

# National Weatherization Assistance Program Characterization – Describing the Pre-ARRA Program



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Environmental Sciences Division

**NATIONAL WEATHERIZATION ASSISTANCE PROGRAM  
CHARACTERIZATION – DESCRIBING THE PRE-ARRA PROGRAM**

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## ACRONYMS AND ABBREVIATIONS

ARRA	American Recovery and Reinvestment Act
DOE	U.S. Department of Energy
FTE	Full-time Equivalent
HVAC	Heating, Ventilation and Air Conditioning
LIHEAP	Low Income Home Energy Assistance Program
NCAF	National Community Action Foundation
NASCSP	National Association for State Community Services Program
OMB	Office of Management and Budget
ORNL	Oak Ridge National Laboratory
PVE	Petroleum Violation Escrow
PY	Program Year
WAP	Weatherization Assistance Program
WAPTAC	Weatherization Assistance Program Technical Assistance Center



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This report summarizes the findings from the Program Characterization Study of the Weatherization Assistance Program (WAP) Evaluation. In this study, the evaluation team contacted 51 WAP grantees and 877 WAP subgrantees in all 50 states and the District of Columbia to collect information to characterize WAP in Program Year 2008. The study included two grantee surveys and two subgrantee surveys. In addition, the subgrantees furnished service delivery information for 14,496 clients.

The original design for the study was developed by staff from the Oak Ridge National Laboratory (ORNL) as one component of the National Evaluation of the Weatherization Assistance Program. (*National Evaluation of the Weatherization Assistance Program: Preliminary Evaluation Plan for Program 2006 – ORNL/CON-498*). As part of the evaluation plan development the design team consulted with and received feedback the Network Planning Committee (41 individuals from the weatherization network).

ORNL contracted with the research team of APPRISE Incorporated, the Energy Center of Wisconsin, Michael Blasnik and Associates, and Dalhoff Associates LLC to conduct the National Evaluation. The Energy Center of Wisconsin took primary responsibility for the design and implementation of this study. The members of the Evaluation Team who contributed to the design and implementation of this survey included:

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## REPORT SUMMARY

The Department of Energy's (DOE) Weatherization Assistance Program (WAP) has supported energy efficiency improvements to the homes of low-income households in the United States since 1976. The program provides grants, guidance, and other support to grantees: weatherization programs administered by each of the 50 states, the District of Columbia and some Native American tribes. Although there have been studies of some grantee-administered weatherization programs, the overall effectiveness of the national weatherization program has not been formally evaluated since Program Year 1989. Since that time, the program has evolved significantly, with an increased focus on baseload electric usage, continued evolution of diagnostic tools, new guidelines and best practices for heating-related measures, and adjustments in program rules. More recently, the program has also adjusted to large, temporary funding increases and changes in federal rules spurred by the American Recovery and Reinvestment Act (ARRA).

Because the WAP of today is dramatically different from the one evaluated in 1989, DOE determined to undertake a new comprehensive evaluation of the national program. This new national evaluation is managed by Oak Ridge National Laboratory (ORNL). Under a competitive solicitation process, ORNL selected APPRISE, Inc., Blasnik & Associates, Dalhoff Associates and the Energy Center of Wisconsin (ECW) to conduct the evaluation. The national evaluation comprises two independent evaluations. The first evaluation—of which this report is a part—focuses on Program Year 2008 (PY08). The second evaluation focuses on the ARRA-funded years of 2009 through 2011.

This report, together with its companion—the Eligible Population Study—addresses specific program characterization goals established for the greater evaluation. ECW led grantee and subgrantee data collection efforts, administering surveys to 51 grantees and 851 of the approximately 900 subgrantees that were slated to receive DOE weatherization funds in PY08. In all, seven different data collection instruments were used to gather the needed data—two instruments for grantees and five for subgrantees. See Table 1.1 for a list of these survey instruments. These surveys were used to determine, among other things:

- Structure and funding of weatherization programs
- Training and staff development of service providers
- How weatherization services are delivered
- Clients served

### Results

The national WAP is delivered through a varied network of state offices (grantees) that run statewide weatherization programs and local agencies (subgrantees) that weatherize homes of eligible program clients. DOE provides a substantial amount of funding to grantees for their respective statewide programs, as well as program guidance and rules governing the use of these funds.

### Funding

In PY08, DOE made available \$227.2 million in program grants to 51 grantees (all 50 states plus the District of Columbia) for their use in administering their respective statewide programs. In turn, the grantees distributed funding to a network of approximately 900 subgrantees. In PY08, grantees allocated an average of \$240,000 in DOE funds to subgrantees.

While DOE funding is an important source of funding for low-income weatherization, it is not the only source. Grantees and subgrantees use a mixture of funding sources to pay for weatherization program activities. Grantees, particularly those with larger programs, reported that leveraging DOE funds was important to their program funding. For 21 of the grantees, leveraged funds accounted for half or more of their total program funding. Altogether, grantees received nearly \$720 million to support their

weatherization programs in PY08. Of that amount, grantee weatherization offices spent about \$42 million on their activities and passed along \$677 million to subgrantees for their work. Fig. 2.6 illustrates the aggregated national funding scenario as reported to us by the grantees and subgrantees.

### **Structure and staff development**

As described above, a varied network of organizations deliver the Weatherization Assistance Program. At the grantee level, the program resides within state government, often in a state department of social services or housing. On average, grantees have eight full-time equivalent (FTE) positions for a total of about 400 state-level staff administering the 51 weatherization programs in the states and the District of Columbia.

Subgrantees tend to be locally-based nonprofit organizations, although some are county or local government agencies. Some subgrantees focus only on weatherization while others provide a variety of social services.

The Weatherization Assistance Program focuses substantial attention on training and staff development at both the federal and state levels. Nine percent of DOE funds spent in PY08 plus another three percent in non-DOE funds were allocated to training and technical assistance. Based on self-reports from grantees and subgrantees, staff are well trained in the areas in which they require particular knowledge to perform their jobs.

### **How services are provided**

The full weatherization process involves a multi-step sequence that comprises client intake, home audit, weatherization (installation of measures), client education and post-weatherization inspection. To understand the relative effort expended on these various activities at the local level, we broke them out by spending category. In PY08, subgrantees spent approximately 70 percent of their weatherization funds on the installation of measures, 12 percent on program management, 10 percent on health and safety measures, 7 percent on audits and inspections, and 1 percent on training and technical assistance.

The home audit is the first step in identifying the measures that provide cost-effective energy efficiency improvements and that address health and safety concerns. Subgrantees use some fairly sophisticated tools to identify heat loss, system efficiency, and other sources of energy waste.

Most subgrantees perform a range of procedures to test air infiltration and the safety and performance of space and water heating systems. These diagnostic procedures include (among others):

- Blower door (used by 99% of subgrantees)
- Flue gas analysis (used by 83% of subgrantees)
- Draft/spillage (used by 77% of subgrantees)
- Duct pressure pan measurements (used by 59% of subgrantees)
- CO testing (done by a majority of subgrantees in some form)

Subgrantees use the diagnostic results to select the measures to be installed or implemented on the home being weatherized. Tools used to select these measures include:

- a priority list (used by 52% of subgrantees)
- a calculation procedure (used by 33% of subgrantees)
- combination of a priority list and a calculation procedure (used by 12% of subgrantees)



Subgrantees using a calculation procedure as their primary decision-making tool overwhelmingly used Weatherization Assistant (53% of subgrantees).

### **Clients served**

WAP serves low-income families. In PY08 DOE rules allowed households at or below 150 percent of the federal poverty level or 60 percent of the state's median income to qualify for weatherization assistance. Additionally, some particularly vulnerable groups receive priority at the federal or grantee level. Clients that receive special priority – either nationally or regionally – include households with elderly members, disabled residents, or children. Clients with high energy expenditures or burdens also receive special consideration.

A snapshot of PY08 WAP clients shows that:

- Approximately three-fourths own the home in which they live (primarily site-built single-family home or mobile home)
- Approximately one-third can be classified as either high energy users or as having a high energy burden (for those clients in states with a defined threshold for high energy users or high energy burden)
- Nearly half (45 percent) of the households have elderly residents, 38 percent have a resident with a qualifying disability and 30 percent have children living at home
- Approximately half of the households with children are single-parent households
- Approximately half identify themselves as white, 16 percent as black, 5 percent as Hispanic and less than 4 percent as American Indian/Alaskan Native, Asian or Native Hawaiian/Pacific Islander (for the three-fourths of PY08 clients for which racial identity data are available)

### **Production**

In PY08 WAP subgrantees responding to our data request weatherized:

- 54,121 single-family units (site-built)
- 5,920 small multifamily (2-4) units
- 11,058 large multifamily (5+) units
- 14,998 mobile homes

Nationally, subgrantees spent on average \$3,500 per unit across building types. Of this spending, just less than \$2,000 came from DOE funds.

Most homes weatherized during PY08 received at least one pressure diagnostic (83 percent), such as a blower door test, zonal pressure analysis or duct pressure measurements, among others. Similarly, most homes received diagnostic measurements or inspection pertaining to the water-heating system and/or space-heating system (82 percent, each).

Energy-saving measures constitute 63 percent of all installations among single-family homes and 61 percent among mobile homes. On average, energy-saving measures make up the largest portion (67 percent) of total measure installations among homes in multifamily buildings.

Finally, weatherization programs across the country tend to install some common measures fairly universally. Nearly all PY08 weatherized homes (91 percent) received some form of air sealing. The next most common types of improvements were insulation (75 percent) and 'other baseload applications' such as lighting, refrigerators, and other energy-consuming equipment that is not part of the Heating, Ventilation and Air Conditioning (HVAC) system (69 percent).



## 1. INTRODUCTION

This report is part of a national evaluation of the Weatherization Assistance Program (WAP) being managed by Oak Ridge National Laboratory (ORNL) on behalf of the U.S. Department of Energy (DOE). The pages that follow describe the nationwide WAP network and weatherization activities during Program Year 2008 (PY08).<sup>1</sup> Other reports being issued as part of the national evaluation will address indoor air quality in weatherized homes; energy savings and non-energy benefits attributable to weatherization activities in electrically and natural gas-heated homes, dwellings heated with delivered fuels, and multifamily buildings heated with fuel oil; a process evaluation; and a series of case studies. In addition, a population eligibility report complements this characterization report by describing the broader population context in which the weatherization program operates.

### 1.1 BACKGROUND

DOE's WAP has supported energy efficiency improvements to the homes of low-income households in the United States since 1976. The program provides grants, guidance, and other support to grantees: weatherization programs administered by each of the 50 states, the District of Columbia and some Native American tribes.<sup>2</sup> (For the sake of convenience—and because the District of Columbia functions much like a state program—we will refer to 51 grantees in this report.) The grantees, in turn, oversee a network of local weatherization agencies (subgrantees): community action agencies, nonprofit organizations, and local government agencies that are eligible to receive weatherization funding from DOE. These weatherization agencies qualify eligible households, assess their homes' energy efficiency opportunities, install energy-saving measures, and inspect the work. The work performed includes air sealing, insulation upgrades, furnace replacements, and other dwelling-specific measures found to be cost-effective, as well as home improvements needed to ensure the health and safety of household occupants. The work is done at no cost to the eligible participants. The Weatherization Assistance Program Technical Assistance Center (WAPTAC) reports that over 6.7 million households have been served through this program since its inception.<sup>3</sup>

In PY08, DOE made available \$227.2 million<sup>4</sup> in program grants to all 51 grantees for their use in administering their respective statewide programs. In turn, the grantees distributed funding to a network of approximately 900 subgrantees. These funds were used to weatherize nearly 98,000 units<sup>5</sup> that year. In addition, as reported below, many grantees and subgrantees supplemented the DOE funds with other funding sources for use on both the housing units weatherized as part of the DOE program and for weatherization that is performed outside the program.

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<sup>1</sup> References to program years in this report are consistent with definitions used by DOE, which names program years according to the year in which the funding period begins. Some states name program years according to the year in which the funding period ends. DOE's Program Year 2008 is referred to as Program Year 2009 in those states.

<sup>2</sup> The program also provides funding for weatherization in some U.S. territories and to two Native American tribal governments. The territories are not included in our analysis. Two Native American tribes appear to have functioned as both grantees and subgrantees. They had a direct funding relationship with DOE, but did local weatherization work. We classified them as subgrantees for the purposes of our analysis.

<sup>3</sup> Reported at the following url on April 11, 2012:

[www.waptac.org/data/files/website\\_docs/public\\_information/combined%20know%20the%20facts\\_talking%20points.pdf](http://www.waptac.org/data/files/website_docs/public_information/combined%20know%20the%20facts_talking%20points.pdf).

<sup>4</sup> As reported in Weatherization Program Notice (WPN) 08-2

<sup>5</sup> Our exact control total was 97,965 units, as reported by grantees to DOE and tracked in the department's WinSAGA system.

Although there have been studies of some grantee-administered weatherization programs, the overall effectiveness of the national weatherization program has not been formally evaluated since Program Year 1989. The program has evolved significantly since the last national evaluation was conducted, with an increased focus on baseload electric usage, continued evolution of diagnostic tools, new guidelines and best practices for heating-related measures, and adjustments in program rules. More recently, the program has also adjusted to large, temporary funding increases and changes in federal rules spurred by the American Recovery and Reinvestment Act (ARRA).

Consequently, ORNL is managing two independent evaluations of the national weatherization program on behalf of DOE. The first evaluation—of which this report is a part—focuses on PY08, which was the last year before substantial ARRA funding became available to the national weatherization network. The second evaluation focuses on the ARRA-funded years of 2009 through 2011.

## **1.2 PURPOSE OF THE EVALUATION**

The purposes of the overall evaluation—and the collection of reports stemming from this work—are to (1) provide a comprehensive review of program performance, (2) enable DOE to make any necessary improvements and guide the direction of the program into the next decade, and (3) provide information of interest to potential funders in order to support leveraging activities. With a subsequent evaluation of the ARRA-era weatherization program to follow, this evaluation effort also provides a baseline against which ARRA results can be compared.

This report, together with its companion—the Eligible Population Study—addresses specific program characterization goals established for the greater evaluation. These goals are to characterize the following elements of the weatherization program:

- Low-income population eligible for and in need of the program
- Segment of the eligible population served by the program,
- Housing units and clients served by the program
- Weatherization and other services performed by the program
- Program expenditures and funding sources

## **1.3 METHODOLOGY**

ORNL solicited input from the weatherization community in developing the evaluation plan and survey instruments. Forty-one people served on the Network Planning Committee which was comprised of representatives from grantees, subgrantees, DOE headquarters and regional offices, training centers and advocacy organizations. Input from the Network Planning Committee informed the goals and research priorities of the evaluation. Members provided feedback on draft survey instruments. The Office of Management and Budget (OMB) also reviewed the evaluation plan and survey instruments and solicited feedback during a public comment period publicized in the Federal Register.

ORNL used a competitive solicitation to select a team of independent energy program evaluators to conduct the evaluation: APPRISE, Inc., Blasnik & Associates, Dalhoff Associates and the Energy Center of Wisconsin. The Energy Center led grantee and subgrantee data collection efforts, administering the surveys that collected the data used in this program characterization report.

This characterization report is based on self-reports by all 51 grantees and 851 of the 904 subgrantees that were slated to receive DOE weatherization funds in PY08. The evaluation team used seven different data collection instruments to gather the needed data—two instruments for grantees and five for subgrantees. We asked all 51 grantees to complete two state-level instruments and all 904 subgrantees to complete two

agency-level instruments. We concentrated the bulk of the subgrantee data collection effort on a representative sample of 400 PY08 agencies, which were asked to complete three additional instruments.

Table 1.1 lists the survey instruments and data forms<sup>6</sup> used and the types of respondents to which each instrument pertained. The instruments are attached as Appendices A through H.

**Table 1.1: Instruments used in grantee and subgrantee data collection**

<b>Instrument name</b>	<b>Label</b>	<b>State programs</b>	<b>Sampled local agencies</b>	<b>Non-sampled local agencies</b>
All States Agencies Information Survey	DF1	X		
All Agencies Overview Data Form	DF10		X	X
All States Program Information Survey	S1	X		
All Agencies Program Information Survey	S2		X	X
Sampled Agencies Detailed Program Information Survey	S3		X	
Sampled Agencies Electric and Gas Bills Information Data Form	DF4 a/b		X	
Housing Unit & Building Information Surveys	DF2/3		X	

ORNL sampled 400 subgrantees from a list of 904 agencies that were slated to receive DOE funds in PY08. ORNL stratified the sample by state and allocated the subgrantee sample to states in proportion to the PY08 planned allocation of WAP funds, with a minimum of one subgrantee sampled per state. Subgrantees were sampled within state (without replacement) with probability proportional to size, where the measure of size was the PY08 planned WAP allocation, with minimum and maximum measures of size of \$10,000 and \$450,000, respectively. Two very large subgrantees were sampled with certainty.

The evaluation team used a case manager approach to collect data from grantees and subgrantees. A team of five case managers and two outreach coordinators managed evaluation-related communications and data requests for grantees and subgrantees. Each case manager was assigned a portfolio of states and served as the designated point of contact for the grantee and subgrantees in the state. The case managers worked with their assigned grantees and subgrantees to facilitate and overcome barriers to their participation in the evaluation.

The data collection effort began with the DF1 survey for grantees in May 2010. Survey data collection for grantees continued through February 2011. Survey data collection for subgrantees began in June 2010 and was finished for nonsampled subgrantees in early December. Survey data collection for sampled subgrantees continued through July 2011.

The evaluation team made surveys available in multiple modes to allow flexibility for respondents. All surveys except DF4 were available in a secure online system developed and administered by the Dieringer Research Group, Inc. Survey instruments were also made available in Microsoft Word or PDF format. Survey responses were accepted via email, mail, fax and over the phone. The DF4 survey for sampled subgrantees was administered in Microsoft Excel, with files transferred over a secure file-sharing website to protect personal information about WAP participants.

In addition, to alleviate some of the response burden for sampled subgrantees, we partially precompleted the data forms that requested unit-level data (DF4 and DF2/3) wherever this was feasible using

<sup>6</sup> Survey instruments (marked with an ‘S’ in their shortened names) addressed quantitative and qualitative information about program operations and administration at an aggregate level; data forms (marked with a ‘DF’) collected detailed information about specific weatherized units or subgrantees.

information from state-level databases. In all, we migrated some data for sampled subgrantees in 18 states.

Overall participation rates ranged from 97 percent for subgrantees to 100 percent for grantees. All grantees completed two data requests, giving us a 100 percent response rate at the state level. Of the 904 subgrantees that appeared slated to receive DOE funds in PY08, 877 actually received an allocation to weatherize units and were still part of the weatherization network by the time data collection began in the spring of 2010. Of these 877 subgrantees, 852 completed at least one instrument for a participation rate of 97 percent. Similarly, among the sampled subgrantees, 396 of the 400 agencies identified in the sample actually received an allocation to weatherize units and were still part of the weatherization network when we attempted to contact them. Three hundred eighty-four of the sampled subgrantees completed at least one instrument. However, it should be noted that not every participating subgrantee completed every survey or data request, and respondents did not always answer all of the applicable questions, so response rates to individual questions are somewhat lower.

Table 1.2 lists instrument-by-instrument response rates.

**Table 1.2: Response rates by instrument**

<b>Instrument name</b>	<b>Label</b>	<b>Response Rate</b>
All States Agencies Information Survey	DF1	100%
All States Program Information Survey	S1	100%
All Agencies Overview Data Form	DF10	97%
All Agencies Program Information Survey	S2	93%
Sampled Agencies Detailed Program Information Survey	S3	90%
Sampled Agencies Electric and Gas Bills Information Data Form	DF4 a/b	93%
Housing Unit & Building Information Surveys	DF2/3	94%

## 1.4 DATA LIMITATIONS

The data presented in this report are based almost exclusively on self-reports by grantees and subgrantees. While we believe that respondents answered the questions we posed in good faith, several factors impinge on the reliability and validity of the data we received. These factors include:

- **Loss of institutional memory:** Several respondents indicated that no one currently associated with their weatherization program was part of the organization during the program year addressed by this study.
- **Respondent fatigue:** Several of the instruments were lengthy, requiring several days of respondent time to complete at a time that many agencies were being audited, included in other studies, or otherwise being asked to respond to various inquiries while working toward aggressive production goals. This combination of circumstances may have limited the amount of attention respondents paid to any one question.
- **Inconsistent interpretation of question meaning:** Some questions could be interpreted in multiple ways. While we provided mouse-over guidance for some of the questions and clarified questions whenever asked, we suspect that respondents may have interpreted some questions in different ways than intended without seeking clarification from us.
- **Recordkeeping:** Some respondents keep records—especially financial records—in ways that do not lend themselves to answering specific questions in our instruments. In particular, we heard from financial staff that they do not track data in a way that maps easily to the financial matrices we included in two of the surveys.

Two areas of particular challenge included financial data and unit counts.

### **1.4.1 Financial data**

We included financial questions on several instruments and asked for funding information to be broken out in a matrix that did not always match the way grantees and subgrantees keep their records. The data we received generally matched what we would expect based on other published data, such as the National Association for State Community Services Program (NASCSPP) annual funding survey and initial DOE allocations contained in the department's WinSAGA database. However, there were substantial inconsistencies in detailed numbers—both within responses from individual grantees or subgrantees and across respondents (grantee reports compared to the sum of subgrantee reports)—and some inconsistencies between aggregate amounts reported to us and published funding reports available elsewhere.

We followed up with selected grantees to understand the reasons for these apparent discrepancies and to correct obvious reporting errors. These follow-ups suggest that discrepancies among reported financial values were due to multiple factors, including:

- Adjustments to funding distribution and timing of expenditures after states submitted data to the NASCSPP funding survey (one of the external data sources we used as a cross-check).
- Inconsistencies in whether funds related to weatherization, such as emergency furnace repair and replacement, were included as weatherization funding.
- Inconsistencies in whether funds coordinated by a grantee but disseminated directly from utilities to subgrantees are counted in state totals.
- Errors in funding amounts reported to us.
- Uses of funds in ways that do not have a clear home in the reporting structure we defined.
- Uncertainty by some subgrantees about the mix of funding sources that make up the allocations they receive from their grantee.

We corrected obvious errors at the direction of grantees, replaced some subgrantee reports with grantee-provided values, and used funding allocations in place of missing values for non-responding subgrantees. Nevertheless, reconciling all differences would have gone beyond the scope of our effort and respondents' abilities to answer questions. As a result, readers should keep in mind that financial data reported here may not match other data sources.

Unless otherwise noted, this report presents the funding amounts reported to us by grantees and subgrantees. A few aggregate values were drawn from other sources, such as initial DOE allocations, in order to anchor our discussion of the overall program size to official funding amounts. In those cases, we identified the external source of those data.

### **1.4.2 Unit counts**

We found similar apparent discrepancies with reported numbers of housing units weatherized under the DOE program. Depending on their funding sources, local agencies can weatherize homes as part of the national WAP program or outside the confines of the program. We sought to obtain unit counts by housing type for both DOE and non-DOE projects.

For some grantees and subgrantees, we obtained different unit counts for PY08 from the department's WinSAGA database, state-maintained databases of weatherization projects, and completed units reported by subgrantees on two different instruments. It appears that there is some ambiguity about which projects should be reported as DOE units and differences in how grantees allocate total units to the WAP program.

Furthermore, subgrantees do not consistently know which, or how many, of their projects the grantee reported as DOE units to the department.

As with financial data, unless otherwise noted, the results presented in this report draw from the responses we received from grantees and subgrantees plus whatever data we were able to extract from statewide databases provided to us by some grantees. These data may not match official department production numbers.

A few aggregate values were drawn from other sources, such as official DOE totals from the WinSAGA database, in order to anchor our discussion to official measures of overall program activity. In those cases, we identified the external source of those data.

## **1.5 READING THIS REPORT**

We hope the readers will find this report straightforward to read. The following information may be helpful to those readers wishing to understand what is behind the data more fully.

### **1.5.1 Subgrantee data**

Subgrantee data presented in this report draw from some questionnaires completed by the full set of respondents and others completed only by sampled subgrantees. Sampled subgrantee data are weighted to represent the full population of subgrantees in PY08. Because our response rates were high, we did not correct for non-response.

Table 1.3 displays approximate error margins due to sampling uncertainties for agency-level data drawn from the Sampled Agencies Detailed Program Survey; tables and figures to which these sampling errors apply are marked with a <sup>+</sup> in the table or figure title. Table 1.4 displays error margins for housing-unit data drawn from the Housing Unit and Building Information Surveys; tables and figures to which these sampling errors apply are marked with a <sup>++</sup> in the table or figure title. These error margins are at a 90 percent confidence level. Margins of error are highest for the hot climate zones because the number of sampled and responding agencies from those areas was lower than for the cooler climate regions. There is no sampling uncertainty for grantee-level data or subgrantee data taken from the “all agencies” survey and data form.



**Table 1.3: Sampling uncertainties for agency-level data from sampled subgrantees**

Agency Group	Approximate margin of error
Overall	+/- 6%
By program size	
small	+/- 21%
medium	+/- 11%
large	+/- 7%
By climate region	
very cold	+/- 9%
cold	+/- 7%
moderate	+/- 16%
hot-humid	+/- 20%
hot-dry	+/- 26%

**Table 1.4: Sampling uncertainties for housing-unit data from sampled subgrantees**

Agency Group	Approximate margin of error <sup>7</sup>
Overall	+/- 1 to 4%
By program size	
small	+/- 4 to 12%
medium	+/- 1 to 6%
large	+/- 2 to 7%
By climate region	
very cold	+/- 1 to 8%
cold	+/- 1 to 5%
moderate	+/- 3 to 8%
hot-humid	+/- 6 to 16%
hot-dry	+/- 13 to 29%

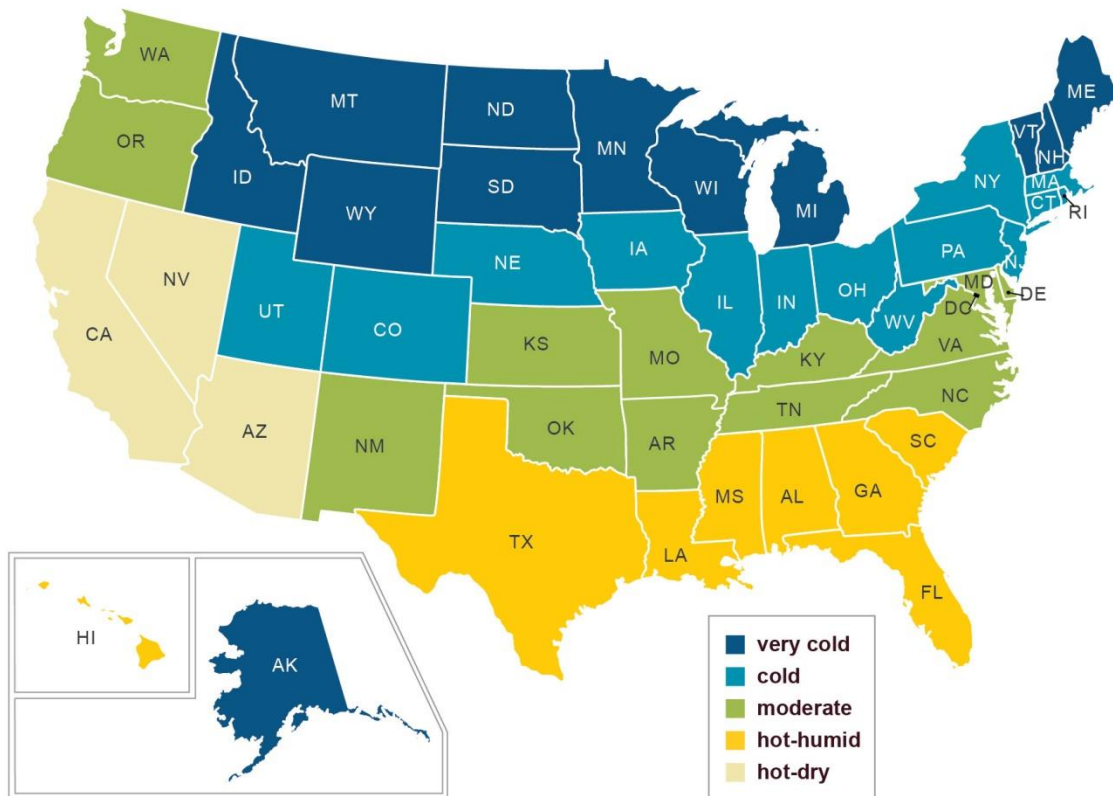
### 1.5.2 Comparisons by program size and climate region

Throughout the report, we compare relevant responses from grantees and subgrantees representing different climate regions and differently sized programs.

<sup>7</sup> Margins of error are shown as ranges because they will differ depending on the degree to which there is variance between subgrantees and between weatherized units within subgrantees.

Fig. 1.1 illustrates the way we defined five climate regions, which are based in large part on the climate zones recognized by DOE’s Building America program except that states are uniquely assigned to a single zone. Each state was assigned to a climate region based on estimates of the heating and cooling degree days for the major population centers.<sup>8</sup> Among temperate climates, there is also a distinction between humid and dry regions. We did not subdivide states with varied climates within their borders because WAP policies and procedures are implemented at the state-level and because an important part of our data collection was state-based.

Climate-based comparisons of weatherization programs allow readers to see differences in policies and procedures among parts of the country that are heavily heating or cooling-dominated and those that fall in-between. Similarly, size-based comparisons show differences between larger and smaller programs.



**Fig. 1.1: Climate regions as used in this report**

We divided grantees and subgrantees by weatherization program size. We defined grantees into quartiles of total reported weatherization funding from all sources for PY08. In this report, we will refer to the grantees that fell into the quartile with the greatest funding as large, those in the quartile with the least funding as small, and those in between as medium-sized. We followed the same approach for subgrantees. Table 1.5 shows the funding ranges for each of these groupings.

<sup>8</sup> This resulted in some allocations of states to climate regions that may seem counterintuitive. For example, while most of Nevada is quite cold, the main population center of Las Vegas has only 2276 heating degree days. By comparison, one might think of New Mexico as warmer, but the main population center of Albuquerque has 4281 heating degree days.

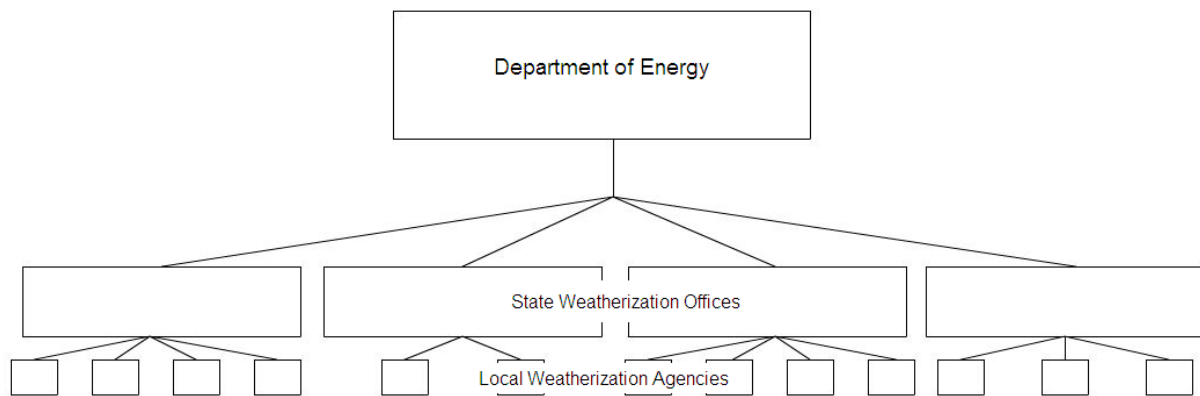
**Table 1.5 Funding ranges for grantees and subgrantees by program size**

Program size	% of agencies	Grantees		Subgrantees	
		lower limit	upper limit	lower limit	upper limit
small	25%	\$0	\$4,237,100	\$0	\$271,533
medium	50%	\$4,237,101	\$15,526,000	\$271,534	\$939,782
large	25%	\$15,526,001	no limit	\$939,783	no limit



## 2. HOW ARE WEATHERIZATION AGENCIES STRUCTURED AND FUNDED TO DO THEIR WORK?

Low-income weatherization consists of a varied network of state offices (grantees) that run statewide weatherization programs and local agencies (subgrantees) that weatherize homes of eligible program clients. DOE provides a substantial amount of funding to state offices for their respective statewide programs, as well as program guidance and rules that govern the use of the DOE funds. Fig. 2.1 illustrates this three-layer structure. Many grantees and subgrantees also obtain and use other funding sources for weatherization work, some of which is used alongside DOE funds on the same homes and some of which funds a unique set of homes for projects that need not adhere to the rules of the DOE program. This chapter describes this network of weatherization-related organizations. For convenience, we will refer to the 50 states and the District of Columbia as the 51 state weatherization programs.



**Fig. 2.1:WAP program hierarchy**

### 2.1 STATE PROGRAMS

State programs consist of state administrative and technical staff (grantees) and an in-state network of local weatherization agencies (subgrantees). The state offices are all part of state government, but housed in a variety of departments. They oversee and administer the weatherization program within their jurisdiction.

Each grantee's network of subgrantees coordinates and completes weatherization of eligible clients' homes at the local level. The typical grantee subcontracted with about 17 local agencies in PY08 and allocated an average of \$240,000 in DOE funds to subgrantees. (See below for a more thorough discussion of funding allocations and non-DOE funding sources.) However, the number of subgrantees and funding allocations varied substantially, ranging from two to 64 subgrantees per state and \$6,000 to \$6,000,000 per local agency.

Interestingly, grantees in colder climates use a smaller network of local agencies and allocate more DOE funds per agency than those in warmer climates. Table 2.1 shows the mean number of subgrantees and DOE allocation per agency in PY08 by climate region.

**Table 2.1: Mean network size and funding per subgrantee by climate region**

Climate region	Mean number of subgrantees per state	Mean DOE allocation per subgrantee
very cold	12	\$320,000
cold	23	\$290,000
moderate	16	\$200,000
hot-humid	17	\$160,000
hot-dry	18	\$130,000
all combined	17	\$240,000

Larger grantees (those with more total weatherization funding from all sources) tend to distribute their DOE funds across larger networks of subgrantees, but keep the average allocations per agency at relatively similar levels as smaller grantees. Table 2.2 shows the mean number of subgrantees and DOE allocations per subgrantee by program size.

**Table 2.2: Mean network size and funding per subgrantee by program size**

State Program Size	Mean # of subgrantees	Mean DOE allocation per subgrantee
Small	8	\$240,000
Medium	16	\$220,000
Large	32	\$330,000

### 2.1.1 Organizational structures

At the grantee level, the weatherization program is often administered by a state department of social services or housing. Thirty-three of these state program offices also administer the Low Income Home Energy Assistance Program (LIHEAP), which provides payments to eligible households' energy providers to offset some of their energy costs and can fund some weatherization activities as well.<sup>9</sup> While weatherization and energy assistance are the largest low income energy programs in most states, the offices that administer the weatherization program also run other programs, including:

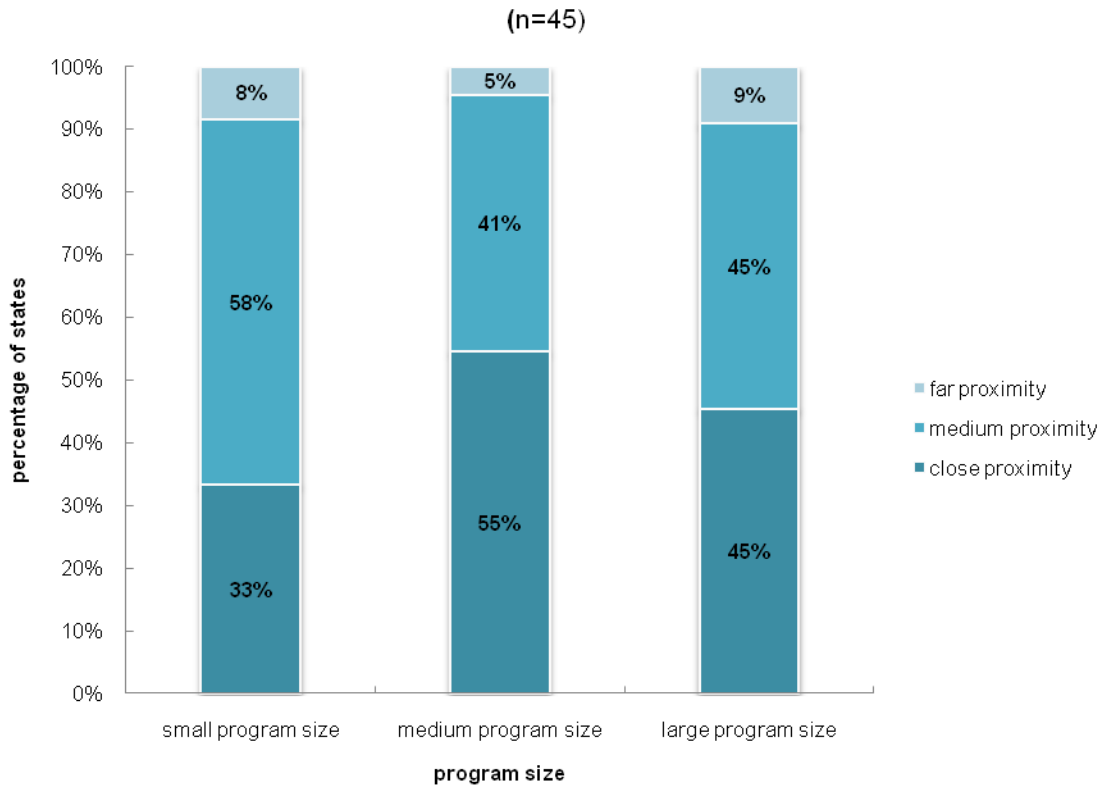
- Community Service Block Grants (10 states)
- HOME Investment Partnerships Program (9 states)
- Community Development Block Grants (5 states)
- Emergency Shelter Grant Program (5 states)
- (Unspecified) tax credits (5 states)
- Public housing (4 states)
- Weatherization Plus / Rehabilitation Program (4 states)

The placement of the weatherization program within the hierarchy of the state's executive branch varies widely. In nearly half of the states (47%), the program is only one or two layers removed from the governor's office, which we categorized as close proximity to political decision-making. In most of the remaining states (another 47%), the weatherization program is located between three and five layers away from the governor's office. We labeled these as being a medium distance removed from political

<sup>9</sup> The other 17 states administer LIHEAP through a different agency than the one responsible for WAP administration.

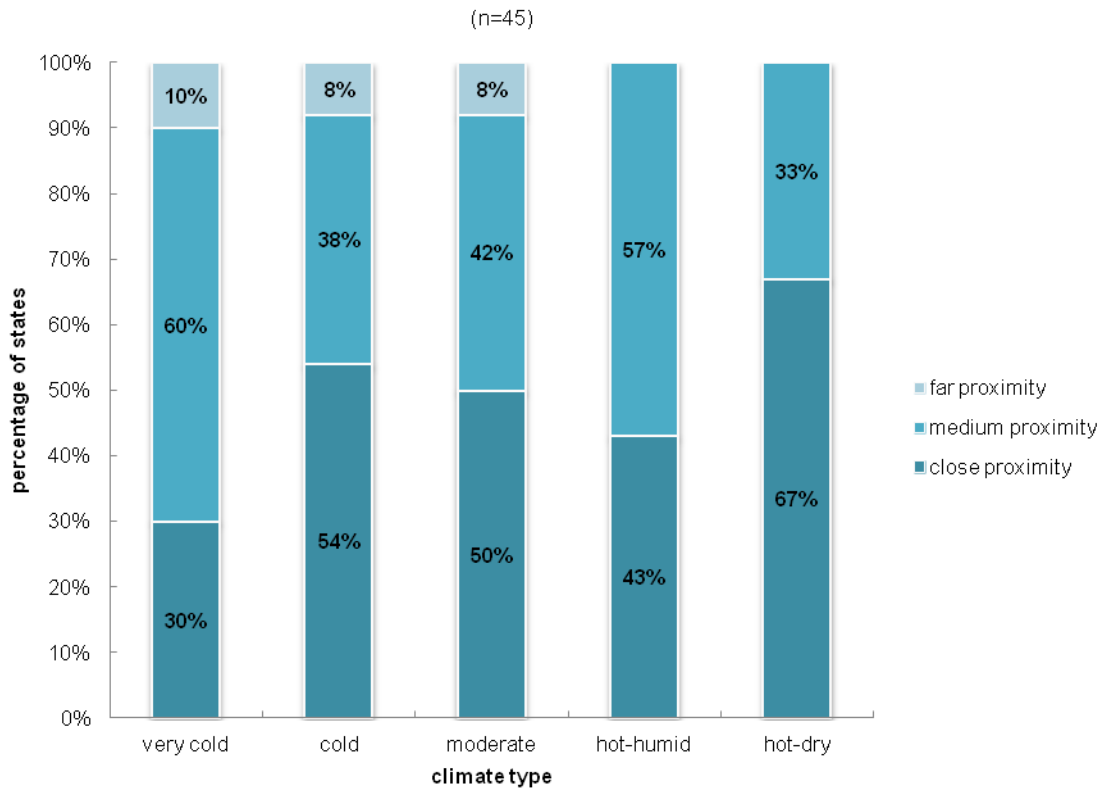
decision-making. The remaining few states have weatherization programs that are located even further away from the governor’s office—six layers or more.

There is no clear pattern for how proximity to the governor’s office varies with program size. As shown in Fig. 2.2, more of the medium-sized programs were placed close to the governor’s office in PY08, while small and large programs tended to be further removed.



**Fig. 2.2: WAP office proximity to governor's office (by program size)**

The coldest climate states tend to place their weatherization programs further from the governor’s office while the warmer states maintain fewer layers between the weatherization program and the governor’s office. As Table 2.3 illustrates, only 30 percent of very cold climate states had their weatherization offices placed one or two layers from the governor’s office in PY08, while the other climate regions had between 43 and 67 percent of their weatherization offices within one or two layers from the governor’s office.



**Fig. 2.3:WAP office proximity to governor's office (by climate region)**

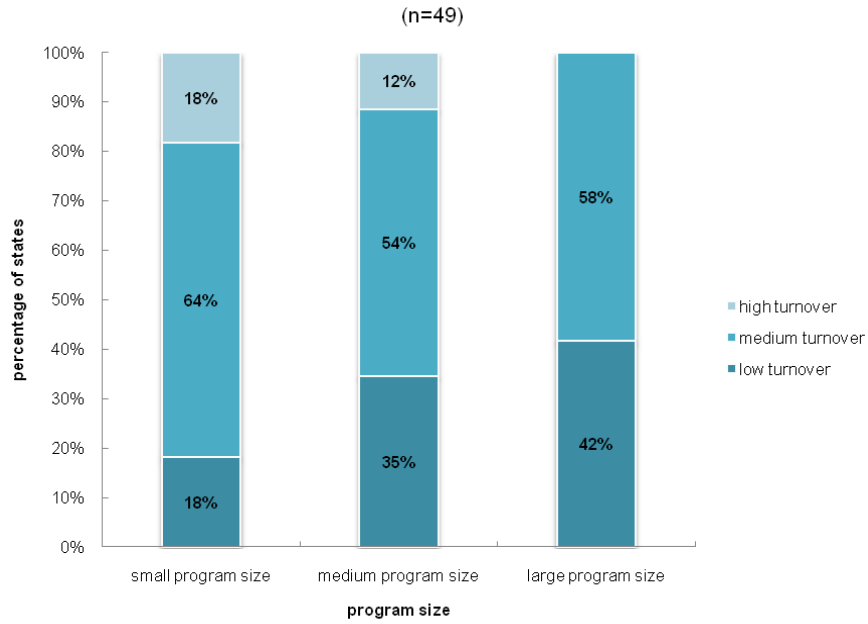
Weatherization offices are run by the grantee’s weatherization director. In a majority of states (82%), the weatherization directors were civil servants in PY08 with political appointees accounting for the remainder (18%). Political appointees were slightly more common among small programs, where 25 percent of weatherization directors were political appointees. No grantee programs were run by elected officials.

The average (mean) tenure of the weatherization directors active in PY08 was eight years, but their experience in that position ranged from less than a year to 30 years. Thirty-six percent had been in that position for more than 10 years.

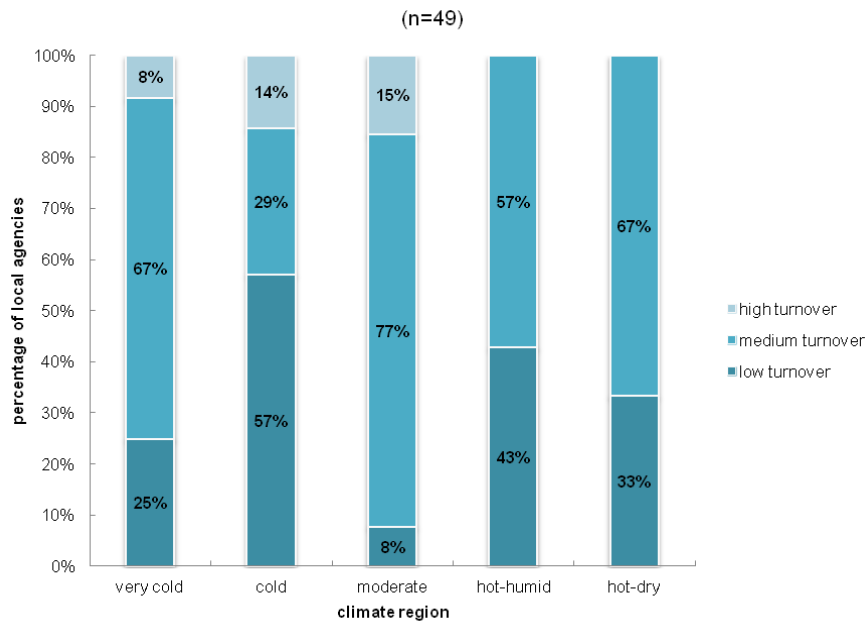
Generally, there was moderate turnover in weatherization program leadership during the ten years prior to PY08. The majority of grantees (57%) were directed by two or three individuals during that ten-year period. Thirty-three percent of grantees had low turnover, maintaining the same weatherization director for the entire decade, and ten percent experienced high turnover, having been directed by four or more individuals during that time.

Turnover was somewhat greater among small programs than larger ones, as shown in Fig. 2.4, and sporadic differences by climate region, as shown in Fig. 2.5.





**Fig. 2.4: Turnover in weatherization director position during 1999-2008 (by program size)**



**Fig. 2.5: Turnover in weatherization director position during 1999-2008 (by climate region)**

### 2.1.2 Staffing and responsibilities

On average, grantees have eight full-time equivalent (FTE) positions for a total of about 400 state-level staff<sup>10</sup> administering the 51 weatherization programs in the states and the District of Columbia. These positions serve several supporting functions needed to run the statewide programs. As one would expect

<sup>10</sup> These 400 full-time equivalent positions are distributed among approximately 500 individuals.

with any program, there is some management and administration—usually two to three positions—to handle program and staff oversight, grant management, program reports to DOE, and accountability to the state agency within which the program is housed.

Most of the remaining positions at the grantee level are designed to ensure effective implementation of weatherization by the subgrantees. One of these functions—agency monitoring—tracks subgrantee performance and thereby provides a quality assurance function. Staffing levels for agency monitoring tends to vary with program size, ranging from one or two people in small programs to four or more in large programs. The other supporting function—training and technical assistance—provides direct and indirect assistance to subgrantees on technical matters related to weatherization. This function comprises another one to six positions, depending on program size, but can be as high as 14 positions.

Table 2.3 below summarizes grantee staffing by function and program size. Not surprisingly, the average number of FTE staff increases with increasing program size across each support function except for the “other” category. Small programs reported a large number of staff in the “other” category, perhaps because staff from small programs perform multiple support functions.

**Table 2.3: Grantee support functions in Program Year 2008—in FTE staff**

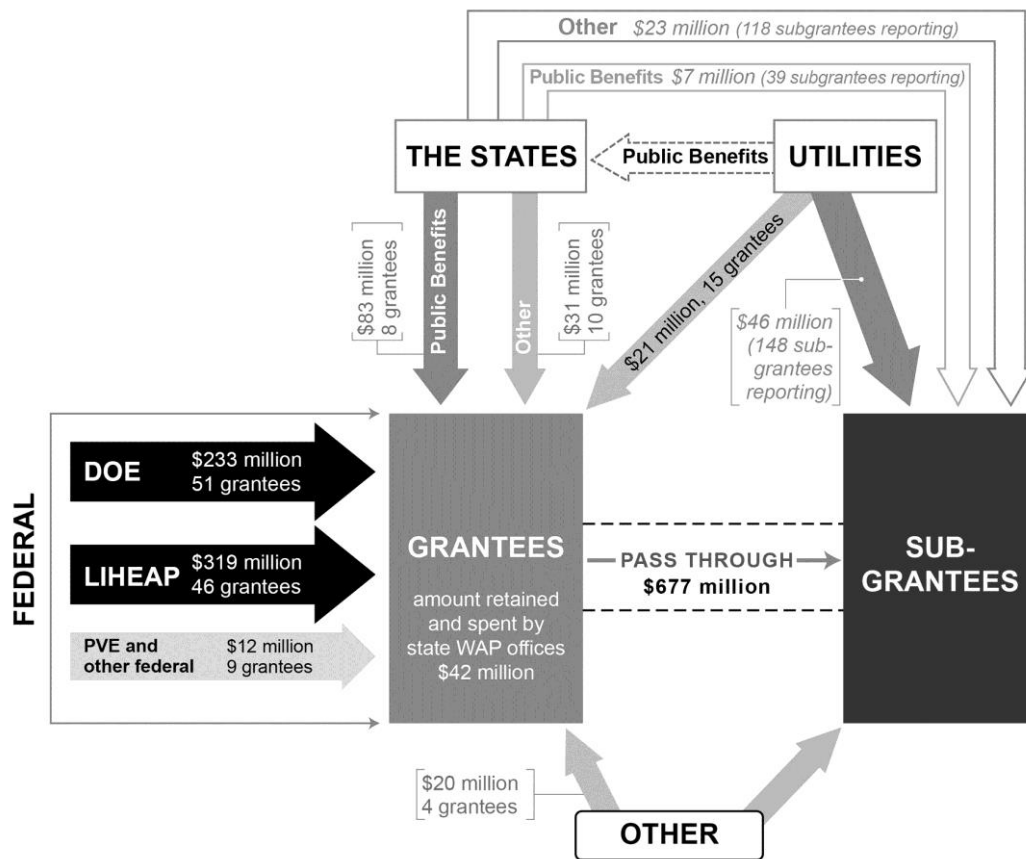
Support function	Grantees with small* programs (pop = 12)	Grantees with mid-sized* programs (pop = 26)	Grantees with large* programs (pop = 12)
Management & administration	Mean: 1.89 Range: .25 to 5 FTE n=7	Mean: 2.43 Range: .5 to 12 FTE n=23	Mean: 3.56 Range: 1 to 7 FTE n=10
Agency monitoring	Mean: 1.35 Range: .1 to 5 FTE n=6	Mean: 2.58 Range: .1 to 18 FTE n=21	Mean: 4.30 Range: .5 to 7 FTE n=10
Training & technical assistance	Mean: 1.00 Range: .5 to 2 FTE n=5	Mean: 1.55 Range: .3 to 6 FTE n=19	Mean: 5.74 Range: .5 to 14 FTE n=10
Other	Mean: 4.00 Range: 4 to 4 FTE n=1	Mean: 0.49 Range: 0 to 1 FTE n=7	Mean: 2.5 Range: 0 to 6.8 FTE n=4

### 2.1.3 Funding and production

The Weatherization Assistance Program provides an important source of funding for low-income weatherization, but it is not the only source. Grantees and subgrantees use a mixture of funding sources to pay for weatherization program activities. While the funding scenarios vary greatly from state to state, Fig. 2.6 illustrates the aggregated national funding scenario as reported to us by the grantees and subgrantees.

Altogether, grantees received nearly \$720 million to support their weatherization programs in PY08. Of that amount, grantee weatherization offices spent about \$42 million on their activities and passed along \$677 million to subgrantees for their work. The DOE WAP program and LIHEAP comprise the two main funding sources for the grantees, accounting for 77 percent of the funds, but some grantees also receive substantial support from state funding sources, state public benefit programs, and utility support. In addition, some state and utility funds go directly to local agencies and are not counted in these amounts.

We estimate that funds provided directly to subgrantees from other sources totaled at least \$76 million in PY08. Of this amount, utility funds provided directly accounted for \$46 million and state funds provided independently of the state weatherization office accounted for \$30 million. This estimate is probably on the conservative side because we counted only funds reported to us by subgrantees whose state offices do not also distribute funds of that type.<sup>11</sup> Funds received by subgrantees who did not report their funding mix to us are not included here.<sup>12</sup> Furthermore, funds from state and utility sources reported by subgrantees are also not included in our estimate of direct funding if the grantee reported providing such funding to its network of subgrantees.



**Fig. 2.6: Weatherization funding structure for Program Year 2008**

Based on official DOE unit counts and subgrantees reports, we estimate that subgrantees weatherized approximately 180,000 units in PY08. Slightly more than half of these units are generally considered to be DOE units, meaning that they were funded entirely or partially using DOE funds and, therefore, were required to adhere to DOE program rules and standards. The remaining weatherization projects included both non-comprehensive and comprehensive weatherization projects, some of which also adhered to DOE

<sup>11</sup> Hence, utility or state funds given directly to subgrantees are excluded if the grantee in that jurisdiction also distributes utility funds or the same kind of state funds to subgrantees. It is possible, however, that some subgrantees received such funds from both the grantee and the funding source directly. We needed to make this simplifying assumption due to limitations in the data available.

<sup>12</sup> Our analysis includes direct allocations of utility funds to 148 subgrantees, state public benefit funds to 39 subgrantees, and other state funds to 118 subgrantees. We estimate that additional funds may have been provided directly to the following numbers of subgrantees who did not provide funding data in sufficient detail for our analysis: utility – up to 40; state public benefits – up to 28; other state funds – up to 52.

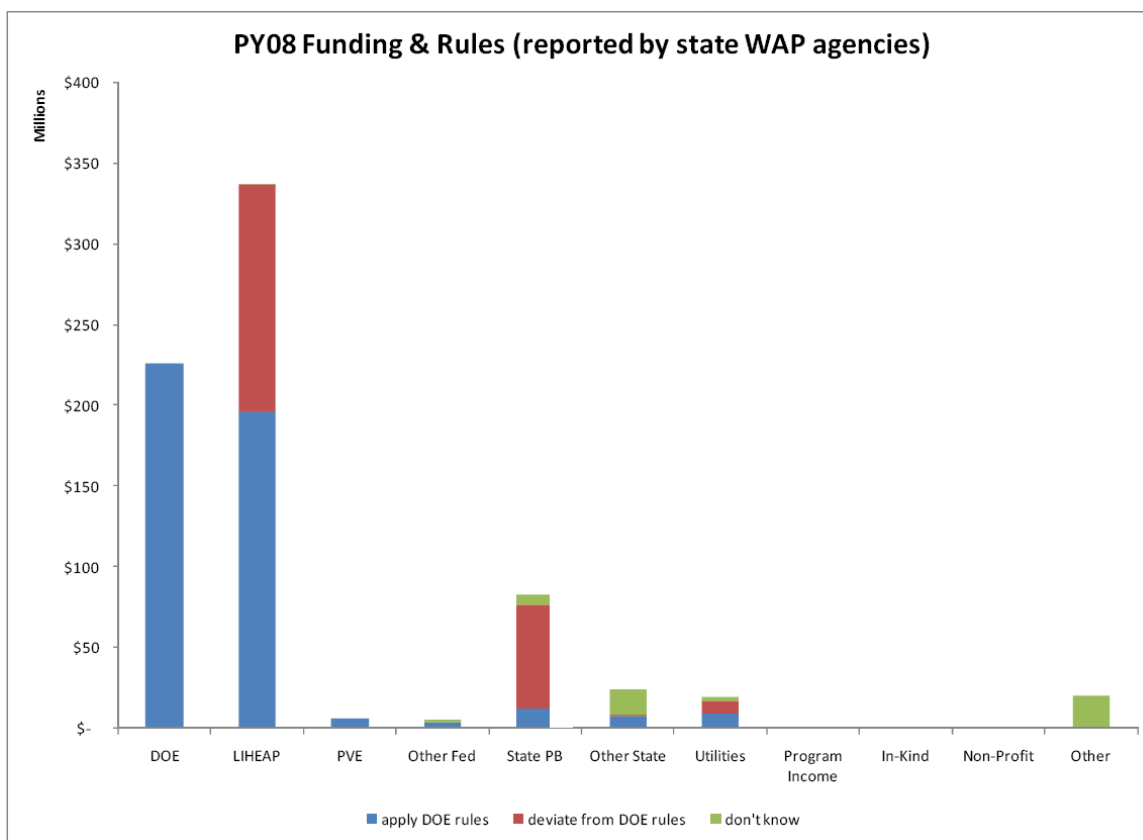
standards. Table 2.4 shows the overall distribution of weatherization projects completed by the subgrantee weatherization network by building type and DOE funding status in PY08.

**Table 2.4: Program Year 2008 units weatherized by WAP subgrantees\***

<i>Type of Structure</i>	<i>Number of units weatherized as part of the DOE program</i>	<i>Number of units weatherized outside the DOE program</i>
single-family	62,835	49,897
small multifamily (2-4 units)		6,231
large multifamily (5+ units)	17,047	16,416
mobile homes	17,754	10,394
shelter	329	no data

\* DOE units shown in the table are based on DOE's WinSAGA database, while nonDOE units are based on subgrantee reports. NonDOE units exclude projects completed by subgrantees that no longer exist or did not respond to our data requests.

DOE rules are being applied to large shares of the funds received from LIHEAP and state public benefits funds as summarized in Fig. 2.7.



**Fig. 2.7: Differences in rules between DOE funds and other sources**

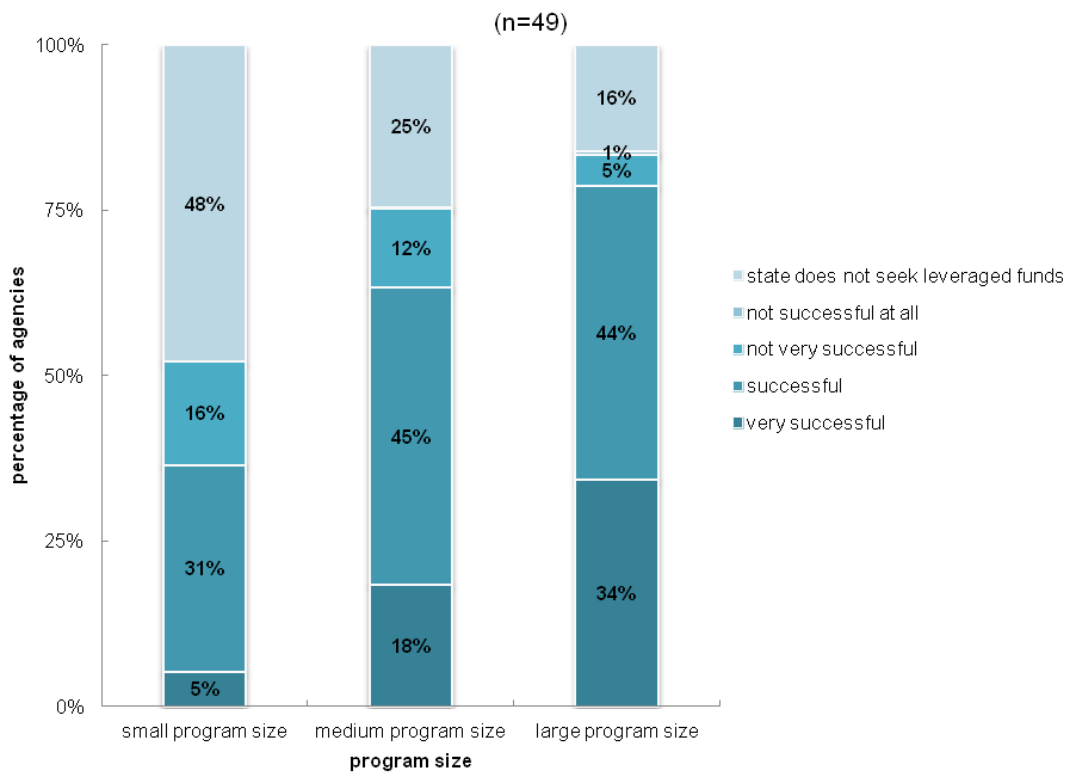
There were a number of departures from DOE rules in the LIHEAP rules. The differences involved measures that were not allowed per DOE rules, including allowances for repair work such as furnace repair/replacement, freezer replacement, roof replacement and reweatherization. If there was a crisis situation, LIHEAP would allow for more flexibility and installed heating equipment. Also, LIHEAP did

not have to meet SIR values and the funds could be used to address health and safety measures found in the home. In terms of costs, unit expenditure average was higher for LIHEAP, with higher allowable costs for health and safety related repairs.

When comparing the State Public Benefits funds and DOE sources, a number of differences were also noted between the rules governing the expenditures of funds. Like LIHEAP, there were differences in the allowable measures, such as roof and heating system replacements, and reweatherization eligibility. The State Public Benefits funds allowed for higher income eligibility limits.

### 2.1.4 Leveraging

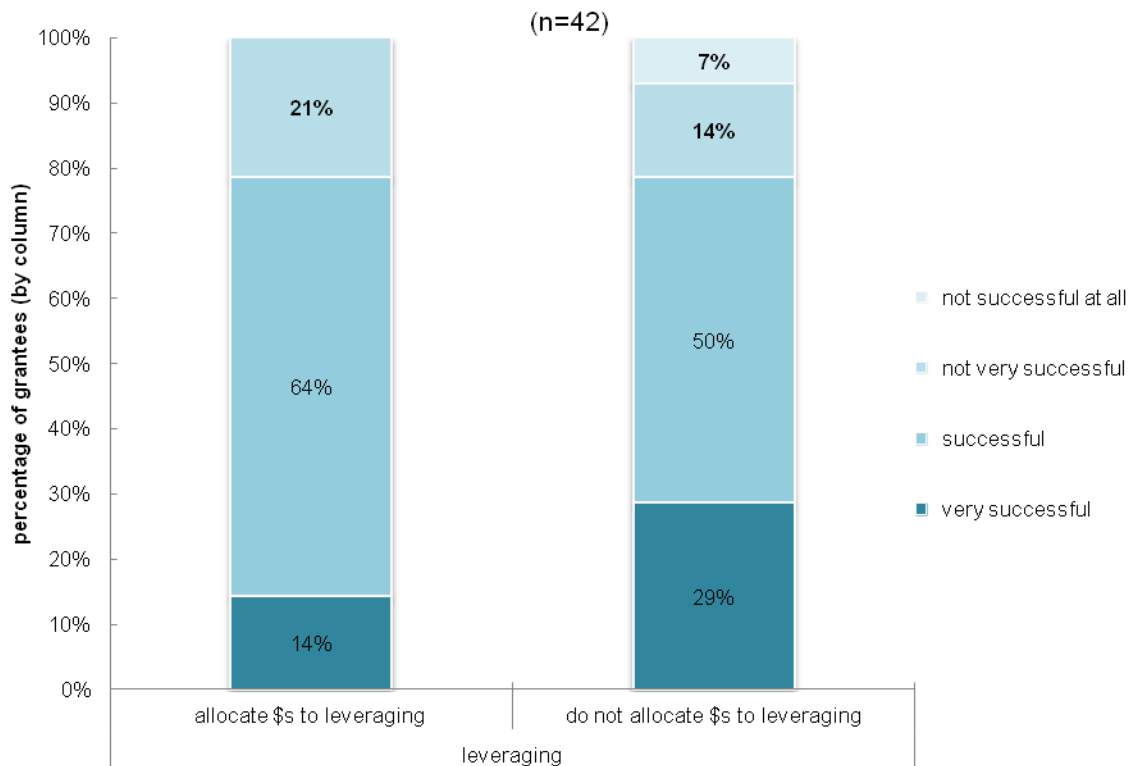
Grantees reported that leveraging DOE funds was important to their program funding. Eighty-two percent of grantees indicated that leveraging was important to their program. As noted in Fig. 2.6 above, nearly all grantees received leveraged (non-DOE) funds. Indeed, for 21 of the grantees, leveraged funds accounted for half or more of their total program funding. Not surprisingly, as shown in Fig. 2.8, grantees with larger programs found leveraging to be more important than smaller programs that are less likely to rely on leveraged funds.



**Fig. 2.8: Importance of leveraged resources by program size**

Most grantees seek leveraged funds—only 14 percent of responding grantees indicated that they do not—but only a minority—29 percent of grantees—set aside funds to advocate for leveraged resources. Those

that set aside funds feel that they were no more successful in acquiring leveraged funds than those who did not allocate financial resources to pursue leveraged resources (see Fig. 2.9).



**Fig. 2.9: Grantee success in attracting leveraged funds (by resources allocated)**

Barriers grantees reported to greater success in acquiring leveraged resources included availability and competing interests for funding, lack of political interest, and insufficient staffing.

Some grantees (19%) reported having modified their program in some way in the three years prior to PY08 to facilitate spending and reporting on leveraged funds.

## 2.2 SUBGRANTEES

Clients see and experience the weatherization program through their interactions with the subgrantee serving their area. In PY08, about 900 organizations nationwide were slated to receive DOE funds for their weatherization activities. This section describes their organizational structure, staffing levels and staff roles, funding and production.

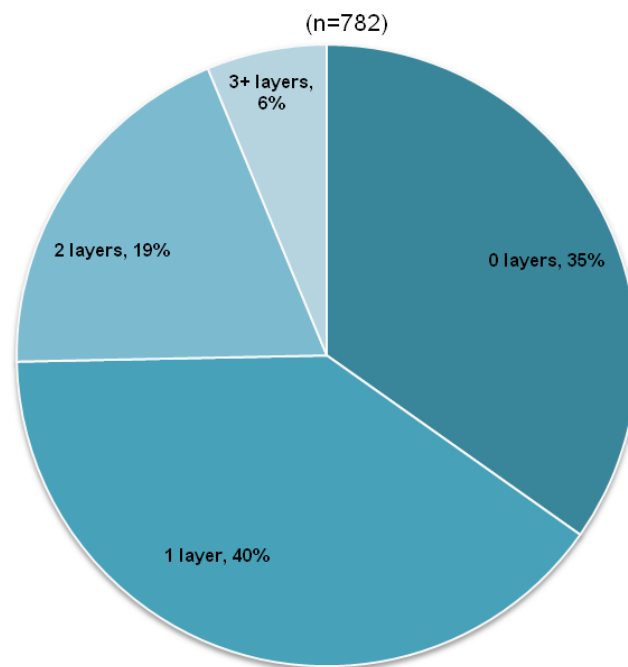
### 2.2.1 Organizational structures

Most subgrantees are locally based nonprofit organizations. Eighty-seven percent of respondents self-identified into that category, while five percent were county government agencies and another four percent were local government agencies. A handful of subgrantees are Native American tribes and the remainder are other assorted types of entities.

Some weatherization subgrantees focus only on weatherization while others have weatherization programs alongside a variety of other social service functions. In both cases, someone functions as the weatherization program director. On average, the program directors serving in PY08 had been in that position for 11 years (mean; median = 8 years). Seventeen percent of subgrantee programs were being directed by someone who had been in that position for a year or less, while another 17 percent of program directors had 20 or more years of experience on the job.

Generally, there was light turnover in the ten years before PY08: a large majority of subgrantees (80%) were directed by one or two individuals during that period. Half of the subgrantees maintained the same weatherization director for the entire decade, and seven percent were directed by four or more individuals during that time.

Most subgrantees have a relatively flat organizational hierarchy. As shown in Fig. 2.10, three quarters of agencies have at most one layer of management or supervision between the weatherization program director and the weatherization crews that install measures in client homes.



**Fig. 2.10:Layers of supervision between program director and crews in subgrantees**

### 2.2.2 Responsibilities and staffing

The functional responsibilities of subgrantee weatherization agency staff can be divided into three main categories:

- *Program management and administration*: Includes office functions such as program management, client intake, outreach, and all administrative tasks.<sup>13</sup>
- *Auditing/inspection*: Entails the field work needed to determine what measures would cost-effectively increase a home’s energy efficiency and what other work needs to be done for health

<sup>13</sup> Note that our survey questions focused on weatherization program activities and staff, so we use the term administration to refer generally to activities within the weatherization programs run by local organizations, even if there is additional administrative oversight at the executive level of the organization.

and safety reasons. It also includes the post-inspection visit to ensure the weatherization work was performed to standards.

- *Weatherization*: Entails the installation of all specified energy efficiency and health and safety measures.

We estimate there were about 7,600 people employed by subgrantee weatherization agencies in PY08. Table 2.5 further divides this workforce total by job function and program size. It appears that a typical, mid-sized weatherization program has a staff of three staff that manage and administer the program, two auditors/inspectors, three weatherization installers, and one person assigned to other responsibilities. The mean number of staff in each functional category increases with program size. Please note that these are total individuals. We were not able to reliably estimate FTE positions because of the high non-response rate on the pertinent question in our survey.

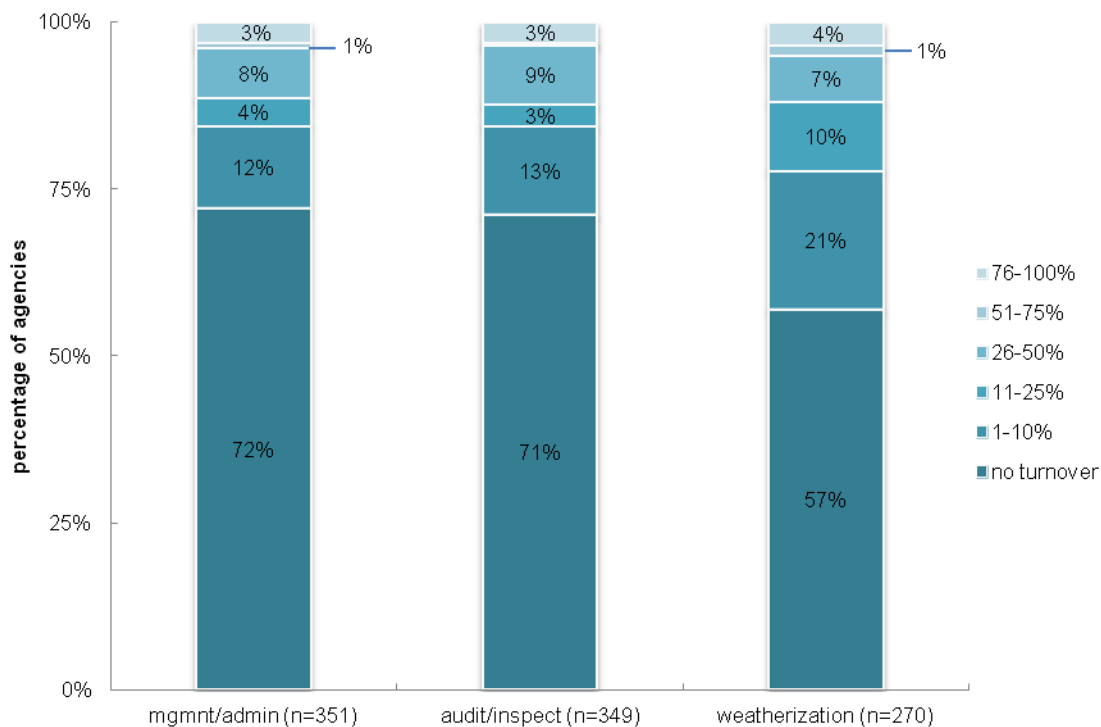
**Table 2.5: Subgrantee staffing by function in Program Year 2008**

<b>Function</b>	<b>Subgrantees with small* programs (n=183)</b>	<b>Subgrantees with mid-sized* programs (n = 413)</b>	<b>Subgrantees with large* programs (n = 169)</b>
Program management / administration	Mean: 2 Total: 350	Mean: 3 Total: 1,230	Mean: 5 Total: 870
Auditing / inspection	Mean: 1 Total: 230	Mean: 2 Total: 730	Mean: 4 Total: 630
Weatherization (in-house only)	Mean: 2 Total: 350	Mean: 3 Total: 1,250	Mean: 8 Total: 1,350
Other	Mean: <1 Total: 30	Mean: 1 Total: 300	Mean: 2 Total: 270

The work of the weatherization crews is a staff-intensive function, particularly for large subgrantees. Some agencies maintain in-house crews while others contract out for the installations entirely or for particular types of work, such as heating system replacements and repair. (See the cost section for additional insights about the use of contractors.)

Turnover among subgrantee agency staff had been low in the three years leading to PY08. As shown in Fig. 2.11, the majority of subgrantees reported no turnover in management/administration (72%), auditing and inspections (71%), and weatherization (57%). Where there was turnover, it tended to be light and rarely involved a complete exchange of applicable staff.





