a survey conducted in 2014, for example, local implementing agencies noted “uncooperative building owners” as the second largest impediment—the first being that many agencies worked where there was little to no multifamily housing.⁴¹ Even in the case of a highly engaged state like New York that has an

⁴⁰ Berger, Lenahan, and Carroll (2014).

⁴¹ Tonn et al. (2017).

extensive record of multifamily WAP, officials report the challenge of attracting small multifamily landlords where large multifamily properties are quicker to participate (often because of large properties' utility payments or responsibilities). DOE's own guidance documentation notes the following:

Landlords may have a number of concerns about the WAP. Many landlords do not want to have "outsiders" work on their buildings. Others fear that WAP is a tenant advocacy program or they are not interested in waiving any of their rights through a landlord and tenant agreement. Publicity that is generated specifically for the landlord has been a successful method of obtaining landlord participation.⁴²

Consequently, DOE suggested that WAP providers work with individual tenant households or tenant advocacy groups to share information about WAP, advertise through local media, present to local landlord associations, develop lists of landlords from local government agencies (such as tax assessors), or create special incentive programs for landlords. The last suggestion is, of course, helpful when there are actual resources for incentives, such as through state housing finance agencies or housing and community development departments, though these would apply primarily to formally assisted housing properties. In all cases, further exploration of landlord interventions and recruitment approaches (including incentives) may be needed to overcome this core challenge.

Capacity

All the preceding four challenges manifest in the overarching concern regarding the capacity of the organizations and individuals across the supply chain, from the national officials to the local implementers. In many cases, insufficient capacity comes in the form of inexperience among newer WAP workers, while in others, it means a continued reliance on past procedures, methods, and building stocks. A wide variability of capacity across WAP providers has resulted in differences in procedures and outputs noted as early as the 1990s.⁴³ Lower-capacity agencies implement fewer innovations in procedures for recruitment and building diagnostics. They are less likely to rely on data to identify subgroups of households and housing units with the most need or for whom weatherization could be the most cost-effective. They do not leverage other

⁴² DOE WAP (2015).

⁴³ Ibid.

funding sources or participate in workforce training initiatives at the same rates as their higher-capacity counterparts. Their preferred interventions tend to rely on more straightforward installations, such as window replacements.

One unique characteristic of WAP among the federal safety net programs that is believed to aid in its achievement is its delivery system: after the federal government allocates funds to state WAP offices by formula, states then issue subgrants to local providers. Most of these providers are non-profit community action agencies, the entities with origins in the 1960s War on Poverty that are statutorily required to maintain operational boards composed of local public- and private-sector officials as well as residents from the service community.⁴⁴ Staff from providers or providers' contractors then recruit and screen households (or their respective landlords), perform the work, and provide nominal reporting to state WAP officials who, in turn, aggregate unit counts for national reports.

Even among the state officials interviewed for this work, which sampled from those overrepresented in multifamily production, there was some variety in the traditional measures of capacity. For example, one state office employed upwards of 40 staff members for WAP, related assistance including LIHEAP, and state-based energy efficiency programs. In contrast, another employed a permanent staff of only five. Their number of implementing local providers also varied from 18 to 50 organizations, most of whom were community action agencies. Most employed a few staff members that had been with their organizations for over a decade, including having worked during the ARRA years. Yet the officials interviewed, or those with programs that provide public documentation of their activities, tended to be from high-capacity states—that is, those with larger staffs. The presence of lower-capacity programs may be correlated with a lower proportion of multifamily properties in a program's service territory (i.e., having a less up-to-date construction and remodeling market and workforce).⁴⁵

WAP's delivery system also provides opportunities for stakeholders at the various scales of geography and influence to interact with WAP services—though it presents challenges that

⁴⁴ Marris and Rein (1973); Tolbert (2013).

