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GAO

Report to Congressional Requesters

March 2013

MANUFACTURED HOMES

State-Based Replacement Programs May Provide Benefits, but Energy Savings Do Not Fully Offset Costs

GAO-13-373

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GAO Accountability * Integrity * Reliability

Highlights

Highlights of GAO-13-373, a report to congressional requesters

Why GAO Did This Study

Approximately 2 million of the nation's 130 million housing units are manufactured homes (i.e., mobile homes) that were built before 1976. These older manufactured homes are generally considered to have some of the poorest energy efficiency of all housing units. Many of the occupants of these homes qualify for federal assistance to help pay their energy bills through the U.S. Department of Health and Human Services' Low Income Home Energy Assistance Program. A portion of this program's funds can be used to improve the energy efficiency of these homes; however, program funding may not be used for new construction, or replacing existing homes. Some states have conducted pilot programs to replace older manufactured homes with newer, more energy efficient models.

GAO was asked to identify and review state programs and the extent to which they may be cost-effective based on reduced energy costs. For this report, GAO's objectives were to (1) identify states that have funded replacement programs and describe these programs; (2) identify challenges, if any, these states reported facing in implementing these programs; and (3) determine the extent to which these programs resulted in energy savings sufficient to offset replacement costs. To address these objectives, GAO surveyed all 50 states and the District of Columbia, examined data from pilot programs spanning about 2 years, and interviewed officials from three state-based programs.

HHS provided technical and clarifying comments, which GAO incorporated as appropriate.

View GAO-13-373. For more information, contact Frank Rusco at (202) 512-3841 or ruscof@gao.gov.

What GAO Found

GAO identified three states—Maine, Montana, and Washington—that have developed pilot programs focused on replacing older manufactured homes using a combination of state and federal funds. The three programs were relatively small, accounting for about $4.5 million in spending and responsible for replacing 81 homes, over about 2 years. The programs differed in requirements, including whether the land that the replacement home would occupy had to be owned or could be leased; the types of financing used, with some replacements requiring recipients to take on a partial mortgage; and the types of replacement homes.

Program officials and representatives of organizations that aided them from the three state replacement pilot programs identified three key types of challenges in implementing these programs. First, they told GAO that many potential beneficiaries were not eligible to participate because (1) they had liens on their existing properties, (2) they did not own or have a long-term lease for the land the homes would be placed on, or (3) their credit histories made them ineligible for any type of loan. Second, these officials told GAO that some potential beneficiaries were unwilling to participate because they were: (1) mistrustful that such a program would be legitimate; (2) unwilling to take on any debt, regardless of the poor condition of their home; (3) unwilling to move from their current location; or (4) unwilling to take on increases in property taxes resulting from increased home value. Third, they identified challenges that were primarily logistical in nature, such as the need to construct wheelchair ramps or update utilities, which could raise the cost of replacement.

In the three pilot replacement programs GAO examined, the energy savings did not fully offset the costs of replacing older manufactured homes over a typical loan period. The two programs that maintained information on energy use and estimated savings spent an average of about $56,119 per unit to replace each older manufactured home and estimated about $489 in annual energy savings per home. The average cost of replacement homes varied across the three programs GAO examined. The least costly program GAO examined was Montana's, which replaced some older manufactured homes with used, but newer and more energy efficient models, with an average cost of about $42,339 per home. However, state officials told GAO that these replacement programs were not specifically focused on energy savings and that energy efficiency gains were secondary to the health and welfare benefits of getting occupants into safer, more weather-tight manufactured homes.

An Example of an Older Manufactured Home and a Replacement Model

Older home

Replacement model

Source: Washington State Department of Commerce.

Contents

Abbreviations

DOE	Department of Energy
EIA	Energy Information Administration
HHS	Health and Human Services
HUD	Housing and Urban Development
LIHEAP	Low Income Home Energy Assistance Program

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United States Government Accountability Office
Washington, DC 20548

March 28, 2013

The Honorable Ron Wyden
Chairman
Committee on Energy and Natural Resources
United States Senate

The Honorable Jon Tester
United States Senate

According to the Energy Information Administration (EIA),[1] the nation's approximately 130 million housing units account for about 23 percent of total energy consumption in the United States. Approximately 2 million of these housing units are manufactured homes (i.e., mobile homes) that were built before 1976, when new standards for energy efficient construction went into effect.[2] These older manufactured homes are generally considered to have some of the poorest energy efficiency of all housing units. Many of the occupants of these homes qualify for federal assistance to help pay their energy bills through the U.S. Department of Health and Human Services' (HHS) Low Income Home Energy Assistance Program (LIHEAP). LIHEAP helps cover home energy expenditures— key components of which are home heating and, in some cases, cooling expenditures. In 2011, LIHEAP covered about 8 million low-income households through payments to homeowners, occupants, landlords, or others. LIHEAP is a federal block grant program in which funds are provided to grantees, including states, territories, and tribes and

[1] EIA in the U.S. Department of Energy collects, analyzes, and disseminates a wide range of information and data products covering energy production, stocks, demand, imports, exports, and prices. EIA then prepares analyses and special reports on topics of current interest.