**Fig. 2.11: Turnover in subgrantees by functional category (Program Years 2005 through 2007)<sup>+</sup>**

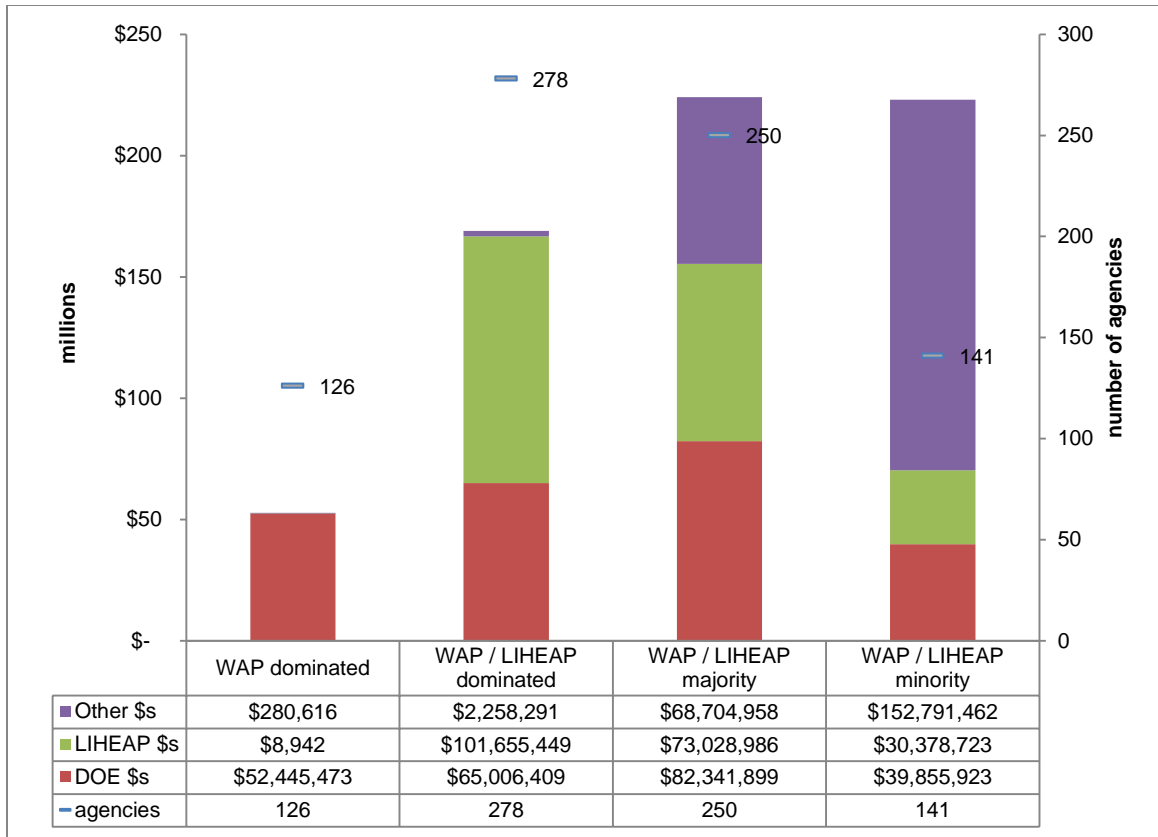
### 2.2.3 Funding

Fig. 2.6 and Table 2.4 above already depicted the funding flows and source for weatherization in PY08 and the units weatherized by subgrantees in that year.

Any individual subgrantee’s funding structure will look different than shown in the figure, however. Some subgrantees rely heavily or exclusively on whatever funds the grantee provides, while others have forged their own relationships with funding sources—primarily utilities and other programs within state government.

Fig. 2.12 illustrates various subgrantee funding models. As shown, 126 subgrantees (16% of those from whom we had sufficient data for this analysis) reported to us that they used only DOE funds in PY08 and 278 subgrantees (35%) relied almost exclusively on a combination of DOE and LIHEAP funds they received from the state office. In contrast, 391 subgrantees (49%) reported the use of non-DOE/LIHEAP funds for at least 10 percent of their funding—141 of these (18% of reporting agencies) drew less than half of their funding from DOE and LIHEAP (typical mainstays of weatherization).

Subgrantees for individual grantees do have a tendency to follow similar funding models. For 23 of the grantees, three quarters or more of the subgrantees followed the same funding model. Among 10 grantees, all subgrantees used the same model.



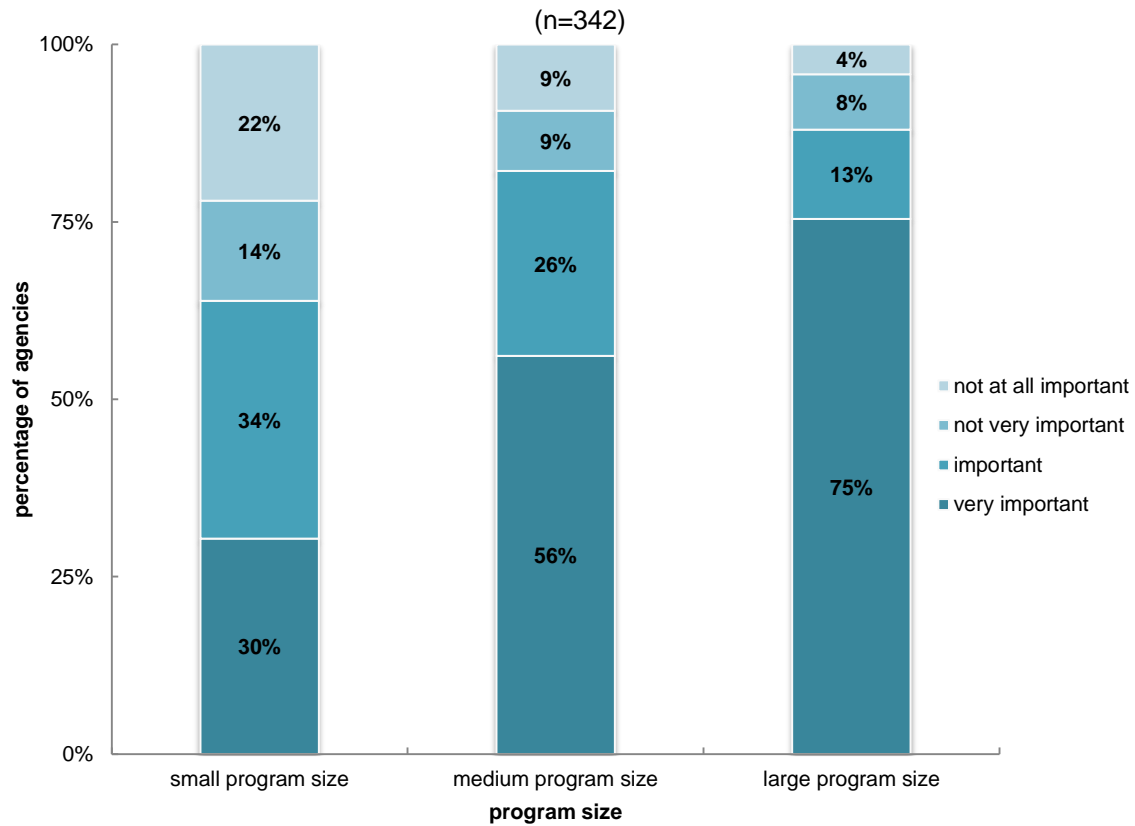
**Fig. 2.12: Subgrantee funding models**

### 2.2.4 Leveraging

Leveraging, the contribution of weatherization funds from sources other than DOE, is an important aspect of the program. As shown in Fig. 2.6, the DOE WAP program represented approximately 32 percent of the grantee-administered weatherization funding in PY08. LIHEAP was the largest funding source, representing 44 percent of the funding total reported for that program year. State funding—ratepayer-funded public benefits funds and other state programs—represented 15 percent of the total. Direct funding to subgrantees appears to expand the total by at least 11 percent.

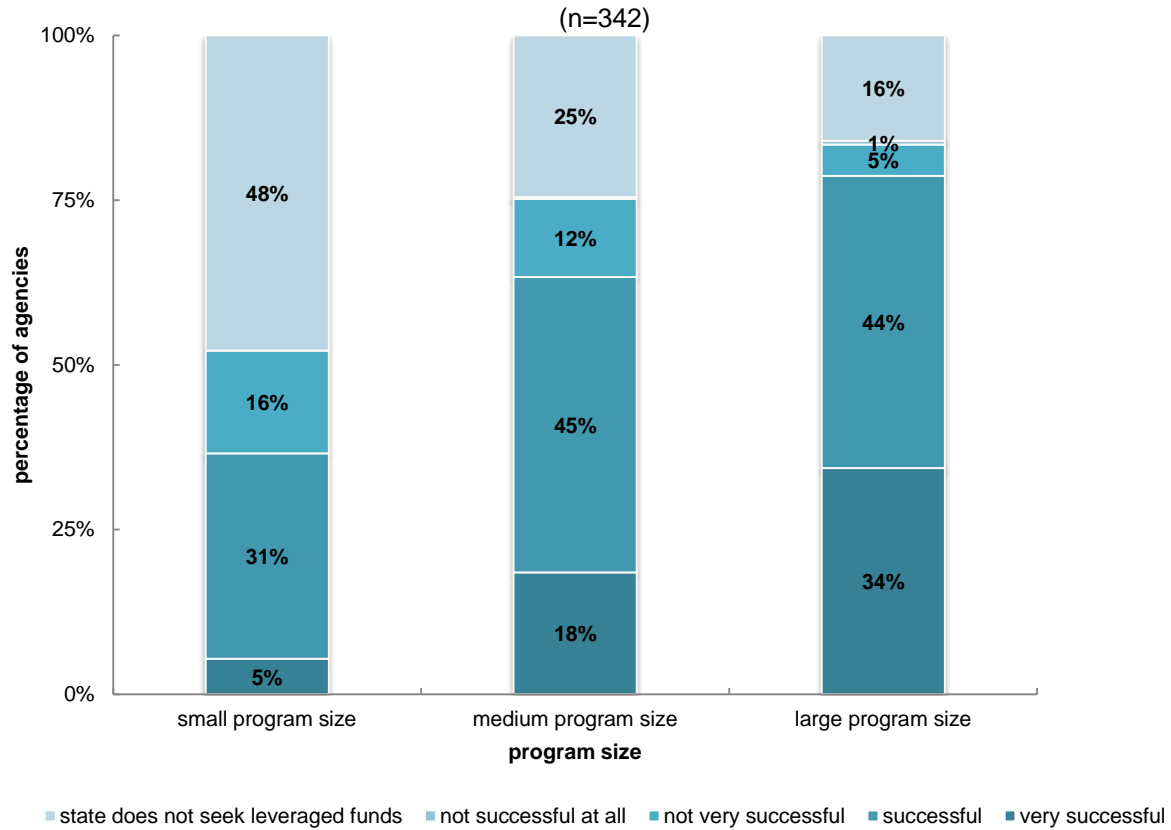
Seventy nine percent of subgrantees reported that leveraged funds were important or very important to their PY08 weatherization efforts. As

illustrates the importance of leveraging increases with program size. Eighty-eight percent of large programs reported that leveraging was important or very important, compared with 64 percent of small programs. Despite the importance of leveraging, however, only 13 percent of subgrantees reported that they set aside funding to advocate for leveraged resources in PY08. This percentage was slightly higher in large subgrantees (15 percent) than in small ones (11 percent).



**Fig. 2.13: Importance of leveraged funds by program size in Program Year 2008<sup>+</sup>**

We asked subgrantees to rate the success of their efforts to acquire leveraged funds in PY08. Overall, 60 percent of agencies rated their efforts as successful or very successful. Twenty-eight percent reported that seeking leveraged funds is not part of their state’s weatherization program. As shown in Fig. 2.14 success ratings improved with increasing program size. Seventy-eight percent of large subgrantees rated their leveraging efforts as successful or very successful compared with 36 percent of small agencies.



**Fig. 2.14: Success of subgrantee efforts to acquire leveraged funds in Program Year 2008<sup>+</sup>**

Subgrantee weatherization programs coordinate with a variety of other energy, housing, and support programs in serving their clients. Cooperation between programs includes use of funds from non-DOE sources to perform repairs to address deferral issues, and also includes referring clients to other services and programs for which they may be eligible. Energy bill paying assistance programs commonly refer clients to the weatherization program, particularly clients that have high energy usage. Subgrantees that were asked to report which programs cooperated with their weatherization initiatives cited the following programs most frequently: energy bill paying assistance programs, health and safety programs, home emergency repair programs, hardship funding programs, and housing rehabilitation programs. Results are presented in Table 2.6.

**Table 2.6: Other programs that cooperated with subgrantee weatherization programs (n=396)<sup>+</sup>**

Type of Program	% of agencies using			
	Federal Funding	State Funding	Utility Funding	Other Funding
Energy bill paying assistance	57%	30%	32%	14%
Health and safety	35%	20%	14%	8%
Home emergency repairs	39%	22%	1%	9%
Hardship funds (other than for energy bill paying)	23%	25%	5%	11%
Housing re-habilitation	31%	15%	6%	9%
Emergency food	24%	13%	1%	17%
Energy education (other than client education delivered by wx program)	19%	11%	18%	6%
Other	22%	17%	1%	9%
Home buying education	15%	11%	0%	7%
Fuel delivery in crisis	13%	8%	1%	10%
Rehabilitation loan	15%	10%	0%	5%
Fair housing	8%	6%	0%	3%
Mortgage loan	8%	5%	0%	4%
Emergency safety	6%	5%	1%	2%

### 2.2.5 Production

Subgrantees' production ranged from a low of three DOE units in PY08 to one that completed 2,255 units. The mean production among the responding subgrantees was 106 DOE units, 78 comprehensive non-DOE units, and 24 non-comprehensive units. The median production was 73 DOE units and, among those completing non-DOE projects, 50 comprehensive non-DOE units and 97 non-comprehensive units. Production per agency was greatest in the very cold regions with a median production of 133 DOE units (mean = 146) and lowest in the hot-humid region with a median production of 38 DOE units (mean = 47).

About half of the subgrantees reported that their grantee had an official definition for high energy expenditure or high energy burden. Within areas covered by a respective definition, 57 percent of units met the definition of high energy expenditure and 55 percent met the definition of high energy burden.

Sixty-four percent of subgrantees reported having waitlists in PY08 with only the hot-dry climate region reporting a substantially different incidence of waitlists (47 percent).<sup>14</sup> Waitlists ranged from 1 to 14,000 percent of agencies' annual production for that year. Subgrantees with waitlists reported a median wait time before homes were weatherized of 205 days. Wait times varied substantially by program size and climate region with larger programs and those in the hot-dry region sporting shorter wait times, as shown in Table 2.8.

<sup>14</sup> The actual share of all subgrantees with waitlists may be higher. Thirty-two percent of subgrantees left the question on waitlists blank, so we could not distinguish between respondents who did not answer the question and those who left it blank because they had no waitlist

**Table 2.7: Duration on waitlists in PY08 by program size (for subgrantees with waitlists)**

	<b>Overall (n=452)</b>	<b>Small (n=112)</b>	<b>Medium (n=226)</b>	<b>Large (n=113)</b>
mean (days)	370	389	396	299
median (days)	205	251	238	180

**Table 2.8: Duration on waitlists in PY08 by climate region (for subgrantees with waitlists)**

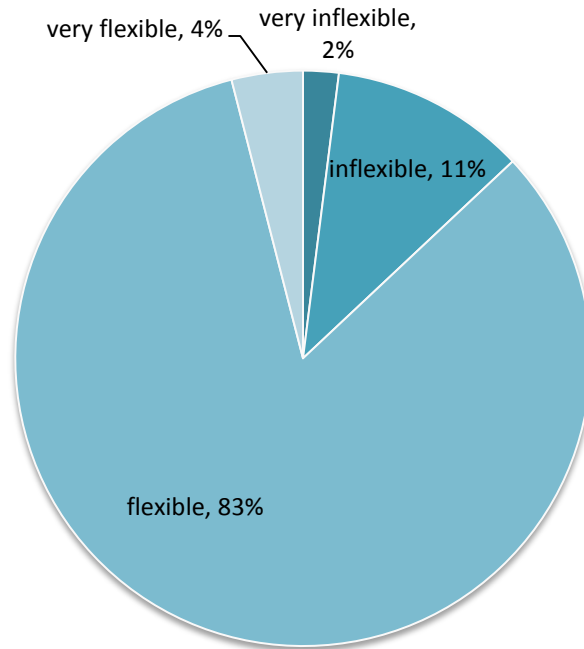
	<b>very cold (n=82)</b>	<b>cold (n=170)</b>	<b>moderate (n=116)</b>	<b>hot-humid (n=61)</b>	<b>hot-dry (n=23)</b>
mean (days)	292	416	334	489	166
median (days)	204	210	195	290	60

## **2.3 SUPPORT FROM THE DEPARTMENT OF ENERGY AND OTHERS**

Although the scope of this evaluation focuses on the weatherization program administered collectively by the grantees and subgrantees, it is important to acknowledge DOE’s role in providing not just funding, but also program guidance, rules, training, and other support. Several questions on the program information survey for grantees inquired about DOE’s role and support for weatherization program activities. This section summarizes the responses to those questions.

A key issue addressed by the surveys was the flexibility of DOE program rules governing weatherization. Grantee program directors characterized DOE rules as generally flexible. As shown in Fig. 2.15, 87 percent of respondents to our questions on the topic characterized DOE program rules as flexible or very flexible.

At the same time, however, 61 percent of respondents thought that program rules should become more flexible (46%) or much more flexible (15%). (No one who responded thought the programs should become less flexible!) Areas in which program directors sought more flexibility tended to focus on the types of measures that can be implemented in homes, spending limits, and timing of when reweatherization may occur. Other comments focused on client education and the ability to loan funds to multifamily building owners. One respondent suggested that the main issue is not flexibility, but lack of clarity and consistency in the existing program rules.

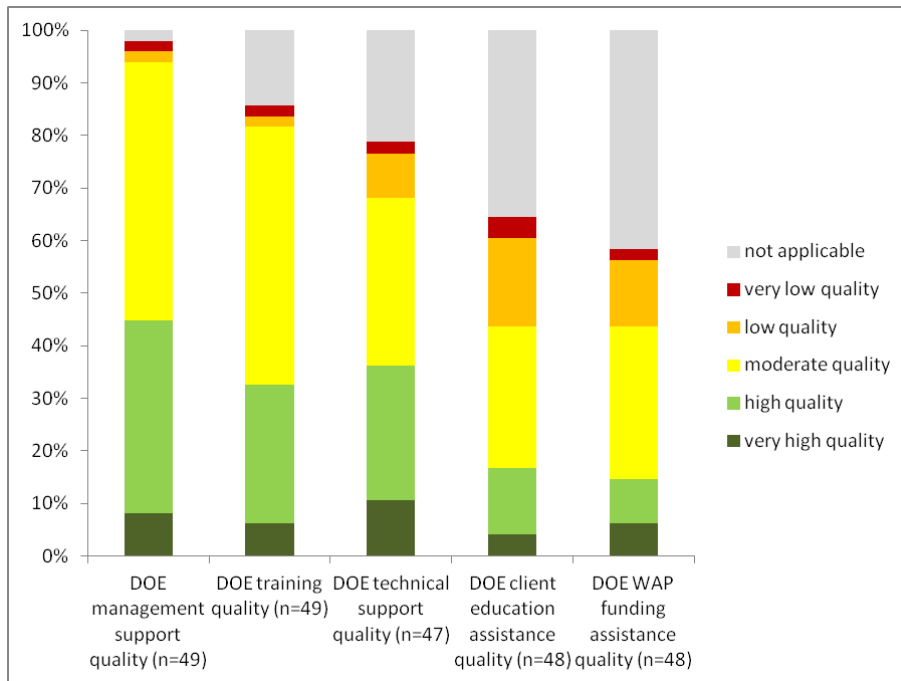


**Fig. 2.15: Flexibility in federal program rules as perceived by grantee program directors**

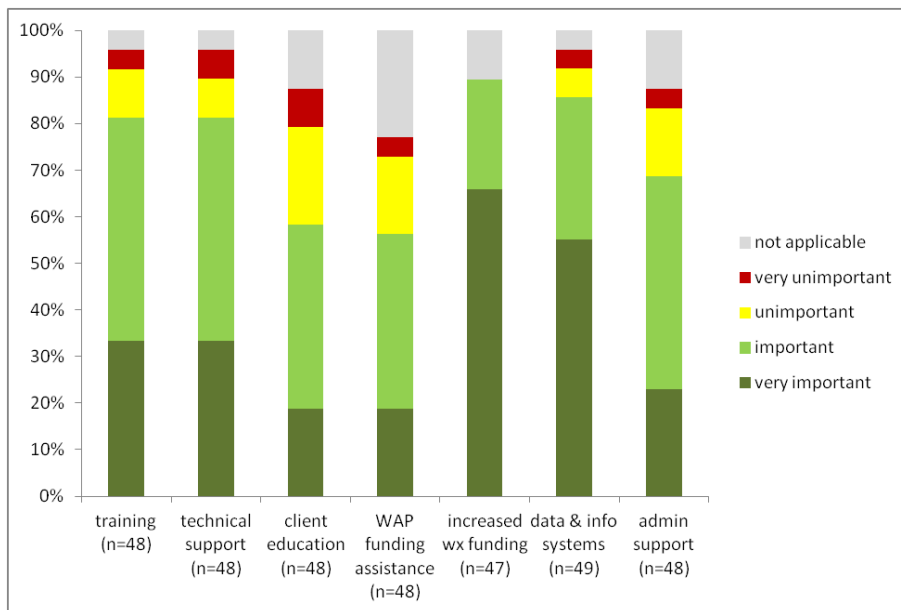
Grantees rated the quality of DOE support in management, training, and technical support in PY08 as moderate to high, as shown in Fig. 2.16. Grantees were more negative on DOE support for client education and funding assistance, however. Slightly fewer than half of the respondents provided ratings of moderate or higher, and more than a third marked “not applicable.” Open-ended comments suggested that some grantees do not think they receive support in these areas, which may be what is driving the overtly negative responses as well.

When asked about the importance of improving DOE support in various areas, the majority of grantees indicated that increased weatherization funding and improved data and information systems were very important. (See Fig. 2.17.) About a third of grantees also rated improving technical support and training as very important. Readers should note that the questions in the survey instrument asked about levels of support in PY08 and the importance of improving from those levels of support. It is possible that grantees would rate DOE support differently today.<sup>15</sup> Repeating these questions in the upcoming ARRA-era evaluation will provide fresher insights about grantee perceptions of DOE support.

<sup>15</sup> It is also plausible that some respondents rated current levels of support despite the question wording referencing PY08, but there is no way for us to assess this.



**Fig. 2.16: Grantee perceptions of DOE support in selected areas**



**Fig. 2.17: Importance of improvement in DOE support in selected areas**

Beyond DOE, other entities that provide support to the weatherization network include ORNL, NASCSP, the National Community Action Foundation (NCAF), and various state-level associations to which subgrantees belong. Furthermore, the Network Planning Committee provides insight and serves as a sounding board on weatherization issues and, as previously noted, provided input to ORNL in developing the evaluation plan we are following on this project.



### 3. TRAINING AND STAFF DEVELOPMENT

The Weatherization Assistance Program focuses substantial attention on training and staff development at both the federal and state levels. Nine percent of DOE funds spent in PY08 plus another three percent in non-DOE funds were allocated to training and technical assistance.<sup>16</sup> Grantees retained slightly more than half of these funds to provide training and technical assistance to subgrantees and obtain training for their staff, while the remainder of the funding was passed through to subgrantees for training and development of their staff and related activities.

#### 3.1 TRAINING PROVIDED

The evaluation team received self-reports from grantees and subgrantees on the state of their training as well as training activities during PY08. This section reports on both.

##### 3.1.1 Grantee training and staff preparedness

The evaluation explored how well-trained agency staff were in PY08 and in what areas they had received training during that program year. We included questions on these topics on survey instruments completed by grantee weatherization program staff. Respondents were asked to rate staff knowledge in key areas using a five-point scale that ranged from not at all well trained to very well trained. In the analysis, we collapsed these ratings into three main categories as shown in the table below.

**Table 3.1: Rating categories**

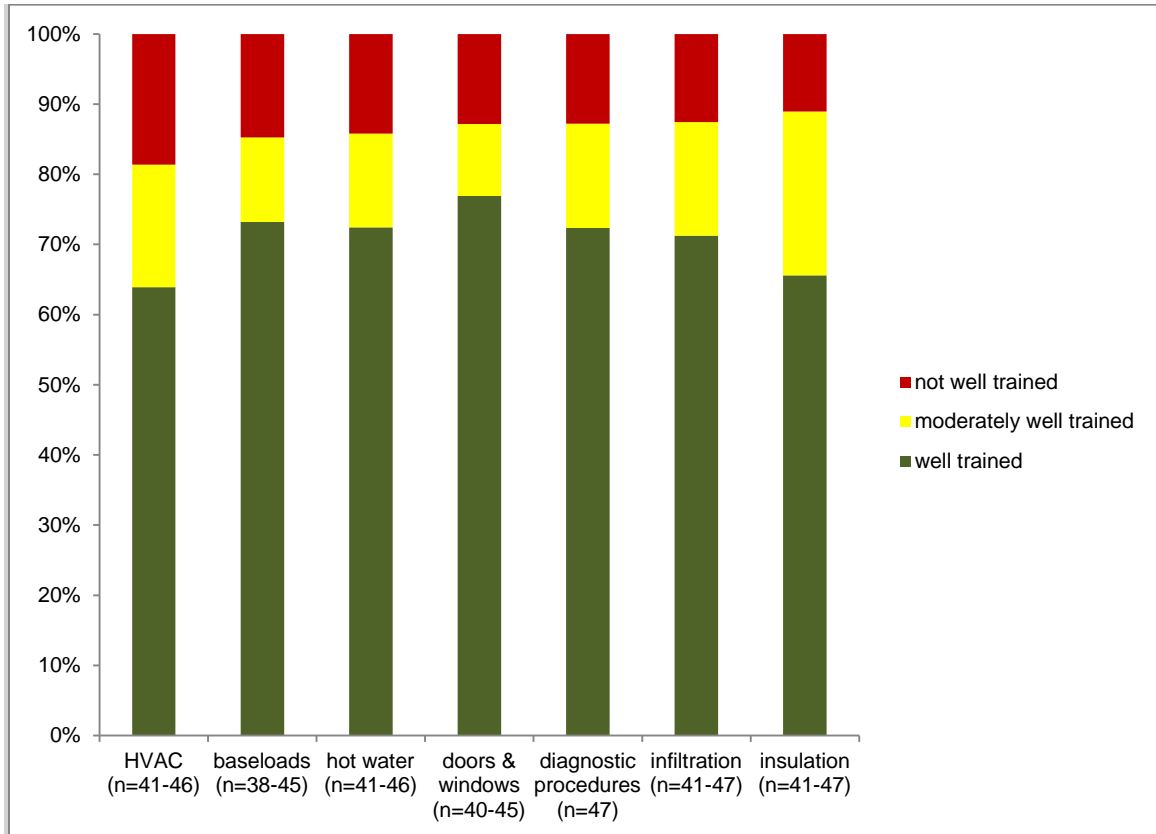
<b>Analysis category</b>	<b>Response category</b>
Well trained	Very well trained
	Well trained
Moderately well trained	Moderately well trained
Not well trained	Not well trained
	Not at all well trained

We present the results of these self-assessments below.

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<sup>16</sup> According to financial data provided by grantees, DOE funds spent on training and technical assistance in PY08 totaled \$22 million (distributed across virtually all grantees), while 18 grantees indicated they spent a total of \$17 million in non-DOE funds for training and technical assistance.

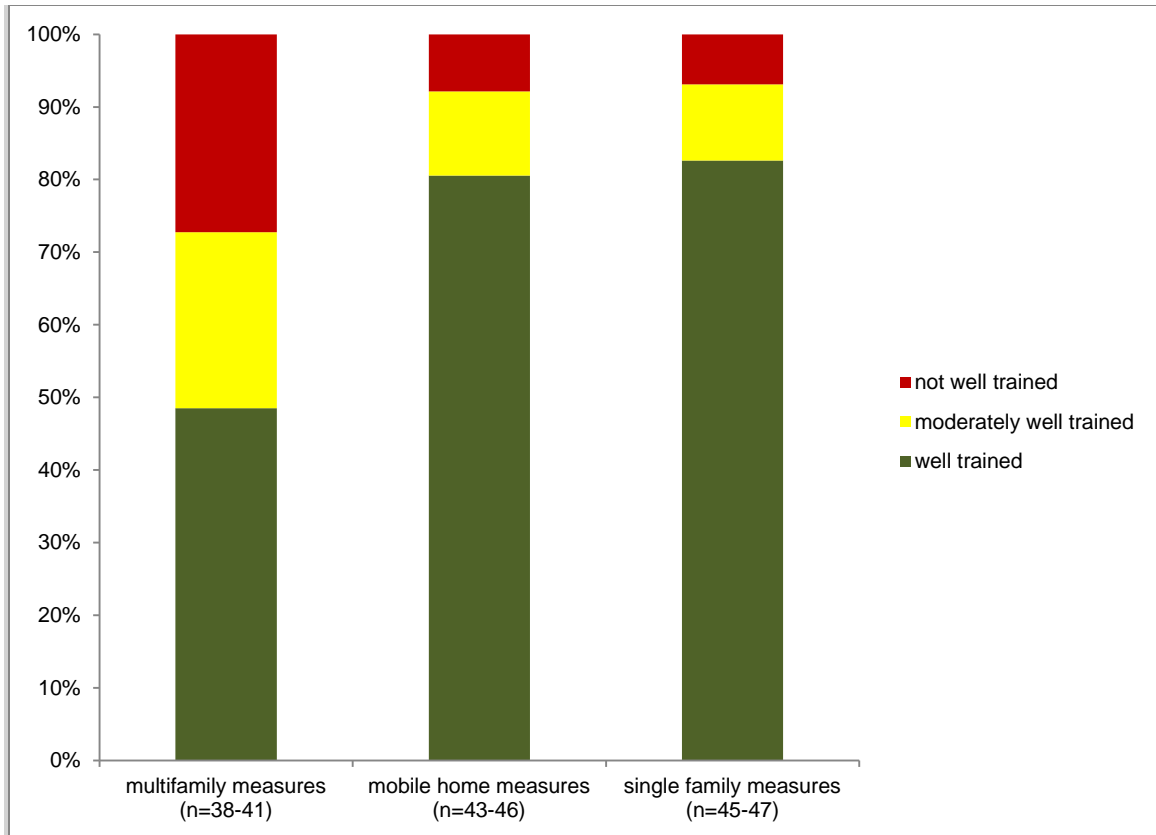
*Staff preparedness* – Grantee weatherization managers perceive their staff to be generally well-trained in the areas in which they require particular knowledge to perform their jobs. We asked grantee respondents to rate staff knowledge across seven technical categories pertaining to weatherization in PY08: diagnostic procedures, insulation, HVAC, infiltration (air leakage), doors and windows, water heating, and electric baseloads. The results of these self-assessments are presented in Fig. 3.1.



**Fig. 3.1: Grantee assessment of staff knowledge on technical weatherization topics in PY08**

On average across the seven technical categories, 71 percent of grantees reported that their office staff were well trained, 15 percent reported that staff were moderately well trained, and 14 percent reported that staff were not well trained. The largest number of “not well trained” responses (19 %) was reported in the HVAC category. In the other six categories, the “not well trained” category ranged from 11 to 15 percent of respondents.

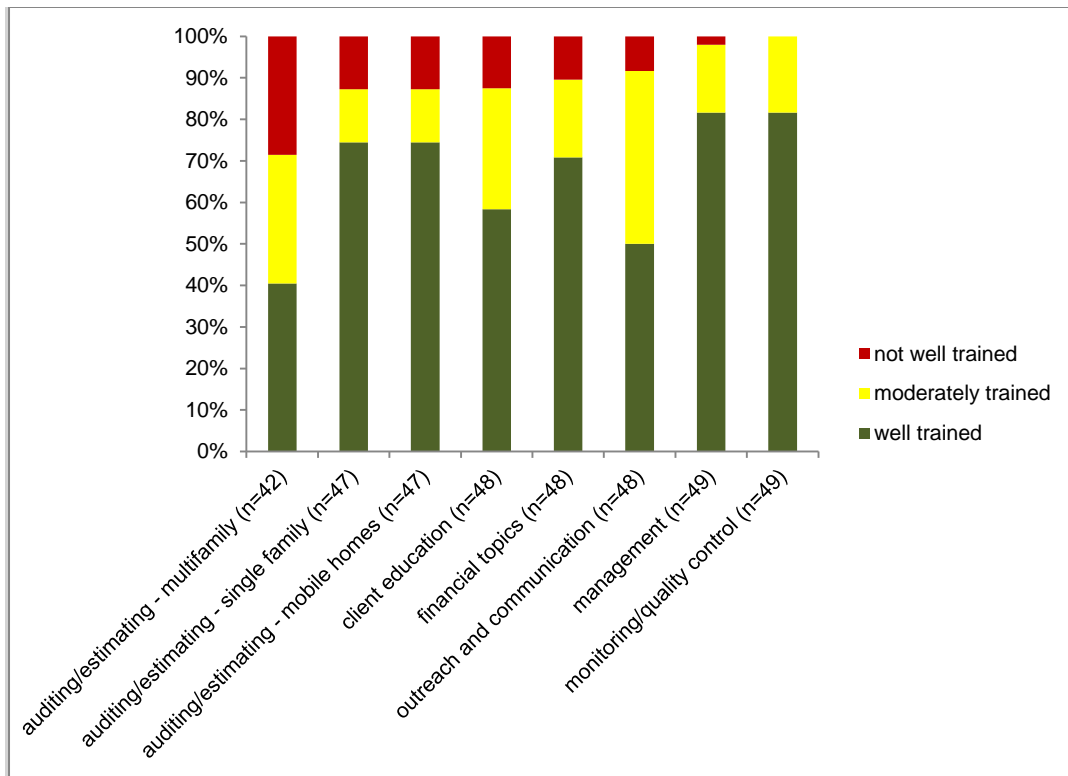
The measure installation categories (all of the above categories except diagnostic procedures) were also broken out by housing type: single family, mobile home, and multifamily. Fig. 3.2 compares grantee assessments of staff knowledge across all measure installation categories by housing type.



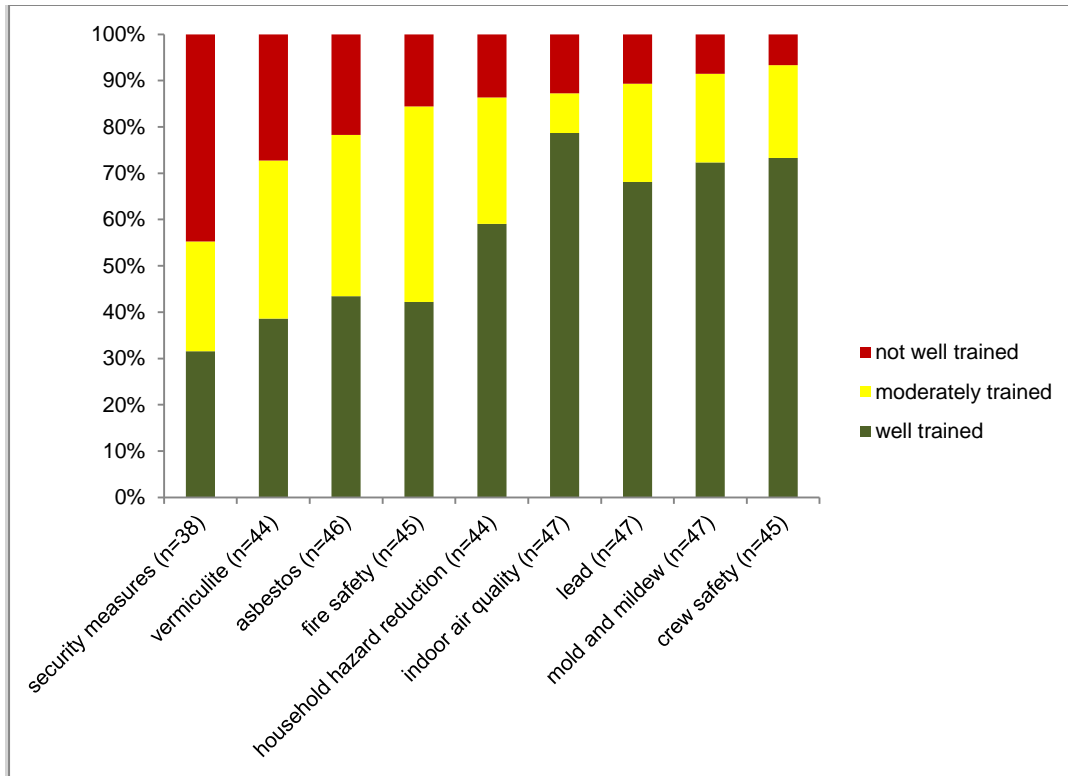
**Fig. 3.2: Grantee assessment of staff knowledge on technical weatherization topics, by housing type**

Grantees rated their staff knowledge most favorably in the single family (83% well trained) and mobile home (81% well trained) weatherization categories. On average across the multifamily weatherization categories, only 49 percent of grantees rated staff as well trained. This result is not surprising given that in PY08 fewer grantees had incorporated multifamily weatherization into their programs than during the ARRA period.

Grantees were also asked to rate staff knowledge across a number of technical and administrative topics (Fig. 3.3), as well as health and safety topics (Fig. 3.4). On average across all technical and administrative topics, 66 percent of grantees rated their staff as being well trained, compared with 56 percent across all health and safety topics.



**Fig. 3.3: Grantee assessment of staff knowledge on technical/administrative topics in PY08**



**Fig. 3.4: Grantee assessment of staff knowledge on health and safety topics in PY08**

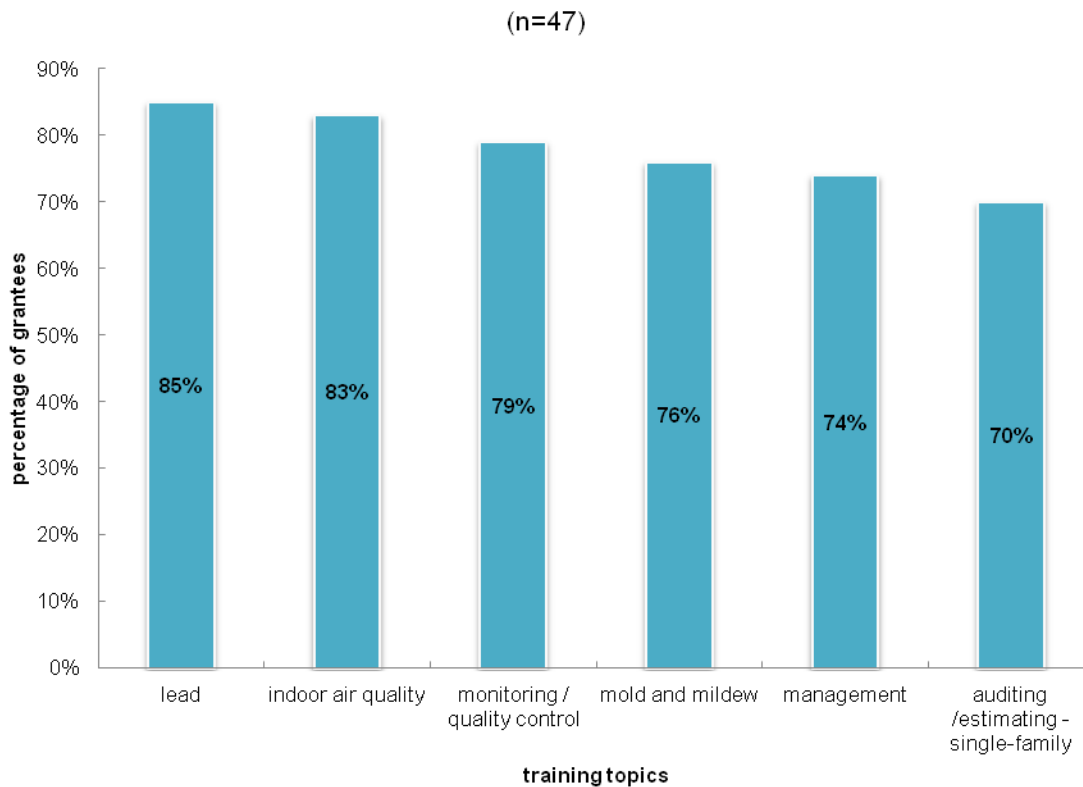
In the technical and administrative arena, grantees rated staff as most knowledgeable in the areas of monitoring/quality control and management (both at 82% well trained), and least knowledgeable in the area of auditing/estimating for multifamily buildings (40% well trained). Again, these results are not surprising given the prevalence of multifamily weatherization in PY08. In the health and safety arena, grantees rated their staff as most knowledgeable about indoor air quality (79% well trained), and least knowledgeable about household security measures (32% well trained).

*Training* — Training by grantee staff ensures that they are well-equipped to support and monitor subgrantee weatherization work. Grantee staff receive training in a variety of venues. Table 3.2 lists the common types of training at which grantees participate and their primary uses.

**Table 3.2: Training supported by grantee weatherization programs**

<b>Training Venue</b>	<b>% of grantees using</b>	<b>Primary use</b>
National Weatherization Program Conference	63%	Mgmt and monitoring classroom training
Affordable Comfort Conference	24%	T&TA and monitoring classroom training
Other national conference	16%	Mgmt classroom training
Regional weatherization conference	49%	Mgmt and monitoring classroom training
State's weatherization conference	29%	Mgmt classroom training
Other in-state conference	8%	Monitoring classroom training
State or regional training center class	24%	Monitoring and T&TA classroom training
Manufacturer's training school class	18%	Monitoring and T&TA classroom training
Utility training class	12%	Monitoring classroom and field training
Training class provided by responding agency	35%	Mgmt, monitoring and T&TA classroom training, mgmt field training
Other class	20%	T&TA and monitoring classroom training
Expert visit to agency	22%	T&TA and monitoring classroom training

Grantee training for its staff tends to span a range of weatherization topics, with health & safety topics, monitoring, auditing, and management being the most common. Fig. 3.5 shows the six most common topics on which grantee staff received training in PY08.



**Fig. 3.5: Grantee training for its staff – most common topics**

### 3.1.2 Staff preparedness and training in subgrantees

Similar to the approach used for assessing training among grantee program staff, the evaluation explored how well-trained subgrantee staff were in PY08 and in what areas they received training during that year. We included questions on these topics on survey instruments completed by program directors at the grantee level and their counterparts within subgrantee agencies. This allowed us to compare grantee and subgrantee assessments of agency staff knowledge in the following areas: diagnostic procedures, measure installation for single family homes, mobile homes and multifamily buildings, administrative topics, and health and safety topics. We compare grantee and subgrantee perceptions of agency staff knowledge in Table 3.3, which shows that grantees tend to perceive<sup>17</sup> subgrantee weatherization staff preparedness slightly higher than subgrantees do for the installation of measures. Conversely, subgrantees perceive their staff as better prepared on diagnostic procedures than grantees do.

<sup>17</sup> We did not conduct grantee-level comparisons, however. These comments are based on national level summary data.

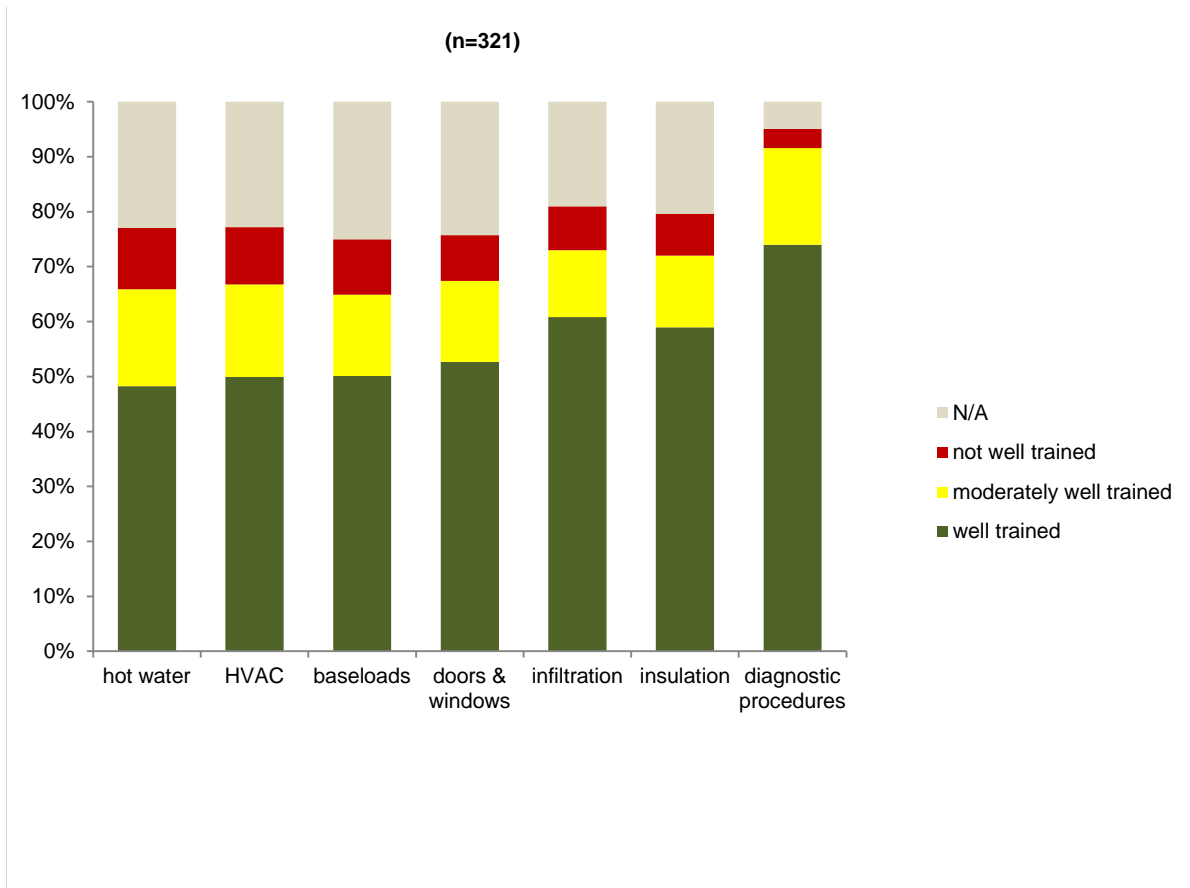
**Table 3.3: Perceptions of grantees and subgrantees on training/preparedness in key topic areas by subgrantee weatherization staff<sup>+</sup>**

	Well trained		Moderately well trained		Not well trained		Not applicable	
	grantee	subgr.	grantee	subgr.	grantee	subgr.	grantee	subgr.
Diagnostic procedures (n = 49 - state) (n = 321 - local)	62%	74%	28%	18%	11%	4%	0%	5%
single family measures (n = 49 - state) (n = 321 - local)	77%	67%	17%	18%	5%	7%	0%	8%
mobile home measures (n = 49 - state) (n = 321 - local)	72%	61%	20%	15%	6%	8%	2%	15%
multifamily measures (n = 49 - state) (n = 321 - local)	40%	31%	20%	11%	23%	13%	17%	44%
administrative topics (n = 49 - state) (n = 320 - local)	55%	60%	27%	19%	16%	6%	2%	15%
health & safety topics (n = 49 - state) (n = 319 - local)	40%	44%	31%	21%	25%	16%	4%	19%

*Staff preparedness* – Grantees and subgrantees rated agency staff knowledge most favorably in the areas of diagnostic procedures and measure installation for single family and mobile homes. A larger share of subgrantees (74%) perceived their staff to be well trained on diagnostic procedures, compared with 62% of grantee staff who rated subgrantees as well trained in this area. This differential was reversed in the area of single family and mobile home weatherization measures, where grantees rated subgrantees knowledge somewhat more favorably than the subgrantees did themselves. Grantees and subgrantees also agreed that the areas where subgrantees were less well trained were on multifamily weatherization measures and health and safety topics. For multifamily, more subgrantees listed multifamily weatherization measures as “not applicable” (44%) compared with just 17% of grantee respondents.

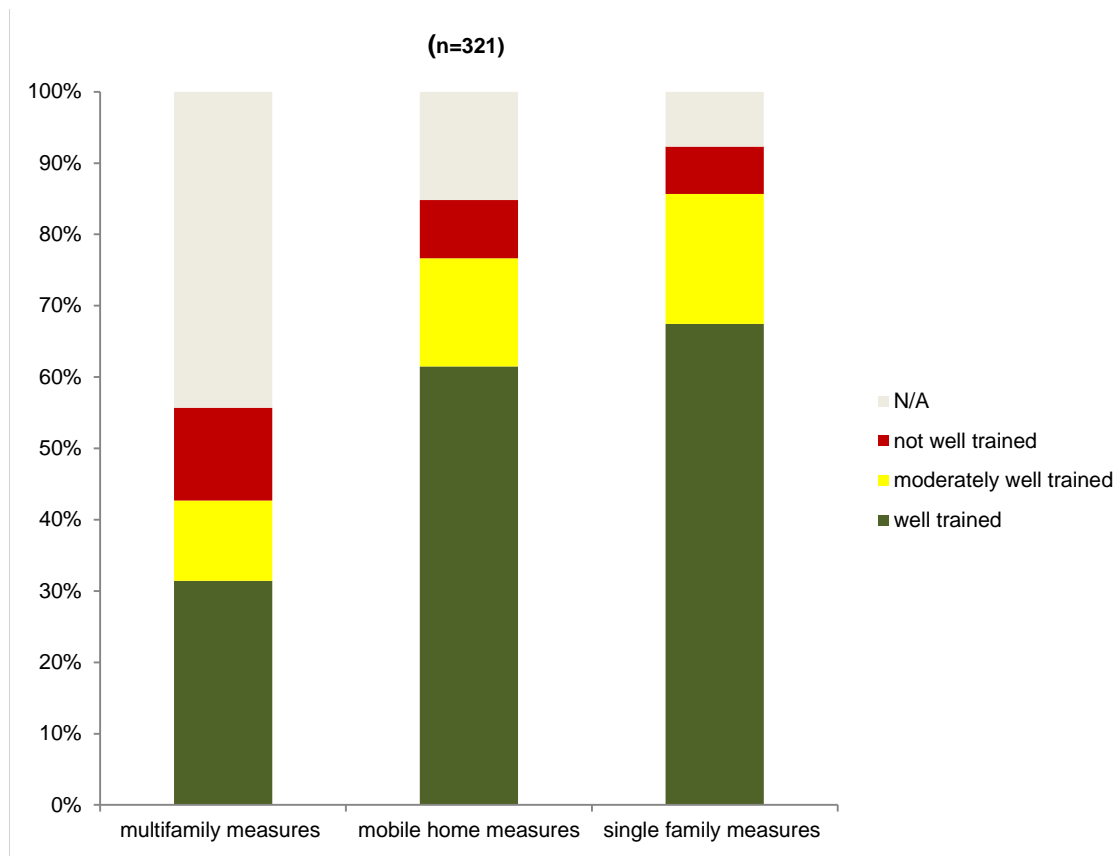
As shown in Fig. 3.6, more than 70 percent of subgrantees rated staff as moderately well or well trained on diagnostic procedures, insulation and infiltration. The areas where at least ten percent of subgrantees rated their staff as not well trained were water heating measures (11%), HVAC measures (10%), and baseload measures (10%). These results are reasonable given that many subgrantees outsource work on HVAC and water heaters.





**Fig. 3.6: Subgrantee assessment of staff knowledge on technical weatherization topics in PY08<sup>+</sup>**

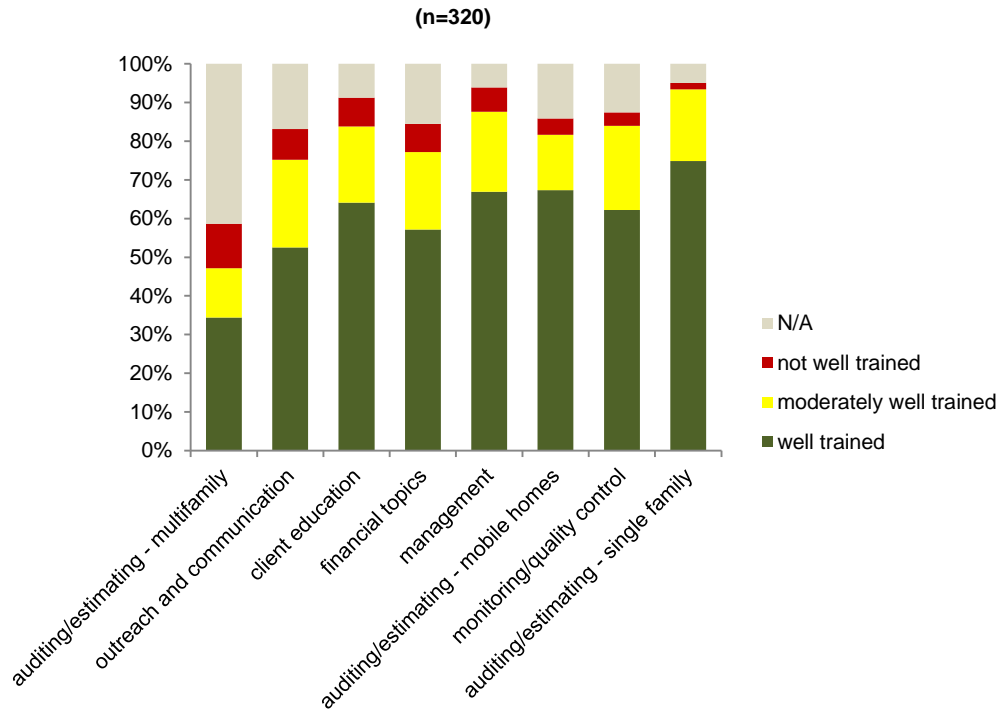
The large proportion of “not applicable” ratings across all categories except diagnostic procedures in the above chart is due to a high proportion of “not applicable” ratings in the multifamily category. Fig. 3.7 compares subgrantee perceptions of staff knowledge of measure installation topics by housing type. In PY08 there was clearly a need for subgrantee staff training on multifamily weatherization topics. Given the emphasis on multifamily weatherization under ARRA, it will be interesting to compare these results with the forthcoming ARRA evaluation results.



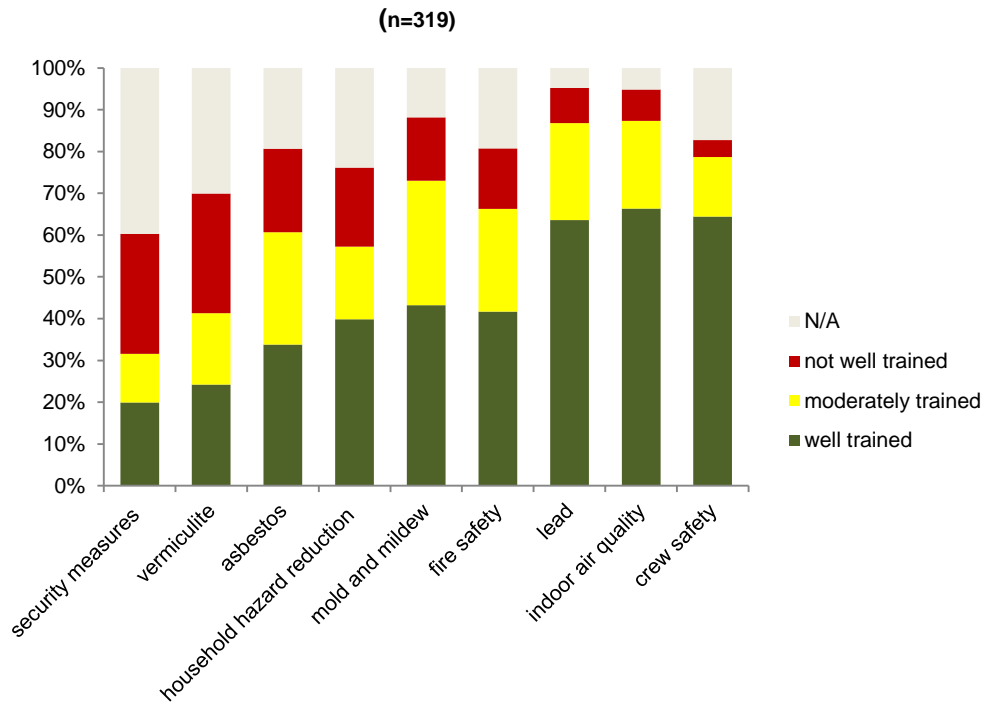
**Fig. 3.7: Subgrantee assessment of staff knowledge on technical weatherization topics, by housing type<sup>+</sup>**

Subgrantees were also asked to rate staff knowledge across a number of technical/administrative and health and safety topics. Results are presented in Fig. 3.8 and

. These charts again highlight the need for additional training on multifamily topics—in this case, auditing and estimating for multifamily buildings, as well as outreach, communication and client education. Over 20 percent of subgrantees rated staff as not well trained on the following health and safety topics: security measures, vermiculite, and asbestos.



**Fig. 3.8: Subgrantee assessment of staff knowledge on technical/administrative topics in PY08<sup>+</sup>**



**Fig. 3.9: Subgrantee assessment of staff knowledge on health and safety topics in PY08<sup>+</sup>**

*Training* – Subgrantees reported that they used a wide assortment of training opportunities. The most commonly used venues for training were state and national weatherization conferences (used by 51 and 45 percent of subgrantees, respectively) and state or regional training centers (40 percent). In total, subgrantees sent staff to at least 10,600 training opportunities<sup>18</sup>, which computes to at least 1.4 events per person for our estimated weatherization workforce of 7,600 individuals in PY08. Table 3.4 lists usage and average numbers of staff sent by training venue.

**Table 3.4: Training venues used by subgrantees (n=353)<sup>+</sup>**

<b>Training Venue</b>	<b>% of agencies using</b>	<b>Mean # of staff sent (of agencies that used)</b>	<b>Mean % of staff sent (of agencies that used)</b>
National Weatherization Program Conference	45%	3	42%
Affordable Comfort Conference	35%	3	41%
Other national conference	13%	3	28%
Regional weatherization conference	32%	4	47%
State’s weatherization conference	51%	4	55%
Other in-state conference	26%	3	39%
Weatherization conference in another state	5%	2	38%
Other conference given in another state	4%	4	40%
State or regional training center class	40%	5	51%
Manufacturer’s training school class	11%	4	36%
Utility training class	14%	3	36%
Training class provided by responding agency	29%	6	57%
One-time state-sponsored class	19%	5	46%
Other external class	8%	4	38%
Visit to another agency	20%	3	39%
State instruction to responding agency	28%	5	47%
In-person expert visit	26%	4	42%
Webcast	8%	5	44%

Training for subgrantee staff in PY08 covered the major functional categories comprising weatherization work. Collectively, this training included some aspect of diagnostic procedures, weatherization measures, technical and administrative functions, and health and safety for staff in most agencies. As shown in Fig. 3.10:

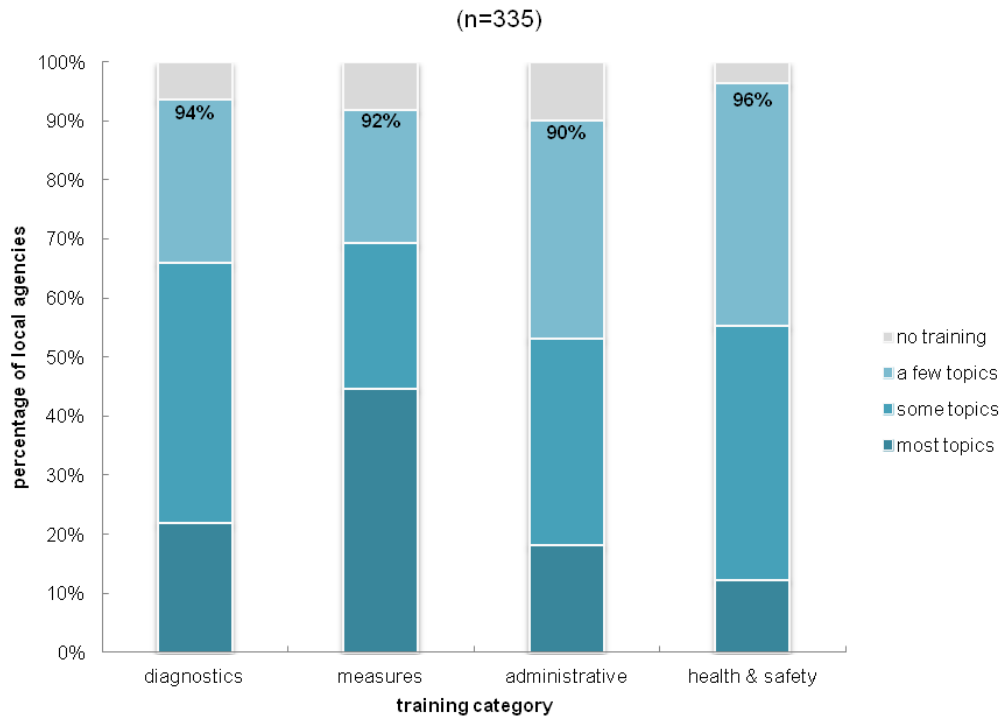
- 94 percent of subgrantees reported that staff received training on diagnostic procedures, with staff at 20 percent of agencies covering a solid majority<sup>19</sup> of the diagnostic procedures listed in our

<sup>18</sup> This number does not include any repeated attendances at a single training venue by the same staff, such as a staff person taking multiple classes at regional training centers. The number of training opportunities shown is the sum of the total number of staff sent to each of the 18 training venues included in our questionnaire (plus a 19<sup>th</sup> venue labeled as other) across all the sampled agencies responding to S3 and then weighted and scaled up to the full population of local agencies.

<sup>19</sup> The shades in the figure indicate the share of diagnostic procedures from our questionnaire included in the training that subgrantee staff collectively received. The darkest shade represent agencies whose staff, collectively, received training on 2/3 or more of the 28 diagnostic procedures included in our questionnaire. The medium shade represents agencies covering between 1/3 and 2/3 of the procedures in the training received by staff. The lightest shade represents agencies covering less than 1/3 of procedures in the training.

questionnaire. (See Sampled Agencies Detailed Program Information Survey (section 5, question 2) in the appendices for a list of procedures included in the questionnaire.)

- 92 percent of subgrantees reported that staff received training on weatherization measures, with half of those covering a solid majority of measures included in the questionnaire (see Sampled Agencies Detailed Program Information Survey, section 5, question 1).
- 90 percent of subgrantees reported that staff received training on technical and administrative activities, including auditing, client education, and some management topics (section 5, question 1a).
- 96 percent of subgrantees made training on health and safety topics available to some staff (section 5, question 1b).



**Fig. 3.10: Training received by subgrantee staff by functional category<sup>+</sup>**

The diagnostic procedures on which training for subgrantee staff was most widespread are:

- **Blower door tests to measure house leakage rates.** Eighty-four percent of subgrantees reported that their staff received training on this procedure in PY08. This topic was the most widespread diagnostic training topic in all program size groupings and in all climate regions.
  - By subgrantee size
    - Large 89%
    - Medium 83%
    - Small 83%
  - By climate region
    - Hot-dry 94%
    - Hot-humid 87%
    - Moderate 85%
    - Cold 83%
    - Very cold 83%

- **Carbon monoxide measurements.** Four different kinds of carbon monoxide measurements were common training content for subgrantee staff. Seventy-five percent of agencies reported that staff received training on carbon monoxide measurement in space heating flues, 71 percent for water heating system flues, 63 percent for living areas, and 61 percent for equipment rooms. These procedures received fairly widespread coverage across the program size groups and climate regions, although more common in the warmer climate regions. Averages of training rates for all CO monitoring are shown below.

  - By subgrantee size
 

▪ Small	70%
▪ Medium	67%
▪ Large	67%
  - By climate region
 

▪ Hot-dry	78%
▪ Moderate	73%
▪ Hot-humid	72%
▪ Cold	69%
▪ Very cold	53%
  
- **Cooking stove measurements.** Sixty-nine percent of subgrantees reported that their staff received training on cooking stove measurements. This training topic was common across all program sizes and in all regions except the very cold climate region.

  - By subgrantee size
 

▪ Small	72%
▪ Medium	70%
▪ Larger	65%
  - By climate region
 

▪ Hot-dry	93%
▪ Hot-humid	87%
▪ Moderate	76%
▪ Cold	66%
▪ Very cold	49%
  
- **Flue gas analysis.** Sixty-six and fifty-seven percent of subgrantees, respectively, reported that their staff received training on flue gas analysis for space and water heating systems. Training on these topics was more prevalent in the moderate and cold climate regions. Averages of training rates for flue gas analysis for space and water heating shown below.

  - By subgrantee size
 

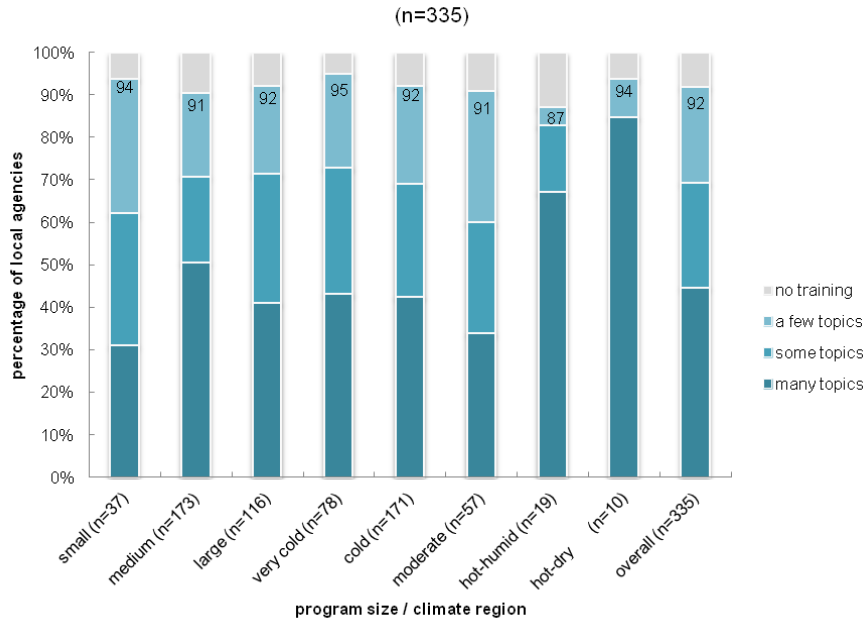
▪ Medium	67%
▪ Large	63%
▪ Small	47%
  - By climate region
 

▪ Cold	73%
▪ Very cold	57%
▪ Moderate	56%
▪ Hot-humid	50%
▪ Hot-dry	38%
  
- **Draft/spillage test.** Sixty-four percent of subgrantees reported that their staff were trained on measuring drafting/spillage on space and water heating systems. This training topic followed an

unusual climate pattern, being most prevalent in the hot-dry region and least prevalent in the hot-humid areas. Averages for training for measuring spillage on space and water heating shown below.

- By subgrantee size
  - Large 72%
  - Medium 69%
  - Small 45%
- By climate region
  - Hot-dry 78%
  - Cold 73%
  - Very cold 65%
  - Moderate 56%
  - Hot-humid 40%

Ninety-two percent of subgrantees said staff received training on at least one measure (Fig. 3.11), but training generally covered multiple measures. Training on measures was widespread across all program size groupings and in all climate regions, although staff in the hot-dry region received training on a greater number of measures than those in the other climate regions.



**Fig. 3.11: Subgrantee staff training - weatherization measures<sup>†</sup>**

The training on measures that subgrantees reported receiving is distributed across six categories roughly equally:

- Doors and windows (83% of subgrantees reported that staff received training)
- Insulation (82%)
- Heating systems (78%)
- Infiltration (78%)
- Baseload energy usage (72%)
- Water heating (71%)

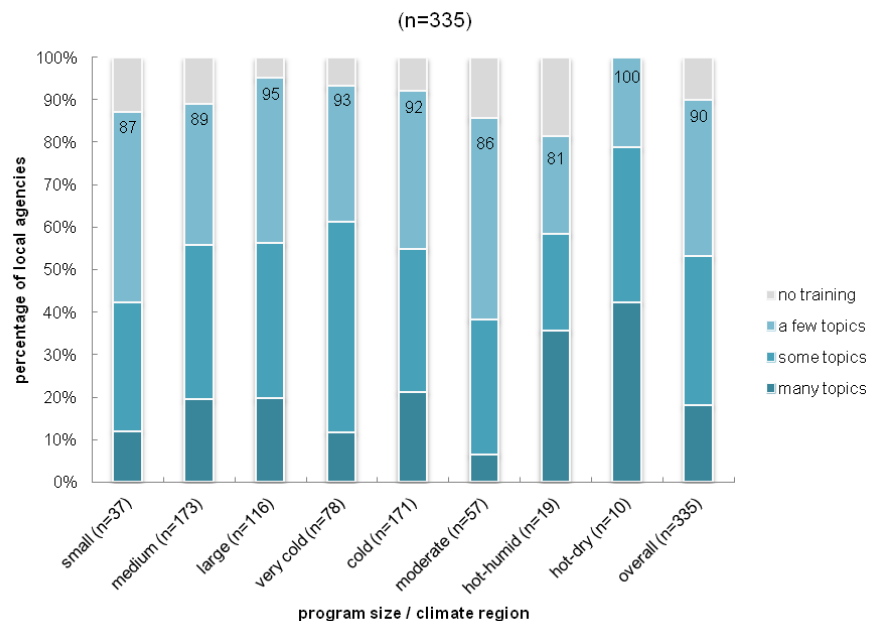
Interestingly, staff from small agencies were most likely to receive training on infiltration and doors and windows (84% and 81% of small agencies, respectively, reported these training topics) while those in medium and large agencies were most likely to provide training on insulation (85% and 86%) and doors and windows (83% and 84%). Staff in the coldest climate regions were most likely to receive training on insulation (88% very cold, 84% cold), infiltration (87% very cold, 73% cold), and doors and windows (80% very cold, 84% cold). Those in more moderate climates focused more on doors and windows, infiltration, and insulation (79%, 77%, and 76%, respectively). Subgrantee staff in hot-humid climates most commonly received training in insulation, doors and windows, and water-heating measures (86% each), and those in hot-dry climates received training on HVAC systems and doors and windows most often (94% each).

The process of installing weatherization measures varies by housing type, so our questionnaire inquired about measure installation training separately for single family homes, multifamily buildings, and mobile homes. We found that subgrantee staff were trained on all three of these housing categories: 89 percent of subgrantees reported that their staff received training on measures for single family homes, 83 percent for multifamily buildings, and 78 percent for mobile homes.



Ninety percent of subgrantees said staff received training in at least one technical or administrative topic (Fig. 3.12). Technical and administrative training was widespread across all program size groupings and in all climate regions, although staff in the hot-dry region received technical or administrative training in somewhat greater numbers, and those in the hot-humid region a little less.

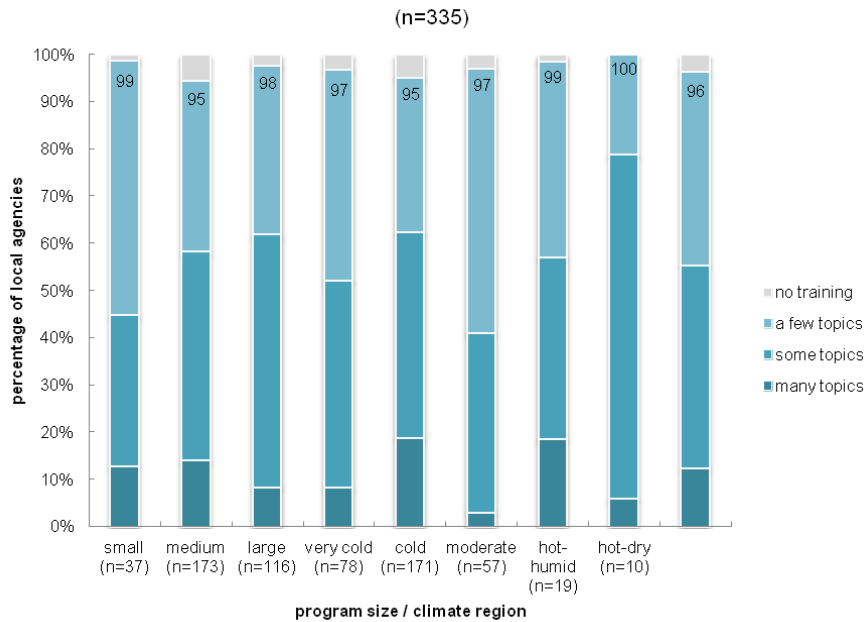
The most common technical and administrative topics on which subgrantee staff received training were auditing of single-family dwellings (75% of agencies), auditing of mobile homes (60%), and monitoring/quality control. Client education and management were part of the training agendas for staff from about half of the subgrantees, while training on financial topics, outreach and communications, and auditing multifamily buildings was less common.<sup>20</sup>



**Fig. 3.12: Subgrantee staff training – technical and administrative topics<sup>+</sup>**

Nearly all subgrantees (96 percent) reported that staff received training in some health and safety topics (Fig. 3.13). The most common health and safety topics on which staff received training were lead (cited by 82 percent of subgrantees), indoor air quality (69%), mold and mildew (61%), and general crew safety (56%). All other topics—fire safety, housing unit security, household hazards, asbestos, vermiculite—were identified as training topics for their staff by fewer than half of the subgrantees.

<sup>20</sup> The training topic on auditing was labeled as “auditing/estimating” on the survey instrument to distinguish it from the survey questions on various diagnostic procedures that are part of the audit task.



**Fig. 3.13: Subgrantee staff training - health & safety<sup>+</sup>**

*Barriers to training.* When asked what barriers prevented crews from receiving all the training they need, respondents representing two-thirds of subgrantees identified at least one barrier. The most commonly identified barriers<sup>21</sup> were:

- Poor timing of the existing training options (47%)
- Inability to take crews out of the field long enough for training (45%)
- Lack of sufficient training funds (24%)
- Inconvenient locations for the existing training options (24%)

Subgrantees with large programs and those in the cold climate region particularly stressed their inability to take crews out of the field. Fifty-four percent of large agencies and 58 percent of those in the very cold climate region noted this barrier, compared to 45 percent of all subgrantees. Agencies with small programs and those in the very cold climate regions reported lack of training funds in greater proportions than their counterparts (30% and 39% vs. 24%).

### 3.1.3 Perceptions of training effectiveness

Of all the training venues included in our questionnaires, both grantees and subgrantees gave high marks to the quality of training at state/regional training centers and internally provided training. Grantees also gave high marks to the Affordable Comfort Conference. As shown in Table 3.5, grantees singled out training on management, monitoring, and selecting weatherization measures at the training centers, although they provided high ratings to the centers across multiple other topics as well. Grantees thought that internal training is particularly effective for diagnostic procedures and auditing, and they also rated the Affordable Comfort Conference particularly high for training on diagnostic procedures, as well as health and safety and selecting weatherization measures. The National Weatherization Program conference was rated stronger in weatherization installation and health and safety than on other training topics.

<sup>21</sup> Respondents chose from a pre-defined list of potential barriers.

Subgrantees rated state/regional training centers particularly highly for health and safety, weatherization skills methods, and outreach and communications, as shown in Table 3.6. Internal training scored well on client education, weatherization skills and methods, and diagnostic procedures. Regional weatherization conferences, collectively, were seen as providing better training in weatherization methods, outreach and communications, and health and safety than they do on other topics, while the National Weatherization Program Conference’s relative strengths were auditing and health and safety.