⁴⁵ In all known case studies of WAP agencies that conduct multifamily delivery, the WAP providers in specific cities known to have strong construction industry capacity—especially for multifamily housing—were reviewed, including New York City, Chicago, and Minneapolis in 1994: see Brown, Berry, and Kinney (1994). By 2017, the same cities were highlighted: see Tonn et al. (2017).

have been ingrained into the program from its near half-century of existence. The challenges in workforce quantity and skills have resulted in some concerns over potential waste, substandard work, and abuse.⁴⁶ However, the primary concern is the limited ability to better prioritize eligible households and their housing and energy conditions, recruit and serve them in an audience-appropriate manner and with the most comprehensive technologies available under cost restrictions, and provide lessons via reporting and monitoring to further improve this program that has become a central thread in national energy and housing safety nets.

Opportunities

This paper was initiated in response to the IIJA issuance of funds to WAP. However, another important and historic moment for advancing the energy performance of low-income rental housing has also come from the passage of the Inflation Reduction Act. Consequently, a review of how harnessing IIJA for the purposes of WAP-eligible households can also serve as preliminary guidance for implementing the IRA programs that serve an income population overlapping with WAP's and for retrofitting the buildings that house them. The following summarizes both acts' terms and potential.

IIJA

The Infrastructure Bill spans over one thousand pages; however, only two short sentences are dedicated to WAP. The first appropriates \$3.5 billion to the program in fiscal year 2022, with no expiration date for the funds. The second statutory reference is the exemption of prevailing wage (Davis-Bacon) requirements for the small multifamily units defined as buildings with 2-4 units.⁴⁷ These two provisions alleviate the burden of at least two fundamental challenges. First,

⁴⁶ DOE Inspector General (2022).

⁴⁷ The overall law also includes a "Buy America, Build America" section, which places a domestic preference requirement for all iron, steel, manufactured products, and construction materials used in "infrastructure projects." DOE states that the requirements and applicability are still being internally determined, but they are nearly certain that this requirement will apply to WAP-funded work. The department says that recipients should begin ensuring that all materials are certified in writing that they were manufactured domestically. A waiver process will be available where petitions are reviewed on a case-by-case basis looking at specific facts and

because the funds can be used until expended (rather than by a set deadline as per ARRA), states and local agencies can more readily and deliberately plan for a moderated growth around which they can smooth hiring, workloads, and other activities. Second, the Davis-Bacon exemption for small multifamily units allows those projects to be more cost-effective and less burdensome for agencies, thereby making the agencies more likely to pursue this housing sector.

Beyond the statutory changes, the Biden administration has also clarified several program rules, including those concerning the allowance of electrification or decarbonization (that is, replacing carbon-fuel consuming equipment and appliances with electric equivalents). Smaller pilot grant programs administered by state WAP offices such as the Sustainable Energy Resources for Consumers program and the Enhancement and Innovation program grants will also allow for deeper retrofits beyond traditional WAP activities, but braided with the WAP funds as appropriate. To address the problem of “deferrals,” DOE strongly encourages grantees to have a comprehensive tracking mechanism to make future evaluations and leveraging activities easier. DOE created a new deferral reporting tool and reported that they would begin tracking deferrals in Spring 2023 to better understand the severity of the problem.⁴⁸ In its first notice of allocations to states, WAP also set aside \$15 million in the formula funds for “Weatherization Readiness Funds” to reduce the frequency of deferrals.⁴⁹

Consequently, DOE noted several programmatic changes in its application guide released in March 2022 in addition to the recent program notices clarifying rules concerning multifamily and rental unit recipients of WAP services.⁵⁰ Based on current formula allocations and their distribution among states with multifamily property shares (Figure 11), there is a strong likelihood of resources going to weatherizing this housing stock.

circumstances. ARRA had a similar “Buy America” provision however it only applied to public buildings or public work.