[2] In 1976, as a result of the National Manufactured Home Construction and Safety Standards Act of 1974 (Pub. L. No. 93-383, as amended, 42 U.S.C. § 5401 *et seq*.), the U.S. Department of Housing and Urban Development (HUD) began to issue and enforce standards for the construction, design, performance, and installation of manufactured homes to ensure that they were more energy efficient, among other things. Consistent with these standards, for the purposes of this report, we consider manufactured homes to include any home that is constructed and then transported to a site where it is occupied as a permanent residence. These definitions are consistent with the federal building code administered by HUD and the definitions used by EIA to collect information on housing. These codes and definitions do not consider prefabricated structures that are assembled on site to be manufactured homes.

tribal organizations, based on a number of factors, such as climate and income. Grantees then provide LIHEAP funds to eligible beneficiaries. To be eligible, household income must be below varying thresholds set by the federal government. In fiscal year 2013, Congress appropriated about $3 billion for LIHEAP nationwide.

Questions have been raised about whether improving the energy efficiency of older manufactured homes or replacing them with newer, more energy efficient models would save the federal government money by reducing federal spending on LIHEAP. A portion of LIHEAP funds can be used to improve the energy efficiency of these homes but, in many cases, because of the ways these homes were built, and their sometimes poor condition, improving their energy efficiency cannot be accomplished cost effectively. Some states have conducted pilot programs to replace older manufactured homes; however, LIHEAP funds are statutorily prohibited from being used for new construction—which includes replacing existing homes.

You asked us to identify and review state-based or other programs that have replaced older manufactured homes—particularly those built before 1976—with newer, more energy efficient models, and the extent to which these programs may be cost-effective based on reduced energy costs. Our objectives for this report were to (1) identify states that have funded programs to replace older manufactured homes with more energy efficient models and describe these programs; (2) identify challenges, if any, these states reported facing in implementing these programs; and (3) determine the extent to which these programs resulted in energy savings sufficient to offset replacement costs.

To identify which states had replacement programs, we surveyed LIHEAP grantees from all 50 states and the District of Columbia and received a 100 percent response rate. We examined budgets, eligibility criteria, beneficiary records, and program evaluations conducted at the state level for the three programs we identified. To learn more about these programs and identify challenges states reported facing in implementing them, we interviewed officials from each state program, as well as representatives of organizations and agencies that aided these programs or were knowledgeable about the owners of manufactured homes in each state. We determined early in the course of our work that these programs were not designed to save LIHEAP funds, but we examined available information about the energy savings that resulted from these programs and the extent to which they offset replacement costs, which could inform deliberations about whether such programs could help reduce LIHEAP

costs. State officials provided data spanning about 2 years of operation of these programs on funding sources, replacement program costs, and energy costs, to the extent that they collected these data. To assess the reliability of the data, we compared summary documents with individual replacement records, where possible, and discussed the data with state officials who compiled it. We determined that the data were sufficiently reliable for the purposes of this report.

We conducted this performance audit from February 2012 to March 2013 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

A manufactured home is constructed almost entirely in a factory and transported to the site where it will be occupied, in contrast to a site-built home, which is constructed at the site where it will be occupied. Many manufactured homes are rectangular, wood-framed, aluminum-sided, single-story structures—commonly known as “mobile homes” or “house trailers”—built on a metal frame that can be placed on wheels or on the back of a commercial-grade truck and transported to sites where they are generally permanently installed. Camping or travel trailers—typically smaller structures that can be pulled by car or small truck—are another type of manufactured home but are generally designed to be temporary dwellings rather than permanent residences.

To implement the National Manufactured Housing Construction and Safety Standards Act of 1974, the Department of Housing and Urban Development (HUD) began to issue and enforce standards for the construction, design, performance, and installation of manufactured homes to ensure their quality, durability, affordability, and safety. HUD may enforce these standards directly, or they may be enforced at the state level. These standards preempt state and local laws that are not identical to the federal standards and apply to all manufactured homes produced after June 15, 1976.

Before 1976, there were few provisions for ensuring the safety or quality of manufactured homes. Many of these older homes were built with little or no insulation, thin walls and roofs, uninsulated heating and cooling systems, and inefficient louvered windows (known as jalousie windows).