**Table 3.5: Training quality by venue – grantee assessment**

<b>Training Venue</b>	<b>n</b>	<b>Overall training quality</b>	<b>Top-rated topics</b>
State/Regional Training Center	10	high	management (4.60) monitoring/quality control (4.60) selecting measures (4.60)
Internal Training	28	high	diagnostic procedures (4.19) auditing (4.15)
Affordable Comfort Conference	14	high	diagnostic procedures (4.60) health & safety (4.45) selecting measures (4.30)
National Weatherization Program Conference	29	medium-high	selecting measures (3.86) management (3.81)
Regional Weatherization Conference	24	medium-high	weatherization installation (3.95) health & safety (3.94)
State Weatherization Conference	17	medium-high	weatherization installation (4.21) health & safety (3.91) diagnostic procedures (3.91)

**Table 3.6: Training quality by venue – subgrantee assessment**

<b>Training Venue</b>	<b>n</b>	<b>Overall training quality</b>	<b>Top-rated topics</b>
State/Regional Training Center	139	high	health & safety (4.27) wx methods (4.26) outreach (4.17)
Internal Training	156	high	client education (4.40) wx methods (4.11) diagnostic procedures (4.09)
Affordable Comfort Conference	88	medium-high	wx methods (3.72) health & safety (3.68)
National Weatherization Program Conference	115	medium-high	auditing (3.72) health & safety (3.69)
Regional Weatherization Conference	84	medium-high	wx methods (3.92) outreach (3.89) health & safety (3.88)
State Weatherization Conference	129	medium-high	diagnostic procedures (3.71)

While both grantees and subgrantees rated the overall training quality at these venues similarly, the topics they rated highest differed. When asked which of various types of training represented by these training venues were most effective in imparting key skills and information, grantees clearly favored direct instructions given to individual subgrantees. This means of providing training rated first for all subject

areas included in our questionnaire.<sup>22</sup> In-person expert visits and grantee-sponsored classes also rated highly, while conferences, the state/regional training centers, and webcasts were rated lower.

On a similar question, subgrantees distinguished clearly between technical skills required in the field and those used in the office or in client interactions. Clear majorities of subgrantees believe field training is the most effective for weatherization skills and methods (93% of agencies classified field work as effective), auditing (77%), monitoring (69%), health and safety (71%), diagnostic procedures (87%), and selecting weatherization measures (64%). In contrast, conferences and classroom training are viewed as more effective for management skills, financial topics, outreach and communications, and client education.

### **3.1.4 Certifications**

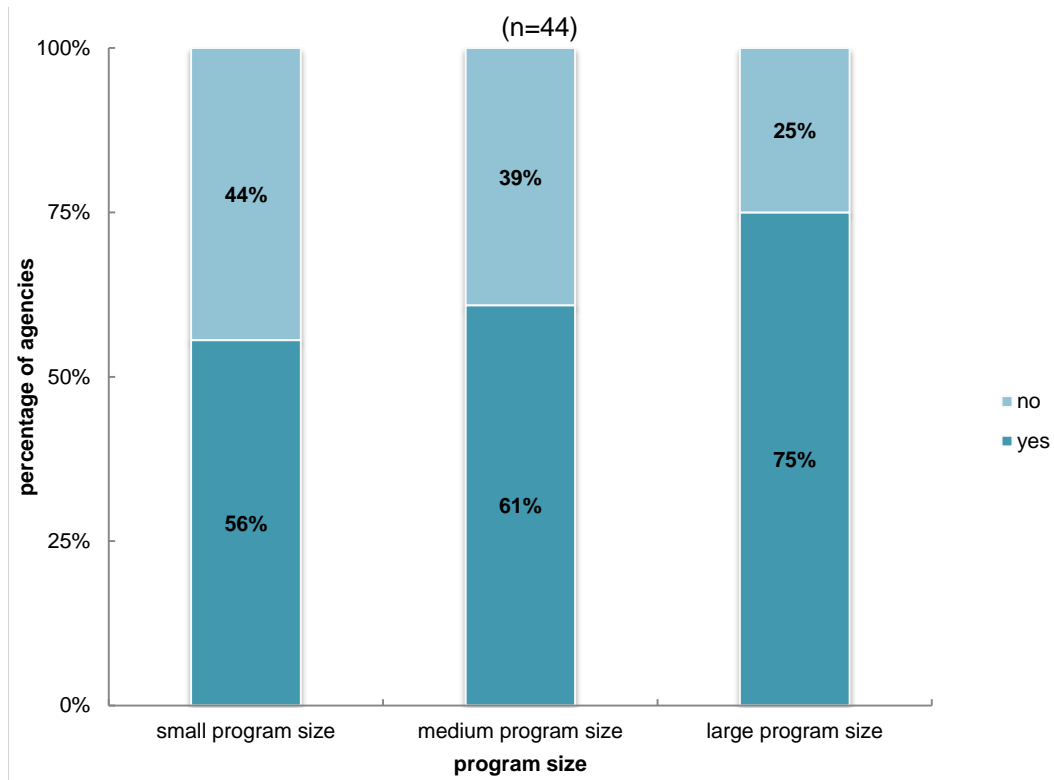
Technical certification and licensing requirements seek to ensure quality and consistency in the performance of weatherization work. The program information surveys for grantees (S1) and sampled subgrantees (S3) provided high-level information on the extent to which certifications or licensing requirements were in place for weatherization staff at the grantee and subgrantee level during PY2008. Survey questions focused on certification requirements across broad job categories. For grantee weatherization offices, the survey addressed credentialing for trainers, post-weatherization quality control inspectors, and administrative monitors. For subgrantees, the survey addressed requirements for management/administrative staff, auditing/inspection staff, and weatherization installers (in-house and contractors).

#### **3.1.4.1 Grantee level**

Sixty-four percent of grantees reported that personnel involved in training subgrantee weatherization agencies or their contractors were required to have technical certifications in PY08. As shown in Fig. 3.14, such requirements were more prevalent in large grantee programs (75%) than small programs (56%). Seventy-three percent of grantee respondents (n=41) indicated that certification requirements for trainers were important or very important.

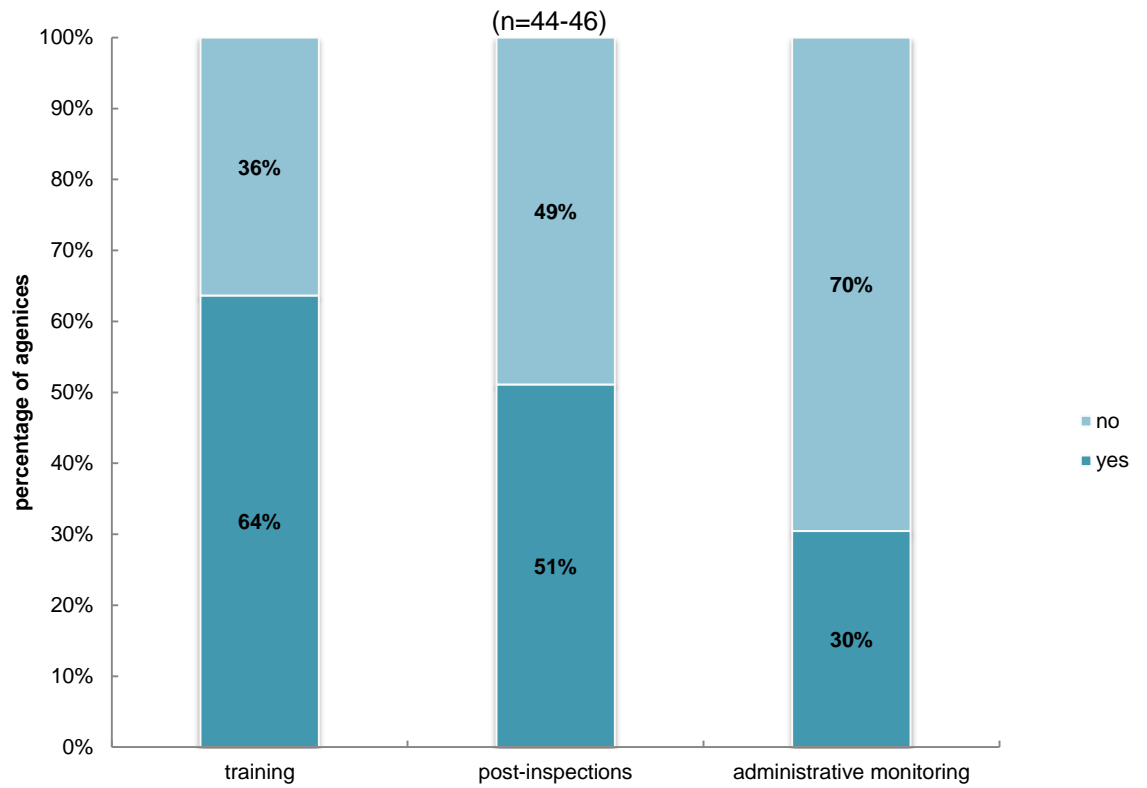
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<sup>22</sup> Those subject areas were: management, weatherization installation, auditing/estimating/measure selection, monitoring and quality control, financial topics, outreach and communications, health and safety, diagnostics procedures, and client education.



**Fig. 3.14: Technical certification requirements for grantee trainers in PY2008**

As shown in Fig. 3.15, technical certification requirements at the grantee level were most prevalent in the training arena (64%). Roughly half of grantee respondents reported that technical certifications were required for staff conducting post-inspections. Certification requirements for post-inspectors were more common among large and medium-sized grantee programs (58%) than among small programs (22%). Only 30 percent of grantee respondents reported that technical certifications were required for staff involved in administrative monitoring. These requirements were slightly more prevalent among large and medium-sized grant programs (33 percent) than among small programs (20 percent).



**Fig. 3.15: Comparison of technical certification requirements for key grantee roles in PY2008**

### 3.1.4.2 Subgrantee level

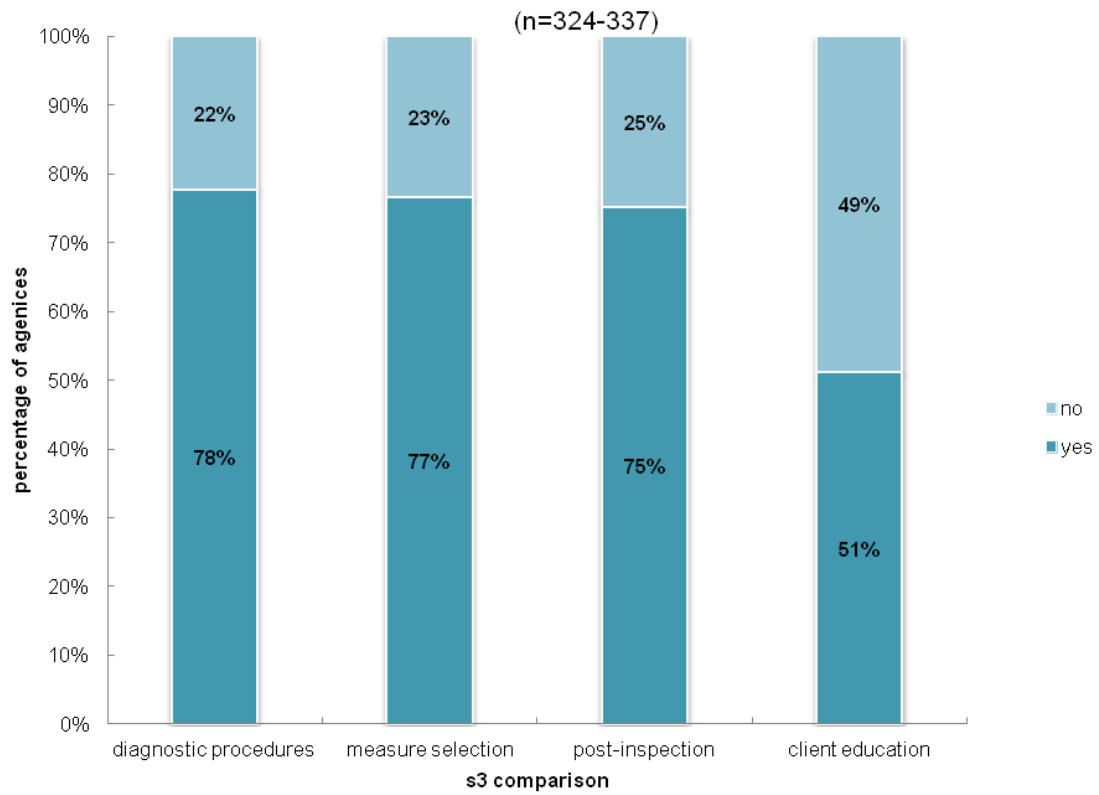
Subgrantees were asked whether their grantee program required certification or licensing in key functional areas: program management/administration, auditing/inspection, and home weatherization. As shown in Table 3.7, certification requirements were most prevalent in the home weatherization category. Subgrantees from 45 states reported that technical certifications or licenses were required for staff or contractors involved in weatherization installation. Subgrantees from 43 states reported that technical certifications or licenses were required for staff or contractors involved in conducting audits or post-inspections. Subgrantees from 28 states reported that technical certifications were required for staff or contractors involved in providing weatherization training.

**Table 3.7: Grantee certification and licensing requirements**

	<b>Number of grantees with certification or licensing requirements for staff/contractors (as reported by sampled subgrantees)</b>
Program management/administration	27
Auditing/inspection	43
Home weatherization	45

The program information survey for subgrantees also addressed agency-level certification requirements for staff involved in four key areas: diagnostic procedures, measure selection, post-inspection and client education.

compares the prevalence of technical certification requirements across these categories. Certification requirements were similarly prevalent across diagnostics (78%), measure selection (77%) and post inspection (75%). They were less common for subgrantee personnel involved in client education (51%). At the subgrantee level, program size had less of an effect on the prevalence of these requirements than at the grantee level.



**Fig. 3.16: Comparison of technical certification requirements for key subgrantee roles in PY2008<sup>+</sup>**



#### 4. HOW WEATHERIZATION SERVICES ARE DELIVERED

The full weatherization process involves a multi-step sequence, which comprises an important aspect of the weatherization process. The main steps involving the participant are:

**Client intake** – Office staff, typically at the subgrantee or sometimes other low-income energy service organizations, explains the program to interested applicants. Once client eligibility is determined, priority for delivery of services is determined among the pool of eligible applicants.

**Audit** – Once a household is deemed to be eligible, a trained auditor visits the home to conduct various diagnostic tests and determine what measures would save energy and be cost-effective for that home. This audit process is more comprehensive than assessments conducted by some other residential programs and more complete than diagnostics performed by many private sector remodelers who provide energy efficiency improvements as part of their services.

**Weatherization** – After the audit, a weatherization crew employed by the subgrantee, private contractors, or a combination visits the home over the course of several weeks and performs the work specified by the audit.

**Client education** – In addition to physical work on the premises, the vast majority of weatherization projects include some form of client education about energy efficient practices and/or the measures being installed. Client education can be conducted at various stages of the weatherization process.

**Post-weatherization inspection** – After weatherization is complete, an agency inspector visits the home to ensure that all measures were installed and that the work was done well. The inspection component of weatherization results in rework that increases energy efficiency, improves durability of the installed measures, and/or assures health and safety.

##### 4.1 DISTRIBUTION OF EFFORT AMONG THE COMPONENTS OF WEATHERIZATION

One measure of the relative effort expended on these various activities is spending by category. As shown in Table 4.1, subgrantees spent approximately two-thirds of their weatherization funds on the installation of measures and another tenth on health and safety measures in PY08. However, it is noteworthy that about seven percent of local weatherization funds were spent on auditing and inspecting homes—two important functions that help support program effectiveness. Program management costs were about 12 percent of the total amount spent at the local level. (The amounts shown in the table are based on all funding sources used by subgrantees, not just DOE funds.)

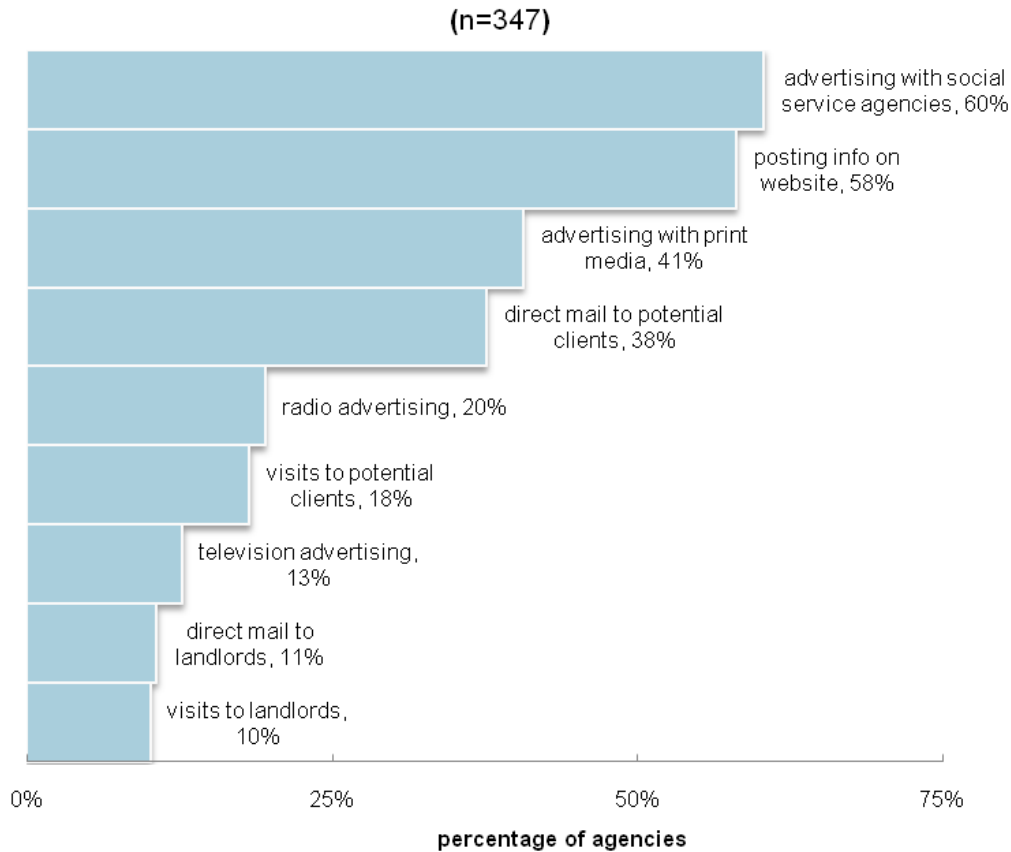
**Table 4.1: Distribution of subgrantees' expenditures by category**

<i>Expenditure Category</i>	<i>Amount Spent* by Reporting Subgrantees (PY 2008)</i>	<i>Share of Total</i>
Weatherization measure installation	\$470 million	70%
Health and safety measures	\$70 million	10%
Audits and inspections	\$50 million	7%
Training and technical assistance	\$10 million	1%
Program management	\$80 million	12%

\* Note: Amounts shown here are approximate and based on responses received from subgrantees. They have not been adjusted for non-respondents.

## 4.2 RECRUITMENT AND SCREENING

Most subgrantees take some proactive steps to market their weatherization programs. As shown in Fig. 4.1, more than half market their programs through other social service agencies and post information about weatherization on their websites. Many also advertise in printed media and send direct mail to potential clients.



**Fig. 4.1: Marketing for weatherization services by subgrantees<sup>+23</sup>**

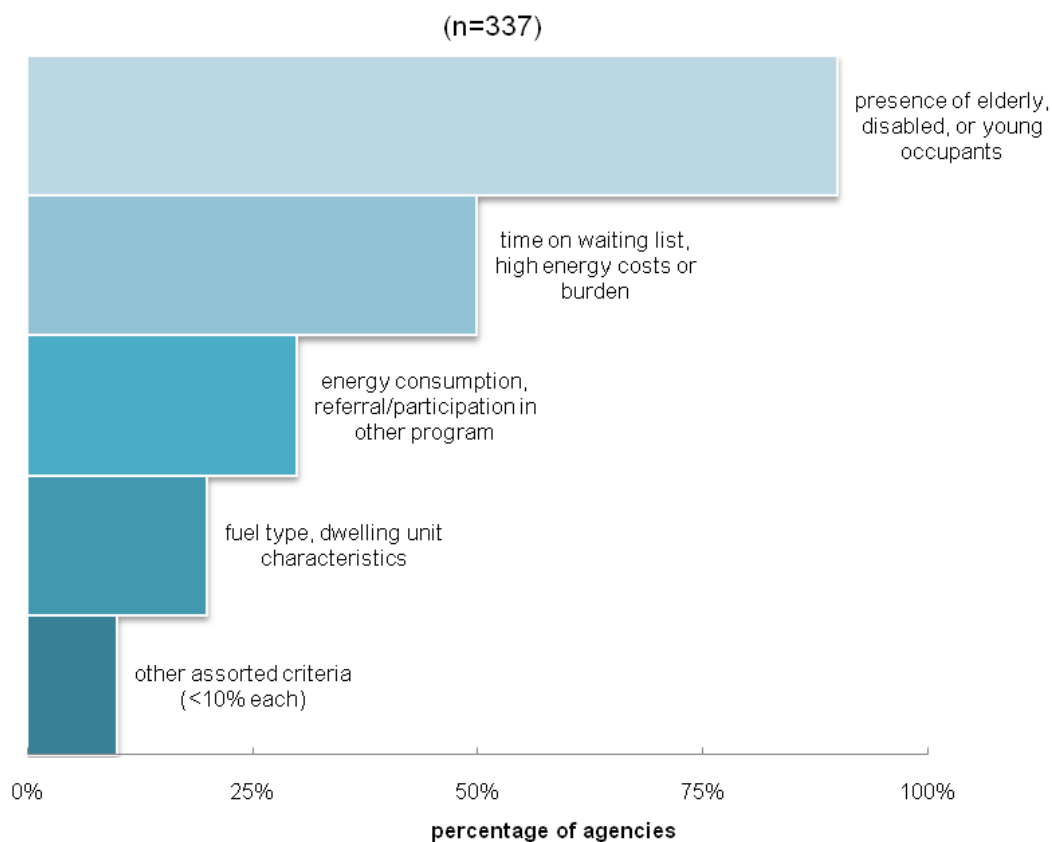
Subgrantees with large programs are more likely to use direct mail or visit potential clients and landlords than those from smaller programs. Fifty-three percent of large subgrantees use direct mail and 34 percent visit either potential clients or their landlords, while only 29 and 13 percent of small agencies do so. However, subgrantees of all sizes advertise with other social service agencies, on their own websites, and in the mass media in similar proportions (large, 46%; medium, 47%; small 55%). In the majority of subgrantees (73%), agency management takes responsibility for leading marketing and outreach efforts, while 29 percent of subgrantees indicate that an in-house outreach coordinator leads this function.

The first step in the actual weatherization process comprises the application and qualification process and the scheduling of an audit. Most subgrantees (86%) indicated that they received needed information to qualify and process applicants from an application, although half received applicable data from LIHEAP

<sup>23</sup> The term advertising in this figure may encompass broader marketing activities, such as outreach to—and coordination with—other organizations. The figure shows the response options offered to subgrantees in the surveys they completed.

and a quarter collected some of the household information they need at the time the home is audited. Approximately half of the subgrantees collected household energy consumption information from the household, and half did so from the local energy utility. (Some did both.) Meanwhile, about a fifth of subgrantees did not collect energy consumption data in PY08.

Among eligible applications, subgrantees prioritized weatherization projects based on numerous factors. Nearly all agencies indicated that they give priority to households that include elderly occupants (92% of agencies), disabled occupants (90%), or children (85%). Roughly half of the subgrantees assigned priorities based on the amount of time an applicant had been on the waiting list, a client’s energy expenditures or energy burden. Energy consumption, fuel type, and dwelling unit characteristics resulted in priority status in a minority of agencies. Fig. 4.2 displays these priorities graphically.



**Fig. 4.2: Priority applicants<sup>+</sup>**

Although subgrantees from all size groupings and climate regions are consistent in giving priority to households with elderly, disabled, and young occupants, there was some regional variation in the secondary priority factors. For example, subgrantees in the very cold and hot-dry regions more likely to prioritize based on a client’s energy consumption, costs, or burden. In contrast, subgrantees in the moderate region were more likely to prioritize based on time spent on a waiting list and on fuel type.

When asked explicitly about setting targets or actively seeking participation in their weatherization programs by households in particular housing types, a minority of subgrantees indicated that they do. About a third of subgrantees set target numbers of single-family units to be weatherized in PY08 (with lower shares setting targets for other housing types), and about the same proportion actively encouraged

the participation of single-family housing units in their weatherization program. Multifamily buildings were not frequently targeted in PY08. Twelve percent of subgrantees set targets for small multifamily buildings, and six percent did so for large multifamily buildings. Some more—21 percent and 13 percent, respectively—actively sought participation by small and large multifamily buildings.

Most subgrantees also referred clients to non-energy programs for additional social services. Between 57 and 70 percent of subgrantees indicated that they referred weatherization clients to other programs in PY08.<sup>24</sup>

### **4.3 IDENTIFYING MEASURES NEEDED**

The first step in weatherizing a home is an audit in which a trained professional visits the home to identify the energy-saving measures that would provide cost-effective efficiency improvements and health and safety concerns that need to be addressed. The audit comprises diagnostic measurements and a decision-making process to select the measures that the weatherization crew or subcontractors will be directed to perform.

#### **4.3.1 Diagnostics**

Weatherization programs have some fairly sophisticated tools to identify heat loss, system efficiency, and other sources of energy waste. Most subgrantees—regardless of size or region—perform a range of procedures to test air infiltration and the safety and performance of space and water heating systems. Table 4.2 presents a list of diagnostic procedures reported by at least half of our respondents, the share of subgrantees that use them, agency perceptions of their comparative effectiveness, and agency perceptions about the level of effort (in cost, time, and training) needed to use them.

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<sup>24</sup> We presented this share of subgrantees as a range because there was moderately high non-response to the relevant question (19 percent of sampled subgrantees who completed S3). Seventy percent of respondents indicated that they refer at least some of their cases to other programs. However, if the blanks left by the non-respondents actually were intended to mean “0,” that would imply that 57 percent of subgrantees refer some clients. We also sought to identify the share of clients referred, but could not reliably do so because the responses subgrantees entered suggest that respondents were inconsistent in whether they entered counts or percentages of units.

**Table 4.2: Diagnostic procedures performed by subgrantees in Program Year 2008<sup>+</sup>**

Diagnostic procedure	Percentage of subgrantees that		
	perform the procedure	perceive the effectiveness as high	perceive the investment needed as high*
Blower door (house air leakage rate)	99%	94%	32%
CO measurements in flues (space heating system)	91%	84%	25%
CO measurements in flues (water heating system)	88%	81%	22%
Flue gas analysis (space heating system steady-state eff. test)	83%	88%	31%
CO measurement from cooking stove	82%	77%	19%
Draft/spillage (space heating system, normal operation)	78%	87%	24%
CO measurements in living areas	78%	82%	21%
Draft/spillage (water heating system, normal operation)	77%	85%	23%
Flue gas analysis (water heating steady-state eff. test)	72%	80%	27%
CO measurements in equipment rooms	69%	80%	17%
Worst case draft/spillage (CAZ)	63%	85%	35%
Refrigerator energy use	63%	67%	14%
Duct pressure pan measurements	59%	63%	23%
Zonal pressure measurements	58%	71%	33%
Heat rise measurements (space heating system)	55%	68%	17%
Infrared scanning (camera)	51%	80%	52%

\* Investment comprises both training and time needed.

Diagnostic procedures performed and perceived as effective vary slightly by program size and a bit more by climate region. As shown in Table 4.3, the most commonly performed diagnostic procedures in smaller and larger subgrantee agencies are generally the same, although smaller agencies more commonly test cooking stoves while larger agencies do more draft/spillage tests.

**Table 4.3: Common diagnostic procedures by program size**

Program Size	Most used diagnostic procedures
small (n=45)	blower door test (98%) cooking stove (86%) CO in living areas (85%) CO in flues (water heat) (81%) CO in flues (space heat) (81%)
medium (n=182)	blower door test (99%) CO in flues (space heat) (93%) flue gas analysis (space heat) (90%) CO in flues (water heat) (88%) draft/spillage (84%)
large (n=118)	blower door test (98%) CO in flues (space heat) (96%) CO in flues (water heat) (94%) draft/spillage (water heat) (92%) draft/spillage (space heat) (89%)

As shown in Table 4.4, the most commonly performed diagnostic procedures in cooler and warmer climate regions varied somewhat as well, although the results for the hot-dry region are affected by the small respondent pool from that region. While blower door tests were widespread across the regions, colder climates emphasized space and water heating system tests. These tests were less common in warmer climates, so the carbon monoxide tests by those agencies appeared higher in the ranking of diagnostic procedures performed.

**Table 4.4: Common diagnostic procedures by climate region<sup>+</sup>**

<b>Program Size</b>	<b>Most used diagnostic procedures</b>
very cold (n=80)	blower door test (100%) flue gas analysis (space heat) (88%) draft/spillage (space heat) (88%) draft/spillage (water heat) (87%) CO in flues (space heat) (87%)
cold (n=172)	blower door test (99%) CO in flues (space heat) (98%) CO in flues (water heat) (95%) flue gas analysis (space heat) (94%) draft/spillage (space heat) (93%)
moderate (n=58)	blower door test (100%) CO in living areas (90%) CO from cooking stoves (89%) CO in flues (space heat) (86%) flue gas analysis (space heat) (85%)
hot-humid (n=20)	blower door test (95%) CO from cooking stove (92%) CO in flues (space heat) (82%) CO in living areas (82%) CO in flues (water heat) (77%)
hot-dry (n=9)	CO in flues (space heat) (100%) CO in flues (water heat) (100%) draft/spillage (water heat) (100%) CO in living areas (93%) blower door test (93%)

### 4.3.2 Decision-making tools used

The diagnostic results from the audit lead to the selection of measures to be installed or implemented on the home being weatherized. Subgrantees can use either a priority list or a calculation procedure, such as Weatherization Assistant (NEAT/MHEA). A slight majority of subgrantees used priority lists as their primary measure section tool in PY08, as shown in

Table 4.5. About a third used calculation procedures as their primary tool, while 12 percent of subgrantees used priority lists on some units and a calculation procedure on other units. There is relative stability in the use of these decision-making tools; on average, subgrantees have been using their current type of tool for over a decade.

**Table 4.5: Primary measure selection tools used in Program Year 2008<sup>+</sup>**

(n=353)

Tools used	Percentage of subgrantees	Mean # of years used
priority list	53%	15
calculation procedure	33%	11
both (for different units)	12%	11
ambiguous responses	2%	n/a

Priority lists were more commonly used by subgrantees with small programs (68% of these used priority lists exclusively) and those in all climate regions except the very coldest – usage ranged from 57% in the cold region to 71% in the hot-dry region. Large agencies and those in very cold climate region were more likely to use calculation procedures exclusively (42% and 63%, respectively).

Subgrantees that used priority lists found them to be easy (67% of agencies) or very easy (26%) to use. They also perceived them to be effective (67%) or very effective (21%).

Weatherization Assistant was the most commonly used calculation procedure in use in PY08 (Table 4.6). Those who used it as their primary measure selection tool rated it, on average, as effective, but not as uniformly easy to use. Sixty-two percent of users rated it as easy or very easy to use, while 38 percent considered it difficult or very difficult to use.

**Table 4.6: Most commonly used calculation procedures in Program Year 2008<sup>+</sup>**

(n=182)

Calculation procedure	Percentage of subgrantees (of those who use calculation procedures as a primary tool)	Ease of use (% indicating tool's use is easy or very easy)	Effectiveness (% indicating tool's use is effective or very effective)
Weatherization Assistant	53%	62%	77%
REM/Rate	8%	Not presenting means because these calculation procedures were each used by fewer than 20 subgrantees.	
TREAT	7%		
EA-QUIP	5%		
EASY	5%		

#### 4.4 CLIENT EDUCATION

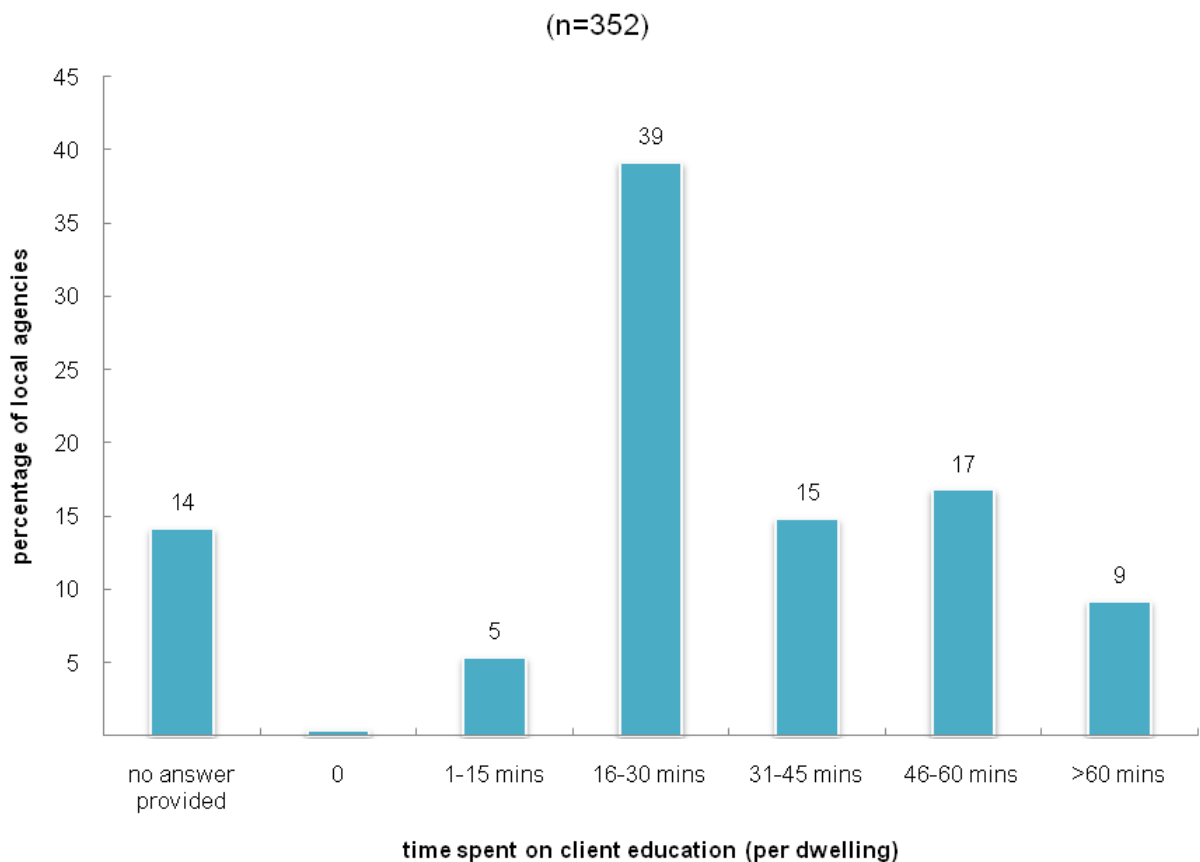
Virtually all subgrantees reported performing some sort of client education in PY08.<sup>25</sup> Subgrantees reported that, on average, they provide just under 45 minutes of client education at various times during

<sup>25</sup> Only five of the sampled subgrantees who responded to the detailed program information survey marked none of the client education measures on the questionnaire. When weighted, these respondents represent three percent of the full population of agencies.



the weatherization process, especially during the intake process, the on-site weatherization work, and the inspection. In most cases, the client education comprised direct interaction with the participant—applicants were the target for client education among 94% of the subgrantees—and sometimes another household member.<sup>26</sup> The most common form of client education consisted of the dissemination of some energy literature and in-person interaction with the client.

The plurality of subgrantees reported that they spent between a quarter and a half hour on client education in a typical dwelling (Fig. 4.3). The average amount of time spent was nearly 45 minutes, but that value was buoyed by a few agencies that reported very large amounts of time. The median time spent was about 30 minutes. Fourteen percent of the subgrantees that reported doing client education did not answer our question on the amount of time spent. If these agencies left the question blank because their educational efforts don't involve spending interactive time with the client, then the average time spent may be a bit lower than reported here. The differences between subgrantees with varying program sizes and in different climate regions were small.



**Fig. 4.3: Quantity of client education provided<sup>+</sup>**

Table 4.7 below lists some common topics covered as part of client education. The most common topics were management of the client's thermostat, information about insulation, lighting, and the operation and maintenance of the client's heating (or cooling) system. The field process study being done as part of the

<sup>26</sup> Twenty-two percent of subgrantees indicated that they typically provide client education to multiple individuals for each weatherization project.

national weatherization evaluation is likely to provide additional insights about the nature and depth of client education.

**Table 4.7: Topics covered as part of client education in more than half of weatherization subgrantees+**

Client Education Topics	% of agencies
Thermostat management	88
Insulation	86
Lighting	84
HVAC system operation / maintenance	80
Windows	75
Hot water use	73
Ventilation	71
Safety monitors (e.g., CO monitors, smoke alarm)	68
Mold	67
Refrigerator	66
Water heating system operation / maintenance	59
Energy bills	56

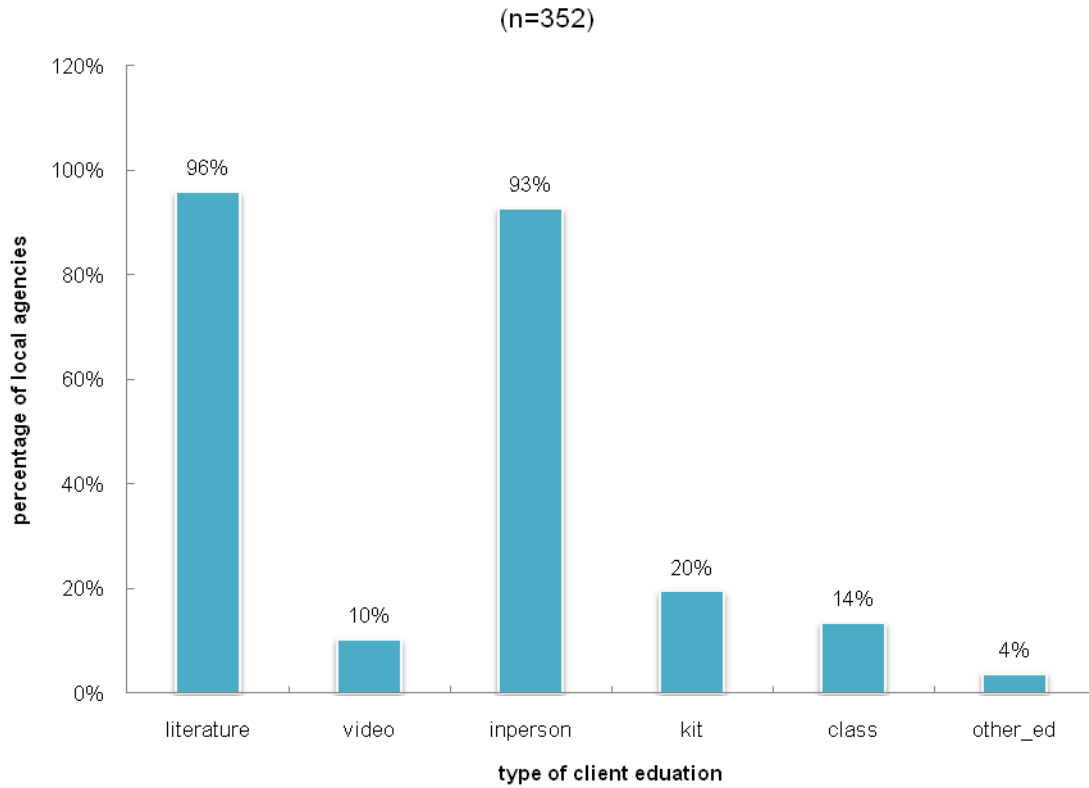
As one might expect, there are regional differences among the topics included in client education. For example, thermostat management was the most commonly cited topic in four of the five climate regions, but was not even among the top five topics for the hot-dry region. Ventilation was commonly discussed in the coldest climate region, but not as frequently in the rest of the country. The warmer climates, on the other hand, more frequently included HVAC system operation and maintenance. Table 4.8 lists the five most common topics by climate region.

**Table 4.8: Most common client education topics by climate region**

Rank	very cold (n=77)	cold (n=171)	moderate (n=55)	hot-humid (n=20)	hot-dry (n=10)
1.	thermostat management (87%)	thermostat management (91%)	thermostat management (85%)	thermostat management (88%)	insulation (100%)
2.	ventilation (86%)	insulation (90%)	insulation (85%)	lighting (79%)	lighting (100%)
3.	lighting (84%)	lighting (88%)	HVAC o&m (82%)	safety monitors (79%)	windows (100%)
4.	hot water use (77%)	HVAC o&m (83%)	lighting (74%)	hot water use (77%)	HVAC o&m (93%)
5.	windows (77%)	windows (79%)	windows (69%)	insulation (73%)	energy bills (93%)

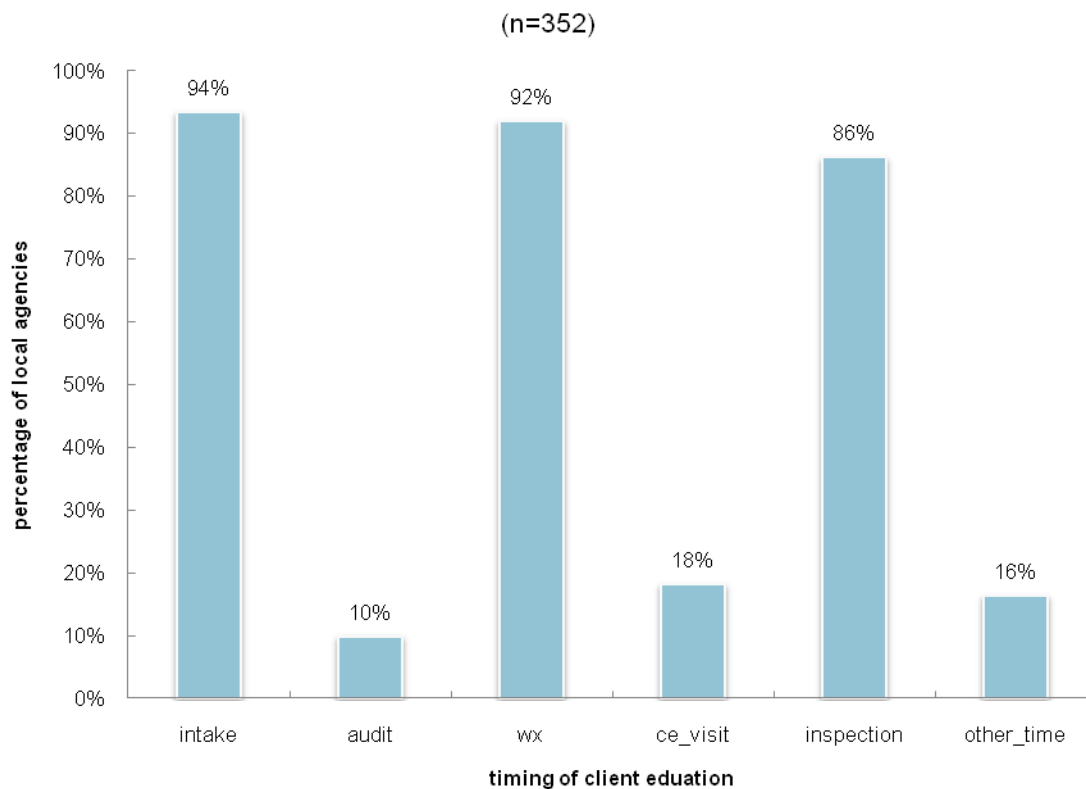
Note: Percentage represent the share of agencies that do client education.

As previously noted, the vast majority of client education consisted of the dissemination of literature or in-person interaction with the client. As shown in Fig. 4.4, 96 and 93 percent of subgrantees, respectively, employed these two methods. Many did both, although small agencies were more likely to rely on literature only. Other forms of client education, such as the dissemination of videos, kits, or separate client education classes were less common and more likely to be done by larger agencies.



**Fig. 4.4: Type of client education<sup>+</sup>**

As noted earlier, subgrantees used three separate touch points to conduct their client education. As shown in Fig. 4.5, roughly 90 percent of subgrantees conducted client education at intake, during the weatherization work, and at the inspection. Many used all three of these touch points to conduct client education. Larger agencies were more likely to incorporate client education into the on-site weatherization work, however.



**Fig. 4.5: Timing of client education<sup>+</sup>**

Not surprisingly, subgrantees reported that staff most involved in client education are auditors (cited by 86% of subgrantees as providing client education), inspectors (62%), and intake personnel (54%).<sup>27</sup> In-house education specialists or contractor education specialists were used by only 12 and 6 percent of subgrantees, respectively.

When asked about the relative effectiveness and levels of investment needed for each of these client education approaches, subgrantees gave favorable marks to in-person instruction and the dissemination of literature. Respondents rated in-person instruction as being somewhat more effective than the other types of instruction, but also requiring a greater investment of money, time, and staff training. The dissemination of literature was rated as being nearly as effective with a lower overall investment needed. Subgrantees perceive in-home opportunities—either at the time of the audit, the weatherization work, or the inspection—to be relatively more effective and requiring no more investment than other client education opportunities. See Table 4.9 for a more complete summary of subgrantee perceptions.

<sup>27</sup> These proportions are lower than one would expect from subgrantee responses on when client education occurs. One possible explanation is that subgrantees did not attribute the dissemination of literature to individual staff. Alternatively, it is possible that there is some underreporting of staff involvement or overreporting of where client education occurs.

**Table 4.9: Perceived effectiveness and level of investment needed for various client education approaches<sup>+</sup>**

Type of post-client education	Effectiveness (mean score on 5-point scale where 5 = “very high”)	Investment needed (blended mean on 5-point scale where 5 = “very high”)
<b>Type of Client Education</b>		
literature	3.2	2.3
video	2.5	2.5
in-person instruction	3.5	2.7
hardware kit	2.6	2.4
group training class	2.9	3.1
<b>Timing of Client Education</b>		
client intake	2.9	2.4
audit	3.1	2.4
weatherization	3.1	2.4
client education visit	2.7	2.8
inspection	3.1	2.4

## 4.5 INSTALLATION

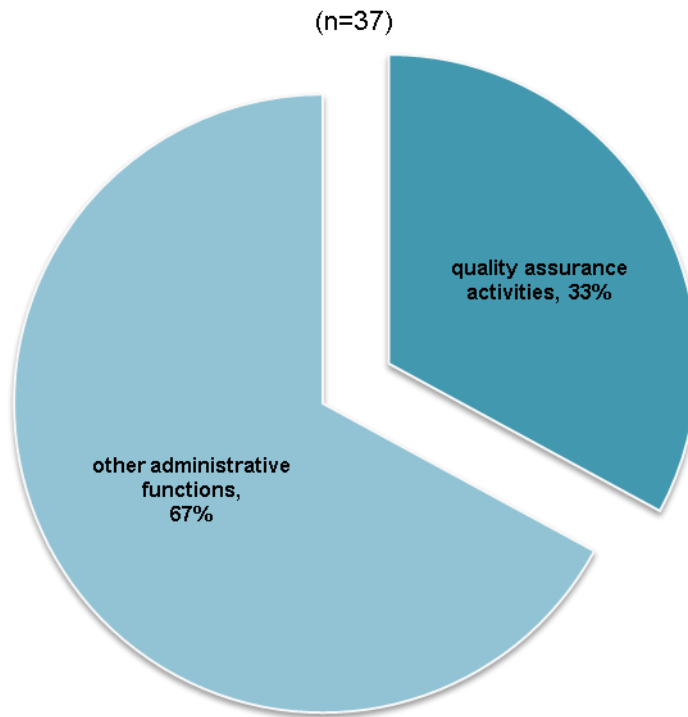
Weatherization programs install two general types of measures in client homes: home improvements to save energy and home improvements to address health and safety risks. Measure installation is performed by a weatherization crew employed by the subgrantee, private contractors, or a combination of the two. Diagnostics to determine measures and types of measures installed are discussed more fully in Measures and Services (see Section 5.0 - Whom do Weatherization Agencies Serve with what Services?).

## 4.6 QUALITY CONTROL AND ASSURANCE

Quality monitoring and inspections conducted by grantee staff provide feedback to subgrantees on performance, accountability to funders, and assurance to clients that the weatherization work was done properly. As noted, all grantees conduct quality monitoring of subgrantees, and subgrantees inspect individual projects. These activities encompass both quality control and quality assurance.

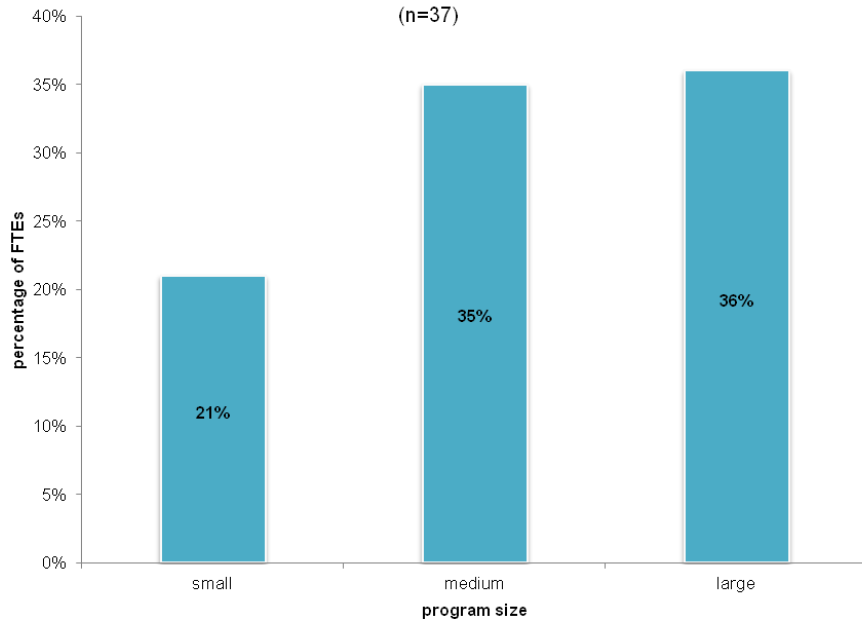
### 4.6.1 Grantee monitoring

Grantee quality control and assurance activities consist of both inspections of some weatherized units and agency visits to monitor administrative functions. Together, these activities account for 105 FTEs of activity by grantees nationwide, or about 33 percent of total grantee staff time spent on weatherization program activities (Fig. 4.6). The range of staff time devoted to these activities spans from 5 percent to 60 percent of total staff time at the grantee level.



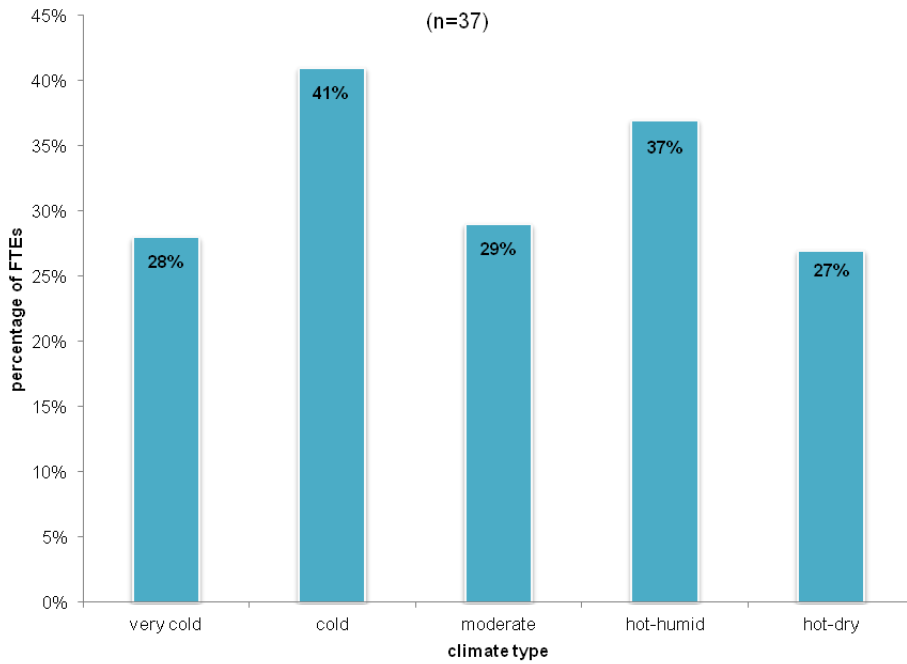
**Fig. 4.6: Proportion of staff time (FTEs) spent on quality control and assurance activities**

The amount of staff time grantees spend on quality control and assurance varies with program size (Fig. 4.7). Grantees with small weatherization programs tend to spend proportionally less staff time than grantees with medium- or large-sized programs. Roughly one-fifth of total staff time is allocated to these activities among grantees with small programs, whereas grantees with medium-sized programs spend 35 percent of FTEs and those with large programs spend 36 percent. It is important to note that grantee monitoring activities have been expanded under ARRA. The ARRA evaluation may show significant changes in the level of effort devoted to quality control and assurance activities as compared with these PY08 results.



**Fig. 4.7: Proportion of staff time spent on quality control and assurance by program size**

There is also variation among staff time spent on quality control and assurance among the climate regions (Fig. 4.8). The greatest proportion of FTEs are allocated to inspections and monitoring among grantees located in the cold and hot-humid regions (41% and 37%, respectively) compared to those in very cold, moderate, or hot-dry regions (28%, 29%, and 27%, respectively).



**Fig. 4.8: Proportion of staff time spent on quality control and assurance by climate type**

*Inspections of units.* Most grantees inspected between 23 and 600 weatherized units<sup>28</sup> in PY08, spending an average of two hours in each home. The most common types of inspections, performed by three-fourths of states, are:

- Visual inspection of installed measures
- Assessment of quality of measures installed
- Discussion with occupants
- Verification of operation of measures installed
- Identification of unresolved health and safety issues
- Verification of insulation depths/quantities
- Identification of needed measures that were not installed
- Blower door test
- Carbon monoxide monitoring

Grantee weatherization directors consider visual inspection of installed measures, the blower door test and carbon monoxide monitoring to be the most effective monitoring activities, but verification of insulation depths/quantities and discussions with occupants appear to provide good effectiveness for more modest investments in cost, training needs, and time required. Table 4.10 presents all types of inspections included in our surveys and the grantee assessments of their effectiveness and investment required. (Note: The survey instrument inquired about cost, training, and time separately, but we combined the responses, giving equal weight to each factor.)

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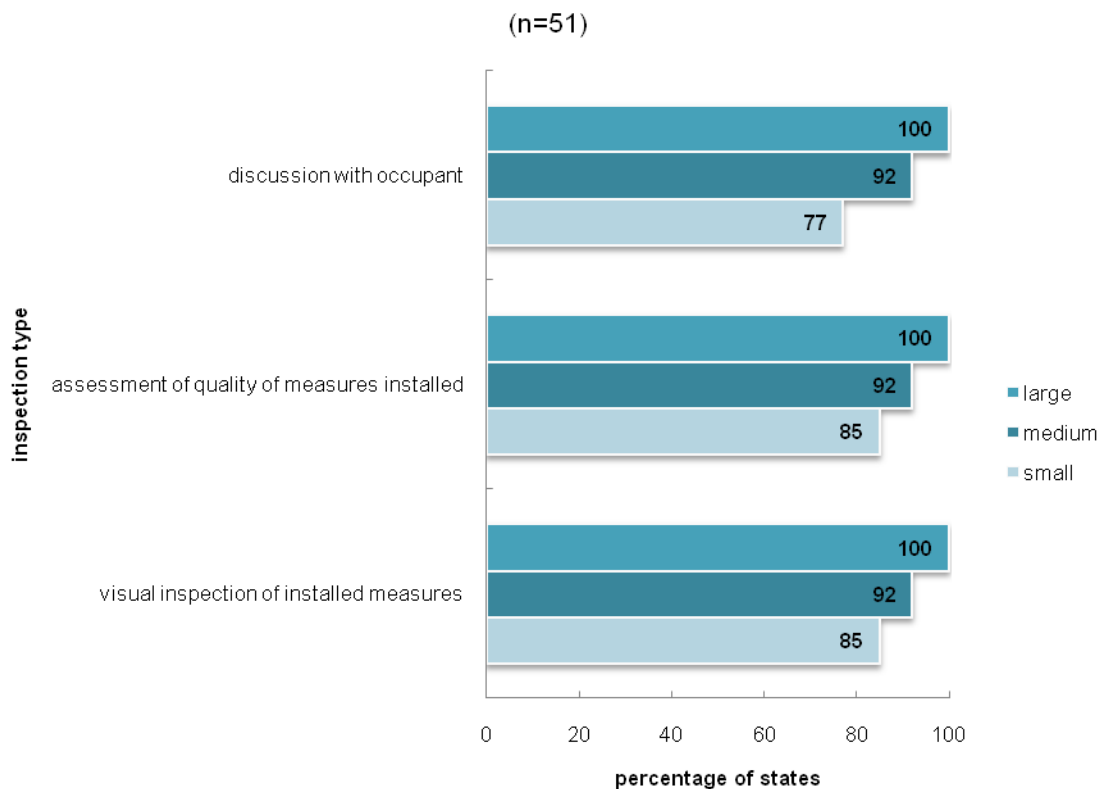
<sup>28</sup> This volume of inspections falls between 4 and 40 percent of these grantees' caseload (with a mean of 14 percent). However, we note that inspections reported appear to include non-DOE cases as well, so we provide these comparative statistics only as a frame of reference.



**Table 4.10: Post-weatherization inspections performed by grantees**

<b>Type of post-weatherization inspection</b>	<b>Percentage of grantees that perform</b>	<b>Percentage of grantees that rate effectiveness as high (4 or 5 on a 5-point scale)</b>	<b>Percentage of grantees that rate the investment needed as high (4 or 5 on a 5-point scale)</b>
Visual inspection of installed measures	100%	90%	32%
Assessment of quality of measures installed	100%	86%	33%
Discussion with occupants	98%	74%	22%
Verification of operation of measures installed	94%	80%	28%
Identification of unresolved health and safety issues	92%	78%	34%
Verification of insulation depths/quantities	92%	83%	21%
Identification of needed measures that were not installed	92%	78%	36%
Blower door test	87%	93%	42%
Carbon monoxide (CO) monitoring	83%	90%	29%
Draft/spillage tests of heating systems	64%	84%	32%
Heating system efficiency test (flue gas analysis)	51%	70%	39%
Infrared scanning	51%	71%	46%

The frequency of inspection types decreases with program size. Grantees with large programs tend to undertake all inspection types more frequently than grantees with small programs. However, the types of inspections that occur most commonly are the same across program size. Fig. 4.9 shows the frequency of the three most common inspection types by program size.



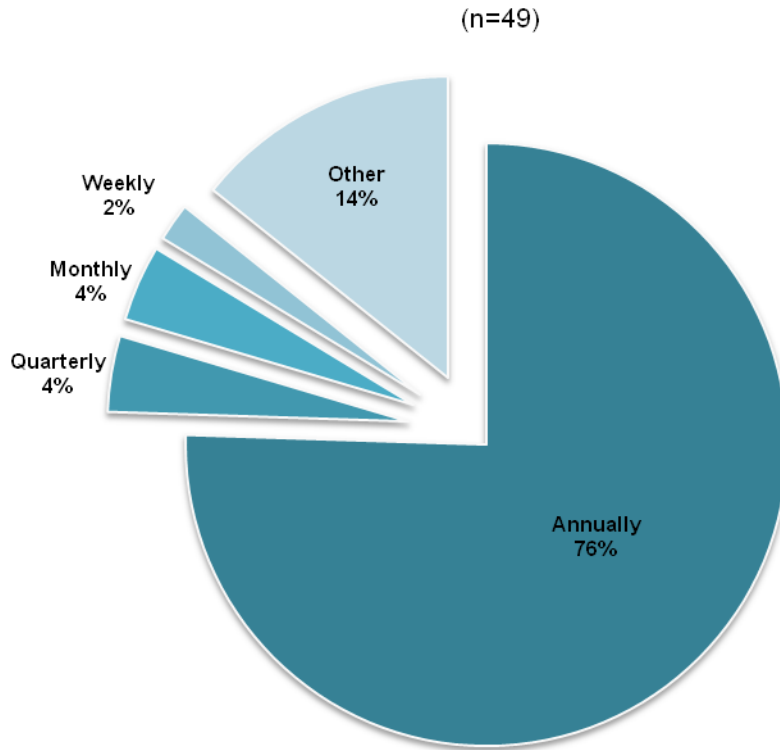
**Fig. 4.9: Frequency of most common inspection types by program size**

The pattern between frequency of inspection types and climate region is less clear. Among the most common inspection types, grantees in cold or dry climates tend to perform inspections more frequently than those in other climates; however, this does not hold for all inspection types. A few types of inspections—most notably, flue gas analysis and infrared scanning – are performed frequently in colder climates but less often in moderate and hot climates.

Post-weatherization inspections found problems that warranted a return visit by the subgrantee in 21 percent of units inspected with a range from zero in one state to 70 percent in another. The most common problems pertain to insulation (23%), work quality (14%), and air sealing (12%). Other categories of problems (including health and safety measures) occurred fewer than 10 percent of the time. The most common remedy, by far, is to have the subgrantee send a crew back to correct the problem (90%).

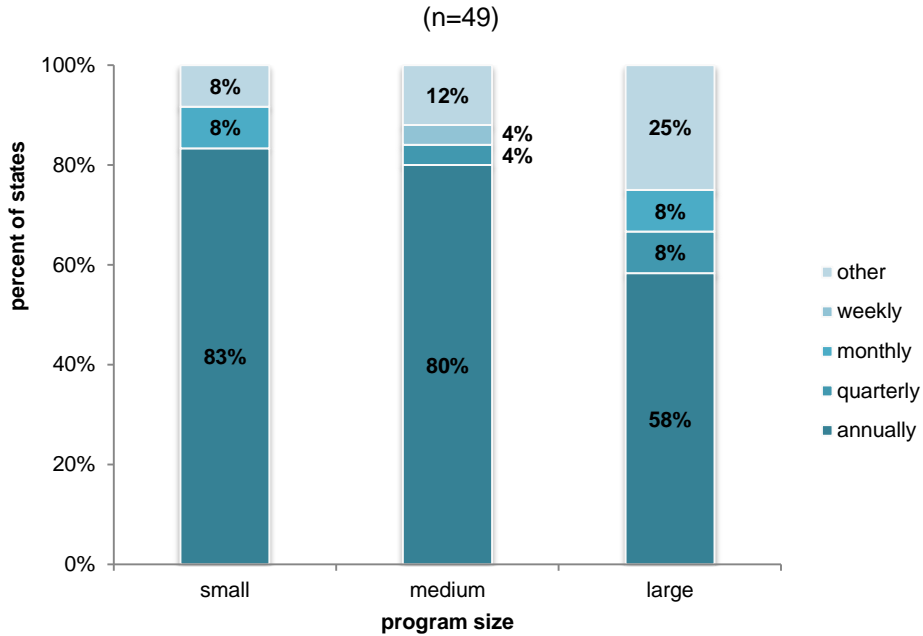
Grantees in the hot-dry region reported the fewest problems detected during post-weatherization inspections (10%) while all other regions reported problems with 18 to 26 percent of cases that resulted in a return visit by a subgrantee.

*Administrative monitoring.* The amount of staff time grantee weatherization programs allocate to monitoring agency administrative activities ranges widely. Most grantees (76%) conduct subgrantee administrative monitoring visits annually; however, actual staff hours spent at each agency ranges from one hour to 72 hours per subgrantee in most states. The national average for PY08 was 18 staff hours per subgrantee.



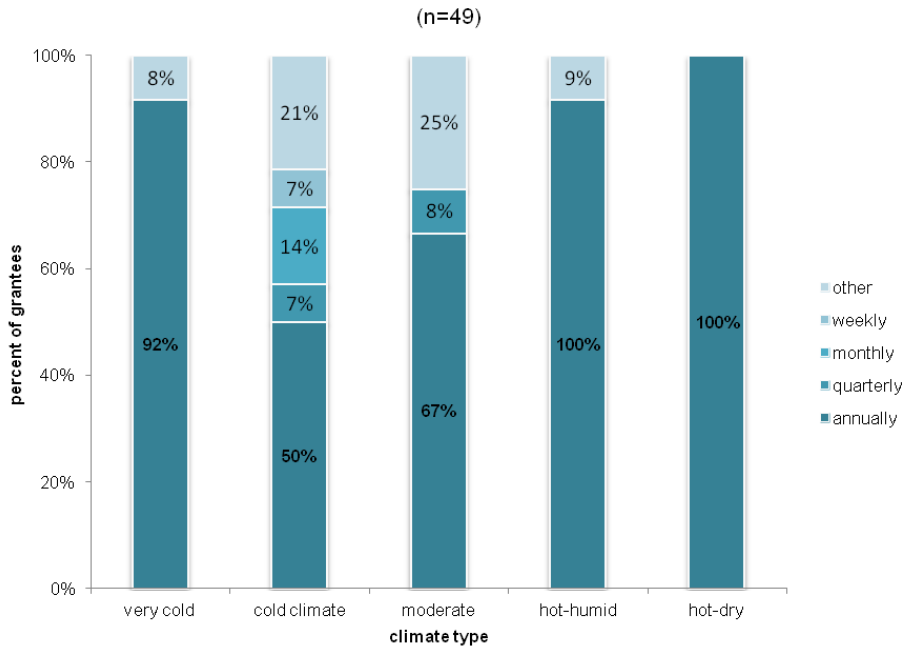
**Fig. 4.10: Frequency of grantee administrative monitoring visits to subgrantees**

As shown in Fig. 4.11, grantees with large weatherization programs conduct more frequent monitoring visits to subgrantees compared to those with small or medium programs. Sixteen percent of large program grantees make monthly or quarterly visits, while only eight percent of grantees with small or medium programs make visits more regularly than once per year. Furthermore, only 58 percent of grantees with large programs conduct annual monitoring visits compared to 80 to 83 percent of grantees with small or medium programs. In terms of program staff hours, grantees spent a similar amount of time conducting administrative monitoring activities regardless of program size, ranging from an annual average of 13 to 20 hours per subgrantee.



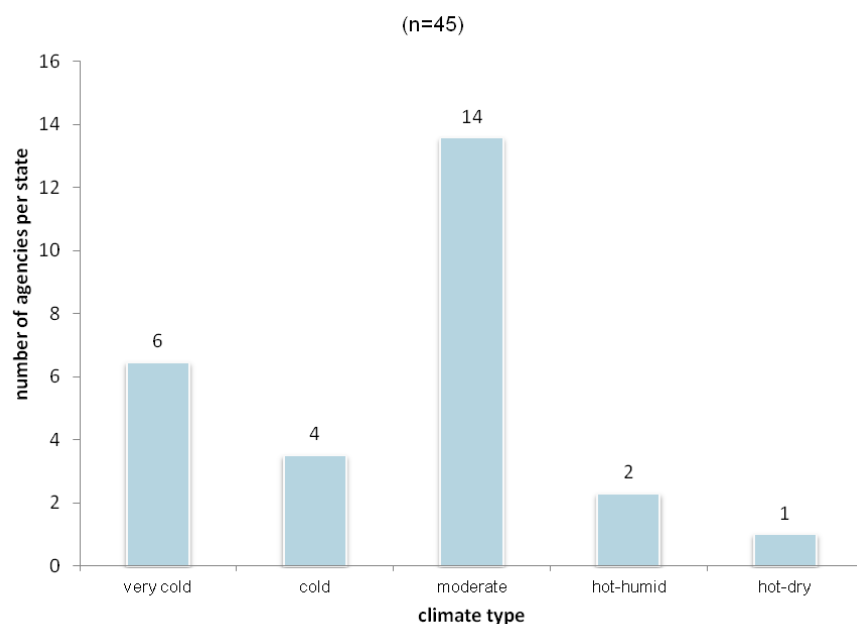
**Fig. 4.11: Frequency of grantee administrative monitoring visits to subgrantees (by program size)**

Grantees in the cold and moderate climate regions conduct administrative monitoring visits on a variety of schedules – ranging from weekly to annually – while most grantees in the other climate regions make such visits annually. In terms of program staff hours, grantees spent a similar amount of time conducting administrative monitoring activities regardless of climate region, ranging from an annual average of 12 to 22 hours per subgrantee.



**Fig. 4.12: Frequency of grantee administrative monitoring visits to subgrantees (by climate region)**

Grantee monitoring revealed a range of subgrantee administrative problems requiring corrective actions. On average, monitoring efforts found problems in seven subgrantees per state; however frequency varied among grantees with regard to climate region. Grantees in the moderate climate region found the most subgrantees with administrative problems (14), on average, followed by those in the very cold region (6). Those in the hot-dry region found the fewest subgrantees with administrative problems (1). The primary issues were incomplete forms, failure to complete weatherization work, fiscal administration, inaccurate inventory counts and inadequate staff knowledge/management.



**Fig. 4.13: Occurrences of administrative problems per grantee (by climate region)**

In response to administrative problems, most grantees undertake multiple corrective actions. The vast majority of grantees (87%) issue a written report to the subgrantee requiring that corrective action be taken by the agency. Nearly half of grantees (47%) send someone from the state office to help correct the problem. Two grantees (4%) reported that they take no action.

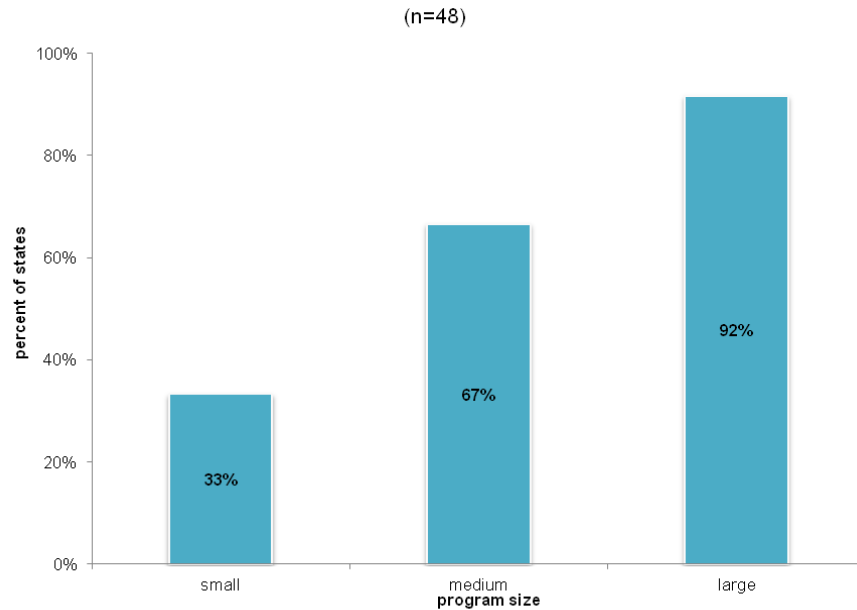
Type of corrective action	Percentage of grantees* that perform
Send written report to local agency	87%
Require local action	87%
Send state office staff to help correct problem	47%
Make presentation to local agency	28%
Send state contractor to help correct problem	13%
Other	13%
No action taken	4%

\* Includes only grantees where monitoring revealed an administrative problem that required corrective actions above and beyond acceptable findings and recommendations in PY08.

**Fig. 4 14: Corrective actions taken by grantees in response to subgrantee administrative problems**

A number of grantees implemented changes to weatherization training for subgrantee staff after observation of work quality problems. Approximately two-thirds of grantees (65%) adjusted their training programs.<sup>29</sup>

Implementation of training changes correlates with grantee weatherization program size. Training changes were most frequent among grantees with large programs (92%), followed by those with medium programs (67%) and small programs (33%). Fig. 4.15 shows the percentage of grantees, by program size.

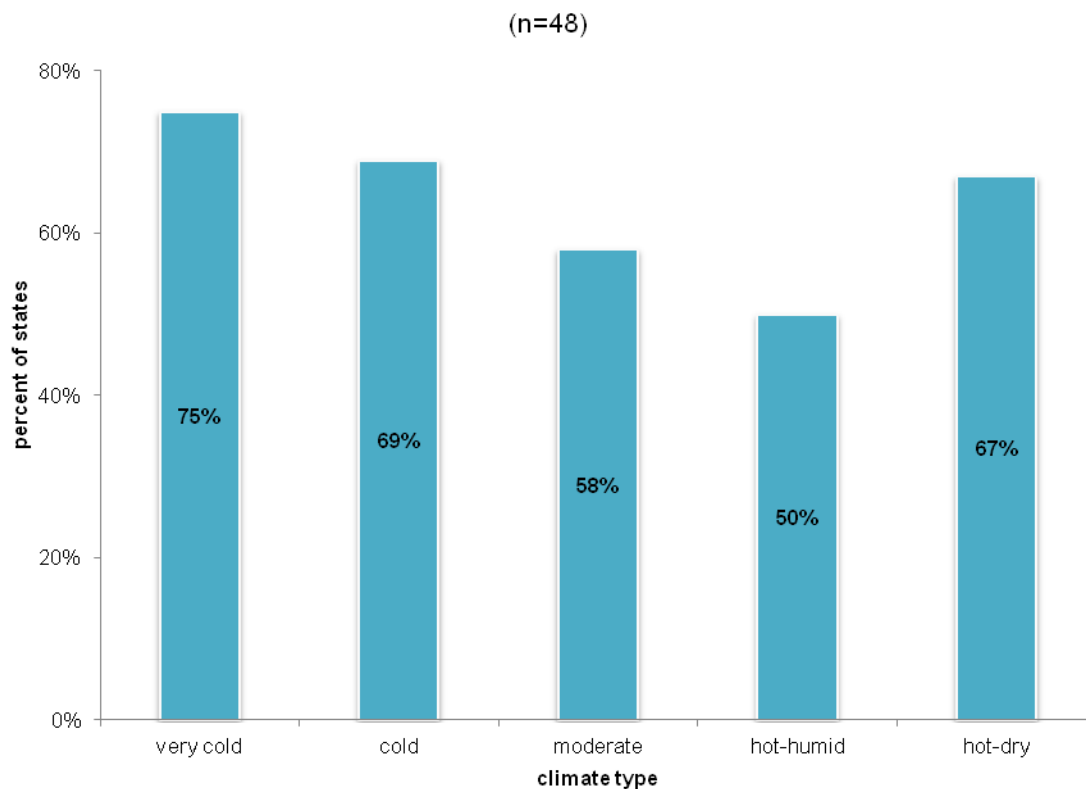


**Fig. 4.15: Portion of grantees that made training program changes in response to subgrantee administrative problems (by program size)**

There is also a pattern between implementation of training changes and climate region. Comparatively, a larger portion of grantees in cooler climates adjust their training programs in reaction to observed administrative problems among subgrantees. More than two-thirds of grantees in the very cold and cold regions – as well as the hot-dry region – implemented training changes. Among programs in hot-humid and moderate regions, however, only 50 and 58 percent, respectively, made changes (Fig. 4.16).