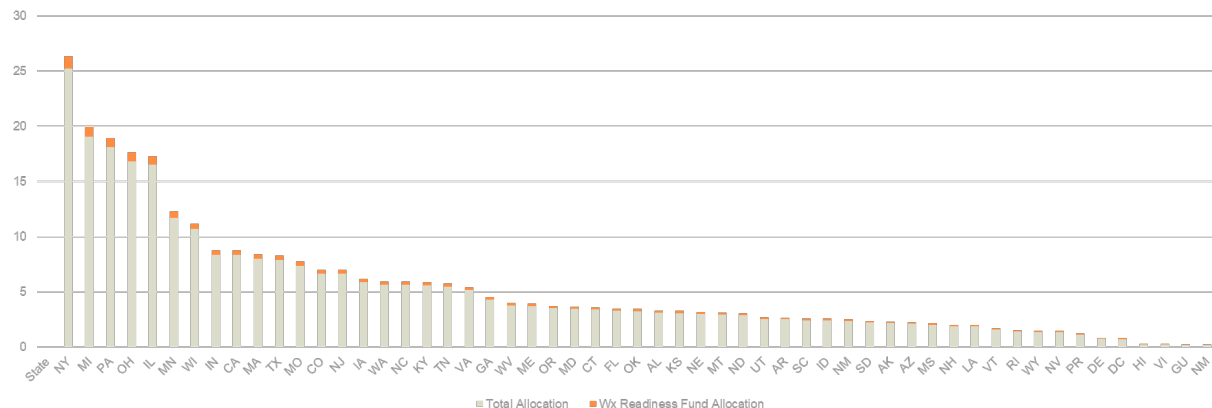
⁴⁸ Benschhoff (2022).

⁴⁹ DOE (2022c).

⁵⁰ DOE (2022a).

Figure 11. WAP state allocations, 2022 (\$ million)

Source: Weatherization Program Notice 22-2, issued March 23, 2022



IRA

The unexpected passage of IRA in August set additional wheels rolling at DOE to begin developing guidance for the two grant programs designed to progressively fund energy retrofits among low- and moderate-income households: the Home Owner Managing Energy Savings program (or “HOMES,”) and the High-Efficiency Electric Home Rebates (HEEHR) program. Each program received \$4.3 billion in funds, to be spent over ten years in direct rebates for energy efficiency and electrification. In HOMES, owners of multifamily units can receive rebates of between \$2,000 and \$4,000 (capped per building at \$200,000 to \$400,000) depending on the energy reductions. But these rebate values are doubled for multifamily property buildings in which at least 50 percent of the tenant households are low-income (defined as having incomes less than 80 percent of the HUD-defined area median income). For HEEHR, multifamily rebates are capped at \$14,000 per unit for the ten years’ duration (with individual projects within that cap allowed at varying but defined rebate values), but with rebates also doubled for the multifamily properties with a majority low-income households (defined in the same way as for HOMES) compared to the other eligible households that make between 80 and 150 percent of area median income. This increase in HEEHR rebate values for low-income households is designed to cover the full costs of electrifying appliances and building systems.

Allocations for the HOMES and HEEHR rebates were issued on November 2, 2022. However, DOE’s program rulemaking will occur in early 2023 with funding becoming available by spring of that year. States must present acceptable plans to DOE by August 2024 or forego

their allocation. Consequently, the opportunity to learn from WAP's lessons is relevant not only to the future WAP operations but also for the success of the IRA rebates. This holds true with regard to both eligibility and implementation.

The IRA rebates are meant to fill the eligibility gap between tax credits and WAP. The tax credits for energy efficiency, electrification, and renewable energy installation that are also extended through IRA are intended to support higher-income households, presumably including the 50 percent of US households with incomes higher than the rebates' cap of 120 percent of area median income. In contrast, eligibility for WAP assistance is, again, set at 200 percent of the federal poverty guidelines, or \$55,500 for a family of four in 2022—about 30 percent of US housed households. Rebate eligibility would include WAP-eligible households but also fold in the remaining 20 percent of households making between 80 and 120 percent of area median income (about \$54,000 to \$81,000 using the US median income).

However, because the income definitions vary or are challenging to quantify across this incentive spectrum, some households may slip through the gaps either because of direct disqualification or de facto inability to participate. This is especially true given that lower-income households have fewer financial and information resources to identify and access appropriate services. Threading the needle by demographic analysis will be essential to ensure that no one is left out. WAP has provided significant insight into how these challenges may play out in specific communities.