Further, over time many of these older manufactured homes deteriorated to the point that their windows and doors no longer seal tightly to protect the interior from the weather. According to the Maine Housing Authority, which conducted a study in 2007 of pre-1976 manufactured homes, many of these older manufactured homes have depreciated to the point where they have no market value. In addition, officials knowledgeable about housing and weatherization have stated that some pre-1976 manufactured homes may be unsuitable for weatherization (i.e., making long-term energy efficiency improvements). For example, these homes typically have roofs made of thin metal sheets seamed together and walls built with 2-inch by 2-inch studs; therefore, neither the ceilings nor the walls can accommodate insulation. In addition, most of these older manufactured homes are beyond the scope of federal and state weatherization programs;[3] that is, officials responsible for implementing these programs have generally determined that such homes have become too deteriorated to warrant weatherization or are unsafe for weatherization crews to work on. Approximately 80 percent of older manufactured homes are in the South and West U.S. Census Regions, as are approximately 84 percent of newer manufactured homes.[4] Figure 1 shows an example of a manufactured home built before 1976.

[3] The Department of Energy's (DOE) Weatherization Assistance Program was created under Title IV of the Energy Conservation and Production Act of 1976 (Pub. L. No. 94-985 §§ 411-422 (1976)). By making long-term energy efficiency improvements, such as installing insulation, sealing leaks, and modernizing heating and air conditioning equipment, the weatherization program aims to, among other things, increase the energy efficiency of homes owned or occupied by low-income persons, reduce their total residential energy expenditures, improve their health and safety, and reduce the burden of energy prices. DOE makes weatherization program funds available through formula-based grants to agencies in the 50 states, the District of Columbia, U.S. territories, and American Indian tribes and tribal organizations.

[4] The U.S. Census Bureau divides the United States into four regions. Each region includes several states: Northeast Region (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania); Midwest Region (Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas); South Region (Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas); and West Region (Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, and Hawaii).

Figure 1: Pre-1976 Manufactured Home

Source: Maine Housing Authority.

As part of the Energy Policy Act of 2005,[5] Congress formally authorized the Energy Star program to identify and promote energy efficient products and buildings, including manufactured homes. The Energy Star program is designed to identify products that deliver the same or better performance as comparable models while using less energy. An Energy Star-rated manufactured home is a home that has been designed, produced, and installed by the home manufacturer to meet Energy Star requirements for energy efficiency. Such requirements include increased insulation, tightly sealed air ducts, and Energy Star-qualified windows. Each Energy Star-rated manufactured home is inspected while it's being built in the factory and during on-site installation to verify that it meets Energy Star standards for energy efficiency.

In addition, Title XXVI of the Omnibus Budget Reconciliation Act of 1981 established LIHEAP to help low-income households—particularly those with the lowest incomes that pay a high proportion of their household income on home energy expenditures—pay their home heating and

[5] Energy Policy Act of 2005, Pub. L. No. 109-58, § 131, 119 Stat. 594, 620 (2005) (codified as amended at 42 U.S.C. § 6294a).

cooling costs.[6] LIHEAP is a federal block grant program that provides funding grants to states and other entities that, in turn, provide the funds to eligible households. States, territories, and tribes and tribal organizations that wish to assist low-income households in meeting home energy expenditures may apply for a LIHEAP block grant. These grantees then provide payments on behalf of the eligible households directly to energy providers (e.g., utilities), homeowners, occupants, landlords, or others. Grantees provide LIHEAP assistance to eligible beneficiaries up to the maximum eligible payment for that beneficiary as determined by the grantee. Grant funds are distributed in this manner until the grantees' annual funding has been entirely expended or the fiscal year has ended. LIHEAP funding, adjusted for inflation, was highest from 1981 to 1986 and from 2009-2011, witnessing a decline in real terms in the years in between these two periods. For 2012, LIHEAP allocated to state grantees funding that ranged from about $6.1 million, for Hawaii, to about $375.5 million, for New York. For 2012, LIHEAP allocated to U.S. territory grantees funding that ranged from about $58.7 thousand, for the Northern Mariana Islands, to about $4.2 million, for Puerto Rico, and for all tribes and tribal organizations funding of about $38.4 million.

While the federal government establishes overall LIHEAP guidelines, each grantee operates its own program. For example, federal law stipulates that a LIHEAP-eligible household's income generally must not exceed the greater of 150 percent of the poverty level or 60 percent of the state's median income. However, LIHEAP grantees may not set their maximum income threshold for applicants below 110 percent of the poverty level, but they may give priority to those households with the highest home energy expenditures or needs in relation to income. LIHEAP grantees may set additional criteria for allocating LIHEAP funding to recipients. For example, they may give priority to households with vulnerable occupants, which HHS defines as those who are at least 60 years old, disabled, or 5 years old or younger.