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<sup>29</sup> The primary changes centered on training protocol updates including policy and procedural changes both in the field and in the office.



**Fig. 4.16: Grantee training program changes in response to subgrantee administrative problems (by climate region)**

#### 4.6.2 Subgrantee inspections

In PY08, subgrantees performed a range of post-weatherization quality control and assurance inspections on weatherized dwelling units. Typically, subgrantees performed initial inspections one week after weatherization completion; however the time between completion and inspection ranged from same-day inspections to a six month time lapse.

During inspection visits, subgrantees conduct a variety of inspection procedures. The set of procedures conducted during a typical inspection visit varies by subgrantee. The most common types of inspection procedures (performed by more than four-fifths of subgrantees) are listed below:

- Visual inspection of installed measures
- Blower door test
- Verification of insulation depths/quantities
- Verification of operation of measures installed
- Carbon monoxide monitoring
- Discussion with occupants
- Assessment of quality of measures installed

Other inspection procedures conducted by a sizeable portion of subgrantees included identification of needed measures that were not installed, identification of unresolved health and safety issues, draft/spillage tests of heating systems, heating system efficiency tests (flue gas analysis), and infrared scanning.

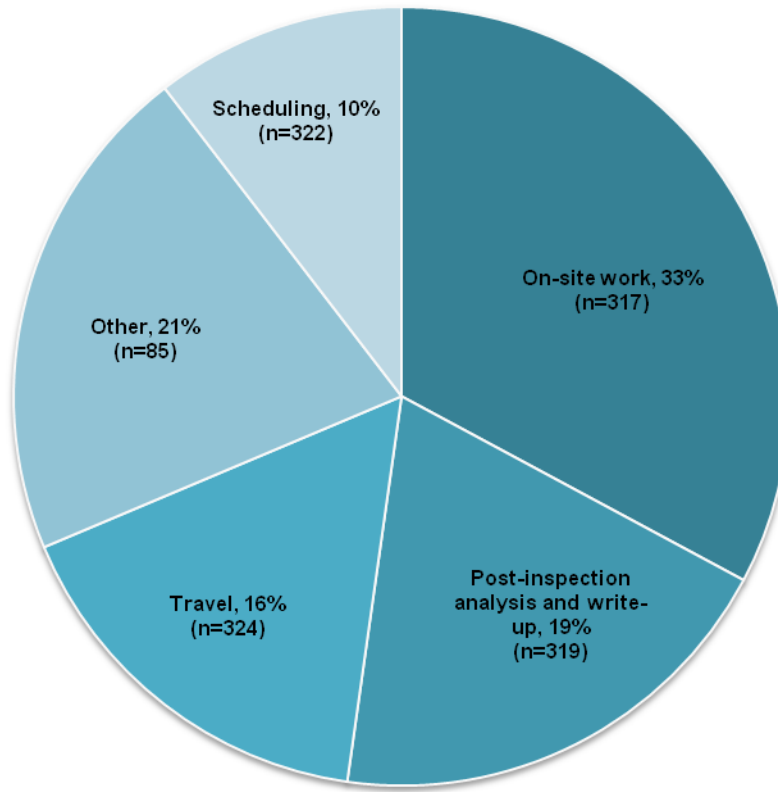
Subgrantees regard the blower door test and discussions with occupants as the most effective inspection procedures, along with certain diagnostic tests not specifically asked about in the survey (labeled “other diagnostic tests” in Table 4.11). Verification of insulation depths/quantities, visual inspection of installed measures, and verification of operation of measures installed are also relatively effective inspection procedures, yet require more modest investments in cost, training needs, and time required. Table 4.11 presents all inspection procedures included in our surveys and the subgrantee assessments of their effectiveness and investment required. (Note: The survey instrument inquired about cost, training, and time separately, but we combined the responses, giving equal weight to each factor.)

**Table 4.11: Post-weatherization inspections performed by subgrantees**

<b>Type of post-weatherization inspection</b>	<b>Percentage of subgrantees that perform</b>	<b>Percentage of subgrantees that rate effectiveness as high (4 or 5 on a 5-point scale)</b>	<b>Percentage of subgrantees that rate the investment needed as high (4 or 5 on a 5-point scale)</b>
Visual inspection of installed measures	99%	85%	24%
Blower door test	95%	89%	35%
Verification of insulation depths/quantities	92%	85%	16%
Verification of operation of measures installed	89%	80%	22%
Discussion with occupants	89%	88%	25%
Assessment of quality of measures installed	88%	79%	25%
Identification of needed measures that were not installed	73%	68%	25%
Identification of unresolved health and safety issues	68%	86%	29%
Other diagnostic tests	95%	84%	35%

During PY08, most post-weatherization inspections took between one and ten hours, averaging five hours per inspection. Roughly one-third of that time is spent on-site conducting some portion of the inspection types listed above. Another fifth is spent on post-inspection analysis and writing the report. Fig. 4.17 shows the percentage of time spent on the various inspection components.



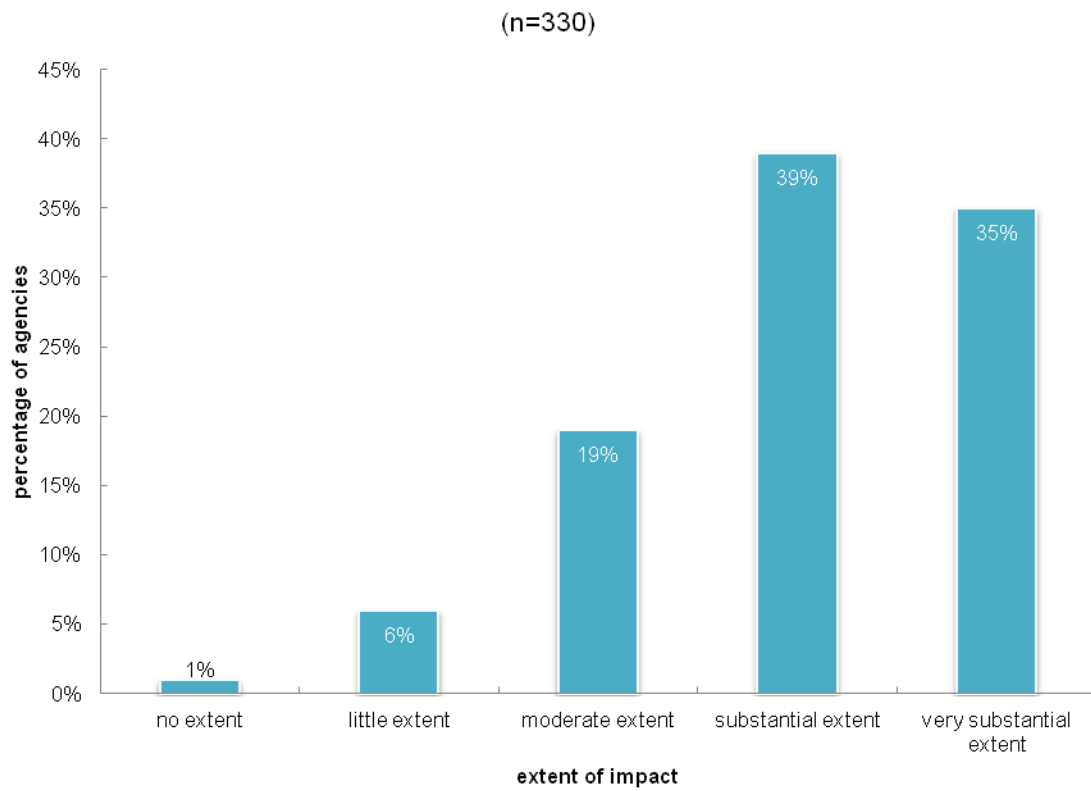


**Fig. 4.17: Post-weatherization inspection components**

In instances where post-weatherization inspections revealed a problem with the weatherization job performed, nearly all subgrantees (94%) sent the original crew or contractor back to correct the problem. Large subgrantees also occasionally sent a crew supervisor to correct the problem (6 percent of large subgrantees).

In PY08, eight out of nine subgrantees (89%) performed additional work on dwelling units as a result of post-weatherization quality control inspections. Among those agencies, half conducted work on fewer than ten units, however, a few agencies performed additional work on a large number of units. This results in an average of 21 dwelling units per subgrantee requiring additional work as the result of post-weatherization inspections.

Subgrantees reported that inspections have a significant impact on the quality of future weatherization work. Three-fourths of subgrantees report that the extent of the impact is substantial or very substantial, with 35 percent reporting that inspections have a very substantial impact on the quality of future work (Fig. 4.18). Only seven percent reported little or no impact.



**Fig. 4.18: Extent subgrantee inspections affect future weatherization work<sup>+</sup>**

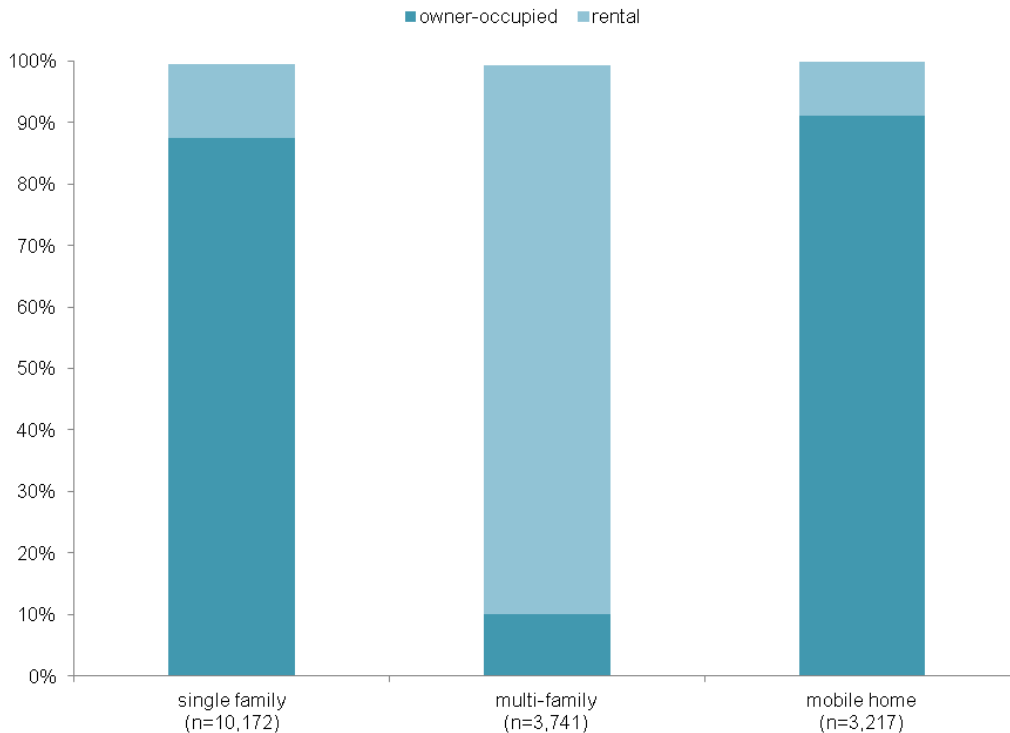
## 5. WHOM DO WEATHERIZATION AGENCIES SERVE WITH WHAT SERVICES?

The Weatherization Assistance Program serves low-income families. In PY08 DOE rules allowed households at or below 150 percent of the poverty level or 60 percent of the state median income to qualify for weatherization assistance. However, income level is only one characteristic of the eligible population. To fully characterize the clients served by WAP and the services they received, we collected demographic data, housing characteristics and home ownership data, and data on the diagnostic tests performed and measures installed.

### 5.1 CLIENTS SERVED

Weatherization programs across the country serve a wide range of low-income clients, but some particularly vulnerable groups receive priority at the federal or grantee level. Clients that receive special priority—either nationally or regionally—include households with elderly members, disabled residents, or children. Clients with high energy costs or burdens and single parents are also of heightened interest. This section reports on the share of weatherized units served who meet various demographic characteristics and household structures.

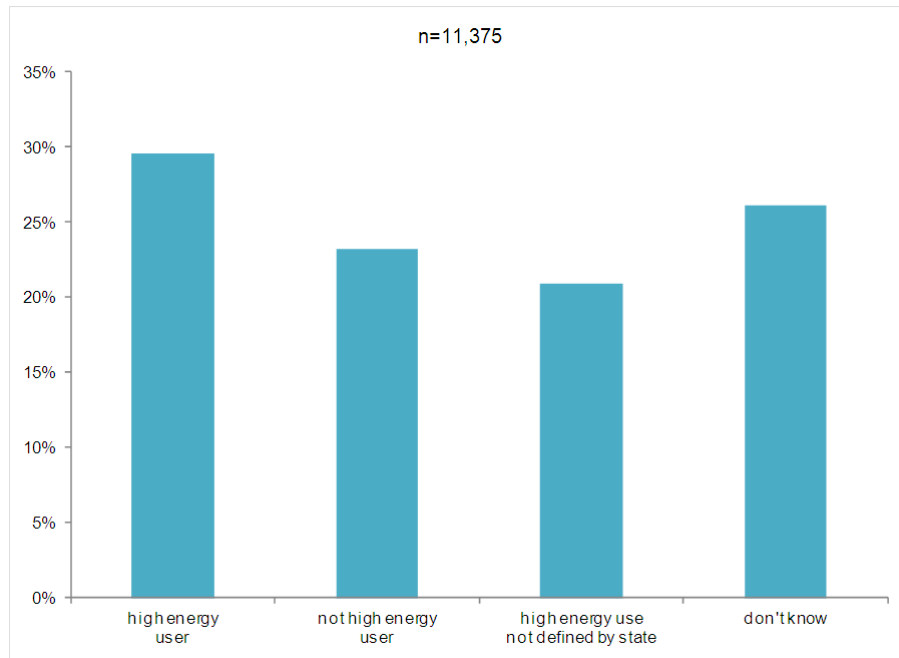
Among clients served in PY08, nearly three-fourths own the home in which they live. The remainder rent. Home-ownership, however, is largely correlated with housing type. As noted in Fig. 5.1, most clients living in single-family or mobile homes own their home (87 and 91 percent, respectively), while clients living in multifamily buildings tend to rent their homes (89 percent).



**Fig. 5.1: Ownership status by housing type<sup>++</sup>**

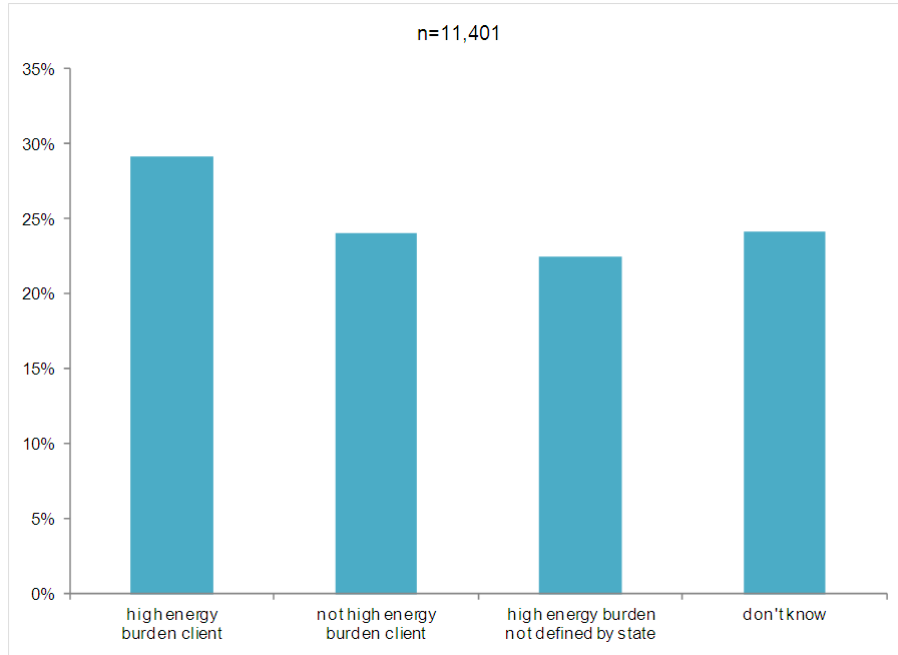
A number of grantees have defined thresholds used to characterize potential clients as “high energy users.” Among the sampled project data we analyzed, 53 percent of households could be classified as either meeting or not meeting a high energy user definition. Of these, a small majority—30 percent of all

units analyzed—met an applicable definition of high energy user, while the rest—23 percent of units analyzed—did not. The remaining clients either live in states with no defined threshold or their status is unknown. (Fig. 5.2.)



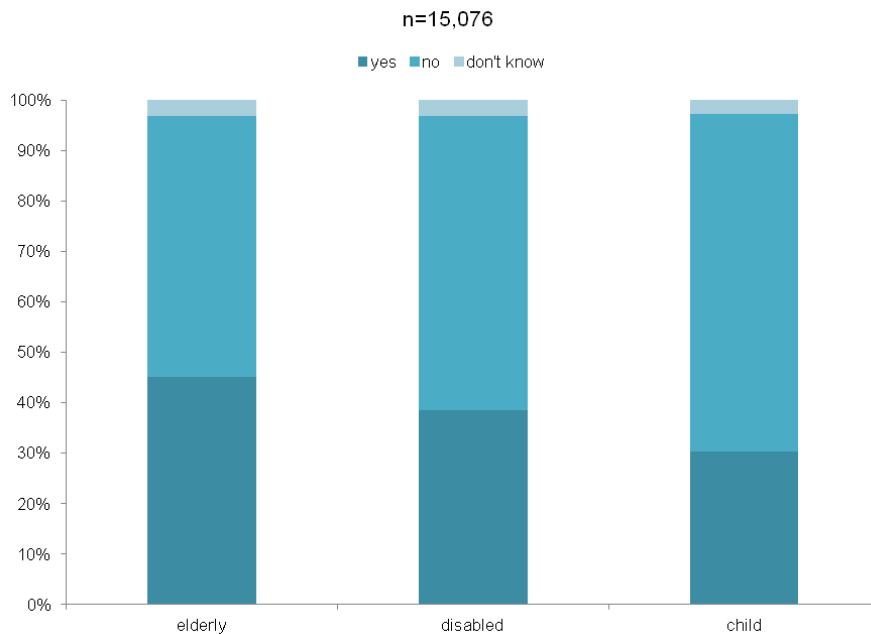
**Fig. 5.2: High energy users as share of clients served++**

Clients with a high energy burden are defined as those with the lowest income and highest energy use (accounting for household size). The breakdown of PY08 clients having a high energy burden is similar to that for high energy users. As shown in Fig. 5.3, 29 percent of those served are considered to have a high energy burden and 24 percent are not. One-fifth of clients (21 percent) live in states that do not have a defined threshold for high energy burden and 26 percent have an unknown energy burden status.



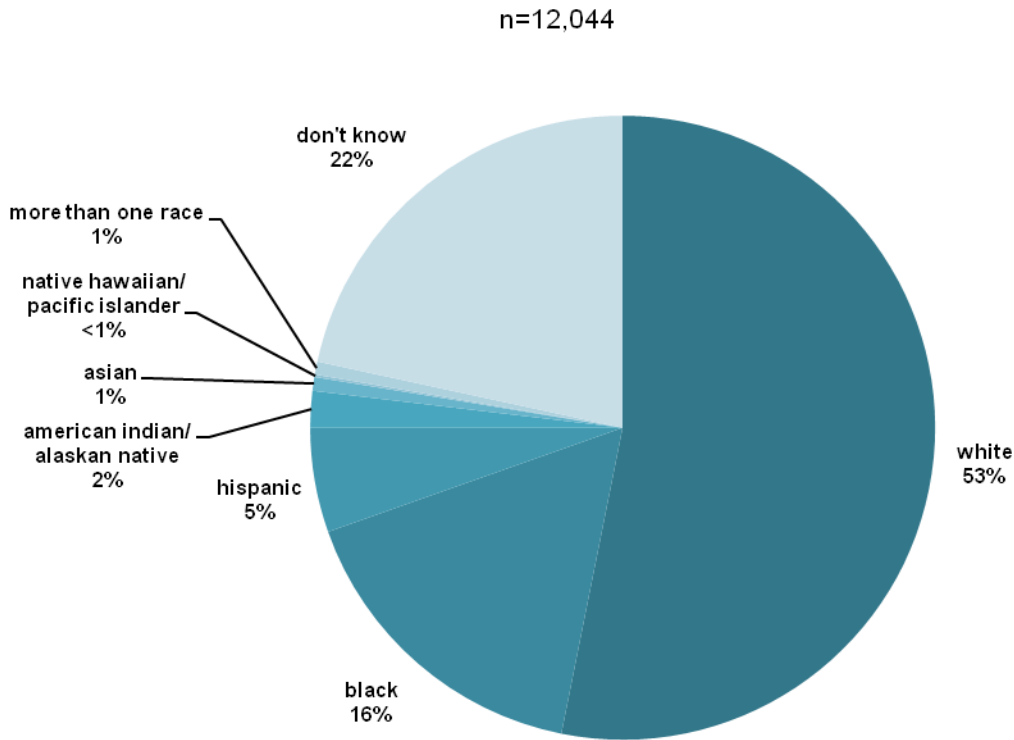
**Fig. 5.3: Users with a high energy burden, as share of clients served<sup>++</sup>**

As noted above, homes with elderly members, disabled residents, or children receive some priority status. Among homes that received weatherization services in PY08, a sizable portion have residents that are elderly (45 percent), have a qualifying disability (38 percent) or have children living at home (30 percent). (Fig. 5.4.)



**Fig. 5.4: Share of units with presence of priority client types<sup>++</sup>**

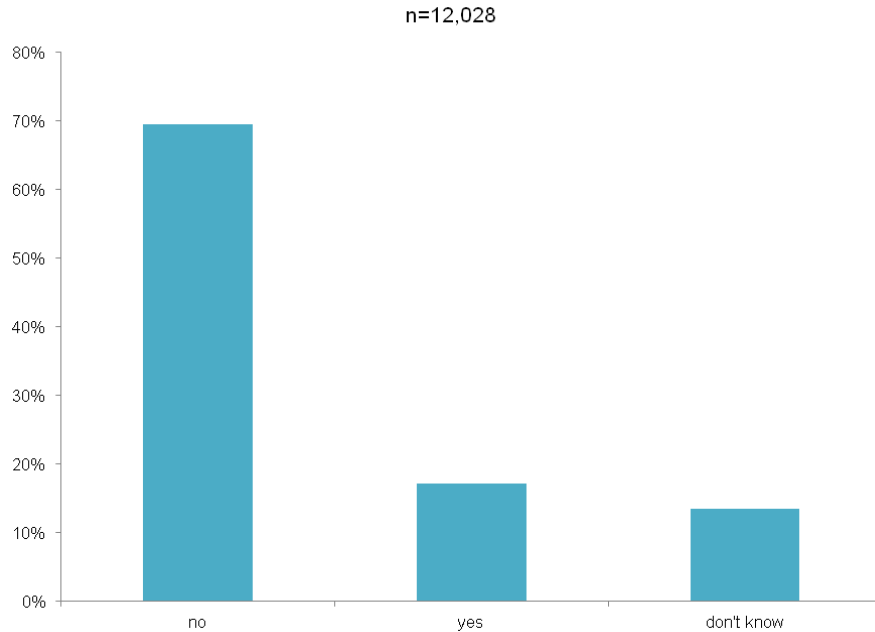
Although race is generally not a priority criterion<sup>30</sup>, racial identity is captured by weatherization programs as part of demographic information gathering. Roughly half of clients who had their homes weatherized in PY08 are white. Sixteen percent are black, five percent are Hispanic and less than four percent are American Indian/Alaskan Native, Asian or Native Hawaiian/Pacific Islander. One percent identifies as more than one race. Data is not available for nearly one-quarter (22 percent) of PY08 clients. (See Fig. 5.5.)



**Fig. 5.5: Race of clients<sup>++</sup>**

Whether or not a client is a single-parent household is also captured by most weatherization programs. As shown in Fig. 5.6, about one-sixth of PY08 clients are single-parent households, which comprises about half of clients with children. Sixty-nine percent are not headed by a single parent, and data were not available for the remainder of clients.

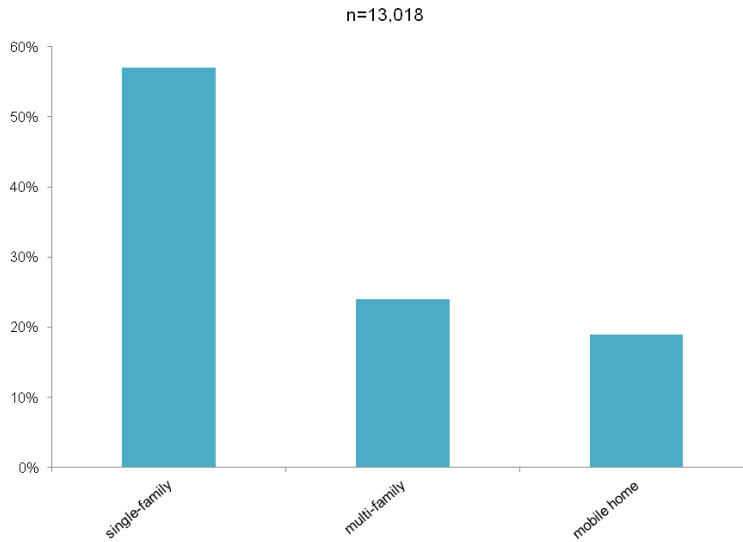
<sup>30</sup> The allocation of priority status to Native Americans is an exception.



**Fig. 5.6: Single-parent status of clients<sup>++</sup>**

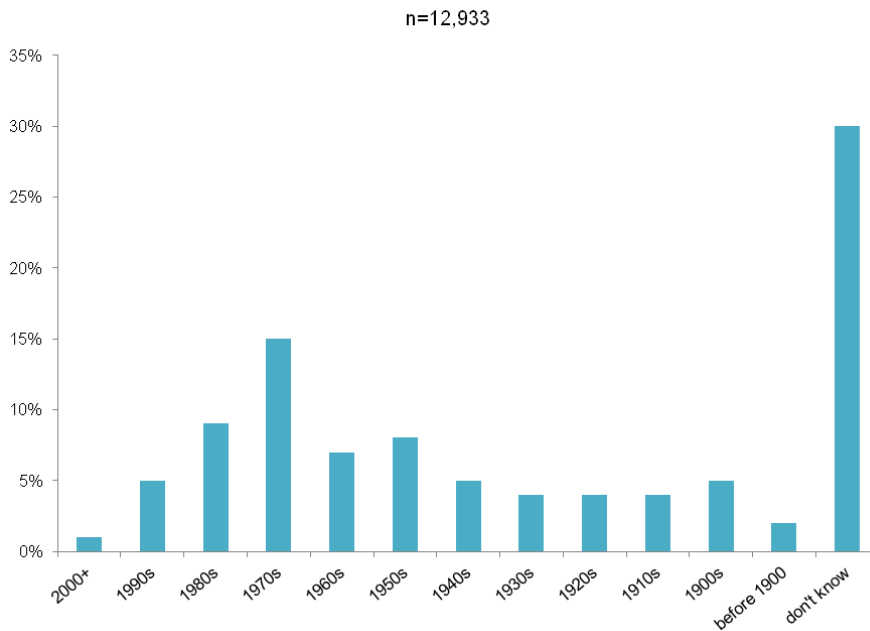
## 5.2 HOUSING STOCK

The characteristics of pre-weatherized homes are important in understanding the types of homes typically weatherized by grantee and subgrantee assistance programs. Site-built single-family homes constitute over half (58 percent) of the PY08 weatherized housing stock (see Fig. 5.7). Housing units in multifamily buildings account for another quarter (24 percent) and mobile homes account for 18 percent. Among multifamily buildings, one-third of weatherized units are located in small buildings (2-4 units) and two-thirds are in large buildings (5 or more units).



**Fig. 5.7: Housing type<sup>++</sup>**

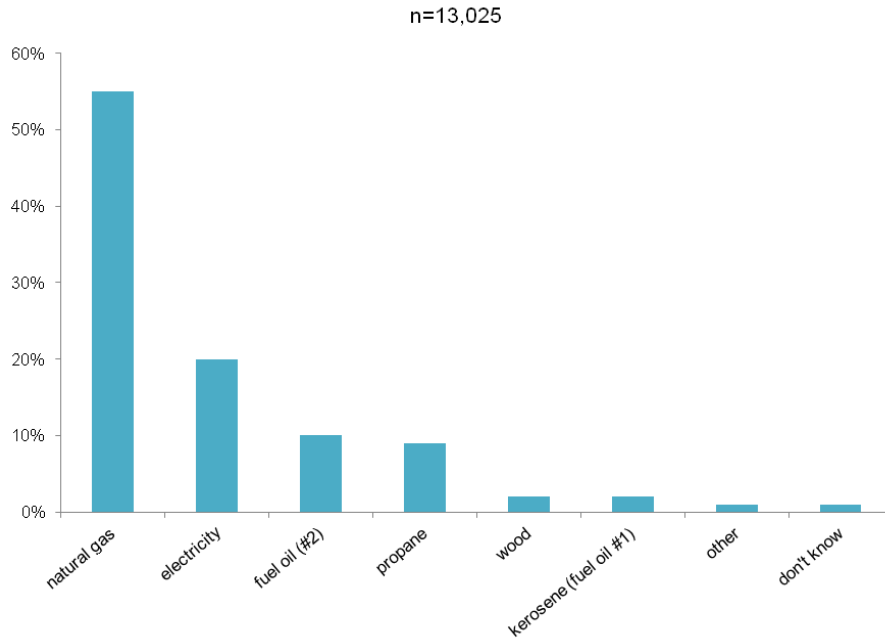
Homes weatherized in PY08 span a millennium in terms of the year built. Most commonly, however, weatherized homes were built between 1950 and 1989. Homes built in the 1970s represent 15 percent of all PY08 weatherized homes, followed by the 1980s (9 percent), the 1950s (8 percent) and the 1960s (7 percent).



**Fig. 5.8: Year built<sup>++</sup>**

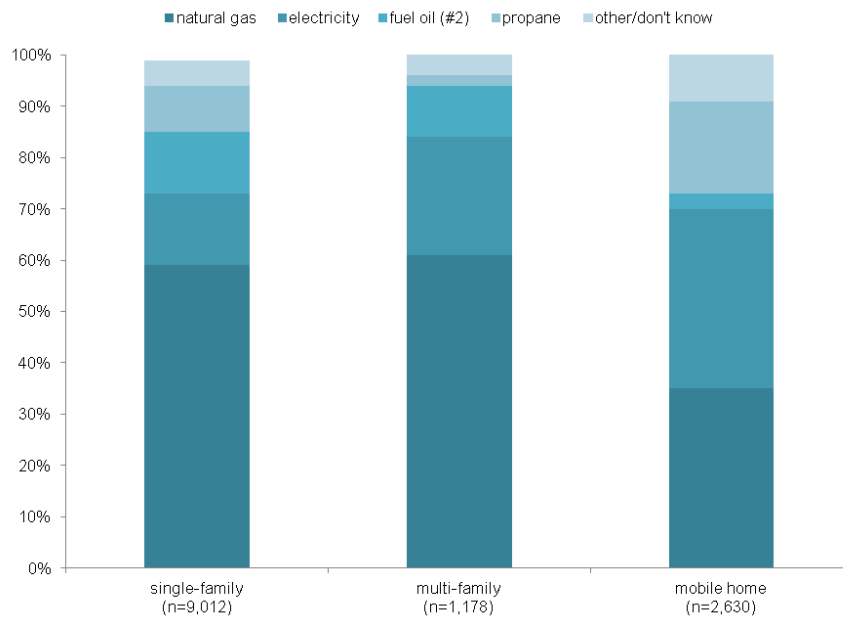
The majority of PY08 weatherized homes were primarily heated with natural gas (55 percent), electricity (20 percent), fuel oil #2 (10 percent) or propane (9 percent)—prior to any weatherization measures installed.





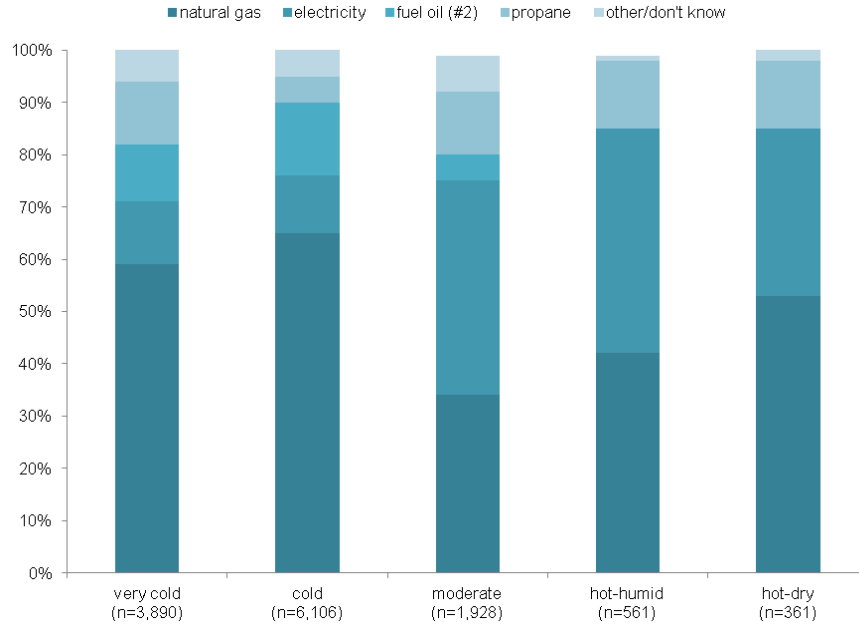
**Fig. 5.9: Primary heating fuel type<sup>++</sup>**

Mobile homes, while still commonly heated with natural gas (35 percent), were more frequently heated with electricity (35 percent), propane (18 percent) and kerosene (7 percent) compared to single-family and multifamily units.



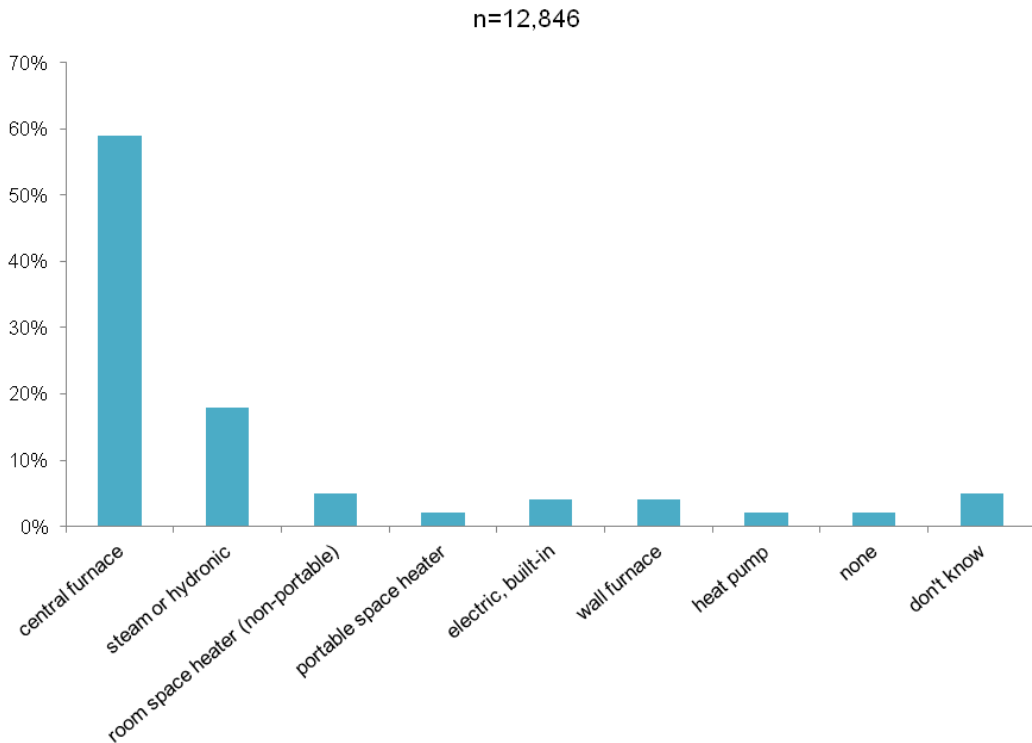
**Fig. 5.10: Primary heating fuel type by housing type<sup>++</sup>**

Differences among climate regions are notable. The pre-weatherization housing stock in cold and very cold climate regions tends to be more reliant on fuel oil #2 as a primary heating fuel compared to the housing stock in warmer regions. Conversely, units in warmer regions more frequently use electricity as a primary heating fuel.



**Fig. 5.11: Primary heating fuel type by climate region<sup>++</sup>**

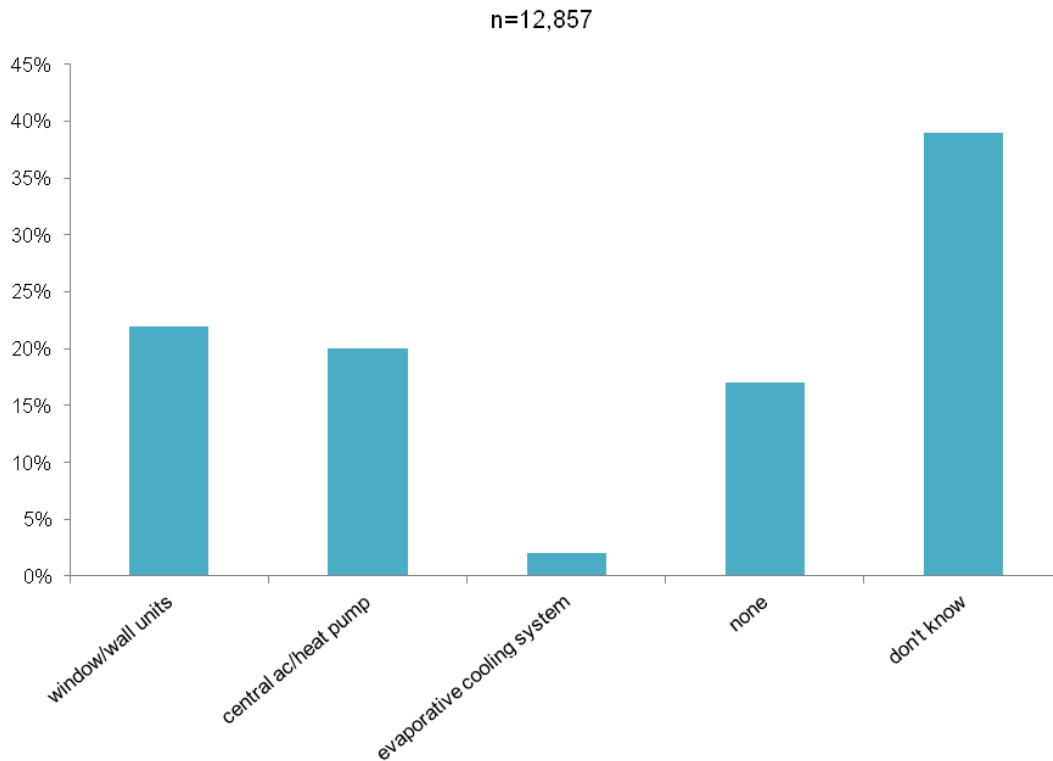
In addition to fuel type, heating systems vary among homes weatherized in PY08. The most common primary heating types among pre-weatherized homes is a central furnace system (59 percent), or steam or hydronic system (18 percent).



**Fig. 5.12: Primary heating system<sup>++</sup>**

Central furnace systems are most typical of single-family and mobile homes (63 and 82 percent, respectively), while steam or hydronic systems are more typical of units in multifamily buildings (47 percent). More specifically, steam or hydronic systems are often the primary heat source among multifamily units that have a shared heating system (91 percent of shared heating systems).

The type of air conditioning system is another important characteristic of the PY08 weatherized housing stock. Roughly half of homes had at least one type of air conditioning system. Twenty-two percent had window/wall units, 20 percent had a central system and 2 percent had an evaporative cooling system. Nearly one-fifth (17 percent) of homes had no air conditioning system.



**Fig. 5.13: Air conditioning system<sup>++</sup>**

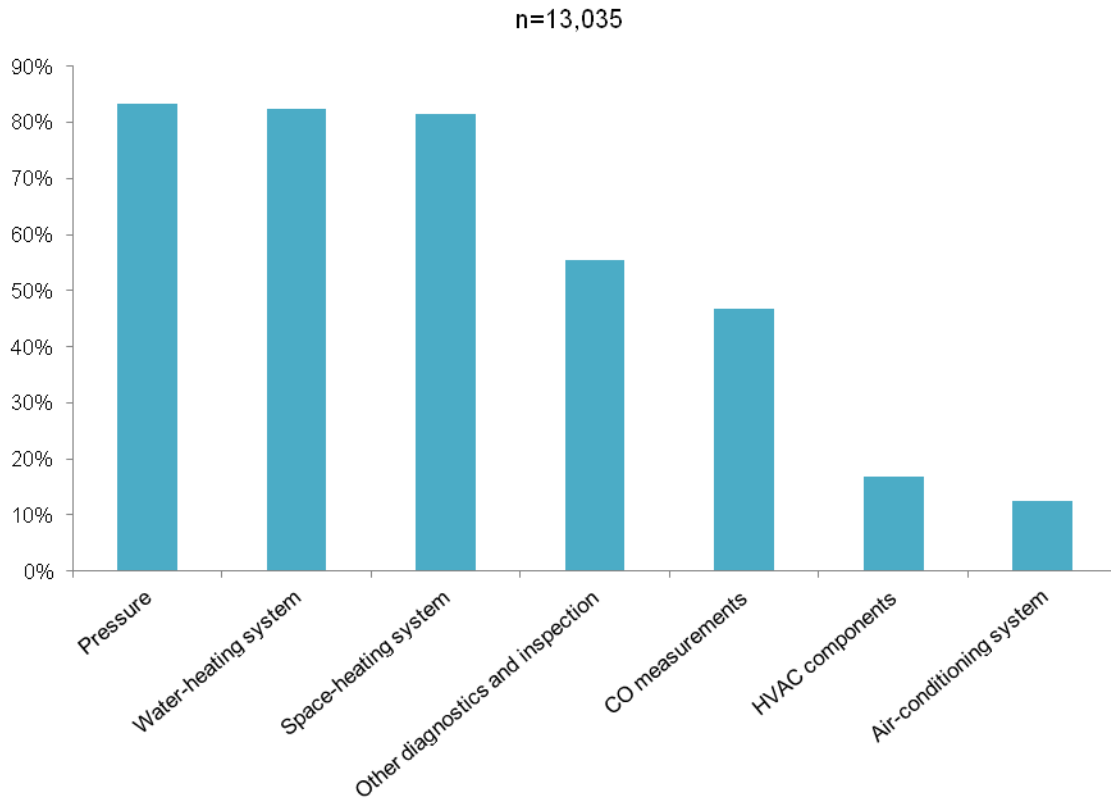
### 5.3 DIAGNOSTICS PERFORMED

Diagnostic and inspection procedures are performed on potential weatherization clients' homes to determine the status of the housing unit and the capacity for energy savings. Most homes weatherized during PY08 received at least one pressure diagnostic (83 percent), such as a blower door test, zonal pressure analysis or duct pressure measurements, among others. Similarly, most homes received diagnostic measurements or inspection pertaining to the water-heating system and/or space-heating system (82 percent, each). Table 5.1 summarizes the implementation rates, and Fig. 5.14 shows them visually.<sup>31</sup>

**Table 5.1: Percent of weatherized units receiving at least one inspection from diagnostic category<sup>++</sup>**

Diagnostic category	Percent of units
Pressure	83%
Water-heating system	82%
Space-heating system	82%
Other diagnostics	56%
CO measurements	47%
HVAC components	17%
Air conditioning system	13%

<sup>31</sup> These implementation rates are for individual units and may differ from implementation rates reported by subgrantees at the agency-level.



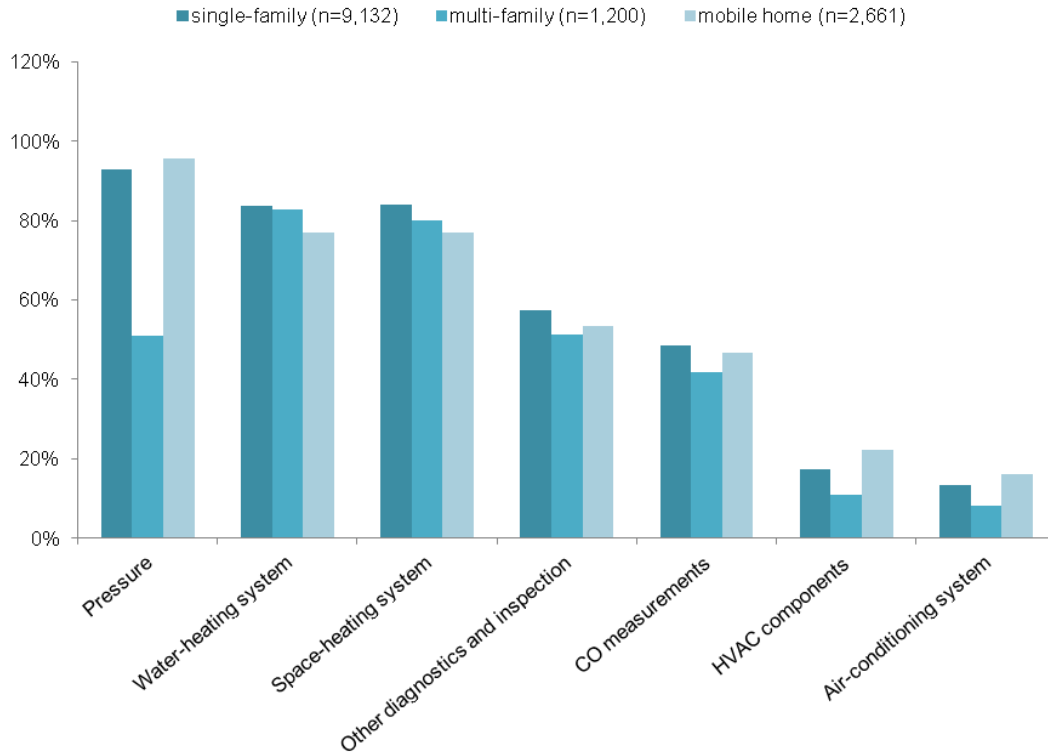
**Fig. 5.14: Percent of weatherized units receiving at least one inspection from diagnostic category<sup>++</sup>**

### 5.3.1 Diagnostics by housing type

Generally speaking, fewer diagnostic measurements were performed on housing units in multifamily buildings, compared to single-family and mobile homes, although in most cases the differences across building types were slight. Pressure tests were the exception. The likelihood of a multifamily unit receiving a pressure test (51 percent) was roughly half that for the other housing types (over 90 percent).

**Table 5.2: Percent of weatherized units receiving at least one inspection from diagnostic category<sup>++</sup>**

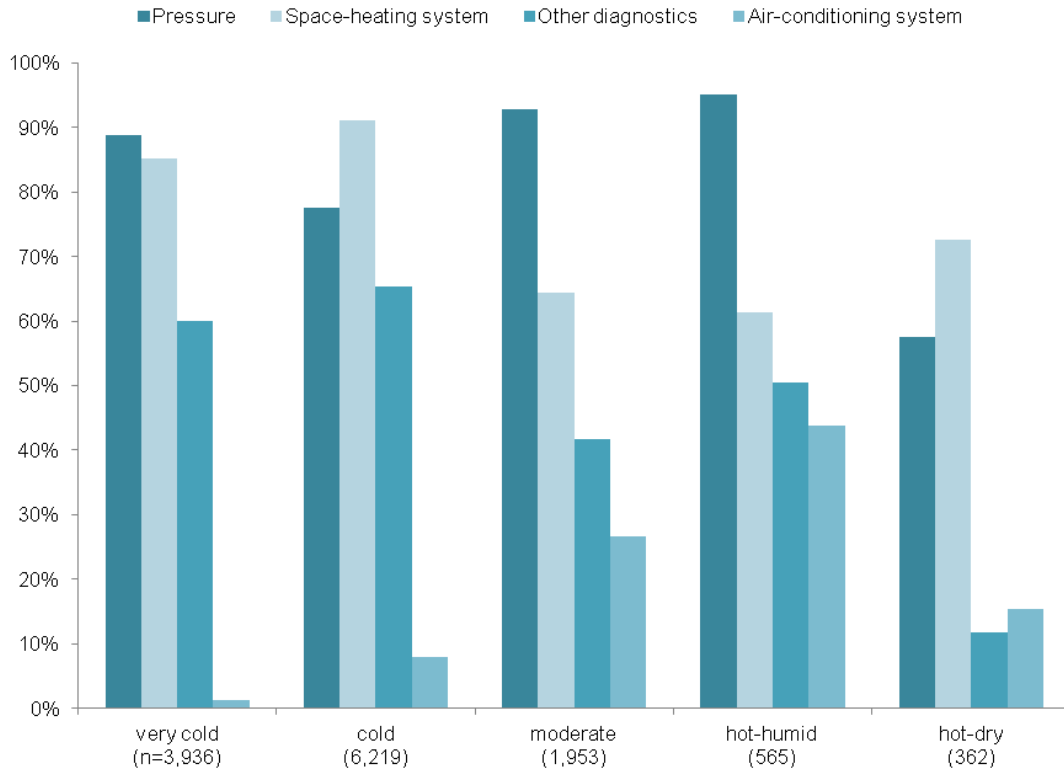
Diagnostic category	% single-family units (n=9,132)	% multifamily units (n=1,200)	% mobile home units (n=2,661)
Pressure	92%	51%	95%
Water-heating system	84%	83%	77%
Space-heating system	84%	80%	77%
Other diagnostics	57%	51%	53%
CO measurements	49%	47%	47%
HVAC components	18%	11%	22%
Air conditioning system	13%	8%	16%



**Fig. 5.15: Percent of weatherized units receiving at least one inspection from diagnostic category, by housing type<sup>++</sup>**

### 5.3.2 Diagnostics by climate zone

Variation among climate regions is apparent for a handful of diagnostic categories. PY08 weatherized units in hot-dry regions received fewer pressure analyses (58 percent) and fewer ‘other’ diagnostics (12 percent) than other regions. Measurements included in other diagnostics are refrigerator use, exhaust fan air flow, infrared scanning and radon testing. Interestingly, however, units in hot-dry regions received more space-heating measurements than those in moderate or hot-humid regions. Finally, air conditioning system inspections also proved variable by climate region. Forty-four percent of units in hot-humid regions received diagnostic measures on their air-conditioning systems, 27 percent of units in moderate climates and fewer than 15 percent in each of the other three climate regions.



**Fig. 5.16:Percent of weatherized units receiving at least one inspection from diagnostic category<sup>++</sup>**

## 5.4 MEASURES AND SERVICES

Weatherization programs provide three general types of measures and services to clients: home improvements to save energy, home improvements to address health and safety risks, and client education.

### 5.4.1 Energy-saving measures

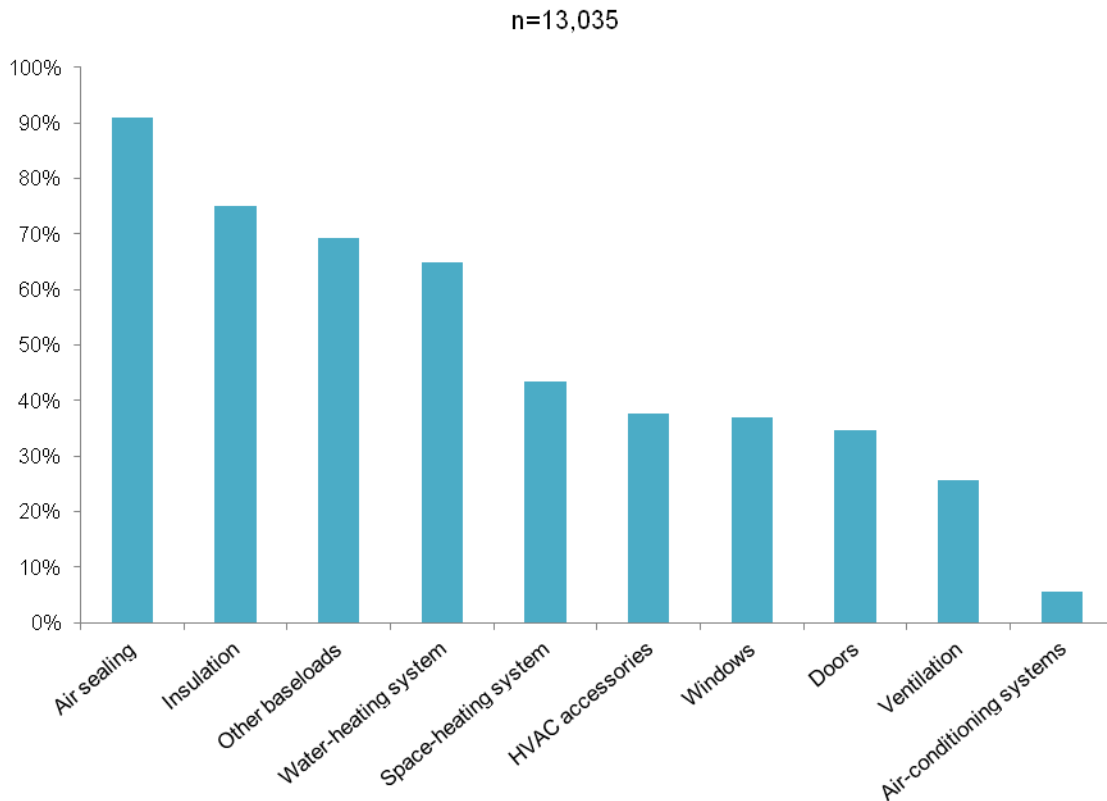
The primary service is the installation of measures that save energy, which account for 63 percent of all measures in the 97,965 units weatherized in PY08 for which we collected measure information and 87 percent of funds spent on units and buildings. To qualify as an energy-saving measure under DOE program rules, a measure must be deemed to be cost-effective, which means it needs to have a savings-to-investment ratio of one or higher.

On average, energy-saving measures make up the largest portion (67 percent) of total measure installations among homes in multifamily buildings. Energy-saving measures constitute 63 percent of all installations among single-family homes and 61 percent among mobile homes.

Weatherization programs across the country tend to install some common measures fairly universally. Nearly all PY08 weatherized homes (91 percent) received some form of air sealing. The next most common types of improvements were insulation (75 percent) and ‘other baseload applications’ (69 percent). Other baseloads refer to energy-consuming appliances and fixtures that are not part of the heating, ventilation and air conditioning (HVAC) systems.

**Table 5.3: Percent of weatherized units receiving work in various measure categories<sup>++</sup>**

Measure category	Percent of units
Air sealing	91%
Insulation	75%
Other baseloads	69%
Water-heating system	65%
Space-heating system	44%
HVAC accessories	38%
Windows	37%
Doors	35%
Ventilation	26%
Air-conditioning systems	6%



**Fig. 5.17:Percent of weatherized units receiving work in various measure categories<sup>++</sup>**

In single-family homes, the most commonly installed energy-saving measures are similar to those for all housing types, with air sealing (94 percent), insulation (82 percent) and non-HVAC baseload measures (65 percent) leading other measure categories.



For units in multifamily buildings, air sealing measures are slightly less universal; however, these types of measures and non-HVAC baseloads are the most commonly installed measures (81 percent each). Improvements to water-heating systems (73 percent), insulation (66 percent) and space-heating systems (52 percent) are also commonly installed measure types among weatherized units in multifamily buildings.

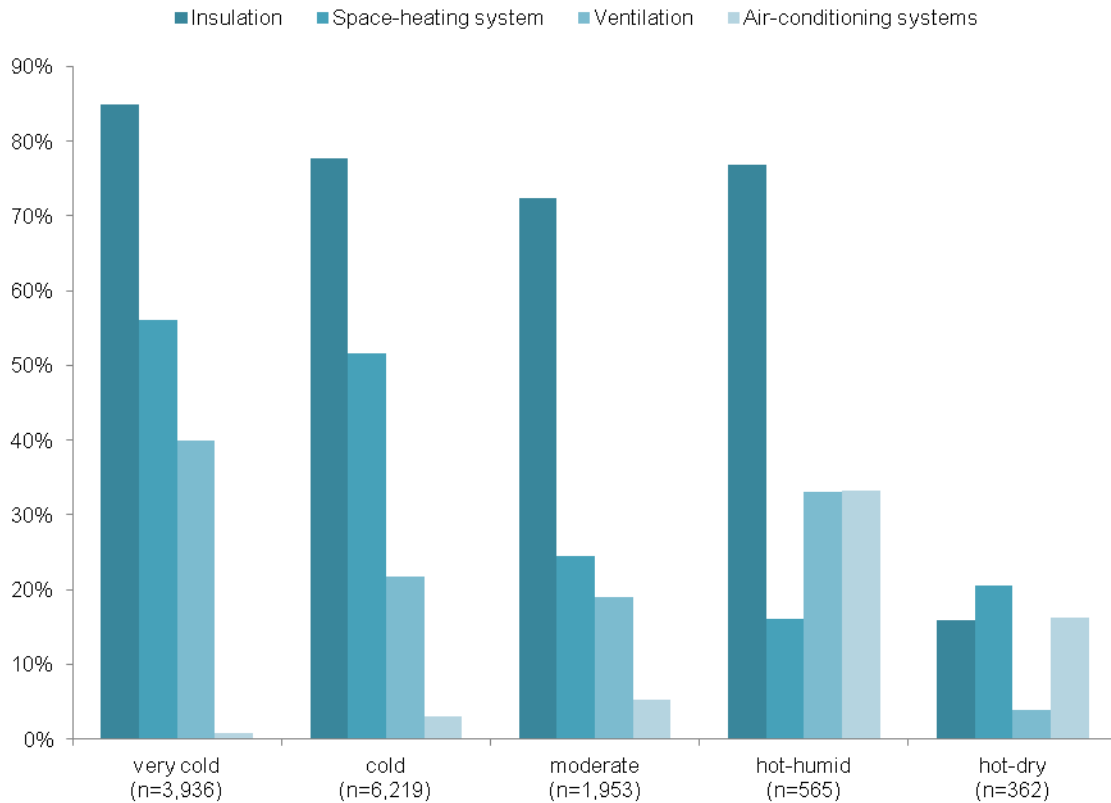
Instances of measure types installed in mobile homes differs most notably from single- and multifamily homes in terms of HVAC accessories (52 percent) and window and door improvements (46 percent each).

**Table 5.4: Percent of weatherized units receiving at least one measure from broader category, by housing type<sup>++</sup>**

Measure category	% single-family units (n=9,132)	% multifamily units (n=1,200)	% mobile home units (n=2,661)
Air sealing	94%	81%	94%
Insulation	82%	66%	64%
Other baseloads	65%	81%	68%
Water-heating system	63%	73%	61%
Space-heating system	41%	52%	41%
HVAC accessories	38%	26%	52%
Windows	37%	19%	46%
Doors	36%	33%	46%
Ventilation	24%	33%	24%
Air-conditioning systems	6%	4%	8%

Regional differences are primarily seen in four measure categories: insulation, space-heating systems, air-conditioning systems and ventilation. In Fig. 5.18, incidence rates for these measure categories are broken out by climate region. Rates of insulation measures are much lower in hot-dry regions compared to all other regions.<sup>32</sup> As expected space-heating system measures are more commonly installed in very cold, cold and moderate regions while air-conditioning system measures are more common in hot regions. Ventilation measures have noticeably low incidence rates in hot-dry regions, compared to all other regions.

<sup>32</sup> Instances of insulation measures within the hot-dry states tend to be greatest among subgrantees that serve colder portions of the states classified as “hot-dry,” suggesting that insulation measures are driven mostly by heating need.



**Fig. 5.18: Percent of weatherized units receiving at least one measure from broader category, by climate region<sup>++</sup>**

### 5.4.2 Heating systems

Heating system replacements are a significant measure for most weatherization programs where they occur due to the impact and cost involved. During PY08, 16 percent of weatherized homes received a new space-heating system as an energy-saving measure and 11 percent received a new system for health and safety reasons. Eighty-five percent of cost-effective heating system replacements and 75 percent of health and safety-motivated replacements were in the cold and very cold regions.

Changes in heating fuel type and heating system type, before and after weatherization, are shown in the tables below. Table 5.5 shows instances of heating fuel switching among the roughly 2,800 homes that received a new heating system, either as a cost-effective energy conservation measure or for health and safety reasons. Homes switched from the fuel type listed in the left-hand column to the fuel type listed across the first row. As shown, the vast majority of new heating systems use the same fuel as their predecessors (see the shaded cells in the table), but there is a slight net movement toward natural gas systems.

**Table 5.5: Percentage of housing units that switched from old fuel type to new fuel type<sup>++</sup>**

<i>Old fuel type</i>	<i>New fuel type</i>					
	Natural gas	Propane	Kerosene (fuel oil #1)	Fuel oil (#2)	Electricity	Wood
Natural gas	67%	<1%	-	0%	<1%	-
Propane	1%	8%	-	<1%	<1%	-
Kerosene (fuel oil #1)	-	<1%	2%	<1%	<1%	-
Fuel oil (#2)	1%	<1%	<1%	6%	<1%	-
Electricity	3%	<1%	-	-	9%	-
Wood	-	<1%	-	-	-	1%
Coal	-	-	-	-	<1%	-
Other	<1%	-	-	-	-	-
Don't know	<1%	-	-	-	-	-
<b>All system replacements</b>	<b>72%</b>	<b>8%</b>	<b>2%</b>	<b>7%</b>	<b>10%</b>	<b>1%</b>

(Note: 'not applicable' and 'don't know' responses for new fuel type not shown in table.)

Table 5.6 shows instances of those same 2,800 homes that switched from one heating system type to another. Again, most new heating systems are of the same type as their predecessors (shaded cells), but there is a slight net movement toward furnaces.

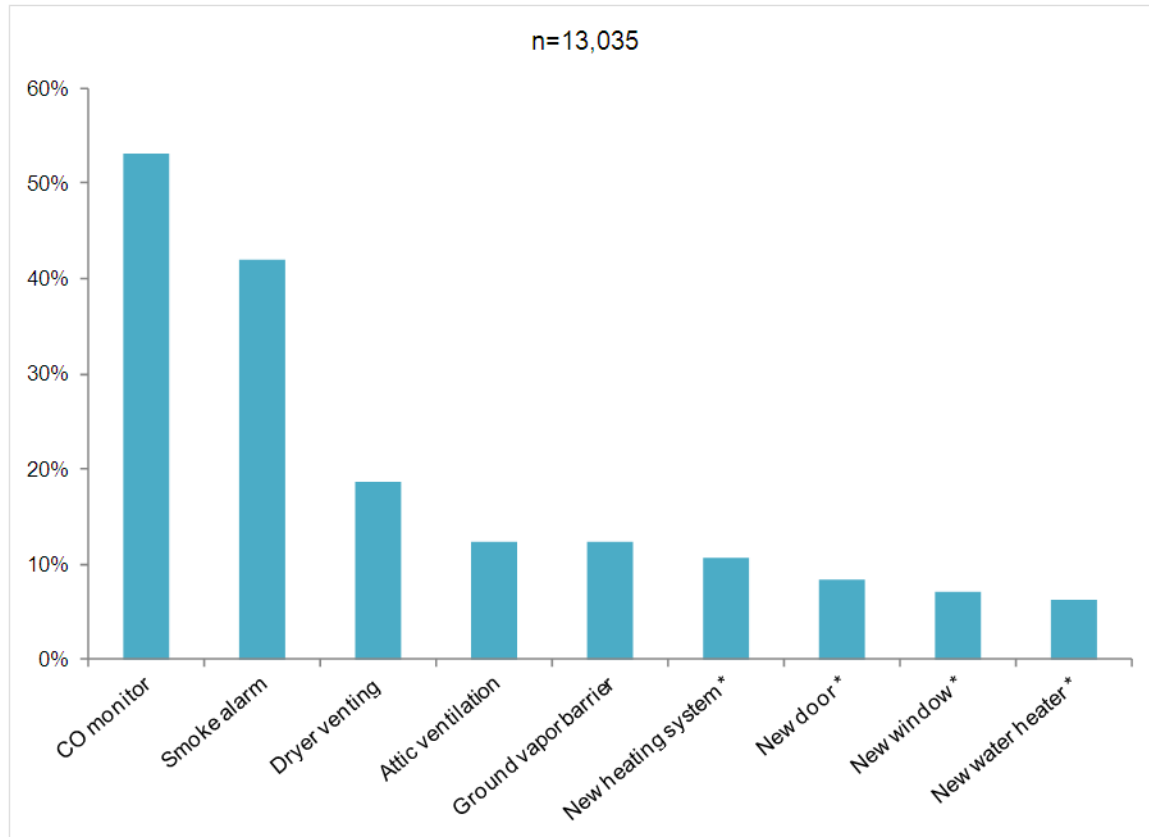
**Table 5.6: Percentage of housing units that switched from old heating system to new heating system<sup>++</sup>**

<i>Old heating system</i>	<i>New heating system</i>						
	Central furnace	Heat pump	Electric	Steam or hydronic	Wall furnace	Room space heater	Portable space heater
Central furnace	57%	1%	-	<1%	1%	<1%	<1%
Heat pump	<1%	1%	-	-	-	-	-
Electric	<1%	-	<1%	1%	-	-	-
Steam or hydronic	<1%	-	-	22%	-	-	-
Wall furnace	1%	-	-	-	3%	<1%	-
Room space heater	1%	-	-	-	1%	4%	<1%
Portable space heater	1%	-	<1%	-	<1%	<1%	<1%
Cooking stove	<1%	-	-	-	-	-	-
None	<1%	-	-	-	-	-	<1%
Don't know	2%	-	-	<1%	<1%	<1%	-
<b>All system replacements</b>	<b>62%</b>	<b>2%</b>	<b>0%</b>	<b>24%</b>	<b>5%</b>	<b>5%</b>	<b>1%</b>

(Note: 'other', 'not applicable' and 'don't know' responses for new heat system not shown in table.)

### 5.4.3 Health and safety measures

Health and safety measures are installed to help ensure the wellbeing of residents. Some of these measures help residents lower their energy consumptions, but they differ from energy-saving measures because the costs are justified for health and safety reasons, not energy savings. Fig. 5.19 shows the 10 most common health and safety measures installed during PY08. Carbon monoxide (CO) monitors were installed in 53 percent of all weatherized homes and smoke alarms in 42 percent. Four of the 10 top health and safety measures are also common energy-saving measures that are sometimes installed for efficiency reasons: new heating system, new door, new window and new water heater.



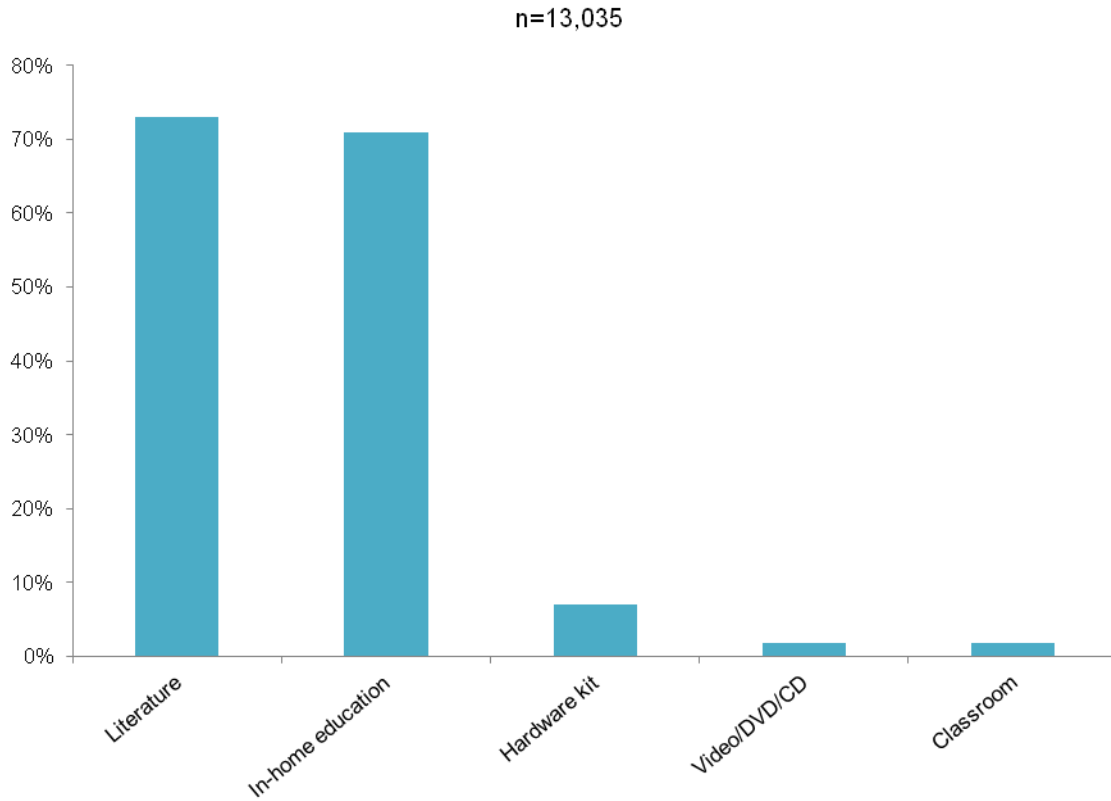
\* These measure types could be installed for either energy conservation or for health and safety reasons. Instances reported in this figure were installed for health safety reasons only.

**Fig. 5.19: Percent of weatherized units receiving 10 most common health and safety measures<sup>++</sup>**

### 5.4.4 Client education services

In addition to physical measures weatherization programs offer clients educational material and training designed to create energy savings or improve home safety through behavioral or usage changes. (The description of client services presented here are taken from a review of project information and may differ from the characterization subgrantees presented – see above.) Overwhelmingly, literature and in-home education were the most common education services offered in PY08. Hardware kits, video/DVD/CDs and classroom education were all less common, ranging from 2 to 7 percent of all homes.

Data on in-home education instances is broken down by duration: 8 percent of homes received a visit lasting 30 minutes or longer, 17 percent received a 15 to 29 minute visit and 9 percent received a visit lasting no longer than 15 minutes. Additionally, 48 percent of homes received an in-home education service of an undetermined length of time.



**Fig. 5.20: Percent of weatherized units receiving client education measures<sup>++</sup>**

## 5.5 COST PER UNIT

Subgrantees reported total project costs to us for 12,113 PY08 weatherization jobs<sup>33</sup>. The project costs varied by housing type and we measured the differences in the costs, broken out by DOE based funding as well as material, labor and overhead costs. The breakdown of in-house crew versus contractors was also determined.

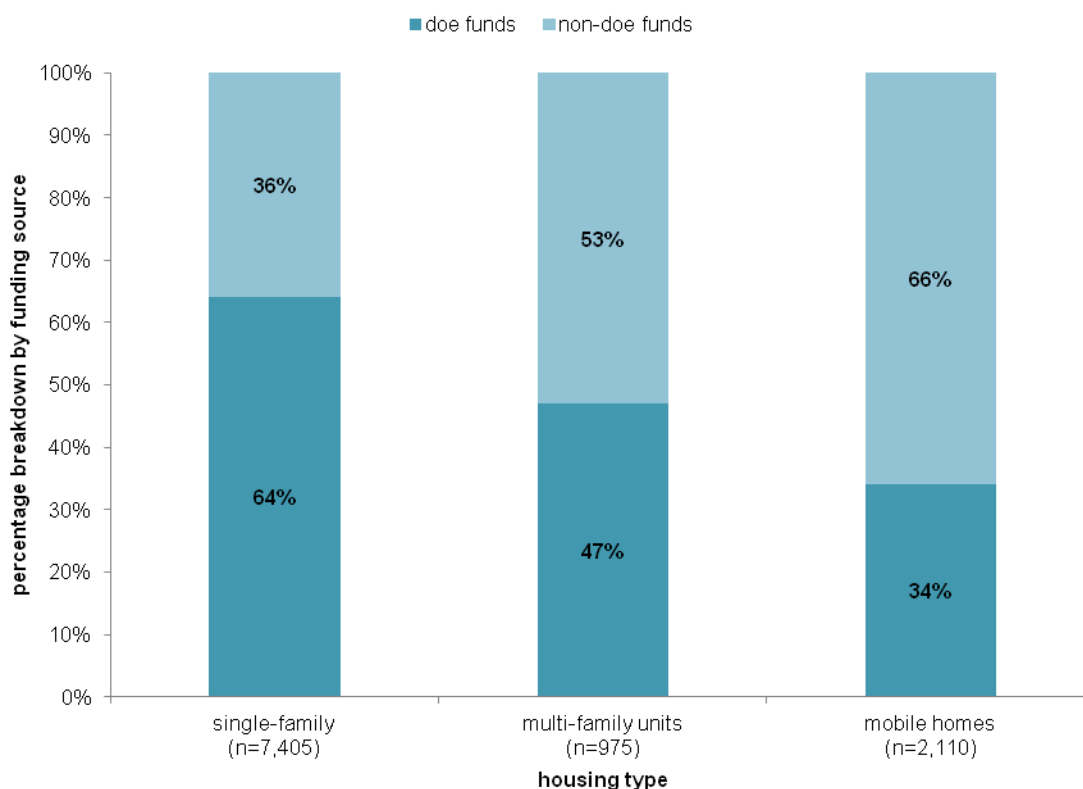
Project costs differed by building type, as shown in Table 5.7, but costs per unit averaged around \$3,500 regardless of building type. Project costs for individual weatherization jobs also varied widely, as shown by the percentile distribution in the table. (Note: multifamily refers to the entire multifamily building, where multifamily unit refers to the housing unit in which the weatherization project occurred.)