Second, and more directly relevant to this paper, is the reality that all these programs will suffer from implementation challenges regarding household awareness and recruitment, property owner consent, and contractors' availability and quality delivery. IRA's implementation of point-of-sale rules, income verification practices, and varying duplication of benefits prohibitions across these programs could cause additional red tape that would be another barrier to entry for lower-income households. Learning from WAP's implementation challenges and their evolution will be instrumental to IRA's housing program success, particularly for low-income households in multifamily properties—especially those in the unassisted small multifamily stock. The guidance developing now for WAP's IJA

implementation can be used by DOE and the state grantee offices for designing the outreach and protocols for IRA.

State plans

In response to the IIJA opportunities, several states have already begun planning how to leverage their WAP multifamily experiences. For example, state officials interviewed for this paper are conducting more granular reviews of their multifamily housing stock and of where multifamily buildings are spatially clustered. They have all translated this analysis into targets for next year's services, ranging from 20 to 50 percent of their planned units. However, we identified these state officials because of their multifamily record; one official worked for a state with which DOE consulted to produce the recent multifamily program notices. There is an ongoing concern about how to share information about these states' successes with the states that may be underperforming.

However, even in these higher-capacity states, officials reported the challenge of recruiting landlords who are reluctant to participate because of the owner match requirements or other concerns. Having gone through the ARRA ramp-up and wind-down, state officials noted some uncertainty regarding DOE's distribution of the IIJA funds over the upcoming years. Most states have already submitted their WAP plans for the current program year and expect possible changes during the approval process as a consequence.

Transparency about the funds' timing and quantity is a particular concern for states with extensive leveraged partnerships. States with new legislation regarding residential decarbonization, climate policies, and energy equity such as New York, California, and Massachusetts are likely studying the overlaps between various incentive programs, mandates, and assistance programs like WAP. New York, further, is looking at using state funds to provide electrification in combination with the WAP efficiency resources. Because IRA rebates will be targeting many of the same households and contractors that are WAP-eligible, these states are also looking at increased coordination among state agencies to fully leverage the entire federal pool of resources that have become available to better serve eligible households as well as integrate the latest residential energy technologies.

State officials have also expressed increasing concern about the availability of materials and workers. As in other sectors impacted by the economic repercussions of COVID, the supply chain of products and materials for weatherization and home retrofits is not stable. Agencies have seen work delays because crews can't get sufficient materials. These labor and materials shortages will be an ongoing issue that may be exacerbated by the resultant ramp-up once IIJA and IRA funds are dispersed.

Similarly, COVID and recent high job turnover rates have shrunk the available weatherization and contractor workforce. State officials report higher staff turnover in their agencies. Transitions in program leadership have also brought new priorities along with a loss of institutional knowledge and longstanding relational ties with subgrantees and stakeholders in the community. Across all these challenges, states note that there is slow recovery but there will have to be a large push from state agencies to help recruit and train crews and to execute bulk purchasing agreements for materials and equipment to meet the expected growth in demand.

Recommendations

Given the insights from the analysis of WAP's past implementation and provided by state WAP officials regarding their plans for both IIJA and IRA, there are several opportunities for improvements at all levels of the WAP governance structure.

Congress

The IIJA's statutory language specifies that the \$3.5 billion should be available until expended, opting not to impose a time limit that could lead to wild operational fluctuations due to massive, rapid scaling up as witnessed during ARRA. This provision, along with the overall appropriations value, presumably overcomes the challenge of WAP's underfunding and inconsistent funding in the short term. However, even this gradual, large infusion of resources will not meet the need to reduce energy use for all low-income households and will certainly not sustain the WAP program—and local implementing agencies' capacity—indefinitely. More

dollars more consistently allocated are needed, including increased allocations for the monitoring and training recommended below. Congress might also allow greater flexibility regarding the type of intervention that is allowable and the per unit project cap to allow for the increased decarbonization required by national climate commitments as well as for a more nuanced approach to addressing the unique performance challenges of individual housing units and the behaviors of their occupants.

DOE

DOE officials are statutorily permitted to define and support state and local WAP activities through program rules and technical assistance. Updated, substantive, context-appropriate, and faster technical assistance is a challenge for all federal grant programs—especially formula ones that have limited ability to impose extensive requirements on states.⁵¹ Yet WAP has shown that new tools and resources can provide effective technical assistance. For example, having federal reporting standards and software platforms that match the more sophisticated states' internal specifications could lift all states—particularly those with minimal experience in multifamily interventions and documentation.