LIHEAP does not require grantees to match federal funds, but some grantees choose to supplement funds. Grantees also have the flexibility to use up to 15 percent of their LIHEAP funds—or up to 25 percent under certain circumstances—for state weatherization programs that provide funds to improve home energy efficiency, typically by upgrading insulation

[6] Pub. L. No. 97-35, 95 Stat. 357 (1981).

and heating and cooling equipment.[7] However, because funds from LIHEAP, which assists low-income families in reducing their energy bills by making long-term energy efficiency improvements to their homes, [8] are precluded from being used for new construction, they cannot be used to replace existing homes with newer, more efficient models.

In August 2012, we reported[9] on the home energy costs and LIHEAP benefits for occupants of manufactured homes, site-built detached homes, site-built attached homes, and apartments of any size.[10] We reported in 2005, the most recent year for which complete data were available, occupants of older manufactured homes paid over twice as much on average per square foot for energy—$1.75 per square foot as compared with $0.87—as was paid by occupants of detached homes. We also reported that annual energy expenditures for older manufactured homes—about 906 square feet on average—were about $1,369, compared with detached homes—about 2,919 square feet on average—were about $2,060.[11] Furthermore, we found that in 2005, LIHEAP provided more assistance on a per square foot basis—about $0.33 per square foot—to occupants of older manufactured homes than to those of detached homes—about $0.20 per square foot. However, we also found that this assistance covers slightly less of the annual energy expenditures

[7] Up to 25 percent of LIHEAP funds may be used for weatherization programs with an approved waiver from HHS. HHS evaluates states' requests for these waivers after March 31 each year.

[8] DOE's Weatherization Assistance Program assists in making energy efficiency improvements such as installing insulation, sealing leaks, and modernizing heating equipment and air-conditioning equipment.

[9] GAO, Home Energy Assistance for Low-Income Occupants of Manufactured Homes, GAO-12-848R (Washington, D.C.: Aug. 24, 2012).

[10] EIA defines detached homes as single-family houses as long as they are not divided into more than one housing unit and have an independent outside entrance. A single-family house is contained within walls extending from the basement (or the ground floor, if there is no basement) to the roof. Town houses, row houses, and duplexes are considered single-family attached housing units as long as there is no household living above another one within the walls extending from the basement to the roof to separate the units.

[11] Energy expenditures—both per square foot and annually—varied significantly by region, reflecting regional differences in the types and costs of fuels commonly used to heat and cool homes, income levels, and climate, among other things.

of occupants of older manufactured homes than occupants of detached homes—15 and 17 percent, respectively.[12]

Three States Have Replaced Older Manufactured Homes with More Energy Efficient Models

We identified three states—Maine, Montana, and Washington—that have used a combination of state and federal funds to conduct pilot programs that replaced older manufactured homes with more energy efficient models. The three programs were relatively small, accounting for about $4.5 million in spending and responsible for replacing 81 homes, over about 2 years. The programs differed in program requirements, the types of financing used, and the types of replacement homes used.

Maine. Maine has conducted one replacement pilot and has one ongoing program. Maine Housing Authority's (MaineHousing) replacement pilot—conducted from November 2008 through August 2010—was the largest-scale pilot we identified to replace older manufactured homes. Under the pilot, Maine replaced 35 older manufactured homes with new, Energy Star-rated manufactured homes. The program was funded with approximately $2 million in state funds provided by the Housing Opportunities for Maine (Maine HOME) Fund[13] along with $148,000 in mortgage financing from MaineHousing's Home Mortgage Program.[14] According to Maine officials, the intent of the program was for the beneficiary to secure a 30-year first mortgage at a 5.25 percent interest

[12] Based on our analysis of EIA data, we estimate that about 3 percent of LIHEAP funds—about $57 million—spent in 2005 were used to assist occupants of older manufactured homes. For more information see GAO, Home Energy Assistance for Low-Income Occupants of Manufactured Homes, GAO-12-848R.

[13] The Maine HOME Fund was implemented in 1983 to provide a flexible financial resource to help MaineHousing address the state's affordable housing needs. The HOME Fund is financed by a small tax on the buyers and sellers of real estate when property is bought and sold. From 2002 through 2010, the HOME Fund generally received from $5 million to $9 million annually to, among other things, assist buyers in making their first home purchase and finance smaller programs such as making homes safer for children, the disabled, and others.