<sup>33</sup> Excludes jobs for which cost information was inconsistent across multiple questions and projects for which costs shown were \$0 or that were extremely high. Two records with overall project costs shown of \$1 million or more were excluded from the data as either outliers or erroneous data.

**Table 5.7: Project costs by building type (all funding sources)<sup>++</sup>**

<i>building type</i>	<i>average (mean)</i>	<i>25th percentile</i>	<i>50th percentile</i>	<i>75th percentile</i>	<i>range</i>
overall (building) (n=12,066)	\$4,350	\$870	\$3,400	\$4,760	\$6 - \$959,110
single family (n=8,514)	\$3,490	\$1,500	\$2,760	\$4,450	\$6 - \$45,030
mobile homes (n=2,477)	\$3,350	\$1,410	\$2,770	\$4,490	\$16 - \$17,270
multifamily (building) (n=1,052)	\$15,690	\$1,670	\$3,920	\$10,000	\$22 - \$959,110
multifamily <u>unit</u> (n=1,097)	\$3,200	\$730	\$2,080	\$4,890	\$5 - \$44,210

The majority of projects involving single-family homes were funded using DOE allocations, as shown in Fig. 5.21, whereas costs for multifamily units and mobile homes used greater shares of non-DOE funding.



**Fig. 5.21: Distribution of costs by funding source and building type<sup>++</sup>**

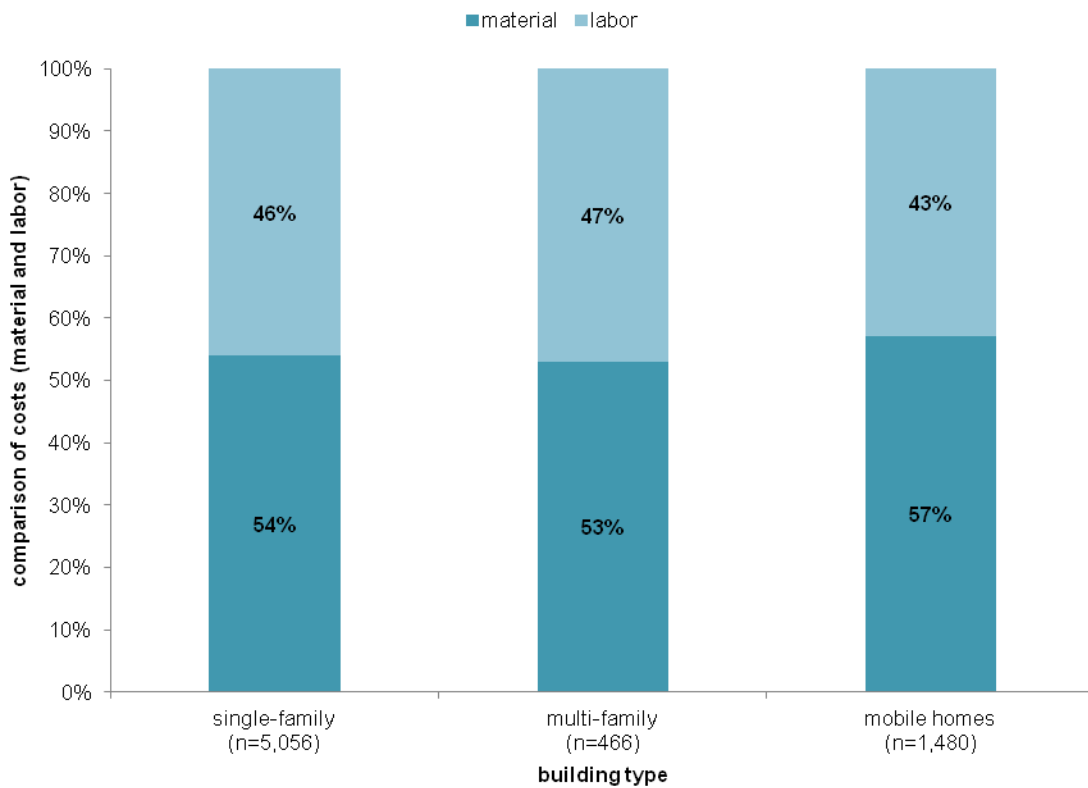
On-site project costs are primarily materials and labor, with labor costs split between subgrantees' in-house crews and contractors. Based on average costs reported by subgrantees, we developed a "typical" single-family cost structure shown in Table 5.8. For a project costing \$3,500, materials comprise about \$1,900 of the project expense while labor accounts for the remaining \$1,600. On average, labor costs for

work done by in-house crews is about \$765 while costs for contracted work is about \$835, although the distribution can be very different for any individual project.

**Table 5.8: Typical project cost breakdown for single family<sup>++</sup>**

Typical total costs for single family project ~ \$3,500		
<b>Material</b>	~\$1,900	
<b>Labor</b>	~\$1,600	
	In house crew ~ \$765	Contractor ~ \$835

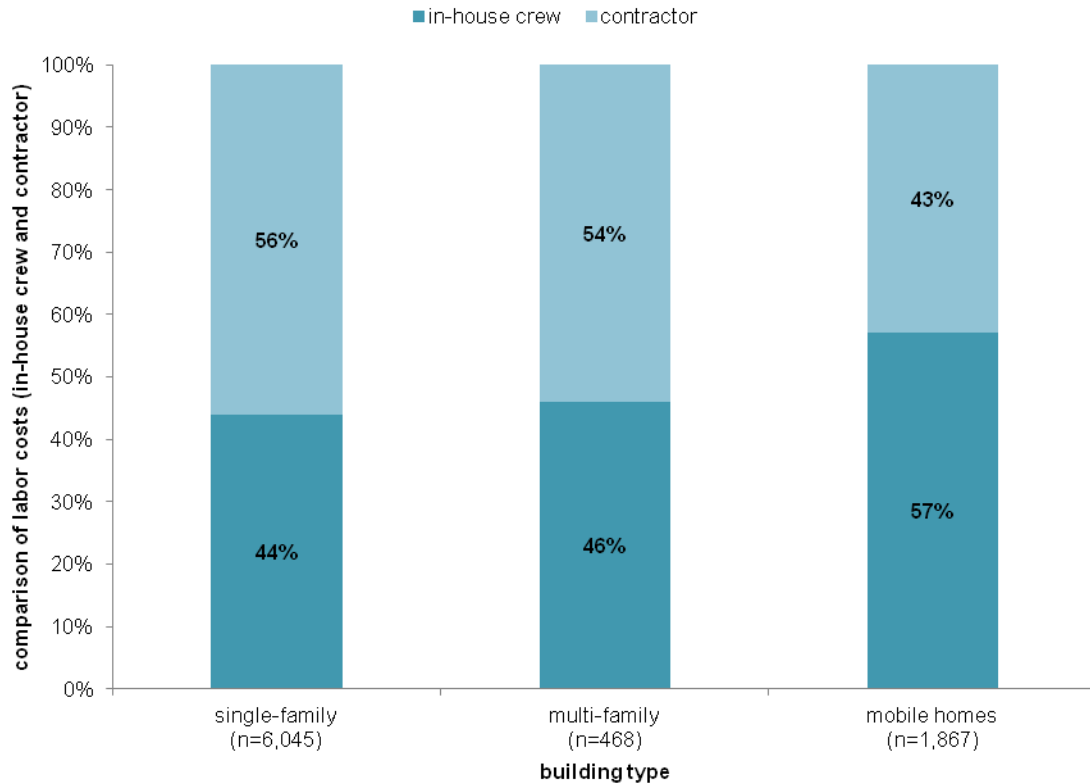
As shown in Fig. 5.22, the average distribution of costs between material and labor differs little across building types.



**Fig. 5.22: Distribution of material and labor costs by building type<sup>++</sup>**

shows the project cost breakout of in-house crews against contractor costs by building type. For single-family homes and multifamily projects, subgrantees spent a bit more on contractors than for work performed by in-house crews. In contrast, for mobile homes, subgrantees spent more on in-house crews than contractors.





**Fig. 5.23: Distribution of labor costs among in-house crews and contractors, by building type<sup>++</sup>**

How subgrantees allocate the labor component of weatherization projects is more complex and varied. Possible models include using in-house staff for all (or most) project work, hiring contracted weatherization crews, or doing some work using in-house staff and supplementing their work with specialty contractors, such as HVAC or insulation contractors. We examined labor costs further to assess how commonly subgrantees use these various models.

Project-level analysis of cost data suggests that 60 percent of subgrantees tended to use either in-house crews or contractors on individual projects<sup>34</sup> for the work on a given single-family project while 40 percent of subgrantees tended to use both in-house crews and contractors on the same single family projects.<sup>35</sup> Among subgrantees that used either in-house crews or contractors, approximately one third relied on in-house crews and two thirds on contractors. Mobile homes show a similar breakout. For multifamily buildings, we find that it was even more common that subgrantees used either in-house crews or contractors on their projects. Table 5.9 displays the distribution of these labor cost patterns by building type.

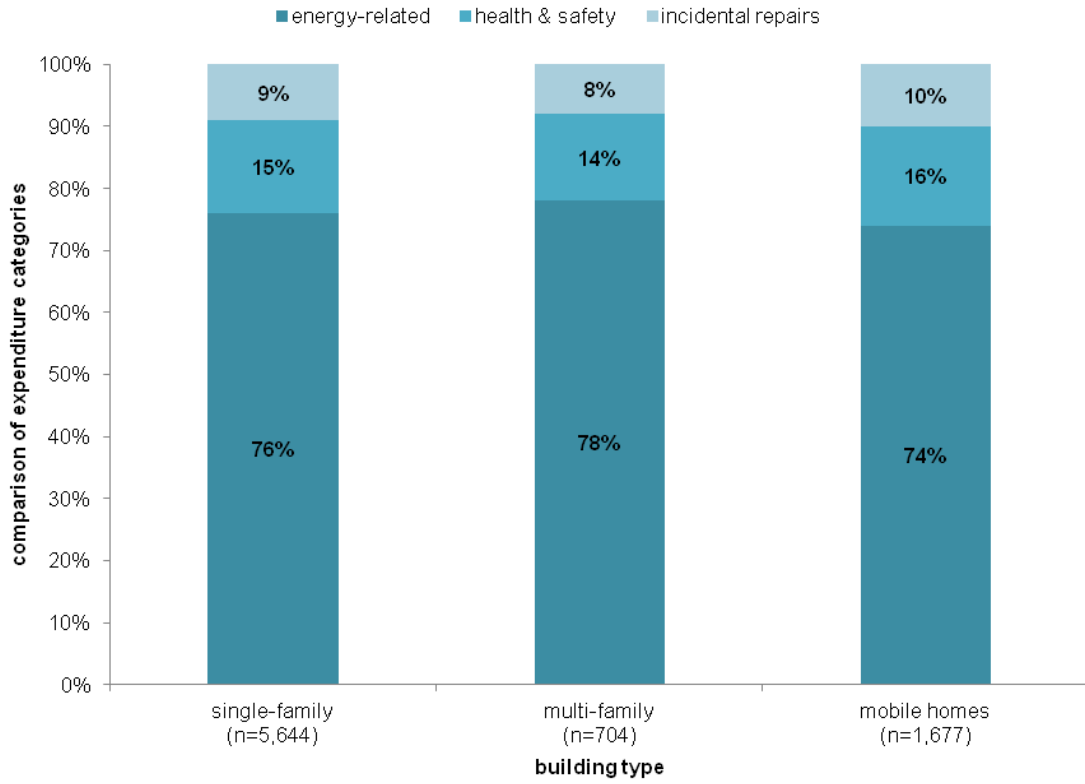
<sup>34</sup> We used a threshold of 80% of labor costs spent on either in-house crews or contractors in categorizing projects as being done primarily by one type of labor or the other.

<sup>35</sup> In doing this analysis, we assigned individual projects as being done either primarily by in-house crews (if labor costs for in-house crews exceeded 80% of total labor costs), primarily by contractors (again using an 80% threshold), or a mix of both. Then, we examined subgrantees' tendencies across all of their sampled projects for which we had sufficient cost data. We defined subgrantees as using one model or the other as their primary mode if 2/3 or more of their projects fell in that pattern. If both models were in use in at least 1/3 of projects, we classified that subgrantee as using both models.

**Table 5.9: Subgrantee cost allocation for labor costs (in-house crew or contractor), by building type<sup>++</sup>**

	Subgrantees using mix of labor types (group A)	Subgrantees using either one labor type or the other (group B)	Distribution of dominant labor type used by subgrantees in “group A”	
			In-house	Contractor
<b>Single family (n= 6045)</b>	40%	60%	In-house	31%
			Contractor	69%
<b>Multifamily buildings (n= 486)</b>	24%	76%	In-house	46%
			Contractor	54%
<b>Mobile homes (n= 1867)</b>	32%	68%	In-house	42%
			Contractor	58%

For each building type, expenditures were broken down between energy-related measure, health and safety measures, and incidental repairs. Unsurprisingly, the majority of the effort lies within the category of energy-related measure as shown in Fig. 5.24. For all building types, significantly less was spent on health and safety and incidental repairs. It should be noted that, as with all of the cost analyses, this distribution of expenditure types is taken from those subgrantees that knew the costs and does not include sampled projects for the subgrantees who did not know expenditure allocations. In contrast to material/labor and DOE/non-DOE cost distributions, however, subgrantees tended to have more difficulty providing distributions by measure purpose.



**Fig. 5.24: Project cost distribution among energy-saving measures, health & safety, and incidental reports, by building type<sup>++</sup>**



## 6. CONCLUSIONS

The three partners in the design and implementation of the WAP program are DOE, the weatherization grantees (i.e., states, tribes, and territories), and the subgrantees. Each plays an important part in the success of the program:

DOE provides:

- the base funding on which the program has been built
- program specifications and boundaries within which grantees need to operate to ensure cost-effectiveness and to ensure policy priorities are met
- technical assistance and tools, such as the National Energy Audit Tool
- training funds and staff development opportunities, such as the national weatherization program conference and a network of weatherization training centers
- grant oversight and administration
- participation in national policy development on energy efficiency services for low-income populations.

Grantees contribute:

- program customization and administration to fit the grantee's WAP program to local conditions, needs, and preferences
- development and maintenance of a set of subgrantees to serve eligible households throughout the grantee's jurisdiction
- training opportunities and state-level conferences for subgrantee staff
- quality control and oversight to ensure that homes are weatherized effectively and the program is implemented uniformly
- leveraging of other federal, state, and private funds to supplement DOE grants.

Subgrantees add:

- diagnosis and weatherization of eligible households' homes
- inspection of units served
- recruitment and income screening of eligible households (sometimes performed upstream of WAP subgrantee involvement)
- leveraging of DOE funds by attracting additional funding sources for their work
- (sometimes) complementary services for eligible households and individuals.

Below, we summarize the evaluation project's overall findings about the manner in which these program partners go about performing their functions. Our data collection focused on grantee and subgrantee implementation of the national WAP program, so our findings concentrate on those two levels of the program.

### 6.1 DEPARTMENT OF ENERGY

As the core funder, DOE provides the financial backbone and programmatic structure on which the national WAP program is built. The addition of non-DOE funding—which added about \$541 million to DOE's \$233 million in PY08—has built onto this structure. The fact that grantees and subgrantees were able to attract and retain new funding from other sources (including \$210 million in non-federal funds) over the years speaks well of the program and the confidence that regional and local partners have in it. At the same time, the low adoption of DOE rules by the non-federal funding sources (see suggests that there are unmet needs and priorities at the local level that the DOE structure does not address.

Grantee input on DOE's administrative and supporting role in their implementation of local WAP programs called for:

- increased financial or leveraging support (than was provided in PY08)
- DOE help with data and information systems
- more flexibility.

## **6.2 GRANTEES**

Grantees comprise a diverse set of state agencies (one in each of the 50 states) with disparate other energy or housing-related responsibilities, as well as the District of Columbia, some tribes, and territories. Our data collection from grantees entailed the completion of one data form and one comprehensive survey, as well as the receipt of grantee-level databases of projects completed in PY08 where sufficiently comprehensive datasets existed.

Grantees design and run the actual weatherization programs to meet local conditions, needs, and preferences. They are the ones who assemble a network of local weatherization providers and, in many cases, additional funding sources to support their programs.

We found that grantees:

- received about \$700 million to administer their weatherization programs in PY08, of which a third was DOE funds
- passed along 94 percent of their weatherization funds (\$677 million) to subgrantees for local weatherization work, retaining 6 percent for program management, oversight, administration, and assistance
- maintained between two and 64 subgrantees, providing an average of \$240,000 in DOE funds per subgrantee
- maintained an average of eight FTE, typically allocating 2-3 positions for program oversight, 2-3 FTE for agency monitoring and quality assurance, and 1-2 FTE for training and technical assistance.

Certain aspects of the technical work done on homes and oversight are also determined by grantees. As one would expect, we found that some diagnostic tests and measures are more common in certain climate regions or for certain housing types. For example, pressure diagnostics and heating system inspections were almost universal in the colder regions, but performed on only about two-thirds of units in the hot-dry region. Grantee programs also vary by program size, housing stock, and other local factors and preferences.

## **6.3 SUBGRANTEES**

Subgrantees are mostly non-profit organizations—some of which provide a full range of services to low-income households in the local geographies they serve and some of which focus exclusively on weatherization. Our data collection from subgrantees comprised one form and one comprehensive survey requested of each subgrantee in PY08. In addition, we sampled 400 subgrantees for very extensive data collection that included a detailed program survey and requests for project-level details for a share of their weatherization jobs.

Subgrantees are the face of the weatherization program for clients, providing the actual weatherization services, client education, and in many cases, program intake. Subgrantees vary widely in size, the geography they cover, the housing types they encounter, and the kinds of other services they provide to their clients. For example, some subgrantees employ only a very small number of people to serve a moderate number of houses and mobile homes in sparsely populated rural areas, while others employ or contract with a large number of weatherization professionals in dense urban areas to serve hundreds and even thousands of units in single- and multifamily buildings every year.

We found that subgrantees:

- received about \$753 million for weatherization work, including \$677 million from their grantees and \$76 million from other funding sources
- maintained an average of about ten employees (although staffing varies widely), comprised of about three FTE for management and administration, two FTE for auditing and inspections, three FTE for installation of weatherization measures, and one FTE for other duties
- followed varying funding models—16 percent of subgrantees rely exclusively on DOE funds, but 84 percent receive meaningful shares of their funding from non-DOE sources, and 49 percent include state, utility, or other local funds in their funding mix
- spent an average of \$3,500 on single-family homes and \$3,200 per unit on multifamily projects with materials accounting for slightly more than half of the project cost
- often used contractors to install weatherization measures—about 40 percent of subgrantees appear to have used contractors exclusively while nearly 30 percent used contractors for a substantial share of their installation work.

Diagnostic tests and weatherization measures installed vary somewhat by region, but some are fairly uniformly applied in the vast majority of weatherization projects, including:

- blower door tests (99% of subgrantees apply this procedure)
- CO measurements in flues of space heating systems (91%) and water heating systems (88%)
- air sealing measures (performed in 94 percent of single-family homes, but a lesser share of multifamily buildings)
- insulation measures (82% and 66%)
- other baseloads (65% and 81%).

Virtually all subgrantees also reported providing some level of client education—usually at multiple points in the weatherization process. Client education generally consisted of the distribution of literature and in-person communication when interacting with clients as part of the in-take or weatherization process.

## **6.4 TRAINING**

Training receives substantial attention at both the national and state levels. Nine percent of DOE funds and three percent of non-DOE funds were allocated to training and technical assistance. Grantees retained slightly more than half of these funds to train their own staff and provide training and assistance to subgrantees, while passing along the rest to enable subgrantees to build training into their staff development.

From our inquiry into training topics, we found that:

- grantees use primarily the national weatherization program conference and regional weatherization conferences to develop their own staff
- subgrantees use primarily state weatherization conferences, the national weatherization program conference, and state or regional training center classes to develop their staff

- subgrantee staff are trained most thoroughly in diagnostic procedures and in measures for single-family and mobile homes, but less well in health and safety topics and less consistently in multifamily measures
- state and regional training centers and internal training were rated most consistently as providing high quality training by both grantees and subgrantees.

## **6.5 QUALITY CONTROL AND ASSURANCE**

Quality control and assurance occurs at both the grantee and subgrantee level. Subgrantees indicated that these inspections have a substantial positive effect on the quality of weatherization installations.

Subgrantees send an inspector to the home after weatherization crews have completed all measure installation. In PY08, post-weatherization inspections averaged five hours per home and most commonly included visual inspections of the installed measures (performed by 99% of subgrantees), blower door tests (95%), and verification of insulation quantities (92%) and operation of measures installed (89%).

Grantees provide an additional level of quality review. In PY08, grantees inspected between 23 and 600 weatherization units, spending an average of two hours in the inspected homes. These inspections include many of the same activities as the subgrantee inspections.

Post-weatherization inspections by grantees found problems that warranted a return visit by the subgrantee in 21 percent of units inspected. This rate varied greatly among grantees, probably due to differences in either the nature of the inspections or the quality of the initial installations.

## **6.6 OVERALL**

Overall, we can see that low-income weatherization is a simple concept built on a sophisticated technical approach that is delivered through a large and varied network of providers. The concept—to reduce the energy burden of low-income households through cost-effective efficiency improvements—led to a DOE-funded program in 1976 that has served several million households. The program has evolved since then, both technically and administratively. It was last evaluated and studied at a national level in 1989. This report—and the data gathering and analysis on which it is based—provide an updated picture of the way weatherization was provided in Program Year 2008.



**APPENDIX A: ALL STATES AGENCIES INFORMATION SURVEY**



**DF 1: ALL STATES AGENCIES INFORMATION SURVEY**

Thank you for your prompt response to this data request which is part of the national evaluation of the Weatherization Assistance Program. Evaluation results will provide essential feedback to the weatherization community and inform policymakers about the program's effects on clients' energy consumption, cost savings, and non-energy benefits.

This survey collects data that will be used to compile a complete list of local agencies that provided weatherization services in Program Year 2008.

Thank you in advance for completing this survey.

Public reporting burden for this collection of information is estimated to average four hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of the Chief Information Officer, Records Management Division, IM-11, Paperwork Reduction Project (1910-5151), U.S. Department of Energy, 1000 Independence Ave SW, Washington, DC, 20585-1290; and to the Office of Management and Budget (OMB), OIRA, Paperwork Reduction Project (1910-5151), Washington, DC 20503.

1. Please identify your state. \_\_\_\_\_
2. It is important to collect information about the weatherization of homes beyond the standard single family homes that are heated with natural gas or electricity. Please provide the following information about each of the local agencies (subgrantees) that you fund to provide weatherization services in your state:

Local Agency (Subgrantee) Name	Amount of DOE Funds Received by Agency in Program Year 2008	Indicate, by checking the appropriate boxes below, where a specific local agency weatherized a substantial number of dwelling units of a particular type in Program Year 2008.				
		Large multi-family	Large multi-family heated with fuel oil	Single-family heated with fuel oil	Single-family heated with propane	Mobile home heated with propane
	obs: 885 missing: 21 mean: 237905.81 standard dev: 276213.51 min: 5670 10th percentile: 64372 25th percentile: 102656 median: 180018 75th percentile: 306863 90th percentile: 438779 max: 6009900	obs: 890 yes: 61 no: 829	obs: 890 yes: 25 no: 865	obs: 890 yes: 25 no: 865	obs: 890 yes: 226 no: 664	obs: 890 yes: 249 no: 641

*The definition of substantial will vary from state to state. Please use your best judgment considering the total number of units weatherized and the composition of your housing stock. Include any agencies that tend to handle a large number of the kinds of units listed below, relative to your state's caseload and housing stock. If your state has few units of a particular type, you might not have any agencies with a substantial number of units.*

*For the purposes of this survey, Program Year 2008 is defined as the program year that includes the heating season spanning late 2008/early 2009.*

*A large multi-family is a building with five or more housing units (i.e., building that contains living quarters for five or more families or households).*

*A mobile home is built on a movable chassis, is moved to the site, and may be placed on a permanent or temporary foundation. If rooms are added to the structure, it is considered a mobile home if the added floor area is less than the mobile home's original floor area; otherwise, it is a single-family detached house. A manufactured house assembled on site is a single-family detached house, not a mobile home.*

3. Please provide the following information about each of the local agencies (subgrantees) that you fund to provide weatherization services in your state:

Local Agency (Subgrantee) Name	Indicate, by checking the appropriate boxes below, where you expect a specific local agency to have the following characteristics.				
	Average energy savings substantially higher than the state norm	Innovative and/or particularly effective client education program	Innovative and/or particularly effective program for training weatherization staff and/or contractors	Innovative and/or particularly effective program for inspecting weatherized units (Quality Assurance)	Innovative and/or large program of leveraging DOE funds to gain non-DOE funds for weatherization
	obs: 889 yes: 130 no: 759	obs: 889 yes: 209 no: 680	obs: 889 yes: 178 no: 711	obs: 889 yes: 168 no: 721	obs: 889 yes: 177 no: 712



**APPENDIX B: ALL AGENCIES OVERVIEW DATA FORM**





**DF 10: ALL AGENCIES OVERVIEW DATA FORM**

Thank you for your prompt response to this data request which is part of the national evaluation of the Weatherization Assistance Program. Evaluation results will provide essential feedback to the weatherization community and inform policymakers about the program's effects on clients' energy consumption, cost savings, and non-energy benefits.

This survey addresses audit processes, measure selection, client education, and training practices. The data you supply will also be used select a small number of agencies for special process evaluation studies.

All of the information obtained from this data form will be protected and will remain confidential. The data will be analyzed in such a way that the information provided cannot be associated back to your state, your agencies, or the housing units and clients that your state served. Again, please note that the questions refer to Program Year 2008 unless otherwise noted.

Thank you in advance for completing this survey.

Public reporting burden for this collection of information is estimated to average one hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of the Chief Information Officer, Records Management Division, IM-11, Paperwork Reduction Project (1910-5151), U.S. Department of Energy, 1000 Independence Ave SW, Washington, DC, 20585-1290; and to the Office of Management and Budget (OMB), OIRA, Paperwork Reduction Project (1910-5151), Washington, DC 20503.

1. What is the primary method that your agency used in Program Year 2008 to select weatherization measures for clients' dwelling units (excluding health, safety, and repair measures and general heat waste measures)?

	Freq.	Percent	Cum.
Priority list	391	45.95	45.95
Calculation procedure	270	31.73	77.67
Priority list for some units, calc. pro	134	15.75	93.42
Other	56	6.58	100.00
Total	851	100.00	

2. If your agency used a calculation procedure for at least some dwelling units, what was the name of the procedure or procedures employed. *Check all that apply.*

     **AK Warm**

	Freq.	Percent	Cum.
No	707	99.30	99.30
Yes	5	0.70	100.00
Total	712	100.00	

     **EA-3**

	Freq.	Percent	Cum.
No	700	98.31	98.31
Yes	12	1.69	100.00
Total	712	100.00	

     **EASY**

	Freq.	Percent	Cum.
No	688	96.63	96.63
Yes	24	3.37	100.00
Total	712	100.00	

     **EA-QUIP**

	Freq.	Percent	Cum.
No	673	94.52	94.52
Yes	39	5.48	100.00
Total	712	100.00	

     **HomeCheck**

	Freq.	Percent	Cum.
No	701	98.46	98.46
Yes	11	1.54	100.00
Total	712	100.00	

\_\_\_ **Meadows**

	Freq.	Percent	Cum.
No	705	99.02	99.02
Yes	7	0.98	100.00
Total	712	100.00	

\_\_\_ **REES**

	Freq.	Percent	Cum.
No	712	100.00	100.00
Total	712	100.00	

\_\_\_ **REM/Rate**

	Freq.	Percent	Cum.
No	679	95.37	95.37
Yes	33	4.63	100.00
Total	712	100.00	

\_\_\_ **SMOC-ERS**

	Freq.	Percent	Cum.
No	701	98.46	98.46
Yes	11	1.54	100.00
Total	712	100.00	

\_\_\_ **TIPS**

	Freq.	Percent	Cum.
No	652	91.57	91.57
Yes	60	8.43	100.00
Total	712	100.00	

\_\_\_ **TREAT**

	Freq.	Percent	Cum.
--	-------	---------	------

	Freq.	Percent	Cum.
No	673	94.52	94.52
Yes	39	5.48	100.00
Total	712	100.00	

\_\_\_ **Weatherization Assistant (NEAT/MHEA)**

	Freq.	Percent	Cum.
No	273	38.34	38.34
Yes	439	61.66	100.00
Total	712	100.00	

\_\_\_ **WXEOR**

	Freq.	Percent	Cum.
No	706	99.16	99.16
Yes	6	0.84	100.00
Total	712	100.00	

\_\_\_ **Other – Please specify:** \_\_\_\_\_

	Freq.	Percent	Cum.
No	614	86.24	86.24
Yes	98	13.76	100.00
Total	712	100.00	

3. Which of the following client education approaches did your agency use in Program Year 2008?  
*Check all that apply.*

**At time of client intake**

\_\_\_ Provide literature at time of client intake

	Freq.	Percent	Cum.
No	408	47.94	47.94
Yes	443	52.06	100.00
Total	851	100.00	

\_\_\_ Provide video, CD, or DVD at time of client intake

	Freq.	Percent	Cum.
No	815	95.77	95.77
Yes	36	4.23	100.00
Total	851	100.00	

\_\_\_ Provide hardware kit at time of client intake

	Freq.	Percent	Cum.
No	831	97.65	97.65
Yes	20	2.35	100.00
Total	851	100.00	

\_\_\_ Provide in-person instruction at time of client intake

	Freq.	Percent	Cum.
No	558	65.57	65.57
Yes	293	34.43	100.00
Total	851	100.00	

**At time of audit**

\_\_\_ Provide literature at time of audit

	Freq.	Percent	Cum.
No	288	33.84	33.84
Yes	563	66.16	100.00
Total	851	100.00	

\_\_\_ Provide video, CD, or DVD at time of audit

	Freq.	Percent	Cum.
No	828	97.30	97.30
Yes	23	2.70	100.00
Total	851	100.00	

\_\_\_ Provide hardware kit at time of audit

	Freq.	Percent	Cum.
No	797	93.65	93.65
Yes	54	6.35	100.00
Total	851	100.00	

\_\_\_ Provide in-person instruction at time of audit

	Freq.	Percent	Cum.
No	214	25.15	25.15
Yes	637	74.85	100.00
Total	851	100.00	

### At time of weatherization

\_\_\_ Provide literature at time of weatherization

	Freq.	Percent	Cum.
No	684	80.38	80.38
Yes	167	19.62	100.00
Total	851	100.00	

\_\_\_ Provide video, CD, or DVD at time of weatherization

	Freq.	Percent	Cum.
No	846	99.41	99.41
Yes	5	0.59	100.00
Total	851	100.00	

\_\_\_ Provide hardware kit at time of weatherization

	Freq.	Percent	Cum.
No	803	94.36	94.36
Yes	48	5.64	100.00
Total	851	100.00	

\_\_\_ Provide in-person instruction at time of weatherization

	Freq.	Percent	Cum.
No	252	29.61	29.61
Yes	599	70.39	100.00
Total	851	100.00	

**At separate client education visit**

\_\_\_ Provide literature at separate client education visit

	Freq.	Percent	Cum.
No	695	81.67	81.67
Yes	156	18.33	100.00
Total	851	100.00	

\_\_\_ Provide video, CD, or DVD at separate client education visit

	Freq.	Percent	Cum.
No	833	97.88	97.88
Yes	18	2.12	100.00
Total	851	100.00	

\_\_\_ Provide hardware kit at separate client education visit

	Freq.	Percent	Cum.
No	810	95.18	95.18
Yes	41	4.82	100.00
Total	851	100.00	

\_\_\_ Provide in-person instruction at separate client education visit

	Freq.	Percent	Cum.
No	649	76.26	76.26
Yes	202	23.74	100.00
Total	851	100.00	

### At time of inspection

\_\_\_ Provide literature at time of inspection  
Freq. Percent Cum.

	Freq.	Percent	Cum.
No	607	71.33	71.33
Yes	244	28.67	100.00
Total	851	100.00	

\_\_\_ Provide video, CD, or DVD at time of inspection  
Freq. Percent Cum.

	Freq.	Percent	Cum.
No	849	99.76	99.76
Yes	2	0.24	100.00
Total	851	100.00	

\_\_\_ Provide hardware kit at time of inspection  
Freq. Percent Cum.

	Freq.	Percent	Cum.
No	827	97.18	97.18
Yes	24	2.82	100.00
Total	851	100.00	

\_\_\_ Provide in-person instruction at time of inspection  
Freq. Percent Cum.

	Freq.	Percent	Cum.
No	204	23.97	23.97
Yes	647	76.03	100.00
Total	851	100.00	

### Other approaches

\_\_\_ Group training class  
Freq. Percent Cum.

	Freq.	Percent	Cum.
No	743	87.31	87.31
Yes	108	12.69	100.00
Total	851	100.00	



\_\_\_ Other - Please specify: \_\_\_\_\_

	Freq.	Percent	Cum.
No	765	89.89	89.89
Yes	86	10.11	100.00
Total	851	100.00	

4. From which of the following sources did your agency obtain needed skills and/or information in Program Year 2008? *Check all that apply.*

\_\_\_ National Weatherization Program Conference

	Freq.	Percent	Cum.
No	440	51.70	51.70
Yes	411	48.30	100.00
Total	851	100.00	

\_\_\_ Affordable Comfort Conference

	Freq.	Percent	Cum.
No	599	70.39	70.39
Yes	252	29.61	100.00
Total	851	100.00	

\_\_\_ National Community Action Foundation (NCAF) Conference

	Freq.	Percent	Cum.
No	702	82.49	82.49
Yes	149	17.51	100.00
Total	851	100.00	

\_\_\_ National Association for State Community Services Programs (NASCSPP) Energy Leveraging Conference

	Freq.	Percent	Cum.
No	795	93.42	93.42
Yes	56	6.58	100.00
Total	851	100.00	

\_\_\_ Other national conference  
 Freq. Percent Cum.

	Freq.	Percent	Cum.
No	796	93.54	93.54
Yes	55	6.46	100.00
Total	851	100.00	

\_\_\_ Regional weatherization conference  
 Freq. Percent Cum.

	Freq.	Percent	Cum.
No	515	60.52	60.52
Yes	336	39.48	100.00
Total	851	100.00	

\_\_\_ State weatherization conference  
 Freq. Percent Cum.

	Freq.	Percent	Cum.
No	337	39.60	39.60
Yes	514	60.40	100.00
Total	851	100.00	

\_\_\_ Other state conference  
 Freq. Percent Cum.

	Freq.	Percent	Cum.
No	704	82.73	82.73
Yes	147	17.27	100.00
Total	851	100.00	

\_\_\_ State/regional training center class  
 Freq. Percent Cum.

	Freq.	Percent	Cum.
No	432	50.76	50.76
Yes	419	49.24	100.00
Total	851	100.00	

\_\_\_ Manufacturer's training school class

	Freq.	Percent	Cum.
No	738	86.72	86.72
Yes	113	13.28	100.00
Total	851	100.00	

\_\_\_ Utility training class

	Freq.	Percent	Cum.
No	720	84.61	84.61
Yes	131	15.39	100.00
Total	851	100.00	

\_\_\_ State sponsored class taught at central location (e.g., local agency, state office)

	Freq.	Percent	Cum.
No	310	36.43	36.43
Yes	541	63.57	100.00
Total	851	100.00	

\_\_\_ Class not sponsored by state (e.g., another state, trade organization)

	Freq.	Percent	Cum.
No	713	83.78	83.78
Yes	138	16.22	100.00
Total	851	100.00	

\_\_\_ Visiting another agency

	Freq.	Percent	Cum.
No	635	74.62	74.62
Yes	216	25.38	100.00
Total	851	100.00	

\_\_\_ Instruction received by just your agency during a visit by state staff

	Freq.	Percent	Cum.
No	381	44.77	44.77
Yes	470	55.23	100.00
Total	851	100.00	

\_\_\_ In-person expert visit to your agency (e.g., peer exchange, consultant)

	Freq.	Percent	Cum.
No	643	75.56	75.56
Yes	208	24.44	100.00
Total	851	100.00	

\_\_\_ Web cast

	Freq.	Percent	Cum.
No	707	83.08	83.08
Yes	144	16.92	100.00
Total	851	100.00	

\_\_\_ Conference call

	Freq.	Percent	Cum.
No	579	68.04	68.04
Yes	272	31.96	100.00
Total	851	100.00	

\_\_\_ Phone call from expert

	Freq.	Percent	Cum.
No	621	72.97	72.97
Yes	230	27.03	100.00
Total	851	100.00	

___ E-mail from expert			
	Freq.	Percent	Cum.
No	575	67.57	67.57
Yes	276	32.43	100.00
Total	851	100.00	

___ Other (please specify) _____			
	Freq.	Percent	Cum.
No	774	90.95	90.95
Yes	77	9.05	100.00
Total	851	100.00	

5. Which of the following types of post-weatherization quality control inspection did your agency perform in Program Year 2008? *Check all that apply.*

___ Visual inspection of installed measures			
	Freq.	Percent	Cum.
No	13	1.53	1.53
Yes	838	98.47	100.00
Total	851	100.00	

___ Verification of insulation depths/quantities			
	Freq.	Percent	Cum.
No	80	9.40	9.40
Yes	771	90.60	100.00
Total	851	100.00	

___ Verification of operation of measures installed			
	Freq.	Percent	Cum.
No	120	14.10	14.10
Yes	731	85.90	100.00
Total	851	100.00	

\_\_\_ Assessment of quality of measures installed

	Freq.	Percent	Cum.
No	103	12.10	12.10
Yes	748	87.90	100.00
Total	851	100.00	

\_\_\_ Identification of needed measures that were not installed

	Freq.	Percent	Cum.
No	286	33.61	33.61
Yes	565	66.39	100.00
Total	851	100.00	

\_\_\_ Blower door test

	Freq.	Percent	Cum.
No	55	6.46	6.46
Yes	796	93.54	100.00
Total	851	100.00	

\_\_\_ Heating system efficiency test (flue gas analysis)

	Freq.	Percent	Cum.
No	211	24.79	24.79
Yes	640	75.21	100.00
Total	851	100.00	

\_\_\_ Draft/spillage tests of heating systems

	Freq.	Percent	Cum.
No	246	28.91	28.91
Yes	605	71.09	100.00
Total	851	100.00	

\_\_\_ Carbon monoxide (CO) monitoring

	Freq.	Percent	Cum.
No	107	12.57	12.57
Yes	744	87.43	100.00
Total	851	100.00	

\_\_\_ Infrared scanning

	Freq.	Percent	Cum.
No	490	57.58	57.58
Yes	361	42.42	100.00
Total	851	100.00	

\_\_\_ Identification of unresolved health and safety issues

	Freq.	Percent	Cum.
No	296	34.78	34.78
Yes	555	65.22	100.00
Total	851	100.00	

\_\_\_ Discussion with occupants

	Freq.	Percent	Cum.
No	88	10.34	10.34
Yes	763	89.66	100.00
Total	851	100.00	

\_\_\_ Use of customer sign-off form

	Freq.	Percent	Cum.
No	95	11.16	11.16
Yes	756	88.84	100.00
Total	851	100.00	

Other (specify)			
	Freq.	Percent	Cum.
No	800	94.01	94.01
Yes	51	5.99	100.00
Total	851	100.00	



**APPENDIX C: ALL STATES PROGRAM INFORMATION SURVEY**



**S1: ALL STATES PROGRAM INFORMATION SURVEY**

Thank you for your prompt response to this data request which is part of the national evaluation of the Weatherization Assistance Program. Evaluation results will provide essential feedback to the weatherization community and inform policymakers about the program's effects on clients' energy consumption, cost savings and non-energy benefits.

This survey collects data that will be used to characterize Weatherization Assistance Program activities at the state level during Program Year 2008.

All of the information obtained from this survey will be protected and will remain confidential. The data will be analyzed in such a way that the information provided cannot be associated back to your state, your agencies, or the housing units and clients that your state served. Again, please note that the questions refer to PY 2008 unless otherwise noted.

Thanks you in advance for completing this survey.

Public reporting burden for this collection of information is estimated to average sixteen hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of the Chief Information Officer, Records Management Division, IM-11, Paperwork Reduction Project (1910-5151), U.S. Department of Energy, 1000 Independence Ave SW, Washington, DC, 20585-1290; and to the Office of Management and Budget (OMB), OIRA, Paperwork Reduction Project (1910-5151), Washington, DC 20503.

**Section A: PROGRAM CHARACTERIZATION**

1. Please identify your state: \_\_\_\_\_

2. How many layers of government (i.e., positions on an organization chart) sat between the governor’s office in your state and your weatherization program in Program Year 2008? \_\_\_\_\_

*For the purposes of this survey, Program Year 2008 is defined as the program year that includes the heating season spanning late 2008/early 2009.*

3. During Program Year 2008, was the director of your state’s weatherization program (Check best answer):

- \_\_\_\_\_ a civil servant
- \_\_\_\_\_ political appointee
- \_\_\_\_\_ elected official

	Freq.	Percent	Cum.
-----+-----			
a civil servant	40	81.63	81.63
political appointee	9	18.37	100.00
-----+-----			
Total	49	100.00	

4. During Program Year 2008, did the director of your state’s weatherization program *report to* a (Check best answer):

- \_\_\_\_\_ civil servant
- \_\_\_\_\_ political appointee
- \_\_\_\_\_ elected official

	Freq.	Percent	Cum.
-----+-----			
a civil servant	25	51.02	51.02
political appointee	23	46.94	97.96
elected official	1	2.04	100.00
-----+-----			
Total	49	100.00	

5. For how many years had the current director of your state's weatherization program served in that capacity prior to Program Year 2008? \_\_\_\_\_

observations:	50
missing values:	1
mean:	8.23
standard deviation:	8.47
min:	0
10th percentile:	0
25th percentile:	1
median:	6
75th percentile:	14
90th percentile:	21
max:	30

6. How many different directors (including the Program Year 2008 director) led your state's weatherization program over the 10 years prior to Program Year 2008? \_\_\_\_\_

observations:	49
missing values:	2
mean:	2.14
standard deviation:	1.49
min:	0
10th percentile:	1
25th percentile:	1
median:	2
75th percentile:	3
90th percentile:	4
max:	7

7. Did your state's weatherization program set annual performance goals of Program Year 2008?

\_\_\_\_\_ Yes  
 \_\_\_\_\_ No (go to Question 8)

	Freq.	Percent	Cum.
no	7	14.00	14.00
yes	43	86.00	100.00
Total	50	100.00	

7a. What agency, office, or department was responsible for reviewing the annual performance goals and achievement of goals of your state's weatherization program? \_\_\_\_\_

*This question refers to a state-level office, agency or department.*

8. Please list other important housing and/or energy-related programs for low-income residents that were administered by the same office that is in charge of your state's weatherization program.

\_\_\_\_\_

\_\_\_\_\_

10. For each of the data categories listed, indicate the format in which agencies were supposed to provide the data in Program Year 2008 by checking the appropriate box in the following table:

Data Category	Data Format				
	Paper hardcopy	Excel files or other computerized spreadsheet files	Microsoft Access or other computerized database files	Microsoft Word or other computerized word processing files	Not Required
Number of homes weatherized	obs: 50 no: 28 yes: 22	obs: 50 no: 31 yes: 19	obs: 50 no: 24 yes: 26	obs: 50 no: 49 yes: 1	obs: 50 no: 50 yes: 0
Number of homes weatherized in high priority categories	obs: 48 no: 28 yes: 20	obs: 48 no: 31 yes: 17	obs: 48 no: 26 yes: 22	obs: 48 no: 46 yes: 2	obs: 48 no: 43 yes: 5
DOE weatherization funds expended	obs: 48 no: 43 yes: 5	obs: 50 no: 27 yes: 23	obs: 50 no: 28 yes: 22	obs: 50 no: 28 yes: 22	obs: 50 no: 0 yes: 50
Non-DOE weatherization funds expended	obs: 50 no: 46 yes: 4	obs: 50 no: 50 yes: 0	obs: 47 no: 29 yes: 18	obs: 47 no: 29 yes: 18	obs: 47 no: 42 yes: 5
Descriptive statistics: demographics weatherized homes	obs: 50 no: 30 yes: 20	obs: 50 no: 34 yes: 16	obs: 50 no: 24 yes: 26	obs: 50 no: 49 yes: 1	obs: 50 no: 47 yes: 3
Descriptive statistics: weatherization measures installed	obs: 46 no: 29 yes: 17	obs: 46 no: 34 yes: 12	obs: 46 no: 22 yes: 24	obs: 46 no: 45 yes: 1	obs: 46 no: 40 yes: 6
Descriptive statistics: energy use and savings in weatherized homes	obs: 43 no: 29 yes: 14	obs: 43 no: 36 yes: 7	obs: 43 no: 26 yes: 17	obs: 43 no: 42 yes: 1	obs: 43 no: 28 yes: 15
Copies of audits performed on weatherized homes	obs: 42 no: 16 yes: 26	obs: 42 no: 38 yes: 4	obs: 42 no: 32 yes: 10	obs: 42 no: 39 yes: 3	obs: 42 no: 30 yes: 12
Results of certain diagnostic tests	obs: 42 no: 15 yes: 27	obs: 42 no: 36 yes: 6	obs: 42 no: 25 yes: 17	obs: 42 no: 41 yes: 1	obs: 42 no: 37 yes: 5
Other	obs: 5 no: 3 yes: 2	obs: 5 no: 5 yes: 0	obs: 5 no: 4 yes: 1	obs: 5 no: 5 yes: 0	obs: 5 no: 3 yes: 2

11. How frequently were the agencies supposed to provide the data in Program Year 2008? Please check the appropriate boxes. Please leave blank for data categories not reported.

Data Category	Reporting Frequency				
	Weekly	Monthly	Quarterly	Annually	Other
Number of homes weatherized	obs: 50 no: 50 yes: 0	obs: 50 no: 11 yes: 39	obs: 50 no: 39 yes: 11	obs: 50 no: 44 yes: 6	obs: 50 no: 46 yes: 4
Number of homes weatherized in high priority categories	obs: 42 no: 42 yes: 0	obs: 42 no: 11 yes: 31	obs: 42 no: 32 yes: 10	obs: 42 no: 37 yes: 5	obs: 42 no: 38 yes: 4
DOE weatherization funds expended	obs: 49 no: 49 yes: 0	obs: 49 no: 8 yes: 41	obs: 49 no: 39 yes: 10	obs: 49 no: 42 yes: 7	obs: 49 no: 46 yes: 3
Non-DOE weatherization funds expended	obs: 39 no: 39 yes: 0	obs: 39 no: 6 yes: 33	obs: 39 no: 30 yes: 9	obs: 32 no: 7 yes: 39	obs: 39 no: 36 yes: 3
Descriptive statistics: demographics weatherized homes	obs: 46 no: 46 yes: 0	obs: 46 no: 10 yes: 36	obs: 46 no: 36 yes: 10	obs: 46 no: 40 yes: 6	obs: 42 no: 4 yes: 46
Descriptive statistics: weatherization measures installed	obs: 39 no: 39 yes: 0	obs: 39: no: 11 yes: 28	obs: 39 no: 33 yes: 6	obs: 39 no: 38 yes: 1	obs: 39 no: 32 yes: 7
Descriptive statistics: energy use and savings in weatherized homes	obs: 27 no: 27 yes: 0	obs: 27 no: 11 yes: 16	obs: 27 no: 24 yes: 3	obs: 27 no: 25 yes: 2	obs: 27 no: 21 yes: 6
Copies of audits performed on weatherized homes	obs: 28 no: 27 yes: 1	obs: 28 no: 20 yes: 8	obs: 28 no: 26 yes: 2	obs: 28 no: 26 yes: 2	obs: 28 no: 13 yes: 15
Results of certain diagnostic tests	obs: 36 no: 35 yes: 1	obs: 36 no: 14 yes: 22	obs: 36 no: 33 yes: 3	obs: 36 no: 36 yes: 0	obs: 36 no: 26 yes: 10
Other	obs: 2 no: 2 yes: 0	obs: 2 no: 2 yes: 0	obs: 2 no: 2 yes: 0	obs: 2 no: 2 yes: 0	obs: 2 no: 0 yes: 2

12. Overall, how would you rate the quality of the data received from the agencies in Program Year 2008? *Please check the appropriate boxes. Please leave blank any data categories that are not required to be reported.*

***Very low data quality means required data was incomplete and inaccurate. Very high data quality means virtually all required data was accurate and complete.***

Data Category	Data Quality				
	Very High	High	Medium	Low	Very Low
Number of homes weatherized	Freq.    Percent    Cum.				
	medium	6	12.24	12.24	
	high	14	28.57	40.82	
	very high	29	59.18	100.00	
	Total	49	100.00		
Number of homes weatherized in high priority categories	Freq.    Percent    Cum.				
	low	1	2.44	2.44	
	medium	10	24.39	26.83	
	high	12	29.27	56.10	
	very high	18	43.90	100.00	
Total	41	100.00			
DOE weatherization funds expended	Freq.    Percent    Cum.				
	medium	7	14.29	14.29	
	high	15	30.61	44.90	
	very high	27	55.10	100.00	
	Total	49	100.00		
Non-DOE weatherization funds expended	Freq.    Percent    Cum.				
	medium	6	14.63	14.63	
	high	14	34.15	48.78	
	very high	21	51.22	100.00	
	Total	41	100.00		
Descriptive statistics: demographics weatherized homes	Freq.    Percent    Cum.				
	medium	8	17.78	17.78	
	high	17	37.78	55.56	
	very high	20	44.44	100.00	
	Total	45	100.00		
Descriptive statistics: weatherization measures installed	Freq.    Percent    Cum.				
	medium	11	29.73	29.73	
	high	10	27.03	56.76	
	very high	16	43.24	100.00	
	Total	37	100.00		
Descriptive statistics:	Freq.    Percent    Cum.				



energy use and savings in weatherized homes	low	4	16.00	16.00
	medium	8	32.00	48.00
	high	3	12.00	60.00
	very high	10	40.00	100.00
	Total	25	100.00	
Copies of audits performed on weatherized homes	low	3	11.11	11.11
	medium	9	33.33	44.44
	high	9	33.33	77.78
	very high	6	22.22	100.00
	Total	27	100.00	
Results of certain diagnostic tests	low	3	9.09	9.09
	medium	8	24.24	33.33
	high	14	42.42	75.76
	very high	8	24.24	100.00
	Total	33	100.00	
Other	low	1	25.00	25.00
	high	1	25.00	50.00
	very high	2	50.00	100.00
	Total	4	100.00	

13. Did your state analyze data provided by the weatherization agencies in Program Year 2008 to: (Check all that apply)

\_\_\_\_\_ **Generate descriptive statistics**

	Freq.	Percent	Cum.
no	19	40.43	40.43
yes	28	59.57	100.00
Total	47	100.00	

\_\_\_\_\_ **Look for trends**

	Freq.	Percent	Cum.
no	16	34.04	34.04
yes	31	65.96	100.00
Total	47	100.00	

\_\_\_\_\_ **Support state-level strategic planning about its weatherization program**

	Freq.	Percent	Cum.
no	16	34.04	34.04
yes	31	65.96	100.00
Total	47	100.00	

**\_\_\_\_\_ Analyze individual agency performance**

	Freq.	Percent	Cum.
no	5	10.64	10.64
yes	42	89.36	100.00
Total	47	100.00	

**\_\_\_\_\_ Other \_\_\_\_\_**

	Freq.	Percent	Cum.
no	41	87.23	87.23
yes	6	12.77	100.00
Total	47	100.00	

13a. If your state did not analyze data, why did your state not analyze data from the weatherization agencies in Program Year 2008? (Check all that apply)

**\_\_\_\_\_ Not a priority**

	Freq.	Percent	Cum.
no	9	90.00	90.00
yes	1	10.00	100.00
Total	10	100.00	

**\_\_\_\_\_ Not worth the effort**

	Freq.	Percent	Cum.
no	10	100.00	100.00
Total	10	100.00	

\_\_\_\_\_ **Insufficient staff resources**

	Freq.	Percent	Cum.
no	2	20.00	20.00
yes	8	80.00	100.00
Total	10	100.00	

\_\_\_\_\_ **Insufficient staff experience**

	Freq.	Percent	Cum.
no	6	60.00	60.00
yes	4	40.00	100.00
Total	10	100.00	

14. What data did your state **plan** to provide to DOE about its weatherization program in Program Year 2008? (Check all that apply)

\_\_\_\_\_ **Number of homes weatherized**

	Freq.	Percent	Cum.
yes	50	100.00	100.00
Total	50	100.00	

\_\_\_\_\_ **Number of homes weatherized for high priority categories**

	Freq.	Percent	Cum.
no	16	32.00	32.00
yes	34	68.00	100.00
Total	50	100.00	

\_\_\_\_\_ **DOE weatherization funds expended**

	Freq.	Percent	Cum.
no	2	4.00	4.00
yes	48	96.00	100.00
Total	50	100.00	

\_\_\_\_\_ **Descriptive statistics on demographics of households weatherized**

	Freq.	Percent	Cum.
no	11	22.00	22.00
yes	39	78.00	100.00
Total	50	100.00	

\_\_\_\_\_ **Descriptive statistics on weatherization measures installed in households weatherized**

	Freq.	Percent	Cum.
no	35	70.00	70.00
yes	15	30.00	100.00
Total	50	100.00	

\_\_\_\_\_ **Descriptive statistics on energy use/savings of households weatherized**

	Freq.	Percent	Cum.
no	29	58.00	58.00
yes	21	42.00	100.00
Total	50	100.00	

\_\_\_\_\_ **Copy of audits performed on the households weatherized**

	Freq.	Percent	Cum.
no	45	90.00	90.00
yes	5	10.00	100.00
Total	50	100.00	

\_\_\_\_\_ **Other** \_\_\_\_\_

	Freq.	Percent	Cum.
no	48	96.00	96.00
yes	2	4.00	100.00
Total	50	100.00	

15. What data did your state **actually** provide to DOE about its weatherization program during Program Year 2008? (Check all that apply)

\_\_\_\_\_ **Number of homes weatherized**

	Freq.	Percent	Cum.
yes	49	100.00	100.00
Total	49	100.00	

\_\_\_\_\_ **Number of homes weatherized for high priority categories**

	Freq.	Percent	Cum.
no	14	28.57	28.57
yes	35	71.43	100.00
Total	49	100.00	

\_\_\_\_\_ **DOE weatherization funds expended**

	Freq.	Percent	Cum.
no	1	2.04	2.04
yes	48	97.96	100.00
Total	49	100.00	

\_\_\_\_\_ **Descriptive statistics on demographics of households weatherized**

	Freq.	Percent	Cum.
no	7	14.29	14.29
yes	42	85.71	100.00
Total	49	100.00	

\_\_\_\_\_ **Descriptive statistics on weatherization measures installed in households weatherized**

	Freq.	Percent	Cum.
no	35	71.43	71.43
yes	14	28.57	100.00
Total	49	100.00	

\_\_\_\_\_ **Descriptive statistics on energy use/savings of households weatherized**

	Freq.	Percent	Cum.
no	33	67.35	67.35
yes	16	32.65	100.00
Total	49	100.00	

\_\_\_\_\_ **Copy of audits performed on the households weatherized**

	Freq.	Percent	Cum.
no	42	85.71	85.71
yes	7	14.29	100.00
Total	49	100.00	

\_\_\_\_\_ **Other** \_\_\_\_\_

	Freq.	Percent	Cum.
no	44	89.80	89.80
yes	5	10.20	100.00
Total	49	100.00	

16. For each of the non-DOE sources of weatherization funds which your state administered in Program Year 2008, did you require local agencies receiving those funds to follow DOE rules when spending the money? If you did *not* require DOE rules to be followed for non-DOE jobs, what were the major differences in the rules governing those expenditures in comparison to DOE rules? If you did not administer funding from a particular source in Program Year 2008 for weatherization, please enter N/A.

Source of non-DOE PY 2008 Weatherization Funding Administered by State	(A) Did you require local agencies to follow DOE rules when spending funds from this source? (Yes/No/NA) <i>Answer "no" if funding was used for expenses that would not be allowed with DOE funding for WAP.</i>	(B) If the answer in Column (A) was no, what were the major differences in the rules governing the expenditure of funds from this source in comparison to the rules governing the expenditure of DOE funds?																				
	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>yes  </td> <td>30</td> <td>60.00</td> <td>60.00</td> </tr> <tr> <td>no  </td> <td>15</td> <td>30.00</td> <td>90.00</td> </tr> <tr> <td>n/a  </td> <td>5</td> <td>10.00</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>50</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	yes	30	60.00	60.00	no	15	30.00	90.00	n/a	5	10.00	100.00	Total	50	100.00		
	Freq.	Percent	Cum.																			
yes	30	60.00	60.00																			
no	15	30.00	90.00																			
n/a	5	10.00	100.00																			
Total	50	100.00																				
LIHEAP	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>yes  </td> <td>9</td> <td>20.93</td> <td>20.93</td> </tr> <tr> <td>no  </td> <td>1</td> <td>2.33</td> <td>23.26</td> </tr> <tr> <td>n/a  </td> <td>33</td> <td>76.74</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>43</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	yes	9	20.93	20.93	no	1	2.33	23.26	n/a	33	76.74	100.00	Total	43	100.00		
	Freq.	Percent	Cum.																			
yes	9	20.93	20.93																			
no	1	2.33	23.26																			
n/a	33	76.74	100.00																			
Total	43	100.00																				
Petroleum Violation Escrow (PVE)	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>yes  </td> <td>4</td> <td>9.30</td> <td>9.30</td> </tr> <tr> <td>n/a  </td> <td>39</td> <td>90.70</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>43</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	yes	4	9.30	9.30	n/a	39	90.70	100.00	Total	43	100.00						
	Freq.	Percent	Cum.																			
yes	4	9.30	9.30																			
n/a	39	90.70	100.00																			
Total	43	100.00																				
Other Federal Programs	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>yes  </td> <td>4</td> <td>9.09</td> <td>9.09</td> </tr> <tr> <td>no  </td> <td>4</td> <td>9.09</td> <td>18.18</td> </tr> <tr> <td>n/a  </td> <td>36</td> <td>81.82</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>44</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	yes	4	9.09	9.09	no	4	9.09	18.18	n/a	36	81.82	100.00	Total	44	100.00		
	Freq.	Percent	Cum.																			
yes	4	9.09	9.09																			
no	4	9.09	18.18																			
n/a	36	81.82	100.00																			
Total	44	100.00																				
State Public Benefit Funds	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>yes  </td> <td>5</td> <td>11.90</td> <td>11.90</td> </tr> <tr> <td>no  </td> <td>2</td> <td>4.76</td> <td>16.67</td> </tr> <tr> <td>n/a  </td> <td>35</td> <td>83.33</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>42</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	yes	5	11.90	11.90	no	2	4.76	16.67	n/a	35	83.33	100.00	Total	42	100.00		
	Freq.	Percent	Cum.																			
yes	5	11.90	11.90																			
no	2	4.76	16.67																			
n/a	35	83.33	100.00																			
Total	42	100.00																				
Other State Programs	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>yes  </td> <td>18</td> <td>41.86</td> <td>41.86</td> </tr> <tr> <td>no  </td> <td>9</td> <td>20.93</td> <td>62.79</td> </tr> <tr> <td>n/a  </td> <td>16</td> <td>37.21</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>43</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	yes	18	41.86	41.86	no	9	20.93	62.79	n/a	16	37.21	100.00	Total	43	100.00		
	Freq.	Percent	Cum.																			
yes	18	41.86	41.86																			
no	9	20.93	62.79																			
n/a	16	37.21	100.00																			
Total	43	100.00																				
Utilities	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>yes  </td> <td>6</td> <td>14.29</td> <td>14.29</td> </tr> <tr> <td>n/a  </td> <td>36</td> <td>85.71</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>42</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	yes	6	14.29	14.29	n/a	36	85.71	100.00	Total	42	100.00						
	Freq.	Percent	Cum.																			
yes	6	14.29	14.29																			
n/a	36	85.71	100.00																			
Total	42	100.00																				
Program Income (other than above)	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>yes  </td> <td>4</td> <td>9.30</td> <td>9.30</td> </tr> <tr> <td>no  </td> <td>1</td> <td>2.33</td> <td>11.63</td> </tr> <tr> <td>n/a  </td> <td>38</td> <td>88.37</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>43</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	yes	4	9.30	9.30	no	1	2.33	11.63	n/a	38	88.37	100.00	Total	43	100.00		
	Freq.	Percent	Cum.																			
yes	4	9.30	9.30																			
no	1	2.33	11.63																			
n/a	38	88.37	100.00																			
Total	43	100.00																				
In-Kind Contributions	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>yes  </td> <td>4</td> <td>9.30</td> <td>9.30</td> </tr> <tr> <td>no  </td> <td>1</td> <td>2.33</td> <td>11.63</td> </tr> <tr> <td>n/a  </td> <td>38</td> <td>88.37</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>43</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	yes	4	9.30	9.30	no	1	2.33	11.63	n/a	38	88.37	100.00	Total	43	100.00		
	Freq.	Percent	Cum.																			
yes	4	9.30	9.30																			
no	1	2.33	11.63																			
n/a	38	88.37	100.00																			
Total	43	100.00																				

Non-Profit Organizations		Freq.	Percent	Cum.	
	yes	2	4.65	4.65	
	no	1	2.33	6.98	
	n/a	40	93.02	100.00	
	Total	43	100.00		
Other		Freq.	Percent	Cum.	
	yes	1	2.70	2.70	
	n/a	36	97.30	100.00	
	Total	37	100.00		



17a. Please indicate the amount of weatherization funding from each source that your state administered in Program Year 2007 that was spent on the different functions or applications shown below. The amount that you list in the right-most cell at the very bottom of the table should equal the total amount of weatherization funding from all sources that your state administered in Program Year 2007.

Source of PY 2007 Weatherization Funding Administered by State	Training and Technical Assistance (T&TA)		Program Management		Other (funds for weatherization, H&S, and other measures passed on to local agencies)	Total
	Funds retained and spent by state	Funds passed on to local agencies	Funds retained and spent by state	Funds passed on to local agencies		
DOE	obs: 50 min: 0 max: 1038505 mean: 176297.83 median: 83571.52	obs: 50 min: 0 max: 3815185 mean: 200074.99 median: 77587	obs: 50 min: 0 max: 3981946.5 mean: 256340.14 median: 109576.5	obs: 50 min: 0 max: 11805719 mean: 945961.67 median: 365005	obs: 51 min: 0 max: 14407620 mean: 2477823.5 median: 1437762	obs: 51 min: 0 max: 18009524 mean: 4043834.9 median: 2315681
LIHEAP	obs: 50 min: 0 max: 188000 mean: 14190.7 median: 0	obs: 50 min: 0 max: 5733524 mean: 144112.66 median: 0	obs: 50 min: 0 max: 1554524 mean: 149582.19 median: 17270.5	obs: 50 min: 0 max: 46674732 mean: 2410325.1 median: 281160	obs: 50 min: 0 max: 34450016 mean: 2596525.5 median: 309737	obs: 51 min: 0 max: 46840176 mean: 5322676.8 median: 2284133
Petroleum Violation Escrow (PVE)	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 680000 mean: 13333.33 median: 0	obs: 51 min: 0 max: 209792 mean: 6579.02 median: 0	obs: 51 min: 0 max: 800000 mean: 19912.35 median: 0
Other Federal Programs	obs: 51 min: 0 max: 2005535 mean: 41791.94 median: 0	obs: 51 min: 0 max: 69156 mean: 1653.10 median: 0	obs: 51 min: 0 max: 154740 mean: 3632.20 median: 0	obs: 51 min: 0 max: 782264 mean: 23209.92 median: 0	obs: 51 min: 0 max: 206357.59 mean: 5412.44 median: 0	obs: 51 min: 0 max: 2305212 mean: 75699.6 median: 0
State Public Benefit Funds	obs: 51 min: 0 max: 168441 mean: 5099.96 median: 0	obs: 51 min: 0 max: 234959 mean: 6532.18 median: 0	obs: 51 min: 0 max: 864334 mean: 31861.94 median: 0	obs: 51 min: 0 max: 6798620 mean: 363211.08 median: 0	obs: 51 min: 0 max: 42442957 mean: 1196336.3 median: 0	obs: 51 min: 0 max: 47384020 mean: 1603041.4 median: 0
Other State Programs	obs: 50 min: 0 max: 0 mean: 0 median: 0	obs: 50 min: 0 max: 3000000 mean: 61542.03 median: 0	obs: 50 min: 0 max: 16000 mean: 320 median: 0	obs: 50 min: 0 max: 1748908 mean: 57306.20 median: 0	obs: 50 min: 0 max: 1885427.6 mean: 70479.07 median: 0	obs: 51 min: 0 max: 3000000 mean: 186542.39 median: 0
Utilities	obs: 51 min: 0 max: 20000 mean: 392.16 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 350000 mean: 9967.21 median: 0	obs: 51 min: 0 max: 1778170 mean: 112329.11 median: 0	obs: 51 min: 0 max: 4846840 mean: 320783.75 median: 0	obs: 51 min: 0 max: 4846840 mean: 443472.22 median: 0
Program Income (other than above)	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0
In-Kind Contributions	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0
Non-Profit Organizations	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 55000 mean: 1078.43 median: 0	obs: 51 min: 0 max: 55000 mean: 1078.43 median: 0
Other	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 21303879 mean: 428507.43 median: 0	obs: 51 min: 0 max: 21303879 mean: 428507.43 median: 0
Total	obs: 50 min: 0 max: 2324448 mean: 238718.27 median: 106920.5	obs: 50 min: 0 max: 12617865 mean: 414078.66 median: 105269.5	obs: 50 min: 0 max: 4284665 mean: 452612.9 median: 211051.5	obs: 50 min: 0 max: 47341096 mean: 3935918.1 median: 1016511.5	obs: 51 min: 0 max: 71046408 mean: 7101572.6 median: 2947177	obs: 51 min: 0 max: 78085712 mean: 12124766 median: 5838587

17b. Of the Program Year 2007 funds retained by your state's weatherization program for Program Management, how much was used for each function listed below?

<b>Type of Management Function</b>	<b>Total</b>
Administration*	obs: 46 min: 4129 max: 2860260 mean: 301772.96 median: 144405.12
Agency monitoring	obs: 32 min: 0 max: 337565 mean: 122735.74 median: 101661.5
Other (specify)	obs: 12 min: 0 max: 737827.63 mean: 164062.05 median: 71381.5
TOTAL	obs: 51 min: 0 max: 2860260 mean: 387800.87 median: 208825

\* Includes planning, finance and accounting, clerical support, outreach, and evaluation.

18a. Please indicate the amount of weatherization funding from each source that your state administered in Program Year 2008 that was spent on the different functions or applications shown below. The amount that you list in the right-most cell at the very bottom of the table should equal the total amount of weatherization funding from all sources that your state administered in Program Year 2008.

Source of PY 2008 Weatherization Funding Administered by State	Training and Technical Assistance (T&TA)		Program Management		Other (funds for weatherization, H&S, and other measures passed on to local agencies)	Total
	Funds retained and spent by state	Funds passed on to local agencies	Funds retained and spent by state	Funds passed on to local agencies		
DOE	obs: 51 min: 0 max: 898076 mean: 183343.92 median: 119396	obs: 51 min: 0 max: 4468840 mean: 240641.3 median: 94496	obs: 51 min: 0 max: 1003790 mean: 206716.67 median: 134617	obs: 51 min: 0 max: 13305394 mean: 1122956.5 median: 409447	obs: 51 min: 0 max: 15885365 mean: 2821587.9 median: 1703174	obs: 51 min: 0 max: 20075816 mean: 4575246.3 median: 2890404.5
LIHEAP	obs: 51 min: 0 max: 6042017 mean: 133522.08 median: 0	obs: 51 min: 0 max: 551466 mean: 38236.47 median: 0	obs: 51 min: 0 max: 1530148 mean: 225906.89 median: 47952	obs: 51 min: 0 max: 33345700 mean: 1705141 median: 307595	obs: 51 min: 0 max: 40724760 mean: 4148556.3 median: 854099	obs: 51 min: 0 max: 44437348 mean: 6251362.8 median: 2709263
Petroleum Violation Escrow (PVE)	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 696870 mean: 13664.12 median: 0	obs: 51 min: 0 max: 5000000 mean: 111234.82 median: 0	obs: 51 min: 0 max: 5000000 mean: 124898.94 median: 0
Other Federal Programs	obs: 51 min: 0 max: 69156 mean: 3272.88 median: 0	obs: 51 min: 0 max: 2016495 mean: 41562.61 median: 0	obs: 51 min: 0 max: 170128 mean: 4165.35 median: 0	obs: 51 min: 0 max: 873532 mean: 28286.49 median: 0	obs: 51 min: 0 max: 1317932 mean: 32329.77 median: 0	obs: 51 min: 0 max: 2304828 mean: 109617.11 median: 0
State Public Benefit Funds	obs: 51 min: 0 max: 128492 mean: 5233.33 median: 0	obs: 51 min: 0 max: 315054 mean: 7968.67 median: 0	obs: 51 min: 0 max: 1610995 mean: 47051.88 median: 0	obs: 51 min: 0 max: 7178416 mean: 384897.29 median: 0	obs: 51 min: 0 max: 40182405 mean: 1178866.4 median: 0	obs: 51 min: 0 max: 45735904 mean: 1624017.6 median: 0
Other State Programs	obs: 51 min: 0 max: 311 mean: 10.57 median: 0	obs: 51 min: 0 max: 3000000 mean: 107911.33 median: 0	obs: 51 min: 0 max: 33470 mean: 1552.35 median: 0	obs: 51 min: 0 max: 14795008 mean: 344177.89 median: 0	obs: 51 min: 0 max: 3523641 mean: 163427.86 median: 0	obs: 51 min: 0 max: 14795008 mean: 617080 median: 0
Utilities	obs: 51 min: 0 max: 20000 mean: 401.29 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 152652 mean: 4359.11 median: 0	obs: 51 min: 0 max: 2002159 mean: 115127.97 median: 0	obs: 51 min: 0 max: 4842605 mean: 289489.6 median: 0	obs: 51 min: 0 max: 4842605 mean: 409377.97 median: 0
Program Income (other than above)	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0
In-Kind Contributions	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0
Non-Profit Organizations	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 33200 mean: 650.98 median: 0	obs: 51 min: 0 max: 33200 mean: 650.98 median: 0
Other	obs: 51 min: 0 max: 8500 mean: 166.67 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 0 mean: 0 median: 0	obs: 51 min: 0 max: 20006838 mean: 393663.49 median: 0	obs: 51 min: 0 max: 20006838 mean: 393663.49 median: 0
Total	obs: 51 min: 0 max: 6246423 mean: 325950.75 median: 144285	obs: 51 min: 0 max: 9941058 mean: 436320.37 median: 106936	obs: 51 min: 0 max: 2455541 mean: 489791.48 median: 270223	obs: 51 min: 0 max: 46651096 mean: 3714251.3 median: 1470332	obs: 51 min: 0 max: 78653192 mean: 8982620.5 median: 3141659	obs: 51 min: 0 max: 86556232 mean: 14106082 median: 7619160

18b. Of the Program Year 2008 funds retained by your state's weatherization program for Program Management, how much was used for each function listed below?

Type of Management Function	Total
Administration*	obs: 51 min: 4294 max: 2918600 mean: 380372.77 median: 210201
Agency monitoring	obs: 51 min: 0 max: 363388 mean: 127001.74 median: 130201.5
Other (specify)	obs: 51 min: 0 max: 1032807 mean: 144389.08 median: 36704
TOTAL	obs: 51 min: 0 max: 2918600 mean: 472012.5 median: 289151

\* Includes planning, finance and accounting, clerical support, outreach, and evaluation.

19. How important were leveraged funds (i.e., funds that support the weatherization program that are not provided by DOE) for your state's weatherization program in PY 2008? (Check best answer). *Include leveraged funds not reported by the state but available at the local level.*

	Freq.	Percent	Cum.
not important at all	5	10.20	10.20
not very important	4	8.16	18.37
important	13	26.53	44.90
very important	27	55.10	100.00
Total	49	100.00	

20. Did your state set aside funding to advocate for leveraged resources in Program Year 2008?

	Freq.	Percent	Cum.
no	35	71.43	71.43
yes	14	28.57	100.00
Total	49	100.00	

21. What organizations advocated for leveraged resources in Program Year 2008? (Check all that apply)

\_\_\_\_ **Your state office**

	Freq.	Percent	Cum.
no	9	56.25	56.25
yes	7	43.75	100.00
Total	16	100.00	

\_\_\_\_ **Your state's local weatherization agencies or agency associations**

	Freq.	Percent	Cum.
no	6	37.50	37.50
yes	10	62.50	100.00
Total	16	100.00	

\_\_\_\_ **Non-profit organizations funded by your state**

	Freq.	Percent	Cum.
no	13	81.25	81.25
yes	3	18.75	100.00
Total	16	100.00	

\_\_\_\_ **Other**

	Freq.	Percent	Cum.
no	15	93.75	93.75
yes	1	6.25	100.00
Total	16	100.00	

22. How successful would you rate your state's efforts to acquire leveraged funds in Program Year 2008? (Check best answer). *Include leveraged funds not reported by the state but available at the local level.*

	Freq.	Percent	Cum.
not successful at all	2	4.08	4.08
not very successful	7	14.29	18.37
successful	23	46.94	65.31
very successful	10	20.41	85.71
state does not seek leveraged funds	7	14.29	100.00
Total	49	100.00	

23. What factors limited the success of your state's efforts to acquire leveraged funding in Program Year 2008? \_\_\_\_\_

24. Have you modified your state's weatherization program practices or regulations in the three years prior to Program Year 2008 to facilitate spending and reporting on leveraged resources?