DOE could continue partnerships with other federal agencies such as HUD to identify eligible small multifamily properties under HUD's direct purview as well as to provide analytical guidance on state and local rental registries and property databases that could be integrated into assistance content. Further coordination with other programs at DOE, including the new IRA programs, could also help ensure that DOE's reporting and state plan reviews are aligned with energy assistance goals and household safety nets.

The examples of identifying and marketing to small multifamily owners from states with more experience could be supplemented with knowledge from other agencies (particularly housing ones) that have served or regulate this same stock—such as the use of local rental registries. These agencies could provide lists of likely properties and property owner contact information to WAP providers, as well as share qualitative insights about the local multifamily

⁵¹ Terman (2018).

markets. DOE could also encourage intra- and interstate peer networking at the provider staffing and contractor levels, not just among state program officials or community action agency leads. This might include mentoring for states or agencies where there are gaps in entry-level program and remodeling workers. DOE should include online and readily accessible technology transfer opportunities, such as how-to videos and marketing material examples. The pool of assistance providers should expand to include organizations already equipped with the knowledge for multifamily weatherization; the multifamily experiences of non-WAP providers such as Elevate Energy in Chicago as well as experienced WAP agencies like New York's Association for Energy Affordability could provide helpful content.

States

As the primary conduit between federal budgetary and knowledge resources and local implementers, state weatherization offices play a critical role. They have access to more granular data, closer ties to peer governmental agencies, and direct familiarity with civil- and private-sector players. State weatherization offices could perform housing and demographic analysis—again, coordinated with peer state agencies and commissions overseeing housing and energy programs—to identify the small multifamily properties in their jurisdictions and map their spatial concentration. Incorporating these data into the annual plans they submit to DOE with targets to serve this population and proportioning budgetary and technical assistance resources to the respective local implementers near these homes, could ensure that DOE's intentions are translated on the ground. In turn, the state offices can divert resources proportionally among their implementing agencies to ensure that the target households are served.

The states' WAP officials could also coordinate directly with their state public utility or energy commissions to require utility data sharing. These data can help identify properties to be served and ensure that monitoring and compliance after projects are completed are rigorous and transparent. Likewise, coordination with state housing officials will help ensure not only that WAP is an independent housing assistance program but also that it is integrated into long-term housing and community development plans.

Finally, as the formula grantees, states have significant power over the management and quality of their programs—even more than DOE. State officials must perform higher-quality, independent evaluations of subgrantees and contractors, including spot inspections that could be coordinated with local building department officials or other public services. This oversight need not be punitive only, as it could also be harnessed to coordinate with state workforce and commerce departments to ensure that agencies have the necessary resources (including crews and materials). States also are likely to have more bargaining power for bulk purchases of appliances, equipment, and construction materials that can be used to benefit all WAP providers in their state boundaries.

Local agencies

Finally, the local implementers, including community action agencies and their contractors, are the eyes and ears of the national WAP program—as well as the hands. Most local implementers have limited capacity for or experience in identifying rental and multifamily properties, recruiting and coordinating property owners and tenants, and implementing the unique technological fixes needed for this housing type. Knowledge and funding resources provided through state offices, and in partnership with local public- and civil-sector housing or energy groups and private workforce trainers could fill these gaps. For outreach, local agencies should seek out alternative sources of property data such as local rental registries or municipal housing and planning agencies' databases that have been used by more experienced agencies elsewhere, and which could lead to partnerships and increased resources.

WAP agencies should also join broader coalitions of housing and energy service providers to ensure their own familiarity with local needs and construction capacities. Participation in groups or events including tenant and fair housing advocates, local construction and remodeling groups, property owner associations, and even local energy advocacy groups could lead to opportunities across operational lines. These partnerships create better understanding of how to identify and recruit rental and multifamily owners, to tap into resources for workers, volunteers, and materials, and ultimately, to ensure a local climate that is conducive to multifamily energy improvements.

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