[14] MaineHousing's Home Mortgage Program offered the first mortgage to the extent that the participating bank determined that the borrower has the ability to repay such a loan. The Home Mortgage Program issued bonds to fund the purchase of these first mortgages as a guarantee to the lender in case of a beneficiary defaulting on their mortgage payments. Generally, the Maine HOME Fund issues bonds to conduct financing activities and repays these bonds through mortgage payments and other revenues produced by the projects funded by the HOME program. However, pilot officials told us that the Maine HOME funds used for deferred second mortgages were viewed as a grant.

rate with Home Mortgage Program funds for part of the cost of the replacement home and a second deferred mortgage with the Maine HOME funds for the balance—deferred in this case meaning that beneficiaries made no interest or principal payments if they stayed in the home. However, of the 35 beneficiaries, 9 could afford the 30-year first mortgage. Loans for these 9 beneficiaries ranged from $8,000 to $40,000, which covered an average 24 percent of the cost of their replacement homes, with the balance covered by the second, deferred Maine HOME mortgage. For the remaining 26 beneficiaries who were unable to afford the 30-year first mortgage, the replacement was wholly funded using a Maine HOME deferred mortgage. Under either loan structure, no down payment or application fee was required. According to Maine officials, potential beneficiaries were selected with input from community action agencies and were drawn from LIHEAP rolls.[15] To be eligible, beneficiaries' manufactured homes were required to have been built before 1976 and deemed unsuitable for weatherization.[16] Beneficiaries were also required to own the land on which the home was situated. The first pilot ended in 2010 when all the available funding was used, and officials told us they have another pilot ongoing.[17]

Montana. Montana's replacement pilot—conducted from December 2008 through September 2010—replaced 19 manufactured homes with more energy efficient models. It was initially conceived not as a pilot, but as an ongoing program; however, when private underwriting for loans for replacement homes could not be secured, the program was turned into a pilot. Under the pilot, beneficiaries received a replacement home using a combination of state funds and federal grant funds. Total funding for the

[15] Community action agencies are local private and public non profit organizations that carry out community action programs, such as LIHEAP, the Weatherization Assistance Program, and numerous other federally- and state- funded programs. Community action agencies are sometimes referred to as human resource councils or community action program agencies.

[16] According to a representative from a community action agency in Maine, MaineHousing prohibits the use of weatherization funds on pre-1976 manufactured homes. Federal funds used for weatherization are generally restricted from being used on manufactured homes deemed by weatherization officials to be unsafe or in too poor a condition to be weatherized.

[17] MaineHousing officials told us they were conducting a $4 million follow-up replacement program. As of February 2013, the officials said that the ongoing program had replaced eight manufactured homes and was scheduled to continue through the current fiscal year, but MaineHousing did not provide any additional information on this ongoing program.

program was approximately $804,448 and consisted of $354,886 from the state's general fund and about $449,562 funded by a combination of Montana Board of Housing first-time homebuyer assistance and the U.S. HUD's HOME Investment Partnerships (HUD HOME) Program.[18] Funding for each replacement home was determined on a case-by-case basis. Under the program, money from Montana's general fund was used to provide direct, 15- to 20-year loans at a 2 percent interest rate for all program beneficiaries, which beneficiaries were required to repay in full with monthly payments. Based on the beneficiaries' ability to pay, these loans ranged from $9,500 to about $20,000. The remainder of the financing was provided using HUD HOME and Montana Board of Housing funds, which the beneficiary was not required to pay back as long as they complied with program rules, such as the requirement that beneficiaries' homes be owner-occupied. Potential beneficiaries were identified through community outreach by participating community action agencies based on the condition of the homes and household income and the presence of vulnerable occupants.[19] Unlike Maine, the pilot did not require the beneficiary to own the land on which the home was situated but required that the beneficiary's lease on the land exceed the terms of the loan. Montana's pilot was unique among the pilots we reviewed in that nearly half of the replacement homes were previously owned manufactured homes. Officials told us they chose to purchase previously owned homes to reduce costs. In addition, unlike the other state pilots we reviewed, Montana's pilot did not require replacement homes to be Energy Star rated; however, according to program officials they were generally significantly more energy efficient than the homes they replaced. The pilot ended in October 2010, when it had used all the available funds. Montana

[18] The Montana Board of Housing partners with several statewide groups to provide assistance in covering certain home purchase costs. This first-time homebuyer down payment assistance was used in some cases to finance the purchase of the replacement home.

The HUD HOME Investment Partnerships Program is designed exclusively to create affordable housing for low-income households. Each year it allocates approximately $2 billion among the states and hundreds of localities nationwide. HOME funds are awarded annually as formula grants to participating jurisdictions. The program allows states and local governments to use HOME funds for grants, direct loans, loan guarantees, or other forms of credit enhancement, or rental assistance, or security deposits.