	Freq.	Percent	Cum.
no	39	81.25	81.25
yes	9	18.75	100.00
Total	48	100.00	

25. Please indicate the number of staff that supported your state's weatherization program and their work effort in Program Year 2008. In considering the number of staff, please include everyone who worked full- or part-time or who worked with the weatherization program as well as other state programs. Also include any non-agency staff supporting the state program who work under contract to the state.

Type of Administrative Function	Number of Staff (# persons)	Staff Work Effort (FTE)
Management/administration	obs: 48 min: .75 max: 22 mean: 3.90 median: 3	obs: 40 min: .25 max: 12 mean: 2.62 median: 2
Agency monitoring	obs: 45 min: .5 max: 18 mean: 3.63 median: 2	obs: 37 min: .05 max: 18 mean: 2.84 median: 1.75
Training and Technical Assistance	obs: 39 min: 0 max: 32 mean: 3.12 median: 1	obs: 34 min: .3 max: 13.52 mean: 2.70 median: 1
Other (specify)	obs: 15 min: 0 max: 9 mean: 2.07 median: 1	obs: 12 min: 0 max: 6.8 mean: 1.45 median: .75
TOTAL	obs: 51 min: 0 max: 57 mean: 9.86 median: 7	obs: 51 min: 0 max: 34 mean: 6.26 median: 4

26. For the in-house staff working on your state's weatherization program in each of the following functional areas in Program Year 2008, please indicate their collective level of experience with the weatherization program.

	<b>Very High</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>Very Low</b>
Management/administration	Freq. Percent Cum.				
	low	3	6.12	6.12	
	medium	7	14.29	20.41	
	high	15	30.61	51.02	
	very high	24	48.98	100.00	
	Total	49	100.00		
Field monitoring/auditing	Freq. Percent Cum.				
	very low	1	2.04	2.04	
	low	2	4.08	6.12	
	medium	5	10.20	16.33	
	high	12	24.49	40.82	
	very high	29	59.18	100.00	
Total	49	100.00			
Training and Technical Assistance	Freq. Percent Cum.				
	very low	1	2.13	2.13	
	low	2	4.26	6.38	
	medium	6	12.77	19.15	
	high	13	27.66	46.81	
	very high	25	53.19	100.00	
Total	47	100.00			
Other (specify)	Freq. Percent Cum.				
	very low	1	25.00	25.00	
	low	1	25.00	50.00	
	very high	2	50.00	100.00	
	Total	4	100.00		

27. For the in-house staff working on your state's weatherization program in each of the following functional areas in Program Year 2008, please indicate the amount of turnover in staff over a **three year period that included Program Year 2008**: Turnover is defined as the number of new staff in a functional area in the past three years divided by the total number of staff working in that functional area. If a particular position has had more than one new person during the past three years (e.g., Person 1 leaves, Person 2 is hired to take Person 1's position, then Person 2 leaves and a third person is hired), just count that as one new staff person. (Please check appropriate boxes)

	No Turnover	1 to 10%	11 to 25%	26 to 50%	51 to 75%	76 to 100%
Management/ administration	Freq. Percent Cum.					
	-----+					
	1 to 10%	9	20.45	20.45		
	26 to 50%	6	13.64	34.09		
	51 to 75%	2	4.55	38.64		
	76 to 100%	2	4.55	43.18		
	no turnover	25	56.82	100.00		
-----+						
Total	44	100.00				
Field monitoring/ Auditing	Freq. Percent Cum.					
	-----+					
	1 to 10%	9	20.00	20.00		
	11 to 25%	1	2.22	22.22		
	26 to 50%	5	11.11	33.33		
	51 to 75%	3	6.67	40.00		
	76 to 100%	5	11.11	51.11		
no turnover	22	48.89	100.00			
-----+						
Total	45	100.00				
Training and Technical Assistance	Freq. Percent Cum.					
	-----+					
	1 to 10%	6	15.00	15.00		
	26 to 50%	4	10.00	25.00		
	51 to 75%	1	2.50	27.50		
	76 to 100%	3	7.50	35.00		
no turnover	26	65.00	100.00			
-----+						
Total	40	100.00				
Other (specify)	Freq. Percent Cum.					
	-----+					
	1 to 10%	1	25.00	25.00		
	51 to 75%	1	25.00	50.00		
no turnover	2	50.00	100.00			
-----+						
Total	4	100.00				



28. The Federal Regulations governing the Weatherization Assistance Program define children as “dependents not exceeding 19 years or a lesser age set forth in the State plan.” What age did you state use in your state’s definition of children in Program Year 2008? \_\_\_\_\_

observations:	46
missing values:	5
mean:	14.91
standard deviation:	5.60
min:	5
10th percentile:	6
25th percentile:	6
median:	18
75th percentile:	19
90th percentile:	19
max:	19

29. Did your state use a high energy burden category to prioritize the provision of weatherization services in Program Year 2008?

	Freq.	Percent	Cum.
no	21	42.00	42.00
yes	29	58.00	100.00
Total	50	100.00	

29a. How was ‘high energy burden’ defined? \_\_\_\_\_

30. Did your state use a high energy expenditure category to prioritize the provision of weatherization services in Program Year 2008?

	Freq.	Percent	Cum.
no	31	62.00	62.00
yes	19	38.00	100.00
Total	50	100.00	

30a. How was ‘high energy expenditure’ defined? \_\_\_\_\_

31. What were the income guidelines for households to be eligible for your state’s weatherization program in Program Year 2008? (Check all that apply)

\_\_\_\_\_ **100% of Federal Poverty Guidelines**

	Freq.	Percent	Cum.
no	48	96.00	96.00
yes	2	4.00	100.00
Total	50	100.00	

\_\_\_\_\_ **125% of Federal Poverty Guidelines**

	Freq.	Percent	Cum.
no	44	88.00	88.00
yes	6	12.00	100.00
Total	50	100.00	

\_\_\_\_\_ **150% of Federal Poverty Guidelines**

	Freq.	Percent	Cum.
no	27	54.00	54.00
yes	23	46.00	100.00
Total	50	100.00	

\_\_\_\_\_ **185% of Federal Poverty Guidelines**

	Freq.	Percent	Cum.
no	48	96.00	96.00
yes	2	4.00	100.00
Total	50	100.00	

\_\_\_\_\_ **More than 185% of Federal Poverty Guidelines**

	Freq.	Percent	Cum.
no	50	100.00	100.00
Total	50	100.00	

\_\_\_\_\_ **60% of state median income**

	Freq.	Percent	Cum.
no	37	74.00	74.00
yes	13	26.00	100.00
Total	50	100.00	

\_\_\_\_\_ **Other:** \_\_\_\_\_

	Freq.	Percent	Cum.
no	39	78.00	78.00
yes	11	22.00	100.00
Total	50	100.00	

**Section B: PROGRAM OPERATIONS AND IMPLEMENTATION**

- Using the following scale, how adequate was the Program Year 2008 funding received by your state from ALL funding sources for weatherizing the stock of eligible low-income dwelling units in your state in a timely fashion? (Check best answer)

	Freq.	Percent	Cum.
very inadequate	8	16.33	16.33
inadequate	23	46.94	63.27
adequate	16	32.65	95.92
very adequate	2	4.08	100.00
Total	49	100.00	

- What was the quality of the management support that your state received from DOE and its contractors in Program Year 2008? (Check best answer)

	Freq.	Percent	Cum.
very low quality	1	2.04	2.04
low quality	1	2.04	4.08
moderate quality	24	48.98	53.06
high quality	18	36.73	89.80
very high quality	4	8.16	97.96
not applicable	1	2.04	100.00
Total	49	100.00	

2a. If appropriate, why did you rate the quality very low or low? \_\_\_\_\_

- What was the quality of the training that your state received from DOE and its contractors in Program Year 2008? (Check best answer)

	Freq.	Percent	Cum.
very low quality	1	2.04	2.04
low quality	1	2.04	4.08
moderate quality	24	48.98	53.06
high quality	13	26.53	79.59
very high quality	3	6.12	85.71
not applicable	7	14.29	100.00
Total	49	100.00	

3a. If appropriate, why did you rate the quality very low or low? \_\_\_\_\_

4. What was the quality of the support and assistance on client education that your state received from DOE and its contractors in Program Year 2008? (Check best answer)

	Freq.	Percent	Cum.
very low quality	2	4.17	4.17
low quality	8	16.67	20.83
moderate quality	13	27.08	47.92
high quality	6	12.50	60.42
very high quality	2	4.17	64.58
not applicable	17	35.42	100.00
Total	48	100.00	

4a. If appropriate, why did you rate the quality very low or low? \_\_\_\_\_

5. What was the quality of the support and assistance on leveraging the Weatherization Assistance Program funding provided by DOE with other funding sources in Program Year 2008? (Check best answer)

	Freq.	Percent	Cum.
very low quality	1	2.08	2.08
low quality	6	12.50	14.58
moderate quality	14	29.17	43.75
high quality	4	8.33	52.08
very high quality	3	6.25	58.33
not applicable	20	41.67	100.00
Total	48	100.00	

5a. If appropriate, why did you rate the quality very low or low? \_\_\_\_\_

6. What was the quality of the *technical* support (e.g., measure selection and installation) that your state received from DOE and its contractors in Program Year 2008? (Check best answer)

	Freq.	Percent	Cum.
very low quality	1	2.13	2.13
low quality	4	8.51	10.64
moderate quality	15	31.91	42.55
high quality	12	25.53	68.09
very high quality	5	10.64	78.72
not applicable	10	21.28	100.00
Total	47	100.00	

6a. If appropriate, why did you rate the quality very low or low? \_\_\_\_\_

7. How flexible did you find the DOE program rules that governed the weatherization program in Program Year 2008? In other words, did the program rules allow your state to tailor your program to your needs (very flexible) or proscribe your program to only one way of operation (very inflexible)? (Check best answer)

	Freq.	Percent	Cum.
very inflexible	1	2.08	2.08
inflexible	5	10.42	12.50
flexible	40	83.33	95.83
very flexible	2	4.17	100.00
Total	48	100.00	

7a. Using Program Year 2008 as the reference point, how should the program rules change? (Check best answer)

- Become much more flexible
- Become more flexible
- Stay about the same
- Become more inflexible
- Become much more inflexible

	Freq.	Percent	Cum.
stay about the same	19	39.58	39.58
become more flexible	22	45.83	85.42
become much more flexible	7	14.58	100.00
Total	48	100.00	

7b. In what areas should the program rules become more flexible? \_\_\_\_\_

7c. In what areas should the program rules become less flexible? \_\_\_\_\_

8. Please describe any important political issues faced by your state's weatherization program in Program Year 2008.

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9. Using Program Year 2008 as a reference point, how important was improving administrative support and assistance from DOE and its contractors in improving your state's ability to deliver low-income weatherization services? (Check best answer) *Thinking back to Program Year 2008, how great did you perceive the need to be for improvements in administrative support and assistance from DOE and its contractors to help your state deliver low-income weatherization services?*

	Freq.	Percent	Cum.
very unimportant	2	4.17	4.17
unimportant	7	14.58	18.75
important	22	45.83	64.58
very important	11	22.92	87.50
not applicable	6	12.50	100.00
Total	48	100.00	

10. Using Program Year 2008 as a reference point, how important was improving training from DOE and its contractors in improving your state's ability to deliver low-income weatherization services? (Check best answer) *Thinking back to Program Year 2008, how great did you perceive the need to be for improvements in training from DOE and its contractors to help your state deliver low-income weatherization services?*

	Freq.	Percent	Cum.
very unimportant	2	4.17	4.17
unimportant	5	10.42	14.58
important	23	47.92	62.50
very important	16	33.33	95.83
not applicable	2	4.17	100.00
Total	48	100.00	

11. Using Program Year 2008 as a reference point, how important was improving assistance on client education from DOE and its contractors in improving your state's ability to deliver low-income weatherization services? (Check best answer) *Thinking back to Program Year 2008, how great did you perceive the need to be for improvements in assistance on client education from DOE and its contractors to help your state deliver low-income weatherization services?*

	Freq.	Percent	Cum.
very unimportant	4	8.33	8.33
unimportant	10	20.83	29.17
important	19	39.58	68.75
very important	9	18.75	87.50
not applicable	6	12.50	100.00
Total	48	100.00	

12. Using Program Year 2008 as a reference point, how important was improving assistance from DOE and its contractors on leveraging the Weatherization Assistance Program provided by DOE with other funding sources? (Check best answer) *Thinking back to Program Year 2008, how great did you perceive the need to be for improvements in assistance from DOE and its contractors on leveraging the Weatherization Assistance Program to help your state deliver low-income weatherization services?*

	Freq.	Percent	Cum.
very unimportant	2	4.17	4.17
unimportant	8	16.67	20.83
important	18	37.50	58.33
very important	9	18.75	77.08
not applicable	11	22.92	100.00
Total	48	100.00	

13. Using Program Year 2008 as a reference point, how important was improving *technical* support from DOE and its contractors in improving your state's ability to deliver low-income weatherization services? (Check best answer) *Thinking back to Program Year 2008, how great did you perceive the need to be for improvements in technical support from DOE and its contractors to help your state deliver low-income weatherization services?*

	Freq.	Percent	Cum.
very unimportant	3	6.25	6.25
unimportant	4	8.33	14.58
important	23	47.92	62.50
very important	16	33.33	95.83
not applicable	2	4.17	100.00
Total	48	100.00	

14. Using Program Year 2008 as a reference point, how important was increased weatherization funding in improving your state's ability to deliver low-income weatherization services? (Check best

answer) *Thinking back to Program Year 2008, how great did you perceive the need to be for improvements in weatherization funding to help your state deliver low-income weatherization services? "Increased weatherization funding" refers to funding increases going into Program Year 2008. If a state did not experience funding increases going into Program Year 2008, mark not applicable.*

- Very Important
- Somewhat Important
- Somewhat Unimportant
- Very Unimportant
- Not applicable

	Freq.	Percent	Cum.
important	11	23.40	23.40
very important	31	65.96	89.36
not applicable	5	10.64	100.00
Total	47	100.00	

15. Using Program Year 2008 as a reference point, how important was improving data and information systems for managing the delivery of weatherization services? (Check best answer) *Thinking back to Program Year 2008, how great did you perceive the need to be for improvements in data and information systems to help your state deliver low-income weatherization services?*

	Freq.	Percent	Cum.
very unimportant	2	4.08	4.08
unimportant	3	6.12	10.20
important	15	30.61	40.82
very important	27	55.10	95.92
not applicable	2	4.08	100.00
Total	49	100.00	



**Section C: TRAINING**

1. For those staff working in your state’s weatherization office who need to have knowledge about the following list of weatherization topics, how well trained were they in each area in Program Year 2008? Please use the following scale: 1– not at all well trained; 2 – not well trained; 3 – moderately well trained; 4 –well trained; 5 – very well trained; 6 – not applicable (*Circle best answer*).

**(1) Diagnostic procedures**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	5	10.20	12.24
moderately well trained	7	14.29	26.53
well trained	15	30.61	57.14
very well trained	19	38.78	95.92
not applicable	2	4.08	100.00
<b>Total</b>	<b>49</b>	<b>100.00</b>	

**(2) Insulation**

**-- single family dwellings**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	1	2.04	4.08
moderately well trained	6	12.24	16.33
well trained	15	30.61	46.94
very well trained	24	48.98	95.92
not applicable	2	4.08	100.00
<b>Total</b>	<b>49</b>	<b>100.00</b>	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	3	6.25	6.25
not well trained	7	14.58	20.83
moderately well trained	16	33.33	54.17
well trained	4	8.33	62.50
very well trained	11	22.92	85.42
not applicable	7	14.58	100.00
<b>Total</b>	<b>48</b>	<b>100.00</b>	

**-- mobile homes**

	Freq.	Percent	Cum.
not at all well trained	1	2.13	2.13
not well trained	1	2.13	4.26
moderately well trained	8	17.02	21.28
well trained	16	34.04	55.32
very well trained	18	38.30	93.62
not applicable	3	6.38	100.00
Total	47	100.00	

**(3) Space heating, ventilation, air conditioning**  
**-- single family dwellings**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	4	8.33	10.42
moderately well trained	7	14.58	25.00
well trained	14	29.17	54.17
very well trained	20	41.67	95.83
not applicable	2	4.17	100.00
Total	48	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	2	4.17	4.17
not well trained	12	25.00	29.17
moderately well trained	9	18.75	47.92
well trained	8	16.67	64.58
very well trained	10	20.83	85.42
not applicable	7	14.58	100.00
Total	48	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	4	8.16	10.20
moderately well trained	7	14.29	24.49
well trained	14	28.57	53.06
very well trained	20	40.82	93.88
not applicable	3	6.12	100.00
Total	49	100.00	

**(4) Infiltration measures**

**-- single family dwellings**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	1	2.04	4.08
moderately well trained	5	10.20	14.29
well trained	15	30.61	44.90
very well trained	25	51.02	95.92
not applicable	2	4.08	100.00
Total	49	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	2	4.17	4.17
not well trained	9	18.75	22.92
moderately well trained	12	25.00	47.92
well trained	8	16.67	64.58
very well trained	10	20.83	85.42
not applicable	7	14.58	100.00
Total	48	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	2	4.08	6.12
moderately well trained	4	8.16	14.29
well trained	16	32.65	46.94
very well trained	23	46.94	93.88
not applicable	3	6.12	100.00
Total	49	100.00	

**(5) Doors and windows**

**-- single family dwellings**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	2	4.17	6.25
moderately well trained	3	6.25	12.50
well trained	19	39.58	52.08
very well trained	20	41.67	93.75
not applicable	3	6.25	100.00
Total	48	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	2	4.26	4.26
not well trained	8	17.02	21.28
moderately well trained	6	12.77	34.04
well trained	14	29.79	63.83
very well trained	10	21.28	85.11
not applicable	7	14.89	100.00
Total	47	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	2	4.17	6.25
moderately well trained	4	8.33	14.58
well trained	17	35.42	50.00
very well trained	20	41.67	91.67
not applicable	4	8.33	100.00
Total	48	100.00	

**(6) Hot water heating**

**-- single family dwellings**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	2	4.08	6.12
moderately well trained	4	8.16	14.29
well trained	19	38.78	53.06
very well trained	20	40.82	93.88
not applicable	3	6.12	100.00
Total	49	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	2	4.26	4.26
not well trained	9	19.15	23.40
moderately well trained	10	21.28	44.68
well trained	10	21.28	65.96
very well trained	10	21.28	87.23
not applicable	6	12.77	100.00
Total	47	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
not at all well trained	1	2.13	2.13
not well trained	3	6.38	8.51
moderately well trained	3	6.38	14.89
well trained	19	40.43	55.32
very well trained	17	36.17	91.49
not applicable	4	8.51	100.00
Total	47	100.00	

**(7) Baseloads (e.g., lighting, refrigerators)**

**-- single family dwellings**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	3	6.12	8.16
moderately well trained	4	8.16	16.33
well trained	17	34.69	51.02
very well trained	20	40.82	91.84
not applicable	4	8.16	100.00
Total	49	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	2	4.26	4.26
not well trained	8	17.02	21.28
moderately well trained	6	12.77	34.04
well trained	11	23.40	57.45
very well trained	11	23.40	80.85
not applicable	9	19.15	100.00
Total	47	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
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	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	3	6.12	8.16
moderately well trained	5	10.20	18.37
well trained	17	34.69	53.06
very well trained	18	36.73	89.80
not applicable	5	10.20	100.00
<b>Total</b>	<b>49</b>	<b>100.00</b>	

1a. For those staff working in your state's weatherization office who need to have knowledge about the following list of administrative-related topics, how well trained were they in each area in Program Year 2008? Please use the following scale: 1- not at all well trained; 2 - not well trained; 3 - moderately well trained; 4 - well trained; 5 - very well trained; 6 - not applicable (*Circle best answer*).

**(1) Management**

	Freq.	Percent	Cum.
not well trained	1	2.04	2.04
moderately well trained	8	16.33	18.37
well trained	23	46.94	65.31
very well trained	17	34.69	100.00
<b>Total</b>	<b>49</b>	<b>100.00</b>	

**(2) Client education**

	Freq.	Percent	Cum.
not well trained	6	12.24	12.24
moderately well trained	14	28.57	40.82
well trained	12	24.49	65.31
very well trained	16	32.65	97.96
not applicable	1	2.04	100.00
<b>Total</b>	<b>49</b>	<b>100.00</b>	

**(3) Auditing/estimating**

**-- single family dwellings**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	5	10.20	12.24
moderately well trained	6	12.24	24.49
well trained	13	26.53	51.02
very well trained	22	44.90	95.92
not applicable	2	4.08	100.00
<b>Total</b>	<b>49</b>	<b>100.00</b>	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
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	Freq.	Percent	Cum.
not at all well trained	3	6.25	6.25
not well trained	9	18.75	25.00
moderately well trained	13	27.08	52.08
well trained	6	12.50	64.58
very well trained	11	22.92	87.50
not applicable	6	12.50	100.00
<b>Total</b>	<b>48</b>	<b>100.00</b>	

**-- mobile homes**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	5	10.20	12.24
moderately well trained	6	12.24	24.49
well trained	12	24.49	48.98
very well trained	23	46.94	95.92
not applicable	2	4.08	100.00
<b>Total</b>	<b>49</b>	<b>100.00</b>	

**(4) Monitoring/quality control**

	Freq.	Percent	Cum.
moderately well trained	9	18.37	18.37
well trained	17	34.69	53.06
very well trained	23	46.94	100.00
<b>Total</b>	<b>49</b>	<b>100.00</b>	

**(5) Financial topics**

	Freq.	Percent	Cum.
not well trained	5	10.42	10.42
moderately well trained	9	18.75	29.17
well trained	15	31.25	60.42
very well trained	19	39.58	100.00
<b>Total</b>	<b>48</b>	<b>100.00</b>	

**(6) Outreach and communications**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	3	6.25	8.33
moderately well trained	20	41.67	50.00
well trained	8	16.67	66.67
very well trained	16	33.33	100.00
Total	48	100.00	

**(7) Other (please specify)**

1b. For those staff working in your state's weatherization office who need to have knowledge about the following list of health and safety topics, how well trained were they in each area in Program Year 2008? Please use the following scale: 1– not at all well trained; 2 – not well trained; 3 – moderately well trained; 4 –well trained; 5 – very well trained; 6 – not applicable (*Circle best answer*).

**(1) Fire safety**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	6	12.24	14.29
moderately well trained	19	38.78	53.06
well trained	11	22.45	75.51
very well trained	8	16.33	91.84
not applicable	4	8.16	100.00
Total	49	100.00	

**(2) Indoor air quality**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	5	10.20	12.24
moderately well trained	4	8.16	20.41
well trained	14	28.57	48.98
very well trained	23	46.94	95.92
not applicable	2	4.08	100.00
Total	49	100.00	



**(3) Measures to increase security of housing unit**

	Freq.	Percent	Cum.
not at all well trained	3	6.25	6.25
not well trained	14	29.17	35.42
moderately well trained	9	18.75	54.17
well trained	6	12.50	66.67
very well trained	6	12.50	79.17
not applicable	10	20.83	100.00
Total	48	100.00	

**(4) Measures to reduce common household hazards**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	5	10.20	12.24
moderately well trained	12	24.49	36.73
well trained	13	26.53	63.27
very well trained	13	26.53	89.80
not applicable	5	10.20	100.00
Total	49	100.00	

**(5) Mold and mildew**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	3	6.12	8.16
moderately well trained	9	18.37	26.53
well trained	16	32.65	59.18
very well trained	18	36.73	95.92
not applicable	2	4.08	100.00
Total	49	100.00	

**(6) Lead**

	Freq.	Percent	Cum.
not at all well trained	1	2.04	2.04
not well trained	4	8.16	10.20
moderately well trained	10	20.41	30.61
well trained	15	30.61	61.22
very well trained	17	34.69	95.92
not applicable	2	4.08	100.00
Total	49	100.00	

**(7) Asbestos**

	Freq.	Percent	Cum.
not at all well trained	3	6.25	6.25
not well trained	7	14.58	20.83
moderately well trained	16	33.33	54.17
well trained	8	16.67	70.83
very well trained	12	25.00	95.83
not applicable	2	4.17	100.00
Total	48	100.00	

**(8) Vermiculite**

	Freq.	Percent	Cum.
not at all well trained	4	8.33	8.33
not well trained	8	16.67	25.00
moderately well trained	15	31.25	56.25
well trained	9	18.75	75.00
very well trained	8	16.67	91.67
not applicable	4	8.33	100.00
Total	48	100.00	

**(9) General crew safety**

	Freq.	Percent	Cum.
not at all well trained	2	4.08	4.08
not well trained	1	2.04	6.12
moderately well trained	9	18.37	24.49
well trained	18	36.73	61.22
very well trained	15	30.61	91.84
not applicable	4	8.16	100.00
Total	49	100.00	

**(10) Other (please specify)**

2. On which of the following weatherization subjects did staff working in your state's weatherization office receive training in Program Year 2008 from DOE, your state, or other entities? (Check all that apply)

**(1) Diagnostic procedures**

	Freq.	Percent	Cum.
no	3	7.14	7.14
yes	39	92.86	100.00
Total	42	100.00	

**(2) Insulation**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	2	4.76	4.76
yes	40	95.24	100.00
Total	42	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	26	61.90	61.90
yes	16	38.10	100.00
Total	42	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	9	21.43	21.43
yes	33	78.57	100.00
Total	42	100.00	

**(3) Space heating, ventilation, air conditioning**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	4	9.52	9.52
yes	38	90.48	100.00
Total	42	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	24	57.14	57.14
yes	18	42.86	100.00
Total	42	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	8	19.05	19.05
yes	34	80.95	100.00
Total	42	100.00	

**(4) Infiltration measures**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	4	9.52	9.52
yes	38	90.48	100.00
Total	42	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	24	57.14	57.14
yes	18	42.86	100.00
Total	42	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	7	16.67	16.67
yes	35	83.33	100.00
Total	42	100.00	

**(5) Doors and windows**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	11	26.19	26.19
yes	31	73.81	100.00
Total	42	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	27	64.29	64.29
yes	15	35.71	100.00
Total	42	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	14	33.33	33.33
yes	28	66.67	100.00
Total	42	100.00	

**(6) Hot water heating**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	11	26.19	26.19
yes	31	73.81	100.00
Total	42	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	27	64.29	64.29
yes	15	35.71	100.00
Total	42	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	15	35.71	35.71
yes	27	64.29	100.00
Total	42	100.00	

**(7) Baseloads (e.g., lighting, refrigerators)**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	8	19.05	19.05
yes	34	80.95	100.00
Total	42	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	26	61.90	61.90
yes	16	38.10	100.00
Total	42	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	12	28.57	28.57
yes	30	71.43	100.00
Total	42	100.00	

2a. On which administration-related topics did staff working in your state's weatherization office receive training in Program Year 2008 from DOE, your state, or other entities? (Check all that apply)

**(1) Management**

	Freq.	Percent	Cum.
no	12	25.53	25.53
yes	35	74.47	100.00
Total	47	100.00	

**(2) Client education**

	Freq.	Percent	Cum.
no	25	53.19	53.19
yes	22	46.81	100.00
Total	47	100.00	

**(3) Auditing/estimating**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	14	29.79	29.79
yes	33	70.21	100.00
Total	47	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	33	70.21	70.21
yes	14	29.79	100.00
Total	47	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	20	42.55	42.55
yes	27	57.45	100.00
Total	47	100.00	

**(4) Monitoring/quality control**

	Freq.	Percent	Cum.
no	10	21.28	21.28
yes	37	78.72	100.00
Total	47	100.00	

**(5) Financial topics**

	Freq.	Percent	Cum.
no	15	31.91	31.91
yes	32	68.09	100.00
Total	47	100.00	

**(6) Outreach and communications**

	Freq.	Percent	Cum.
no	26	55.32	55.32
yes	21	44.68	100.00
Total	47	100.00	

**(7) Other (please specify)**

2b. On which health and safety topics did staff working in your state's weatherization office receive training in Program Year 2008 from DOE, your state, or other entities? (Check all that apply.)

\_\_\_\_\_ **Fire safety**

	Freq.	Percent	Cum.
no	32	78.05	78.05
yes	9	21.95	100.00
Total	41	100.00	

\_\_\_\_\_ **Indoor air quality**

	Freq.	Percent	Cum.
no	7	17.07	17.07
yes	34	82.93	100.00
Total	41	100.00	

\_\_\_\_\_ **Measures to increase security of housing unit**

	Freq.	Percent	Cum.
no	38	92.68	92.68
yes	3	7.32	100.00
Total	41	100.00	

\_\_\_\_\_ **Measures to reduce common household hazards**

	Freq.	Percent	Cum.
no	25	60.98	60.98
yes	16	39.02	100.00
Total	41	100.00	

\_\_\_\_\_ **Mold and mildew**

	Freq.	Percent	Cum.
no	10	24.39	24.39
yes	31	75.61	100.00
Total	41	100.00	

\_\_\_\_\_ **Lead**

	Freq.	Percent	Cum.
no	6	14.63	14.63
yes	35	85.37	100.00
Total	41	100.00	

\_\_\_\_\_ **Asbestos**

	Freq.	Percent	Cum.
no	29	70.73	70.73
yes	12	29.27	100.00
Total	41	100.00	

\_\_\_\_\_ **Vermiculite**

	Freq.	Percent	Cum.
no	31	75.61	75.61
yes	10	24.39	100.00
Total	41	100.00	



<b>General crew safety</b>			
	Freq.	Percent	Cum.
no	18	43.90	43.90
yes	23	56.10	100.00
Total	41	100.00	

**Other (please specify)**

3. For those staff working in your state’s weatherization office who need to have knowledge about the following list of diagnostic topics, how well trained were they in each area in Program Year 2008? Please use the following scale: 1– not at all well trained; 2 – not well trained; 3 – moderately well trained; 4 – well trained; 5 – very well trained; 6 – not applicable (*Circle best answer*).

**Pressure diagnostics:**

- **Blower door (house air leakage rate)**

	Freq.	Percent	Cum.
not well trained	3	6.25	6.25
moderatel well trained	5	10.42	16.67
well trained	12	25.00	41.67
very well trained	26	54.17	95.83
not applicable	2	4.17	100.00
Total	48	100.00	

- **Zonal pressure measurements**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	6	12.50	14.58
moderately well trained	13	27.08	41.67
well trained	11	22.92	64.58
very well trained	13	27.08	91.67
not applicable	4	8.33	100.00
Total	48	100.00	

- **Room-to-room pressure measurements**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	8	16.67	18.75
moderately well trained	10	20.83	39.58
well trained	14	29.17	68.75
very well trained	11	22.92	91.67
not applicable	4	8.33	100.00
Total	48	100.00	

- **Duct pressure pan measurements**

	Freq.	Percent	Cum.
not at all well trained	3	6.25	6.25
not well trained	3	6.25	12.50
moderately well trained	12	25.00	37.50
well trained	10	20.83	58.33
very well trained	15	31.25	89.58
not applicable	5	10.42	100.00
Total	48	100.00	

- **Duct blower measurements (duct air leakage rate)**

	Freq.	Percent	Cum.
not at all well trained	4	8.51	8.51
not well trained	8	17.02	25.53
moderately well trained	10	21.28	46.81
well trained	7	14.89	61.70
very well trained	11	23.40	85.11
not applicable	7	14.89	100.00
Total	47	100.00	

**Space-heating system:**

- **Flue gas analysis (steady-state efficiency measurements)**

	Freq.	Percent	Cum.
not at all well trained	3	6.25	6.25
not well trained	7	14.58	20.83
moderately well trained	9	18.75	39.58
well trained	10	20.83	60.42
very well trained	16	33.33	93.75
not applicable	3	6.25	100.00
Total	48	100.00	

- **Heat rise measurements**

	Freq.	Percent	Cum.
not at all well trained	2	4.17	4.17
not well trained	6	12.50	16.67
moderately well trained	11	22.92	39.58
well trained	10	20.83	60.42
very well trained	16	33.33	93.75
not applicable	3	6.25	100.00
Total	48	100.00	

- **CO measurements in flues**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	3	6.25	8.33
moderately well trained	10	20.83	29.17
well trained	10	20.83	50.00
very well trained	23	47.92	97.92
not applicable	1	2.08	100.00
Total	48	100.00	

- **Draft/spillage (normal operation)**

	Freq.	Percent	Cum.
not at all well trained	2	4.17	4.17
not well trained	4	8.33	12.50
moderately well trained	9	18.75	31.25
well trained	11	22.92	54.17
very well trained	19	39.58	93.75
not applicable	3	6.25	100.00
Total	48	100.00	

**Air-conditioning system:**

- **Refrigerant charge (e.g., superheat, subcooling)**

	Freq.	Percent	Cum.
not at all well trained	10	21.74	21.74
not well trained	12	26.09	47.83
moderately well trained	7	15.22	63.04
well trained	1	2.17	65.22
very well trained	3	6.52	71.74
not applicable	13	28.26	100.00
Total	46	100.00	

**HVAC components and cross-cutting diagnostics:**

- **Air handler flow rate**

	Freq.	Percent	Cum.
not at all well trained	7	14.58	14.58
not well trained	15	31.25	45.83
moderately well trained	5	10.42	56.25
well trained	6	12.50	68.75
very well trained	9	18.75	87.50
not applicable	6	12.50	100.00
Total	48	100.00	

- **Thermostat anticipator current**

	Freq.	Percent	Cum.
not at all well trained	8	16.67	16.67
not well trained	10	20.83	37.50
moderately well trained	7	14.58	52.08
well trained	8	16.67	68.75
very well trained	9	18.75	87.50
not applicable	6	12.50	100.00
Total	48	100.00	

- **Worst case draft/spillage (CAZ)**

	Freq.	Percent	Cum.
not at all well trained	2	4.26	4.26
not well trained	8	17.02	21.28
moderately well trained	6	12.77	34.04
well trained	9	19.15	53.19
very well trained	19	40.43	93.62
not applicable	3	6.38	100.00
Total	47	100.00	

**Hot-water (water-heating) system:**

- **Flue gas analysis (steady-state efficiency measurements)**

	Freq.	Percent	Cum.
not at all well trained	5	10.42	10.42
not well trained	6	12.50	22.92
moderately well trained	6	12.50	35.42
well trained	10	20.83	56.25
very well trained	17	35.42	91.67
not applicable	4	8.33	100.00
Total	48	100.00	

- **CO measurements in flues**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	5	10.42	12.50
moderately well trained	6	12.50	25.00
well trained	9	18.75	43.75
very well trained	25	52.08	95.83
not applicable	2	4.17	100.00
-----+			
Total	48	100.00	

- **Draft/spillage (normal operation)**

	Freq.	Percent	Cum.
not at all well trained	2	4.17	4.17
not well trained	5	10.42	14.58
moderately well trained	7	14.58	29.17
well trained	11	22.92	52.08
very well trained	20	41.67	93.75
not applicable	3	6.25	100.00
-----+			
Total	48	100.00	

- **Water flow rates (showerheads and faucets)**

	Freq.	Percent	Cum.
not at all well trained	4	8.33	8.33
not well trained	10	20.83	29.17
moderately well trained	9	18.75	47.92
well trained	11	22.92	70.83
very well trained	10	20.83	91.67
not applicable	4	8.33	100.00
-----+			
Total	48	100.00	

**Other CO measurements:**

- **CO measurements in equipment rooms**

	Freq.	Percent	Cum.
not at all well trained	3	6.25	6.25
not well trained	3	6.25	12.50
moderately well trained	11	22.92	35.42
well trained	8	16.67	52.08
very well trained	19	39.58	91.67
not applicable	4	8.33	100.00
-----+			
Total	48	100.00	

- **Cooking stove**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	5	10.42	12.50
moderately well trained	10	20.83	33.33
well trained	12	25.00	58.33
very well trained	17	35.42	93.75
not applicable	3	6.25	100.00
Total	48	100.00	

- **CO measurements in living areas**

	Freq.	Percent	Cum.
not at all well trained	1	2.13	2.13
not well trained	4	8.51	10.64
moderately well trained	9	19.15	29.79
well trained	11	23.40	53.19
very well trained	17	36.17	89.36
not applicable	5	10.64	100.00
Total	47	100.00	

**Other diagnostics and inspections:**

- **Refrigerator energy use**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	2	4.17	6.25
moderately well trained	7	14.58	20.83
well trained	17	35.42	56.25
very well trained	16	33.33	89.58
not applicable	5	10.42	100.00
Total	48	100.00	

- **Exhaust fan air flow rate measurement**

	Freq.	Percent	Cum.
not at all well trained	3	6.25	6.25
not well trained	6	12.50	18.75
moderately well trained	11	22.92	41.67
well trained	10	20.83	62.50
very well trained	12	25.00	87.50
not applicable	6	12.50	100.00
Total	48	100.00	

- **Infrared scanning (camera)**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	6	12.50	14.58
moderately well trained	10	20.83	35.42
well trained	15	31.25	66.67
very well trained	11	22.92	89.58
not applicable	5	10.42	100.00
Total	48	100.00	

- **Radon testing**

	Freq.	Percent	Cum.
not at all well trained	14	29.79	29.79
not well trained	7	14.89	44.68
moderately well trained	7	14.89	59.57
well trained	1	2.13	61.70
very well trained	4	8.51	70.21
not applicable	14	29.79	100.00
Total	47	100.00	

- **Lead testing**

	Freq.	Percent	Cum.
not at all well trained	6	12.77	12.77
not well trained	4	8.51	21.28
moderately well trained	11	23.40	44.68
well trained	12	25.53	70.21
very well trained	7	14.89	85.11
not applicable	7	14.89	100.00
Total	47	100.00	

- **Mold and mildew testing**

	Freq.	Percent	Cum.
not at all well trained	10	21.74	21.74
not well trained	5	10.87	32.61
moderately well trained	8	17.39	50.00
well trained	7	15.22	65.22
very well trained	7	15.22	80.43
not applicable	9	19.57	100.00
Total	46	100.00	

- **Moisture content testing**

	Freq.	Percent	Cum.
not at all well trained	9	19.15	19.15
not well trained	7	14.89	34.04
moderately well trained	10	21.28	55.32
well trained	8	17.02	72.34
very well trained	7	14.89	87.23
not applicable	6	12.77	100.00
Total	47	100.00	

- **Other (please specify)** \_\_\_\_\_

4. On which of the following diagnostic procedures did staff working in your state's weatherization office receive training in Program Year 2008 from DOE, your state, or other entities? (Check all that apply.)

**Pressure diagnostics:**

- **Blower door (house air leakage rate)**

	Freq.	Percent	Cum.
no	3	7.32	7.32
yes	38	92.68	100.00
Total	41	100.00	

- **Zonal pressure measurements**

	Freq.	Percent	Cum.
no	14	34.15	34.15
yes	27	65.85	100.00
Total	41	100.00	



- **Room-to-room pressure measurements (distribution balancing)**

	Freq.	Percent	Cum.
no	16	39.02	39.02
yes	25	60.98	100.00
Total	41	100.00	

- **Duct pressure pan measurements**

	Freq.	Percent	Cum.
no	16	39.02	39.02
yes	25	60.98	100.00
Total	41	100.00	

- **Duct blower measurements (duct air leakage rate)**

	Freq.	Percent	Cum.
no	21	51.22	51.22
yes	20	48.78	100.00
Total	41	100.00	

**Space-heating system:**

- **Flue gas analysis (steady-state efficiency measurements)**

	Freq.	Percent	Cum.
no	13	31.71	31.71
yes	28	68.29	100.00
Total	41	100.00	

- **Heat rise measurements**

	Freq.	Percent	Cum.
no	20	48.78	48.78
yes	21	51.22	100.00
Total	41	100.00	

- **CO measurements in flues**

	Freq.	Percent	Cum.
no	4	9.76	9.76
yes	37	90.24	100.00
Total	41	100.00	

- **Draft/spillage (normal operation)**

	Freq.	Percent	Cum.
no	13	31.71	31.71
yes	28	68.29	100.00
Total	41	100.00	

**Air-conditioning system:**

- **Refrigerant charge (e.g., superheat, subcooling)**

	Freq.	Percent	Cum.
no	34	82.93	82.93
yes	7	17.07	100.00
Total	41	100.00	

**HVAC components and cross-cutting diagnostics:**

- **Air handler flow rate**

	Freq.	Percent	Cum.
no	27	65.85	65.85
yes	14	34.15	100.00
Total	41	100.00	

- **Thermostat anticipator current**

	Freq.	Percent	Cum.
no	29	70.73	70.73
yes	12	29.27	100.00
Total	41	100.00	

- **Worst case draft/spillage (CAZ)**

	Freq.	Percent	Cum.
no	19	46.34	46.34
yes	22	53.66	100.00
Total	41	100.00	

**Hot-water (water-heating) system:**

- **Flue gas analysis (steady-state efficiency measurements)**

	Freq.	Percent	Cum.
no	19	46.34	46.34
yes	22	53.66	100.00
Total	41	100.00	

**CO measurements in flues**

	Freq.	Percent	Cum.
no	9	21.95	21.95
yes	32	78.05	100.00
Total	41	100.00	

• **Draft/spillage (normal operation)**

	Freq.	Percent	Cum.
no	17	41.46	41.46
yes	24	58.54	100.00
Total	41	100.00	

• **Water flow rates (showerheads and faucets)**

	Freq.	Percent	Cum.
no	26	63.41	63.41
yes	15	36.59	100.00
Total	41	100.00	

**Other CO measurements:**

• **CO measurements in equipment rooms**

	Freq.	Percent	Cum.
no	21	51.22	51.22
yes	20	48.78	100.00
Total	41	100.00	

• **Cooking stove**

	Freq.	Percent	Cum.
no	17	41.46	41.46
yes	24	58.54	100.00
Total	41	100.00	

• **CO measurements in living areas**

	Freq.	Percent	Cum.
no	17	41.46	41.46
yes	24	58.54	100.00
Total	41	100.00	

**Other diagnostics and inspections:**

• **Refrigerator energy use**

	Freq.	Percent	Cum.
no	15	36.59	36.59
yes	26	63.41	100.00
Total	41	100.00	

• **Exhaust fan air flow rate measurement**

	Freq.	Percent	Cum.
no	24	58.54	58.54
yes	17	41.46	100.00
Total	41	100.00	

• **Infrared scanning (camera)**

	Freq.	Percent	Cum.
no	19	46.34	46.34
yes	22	53.66	100.00
Total	41	100.00	

• **Radon testing**

	Freq.	Percent	Cum.
no	36	87.80	87.80
yes	5	12.20	100.00
Total	41	100.00	

• **Lead testing**

	Freq.	Percent	Cum.
no	20	48.78	48.78
yes	21	51.22	100.00
Total	41	100.00	

• **Mold and mildew testing**

	Freq.	Percent	Cum.
no	26	63.41	63.41
yes	15	36.59	100.00
Total	41	100.00	

- **Moisture content testing**

	Freq.	Percent	Cum.
no	28	68.29	68.29
yes	13	31.71	100.00
Total	41	100.00	

- **Other (please specify)** \_\_\_\_\_

5. Please indicate the number of your state's weatherization office staff who received training in these three job function areas by attending the following events in Program Year 2008.

Training events	Job Function					
	Management and Administration		Field Monitoring and Auditing		Training and Technical Assistance	
	Primarily Classroom Training	Primarily Field Training	Primarily Classroom Training	Primarily Field Training	Primarily Classroom Training	Primarily Field Training
National Weatherization Program conference	obs: 30 min: 0 max: 6 mean: 1.43 median: 1	obs: 10 min: 0 max: 2 mean: .7 median: 1	obs: 25 min: 0 max: 4 mean: 1.52 median: 1	obs: 15 min: 0 max: 6 mean: 1.67 median: 1	obs: 19 min: 0 max: 4 mean: 1.58 median: 2	obs: 10 min: 0 max: 2 mean: 1.2 median: 1.5
Affordable Comfort Conference	obs: 13 min: 0 max: 2 mean: .77 median: 1	obs: 7 min: 0 max: 2 mean: .43 median: 0	obs: 14 min: 0 max: 4 mean: 1.36 median: 1	obs: 11 min: 0 max: 4 mean: 1 median: 1	obs: 15 min: 0 max: 4 mean: 1.33 median: 1	obs: 7 min: 0 max: 3 mean: .71 median: 0
Other national conference	obs: 8 min: 0 max: 2 mean: 1.13 median: 1	obs: 4 min: 0 max: 1 mean: .25 median: 0	obs: 5 min: 0 max: 1 mean: .4 median: 0	obs: 4 min: 0 max: 2 mean: .5 median: 0	obs: 3 min: 0 max: 0 mean: 0 median: 0	obs: 3 min: 0 max: 0 mean: 0 median: 0
Regional weatherization conference	obs: 25 min: 0 max: 4 mean: 1.6 median: 1	obs: 6 min: 0 max: 1 mean: .5 median: .5	obs: 20 min: 0 max: 4 mean: 1.75 median: 2	obs: 7 min: 0 max: 2 mean: .71 median: 1	obs: 18 min: 0 max: 3 mean: 1.56 median: 2	obs: 7 min: 0 max: 3 mean: 1.14 median: 1
State weatherization conference	obs: 17 min: 0 max: 12 mean: 2.71 median: 1	obs: 7 min: 0 max: 4 mean: 1.43 median: 1	obs: 13 min: 0 max: 12 mean: 2.38 median: 1	obs: 9 min: 0 max: 4 mean: 1.33 median: 1	obs: 9 min: 0 max: 12 mean: 3.11 median: 2	obs: 7 min: 0 max: 4 mean: 1.14 median: 1
Other state conference	obs: 6 min: 0 max: 1 mean: .33 median: 0	obs: 4 min: 0 max: 1 mean: .25 median: 0	obs: 6 min: 0 max: 8 mean: 1.67 median: .5	obs: 3 min: 0 max: 0 mean: 0 median: 0	obs: 6 min: 0 max: 2 mean: .67 median: .5	obs: 4 min: 0 max: 2 mean: .5 median: 0
State/regional training center class	obs: 9 min: 0 max: 1 mean: .56 median: 1	obs: 4 min: 0 max: 0 mean: 0 median: 0	obs: 12 min: 0 max: 5 mean: 1.67 median: 2	obs: 10 min: 0 max: 5 mean: 1.5 median: 1.5	obs: 9 min: 0 max: 10 mean: 2.22 median: 1	obs: 7 min: 0 max: 5 mean: 1.43 median: 1
Manufacturer's training school class	obs: 5 min: 0 max: 1 mean: .2 median: 0	obs: 4 min: 0 max: 1 mean: .25 median: 0	obs: 7 min: 0 max: 4 mean: 1.71 median: 2	obs: 4 min: 0 max: 2 mean: .5 median: 0	obs: 6 min: 0 max: 5 mean: 1.33 median: .5	obs: 5 min: 0 max: 1 mean: .4 median: 0
Utility sponsored training class	obs: 4 min: 0 max: 0 mean: 0 median: 0	obs: 4 min: 0 max: 1 mean: .25 median: 0	obs: 6 min: 0 max: 2 mean: 1.17 median: 1.5	obs: 5 min: 0 max: 2 mean: .8 median: 0	obs: 4 min: 0 max: 2 mean: .5 median: 0	obs: 3 min: 0 max: 0 mean: 0 median: 0
Class sponsored by your state weatherization office)	obs: 12 min: 0 max: 12 mean: 2.67 median: 2.5	obs: 8 min: 0 max: 16 mean: 3 median: 1	obs: 13 min: 0 max: 8 mean: 2.23 median: 2	obs: 9 min: 0 max: 7 mean: 1.89 median: 1	obs: 12 min: 0 max: 8 mean: 2.42 median: 1.5	obs: 11 min: 0 max: 4 mean: 1.82 median: 1
Class not sponsored by any of the entities listed above (e.g., another state, trade organization)	obs: 5 min: 0 max: 2 mean: .6 median: 0	obs: 5 min: 0 max: 2 mean: .6 median: 0	obs: 9 min: 0 max: 3 mean: 1.22 median: 1	obs: 5 min: 0 max: 3 mean: 1 median: 0	obs: 8 min: 0 max: 5 mean: 1.63 median: 1.5	obs: 6 min: 0 max: 3 mean: 1.17 median: 1
In-person expert visit to state (e.g., peer exchange, consultant)	obs: 6 min: 0 max: 2 mean: .83 median: .5	obs: 6 min: 0 max: 2 mean: .83 median: .5	obs: 7 min: 0 max: 2 mean: .86 median: 1	obs: 8 min: 0 max: 2 mean: 1 median: 1	obs: 7 min: 0 max: 4 mean: 1.57 median: 2	obs: 8 min: 0 max: 2 mean: 1 median: 1
Other (please specify: _____)						

6. For each broad subject listed in the left-most column of the following table, put a check mark in the appropriate cell(s) to indicate which training method(s) you believe were most effective for imparting key skills and information in that area to your state's in-house staff and any non-agency staff supporting the state program who work under contract to the state in Program Year 2008:

<b>Subject</b>	<b>Conferences</b>	<b>Primarily Classroom Training</b>	<b>Primarily Field Training</b>	<b>In-person expert visits</b>	<b>Web casts</b>	<b>Other (specify)</b>
Management	obs: 43 no: 11 yes: 32	obs: 43 no: 23 yes: 20	obs: 43 no: 39 yes: 4	obs: 43 no: 28 yes: 15	obs: 43 no: 34 yes: 9	obs: 43 no: 41 yes: 2
Weatherization installation	obs: 42 no: 31 yes: 11	obs: 42 no: 28 yes: 14	obs: 42 no: 3 yes: 39	obs: 42 no: 31 yes: 11	obs: 42 no: 42 yes: 0	obs: 42 no: 40 yes: 2
Auditing/Estimating/Measure selection	obs: 42 no: 37 yes: 5	obs: 42 no: 16 yes: 26	obs: 42 no: 12 yes: 30	obs: 42 no: 29 yes: 13	obs: 42 no: 42 yes: 0	obs: 42 no: 41 yes: 1
Monitoring and quality control	obs: 43 no: 26 yes: 17	obs: 43 no: 21 yes: 22	obs: 43 no: 16 yes: 27	obs: 43 no: 32 yes: 11	obs: 43 no: 40 yes: 3	obs: 43 no: 42 yes: 1
Financial topics	obs: 40 no: 15 yes: 25	obs: 40 no: 17 yes: 23	obs: 40 no: 35 yes: 5	obs: 40 no: 31 yes: 9	obs: 40 no: 32 yes: 8	obs: 40 no: 39 yes: 1
Outreach and communications	obs: 39 no: 16 yes: 23	obs: 39 no: 19 yes: 20	obs: 39 no: 37 yes: 2	obs: 39 no: 36 yes: 3	obs: 39 no: 33 yes: 6	obs: 39 no: 38 yes: 1
Health and safety	obs: 43 no: 27 yes: 16	obs: 43 no: 17 yes: 26	obs: 43 no: 15 yes: 28	obs: 43 no: 29 yes: 14	obs: 43 no: 41 yes: 2	obs: 43 no: 42 yes: 1
Diagnostic procedures	obs: 43 no: 34 yes: 9	obs: 43 no: 20 yes: 23	obs: 43 no: 6 yes: 37	obs: 43 no: 27 yes: 16	obs: 43 no: 43 yes: 0	obs: 43 no: 43 yes: 0
Client education	obs: 37 no: 18 yes: 19	obs: 37 no: 16 yes: 21	obs: 37 no: 29 yes: 8	obs: 37 no: 31 yes: 6	obs: 37 no: 34 yes: 3	obs: 37 no: 36 yes: 1
Other (specify)						

7. For each broad subject listed in the left-most column of the following table, please indicate the quality of training received by your in-house staff in Program Year 2008 at the training venues listed in the column headings. Please leave cells blank were your in-house staff did not receive training during this period of time. Please use the following scale: 1-very low; 2 - low; 3-medium; 4- high; 5-very high

Subject	National Weatherization Program Conference	Affordable Comfort Conference	Regional Weatherization Conference	State Weatherization Conference	State/ Regional Training Center	Training Provided by Your Own State
Management	obs: 26 very low: 0 low: 1 medium: 10 high: 8 very high: 7	obs: 8 very low: 0 low: 0 medium: 3 high: 2 very high: 3	obs: 18 very low: 0 low: 0 medium: 11 high: 5 very high: 2	obs: 15 very low: 1 low: 0 medium: 3 high: 8 very high: 3	obs: 5 very low: 0 low: 0 medium: 1 high: 0 very high: 4	obs: 15 very low: 1 low: 1 medium: 1 high: 8 very high: 4
Weatherization installation	obs: 18 very low: 0 low: 0 medium: 10 high: 6 very high: 2	obs: 13 very low: 0 low: 0 medium: 4 high: 4 very high: 5	obs: 21 very low: 0 low: 0 medium: 7 high: 8 very high: 6	obs: 14 very low: 0 low: 0 medium: 2 high: 7 very high: 5	obs: 9 very low: 0 low: 0 medium: 1 high: 2 very high: 6	obs: 20 very low: 0 low: 0 medium: 5 high: 9 very high: 6
Auditing/ Estimating	obs: 18 very low: 0 low: 0 medium: 10 high: 5 very high: 3	obs: 12 very low: 0 low: 0 medium: 4 high: 3 very high: 5	obs: 17 very low: 0 low: 1 medium: 7 high: 4 very high: 5	obs: 10 very low: 0 low: 1 medium: 2 high: 5 very high: 2	obs: 8 very low: 0 low: 0 medium: 2 high: 1 very high: 5	obs: 20 very low: 0 low: 0 medium: 3 high: 11 very high: 6
Monitoring/ quality control	obs: 19 very low: 0 low: 4 medium: 6 high: 7 very high: 2	obs: 10 very low: 1 low: 0 medium: 1 high: 4 very high: 4	obs: 16 very low: 0 low: 2 medium: 6 high: 2 very high: 6	obs: 10 very low: 1 low: 0 medium: 2 high: 4 very high: 3	obs: 5 very low: 0 low: 0 medium: 1 high: 0 very high: 4	obs: 18 very low: 0 low: 0 medium: 3 high: 10 very high: 5
Financial topics	obs: 20 very low: 0 low: 2 medium: 8 high: 6 very high: 4	obs: 5 very low: 0 low: 2 medium: 1 high: 0 very high: 2	obs: 14 very low: 2 low: 0 medium: 6 high: 2 very high: 4	obs: 8 very low: 1 low: 0 medium: 4 high: 2 very high: 1	obs: 4 very low: 0 low: 0 medium: 1 high: 1 very high: 2	obs: 16 very low: 0 low: 1 medium: 4 high: 6 very high: 5
Outreach and communications	obs: 13 very low: 1 low: 4 medium: 2 high: 4 very high: 2	obs: 6 very low: 0 low: 0 medium: 1 high: 2 very high: 3	obs: 8 very low: 1 low: 1 medium: 3 high: 1 very high: 2	obs: 10 very low: 1 low: 1 medium: 4 high: 2 very high: 2	obs: 3 very low: 0 low: 0 medium: 1 high: 1 very high: 1	obs: 14 very low: 0 low: 1 medium: 4 high: 5 very high: 4
Health and safety	obs: 17 very low: 1 low: 2 medium: 4 high: 6 very high: 4	obs: 11 very low: 0 low: 0 medium: 2 high: 2 very high: 7	obs: 18 very low: 1 low: 0 medium: 3 high: 9 very high: 5	obs: 11 very low: 0 low: 0 medium: 4 high: 4 very high: 3	obs: 6 very low: 0 low: 0 medium: 1 high: 1 very high: 4	obs: 17 very low: 0 low: 1 medium: 4 high: 6 very high: 6
Diagnostic procedures	obs: 18 very low: 0 low: 1 medium: 5 high: 9 very high: 3	obs: 10 very low: 0 low: 0 medium: 1 high: 2 very high: 7	obs: 15 very low: 0 low: 0 medium: 6 high: 5 very high: 4	obs: 11 very low: 0 low: 1 medium: 3 high: 3 very high: 4	obs: 7 very low: 0 low: 0 medium: 1 high: 2 very high: 4	obs: 21 very low: 0 low: 1 medium: 2 high: 10 very high: 8
Procedures for selecting weatherization measures	obs: 14 very low: 0 low: 2 medium: 3 high: 4 very high: 5	obs: 10 very low: 0 low: 0 medium: 2 high: 3 very high: 5	obs: 15 very low: 0 low: 1 medium: 6 high: 3 very high: 5	obs: 10 very low: 0 low: 1 medium: 4 high: 3 very high: 2	obs: 5 very low: 0 low: 0 medium: 1 high: 0 very high: 4	obs: 20 very low: 0 low: 1 medium: 3 high: 10 very high: 6
Client education	obs: 16 very low: 0 low: 5 medium: 5 high: 3 very high: 3	obs: 7 very low: 1 low: 0 medium: 3 high: 0 very high: 3	obs: 15 very low: 1 low: 2 medium: 7 high: 3 very high: 2	obs: 8 very low: 0 low: 3 medium: 1 high: 2 very high: 2	obs: 5 very low: 0 low: 1 medium: 0 high: 1 very high: 3	obs: 15 very low: 0 low: 1 medium: 5 high: 4 very high: 5
Other (specify)						



7. On which of the following weatherization topics did your state provide training to your state's local weatherization agencies or their contractors in Program Year 2008? (Check all that apply). *Refer only to training that your office provided directly or had an active role in directing local agencies to attend or take.*

8.

**(1) Diagnostic procedures**

	Freq.	Percent	Cum.
no	2	4.55	4.55
yes	42	95.45	100.00
Total	44	100.00	

**(2) Insulation**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	7	15.91	15.91
yes	37	84.09	100.00
Total	44	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	28	63.64	63.64
yes	16	36.36	100.00
Total	44	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	13	29.55	29.55
yes	31	70.45	100.00
Total	44	100.00	

**(3) Space heating, ventilation, air conditioning**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	6	13.64	13.64
yes	38	86.36	100.00
Total	44	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	28	63.64	63.64
yes	16	36.36	100.00
Total	44	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	10	22.73	22.73
yes	34	77.27	100.00
Total	44	100.00	

**(4) Infiltration measures**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	4	9.09	9.09
yes	40	90.91	100.00
Total	44	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	27	61.36	61.36
yes	17	38.64	100.00
Total	44	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	10	22.73	22.73
yes	34	77.27	100.00
Total	44	100.00	

**(5) Doors and windows**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	17	38.64	38.64
yes	27	61.36	100.00
Total	44	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	31	70.45	70.45
yes	13	29.55	100.00
Total	44	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	18	40.91	40.91
yes	26	59.09	100.00
Total	44	100.00	

**(6) Hot water heating**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	9	20.45	20.45
yes	35	79.55	100.00
Total	44	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	28	63.64	63.64
yes	16	36.36	100.00
Total	44	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	11	25.00	25.00
yes	33	75.00	100.00
Total	44	100.00	

**(7) Baseloads (e.g., lighting, refrigerators)**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	9	20.45	20.45
yes	35	79.55	100.00
Total	44	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	24	54.55	54.55
yes	20	45.45	100.00
Total	44	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	13	29.55	29.55
yes	31	70.45	100.00
Total	44	100.00	

8a. On which of the following administrative-related topics did your state provide training to your state's local weatherization agencies or their contractors in Program Year 2008? (Check all that apply). *Refer only to training that your office provided directly or had an active role in directing local agencies to attend or take.*

**(1) Management**

	Freq.	Percent	Cum.
no	15	33.33	33.33
yes	30	66.67	100.00
Total	45	100.00	

**(2) Client education**

	Freq.	Percent	Cum.
no	18	40.00	40.00
yes	27	60.00	100.00
Total	45	100.00	

**(3) Auditing/estimating**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	4	8.89	8.89
yes	41	91.11	100.00
Total	45	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	30	66.67	66.67
yes	15	33.33	100.00
Total	45	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	14	31.11	31.11
yes	31	68.89	100.00
Total	45	100.00	

**(4) Monitoring/quality control**

	Freq.	Percent	Cum.
no	15	33.33	33.33
yes	30	66.67	100.00
Total	45	100.00	

**(5) Financial topics**

	Freq.	Percent	Cum.
no	17	37.78	37.78
yes	28	62.22	100.00
Total	45	100.00	

**(6) Outreach and communications**

	Freq.	Percent	Cum.
no	24	53.33	53.33
yes	21	46.67	100.00
Total	45	100.00	

**(7) Other (please specify)**

8b. On which of the following health and safety topics did your state provide training to your state's local weatherization agencies or their contractors in Program Year 2008? (Check all that apply). *Refer only to training that your office provided directly or had an active role in directing local agencies to attend or take.*

<b>Fire safety</b>			
	Freq.	Percent	Cum.
no	31	70.45	70.45
yes	13	29.55	100.00
Total	44	100.00	

<b>Indoor air quality</b>			
	Freq.	Percent	Cum.
no	8	18.18	18.18
yes	36	81.82	100.00
Total	44	100.00	

<b>Measures to increase security of housing unit</b>			
	Freq.	Percent	Cum.
no	40	90.91	90.91
yes	4	9.09	100.00
Total	44	100.00	

<b>Measures to reduce common household hazards</b>			
	Freq.	Percent	Cum.
no	23	52.27	52.27
yes	21	47.73	100.00
Total	44	100.00	

<b>Mold and mildew</b>			
	Freq.	Percent	Cum.
no	10	22.73	22.73
yes	34	77.27	100.00
Total	44	100.00	

<b>Lead</b>			
	Freq.	Percent	Cum.
no	9	20.45	20.45
yes	35	79.55	100.00
Total	44	100.00	

<b>Asbestos</b>			
	Freq.	Percent	Cum.
no	23	52.27	52.27
yes	21	47.73	100.00
Total	44	100.00	

<b>Vermiculite</b>			
	Freq.	Percent	Cum.
no	35	79.55	79.55
yes	9	20.45	100.00
Total	44	100.00	

<b>General crew safety</b>			
	Freq.	Percent	Cum.
no	17	38.64	38.64
yes	27	61.36	100.00
Total	44	100.00	

Other (please specify)

9. On which of the following diagnostic procedures did your state provide training to your state's local weatherization agencies or their contractors in Program Year 2008? (Check all that apply). *Refer only to training that your office provided directly or had an active role in directing local agencies to attend or take.*

**Pressure diagnostics:**

- **Blower door (house air leakage rate)**

	Freq.	Percent	Cum.
no	2	4.65	4.65
yes	41	95.35	100.00
Total	43	100.00	

- **Zonal pressure measurements**

	Freq.	Percent	Cum.
no	12	27.91	27.91
yes	31	72.09	100.00
Total	43	100.00	

- **Room-to-room pressure measurements (distribution balancing)**

	Freq.	Percent	Cum.
no	18	41.86	41.86
yes	25	58.14	100.00
Total	43	100.00	

- **Duct pressure pan measurements**

	Freq.	Percent	Cum.
no	13	30.23	30.23
yes	30	69.77	100.00
Total	43	100.00	

- **Duct blower measurements (duct air leakage rate)**

	Freq.	Percent	Cum.
no	17	39.53	39.53
yes	26	60.47	100.00
Total	43	100.00	

**Space-heating system:**

- **Flue gas analysis (steady-state efficiency measurements)**

	Freq.	Percent	Cum.
no	14	32.56	32.56
yes	29	67.44	100.00
Total	43	100.00	

- **Heat rise measurements**

	Freq.	Percent	Cum.
no	18	41.86	41.86
yes	25	58.14	100.00
Total	43	100.00	



- **CO measurements in flues**

	Freq.	Percent	Cum.
no	4	9.30	9.30
yes	39	90.70	100.00
Total	43	100.00	

- **Draft/spillage (normal operation)**

	Freq.	Percent	Cum.
no	16	37.21	37.21
yes	27	62.79	100.00
Total	43	100.00	

**Air-conditioning system:**

- **Refrigerant charge (e.g., superheat, subcooling)**

	Freq.	Percent	Cum.
no	35	81.40	81.40
yes	8	18.60	100.00
Total	43	100.00	

**HVAC components and cross-cutting diagnostics:**

- **Air handler flow rate**

	Freq.	Percent	Cum.
no	27	62.79	62.79
yes	16	37.21	100.00
Total	43	100.00	

- **Thermostat anticipator current**

	Freq.	Percent	Cum.
no	27	62.79	62.79
yes	16	37.21	100.00
Total	43	100.00	

- **Worst case draft/spillage (CAZ)**

	Freq.	Percent	Cum.
no	17	39.53	39.53
yes	26	60.47	100.00
Total	43	100.00	

**Hot-water (water-heating) system:**

- **Flue gas analysis (steady-state efficiency measurements)**

	Freq.	Percent	Cum.
no	17	39.53	39.53
yes	26	60.47	100.00
-----+-----			
Total	43	100.00	

- **CO measurements in flues**

	Freq.	Percent	Cum.
no	8	18.60	18.60
yes	35	81.40	100.00
-----+-----			
Total	43	100.00	

- **Draft/spillage (normal operation)**

	Freq.	Percent	Cum.
no	12	27.91	27.91
yes	31	72.09	100.00
-----+-----			
Total	43	100.00	

- **Water flow rates (showerheads and faucets)**

	Freq.	Percent	Cum.
no	23	53.49	53.49
yes	20	46.51	100.00
-----+-----			
Total	43	100.00	

**Other CO measurements:**

- **CO measurements in equipment rooms**

	Freq.	Percent	Cum.
no	13	30.23	30.23
yes	30	69.77	100.00
-----+-----			
Total	43	100.00	

- **Cooking stove**

	Freq.	Percent	Cum.
no	11	25.58	25.58
yes	32	74.42	100.00
-----+-----			
Total	43	100.00	

- **CO measurements in living areas**

	Freq.	Percent	Cum.
no	11	25.58	25.58
yes	32	74.42	100.00
Total	43	100.00	

**Other diagnostics and inspections:**

- **Refrigerator energy use**

	Freq.	Percent	Cum.
no	14	32.56	32.56
yes	29	67.44	100.00
Total	43	100.00	

- **Exhaust fan air flow rate measurement**

	Freq.	Percent	Cum.
no	23	53.49	53.49
yes	20	46.51	100.00
Total	43	100.00	

- **Infrared scanning (camera)**

	Freq.	Percent	Cum.
no	18	41.86	41.86
yes	25	58.14	100.00
Total	43	100.00	

- **Radon testing**

	Freq.	Percent	Cum.
no	38	88.37	88.37
yes	5	11.63	100.00
Total	43	100.00	

- **Lead testing**

	Freq.	Percent	Cum.
no	18	41.86	41.86
yes	25	58.14	100.00
Total	43	100.00	

- **Mold and mildew testing**

	Freq.	Percent	Cum.
no	26	60.47	60.47
yes	17	39.53	100.00
Total	43	100.00	

- **Moisture content testing**

	Freq.	Percent	Cum.
no	27	62.79	62.79
yes	16	37.21	100.00
Total	43	100.00	

- **Other (please specify)** \_\_\_\_\_

9. Which of the following types of personnel did your state use to provide training to your state’s local weatherization agencies or their contractors in Program Year 2008? (Check all that apply). *Refer only to training that your office provided directly or had an active role in directing local agencies to attend or take.*

- **DOE staff**

	Freq.	Percent	Cum.
no	41	89.13	89.13
yes	5	10.87	100.00
Total	46	100.00	

- **DOE contractor**

	Freq.	Percent	Cum.
no	38	82.61	82.61
yes	8	17.39	100.00
Total	46	100.00	

- **State staff**

	Freq.	Percent	Cum.
no	5	10.87	10.87
yes	41	89.13	100.00
Total	46	100.00	

- **State contractor**

	Freq.	Percent	Cum.
no	30	65.22	65.22
yes	16	34.78	100.00
Total	46	100.00	

- **Staff from another state**

	Freq.	Percent	Cum.
no	35	76.09	76.09
yes	11	23.91	100.00
Total	46	100.00	

- **State training center staff**

	Freq.	Percent	Cum.
no	34	73.91	73.91
yes	12	26.09	100.00
Total	46	100.00	

- **Local agency staff from your state**

	Freq.	Percent	Cum.
no	18	39.13	39.13
yes	28	60.87	100.00
Total	46	100.00	

- **Agency staff from another state**

	Freq.	Percent	Cum.
no	40	86.96	86.96
yes	6	13.04	100.00
Total	46	100.00	

- **Manufacturer representative**

	Freq.	Percent	Cum.
no	34	73.91	73.91
yes	12	26.09	100.00
Total	46	100.00	

- **Utility staff**

	Freq.	Percent	Cum.
no	42	91.30	91.30
yes	4	8.70	100.00
Total	46	100.00	

- **Representative from trade organization**

	Freq.	Percent	Cum.
no	42	91.30	91.30
yes	4	8.70	100.00
Total	46	100.00	

- **Consultant**

	Freq.	Percent	Cum.
no	26	56.52	56.52
yes	20	43.48	100.00
Total	46	100.00	

- **Other (please specify) \_\_\_\_\_**

10. What types of credentials or experience were required of the personnel your state used to provide training to your state's local weatherization agencies or their contractors in Program Year 2008? (Check all that apply). *Refer only to training that your office provided directly or had an active role in directing local agencies to attend or take.*

- **Technical certification**

	Freq.	Percent	Cum.
no	16	36.36	36.36
yes	28	63.64	100.00
Total	44	100.00	

- **Extensive weatherization field experience**

	Freq.	Percent	Cum.
yes	44	100.00	100.00
Total	44	100.00	

- **Construction experience**

	Freq.	Percent	Cum.
no	25	56.82	56.82
yes	19	43.18	100.00
Total	44	100.00	

- **Extensive management experience**

	Freq.	Percent	Cum.
no	17	38.64	38.64
yes	27	61.36	100.00
Total	44	100.00	

- **Extensive experience with financial matters**

	Freq.	Percent	Cum.
no	24	54.55	54.55
yes	20	45.45	100.00
Total	44	100.00	

- **Other (please specify)** \_\_\_\_\_

11a. Using the scale below, please indicate how important each credential was for trainers to have in Program Year 2008?

1= Very Unimportant; 2=Unimportant; 3= Important; 4=Very Important

- **Technical certification**

	Freq.	Percent	Cum.
very unimportant	4	9.76	9.76
unimportant	7	17.07	26.83
important	14	34.15	60.98
very important	16	39.02	100.00
Total	41	100.00	

- **Extensive weatherization field experience**

	Freq.	Percent	Cum.
very unimportant	1	2.22	2.22
unimportant	1	2.22	4.44
important	6	13.33	17.78
very important	37	82.22	100.00
Total	45	100.00	

- **Construction experience**

	Freq.	Percent	Cum.
very unimportant	3	7.50	7.50
unimportant	9	22.50	30.00
important	17	42.50	72.50
very important	11	27.50	100.00
<b>Total</b>	<b>40</b>	<b>100.00</b>	

- **Extensive management experience**

	Freq.	Percent	Cum.
very unimportant	1	2.63	2.63
unimportant	6	15.79	18.42
important	19	50.00	68.42
very important	12	31.58	100.00
<b>Total</b>	<b>38</b>	<b>100.00</b>	

- **Extensive experience with financial matters**

	Freq.	Percent	Cum.
very unimportant	2	5.56	5.56
unimportant	8	22.22	27.78
important	16	44.44	72.22
very important	10	27.78	100.00
<b>Total</b>	<b>36</b>	<b>100.00</b>	

- **Other (please specify)** \_\_\_\_\_

12. How many of your state's weatherization office staff acted as instructors at the following training events that your state provided (e.g., funded, organized) to your state's local weatherization agencies or their contractors in Program Year 2008?