[19] HHS defines vulnerable households as including an occupant who is 60 years old or older, disabled, or 5 years old or younger; LIHEAP requires states to report data on these households annually.

officials told us they have no immediate plans to make the pilot an ongoing program or to conduct another pilot.

Washington. Washington's replacement pilot—conducted from July 2008 through March 2009—replaced 27 manufactured homes with new, Energy Star-rated manufactured homes. The pilot was funded by a $2 million grant funded by HUD's HOME Program.[20] Under the pilot, beneficiaries received a deferred, forgivable 15-year loan, which required no down payment and no monthly payments on the loan.[21] Like Montana's pilot, the beneficiary was not required to own the land on which the home was situated; however, unlike Montana, the pilot required the beneficiary to have only a 1-year lease on the land. Initially, each project was limited to $60,000 total cost; however, in some cases, utility upgrades and other costs necessitated granting waivers to the investment limit and making amendments to replacement contracts. Like Montana's and Maine's pilots, potential beneficiaries were selected with input from participating community action agencies from a list of occupants who were vulnerable (e.g., older individuals and families with young children) and whose homes were in need of weatherization assistance but were deemed to be beyond repair. The pilot ended in March 2009 when all the available funding was used. State officials told us that they would like to make the pilot an ongoing replacement program or conduct another pilot, but that they have no immediate plans to do so because of a lack of funding sources, among other challenges.

Table 1 provides a comparison of the three replacement programs.

[20] A portion of the $2 million in federal funding was kept in reserve to handle contingencies related to the replacement of homes and is not reflected in the average cost per replacement appearing later in this report.

[21] "Deferred forgivable" in this case means that a beneficiary was not required to make any payments and, if the beneficiary of the replacement home stayed in the home for the 15-year period, the loan was forgiven. If the home was sold before the end of the 15-year period, then the balance of the sale was to be paid to the Washington Department of Commerce.

Table 1: Comparison of the Three State-Based Manufactured Home Replacement Programs

Program characteristics	Maine	Montana	Washington
Number of manufactured homes replaced	35[a]	19	27
Funding level[b] (in dollars)	$2 million	$449,562	$2 million
Funding source	State	State and federal (HUD HOME)	Federal (HUD HOME)
Approximate duration of program	2 years[c]	2 years	8 months
Selection criteria	LIHEAP beneficiaries rolls; existing home built pre-1976	LIHEAP/Weatherization beneficiaries and based on home condition	Identified with input from community action agencies based on home condition
Land ownership of replacement site	Required	Not required	Not required
Loan terms	Either a 30-year mortgage; and/or deferred loan	15- to 20-year mortgage at 2 percent interest	Deferred forgivable 15-year mortgage
Down payment requirement	Not required	In some cases	Not required
Replacement homes type	New	New and used	New
Energy Star rating	Required	Not required	Required
Cost limit per replacement	None	None	$60,000

Source: GAO analysis of state replacement pilot data.

[a]This number includes the 35 replacements of the original pilot. It does not include the 8 replaced under the ongoing program, as of February, 2013.

[b]Funding level represents the cost to the program, either in the form of a grant or the amount financed as a deferred, forgivable loan, and it does not include the portion of the program costs that the states expect to be paid back.

[c]Maine's pilot replacement program lasted 2 years. They currently have a follow-up pilot under way.

States Reported Facing Challenges, Including Difficulty Finding Potential Beneficiaries Who Were Eligible and Willing to Participate

Officials from all three state replacement pilot programs and representatives of organizations and agencies that aided these programs told us that they faced three key types of challenges: (1) many potential beneficiaries were not eligible to participate; (2) some potential beneficiaries were not willing to participate; and (3) other logistical challenges, such as finding suitable replacement homes within a reasonable distance to transport them to beneficiaries, which resulted in higher costs.

Specifically, officials and representatives of organizations and agencies that aided these programs told us that many potential beneficiaries were not eligible to participate for three key reasons:

- *Liens on their property*. Officials in Maine with an agency helping to identify potential participants told us that their program stipulated that potential beneficiaries could not have any liens—such as outstanding property taxes or sewage fees, or foreclosure proceedings—on the property that would receive the replacement home. They told us that a property with a lien had a higher risk of foreclosure. These officials told us that, as a result, many potential beneficiaries were disqualified due to liens on their properties.

- *Did not own or have a long-term lease for the land*. In Maine, potential beneficiaries were required to own their properties and, in Montana, they were required to have long-term leases. Officials from these programs told us that these policies were intended to improve the likelihood of beneficiaries staying in their replacement homes. However, these officials told us that many potential beneficiaries were disqualified because they lived in manufactured home parks, where lots are typically held on shorter-term leases.

- *Poor credit histories*. Officials from all states told us that, in some cases, potential beneficiaries' credit histories, which made them ineligible for any loan, were so poor that it was deemed too risky to enroll them in the replacement program.

In addition, these officials and representatives of organizations and agencies that aided these programs told us that, in the pool of eligible potential beneficiaries, some were unwilling to participate because they were:

- *Mistrustful of program's legitimacy*. Some potential beneficiaries were doubtful that such a program would be legitimate. For example, one organization assisting with the program in Montana told us that they spent a lot of time in the early stages of the replacement program convincing potential beneficiaries that the pilot was not a scam. In Washington and Maine, where some community action agencies had already replaced dilapidated homes, they told us that trust in the larger program was not a significant issue.

- *Unwilling to take on any debt*. One official in Maine and an organization assisting with the program in Montana told us that some potential beneficiaries, especially among the elderly population, were just not willing to take on new debt regardless of the poor condition of their home, and there were no loan terms under which they would accept a replacement home.

- *Unwilling to move from their current location*. Older manufactured homes are typically smaller than new ones, so many replacement homes were larger than the homes they replaced. In some cases—particularly when homes were located in older manufactured home parks—the replacement homes would not fit on the lots. In some cases, organizations assisting in programs told us that they were able to find another location, but it would have required a move to a new school district, which caused some potential beneficiaries with school-aged children to choose not to participate in the program.

- *Unwilling or unable to pay tax increases*. Some potential beneficiaries may be unwilling, or unable, to pay the increased property taxes that would result from the increased value of their homes. For example, a Maine official described a situation where a potential beneficiary's home was built in 1957 and had no taxable value, so property taxes were assessed solely on the value of the land. After replacement, the sales value of the new home would be added to the land value, and the beneficiary's property taxes would have tripled. Because this potential beneficiary could not afford this tax increase, he or she chose not to participate.

Officials from all three pilots also identified other challenges that were primarily logistical in nature. For example, a representative assisting the Montana program told us that it was difficult and time-consuming to find suitable replacement homes within a reasonable distance to transport them to beneficiaries. In addition, in Maine, where the homes to be replaced were required to have been built before 1976, officials told us they faced difficulties in confirming the date of construction of some homes. Officials from all three pilots told us that some of these logistical challenges would translate into higher costs. For example, officials in Washington and Montana told us that many of their administrative costs were not covered by the program funding. These officials told us they were willing to take on these costs under a pilot, but that their administrative costs would have to be covered if the pilot became an ongoing program. A representative assisting the Montana program told us that some replacement homes were damaged during transport, leading to additional costs. In addition, representatives knowledgeable of the replacements in all three states told us that some replacement homes required unforeseen additional ad hoc construction such as wheelchair ramps or updates to utilities.

Energy Savings Alone Did Not Fully Offset the Costs of Replacing Older Manufactured Homes, but Replacements May Have Had Other Benefits

In the three replacement pilot programs we examined, the energy savings alone were not sufficient to fully offset the costs of replacing older manufactured homes, but program officials told us that these programs were not specifically focused on doing so and that they had health and welfare benefits for beneficiaries. Specifically, the two programs that maintained information on energy use and estimated savings spent an average of about $56,119 per unit to replace each older manufactured home and estimated about $489 in annual energy savings per home.[22]

The average cost of replacement homes varied across the three programs we examined. The least costly program we examined was Montana's, which replaced some older manufactured homes with used, but newer and more energy efficient models, with an average cost of about $42,339 per home. Maine's replacement program was the most costly but replaced homes with new Energy Star-qualifying homes, and cost about $62,024 per home. Officials from all three programs noted that the costs of a specific replacement can vary widely depending on whether other site-specific steps are required, such as installing foundations and upgrading utilities. Because of the varied costs, and the varying extent to which programs tracked and recorded those costs, we were not able to consistently compare total replacement costs across programs. Table 2 provides a comparison of the number of replacements, cost per manufactured home, and estimated annual energy savings, where data were available.

[22] These averages reflect data for the replacement units in the two programs that maintained data on energy usage and/or estimated energy usage—15 units in Montana and 35 in Maine.

Table 2: Average Costs of Replacement Homes for the Three Programs Examined

Program Characteristics	Maine	Montana	Washington
Number of manufactured homes replaced	35	19	27
Average cost per replacement[a]	$62,024	$42,339	$47,539
Estimated annual energy savings per home	$240	$1,070[b]	Not available

Source: GAO analysis of state replacement pilot data.