- **State weatherization conference**

observations:	29
missing values:	22
mean:	2.17
standard deviation:	1.67
min:	0
10th percentile:	0
25th percentile:	1
median:	2
75th percentile:	3
90th percentile:	5
max:	5



- **Other state conference**

observations:	18
missing values:	33
mean:	2.56
standard deviation:	3.60
min:	0
10th percentile:	0
25th percentile:	0
median:	1.5
75th percentile:	4
90th percentile:	6
max:	15

- **State/regional training center class**

observations:	23
missing values:	28
mean:	1.70
standard deviation:	1.64
min:	0
10th percentile:	0
25th percentile:	0
median:	1
75th percentile:	2
90th percentile:	5
max:	5

- **State-sponsored class taught at central location**

observations:	28
missing values:	23
mean:	2.04
standard deviation:	1.57
min:	0
10th percentile:	0
25th percentile:	1
median:	2
75th percentile:	2.5
90th percentile:	5
max:	5

- **In-person expert visit (e.g., peer exchange, consultant)**

observations:	30
missing values:	21
mean:	2.5
standard deviation:	3.17
min:	0
10th percentile:	0
25th percentile:	1
median:	1.5
75th percentile:	3
90th percentile:	5
max:	15

- **Instruction given to individual agency during an agency visit**

observations:	42
missing values:	9
mean:	4.36
standard deviation:	9.24
min:	0
10th percentile:	1
25th percentile:	1
median:	2
75th percentile:	4
90th percentile:	8
max:	60

- **Web cast**

observations:	11
missing values:	40
mean:	.82
standard deviation:	1.17
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	1
90th percentile:	3
max:	3

- **Other (please specify)** \_\_\_\_\_

13. For each broad subject listed in the left-most column of the following table, put a check mark in the appropriate cell(s) to indicate which training method(s) you believe were most effective for imparting key skills and information in that area to your local weatherization agencies or their contractors in Program Year 2008:

<b>Subject</b>	<b>State weatherization conference</b>	<b>Other state conference</b>	<b>State/regional training center class</b>	<b>State-sponsored class taught at central location</b>	<b>In-person expert visit</b>	<b>Instruction given to individual agency</b>	<b>Web casts</b>	<b>Other (specify)</b>
Management	obs: 38 no: 29 yes: 9	obs: 38 no: 35 yes: 3	obs: 38 no: 32 yes: 6	obs: 38 no: 26 yes: 12	obs: 38 no: 28 yes: 10	obs: 38 no: 16 yes: 22	obs: 38 no: 34 yes: 4	obs: 38 no: 37 yes: 1
Weatherization installation	obs: 44 no: 35 yes: 9	obs: 44 no: 42 yes: 2	obs: 44 no: 32 yes: 12	obs: 44 no: 30 yes: 14	obs: 44 no: 24 yes: 20	obs: 44 no: 19 yes: 25	obs: 44 no: 44 yes: 0	obs: 44 no: 42 yes: 2
Auditing/ Estimating/ Measure selection	obs: 43 no: 33 yes: 10	obs: 43 no: 41 yes: 2	obs: 43 no: 33 yes: 10	obs: 43 no: 25 yes: 18	obs: 43 no: 23 yes: 20	obs: 43 no: 21 yes: 22	obs: 43 no: 42 yes: 1	obs: 43 no: 41 yes: 2
Monitoring and quality control	obs: 39 no: 30 yes: 9	obs: 39 no: 37 yes: 2	obs: 39 no: 33 yes: 6	obs: 39 no: 32 yes: 7	obs: 39 no: 27 yes: 12	obs: 39 no: 15 yes: 24	obs: 39 no: 37 yes: 2	obs: 39 no: 37 yes: 2
Financial topics	obs: 35 no: 27 yes: 8	obs: 35 no: 34 yes: 1	obs: 35 no: 32 yes: 3	obs: 35 no: 22 yes: 13	obs: 35 no: 23 yes: 12	obs: 35 no: 16 yes: 19	obs: 35 no: 32 yes: 3	obs: 35 no: 33 yes: 2
Outreach and communications	obs: 34 no: 25 yes: 9	obs: 34 no: 31 yes: 3	obs: 34 no: 30 yes: 4	obs: 34 no: 23 yes: 11	obs: 34 no: 29 yes: 5	obs: 34 no: 20 yes: 14	obs: 34 no: 31 yes: 3	obs: 34 no: 32 yes: 2
Health and safety	obs: 43 no: 32 yes: 11	obs: 43 no: 41 yes: 2	obs: 43 no: 33 yes: 10	obs: 43 no: 24 yes: 19	obs: 43 no: 26 yes: 17	obs: 43 no: 21 yes: 22	obs: 43 no: 42 yes: 1	obs: 43 no: 40 yes: 3
Diagnostic procedures	obs: 42 no: 34 yes: 8	obs: 42 no: 41 yes: 1	obs: 42 no: 32 yes: 10	obs: 42 no: 23 yes: 19	obs: 42 no: 21 yes: 21	obs: 42 no: 18 yes: 24	obs: 42 no: 42 yes: 0	obs: 42 no: 39 yes: 3
Client education	obs: 38 no: 28 yes: 10	obs: 38 no: 35 yes: 3	obs: 38 no: 32 yes: 6	obs: 38 no: 24 yes: 14	obs: 38 no: 27 yes: 11	obs: 38 no: 24 yes: 14	obs: 38 no: 35 yes: 3	obs: 38 no: 35 yes: 3
Other (specify)								

14. In your judgment, how well trained (on average) were local weatherization crews (both agency and contractor) in your state in the following weatherization topics in Program Year 2008? Please use the following scale: 1– not at all well trained; 2 – not well trained; 3 – moderately well trained; 4 –well trained; 5 – very well trained; 6 – not applicable. (Circle best answer)

**(1) Diagnostic procedures**

	Freq.	Percent	Cum.
not well trained	5	10.64	10.64
moderately well trained	13	27.66	38.30
well trained	19	40.43	78.72
very well trained	10	21.28	100.00
<b>Total</b>	<b>47</b>	<b>100.00</b>	

**(2) Insulation**

**-- single family dwellings**

	Freq.	Percent	Cum.
not well trained	3	6.25	6.25
moderately well trained	6	12.50	18.75
well trained	26	54.17	72.92
very well trained	13	27.08	100.00
<b>Total</b>	<b>48</b>	<b>100.00</b>	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	3	6.38	6.38
not well trained	9	19.15	25.53
moderately well trained	11	23.40	48.94
well trained	12	25.53	74.47
very well trained	4	8.51	82.98
not applicable	8	17.02	100.00
<b>Total</b>	<b>47</b>	<b>100.00</b>	

**-- mobile homes**

	Freq.	Percent	Cum.
not well trained	5	10.64	10.64
moderately well trained	8	17.02	27.66
well trained	23	48.94	76.60
very well trained	10	21.28	97.87
not applicable	1	2.13	100.00
<b>Total</b>	<b>47</b>	<b>100.00</b>	

**(3) Space heating, ventilation, air conditioning**  
**-- single family dwellings**

	Freq.	Percent	Cum.
not well trained	2	4.17	4.17
moderately well trained	12	25.00	29.17
well trained	23	47.92	77.08
very well trained	11	22.92	100.00
<b>Total</b>	<b>48</b>	<b>100.00</b>	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	3	6.38	6.38
not well trained	9	19.15	25.53
moderately well trained	10	21.28	46.81
well trained	13	27.66	74.47
very well trained	4	8.51	82.98
not applicable	8	17.02	100.00
<b>Total</b>	<b>47</b>	<b>100.00</b>	

**-- mobile homes**

	Freq.	Percent	Cum.
not well trained	2	4.17	4.17
moderately well trained	13	27.08	31.25
well trained	20	41.67	72.92
very well trained	12	25.00	97.92
not applicable	1	2.08	100.00
<b>Total</b>	<b>48</b>	<b>100.00</b>	

**(4) Infiltration measures**

**-- single family dwellings**

	Freq.	Percent	Cum.
not well trained	3	6.25	6.25
moderately well trained	6	12.50	18.75
well trained	21	43.75	62.50
very well trained	18	37.50	100.00
<b>Total</b>	<b>48</b>	<b>100.00</b>	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	4	8.51	8.51
not well trained	8	17.02	25.53
moderately well trained	9	19.15	44.68
well trained	12	25.53	70.21
very well trained	6	12.77	82.98
not applicable	8	17.02	100.00
-----+			
Total	47	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
not well trained	2	4.26	4.26
moderately well trained	10	21.28	25.53
well trained	20	42.55	68.09
very well trained	15	31.91	100.00
-----+			
Total	47	100.00	

**(5) Doors and windows**

**-- single family dwellings**

	Freq.	Percent	Cum.
not well trained	2	4.17	4.17
moderately well trained	8	16.67	20.83
well trained	28	58.33	79.17
very well trained	9	18.75	97.92
not applicable	1	2.08	100.00
-----+			
Total	48	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	2	4.26	4.26
not well trained	7	14.89	19.15
moderately well trained	8	17.02	36.17
well trained	17	36.17	72.34
very well trained	4	8.51	80.85
not applicable	9	19.15	100.00
-----+			
Total	47	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
not well trained	1	2.08	2.08
moderately well trained	8	16.67	18.75
well trained	31	64.58	83.33
very well trained	7	14.58	97.92
not applicable	1	2.08	100.00
Total	48	100.00	

**(6) Hot water heating**

**-- single family dwellings**

	Freq.	Percent	Cum.
not well trained	2	4.17	4.17
moderately well trained	9	18.75	22.92
well trained	26	54.17	77.08
very well trained	11	22.92	100.00
Total	48	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	3	6.38	6.38
not well trained	9	19.15	25.53
moderately well trained	9	19.15	44.68
well trained	13	27.66	72.34
very well trained	5	10.64	82.98
not applicable	8	17.02	100.00
Total	47	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
not well trained	2	4.26	4.26
moderately well trained	9	19.15	23.40
well trained	25	53.19	76.60
very well trained	9	19.15	95.74
not applicable	2	4.26	100.00
Total	47	100.00	

**(7) Baseloads (e.g., lighting, refrigerators)**

**-- single family dwellings**

	Freq.	Percent	Cum.
not well trained	3	6.25	6.25
moderately well trained	9	18.75	25.00
well trained	21	43.75	68.75
very well trained	15	31.25	100.00
Total	48	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	2	4.26	4.26
not well trained	5	10.64	14.89
moderately well trained	10	21.28	36.17
well trained	14	29.79	65.96
very well trained	8	17.02	82.98
not applicable	8	17.02	100.00
Total	47	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
not well trained	4	8.33	8.33
moderately well trained	9	18.75	27.08
well trained	21	43.75	70.83
very well trained	13	27.08	97.92
not applicable	1	2.08	100.00
Total	48	100.00	

14a. In your judgment, how well trained (on average) were local weatherization crews (both agency and contractor) in your state in the following administrative-related topics in Program Year 2008? Please use the following scale: 1– not at all well trained; 2 – not well trained; 3 – moderately well trained; 4 –well trained; 5 – very well trained; 6 – not applicable. (Circle best answer)

**(1) Management**

	Freq.	Percent	Cum.
not well trained	5	10.42	10.42
moderately well trained	19	39.58	50.00
well trained	18	37.50	87.50
very well trained	5	10.42	97.92
not applicable	1	2.08	100.00
Total	48	100.00	



**(2) Client education**

	Freq.	Percent	Cum.
not well trained	10	21.28	21.28
moderately well trained	16	34.04	55.32
well trained	18	38.30	93.62
very well trained	3	6.38	100.00
-----+-----			
Total	47	100.00	

**(3) Auditing/estimating**

**-- single family dwellings**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	4	8.33	10.42
moderately well trained	6	12.50	22.92
well trained	27	56.25	79.17
very well trained	10	20.83	100.00
-----+-----			
Total	48	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
not at all well trained	5	10.64	10.64
not well trained	11	23.40	34.04
moderately well trained	10	21.28	55.32
well trained	12	25.53	80.85
very well trained	2	4.26	85.11
not applicable	7	14.89	100.00
-----+-----			
Total	47	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	4	8.33	10.42
moderately well trained	11	22.92	33.33
well trained	24	50.00	83.33
very well trained	7	14.58	97.92
not applicable	1	2.08	100.00
-----+-----			
Total	48	100.00	

**(4) Monitoring/quality control**

	Freq.	Percent	Cum.
not well trained	3	6.25	6.25
moderately well trained	10	20.83	27.08
well trained	28	58.33	85.42
very well trained	7	14.58	100.00
Total	48	100.00	

**(5) Financial topics**

	Freq.	Percent	Cum.
not at all well trained	1	2.13	2.13
not well trained	9	19.15	21.28
moderately well trained	12	25.53	46.81
well trained	21	44.68	91.49
very well trained	4	8.51	100.00
Total	47	100.00	

**(6) Outreach and communications**

	Freq.	Percent	Cum.
not at all well trained	2	4.17	4.17
not well trained	6	12.50	16.67
moderately well trained	17	35.42	52.08
well trained	21	43.75	95.83
very well trained	2	4.17	100.00
Total	48	100.00	

**(7) Other (please specify)**

14b. In your judgment, how well trained (on average) were local weatherization crews (both agency and contractor) in your state in the following health and safety topics in Program Year 2008? Please use the following scale: 1– not at all well trained; 2 – not well trained; 3 – moderately well trained; 4 –well trained; 5 – very well trained; 6 – not applicable. (Circle best answer)

**(1) Fire safety**

	Freq.	Percent	Cum.
not at all well trained	5	10.42	10.42
not well trained	10	20.83	31.25
moderately well trained	18	37.50	68.75
well trained	8	16.67	85.42
very well trained	3	6.25	91.67
not applicable	4	8.33	100.00
Total	48	100.00	

**(2) Indoor air quality**

	Freq.	Percent	Cum.
not well trained	5	10.64	10.64
moderately well trained	16	34.04	44.68
well trained	15	31.91	76.60
very well trained	11	23.40	100.00
Total	47	100.00	

**(3) Measures to increase security of housing unit**

	Freq.	Percent	Cum.
not at all well trained	4	8.51	8.51
not well trained	13	27.66	36.17
moderately well trained	13	27.66	63.83
well trained	7	14.89	78.72
not applicable	10	21.28	100.00
Total	47	100.00	

**(4) Measures to reduce common household hazards**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	8	16.67	18.75
moderately well trained	21	43.75	62.50
well trained	11	22.92	85.42
very well trained	4	8.33	93.75
not applicable	3	6.25	100.00
Total	48	100.00	

**(5) Mold and mildew**

	Freq.	Percent	Cum.
not well trained	8	16.67	16.67
moderately well trained	16	33.33	50.00
well trained	17	35.42	85.42
very well trained	7	14.58	100.00
Total	48	100.00	

**(6) Lead**

	Freq.	Percent	Cum.
not at all well trained	1	2.08	2.08
not well trained	3	6.25	8.33
moderately well trained	13	27.08	35.42
well trained	21	43.75	79.17
very well trained	10	20.83	100.00
Total	48	100.00	

**(7) Asbestos**

	Freq.	Percent	Cum.
not at all well trained	5	10.42	10.42
not well trained	16	33.33	43.75
moderately well trained	13	27.08	70.83
well trained	9	18.75	89.58
very well trained	4	8.33	97.92
not applicable	1	2.08	100.00
Total	48	100.00	

**(8) Vermiculite**

	Freq.	Percent	Cum.
not at all well trained	7	15.22	15.22
not well trained	15	32.61	47.83
moderately well trained	14	30.43	78.26
well trained	5	10.87	89.13
very well trained	4	8.70	97.83
not applicable	1	2.17	100.00
Total	46	100.00	

**(9) General crew safety**

	Freq.	Percent	Cum.
not well trained	4	8.33	8.33
moderately well trained	10	20.83	29.17
well trained	21	43.75	72.92
very well trained	13	27.08	100.00
-----+			
Total	48	100.00	

**(10) Other (please specify)**

16. In your judgment, how well trained (overall) were your state's weatherization crews in Program Year 2008? (Check best answer)

- Very well trained**
- Well trained**
- Moderately well trained**
- Poorly trained**
- Very poorly trained**

	Freq.	Percent	Cum.
poorly trained	1	2.04	2.04
moderately well trained	16	32.65	34.69
well trained	29	59.18	93.88
very well trained	3	6.12	100.00
-----+			
Total	49	100.00	

**Section D: MONITORING**

1. About how many state weatherization office staff went into the field to monitor local weatherization agencies in your state in Program Year 2008? *Note: do not include people who do quality assurance at the local agency level for the local agencies.*

State staff observations:	46
missing values:	5
mean:	3.68
standard deviation:	3.41
min:	.5
10th percentile:	1
25th percentile:	2
median:	3
75th percentile:	4
90th percentile:	7
max:	21

State contractor observations:	21
missing values:	30
mean:	.5
standard deviation:	.97
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	.5
90th percentile:	2
max:	3

- Other (please specify) \_\_\_\_\_

observations:	6
missing values:	45
mean:	2.5
standard deviation:	4.81
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	3
90th percentile:	12
max:	12

**2. Which of the following types of post-weatherization quality control inspection did your state perform on weatherized dwelling units in Program Year 2008? (Check all that apply)**

- **Visual inspection of installed measures**

	Freq.	Percent	Cum.
yes	47	100.00	100.00
Total	47	100.00	

- **Verification of insulation depths/quantities**

	Freq.	Percent	Cum.
no	4	8.51	8.51
yes	43	91.49	100.00
Total	47	100.00	

- **Verification of operation of measures installed**

	Freq.	Percent	Cum.
no	3	6.38	6.38
yes	44	93.62	100.00
Total	47	100.00	

- **Assessment of quality of measures installed**

	Freq.	Percent	Cum.
yes	47	100.00	100.00
Total	47	100.00	

- **Identification of needed measures that were not installed**

	Freq.	Percent	Cum.
no	4	8.51	8.51
yes	43	91.49	100.00
Total	47	100.00	

- **Blower door test**

	Freq.	Percent	Cum.
no	6	12.77	12.77
yes	41	87.23	100.00
Total	47	100.00	

- **Heating system efficiency test (flue gas analysis)**

	Freq.	Percent	Cum.
no	23	48.94	48.94
yes	24	51.06	100.00
Total	47	100.00	

- **Draft/spillage tests of heating systems**

	Freq.	Percent	Cum.
no	17	36.17	36.17
yes	30	63.83	100.00
Total	47	100.00	

- **Carbon monoxide (CO) monitoring**

	Freq.	Percent	Cum.
no	8	17.02	17.02
yes	39	82.98	100.00
Total	47	100.00	

- **Infrared scanning**

	Freq.	Percent	Cum.
no	23	48.94	48.94
yes	24	51.06	100.00
Total	47	100.00	

- **Identification of unresolved health and safety issues**

	Freq.	Percent	Cum.
no	4	8.51	8.51
yes	43	91.49	100.00
Total	47	100.00	

- **Discussion with occupants**

	Freq.	Percent	Cum.
no	1	2.13	2.13
yes	46	97.87	100.00
Total	47	100.00	

- **Other (specify)** \_\_\_\_\_

3. Please indicate which types of post-weatherization quality control inspection listed below were initiated during three years before Program Year 2008? (Check all that apply)

- **Visual inspection of installed measures**

	Freq.	Percent	Cum.
no	4	9.09	9.09
yes	40	90.91	100.00
Total	44	100.00	



- **Verification of insulation depths/quantities**

	Freq.	Percent	Cum.
no	10	22.73	22.73
yes	34	77.27	100.00
Total	44	100.00	

- **Verification of operation of measures installed**

	Freq.	Percent	Cum.
no	8	18.18	18.18
yes	36	81.82	100.00
Total	44	100.00	

- **Assessment of quality of measures installed**

	Freq.	Percent	Cum.
no	5	11.36	11.36
yes	39	88.64	100.00
Total	44	100.00	

- **Identification of needed measures that were not installed**

	Freq.	Percent	Cum.
no	11	25.00	25.00
yes	33	75.00	100.00
Total	44	100.00	

- **Blower door test**

	Freq.	Percent	Cum.
no	12	27.27	27.27
yes	32	72.73	100.00
Total	44	100.00	

- **Heating system efficiency test (flue gas analysis)**

	Freq.	Percent	Cum.
no	19	43.18	43.18
yes	25	56.82	100.00
Total	44	100.00	

- **Draft/spillage tests of heating systems**

	Freq.	Percent	Cum.
no	18	40.91	40.91
yes	26	59.09	100.00
Total	44	100.00	

- **Carbon monoxide (CO) monitoring**

	Freq.	Percent	Cum.
no	10	22.73	22.73
yes	34	77.27	100.00
Total	44	100.00	

- **Infrared scanning**

	Freq.	Percent	Cum.
no	25	56.82	56.82
yes	19	43.18	100.00
Total	44	100.00	

- **Identification of unresolved health and safety issues**

	Freq.	Percent	Cum.
no	10	22.73	22.73
yes	34	77.27	100.00
Total	44	100.00	

- **Discussion with occupants**

	Freq.	Percent	Cum.
no	8	18.18	18.18
yes	36	81.82	100.00
Total	44	100.00	

- **Other (specify)** \_\_\_\_\_

4. For Program Year 2008 please rate key aspects (cost, training needed, time needed and effectiveness) of the quality control inspection procedures listed below using the following scale: 1 – very low; 2 – low; 3 – medium; 4 – high; 5 – very high. For example, if you view visual inspection of installed measures as low-cost, give a rating of 2 in the Cost column. If you view visual inspection of installed measures as highly effective, give a rating of 4 in the Effectiveness column.

Type of Post-Weatherization Quality Control Inspection	Cost	Training Needed	Time Needed	a. Effectiveness
Visual inspection of installed measures	obs: 43 very low: 7 low: 20 medium: 11 high: 4 very high: 1	obs: 42 very low: 6 low: 7 medium: 12 high: 11 very high: 6	obs: 41 very low: 2 low: 8 medium: 13 high: 14 very high: 4	obs: 41 very low: 0 low: 1 medium: 3 high: 16 very high: 21
Verification of insulation depths/quantities	obs: 42 very low: 8 low: 19 medium: 13 high: 2 very high: 0	obs: 41 very low: 6 low: 12 medium: 10 high: 10 very high: 3	obs: 41 very low: 4 low: 13 medium: 13 high: 9 very high: 2	obs: 40 very low: 1 low: 0 medium: 6 high: 20 very high: 13
Verification of operation of measures installed	obs: 42 very low: 6 low: 19 medium: 14 high: 3 very high: 0	obs: 41 very low: 2 low: 6 medium: 17 high: 10 very high: 6	obs: 41 very low: 1 low: 3 medium: 21 high: 13 very high: 3	obs: 41 very low: 1 low: 0 medium: 7 high: 19 very high: 14
Assessment of quality of measures installed	obs: 43 very low: 2 low: 23 medium: 15 high: 3 very high: 0	obs: 42 very low: 1 low: 8 medium: 14 high: 12 very high: 7	obs: 42 very low: 1 low: 6 medium: 15 high: 17 very high: 3	obs: 42 very low: 1 low: 0 medium: 5 high: 20 very high: 16
Identification of needed	obs: 41	obs: 40 very	obs: 40 very	obs: 40 very low: 1

measures that were not installed	very low: 4 low: 18 medium: 15 high: 4 very high: 0	low: 1 low: 5 medium: 12 high: 14 very high: 8	low: 1 low: 4 medium: 18 high: 12 very high: 5	low: 0 medium: 8 high: 17 very high: 14
Blower door test	obs: 43 very low: 6 low: 10 medium: 21 high: 3 very high: 3	obs: 41 very low: 2 low: 6 medium: 9 high: 16 very high: 8	obs: 41 very low: 0 low: 4 medium: 15 high: 15 very high: 7	obs: 41 very low: 1 low: 1 medium: 1 high: 18 very high: 20
Heating system efficiency test (flue gas analysis)	obs: 39 very low: 3 low: 9 medium: 20 high: 5 very high: 2	obs: 37 very low: 2 low: 3 medium: 10 high: 13 very high: 9	obs: 37 very low: 0 low: 4 medium: 18 high: 11 very high: 4	obs: 37 very low: 1 low: 1 medium: 9 high: 11 very high: 15
Draft/spillage tests of heating systems	obs: 40 very low: 3 low: 17 medium: 17 high: 2 very high: 1	obs: 38 very low: 3 low: 5 medium: 9 high: 13 very high: 8	obs: 38 very low: 0 low: 8 medium: 17 high: 10 very high: 3	obs: 38 very low: 1 low: 1 medium: 4 high: 16 very high: 16
Carbon monoxide (CO) monitoring	obs: 42 very low: 9 low: 13 medium: 16 high: 3 very high: 1	obs: 41 very low: 3 low: 7 medium: 12 high: 13 very high: 6	obs: 41 very low: 1 low: 10 medium: 17 high: 9 very high: 4	obs: 41 very low: 1 low: 1 medium: 2 high: 18 very high: 19

Infrared scanning	obs: 38 very low: 2 low: 7 medium: 15 high: 5 very high: 9	obs: 36 very low: 0 low: 5 medium: 11 high: 12 very high: 8	obs: 36 very low: 0 low: 5 medium: 15 high: 10 very high: 6	obs: 34 very low: 1 low: 4 medium: 5 high: 12 very high: 12
Identification of unresolved health and safety issues	obs: 43 very low: 7 low: 18 medium: 14 high: 4 very high: 0	obs: 41 very low: 3 low: 2 medium: 13 high: 16 very high: 7	obs: 41 very low: 1 low: 4 medium: 21 high: 10 very high: 5	obs: 41 very low: 1 low: 2 medium: 6 high: 13 very high: 19
Discussion with occupants	obs: 44 very low: 14 low: 17 medium: 11 high: 1 very high: 1	obs: 42 very low: 5 low: 8 medium: 16 high: 11 very high: 2	obs: 42 very low: 3 low: 10 medium: 16 high: 9 very high: 4	obs: 42 very low: 0 low: 2 medium: 9 high: 19 very high: 12
Other (specify)				

5. On average, how many hours were spent by state weatherization office staff on-site conducting post-weatherization quality control in a typical weatherized home in Program Year 2008? \_\_\_\_\_
6. What types of credentials or experience were required of your post-weatherization quality control inspectors in your state weatherization office in Program Year 2008? (Check all that apply)

- **Technical certification**

	Freq.	Percent	Cum.
no	22	48.89	48.89
yes	23	51.11	100.00
Total	45	100.00	

- **Extensive experience performing pre-weatherization audits**

	Freq.	Percent	Cum.
no	15	33.33	33.33
yes	30	66.67	100.00
Total	45	100.00	

- **Extensive experience performing weatherization work**

	Freq.	Percent	Cum.
no	18	40.00	40.00
yes	27	60.00	100.00
Total	45	100.00	

- **Extensive experience supervising weatherization work**

	Freq.	Percent	Cum.
no	25	55.56	55.56
yes	20	44.44	100.00
Total	45	100.00	

- **Construction experience**

	Freq.	Percent	Cum.
no	25	55.56	55.56
yes	20	44.44	100.00
Total	45	100.00	

- **Other (please specify)** \_\_\_\_\_

7. Please indicate the level of experience of the post-weatherization quality control inspectors in your state weatherization office for each of the following areas in Program Year 2008.

	<b>Very High</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>Very Low</b>
Performing pre-weatherization audits	Freq. Percent Cum.				
	very low	2	4.17	4.17	
	low	4	8.33	12.50	
	medium	6	12.50	25.00	
	high	19	39.58	64.58	
	very high	17	35.42	100.00	
	Total	48	100.00		
Performing weatherization work	Freq. Percent Cum.				
	very low	4	8.51	8.51	
	low	5	10.64	19.15	
	medium	11	23.40	42.55	
	high	18	38.30	80.85	
	very high	9	19.15	100.00	
	Total	47	100.00		
Supervising weatherization work	Freq. Percent Cum.				
	very low	6	12.77	12.77	
	low	7	14.89	27.66	
	medium	10	21.28	48.94	
	high	17	36.17	85.11	
	very high	7	14.89	100.00	
	Total	47	100.00		
Working in construction	Freq. Percent Cum.				
	very low	6	13.33	13.33	
	low	8	17.78	31.11	
	medium	15	33.33	64.44	
	high	8	17.78	82.22	
	very high	8	17.78	100.00	
	Total	45	100.00		
Performing post-weatherization inspections	Freq. Percent Cum.				
	very low	1	2.13	2.13	
	low	1	2.13	4.26	
	medium	4	8.51	12.77	
	high	24	51.06	63.83	
	very high	17	36.17	100.00	
	Total	47	100.00		
Other (specify)					

***Inspectors with a very high level of experience would be considered experts in weatherization.  
Inspectors with a very low level of experience would be considered new to weatherization.***

8. On average, how frequently did state weatherization program office staff visit each local agency to conduct post-weatherization quality control inspections in Program Year 2008? (Check best answer)

	Freq.	Percent	Cum.
weekly	1	2.04	2.04
monthly	5	10.20	12.24
quarterly	9	18.37	30.61
annually	23	46.94	77.55
other (please specify)	11	22.45	100.00
Total	49	100.00	

9. On how many dwelling units did your state perform post-weatherization quality control inspections in Program Year 2008? \_\_\_\_\_

9a. Of those inspected, approximately how many were found to have a problem significant enough to require a return visit by local agency weatherization crews? \_\_\_\_\_

9b. Of those requiring a return visit, what were the three most common problems found in the dwelling units inspected by your state?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

9c. Of those requiring a return visit, how many had work done that probably resulted in more energy savings? \_\_\_\_\_

10. In those cases where a Program Year 2008 post-weatherization quality control inspection revealed a problem with the job performed, what single action was most commonly taken in response to that finding? (Check best answer)

- Made agency send crew back to correct problem \_\_\_\_\_
- Made agency send crew supervisor to correct problem \_\_\_\_\_
- Sent someone from state office to correct problem \_\_\_\_\_
- No action taken \_\_\_\_\_
- Other (please specify) \_\_\_\_\_

	Freq.	Percent	Cum.
Made agency send crew back to correct problem	42	87.50	87.50
Made agency send crew supervisor to correct problem	1	2.08	89.58
Other (please specify)	5	10.42	100.00
Total	48	100.00	



11. What *other* actions were taken in Program Year 2008 in response to the discovery of a problem with the weatherization job performed? (Check all that apply)

- **Made agency send original crew back to correct problem**

	Freq.	Percent	Cum.
no	25	55.56	55.56
yes	20	44.44	100.00
Total	45	100.00	

- **Made agency send different crew to correct problem**

	Freq.	Percent	Cum.
no	30	66.67	66.67
yes	15	33.33	100.00
Total	45	100.00	

- **Made agency send crew supervisor to correct problem**

	Freq.	Percent	Cum.
no	31	68.89	68.89
yes	14	31.11	100.00
Total	45	100.00	

- **Sent someone from state office to correct problem**

	Freq.	Percent	Cum.
no	41	91.11	91.11
yes	4	8.89	100.00
Total	45	100.00	

- **No action taken**

	Freq.	Percent	Cum.
no	42	93.33	93.33
yes	3	6.67	100.00
Total	45	100.00	

- **Other (please specify)** \_\_\_\_\_

12. Which of the following monitoring tasks did your state perform in Program Year 2008 to check on the administration of local weatherization efforts? (Check all that apply)

- **Verification of number of dwelling units weatherized**

	Freq.	Percent	Cum.
no	6	12.24	12.24
yes	43	87.76	100.00
Total	49	100.00	

- **Verification of clients' income eligibility**

	Freq.	Percent	Cum.
no	3	6.12	6.12
yes	46	93.88	100.00
Total	49	100.00	

- **Verification of average expenditure per weatherized unit**

	Freq.	Percent	Cum.
no	5	10.20	10.20
yes	44	89.80	100.00
Total	49	100.00	

- **Verification of material expenditures**

	Freq.	Percent	Cum.
no	2	4.08	4.08
yes	47	95.92	100.00
Total	49	100.00	

- **Verification that installed measures had an SIR of 1.0 or greater**

	Freq.	Percent	Cum.
no	9	18.37	18.37
yes	40	81.63	100.00
Total	49	100.00	

- **Examination of vehicle costs**

	Freq.	Percent	Cum.
no	25	51.02	51.02
yes	24	48.98	100.00
Total	49	100.00	

- **Examination of other equipment costs**

	Freq.	Percent	Cum.
no	20	40.82	40.82
yes	29	59.18	100.00
Total	49	100.00	

- **Examination of training and technical assistance (T&TA) costs**

	Freq.	Percent	Cum.
no	8	16.33	16.33
yes	41	83.67	100.00
Total	49	100.00	

- **Examination of administrative costs**

	Freq.	Percent	Cum.
no	9	18.37	18.37
yes	40	81.63	100.00
Total	49	100.00	

- **Examination of material inventory**

	Freq.	Percent	Cum.
no	19	38.78	38.78
yes	30	61.22	100.00
Total	49	100.00	

- **Interviews with agency staff**

	Freq.	Percent	Cum.
no	3	6.12	6.12
yes	46	93.88	100.00
Total	49	100.00	

- **Interviews with agency contractor staff**

	Freq.	Percent	Cum.
no	27	55.10	55.10
yes	22	44.90	100.00
Total	49	100.00	

- **Interviews with agency clients**

	Freq.	Percent	Cum.
no	5	10.20	10.20
yes	44	89.80	100.00
Total	49	100.00	

- **Other (please specify)** \_\_\_\_\_

13. Please indicate which types of monitoring tasks listed below were initiated three years prior to Program Year 2008. (Check all that apply)

- **Verification of number of dwelling units weatherized**

	Freq.	Percent	Cum.
no	6	13.64	13.64
yes	38	86.36	100.00
Total	44	100.00	

- **Verification of clients' income eligibility**

	Freq.	Percent	Cum.
no	4	9.09	9.09
yes	40	90.91	100.00
Total	44	100.00	

- **Verification of average expenditure per weatherized unit**

	Freq.	Percent	Cum.
no	8	18.18	18.18
yes	36	81.82	100.00
Total	44	100.00	

- **Verification of material expenditures**

	Freq.	Percent	Cum.
no	5	11.36	11.36
yes	39	88.64	100.00
Total	44	100.00	

**Verification that installed measures had an SIR of 1.0 or greater**

	Freq.	Percent	Cum.
no	11	25.00	25.00
yes	33	75.00	100.00
Total	44	100.00	

- **Examination of vehicle costs**

	Freq.	Percent	Cum.
no	23	52.27	52.27
yes	21	47.73	100.00
Total	44	100.00	

- **Examination of other equipment costs**

	Freq.	Percent	Cum.
no	19	43.18	43.18
yes	25	56.82	100.00
Total	44	100.00	

- **Examination of training and technical assistance (T&TA) costs**

	Freq.	Percent	Cum.
no	16	36.36	36.36
yes	28	63.64	100.00
Total	44	100.00	

- **Examination of administrative costs**

	Freq.	Percent	Cum.
no	13	29.55	29.55
yes	31	70.45	100.00
Total	44	100.00	

- **Examination of material inventory**

	Freq.	Percent	Cum.
no	17	38.64	38.64
yes	27	61.36	100.00
Total	44	100.00	

**Interviews with agency staff**

	Freq.	Percent	Cum.
no	8	18.18	18.18
yes	36	81.82	100.00
Total	44	100.00	

• **Interviews with agency contractor staff**

	Freq.	Percent	Cum.
no	24	54.55	54.55
yes	20	45.45	100.00
Total	44	100.00	

• **Interviews with agency clients**

	Freq.	Percent	Cum.
no	8	18.18	18.18
yes	36	81.82	100.00
Total	44	100.00	

• **Other (please specify)** \_\_\_\_\_

14. For Program Year 2008 please rate key aspects (cost, training needed, time needed and effectiveness) of the monitoring tasks listed below using the following scale: 1 – very low; 2 – low; 3 – medium; 4 – high; 5 – very high. *For example, if you view verification of number of dwelling units weatherized as requiring a moderate amount of training, give a rating of 3 in the Training Needed column. If you view verification of number of dwelling units weatherized as requiring a low amount of time, give a rating of 2 in the Time Needed column.*

<b>Type of Monitoring Tasks</b>	<b>Cost</b>	<b>Training Needed</b>	<b>Time Needed</b>	<b>Effectiveness</b>
Verification of number of dwelling units weatherized	obs: 44 very low: 11 low: 20 medium: 8 high: 4 very high: 1	obs: 43 very low: 12 low: 16 medium: 10 high: 4 very high: 1	obs: 44 very low: 5 low: 19 medium: 12 high: 5 very high: 3	obs: 44 very low: 1 low: 4 medium: 7 high: 16 very high: 16
Verification of clients' income eligibility	obs: 44 very low: 11 low: 21 medium: 9 high: 2 very high: 1	obs: 43 very low: 8 low: 8 medium: 20 high: 6 very high: 1	obs: 44 very low: 3 low: 14 medium: 18 high: 7 very high: 2	obs: 44 very low: 1 low: 2 medium: 12 high: 13 very high: 16
Verification of average expenditure per weatherized unit	obs: 43 very low: 11 low: 22 medium: 8 high: 2 very high: 0	obs: 42 very low: 9 low: 13 medium: 13 high: 6 very high: 1	obs: 43 very low: 3 low: 15 medium: 14 high: 9 very high: 2	obs: 43 very low: 2 low: 2 medium: 6 high: 18 very high: 15
Verification of material expenditures	obs: 43 very low: 10 low: 15 medium: 12 high: 5 very high: 1	obs: 42 very low: 6 low: 13 medium: 12 high: 10 very high: 1	obs: 43 very low: 3 low: 10 medium: 15 high: 14 very high: 1	obs: 43 very low: 1 low: 1 medium: 7 high: 22 very high: 12
Verification that installed measures had an SIR of 1.0 or greater	obs: 40 very low: 8 low: 13 medium: 13 high: 6 very high: 0	obs: 39 very low: 6 low: 4 medium: 11 high: 14 very high: 4	obs: 40 very low: 4 low: 8 medium: 13 high: 10 very high: 5	obs: 40 very low: 3 low: 2 medium: 7 high: 15 very high: 13
Examination of vehicle costs	obs: 34 very low: 10 low: 15 medium: 6 high: 3 very high: 0	obs: 33 very low: 8 low: 11 medium: 10 high: 4 very high: 0	obs: 33 very low: 5 low: 10 medium: 12 high: 6 very high: 0	obs: 33 very low: 4 low: 2 medium: 9 high: 11 very high: 7
Examination of other equipment costs	obs: 38 very low: 9 low: 18 medium: 7 high: 4 very high: 0	obs: 37 very low: 8 low: 9 medium: 16 high: 4 very high: 0	obs: 37 very low: 3 low: 13 medium: 14 high: 7 very high: 0	obs: 37 very low: 3 low: 3 medium: 13 high: 11 very high: 7
Examination of training and technical assistance (T&TA) costs	obs: 42 very low: 10 low: 16 medium: 10 high: 6 very high: 0	obs: 41 very low: 8 low: 7 medium: 19 high: 5 very high: 2	obs: 42 very low: 3 low: 11 medium: 17 high: 10 very high: 1	obs: 42 very low: 4 low: 2 medium: 14 high: 17 very high: 5
Examination of administrative costs	obs: 41 very low: 8 low: 16 medium: 10 high: 7 very high: 0	obs: 41 very low: 6 low: 8 medium: 14 high: 10 very high: 3	obs: 42 very low: 2 low: 13 medium: 13 high: 11 very high: 3	obs: 41 very low: 2 low: 3 medium: 10 high: 13 very high: 13

Type of Monitoring Tasks	Cost	Training Needed	Time Needed	Effectiveness
Examination of material inventory	obs: 38 very low: 7 low: 20 medium: 6 high: 5 very high: 0	obs: 37 very low: 5 low: 14 medium: 11 high: 7 very high: 0	obs: 37 very low: 1 low: 7 medium: 13 high: 14 very high: 2	obs: 37 very low: 2 low: 5 medium: 10 high: 17 very high: 3
Interviews with agency staff	obs: 42 very low: 10 low: 16 medium: 11 high: 5 very high: 0	obs: 41 very low: 8 low: 8 medium: 18 high: 7 very high: 0	obs: 42 very low: 3 low: 8 medium: 21 high: 10 very high: 0	obs: 42 very low: 1 low: 3 medium: 14 high: 16 very high: 8
Interviews with agency contractor staff	obs: 37 very low: 7 low: 13 medium: 10 high: 7 very high: 0	obs: 35 very low: 6 low: 7 medium: 16 high: 6 very high: 0	obs: 35 very low: 3 low: 7 medium: 14 high: 10 very high: 1	obs: 36 very low: 2 low: 2 medium: 12 high: 15 very high: 5
Interviews with agency clients	obs: 43 very low: 7 low: 18 medium: 13 high: 5 very high: 0	obs: 42 very low: 7 low: 9 medium: 17 high: 8 very high: 1	obs: 42 very low: 2 low: 10 medium: 20 high: 9 very high: 1	obs: 43 very low: 1 low: 1 medium: 14 high: 18 very high: 9
Other (specify)				

15. On average, how many hours were spent by state weatherization office staff on-site at each local agency monitoring agency administrative activities in Program Year 2008? \_\_\_\_\_

16. What types of credentials or experience were required of those who monitored the administration of local weatherization efforts in your state in Program Year 2008? *Check all that apply.*

- **Technical certification**

	Freq.	Percent	Cum.
no	32	69.57	69.57
yes	14	30.43	100.00
Total	46	100.00	

- **Extensive experience performing pre-weatherization audits**

	Freq.	Percent	Cum.
no	26	56.52	56.52
yes	20	43.48	100.00
Total	46	100.00	

- **Extensive experience performing weatherization work**

	Freq.	Percent	Cum.
no	31	67.39	67.39
yes	15	32.61	100.00



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Total	46	100.00
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- **Extensive experience supervising weatherization work**

	Freq.	Percent	Cum.
no	27	58.70	58.70
yes	19	41.30	100.00
Total	46	100.00	

- **Construction experience**

	Freq.	Percent	Cum.
no	36	78.26	78.26
yes	10	21.74	100.00
Total	46	100.00	

- **Extensive management experience**

	Freq.	Percent	Cum.
no	20	43.48	43.48
yes	26	56.52	100.00
Total	46	100.00	

- **Extensive finance experience**

	Freq.	Percent	Cum.
no	20	43.48	43.48
yes	26	56.52	100.00
Total	46	100.00	

- **Extensive experience administering local weatherization programs**

	Freq.	Percent	Cum.
no	26	56.52	56.52
yes	20	43.48	100.00
Total	46	100.00	

- **Other (please specify) \_\_\_\_\_**

17. Please indicate the level of experience of the state monitors of the local agencies in your state weatherization office for each of the following areas in Program Year 2008.

	Very High	High	Moderate	Low	Very Low	
Management	Freq.			Percent		Cum.
	-----+-----					
	low	2	4.17	4.17		
	moderately well trained	18	37.50	41.67		
	high	17	35.42	77.08		
	very high	11	22.92	100.00		
-----+-----						
Total	48	100.00				
Finance	Freq.			Percent		Cum.
	-----+-----					
	low	7	14.58	14.58		
	moderately well trained	16	33.33	47.92		
	high	18	37.50	85.42		
	very high	7	14.58	100.00		
-----+-----						
Total	48	100.00				
Administration of local weatherization programs	Freq.			Percent		Cum.
	-----+-----					
	very low	3	6.25	6.25		
	low	4	8.33	14.58		
	moderately well trained	17	35.42	50.00		
	high	12	25.00	75.00		
very high	12	25.00	100.00			
-----+-----						
Total	48	100.00				
Other (specify)						

18. On average, how frequently did state weatherization program office staff visit each local agency to monitor administrative activities in Program Year 2008? (Check best answer)

	Freq.	Percent	Cum.
-----+-----			
weekly	1	2.04	2.04
monthly	2	4.08	6.12
quarterly	2	4.08	10.20
annually	37	75.51	85.71
other (please specify)	7	14.29	100.00
-----+-----			
Total	49	100.00	

19. For how many of the local weatherization agencies monitored in your state in Program Year 2008 was an administrative problem found that required corrective actions above and beyond acceptable findings and recommendations? \_\_\_\_\_

20. What were the three most common problems requiring corrective actions above and beyond acceptable findings and recommendations found in the local weatherization agencies monitored in your state in Program Year 2008?

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21. In those cases where state monitoring of the administration of local weatherization efforts in Program Year 2008 revealed an administrative problem requiring corrective actions above and beyond acceptable findings and recommendations, what actions were taken in response? (Check all that apply)

- **Sent written report to local agency**

	Freq.	Percent	Cum.
no	6	12.77	12.77
yes	41	87.23	100.00
Total	47	100.00	

- **Required corrective action**

	Freq.	Percent	Cum.
no	6	12.77	12.77
yes	41	87.23	100.00
Total	47	100.00	

- **Made presentation to local agency**

	Freq.	Percent	Cum.
no	34	72.34	72.34
yes	13	27.66	100.00
Total	47	100.00	

- **Sent someone from state office to help correct problem**

	Freq.	Percent	Cum.
no	25	53.19	53.19
yes	22	46.81	100.00
Total	47	100.00	

- **Sent state contractor to help correct problem**

	Freq.	Percent	Cum.
no	41	87.23	87.23
yes	6	12.77	100.00
Total	47	100.00	

- **No action taken**

	Freq.	Percent	Cum.
no	45	95.74	95.74
yes	2	4.26	100.00
Total	47	100.00	

- **Other (please specify)** \_\_\_\_\_

22. Did the observation of problems with the quality of weatherization work lead to changes in weatherization training for local agency staff?

	Freq.	Percent	Cum.
no	17	35.42	35.42
yes	31	64.58	100.00
Total	48	100.00	

22a. If Yes, what changes were made? \_\_\_\_\_

23. Does your state observe weatherization training sessions to help identify potential problem areas for monitoring in the field (e.g., with respect to installation of measures that trainees seem to have trouble understanding)?

	Freq.	Percent	Cum.
no	14	28.57	28.57
yes	35	71.43	100.00
Total	49	100.00	

24a. If Yes, briefly describe how your in-field monitoring activities were affected by your training session observations. \_\_\_\_\_



**APPENDIX D: ALL AGENCIES PROGRAM INFORMATION SURVEY**





**S2: ALL AGENCIES PROGRAM INFORMATION SURVEY**

Thank you for your prompt response to this data request which is part of the national evaluation of the Weatherization Assistance Program. Evaluation results will provide essential feedback to the weatherization community and inform policymakers about the program's effects on clients' energy consumption, cost savings, and non-energy benefits.

This data is being collected to conduct a process evaluation of the Weatherization Assistance Program at the local level. The data you supply will be used to characterize the program in Program Years 2007 and 2008, with an emphasis on Program Year 2008.

All of the information obtained from this survey will be protected and will remain confidential. The data will be analyzed in such a way that the information provided cannot be associated back to your state, your agencies, or the housing units and clients that your state served. Again, please note that the questions refer to Program Year 2007 and 2008 unless otherwise noted.

Thank you in advance for completing this survey.

Public reporting burden for this collection of information is estimated to average eight hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of the Chief Information Officer, Records Management Division, IM-11, Paperwork Reduction Project (1910-5151), U.S. Department of Energy, 1000 Independence Ave SW, Washington, DC, 20585-1290; and to the Office of Management and Budget (OMB), OIRA, Paperwork Reduction Project (1910-5151), Washington, DC 20503.

**Part 1. General Information**

1. Please identify your state. \_\_\_\_\_
2. Please identify your local agency. \_\_\_\_\_
3. For how many years had the person who was director of your local Weatherization Program in Program Year 2008 served in that capacity prior to Program Year 2008? \_\_\_\_\_

observations:	777
missing values:	37
mean:	10.64
standard deviation:	9.14
min:	0
10th percentile:	1
25th percentile:	2
median:	8
75th percentile:	18
90th percentile:	25
max:	37

4. How many different people have served as director of your local Weatherization Program over the 10 years prior to Program Year 2008 (including the person who was head in Program Year 2008)? \_\_\_\_\_

observations:	787
missing values:	27
mean:	1.78
standard deviation:	1.30
min:	0
10th percentile:	1
25th percentile:	1
median:	2
75th percentile:	2
90th percentile:	3
max:	22

5. What agency, office, or department was responsible for reviewing the performance of your local Weatherization Program in Program Year 2008? \_\_\_\_\_

6. How many layers of management or supervision were there between your weatherization crews and the director of your local Weatherization Program in Program Year 2008? \_\_\_\_\_

observations:	782
missing values:	32
mean:	1.03
standard deviation:	1.24
min:	0
10th percentile:	0
25th percentile:	0
median:	1
75th percentile:	2
90th percentile:	2
max:	20

**Part 2. Information about Program Year 2007**

7. Please provide the following information about ALL low-income dwelling units weatherized by your agency in Program Year 2007.

Type of Unit Weatherized	Number of Units Weatherized in PY 2007			
	DOE Units <sup>1</sup>	Non-DOE Units <sup>2</sup>		TOTAL Units
		Comprehensive Weatherization <sup>3</sup>	Non-comprehensive Weatherization <sup>4</sup>	
Single Family Attached and Detached	obs: 814 min: 0 max: 2464 mean: 64.85 median: 41	obs: 814 min: 0 max: 1998 mean: 41.54 median: 0	obs: 814 min: 0 max: 3593 mean: 16.51 median: 0	obs: 814 min: 0 max: 5435 mean: 122.90 median: 65
Small Multi-family (2-4 units)	obs: 814 min: 0 max: 785 mean: 6.90 median: 0	obs: 814 min: 0 max: 423 mean: 5.36 median: 0	obs: 814 min: 0 max: 423 mean: 1.41 median: 0	obs: 814 min: 0 max: 790 mean: 13.68 median: 0
Multi-family (5 or More Units per Building)	obs: 814 min: 0 max: 789 mean: 13.60 median: 0	obs: 814 min: 0 max: 1956 mean: 16.07 median: 0	obs: 814 min: 0 max: 1281 mean: 2.37 median: 0	obs: 814 min: 0 max: 1956 mean: 32.03 median: 0
Mobile Home	obs: 814 min: 0 max: 191 mean: 17.18 median: 9.5	obs: 814 min: 0 max: 715 mean: 9.15 median: 0	obs: 814 min: 0 max: 381 mean: 2.65 median: 0	obs: 814 min: 0 max: 748 mean: 28.98 median: 15
Shelter	obs: 814 min: 0 max: 22 mean: .15 median: 0	obs: 814 min: 0 max: 19 mean: .05 median: 0	obs: 814 min: 0 max: 1 mean: .001 median: 0	obs: 814 min: 0 max: 34 mean: .21 median: 0
TOTAL UNITS	obs: 814 min: 0 max: 3323 mean: 102.68 median: 66	obs: 814 min: 0 max: 2866 mean: 72.17 median: 0	obs: 814 min: 0 max: 4227 mean: 22.94 median: 0	obs: 814 min: 0 max: 6367 mean: 197.79 median: 103

<sup>1</sup> These are dwelling units that your agency weatherized and reported to the State as “DOE Units”

<sup>2</sup> These are dwelling units that your agency weatherized but did not report as “DOE Units”

<sup>3</sup> Comprehensive weatherization units are those for which an audit or priority list was used that addressed a large proportion of potential energy-saving measures.

<sup>4</sup> Non-comprehensive weatherization units are those for which a limited set of measures was considered (e.g., baseload electric measures only; low cost/no cost measures only), reflecting the needs and priorities of the funding entity.

8. For each of the non-DOE sources from which your agency received weatherization funding in Program Year 2007, was any of the money spent in ways not allowed under DOE rules? If so, enter responses in the appropriate rows of Column A. If your agency did spend non-DOE money in ways not allowed under DOE rules, how did those expenditures differ from expenditures made under DOE rules? Enter responses in the appropriate rows of Column B. If your agency received no funding from a particular source in Program Year 2007, please leave that row blank.

<b>Source of non-DOE PY 2007 weatherization funding received by agency</b>	<b>Column A</b> <b>Was any of this money spent in ways not allowed under DOE rules?</b> <i>Check "yes" if funding was used for expenses that would not be allowed with DOE funding for WAP.</i>	<b>Column B</b> <b>If the answer in Column A was yes, what were the major differences between those expenditures and expenditures made under DOE rules?</b>																																
LIHEAP	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>no  </td> <td>170</td> <td>22.91</td> <td>22.91</td> </tr> <tr> <td>yes  </td> <td>572</td> <td>77.09</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>742</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	no	170	22.91	22.91	yes	572	77.09	100.00	Total	742	100.00		<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>not checked  </td> <td>424</td> <td>75.31</td> <td>75.31</td> </tr> <tr> <td>checked  </td> <td>139</td> <td>24.69</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>563</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	not checked	424	75.31	75.31	checked	139	24.69	100.00	Total	563	100.00	
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	Freq.	Percent	Cum.																															
no	649	87.47	87.47																															
yes	93	12.53	100.00																															
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not checked	64	69.57	69.57																															
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State Public Benefit Funds	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>no  </td> <td>643</td> <td>86.66</td> <td>86.66</td> </tr> <tr> <td>yes  </td> <td>99</td> <td>13.34</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>742</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	no	643	86.66	86.66	yes	99	13.34	100.00	Total	742	100.00		<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>not checked  </td> <td>56</td> <td>57.14</td> <td>57.14</td> </tr> <tr> <td>checked  </td> <td>42</td> <td>42.86</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>98</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	not checked	56	57.14	57.14	checked	42	42.86	100.00	Total	98	100.00	
	Freq.	Percent	Cum.																															
no	643	86.66	86.66																															
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	Freq.	Percent	Cum.																															
no	573	77.22	77.22																															
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	Freq.	Percent	Cum.																															
no	406	54.72	54.72																															
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Program Income (other than above)	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>no  </td> <td>677</td> <td>91.24</td> <td>91.24</td> </tr> <tr> <td>yes  </td> <td>65</td> <td>8.76</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>742</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	no	677	91.24	91.24	yes	65	8.76	100.00	Total	742	100.00		<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>not checked  </td> <td>50</td> <td>80.65</td> <td>80.65</td> </tr> <tr> <td>checked  </td> <td>12</td> <td>19.35</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>62</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	not checked	50	80.65	80.65	checked	12	19.35	100.00	Total	62	100.00	
	Freq.	Percent	Cum.																															
no	677	91.24	91.24																															
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In-Kind Contributions	<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>no  </td> <td>698</td> <td>94.07</td> <td>94.07</td> </tr> <tr> <td>yes  </td> <td>44</td> <td>5.93</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>742</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	no	698	94.07	94.07	yes	44	5.93	100.00	Total	742	100.00		<table border="1"> <thead> <tr> <th></th> <th>Freq.</th> <th>Percent</th> <th>Cum.</th> </tr> </thead> <tbody> <tr> <td>not checked  </td> <td>39</td> <td>90.70</td> <td>90.70</td> </tr> <tr> <td>checked  </td> <td>4</td> <td>9.30</td> <td>100.00</td> </tr> <tr> <td>Total  </td> <td>43</td> <td>100.00</td> <td></td> </tr> </tbody> </table>		Freq.	Percent	Cum.	not checked	39	90.70	90.70	checked	4	9.30	100.00	Total	43	100.00	
	Freq.	Percent	Cum.																															
no	698	94.07	94.07																															
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checked	4	9.30	100.00																															
Total	43	100.00																																

	Freq. Percent Cum.			Freq. Percent Cum.				
Non-profit Organization	no	728	98.11	98.11	not checked	10	100.00	100.00
	yes	14	1.89	100.00				
	Total	742	100.00					
Other	no	656	88.41	88.41	not checked	34	69.39	69.39
	yes	86	11.59	100.00	checked	15	30.61	100.00
	Total	742	100.00					

9. Please indicate the amount of funding from each source that was spent by your agency in Program Year 2007 on the different functions or applications shown below. The amount that you list in the right-most cell at the very bottom of the table should equal the total amount of weatherization funding from all sources that your agency received in Program Year 2007.

Source of PY 2007 Weatherization Funding Received by Agency	Amount Spent on Program Management <sup>1</sup>	Amount Spent on T&TA	PY 2007 Funds Supporting Weatherization of Units (\$)				TOTAL Amount Spent
			Amount Spent on DOE Units <sup>2</sup>		Amount Spent on Non-DOE Units <sup>3</sup>		
			Expenditures for Health and Safety, Repairs, and Other Non Cost-Effective Measures <sup>4</sup>	All Expenditures Defined as Allowable Costs for Purpose of Calculating Average Cost per Unit <sup>5</sup>	Expenditures for Health and Safety, Repairs, and Other Non Cost-Effective Measures <sup>4</sup>	All Expenditures Defined as Allowable Costs for Purpose of Calculating Average Cost per Unit <sup>5</sup>	
DOE	Obs: 793 Min: 0 Max: 5621800 Mean: 49483.67 Median: 21837	Obs: 792 Min: 0 Max: 872800 Mean: 6603.51 Median: 3363.07	Obs: 792 Min: 0 Max: 4319007 Mean: 31436.15 Median: 9733.13	Obs: 792 Min: 0 Max: 64577700 Mean: 270259.55 Median: 126288.5	N/A	N/A	Obs: 793 Min: 0 Max: 74955800 Mean: 357394.09 Median: 183321
LIHEAP	Obs: 792 Min: 0 Max: 548411 Mean: 23982.10 Median: 6822.5	Obs: 791 Min: 0 Max: 110731 Mean: 1394.41 Median: 0	Obs: 791 Min: 0 Max: 1253428 Mean: 13957.89 Median: 0	Obs: 791 Min: 0 Max: 1255000 Mean: 62681.37 Median: 0	Obs: 791 Min: 0 Max: 2016494 Mean: 17029.10 Median: 0	Obs: 791 Min: 0 Max: 3858404 Mean: 83437.33 Median: 0	Obs: 792 Min: 0 Max: 4104275.3 Mean: 202256.82 Median: 96134.5
Petroleum Violation Escrow (PVE)	Obs: 792 Min: 0 Max: 52553 Mean: 167.60 Median: 0	Obs: 791 Min: 0 Max: 1500 Mean: 1.90 Median: 0	Obs: 791 Min: 0 Max: 51972 Mean: 106.32 Median: 0	Obs: 791 Min: 0 Max: 65759 Mean: 208.69 Median: 0	Obs: 791 Min: 0 Max: 171905 Mean: 335.23 Median: 0	Obs: 791 Min: 0 Max: 222000 Mean: 800.63 Median: 0	Obs: 792 Min: 0 Max: 286000 Mean: 1618.53 Median: 0
Other Federal Programs	Obs: 792 Min: 0 Max: 2759000.5 Mean: 6527.89 Median: 0	Obs: 791 Min: 0 Max: 16496.16 Mean: 47.35 Median: 0	Obs: 791 Min: 0 Max: 151555.27 Mean: 1358.54 Median: 0	Obs: 791 Min: 0 Max: 831830 Mean: 6590.93 Median: 0	Obs: 791 Min: 0 Max: 444016 Mean: 2467.58 Median: 0	Obs: 791 Min: 0 Max: 8370340.5 Mean: 18303.53 Median: 0	Obs: 792 Min: 0 Max: 11129341 Mean: 35259.50 Median: 0
State Public Benefit Funds	Obs: 792 Min: 0 Max: 2327160.5 Mean: 12361.18 Median: 0	Obs: 791 Min: 0 Max: 42000 Mean: 220.40 Median: 0	Obs: 791 Min: 0 Max: 671790 Mean: 3640.32 Median: 0	Obs: 791 Min: 0 Max: 2693708 Mean: 19357.01 Median: 0	Obs: 791 Min: 0 Max: 549285.19 Mean: 5595.92 Median: 0	Obs: 791 Min: 0 Max: 3307116.5 Mean: 25688.23 Median: 0	Obs: 792 Min: 0 Max: 6196118.5 Mean: 66794.24 Median: 0
Other State Programs	Obs: 792 Min: 0 Max: 876850 Mean: 7284.20 Median: 0	Obs: 791 Min: 0 Max: 34203 Mean: 173.87 Median: 0	Obs: 791 Min: 0 Max: 371657.25 Mean: 2557.82 Median: 0	Obs: 791 Min: 0 Max: 1489874 Mean: 17851.43 Median: 0	Obs: 791 Min: 0 Max: 126980 Mean: 1700.40 Median: 0	Obs: 791 Min: 0 Max: 2602744 Mean: 20814.97 Median: 0	Obs: 792 Min: 0 Max: 3479594 Mean: 50328.26 Median: 0

Utilities	Obs: 792 Min: 0 Max: 33949300 Mean: 51147.30 Median: 0	Obs: 791 Min: 0 Max: 43912 Mean: 231.06 Median: 0	Obs: 791 Min: 0 Max: 372163 Mean: 3827.23 Median: 0	Obs: 791 Min: 0 Max: 27662500 Mean: 64548.98 Median: 0	Obs: 791 Min: 0 Max: 296751 Mean: 1670.62 Median: 0	Obs: 791 Min: 0 Max: 2790000 Mean: 39156.34 Median: 0	Obs: 792 Min: 0 Max: 61611800 Mean: 160443.35 Median: 0
Program Income (other than above)	Obs: 792 Min: 0 Max: 152879.98 Mean: 499.38 Median: 0	Obs: 791 Min: 0 Max: 12764 Mean: 28.34 Median: 0	Obs: 791 Min: 0 Max: 100000 Mean: 307.76 Median: 0	Obs: 791 Min: 0 Max: 151982 Mean: 708.48 Median: 0	Obs: 791 Min: 0 Max: 126245 Mean: 322.44 Median: 0	Obs: 791 Min: 0 Max: 383052.19 Mean: 1365.34 Median: 0	Obs: 792 Min: 0 Max: 535932.19 Mean: 3228.28 Median: 0
In-Kind Contributions	Obs: 792 Min: 0 Max: 4156401 Mean: 5487.37 Median: 0	Obs: 791 Min: 0 Max: 0 Mean: 0 Median: 0	Obs: 791 Min: 0 Max: 629172 Mean: 938.17 Median: 0	Obs: 791 Min: 0 Max: 300993 Mean: 1045.64 Median: 0	Obs: 791 Min: 0 Max: 0 Mean: 0 Median: 0	Obs: 791 Min: 0 Max: 140401 Mean: 229.49 Median: 0	Obs: 792 Min: 0 Max: 4156401 Mean: 7697.87 Median: 0
Non-Profit Organizations	Obs: 792 Min: 0 Max: 60152 Mean: 110.40 Median: 0	Obs: 791 Min: 0 Max: 0 Mean: 0 Median: 0	Obs: 791 Min: 0 Max: 116476 Mean: 165.18 Median: 0	Obs: 791 Min: 0 Max: 124398 Mean: 432.09 Median: 0	Obs: 791 Min: 0 Max: 20000 Mean: 25.28 Median: 0	Obs: 791 Min: 0 Max: 143786 Mean: 194.42 Median: 0	Obs: 792 Min: 0 Max: 245529 Mean: 926.34 Median: 0
TOTAL FUNDS	Obs: 793 Min: 0 Max: 39571100 Mean: 156915.45 Median: 44578	Obs: 792 Min: 0 Max: 872800 Mean: 8698.18 Median: 4500	Obs: 792 Min: 0 Max: 4683982.5 Mean: 58261.45 Median: 14960	Obs: 792 Min: 0 Max: 92240200 Mean: 443465.18 Median: 203627.89	Obs: 792 Min: 0 Max: 2016494 Mean: 29493.79 Median: 0	Obs: 792 Min: 0 Max: 10973084 Mean: 192633.02 Median: 0	Obs: 793 Min: 0 Max: 1.366e+08 Mean: 888263.19 Median: 437159

<sup>1</sup> Program Management costs include: cost of liability insurance; cost of low cost/no cost activities; cost of financial audits; administrative expenses; and funds used for leveraging activities.

<sup>2</sup> These are dwelling units that your agency weatherized and reported to the State as "DOE Units"

<sup>3</sup> These are dwelling units that your agency weatherized but did not report as "DOE Units"

<sup>4</sup> Non cost-effective measures are those with a Savings to Investment Ratio (SIR) of less than 1.0.

<sup>5</sup> Under DOE regulations, allowable costs include: the cost of weatherization materials (not for health and safety); labor cost (not for health and safety); transportation of weatherization materials, crews, equipment, and tools; vehicle maintenance, operations, and insurance; maintenance of tools and equipment; cost of purchasing vehicles; employment of on-site supervisors; storage of weatherization materials, tools, and equipment; and cost of incidental repairs.

10. Did your agency classify its expenditures for client intake, audits, and post-weatherization inspections as program management costs or as allowable costs used in the calculation of average cost per unit in Program Year 2007? Please indicate your answer for each type of expenditure by checking the appropriate cell in the table below.

Type of Expenditure	Classified as Program Management Costs?	Classified as Allowable Costs for Purpose of Calculating Average Cost per Unit?		
		Freq.	Percent	Cum.
Expenditures for Client Intake				
	Classified as Program Management Costs	312	44.51	44.51
	Classified as Allowable Costs for Purpose	389	55.49	100.00
	Total	701	100.00	
Expenditures for Audits				
	Classified as Program Management Costs	288	39.56	39.56
	Classified as Allowable Costs for Purpose	440	60.44	100.00
	Total	728	100.00	
Expenditures for Post-Weatherization Quality Control Inspections				
	Classified as Program Management Costs	194	27.17	27.17
	Classified as Allowable Costs for Purpose	520	72.83	100.00
	Total	714	100.00	

11. Of the TOTAL amount spent by your agency in Program Year 2007 using funds from *all* sources (shown at bottom of right-most column in table for Question 9), please give your best estimate of how much was spent on Audits and Inspections. \$\_\_\_\_\_

observations:	719
missing values:	95
mean:	61859.06
standard deviation:	83928.93
min:	0
10th percentile:	2520
25th percentile:	10972.5
median:	32000
75th percentile:	74000
90th percentile:	172500
max:	642605



12. Please divide your agency's Program Year 2007 expenditures on DOE units into in-house expenditures and contractor expenditures, as shown in the following table.

Type of Expenditure	PY 2007 In-house Expenditures on DOE Units (in \$)	PY 2007 Contractor Expenditures on DOE Units (in \$)	PY 2007 Total Expenditures on DOE Units (in \$) <sup>1</sup>
Expenditures for Health and Safety, Repairs, and Other Non Cost-Effective Measures	obs: 814 min: 0 max: 1486995 mean: 17732.84 median: 925	obs: 814 min: 0 max: 1832528 mean: 30854.00 median: 2000	obs: 814 min: 0 max: 3058591 mean: 48586.85 median: 13499.5
All Expenditures Defined as Allowable Costs for Purpose of Calculating Average Cost per Unit	obs: 814 min: 0 max: 2502914 mean: 155319.08 median: 62086	obs: 814 min: 0 max: 4515651 mean: 117105.57 median: 21118	obs: 814 min: 0 max: 6048753 mean: 272424.64 median: 157601.59
TOTAL FUNDS	obs: 814 min: 0 max: 2502914 mean: 173051.92 median: 72560	obs: 814 min: 0 max: 4515651 mean: 147959.57 median: 37614.04	obs: 814 min: 0 max: 6048753 mean: 321011.49 median: 190532

<sup>1</sup> The amount that you list for Total Expenditures for Health and Safety, Repairs, and Other Non Cost-Effective Measures in the right-most column of this table should equal the TOTAL FUNDS listed for that same category of expenditures under DOE units at the bottom of the table for Question 9. The amount that you list for Total Expenditures for All Expenditures Defined as Allowable Costs for Purpose of Calculating Average Cost per Unit in the right-most column of this table should equal the TOTAL FUNDS listed for that same category of expenditures under DOE units at the bottom of the table for Question 9.

13. Of your agency's total Program Year 2007 expenditures on DOE units (shown at bottom of right-most column in table for Question 12), please give your best estimate of how much was for labor, how much for materials, and how much for other expenses.

Type of Expenditure	PY 2007 Expenditures on DOE units (in \$)
Labor	obs: 814 min: 0 max: 3313274 mean: 153708.16 median: 79353
Materials	obs: 814 min: 0 max: 2636615.3 mean: 104090.28 median: 55189.5
Other Expenses (e.g., costs for vehicles, transportation, maintenance, and storage)	obs: 814 min: 0 max: 2457000 mean: 57829.2 median: 17837.5
TOTAL FUNDS	obs: 814 min: 0 max: 5669722 mean: 315627.64 median: 181221

14. Of all the DOE units weatherized by your agency in Program Year 2007 (shown at bottom of left-most column in table for Question 7), how many used each of the following as their main heating fuel (i.e., the fuel providing most of the heat for the dwelling unit) in the winter prior to weatherization?

• **Natural gas**

observations:	727
missing values:	87
mean:	58.78
standard deviation:	114.25
min:	0
10th percentile:	0
25th percentile:	8
median:	29
75th percentile:	68
90th percentile:	139
max:	2113

• **Fuel oil**

observations:	727
missing values:	87
mean:	15.06
standard deviation:	38.80
min:	0
10th percentile:	0
25th percentile:	0
median:	1
75th percentile:	13
90th percentile:	36
max:	553

• **Electricity**

observations:	727
missing values:	87
mean:	18.51
standard deviation:	34.47
min:	0
10th percentile:	0
25th percentile:	1
median:	7
75th percentile:	21
90th percentile:	47
max:	326

- Propane/LPG

observations:	727
missing values:	87
mean:	8.70
standard deviation:	15.25
min:	0
10th percentile:	0
25th percentile:	0
median:	4
75th percentile:	11
90th percentile:	22
max:	261

- Kerosene or coal oil

observations:	727
missing values:	87
mean:	5719.41
standard deviation:	154152.3
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	0
90th percentile:	6
max:	4156401

- Wood

observations:	727
missing values:	87
mean:	1.91
standard deviation:	9.77
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	1
90th percentile:	4
max:	242

• **Other (please specify)** \_\_\_\_\_

observations:	727
missing values:	87
mean:	8035.39
standard deviation:	216586.13
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	0
90th percentile:	0
max:	5839801

15. Of all the DOE units weatherized by your agency in Program Year 2007 (shown at bottom of left-most column in table for Question 7), how many housed members of the following high-priority client populations (leave blank if do not know)?

• **Children (according to your state’s definition of that term)**

observations:	626
missing values:	188
mean:	43.72
standard deviation:	55.02
min:	0
10th percentile:	3
25th percentile:	10
median:	26
75th percentile:	56
90th percentile:	103
max:	489

• **Elderly (age 60 and older)**

observations:	663
missing values:	151
mean:	44.65
standard deviation:	63.13
min:	0
10th percentile:	8
25th percentile:	16
median:	29
75th percentile:	54
90th percentile:	91
max:	1144

• **Disabled**

observations:	652
missing values:	162
mean:	36.41
standard deviation:	43.71
min:	0
10th percentile:	4
25th percentile:	12
median:	25
75th percentile:	48
90th percentile:	77
max:	534

• **Native American**

observations:	493
missing values:	321
mean:	4.64
standard deviation:	19.64
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	2
90th percentile:	8
max:	232

16. Did your state have official definitions of “high energy expenditure” or “high energy burden” in Program Year 2007?

	Freq.	Percent	Cum.
no	390	51.32	51.32
yes	370	48.68	100.00
Total	760	100.00	

If answer to Question 16 is “No,” skip to Question 18.

17. Of all the DOE units weatherized by your agency in Program Year 2007 (shown at bottom of left-most column in table for Question 7), how many met your state weatherization program's definition of having "high energy expenditures" \_\_\_\_\_ and

observations:	191
missing values:	623
mean:	46.87
standard deviation:	63.76
min:	0
10th percentile:	.5
25th percentile:	6
median:	27
75th percentile:	60
90th percentile:	103
max:	410

"high energy burden" \_\_\_\_\_? (Leave blank if state did not have that definition).

observations:	201
missing values:	613
mean:	40.68
standard deviation:	68.44
min:	0
10th percentile:	0
25th percentile:	4
median:	22
75th percentile:	47
90th percentile:	92
max:	546

18. Were there any differences between households weatherized by your agency in Program Year 2007 as DOE units and those weatherized as non-DOE units?

	Freq.	Percent	Cum.
no	656	87.00	87.00
yes	98	13.00	100.00
Total	754	100.00	

19. What were the major differences between the rules and conditions governing your weatherization of DOE and non-DOE units in Program Year 2007?

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20. How many homes were on your wait list for weatherization in Program Year 2007?

observations:	542
missing values:	272
mean:	644.76
standard deviation:	1720.72
min:	0
10th percentile:	18
25th percentile:	60
median:	156
75th percentile:	350
90th percentile:	1449
max:	20304

21. On average, how long was a home on the wait list before it was weatherized in Program Year 2007? \_\_\_\_\_

observations:	566
missing values:	248
mean:	322.75
standard deviation:	395.03
min:	0
10th percentile:	30
25th percentile:	90
median:	180
75th percentile:	365
90th percentile:	730
max:	3650

**Part 3. Information about Program Year 2008**

22. Please provide the following information about ALL low-income dwelling units weatherized by your agency in Program Year 2008.

Type of Unit Weatherized	Number of Units Weatherized in PY 2008			
	DOE Units <sup>1</sup>	Non-DOE Units <sup>2</sup>		TOTAL Units
		Comprehensive Weatherization <sup>3</sup>	Non-comprehensive Weatherization <sup>4</sup>	
Single Family Attached and Detached	obs: 814 min: 0 max: 1652 mean: 66.12 median: 44	obs: 814 min: 0 max: 4142 mean: 45.69 median: 0	obs: 814 min: 0 max: 1033 mean: 15.63 median: 0	obs: 814 min: 0 max: 4142 mean: 127.44 median: 66
Small Multi-family (2-4 units)	obs: 814 min: 0 max: 560 mean: 7.25 median: 0	obs: 814 min: 0 max: 579 mean: 6.08 median: 0	obs: 814 min: 0 max: 180 mean: 1.58 median: 0	obs: 814 min: 0 max: 694 mean: 14.91 median: 0
Multi-family (5 or More Units per Building)	obs: 814 min: 0 max: 673 mean: 13.55 median: 0	obs: 814 min: 0 max: 2275 mean: 17.58 median: 0	obs: 814 min: 0 max: 575 mean: 2.59 median: 0	obs: 814 min: 0 max: 2275 mean: 33.72 median: 0
Mobile Home	obs: 814 min: 0 max: 220 mean: 18.40 median: 11	obs: 814 min: 0 max: 545 mean: 8.84 median: 0	obs: 814 min: 0 max: 521 mean: 3.95 median: 0	obs: 814 min: 0 max: 567 mean: 31.19 median: 17
Shelter	obs: 814 min: 0 max: 136 mean: .28 median: 0	obs: 814 min: 0 max: 18 mean: .74 median: 0	obs: 814 min: 0 max: 0 mean: 0 median: 0	obs: 814 min: 0 max: 136 mean: 4.91 median: 0
<b>TOTAL UNITS</b>	obs: 814 min: 0 max: 2255 mean: 105.60 median: 70	obs: 814 min: 0 max: 4642 mean: 78.23 median: 0	obs: 814 min: 0 max: 1723 mean: 23.75 median: 0	obs: 814 min: 0 max: 5342 mean: 207.58 median: 106

<sup>1</sup> These are dwelling units that your agency weatherized and reported to the State as “DOE Units”  
<sup>2</sup> These are dwelling units that your agency weatherized but did not report as “DOE Units”  
<sup>3</sup> Comprehensive weatherization units are those for which an audit or priority list was used that addressed a large proportion of potential energy-saving measures.  
<sup>4</sup> Non-comprehensive weatherization units are those for which a limited set of measures was considered (e.g., baseload electric measures only; low cost/no cost measures only), reflecting the needs and priorities of the funding entity.



23. For each of the non-DOE sources from which your agency received weatherization funding in Program Year 2008, was any of the money spent in ways not allowed under DOE rules? If so, enter responses in the appropriate rows of Column A. If your agency did spend non-DOE money in ways not allowed under DOE rules, how did those expenditures differ from expenditures made under DOE rules? Enter responses in the appropriate rows of Column B If your agency received no funding from a particular source in Program Year 2008, please leave that row blank.

Source of non-DOE PY 2008 weatherization funding received by agency	Column A Was any of this money spent in ways not allowed under DOE rules? <i>Check "yes" if funding that was used for expenses that would not be allowed with DOE funding for WAP.</i>			Column B If the answer in Column A was yes, what were the major differences between those expenditures and expenditures made under DOE rules?		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
LIHEAP	no   159 yes   584 Total   743	21.40 78.60 100.00	21.40 100.00	not checked   430 checked   147 Total   577	74.52 25.48 100.00	74.52 100.00
Petroleum Violation Escrow (PVE)	no   715 yes   28 Total   743	96.23 3.77 100.00	96.23 100.00	not checked   25 checked   3 Total   28	89.29 10.71 100.00	89.29 100.00
Other Federal Programs	no   648 yes   95 Total   743	87.21 12.79 100.00	87.21 100.00	not checked   67 checked   27 Total   94	71.28 28.72 100.00	71.28 100.00
State Public Benefit Funds	no   643 yes   100 Total   743	86.54 13.46 100.00	86.54 100.00	not checked   57 checked   41 Total   98	58.16 41.84 100.00	58.16 100.00
Other State Programs	no   583 yes   160 Total   743	78.47 21.53 100.00	78.47 100.00	not checked   105 checked   52 Total   157	66.88 33.12 100.00	66.88 100.00
Utilities	no   409 yes   334 Total   743	55.05 44.95 100.00	55.05 100.00	not checked   220 checked   100 Total   320	68.75 31.25 100.00	68.75 100.00
Program Income (other than above)	no   682 yes   61 Total   743	91.79 8.21 100.00	91.79 100.00	not checked   48 checked   11 Total   59	81.36 18.64 100.00	81.36 100.00
In-Kind Contributions	no   703 yes   40 Total   743	94.62 5.38 100.00	94.62 100.00	not checked   33 checked   5 Total   38	86.84 13.16 100.00	86.84 100.00
Non-profit Organization	no   726 yes   17 Total   743	97.71 2.29 100.00	97.71 100.00	not checked   13 checked   2 Total   15	86.67 13.33 100.00	86.67 100.00

Other	Freq. Percent Cum.			Freq. Percent Cum.				
	no	657	88.43	88.43	not checked	35	72.92	72.92
	yes	86	11.57	100.00	checked	13	27.08	100.00
	Total	743	100.00		Total	48	100.00	

24. Please indicate the amount of funding from each source that was spent by your agency in Program Year 2008 on the different functions or applications shown below. The amount that you list in the right-most cell at the very bottom of the table should equal the total amount of weatherization funding from all sources that your agency received in Program Year 2008.