Note: We calculated average costs using the total financing costs for each replacement, including the portion of the financing which—in the cases of Maine and Montana—the state expects to be paid back.

[a]Costs per replacement include the cost of the home and some administrative costs (e.g., loan origination fees); however, it does not include other costs such as for site-preparation or septic system upgrades.

[b]Montana maintained information on estimated energy savings for 15 of the replacements it completed, and this is the average savings from those replacements.

Officials reported that the replacement homes in these programs were significantly more energy efficient, resulting in improved quality of life for the beneficiaries and significantly lower projected energy costs on a square foot basis; however, officials in all three states said these energy savings alone were generally not sufficient to pay for the cost of the replacement over a typical loan period. In the case of Maine and Montana, where some beneficiaries paid a monthly payment toward the cost of their replacement homes, those payments may slightly reduce the total cost of the program. However, in both cases, officials told us that those payments were so small that they had little impact in offsetting the overall total replacement costs across the program, though they may have offset the costs of a specific replacement.[23]

In addition, we analyzed costs and projected energy savings for individual replacement homes where data were available, and we found the data confirmed that the energy savings were not sufficient to recover the costs

[23] Officials told us that, in an ongoing replacement program, it may be possible to put these funds in a revolving fund to pay for future replacements, but that pilot was too small-scale for the payments to have much of an impact.

of replacing the homes over a typical loan period.[24] For example, in Montana—where the average replacement cost was $42,339—the average projected energy savings on a replacement home were estimated to be $1,070 per year. In Maine—where the average cost was $62,024, the post-replacement energy savings were approximately $240 per year. Newer manufactured homes are often larger, so the total annual home energy costs increased for some beneficiaries; which may account for the lower average energy savings in Maine, where all replacement homes were new. For example, there were six cases in Maine where annual home energy costs increased by at least $300 per year after replacement, and three of those six cases increased by more than $500 per year. According to Maine officials, these could have been cases where a beneficiary's existing one-bedroom home was replaced by a new, two- or three-bedroom home. Nonetheless, there were eight cases in Maine where annual energy costs decreased by more than $500. Officials overseeing the program in Washington state did not track estimated or actual energy savings and, as a result, we were not able to examine those figures for Washington. Washington state officials told us they did not collect data on home energy costs before and after replacement because the programs were focused on improving housing and not on energy savings.

In addition, these state-funded replacement programs were not designed to help save LIHEAP funds. Because the eligibility for and level of LIHEAP benefits are determined primarily by income, replacing older manufactured homes does not eliminate the beneficiaries' eligibility for LIHEAP benefits. State officials informed us that, in virtually all cases, the beneficiaries of the replacement programs continued to qualify for and receive LIHEAP benefits. As a result, the replacement of older manufactured homes with newer, more efficient homes may not eliminate the need for assistance to recipients in paying their energy bills.

[24] Projected energy savings in Maine are based on individual annual energy costs before and after replacement. In the Montana pilot, officials from one participating agency estimated the annual energy savings for seven replacement homes based on expected energy costs of the replacement model compared with annual energy cost before replacement, which we used in our analysis of replacement costs. However, in Washington, state officials told us they did not collect data on home energy costs before and after replacement because the programs were focused on improving housing and not on energy savings. Data on estimated annual energy savings were generally one-time estimates provided by program officials or participating agencies and not verified by GAO.

Nonetheless, state officials told us that these replacement programs were not specifically designed for energy savings to offset replacement costs, and some officials told us that energy efficiency gains were secondary to the health and welfare benefits of getting occupants into safer, more weather-tight manufactured homes. Program officials cited less measureable benefits of replacement, including fewer trips to the doctor, greater physical security; improved safety in the home, especially for vulnerable beneficiaries; and strengthened community identity. For example, they told us that beneficiaries of replacement homes reported being sick less often, reducing the beneficiary's health bills and—as all beneficiaries were below the poverty level—public health costs. State program officials we spoke with had not quantified these benefits.

Agency Comments and Our Evaluation

We provided a draft of this report for review and comment to HHS. HHS provided technical and clarifying comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Health and Human Services, and other interested parties. In addition, this report is available at no charge on the GAO website at http://www.gao.gov.

If you or your staff members have any questions about this report, please contact me at (202) 512-3841 or ruscof@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff members who made major contributions to this report are listed in appendix I.

Frank Rusco
Director, Natural Resources and Environment

Appendix I: GAO Contact and Staff Acknowledgments

GAO Contact

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Staff Acknowledgments

In addition to the contact named above, GAO staff who made key contributions to this report were Jon Ludwigson, Assistant Director; Michael Kendix; Alison O'Neill; Cheryl Peterson; Kelly Rubin; James W. Turkett; and Jarrod West.