Source of PY 2008 Weatherization Funding Received by Agency	Amount Spent on Program Management <sup>1</sup>	Amount Spent on T&TA	PY 2008 Funds Supporting Weatherization of Units (\$)				TOTAL Amount Spent
			Amount Spent on DOE Units <sup>2</sup>		Amount Spent on Non-DOE Units <sup>3</sup>		
			Expenditures for Health and Safety, Repairs, and Other Non Cost-Effective Measures <sup>4</sup>	All Expenditures Defined as Allowable Costs for Purpose of Calculating Average Cost per Unit <sup>5</sup>	Expenditures for Health and Safety, Repairs, and Other Non Cost-Effective Measures <sup>4</sup>	All Expenditures Defined as Allowable Costs for Purpose of Calculating Average Cost per Unit <sup>5</sup>	
DOE	Obs: 795 Min: 0 Max:1398125.4 Mean:48748.89 Median: 24997	Obs: 795 Min: 0 Max:175145.05 Mean:6710.92 Median: 3761	Obs: 795 Min: 0 Max: 1181937 Mean: 24112.87 Median: 11549	Obs: 795 Min: 0 Max: 4114251 Mean:221764.73 Median: 145971	N/A	N/A	Obs: 795 Min: 0 Max:5325732.5 Mean:301337.41 Median:210713
LIHEAP	Obs: 798 Min: 0 Max: 1033957 Mean:30096.08 Median:8218.5	Obs: 798 Min: 0 Max: 79065 Mean: 1798.37 Median: 0	Obs: 798 Min: 0 Max: 2351704 Mean: 17770.98 Median: 0	Obs: 798 Min: 0 Max: 4887255 Mean: 82167.45 Median: 0	Obs: 798 Min: 0 Max: 2938369 Mean: 22660.55 Median: 0	Obs: 798 Min: 0 Max: 4285918 Mean:102440.52 Median: 0	Obs: 798 Min: 0 Max: 5320161 Mean:257646.92 Median:110028.5
Petroleum Violation Escrow (PVE)	Obs: 798 Min: 0 Max: 58760 Mean: 176.65 Median: 0	Obs: 798 Min: 0 Max: 2195 Mean: 4.26 Median: 0	Obs: 798 Min: 0 Max: 42056 Mean: 65.66 Median: 0	Obs: 798 Min: 0 Max: 58948 Mean: 194.51 Median: 0	Obs: 798 Min: 0 Max: 128117.29 Mean: 361.32 Median: 0	Obs: 798 Min: 0 Max: 226301.2 Mean: 884.55 Median: 0	Obs: 798 Min: 0 Max: 227264.58 Mean: 1686.95 Median: 0
Other Federal Programs	Obs: 798 Min: 0 Max: 2088529 Mean: 6204.53 Median: 0	Obs: 798 Min: 0 Max: 18283 Mean: 119.25 Median: 0	Obs: 798 Min: 0 Max: 385470 Mean: 2034.68 Median: 0	Obs: 798 Min: 0 Max: 890114 Mean: 8595.81 Median: 0	Obs: 798 Min: 0 Max: 760255 Mean: 3603.22 Median: 0	Obs: 798 Min: 0 Max: 6001593.5 Mean: 18355.93 Median: 0	Obs: 798 Min: 0 Max: 8090122.5 Mean: 38913.41 Median: 0
State Public Benefit Funds	Obs: 798 Min: 0 Max:2018119.8 Mean:14078.30 Median: 0	Obs: 798 Min: 0 Max: 35762 Mean: 307.91 Median: 0	Obs: 798 Min: 0 Max: 441853 Mean: 2796.90 Median: 0	Obs: 798 Min: 0 Max: 1736106 Mean: 22064.55 Median: 0	Obs: 798 Min: 0 Max: 698755.5 Mean: 4980.68 Median: 0	Obs: 798 Min: 0 Max: 3226138.8 Mean: 31915.09 Median: 0	Obs: 798 Min: 0 Max: 5961014 Mean: 76143.43 Median: 0
Other State Programs	Obs: 798 Min: -16804 Max:1075894.4 Mean: 7117.97 Median: 0	Obs: 798 Min: -3567 Max: 102551 Mean: 368.29 Median: 0	Obs: 798 Min: 0 Max: 468094 Mean: 3133.10 Median: 0	Obs: 798 Min: 0 Max: 2583139 Mean: 17923.38 Median: 0	Obs: 798 Min: 0 Max: 109046 Mean: 1670.62 Median: 0	Obs: 798 Min: 0 Max: 3016580 Mean: 24633.22 Median: 0	Obs: 798 Min: 0 Max: 4269773 Mean: 57411.06 Median: 0
Utilities	Obs: 798 Min: 0 Max: 1771598 Mean:11789.95 Median: 0	Obs: 798 Min: 0 Max: 35000 Mean: 269.59 Median: 0	Obs: 798 Min: 0 Max: 295202 Mean: 3568.63 Median: 0	Obs: 798 Min: 0 Max: 1725312 Mean: 33452.90 Median: 0	Obs: 798 Min: 0 Max: 336796 Mean: 2596.29 Median: 0	Obs: 798 Min: 0 Max: 3635054 Mean: 44243.38 Median: 0	Obs: 798 Min: 0 Max: 5435354 Mean: 95920.74 Median: 0
Program Income (other than above)	Obs: 798 Min: 0 Max: 65000 Mean: 383.82 Median: 0	Obs: 798 Min: 0 Max: 17920 Mean: 56.21 Median: 0	Obs: 798 Min: 0 Max: 305255 Mean: 603.15 Median: 0	Obs: 798 Min: 0 Max: 295978 Mean: 1382.23 Median: 0	Obs: 798 Min: 0 Max: 28000 Mean: 74.03 Median: 0	Obs: 798 Min: 0 Max: 105822 Mean: 933.41 Median: 0	Obs: 798 Min: 0 Max: 340179 Mean: 3432.86 Median: 0
In-Kind Contributions	Obs: 798 Min: 0 Max: 181000 Mean: 363.16 Median: 0	Obs: 798 Min: 0 Max: 0 Mean: 0 Median: 0	Obs: 798 Min: 0 Max: 189838.61 Mean: 490.01 Median: 0	Obs: 798 Min: 0 Max: 567073.38 Mean: 1772.72 Median: 0	Obs: 798 Min: 0 Max: 10000 Mean: 12.53 Median: 0	Obs: 798 Min: 0 Max: 30000 Mean: 66.28 Median: 0	Obs: 798 Min: 0 Max: 756912 Mean: 2704.70 Median: 0
Non-Profit Organizations	Obs: 798 Min: 0 Max: 69594 Mean: 200.45 Median: 0	Obs: 798 Min: 0 Max: 879.84 Mean: 1.10 Median: 0	Obs: 798 Min: 0 Max: 71298 Mean: 141.81 Median: 0	Obs: 798 Min: 0 Max: 953480 Mean: 1608.95 Median: 0	Obs: 798 Min: 0 Max: 76475 Mean: 113.93 Median: 0	Obs: 798 Min: 0 Max: 159600 Mean: 579.12 Median: 0	Obs: 798 Min: 0 Max: 1023074 Mean: 2645.37 Median: 0
TOTAL FUNDS	Obs: Min: 0 Max: 4562548.5 Mean:119411.53 Median: 53919	Obs: Min: 0 Max:175145.05 Mean: 9618.64 Median: 5298	Obs: Min: 0 Max: 3533641 Mean: 54679.38 Median: 16851	Obs: Min: 0 Max: 5088971 Mean:390527.44 Median: 227380	Obs: Min: 0 Max: 2938369 Mean: 36395.05 Median: 0	Obs: Min: 0 Max: 9018173 Mean:229381.22 Median: 0	Obs: Min: 0 Max: 17508330 Mean:839679.78 Median: 510000

<sup>1</sup> Program Management costs include: cost of liability insurance; cost of low cost/no cost activities; cost of financial audits; administrative expenses; and funds used for leveraging activities. <sup>2</sup> These are dwelling units that your agency weatherized and reported to the State as "DOE Units"

<sup>3</sup> These are dwelling units that your agency weatherized but did not report as "DOE Units"

<sup>4</sup> Non cost-effective measures are those with a Savings to Investment Ratio (SIR) of less than 1.0.

<sup>5</sup> Under DOE regulations, allowable costs include: the cost of weatherization materials (not for health and safety); labor cost (not for health and safety); transportation of weatherization materials, crews, equipment, and tools; vehicle maintenance, operations, and insurance; maintenance of tools and equipment; cost of purchasing vehicles; employment of on-site supervisors; storage of weatherization materials, tools, and equipment; and cost of incidental repairs.

25. Did your agency classify its expenditures for client intake, audits, and post-weatherization inspections as program management costs or as allowable costs used in the calculation of average cost per unit in Program Year 2008? Please indicate your answer for each type of expenditure by checking the appropriate cell in the table below.

Type of Expenditure	Classified as Program Management Costs?	Classified as Allowable Costs for Purpose of Calculating Average Cost per Unit?		
		Freq.	Percent	Cum.
Expenditures for Client Intake				
	Classified as Program Management Costs	303	43.98	43.98
	Classified as Allowable Costs for Purpose	386	56.02	100.00
	Total	689	100.00	
Expenditures for Audits				
	Classified as Program Management Costs	270	37.60	37.60
	Classified as Allowable Costs for Purpose	448	62.40	100.00
	Total	718	100.00	
Expenditures for Post-Weatherization Quality Control Inspections				
	Classified as Program Management Costs	187	26.45	26.45
	Classified as Allowable Costs for Purpose	520	73.55	100.00
	Total	707	100.00	

26. Of the TOTAL amount spent by your agency in Program Year 2008 using funds from *all* sources (shown at bottom of right-most column in table for Question 24), please give your best estimate of how much was spent on Audits and Inspections. \$\_\_\_\_\_

observations:	709
missing values:	105
mean:	70624.50
standard deviation:	96081.56
min:	0
10th percentile:	3510
25th percentile:	14476.54
median:	37440
75th percentile:	80000
90th percentile:	186810
max:	600000

27. Please divide your agency's Program Year 2008 expenditures on DOE units into in-house expenditures and contractor expenditures, as shown in the following table.

Type of Expenditure	PY 2008 In-house Expenditures on DOE Units (in \$)	PY 2008 Contractor Expenditures on DOE Units (in \$)	PY 2008 Total Expenditures on DOE Units (in \$) <sup>1</sup>
Expenditures for Health and Safety, Repairs, and Other Non Cost-Effective Measures	obs: 814 min: 0 max: 1899622 mean: 19163.64 median: 750.20	obs: 814 min: 0 max: 2473664 mean: 30547.52 median: 2948	obs: 814 min: 0 max: 4373286 mean: 49711.16 median: 15215.5
All Expenditures Defined as Allowable Costs for Purpose of Calculating Average Cost per Unit	obs: 814 min: 0 max: 3111678 mean: 184821.51 median: 66660.5	obs: 814 min: 0 max: 3752462 mean: 136635.26 median: 20371	obs: 814 min: 0 max: 5325732.5 mean: 321456.77 median: 169716
<b>TOTAL FUNDS</b>	obs: 814 min: 0 max: 3433798 mean: 203985.15 median: 81231.97	obs: 814 min: 0 max: 4306182 mean: 167182.78 median: 41283.16	obs: 814 min: 0 max: 6380606 mean: 371167.93 median: 201663.5
<sup>1</sup> The amount that you list for Total Expenditures for Health and Safety, Repairs, and Other Non Cost-Effective Measures in the right-most column of this table should equal the TOTAL FUNDS listed for that same category of expenditures under DOE units at the bottom of the table for Question 24. The amount that you list for Total Expenditures for All Expenditures Defined as Allowable Costs for Purpose of Calculating Average Cost per Unit in the right-most column of this table should equal the TOTAL FUNDS listed for that same category of expenditures under DOE units at the bottom of the table for Question 24.			

28. Of your agency's total Program Year 2008 expenditures on DOE units (shown at bottom of right-most column in table for Question 27), please give your best estimate of how much was for labor, how much for materials, and how much for other expenses.

Type of Expenditure	PY 2008 Expenditures on DOE units (in \$)
Labor	obs: 814 min: 0 max: 5544374.5 mean: 176197.44 median: 82624.36
Materials	obs: 814 min: 0 max: 4367090.5 mean: 121092.36 median: 60634.5
Other Expenses (e.g., costs for vehicles, transportation, maintenance, and storage)	obs: 814 min: 0 max: 1072853 mean: 61359.72 median: 18798
<b>TOTAL FUNDS</b>	obs: 814 min: 0 max: 10230263 mean: 358649.52 median: 196173.5

29. Of all the DOE units weatherized by your agency in Program Year 2008 (shown at bottom of left-most column in table for Question 22), how many used each of the following as their main heating fuel (i.e., the fuel providing most of the heat for the dwelling unit) in the winter prior to weatherization?

- **Natural gas**

observations:	729
missing values:	85
mean:	6497.87
standard deviation:	173820.06
min:	0
10th percentile:	1
25th percentile:	10
median:	30
75th percentile:	72
90th percentile:	140
max:	4693201

- **Fuel oil**

observations:	729
missing values:	85
mean:	15.52
standard deviation:	37.60
min:	0
10th percentile:	0
25th percentile:	0
median:	1
75th percentile:	13
90th percentile:	40
max:	375

- **Electricity**

observations:	729
missing values:	85
mean:	22.05
standard deviation:	45.33
min:	0
10th percentile:	0
25th percentile:	2
median:	8
75th percentile:	24
90th percentile:	55
max:	671

- **Propane/LPG**

observations:	729
missing values:	85
mean:	8.84
standard deviation:	15.31
min:	0
10th percentile:	0
25th percentile:	0
median:	4
75th percentile:	11
90th percentile:	22
max:	183

- **Kerosene or coal oil**

observations:	729
missing values:	85
mean:	2.01
standard deviation:	6.80
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	0
90th percentile:	7
max:	71

- **Wood**

observations:	729
missing values:	85
mean:	1.66
standard deviation:	4.11
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	1
90th percentile:	5
max:	38

- **Other (please specify)**

observations:	729
missing values:	85
mean:	3.21
standard deviation:	46.06
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	0
90th percentile:	0
max:	1083

30. Of all the DOE units weatherized by your agency in Program Year 2008 (shown at bottom of left-most column in table for Question 22), how many housed members of the following high-priority client populations (leave blank if do not know)?

- **Children (according to your state's definition of that term)**

observations:	622
missing values:	192
mean:	47.59
standard deviation:	65.67
min:	0
10th percentile:	4
25th percentile:	11
median:	28
75th percentile:	59
90th percentile:	107
max:	932

- **Elderly (age 60 and older)**

observations:	656
missing values:	158
mean:	48.67
standard deviation:	103.77
min:	0
10th percentile:	9
25th percentile:	17
median:	30.5
75th percentile:	54
90th percentile:	98
max:	2239



- **Disabled**

observations:	649
missing values:	165
mean:	44.43
standard deviation:	168.49
min:	0
10th percentile:	5
25th percentile:	12
median:	27
75th percentile:	50
90th percentile:	83
max:	4192

- **Native American**

observations:	468
missing values:	346
mean:	5.82
standard deviation:	27.42
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	3
90th percentile:	10
max:	455

31. Did your state have official definitions of “high energy expenditure” or “high energy burden” in Program Year 2008?

	Freq.	Percent	Cum.
no	352	47.00	47.00
yes	397	53.00	100.00
Total	749	100.00	

If answer to Question 31 is “No,” skip to Question 33.

32. Of all the DOE units weatherized by your agency in Program Year 2008 (shown at bottom of left-most column in table for Question 22), how many met your state’s definition of having “high energy expenditures” \_\_\_\_\_

observations:	198
missing values:	616
mean:	49.38
standard deviation:	62.88
min:	0
10th percentile:	1
25th percentile:	9
median:	29
75th percentile:	67
90th percentile:	118
max:	373

and “high energy burden” \_\_\_\_\_ (leave blank if do not know or if state did not have that definition)?

observations:	210
missing values:	604
mean:	45.70
standard deviation:	73.96
min:	0
10th percentile:	0
25th percentile:	5
median:	25
75th percentile:	51
90th percentile:	110
max:	606

33. Were there any differences between households weatherized by your agency in Program Year 2008 as DOE units and those weatherized as non-DOE units?

	Freq.	Percent	Cum.
no	646	86.25	86.25
yes	103	13.75	100.00
Total	749	100.00	

34. What were the major differences between the rules and conditions governing your weatherization of DOE and non-DOE units in Program Year 2008?

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35. How many homes were on your wait list for weatherization in Program Year 2008?

observations:	554
missing values:	260
mean:	689.46
standard deviation:	1786.06
min:	0
10th percentile:	20
25th percentile:	75
median:	182
75th percentile:	402
90th percentile:	1500
max:	19728

36. On average, how long was a home on the wait list before it was weatherized?

observations:	563
missing values:	251
mean:	325.80
standard deviation:	410.91
min:	0
10th percentile:	30
25th percentile:	90
median:	180
75th percentile:	365
90th percentile:	730
max:	3650

37. Given the rate at which your agency weatherized homes in Program Year 2008, how many years would be needed to weatherize all the homes in your designated area that need to be weatherized?

observations:	426
missing values:	388
mean:	23.23
standard deviation:	26.82
min:	0
10th percentile:	2
25th percentile:	5
median:	13.5
75th percentile:	30
90th percentile:	59
max:	100



**APPENDIX E: SAMPLED AGENCIES DETAILED PROGRAM  
INFORMATION SURVEY**



**Frequency responses are weighted.**

**S3: SUBSET OF AGENCIES DETAILED PROGRAM INFORMATION SURVEY**

Thank you for your prompt response to this data request which is part of the national evaluation of the Weatherization Assistance Program. Evaluation results will provide essential feedback to the weatherization community and inform policymakers about the program's effects on clients' energy consumption, cost savings, and non-energy benefits.

This survey collects data that will be used to conduct a detailed process evaluation of the Weatherization Assistance Program at the local level. The data you supply will be used to characterize local agency weatherization activities in Program Year 2008.

All of the information obtained from this survey will be protected and will remain confidential. The data will be analyzed in such a way that the information provided cannot be associated back to your state, your agencies, or the housing units and clients that your state served. Again, please note that the questions refer to Program Year 2008 unless otherwise noted.

Thank you in advance for completing this survey.

Public reporting burden for this collection of information is estimated to average sixteen hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of the Chief Information Officer, Records Management Division, IM-11, Paperwork Reduction Project (1910-5151), U.S. Department of Energy, 1000 Independence Ave SW, Washington, DC, 20585-1290; and to the Office of Management and Budget (OMB), OIRA, Paperwork Reduction Project (1910-5151), Washington, DC 20503.

**SECTION A: PROGRAM CHARACTERIZATION**

1. Please identify your state. \_\_\_\_\_
2. Please identify your local agency. \_\_\_\_\_
3. Which of the following best characterizes your agency? *Please check the one answer that best applies.*

- \_\_\_\_\_ **Local Non-Profit Organization**
- \_\_\_\_\_ **Local Government Agency**
- \_\_\_\_\_ **County Government Agency**
- \_\_\_\_\_ **Indian Tribe**
- \_\_\_\_\_ **Other entity not eligible for CSBG funding**
- \_\_\_\_\_ **Other (please specify) \_\_\_\_\_**

	Freq.	Percent	Cum.
local non-profit organization	305.02	87.15	87.15
local gov't agency	14.24	4.07	91.22
county gov't agency	16.80	4.80	96.02
indian tribe	44	0.13	96.14
other	13.50	3.86	100.00
Total	350	100.00	



4. Please indicate other energy-related, housing, and other programs that cooperated with your agency's weatherization program, by source of funding in Program Year 2008. *Please check all that apply.*

Type of Program	Federal Funding	State Funding	Utility Funding	Other Funding
Energy bill paying assistance	obs: 247 no: 70 yes: 177	obs: 247 no: 153 yes: 94	obs: 247 no: 149 yes: 98	obs: 247 no: 205 yes: 42
Fuel delivery in crisis	obs: 89 no: 43 yes: 46	obs: 89 no: 61 yes: 28	obs: 89 no: 84 yes: 5	obs: 89 no: 55 yes: 34
Housing re-habilitation	obs: 145 no: 42 yes: 103	obs: 145 no: 97 yes: 48	obs: 145 no: 124 yes: 21	obs: 145 no: 115 yes: 30
Home emergency repairs	obs: 180 no: 51 yes: 129	obs: 180 no: 106 yes: 74	obs: 180 no: 175 yes: 5	obs: 180 no: 150 yes: 30
Hardship funds (other than for energy bill paying)	obs: 162 no: 86 yes: 76	obs: 162 no: 79 yes: 83	obs: 162 no: 146 yes: 16	obs: 162 no: 125 yes: 37
Fair housing	obs: 50 no: 22 yes: 28	obs: 50 no: 29 yes: 21	obs: 50 no: 50 yes: 0	obs: 50 no: 38 yes: 12
Health and safety	obs: 157 no: 50 yes: 107	obs: 157 no: 95 yes: 62	obs: 157 no: 115 yes: 42	obs: 157 no: 134 yes: 23
Energy education (other than client education delivered by weatherization program)	obs: 124 no: 58 yes: 66	obs: 124 no: 88 yes: 36	obs: 124 no: 62 yes: 62	obs: 124 no: 105 yes: 19
Home buying education	obs: 93 no: 40 yes: 53	obs: 93 no: 52 yes: 41	obs: 93 no: 92 yes: 1	obs: 93 no: 66 yes: 27
Rehabilitation loan	obs: 86 no: 35 yes: 51	obs: 86 no: 51 yes: 35	obs: 86 no: 86 yes: 0	obs: 86 no: 70 yes: 16
Mortgage loan	obs: 37 no: 15 yes: 22	obs: 37 no: 22 yes: 15	obs: 37 no: 37 yes: 0	obs: 37 no: 27 yes: 10
Emergency food	obs: 114 no: 42 yes: 72	obs: 114 no: 76 yes: 38	obs: 114 no: 112 yes: 2	obs: 114 no: 62 yes: 52
Emergency safety	obs: 40 no: 16 yes: 24	obs: 40 no: 20 yes: 20	obs: 40 no: 38 yes: 2	obs: 40 no: 31 yes: 9
Other (please specify)				

5. How important were leveraged funds (i.e., funds that support the weatherization program that are not provided by DOE) for your agency's weatherization program in Program Year 2008? *Check best answer.*

	Freq.	Percent	Cum.
not important at all	38.17	11.16	11.16
not very important	32.63	9.54	20.70
important	85.87	25.11	45.81
very important	185.33	54.19	100.00
Total	342	100.00	

6. Did your agency set aside funding to advocate for leveraged resources in Program Year 2008?

	Freq.	Percent	Cum.
no	296.79	86.78	86.78
yes	45.21	13.22	100.00
Total	342	100.00	

7. What organizations worked to acquire leveraged resources in Program Year 2008? *Select all that apply.*

**\_\_\_\_\_ Your state office**

	Freq.	Percent	Cum.
not checked	199.03	58.54	58.54
checked	140.97	41.46	100.00
Total	340	100.00	

**\_\_\_\_\_ Your state's local weatherization agencies—individually or through an agency association**

	Freq.	Percent	Cum.
not checked	195.48	57.50	57.50
checked	144.52	42.50	100.00
Total	340	100.00	

**\_\_\_\_\_ Non-profit organizations funded by your state**

	Freq.	Percent	Cum.
not checked	261.13	76.80	76.80
checked	78.87	23.20	100.00
Total	340	100.00	

**\_\_\_\_\_ Other**

	Freq.	Percent	Cum.
not checked	307.42	90.42	90.42
checked	32.58	9.58	100.00
Total	340	100.00	

**\_\_\_\_\_ None of the above**

	Freq.	Percent	Cum.
not checked	249.74	73.45	73.45
checked	90.26	26.55	100.00
Total	340	100.00	

8. How successful would you rate your agency's efforts to acquire leveraged funds in Program Year 2008?

	Freq.	Percent	Cum.
not successful at all	1.028	0.30	0.30
not very successful	39.00	11.40	11.70
successful	144.55	42.27	53.97
very successful	62.45	18.26	72.23
state does not seek leveraged funds	94.97	27.77	100.00
Total	342	100.00	

9. What factors limited the success of your agency's efforts to acquire leveraged funding in Program Year 2008? \_\_\_\_\_

10. Did you modify your agency's weatherization program practices or regulations in the three years prior to Program Year 2008 to facilitate spending and reporting on leveraged resources?

	Freq.	Percent	Cum.
no	223.26	64.90	64.90
yes	22.17	6.44	71.35
dk	98.57	28.65	100.00
Total	344	100.00	

11. Did your agency experience delays or other difficulties in weatherization-related spending for any of these types of non-DOE funds in Program Year 2008?

Source of Non-DOE Funding	Yes, No, or N/A			Please Provide a Short Description of and the Reasons for the Delays or Other Difficulties														
		Freq.	Percent	Cum.														
LIHEAP	<table border="1"> <tr><td>no</td><td>266.66</td><td>79.13</td><td>79.13</td></tr> <tr><td>yes</td><td>33.36</td><td>9.90</td><td>89.03</td></tr> <tr><td>n/a</td><td>36.97</td><td>10.97</td><td>100.00</td></tr> <tr><td>Total</td><td>337</td><td>100.00</td><td></td></tr> </table>	no	266.66	79.13	79.13	yes	33.36	9.90	89.03	n/a	36.97	10.97	100.00	Total	337	100.00		
no	266.66	79.13	79.13															
yes	33.36	9.90	89.03															
n/a	36.97	10.97	100.00															
Total	337	100.00																
Petroleum Violation Escrow (PVE)	<table border="1"> <tr><td>no</td><td>55.82</td><td>19.45</td><td>19.45</td></tr> <tr><td>n/a</td><td>231.18</td><td>80.55</td><td>100.00</td></tr> <tr><td>Total</td><td>287</td><td>100.00</td><td></td></tr> </table>	no	55.82	19.45	19.45	n/a	231.18	80.55	100.00	Total	287	100.00						
no	55.82	19.45	19.45															
n/a	231.18	80.55	100.00															
Total	287	100.00																
Other Federal Programs	<table border="1"> <tr><td>no</td><td>138.33</td><td>46.73</td><td>46.73</td></tr> <tr><td>yes</td><td>3.36</td><td>1.14</td><td>47.87</td></tr> <tr><td>n/a</td><td>154.31</td><td>52.13</td><td>100.00</td></tr> <tr><td>Total</td><td>296</td><td>100.00</td><td></td></tr> </table>	no	138.33	46.73	46.73	yes	3.36	1.14	47.87	n/a	154.31	52.13	100.00	Total	296	100.00		
no	138.33	46.73	46.73															
yes	3.36	1.14	47.87															
n/a	154.31	52.13	100.00															
Total	296	100.00																
State Public Benefit Funds	<table border="1"> <tr><td>no</td><td>99.60</td><td>34.23</td><td>34.23</td></tr> <tr><td>yes</td><td>3.78</td><td>1.30</td><td>35.53</td></tr> <tr><td>n/a</td><td>187.61</td><td>64.47</td><td>100.00</td></tr> <tr><td>Total</td><td>291</td><td>100.00</td><td></td></tr> </table>	no	99.60	34.23	34.23	yes	3.78	1.30	35.53	n/a	187.61	64.47	100.00	Total	291	100.00		
no	99.60	34.23	34.23															
yes	3.78	1.30	35.53															
n/a	187.61	64.47	100.00															
Total	291	100.00																
Other State Programs	<table border="1"> <tr><td>no</td><td>124.69</td><td>42.56</td><td>42.56</td></tr> <tr><td>yes</td><td>11.52</td><td>3.93</td><td>46.49</td></tr> <tr><td>n/a</td><td>156.78</td><td>53.51</td><td>100.00</td></tr> <tr><td>Total</td><td>293</td><td>100.00</td><td></td></tr> </table>	no	124.69	42.56	42.56	yes	11.52	3.93	46.49	n/a	156.78	53.51	100.00	Total	293	100.00		
no	124.69	42.56	42.56															
yes	11.52	3.93	46.49															
n/a	156.78	53.51	100.00															
Total	293	100.00																
Utilities	<table border="1"> <tr><td>no</td><td>185.60</td><td>60.06</td><td>60.06</td></tr> <tr><td>yes</td><td>15.08</td><td>4.88</td><td>64.94</td></tr> <tr><td>n/a</td><td>108.33</td><td>35.06</td><td>100.00</td></tr> <tr><td>Total</td><td>309</td><td>100.00</td><td></td></tr> </table>	no	185.60	60.06	60.06	yes	15.08	4.88	64.94	n/a	108.33	35.06	100.00	Total	309	100.00		
no	185.60	60.06	60.06															
yes	15.08	4.88	64.94															
n/a	108.33	35.06	100.00															
Total	309	100.00																
Program Income (other than above)	<table border="1"> <tr><td>no</td><td>98.94</td><td>35.09</td><td>35.09</td></tr> <tr><td>yes</td><td>.46</td><td>0.16</td><td>35.25</td></tr> <tr><td>n/a</td><td>182.60</td><td>64.75</td><td>100.00</td></tr> <tr><td>Total</td><td>282</td><td>100.00</td><td></td></tr> </table>	no	98.94	35.09	35.09	yes	.46	0.16	35.25	n/a	182.60	64.75	100.00	Total	282	100.00		
no	98.94	35.09	35.09															
yes	.46	0.16	35.25															
n/a	182.60	64.75	100.00															
Total	282	100.00																
In-Kind Contributions	<table border="1"> <tr><td>no</td><td>99.79</td><td>35.64</td><td>35.64</td></tr> <tr><td>yes</td><td>.97</td><td>0.35</td><td>35.99</td></tr> <tr><td>n/a</td><td>179.24</td><td>64.01</td><td>100.00</td></tr> <tr><td>Total</td><td>280</td><td>100.00</td><td></td></tr> </table>	no	99.79	35.64	35.64	yes	.97	0.35	35.99	n/a	179.24	64.01	100.00	Total	280	100.00		
no	99.79	35.64	35.64															
yes	.97	0.35	35.99															
n/a	179.24	64.01	100.00															
Total	280	100.00																
Non-profit Organizations	<table border="1"> <tr><td>no</td><td>85.11</td><td>30.40</td><td>30.40</td></tr> <tr><td>yes</td><td>5.50</td><td>1.97</td><td>32.36</td></tr> <tr><td>n/a</td><td>189.39</td><td>67.64</td><td>100.00</td></tr> <tr><td>Total</td><td>280</td><td>100.00</td><td></td></tr> </table>	no	85.11	30.40	30.40	yes	5.50	1.97	32.36	n/a	189.39	67.64	100.00	Total	280	100.00		
no	85.11	30.40	30.40															
yes	5.50	1.97	32.36															
n/a	189.39	67.64	100.00															
Total	280	100.00																
Other (please specify)																		

12. Did your agency encounter any of the following problems in spending non-DOE funds in general in Program Year 2008? *Check all that apply.*

**\_\_\_\_\_ Our agency could not easily increase the number of homes weatherized during the year in order to better spend non-DOE funds**

	Freq.	Percent	Cum.
not checked	106.46	74.45	74.45
checked	36.54	25.55	100.00
Total	143	100.00	

**\_\_\_\_\_ Our agency was required to spend DOE weatherization funds before non-DOE funds were expended**

	Freq.	Percent	Cum.
not checked	116.35	81.37	81.37
checked	26.65	18.63	100.00
Total	143	100.00	

**\_\_\_\_\_ We had insufficient staff to manage the receipt and expenditure of non-DOE funds**

	Freq.	Percent	Cum.
not checked	112.18	78.45	78.45
checked	30.82	21.55	100.00
Total	143	100.00	

**\_\_\_\_\_ We had inadequate accounting systems to manage the receipt and expenditure of non-DOE funds**

	Freq.	Percent	Cum.
not checked	131.08	91.66	91.66
checked	11.92	8.34	100.00
Total	143	100.00	

**\_\_\_\_\_ Guidance received from DOE and/or our state made it difficult to expend non-DOE funds in a timely manner**

	Freq.	Percent	Cum.
not checked	133.87	93.62	93.62
checked	9.13	6.38	100.00
Total	143	100.00	

**\_\_\_\_\_ Other (please specify) \_\_\_\_\_**

13. When selecting DOE units to weatherize from the pool of eligible applicants, did your agency give higher priority to specific households based on any of the following characteristics in Program Year 2008? *Check all that apply.*

- **Dwelling unit characteristics**

	Freq.	Percent	Cum.
not checked	283.23	84.04	84.04
checked	53.78	15.96	100.00
Total	337	100.00	

- **Type of heating system**

	Freq.	Percent	Cum.
not checked	307.19	91.16	91.16
checked	29.81	8.84	100.00
Total	337	100.00	

- **Fuel type**

	Freq.	Percent	Cum.
not checked	263.60	78.22	78.22
checked	73.40	21.78	100.00
Total	337	100.00	

- **Geographic location**

	Freq.	Percent	Cum.
not checked	311.40	92.40	92.40
checked	25.60	7.60	100.00
Total	337	100.00	

- **Presence of children**

	Freq.	Percent	Cum.
not checked	49.75	14.76	14.76
checked	287.25	85.24	100.00
Total	337	100.00	

- **Presence of elderly occupants**

	Freq.	Percent	Cum.
not checked	23.08	6.85	6.85
checked	313.92	93.15	100.00
Total	337	100.00	

- **Presence of disabled occupants**

	Freq.	Percent	Cum.
not checked	34.83	10.33	10.33
checked	302.17	89.67	100.00
Total	337	100.00	

- **High energy expenditures**

	Freq.	Percent	Cum.
not checked	171.93	51.02	51.02
checked	165.07	48.98	100.00
Total	337	100.00	

- **High energy burden**

	Freq.	Percent	Cum.
not checked	174.22	51.70	51.70
checked	162.78	48.30	100.00
Total	337	100.00	

- **Energy consumption**

	Freq.	Percent	Cum.
not checked	232.32	68.94	68.94
checked	104.68	31.06	100.00
Total	337	100.00	

- **Anticipated cost of weatherization**

	Freq.	Percent	Cum.
not checked	319.31	94.75	94.75
checked	17.69	5.25	100.00
Total	337	100.00	

- **Anticipated savings**

	Freq.	Percent	Cum.
not checked	314.84	93.42	93.42
checked	22.16	6.58	100.00
Total	337	100.00	

- **Occupant being a renter**

	Freq.	Percent	Cum.
not checked	329.67	97.83	97.83
checked	7.33	2.17	100.00
Total	337	100.00	

- **Landlord or other contributions**

	Freq.	Percent	Cum.
not checked	316.26	93.84	93.84
checked	20.74	6.16	100.00
Total	337	100.00	

- **Amount of time on waiting list**

	Freq.	Percent	Cum.
not checked	165.53	49.12	49.12
checked	171.47	50.88	100.00
Total	337	100.00	

- **Referral from, or participation in, another program**

	Freq.	Percent	Cum.
not checked	232.59	69.02	69.02
checked	104.41	30.98	100.00
Total	337	100.00	

- **Other (please specify)** \_\_\_\_\_



14. In Program Year 2008, did your agency set targets and actively solicit participation by dwelling units of the types shown below? *Check all that apply.*

Type of dwelling unit	Set targets for number of dwelling units of this type to weatherize			Actively sought participation by households residing in this type of dwelling unit		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
Single Family Attached and Detached	not checked   68.58	36.67	36.67	not checked   64.40	34.44	34.44
	checked   118.42	63.33	100.00	checked   122.60	65.56	100.00
	Total   187 100.00			Total   187 100.00		
Small Multi-family (2-4 units)	not checked   62.60	55.40	55.40	not checked   26.26	23.23	23.23
	checked   50.40	44.60	100.00	checked   86.74	76.77	100.00
	Total   113 100.00			Total   113 100.00		
Multifamily (5 or More Units per Building)	not checked   41.27	58.96	58.96	not checked   11.47	16.39	16.39
	checked   28.73	41.04	100.00	checked   58.53	83.61	100.00
	Total   70 100.00			Total   70 100.00		
Mobile Home	not checked   58.39	42.31	42.31	not checked   50.32	36.47	36.47
	checked   79.61	57.69	100.00	checked   87.68	63.53	100.00
	Total   138 100.00			Total   138 100.00		
Shelter	not checked   12.12	63.81	63.81	not checked   6.00	31.58	31.58
	checked   6.88	36.19	100.00	checked   13.00	68.42	100.00
	Total   19 100.00			Total   19 100.00		

15. Did your state require your agency to provide aggregated data for these four types of data in Program Year 2008? If yes, please indicate how often. *Check all that apply.*

	Household Data	Audit Data	Weatherization Measures Data	Energy Use Data
<b>No</b>	obs: 333 not checked: 289 checked: 44	obs: 298 not checked: 235 checked: 63	obs: 312 not checked: 261 checked: 51	obs: 265 not checked: 170 checked: 95
<b>Yes, annually</b>	obs: 333 not checked: 295 checked: 28	obs: 298 not checked: 238 checked: 60	obs: 312 not checked: 269 checked: 43	obs: 265 not checked: 228 checked: 37
<b>Yes, quarterly</b>	obs: 333 not checked: 290 checked: 43	obs: 298 not checked: 271 checked: 27	obs: 312 not checked: 284 checked: 28	obs: 265 not checked: 243 checked: 22
<b>Yes, monthly</b>	obs: 333 not checked: 132 checked: 201	obs: 298 not checked: 166 checked: 132	obs: 312 not checked: 132 checked: 180	obs: 265 not checked: 161 checked: 104
<b>Yes, other</b>	obs: 333 not checked: 303 checked: 30	obs: 298 not checked: 261 checked: 37	obs: 312 not checked: 275 checked: 37	obs: 265 not checked: 239 checked: 26

16. Did your state impose any specific requirements on how your agency collected, stored, and used household energy use, weatherization, and/or household data in Program Year 2008?

	Freq.	Percent	Cum.
no	144.49	42.00	42.00
yes	199.51	58.00	100.00
Total	344	100.00	

16a. If Yes, what were the state-imposed requirements? \_\_\_\_\_

17. Did your state provide any training to help your agency collect, store and use household energy use, weatherization, and/or household data in Program Year 2008?

	Freq.	Percent	Cum.
no	188.30	55.06	55.06
yes	153.70	44.94	100.00
Total	342	100.00	

17a. If Yes, what training was provided by your state? \_\_\_\_\_

18. How were eligibility and prioritization data about households that applied for weatherization services collected in Program Year 2008? *Check all that apply.*

\_\_\_\_\_ **Households filled out forms when they apply for weatherization services**

	Freq.	Percent	Cum.
not checked	47.70	13.79	13.79
checked	298.30	86.21	100.00
Total	346	100.00	

\_\_\_\_\_ **Data were provided by LIHEAP**

	Freq.	Percent	Cum.
not checked	171.37	49.53	49.53
checked	174.63	50.47	100.00
Total	346	100.00	

\_\_\_\_\_ **The state provided the household data**

	Freq.	Percent	Cum.
not checked	323.66	93.54	93.54
checked	22.34	6.46	100.00
Total	346	100.00	

\_\_\_\_\_ **Auditors collected the data at the time the home is audited**

	Freq.	Percent	Cum.
not checked	251.94	72.82	72.82
checked	94.06	27.18	100.00
Total	346	100.00	

\_\_\_\_\_ **Other (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
not checked	320.33	92.58	92.58
checked	25.67	7.42	100.00
Total	346	100.00	

19. How were data needed for audits collected in Program Year 2008? *Check all that apply.*

\_\_\_\_\_ **Auditors/weatherization crews filled out paper forms in the field and/or in the office**

	Freq.	Percent	Cum.
no	55.05	16.10	16.10
yes	286.95	83.90	100.00
Total	342	100.00	

\_\_\_\_\_ **Auditors/weatherization crews had laptop computers to enter data in the field**

	Freq.	Percent	Cum.
no	315.90	92.37	92.37
yes	26.10	7.63	100.00
Total	342	100.00	

\_\_\_\_\_ **Auditors/weatherization crews kept notes in the field and then entered the data into computers back at the office**

	Freq.	Percent	Cum.
no	110.33	32.26	32.26
yes	231.67	67.74	100.00
Total	342	100.00	

\_\_\_\_\_ **Other (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
no	339.34	99.22	99.22
yes	2.66	0.78	100.00
Total	342	100.00	

20. How were data about weatherization measures installed in homes collected in Program Year 2008?  
*Check all that apply.*

\_\_\_\_\_ **Weatherization crews filed out paper forms and turned them in**

	Freq.	Percent	Cum.
no	79.58	23.27	23.27
yes	262.42	76.73	100.00
Total	342	100.00	

\_\_\_\_\_ **Weatherization crews had laptop computers to enter data in the field**

	Freq.	Percent	Cum.
no	332.48	97.22	97.22
yes	9.52	2.78	100.00
Total	342	100.00	

\_\_\_\_\_ **Weatherization crews kept notes in the field and then entered data into computers at the office**

	Freq.	Percent	Cum.
no	207.89	60.79	60.79
yes	134.11	39.21	100.00
Total	342	100.00	

\_\_\_\_\_ **Other (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
no	297.59	87.01	87.01
yes	44.41	12.99	100.00
Total	342	100.00	

21. How were energy use records collected for weatherized houses in Program Year 2008? *Check all that apply.*

**The records were provided by the local utility or utilities**

	Freq.	Percent	Cum.
no	173.62	50.32	50.32
yes	171.38	49.68	100.00
Total	345	100.00	

**The records were provided by the state**

	Freq.	Percent	Cum.
no	320.33	92.85	92.85
yes	24.67	7.15	100.00
Total	345	100.00	

**We asked the households for their energy bills**

	Freq.	Percent	Cum.
no	145.70	42.23	42.23
yes	199.30	57.77	100.00
Total	345	100.00	

**Did not collect**

	Freq.	Percent	Cum.
no	285.05	82.62	82.62
yes	59.95	17.38	100.00
Total	345	100.00	

**Other (please specify) \_\_\_\_\_**

	Freq.	Percent	Cum.
no	323.53	93.78	93.78
yes	21.47	6.22	100.00
Total	345	100.00	

22. Did your agency computerize the following types of data in Program Year 2008? If no, please indicate why not. *Check all that apply.*

	<b>Household Data</b>	<b>Audit Data</b>	<b>Weatherization Measures Data</b>	<b>Energy Use Data</b>
<b>Yes</b>	obs: 331 not checked: 57 checked: 274	obs: 328 not checked: 79 checked: 249	obs: 331 not checked: 71 checked: 260	obs: 303 not checked: 126 checked: 177
<b>No, no need</b>	obs: 331 not checked: 290 checked: 41	obs: 328 not checked: 273 checked: 55	obs: 331 not checked: 282 checked: 49	obs: 303 not checked: 225 checked: 78
<b>No, could not afford</b>	obs: 331 not checked: 328 checked: 3	obs: 328 not checked: 323 checked: 5	obs: 331 not checked: 327 checked: 4	obs: 303 not checked: 297 checked: 6
<b>No, insufficient staff time to set up computer</b>	obs: 331 not checked: 328 checked: 3	obs: 328 not checked: 319 checked: 9	obs: 311 not checked: 323 checked: 8	obs: 303 not checked: 288 checked: 15
<b>No, insufficient staff time enter data</b>	obs: 331 not checked: 326 checked: 5	obs: 328 not checked: 320 checked: 8	obs: 331 not checked: 321 checked: 10	obs: 303 not checked: 280 checked: 23
<b>Other (please specify)</b>	obs: 331 not checked: 322 checked: 9	obs: 328 not checked: 316 checked: 12	obs: 331 not checked: 321 checked: 10	obs: 303 not checked: 278 checked: 25

23. Did your agency analyze the following types of data for any of the following reasons in Program Year 2008? If yes, please indicate the reason(s) why. *Check all that apply.*

<b>Types of Data/Reasons for Use</b>	<b>Household Data</b>	<b>Audit Data</b>	<b>Weatherization Measures Data</b>	<b>Energy Use Data</b>
<b>No</b>	obs: 323 not checked: 184 checked: 139	obs: 299 not checked: 134 checked: 165	obs: 311 not checked: 161 checked: 150	obs: 288 not checked: 113 checked: 175
<b>Yes, generated descriptive statistics (e.g., counts, percentages)</b>	obs: 323 not checked: 191 checked: 132	obs: 299 not checked: 217 checked: 82	obs: 311 not checked: 208 checked: 103	obs: 288 not checked: 224 checked: 64
<b>Yes, looked for trends</b>	obs: 323 not checked: 287 checked: 36	obs: 299 not checked: 265 checked: 34	obs: 311 not checked: 265 checked: 46	obs: 288 not checked: 255 checked: 33
<b>Yes, supported agency strategic planning</b>	obs: 323 not checked: 256 checked: 67	obs: 299 not checked: 263 checked: 36	obs: 311 not checked: 267 checked: 46	obs: 288 not checked: 260 checked: 28
<b>Yes, supported agency program performance review</b>	obs: 323 not checked: 220 checked: 103	obs: 299 not checked: 222 checked: 77	obs: 311 not checked: 215 checked: 96	obs: 288 not checked: 228 checked: 60
<b>Other (please specify)</b>	obs: 323 not checked: 313 checked: 10	obs: 299 not checked: 291 checked: 8	obs: 311 not checked: 302 checked: 9	obs: 288 not checked: 274 checked: 14

24. What percentage of households whose homes were weatherized by your agency in Program Year 2008 registered a complaint regarding the quality or nature of the weatherization job performed on their dwelling unit? \_\_\_\_\_

observations:	313
missing values:	44
mean:	2.05
standard deviation:	3.83
min:	0
10th percentile:	0
25th percentile:	0
median:	1
75th percentile:	2
90th percentile:	5
max:	41

25. Of those households that filed complaints, what percentage of these required some additional work?  
\_\_\_\_\_

observations:	288
missing values:	69
mean:	11.67
standard deviation:	24.64
min:	0
10th percentile:	0
25th percentile:	0
median:	1
75th percentile:	4
90th percentile:	50
max:	100

26. Of all the homes weatherized by your agency in Program Year 2008, how many did you refer to non-energy programs for additional services (e.g., nutrition; family counseling)? \_\_\_\_\_

observations:	290
missing values:	67
mean:	38.57
standard deviation:	221.10
min:	0
10th percentile:	0
25th percentile:	0
median:	7
75th percentile:	30
90th percentile:	75
max:	5060

27. How many income-qualified dwelling units were on your agency's waiting list:  
at the start of Program Year 2008 \_\_\_\_\_

observations:	290
missing values:	67
mean:	507.81
standard deviation:	1179.43
min:	0
10th percentile:	5
25th percentile:	46
median:	127
75th percentile:	342
90th percentile:	1322
max:	10000

at the end of Program Year 2008 \_\_\_\_\_

observations:	289
missing values:	68
mean:	529.20
standard deviation:	1251.42
min:	0
10th percentile:	0
25th percentile:	42
median:	125
75th percentile:	375
90th percentile:	1220
max:	10000

28. Please list the number of dwelling units that your agency could not weatherize in Program Year 2008  
due to housing conditions (i.e., the number you had to "walk away from"). \_\_\_\_\_

observations:	290
missing values:	67
mean:	15.44
standard deviation:	43.44
min:	0
10th percentile:	0
25th percentile:	1
median:	4
75th percentile:	10
90th percentile:	31
max:	600



29. Please list the number of dwellings that your agency could not weatherize in Program Year 2008 because they had previously been weatherized? \_\_\_\_\_

observations:	197
missing values:	160
mean:	41.02
standard deviation:	214.47
min:	0
10th percentile:	0
25th percentile:	0
median:	5
75th percentile:	15
90th percentile:	40
max:	2200

30. Please indicate the number of staff that supported your agency's weatherization program and their work effort in Program Year 2008. In considering the number of staff, please include everyone who worked full- or part-time or who worked with the weatherization program as well as other agency programs.

<b>Type of Administrative Function</b>	<b>Number of Agency Staff (# persons)</b>	<b>Agency Staff Work Effort (FTE)</b>
Management/administration	observations: 353 missing values: 4 mean: 3.19 standard deviation: 2.97 min: 0 10th percentile: 1 25th percentile: 2 median: 2 75th percentile: 4 90th percentile: 6 max: 27	observations: 239 missing values: 118 mean: 5.15 standard deviation: 13.78 min: 0 10th percentile: 1 25th percentile: 1 median: 2 75th percentile: 3 90th percentile: 7 max: 100
Auditing/inspection	observations: 353 missing values: 4 mean: 2.09 standard deviation: 1.90 min: 0 10th percentile: 1 25th percentile: 1 median: 2 75th percentile: 3 90th percentile: 4 max: 26	observations: 239 missing values: 118 mean: 7.83 standard deviation: 32.19 min: 0 10th percentile: 1 25th percentile: 1 median: 2 75th percentile: 3 90th percentile: 6 max: 400
Home weatherization installation	observations: 353 missing values: 4 mean: 3.92 standard deviation: 6.40 min: 0 10th percentile: 0 25th percentile: 0 median: 2 75th percentile: 5 90th percentile: 10 max: 75	observations: 198 missing values: 159 mean: 8.05 standard deviation: 18.67 min: 0 10th percentile: 0 25th percentile: 1 median: 3 75th percentile: 6 90th percentile: 16 max: 100
Other (please specify)	observations: 353 missing values: 4 mean: .78 standard deviation: 2.50 min: 0 10th percentile: 0 25th percentile: 0 median: 0 75th percentile: 0 90th percentile: 2 max: 25	observations: 84 missing values: 273 mean: 4.58 standard deviation: 16.20 min: 0 10th percentile: 0 25th percentile: 0 median: 1 75th percentile: 2 90th percentile: 5.5 max: 100

31. For the agency staff working on your agency's weatherization program in each of the following functional areas in Program Year 2008, please indicate their level of experience with the weatherization program:

	<b>Very High</b>	<b>High</b>	<b>Average</b>	<b>Low</b>	<b>Very Low</b>	
Management/administration	Freq.    Percent    Cum.					
	-----+					
	Very High	4.53	1.28	1.28		
	High	4.69	1.32	2.60		
	Average	47.48	13.37	15.97		
	Low	103.28	29.09	45.07		
	Very Low	195.02	54.93	100.00		
-----+						
Total	355	100.00				
Auditing/inspection	Freq.    Percent    Cum.					
	-----+					
	Very High	2.41	0.68	0.68		
	High	5.141	1.46	2.14		
	Average	55.29	15.66	17.80		
	Low	119.26	33.78	51.59		
	Very Low	170.90	48.41	100.00		
-----+						
Total	353	100.00				
Home weatherization	Freq.    Percent    Cum.					
	-----+					
	Very High	1.50	0.54	0.54		
	High	7.92	2.86	3.40		
	Average	64.18	23.17	26.57		
	Low	112.96	40.78	67.35		
	Very Low	90.45	32.65	100.00		
-----+						
Total	277	100.00				
Other (please specify)	Freq.    Percent    Cum.					
	-----+					
	Very High	6.32	9.44	9.44		
	High	2.75	4.10	13.53		
	Average	10.27	15.34	28.87		
	Low	29.83	44.53	73.40		
	Very Low	17.82	26.60	100.00		
-----+						
Total	67	100.00				

32. For the agency staff working on your agency's weatherization program in each of the following functional area, please indicate the amount of turnover in staff over a **three year period ending with Program Year 2008**. Turnover is defined as the number of new staff in a functional area in the past three years divided by the total number of staff working in that functional area. If a particular position has had more than one new person during the past three years (e.g., Person 1 leaves, Person 2 is hired to take Person 1's position, then Person 2 leaves and a third person is hired), just count that as one new staff person. *Please check appropriate boxes.*

	<b>No Turnover</b>	<b>1 to 10%</b>	<b>11 to 25%</b>	<b>26 to 50%</b>	<b>51 to 75%</b>	<b>76 to 100%</b>
Management/ administration	Freq. Percent Cum.					
	No Turnover	253.05	72.09	72.09		
	1 to 10%	43.66	12.44	84.53		
	11 to 25%	14.22	4.05	88.58		
	26 to 50%	26.35	7.51	96.09		
	51 to 75%	2.70	0.77	96.86		
	76 to 100%	11.02	3.14	100.00		
	Total	351	100.00			
Auditing/inspection	Freq. Percent Cum.					
	No Turnover	248.36	71.16	71.16		
	1 to 10%	46.38	13.29	84.45		
	11 to 25%	11.07	3.17	87.62		
	26 to 50%	31.03	8.89	96.52		
	51 to 75%	1.14	0.33	96.84		
	76 to 100%	11.02	3.16	100.00		
	Total	349	100.00			
Home weatherization	Freq. Percent Cum.					
	No Turnover	153.95	57.02	57.02		
	1 to 10%	56.12	20.78	77.80		
	11 to 25%	28.02	10.38	88.18		
	26 to 50%	18.47	6.84	95.02		
	51 to 75%	3.90	1.44	96.47		
	76 to 100%	9.54	3.53	100.00		
	Total	270	100.00			
Other (please specify)	Freq. Percent Cum.					
	No Turnover	27.97	50.86	50.86		
	1 to 10%	14.91	27.10	77.96		
	11 to 25%	3.25	5.91	83.87		
	26 to 50%	6.27	11.39	95.26		
	51 to 75%	0.00	0.00	95.26		
	76 to 100%	2.61	4.74	100.00		
	Total	55	100.00			

33. For which of the following functional areas were there certification or licensing requirements in Program Year 2008 for the in-house or contractor staff serving your state's weatherization program? *Check all that apply.*

	Certification or Licensing Requirement for In-house Staff			Certification or Licensing Requirement for Contractor Staff		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
Management/ ☒ administration	not checked   4.56 checked   103.44 Total   108	4.23 95.77 100.00	4.23 100.00	not checked   86.33 checked   21.67 Total   108	79.93 20.07 100.00	79.93 100.00
Auditing/inspection	not checked   12.11 checked   260.89 Total   273	4.44 95.56 100.00	4.44 100.00	not checked   211.76 checked   61.24 Total   273	77.57 22.43 100.00	77.57 100.00
Home weatherization	not checked   95.52 checked   138.48 Total   234	40.82 59.18 100.00	40.82 100.00	not checked   89.37 checked   144.63 Total   234	38.19 61.81 100.00	38.19 100.00
Other (please specify)	not checked   21.78 checked   13.22 Total   35	62.22 37.78 100.00	62.22 100.00	not checked   9.43 checked   25.57 Total   35	26.95 73.05 100.00	26.95 100.00

34. Which of the following approaches did your agency use in Program Year 2008 to market your weatherization services to low-income households? *Check all that apply.*

- **Targeted mailings to potential clients**

	Freq.	Percent	Cum.
no	204.47	61.22	61.22
Yes	129.53	38.78	100.00
Total	334	100.00	

- **Targeted mailings to landlords of potential clients**

	Freq.	Percent	Cum.
no	297.35	89.03	89.03
Yes	36.65	10.97	100.00
Total	334	100.00	

- **Visits to potential clients**

	Freq.	Percent	Cum.
no	271.16	81.19	81.19
Yes	62.84	18.81	100.00
Total	334	100.00	

- **Visits to landlords of potential clients**

	Freq.	Percent	Cum.
no	299.04	89.53	89.53
Yes	34.96	10.47	100.00
Total	334	100.00	

- **Advertising with other social service agencies**

	Freq.	Percent	Cum.
no	126.24	37.80	37.80
Yes	207.76	62.20	100.00
Total	334	100.00	

- **Advertising in local newspapers or magazines**

	Freq.	Percent	Cum.
no	194.18	58.14	58.14
Yes	139.82	41.86	100.00
Total	334	100.00	

- **Radio advertising**

	Freq.	Percent	Cum.
no	266.87	79.90	79.90
Yes	67.13	20.10	100.00
Total	334	100.00	

- **Television advertising**

	Freq.	Percent	Cum.
no	289.98	86.82	86.82
Yes	44.02	13.18	100.00
Total	334	100.00	

- **Posting information on website**

	Freq.	Percent	Cum.
no	134.07	40.14	40.14
Yes	199.93	59.86	100.00
Total	334	100.00	

- **Other (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
no	228.14	68.30	68.30
Yes	105.86	31.70	100.00
Total	334	100.00	

35. Who was responsible for leading the marketing/outreach efforts described above? *Check all that apply.*

- **Agency management**

	Freq.	Percent	Cum.
No	81.08	24.42	24.42
Yes	250.92	75.58	100.00
Total	332	100.00	

- **In-house outreach coordinator**

	Freq.	Percent	Cum.
No	231.91	69.85	69.85
Yes	100.09	30.15	100.00
Total	332	100.00	

- **Contractor outreach coordinator**

	Freq.	Percent	Cum.
No	323.32	97.39	97.39
Yes	8.68	2.61	100.00
Total	332	100.00	

- **In-house communications staff**

	Freq.	Percent	Cum.
No	278.23	83.80	83.80
Yes	53.77	16.20	100.00
Total	332	100.00	

- **Contractor communications staff**

	Freq.	Percent	Cum.
No	330.12	99.43	99.43
Yes	1.88	0.57	100.00
Total	332	100.00	

- **Other staff (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
No	243.47	73.33	73.33
Yes	88.53	26.67	100.00
Total	332	100.00	

## SECTION B: PROGRAM OPERATIONS AND IMPLEMENTATION

1. Please rate the adequacy of the Program Year 2008 funding received by your agency from ALL funding sources in terms of weatherizing the stock of eligible low-income dwelling units in your local jurisdiction in a timely fashion? *Check best answer.*

	Freq.	Percent	Cum.
Very inadequate	26.42	7.77	7.77
Inadequate	110.83	32.60	40.37
Adequate	160.53	47.22	87.58
Very adequate	42.22	12.42	100.00
Total	340	100.00	



2. What was the quality of the administrative support and assistance that your agency received from the state and its contractors in Program Year 2008? *Check best answer.*

	Freq.	Percent	Cum.
very low quality	3.27	0.96	0.96
low quality	11.49	3.38	4.34
moderate quality	109.38	32.17	36.51
high quality	155.16	45.63	82.15
very high quality	53.74	15.81	97.95
not applicable	6.97	2.05	100.00
<b>Total</b>	<b>340</b>	<b>100.00</b>	

- 2a. If you gave a rating of “low” or “very low,” what were your reasons? \_\_\_\_\_

3. What was the quality of the training that your agency received from the state and its contractors in Program Year 2008? *Check best answer.*

	Freq.	Percent	Cum.
very low quality	2.48	0.73	0.73
low quality	13.75	4.04	4.77
moderate quality	120.04	35.31	40.08
high quality	137.08	40.32	80.40
very high quality	45.86	13.49	93.89
not applicable	20.79	6.11	100.00
<b>Total</b>	<b>340</b>	<b>100.00</b>	

- 3a. If you gave a rating of “low” or “very low,” what were your reasons? \_\_\_\_\_

4. What was the quality of the support and assistance on client education that your agency received from the state and its contractors in Program Year 2008? *Check best answer.*

	Freq.	Percent	Cum.
very low quality	8.54	2.50	2.50
low quality	23.23	6.81	9.32
moderate quality	159.41	46.75	56.06
high quality	93.13	27.31	83.37
very high quality	18.88	5.54	88.91
not applicable	37.82	11.09	100.00
<b>Total</b>	<b>341</b>	<b>100.00</b>	

- 4a. If you gave a rating of “low” or “very low,” what were your reasons? \_\_\_\_\_

5. What was the quality of the support and assistance on leveraging the Weatherization Assistance Program with other funding sources and related programs that your agency received from the state and its contractors in Program Year 2008? *Check best answer.*

	Freq.	Percent	Cum.
very low quality	8.65	2.54	2.54
low quality	22.19	6.53	9.07
moderate quality	128.20	37.71	46.78
high quality	86.58	25.47	72.24
very high quality	30.75	9.04	81.29
not applicable	63.63	18.71	100.00
Total	340	100.00	

5a. If you gave a rating of “low” or “very low,” what were your reasons? \_\_\_\_\_

6. What was the quality of the *technical* support that your agency received from the state and its contractors in Program Year 2008? *Check best answer.*

	Freq.	Percent	Cum.
very low quality	3.66	1.07	1.07
low quality	11.96	3.51	4.58
moderate quality	106.42	31.21	35.79
high quality	146.68	43.01	78.80
very high quality	56.14	16.46	95.26
not applicable	16.15	4.74	100.00
Total	341	100.00	

6a. If you gave a rating of “low” or “very low,” what were your reasons? \_\_\_\_\_

7. How flexible did you find the DOE program rules that governed the weatherization program in Program Year 2008? In other words, did the program rules allow your state to tailor your program to your needs (very flexible) or proscribe your program to only one way of operation (very inflexible)? *Check best answer.*

	Freq.	Percent	Cum.
Very Inflexible	17.77	5.21	5.21
Inflexible	128.83	37.78	42.99
Flexible	181.52	53.23	96.22
Very Flexible	12.88	3.78	100.00
Total	341	100.00	

- 7a. Using Program Year 2008 as the reference point, how should the program rules change? *Check best answer.*

	Freq.	Percent	Cum.
Become much more inflexible	1.29	0.38	0.38
Become more inflexible	4.68	1.37	1.75
Stay about the same	128.02	37.54	39.29
Become more flexible	171.40	50.26	89.56
Become much more flexible	35.61	10.44	100.00
Total	341	100.00	

7b. In what areas should the program rules become more flexible? \_\_\_\_\_

7c. In what areas should the program rules become less flexible? \_\_\_\_\_

8. Please describe any important political issues faced by your agency's weatherization program in Program Year 2008.

\_\_\_\_\_

\_\_\_\_\_

9. Using Program Year 2008 as a reference point, how important was improving administrative support and assistance from the state and its contractors in improving your agency's ability to deliver low-income weatherization services? *Check best answer.*

	Freq.	Percent	Cum.
Very unimportant	6.30	1.85	1.85
Unimportant	51.52	15.11	16.96
Important	167.92	49.24	66.20
Very important	87.13	25.55	91.75
Not applicable	28.13	8.25	100.00
Total	341	100.00	

10. Using Program Year 2008 as a reference point, how important was improving training from DOE, the state, and their contractors in improving your agency's ability to deliver low-income weatherization services? *Check best answer.*

	Freq.	Percent	Cum.
Very unimportant	4.07	1.19	1.19
Unimportant	38.64	11.30	12.49
Important	144.7	42.32	54.81
Very important	133.09	38.92	93.73
Not applicable	21.45	6.27	100.00
<b>Total</b>	<b>342</b>	<b>100.00</b>	

11. Using Program Year 2008 as a reference point, how important was improving assistance on client education from the state and its contractors in improving your agency's ability to deliver low-income weatherization services? *Check best answer.*

	Freq.	Percent	Cum.
Very unimportant	5.47	1.61	1.61
Unimportant	79.72	23.45	25.06
Important	143.26	42.13	67.19
Very important	75.11	22.09	89.28
Not applicable	36.44	10.72	100.00
<b>Total</b>	<b>340</b>	<b>100.00</b>	

12. Using Program Year 2008 as a reference point, how important was improving assistance from the state and its contractors on leveraging the Weatherization Assistance Program with other funding sources and related programs in improving your agency's ability to deliver low-income weatherization services? *Check best answer.*

	Freq.	Percent	Cum.
Very unimportant	6.16	1.81	1.81
Unimportant	50.19	14.76	16.57
Important	137.34	40.39	56.97
Very important	88.98	26.17	83.14
Not applicable	57.33	16.86	100.00
<b>Total</b>	<b>340</b>	<b>100.00</b>	

13. Using Program Year 2008 as a reference point, how important was improving *technical* support from the state and its contractors in improving your agency's ability to deliver low-income weatherization services? *Check best answer.*

	Freq.	Percent	Cum.
Very unimportant	4.48	1.31	1.31
Unimportant	44.63	13.05	14.36
Important	164.95	48.23	62.59
Very important	107.49	31.43	94.02
Not applicable	20.46	5.98	100.00
Total	342	100.00	

14. Using Program Year 2008 as a reference point, how important was increased weatherization funding in improving your agency's ability to deliver low-income weatherization services? *Check best answer.*

	Freq.	Percent	Cum.
Unimportant	10.76	3.15	3.15
Important	92.24	26.97	30.12
Very important	222.12	64.94	95.06
Not applicable	16.89	4.94	100.00
Total	342	100.00	

15. Using Program Year 2008 as a reference point, how important was improving data and information systems for managing the delivery of weatherization services? *Check best answer.*

	Freq.	Percent	Cum.
Very unimportant	2.20	0.65	0.65
Unimportant	31.18	9.17	9.82
Important	147.58	43.41	53.22
Very important	134.58	39.58	92.81
Not applicable	24.46	7.19	100.00
Total	340	100.00	

16. In general, how satisfied were you with the length of time between the client's request to have their home weatherized and when it was actually weatherized in Program Year 2008? *Check best answer.*

	Freq.	Percent	Cum.
Very dissatisfied	5.49	1.62	1.62
Dissatisfied	54.94	16.16	17.77
Not satisfied or dissatisfied	104.79	30.82	48.59
Satisfied	148.14	43.57	92.16
Very satisfied	26.65	7.84	100.00
Total	340	100.00	

17. In general, how easy was it to schedule your visits to client homes to perform audits, weatherization,

and inspections in Program Year 2008? *Check best answer.*

	Freq.	Percent	Cum.
Very difficult	.92	0.27	0.27
Difficult	16.25	4.76	5.03
Not easy or difficult	154.21	45.22	50.26
Easy	140.73	41.27	91.53
Very easy	28.90	8.47	100.00
Total	341	100.00	

**SECTION C: AUDIT**

1. What was the primary method that your agency used in Program Year 2008 to select weatherization measures for clients' dwelling units (excluding health, safety, and repair measures and general heat waste measures)? *Check best answer.*

	Freq.	Percent	Cum.
priority list used for all dwelling units	183.10	51.87	51.87
calculation procedure	115.02	32.58	84.45
priority list for units meeting specific	41.58	11.78	96.23
other	13.30	3.77	100.00
Total	353	100.00	

2. Including Program Year 2008, for how many years had your agency used the weatherization measure selection method indicated above? \_\_\_\_\_

observations:	311
missing values:	46
mean:	13.17
standard deviation:	8.49
min:	0
10th percentile:	3
25th percentile:	6
median:	10
75th percentile:	20
90th percentile:	25
max:	40

3. What types of credentials or experience were required of your staff or contractors who were engaged in measure selection in Program Year 2008? *Check all that apply.*

- **Technical certification**

	Freq.	Percent	Cum.
no	78.87	23.40	23.40
yes	258.13	76.60	100.00
Total	337	100.00	

- **Extensive weatherization work experience**

	Freq.	Percent	Cum.
no	107.96	32.04	32.04
yes	229.04	67.96	100.00
Total	337	100.00	

- **Extensive weatherization supervision experience**

	Freq.	Percent	Cum.
no	216.26	64.17	64.17
yes	120.74	35.83	100.00
Total	337	100.00	

- **Construction experience**

	Freq.	Percent	Cum.
no	150.95	44.79	44.79
yes	186.05	55.21	100.00
Total	337	100.00	

- **Other (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
no	314.95	93.46	93.46
yes	22.05	6.54	100.00
Total	337	100.00	

4. Please indicate the level of experience for the agency staff engaged in measure selection in Program Year 2008 in each of the following functional areas.

	<b>Very High</b>	<b>High</b>	<b>Average</b>	<b>Low</b>	<b>Very Low</b>
Performing weatherization work	Freq.    Percent    Cum.				
	Very low	10.97	3.47	3.47	
	Low	4.98	1.58	5.05	
	Average	64.12	20.29	25.34	
	High	114.00	36.08	61.41	
	Very High	121.94	38.59	100.00	
	Total	316	100.00		
Supervising weatherization work	Freq.    Percent    Cum.				
	Very low	4.5	1.40	1.40	
	Low	9.61	2.94	4.34	
	Average	61.44	18.79	23.13	
	High	103.20	31.56	54.69	
	Very High	148.18	45.31	100.00	
	Total	327	100.00		
Working in construction	Freq.    Percent    Cum.				
	Very low	9.98	3.24	3.24	
	Low	16.57	5.38	8.62	
	Average	86.51	28.09	36.71	
	High	115.35	37.45	74.16	
	Very High	79.59	25.84	100.00	
	Total	308	100.00		
Performing pre-weatherization audits	Freq.    Percent    Cum.				
	Very low	7.63	2.26	2.26	
	Low	7.10	2.11	4.37	
	Average	63.50	18.84	23.21	
	High	92.10	27.33	50.54	
	Very High	166.67	49.46	100.00	
	Total	337	100.00		



5. On average, approximately how many hours did it take to select weatherization measures for a typical dwelling unit served by your agency in Program Year 2008, by the major components listed below?

Prepartaion/scheduling observations:	345
missing values:	12
mean:	1.09
standard deviation:	1.83
min:	0
10th percentile:	.25
25th percentile:	.5
median:	1
75th percentile:	1
90th percentile:	2
max:	30

Travel observations:	345
missing values:	12
mean:	1.24
standard deviation:	2.33
min:	0
10th percentile:	.25
25th percentile:	.5
median:	1
75th percentile:	1.5
90th percentile:	2
max:	45

On-site auditing observations:	345
missing values:	12
mean:	2.91
standard deviation:	3.84
min:	0
10th percentile:	1
25th percentile:	2
median:	3
75th percentile:	3.5
90th percentile:	4
max:	60

Post-audit analysis and write-up observations:	345
missing values:	12
mean:	2.24
standard deviation:	4.87
min:	0
10th percentile:	.5
25th percentile:	1
median:	2
75th percentile:	2
90th percentile:	4
max:	120

TOTAL of all components observations:	357
missing values:	0
mean:	7.81
standard deviation:	10.74
min:	0
10th percentile:	0
25th percentile:	5
median:	7
75th percentile:	8.5
90th percentile:	11
max:	145

6. If your agency used a priority list for at least some dwelling units in Program Year 2008, how difficult was it for your staff to use that priority list? *Check best answer.*

	Freq.	Percent	Cum.
-----+-----			
Very difficult	3.36	1.14	1.14
Difficult	17.22	5.86	7.00
Easy	202.55	68.90	75.89
Very Easy	70.87	24.11	100.00
-----+-----			
Total	294	100.00	

7. If your agency used a priority list in Program Year 2008, how effective was that list? *Check best answer.*

	Freq.	Percent	Cum.
Very Ineffective	19.22	6.56	6.56
Ineffective	15.55	5.31	11.87
Effective	197.18	67.30	79.16
Very Effective	61.05	20.84	100.00
Total	293	100.00	

8. If your agency used a calculation procedure for at least some dwelling units in Program Year 2008, what was the name of the procedure or procedures employed? *Check all that apply.*

**a. AK Warm**

	Freq.	Percent	Cum.
No	296.86	99.28	99.28
Yes	2.14	0.72	100.00
Total	299	100.00	

**b. EA-3**

	Freq.	Percent	Cum.
No	296.42	99.14	99.14
Yes	2.58	0.86	100.00
Total	299	100.00	

**c. EASY**

	Freq.	Percent	Cum.
No	292.19	97.72	97.72
Yes	6.81	2.28	100.00
Total	299	100.00	

**d. EA-QUIP**

	Freq.	Percent	Cum.
No	281.88	94.27	94.27
Yes	17.12	5.73	100.00
Total	299	100.00	

**e. HomeCheck**

	Freq.	Percent	Cum.
No	295.43	98.81	98.81
Yes	3.57	1.19	100.00
Total	299	100.00	

**f. Meadows**

	Freq.	Percent	Cum.
No	293.65	98.21	98.21
Yes	5.35	1.79	100.00
Total	299	100.00	

**g. REES**

	Freq.	Percent	Cum.
No	299	100.00	100.00
Total	299	100.00	

**h. REM/Rate**

	Freq.	Percent	Cum.
No	284.27	95.07	95.07
Yes	14.73	4.93	100.00
Total	299	100.00	

**i. SMOC-ERS**

	Freq.	Percent	Cum.
No	296.23	99.07	99.07
Yes	2.77	0.93	100.00
Total	299	100.00	

**j. TIPS**

	Freq.	Percent	Cum.
No	271.91	90.94	90.94
Yes	27.09	9.06	100.00
Total	299	100.00	

**k. TREAT**

	Freq.	Percent	Cum.
No	281.23	94.06	94.06
Yes	17.77	5.94	100.00
Total	299	100.00	

**l. Weatherization Assistant (NEAT/MHEA)**

	Freq.	Percent	Cum.
No	109.73	36.70	36.70
Yes	189.27	63.30	100.00
Total	299	100.00	

**m. WXEOR**

	Freq.	Percent	Cum.
No	296.28	99.09	99.09
Yes	2.72	0.91	100.00
Total	299	100.00	

**n. Other (pleases specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
No	249.62	83.48	83.48
Yes	49.38	16.52	100.00
Total	299	100.00	

9. If your agency used a calculation procedure in Program Year 2008, use the following scale to describe how difficult it was for your staff to use the applicable procedure(s). *Circle best answer.*  
1= Very Difficult; 2=Difficult; 3= Easy; 4=Very Easy; 5 =N/A

**a. AK Warm**

	Freq.	Percent	Cum.
Easy	2.13	4.43	4.43
Not applicable	45.87	95.57	100.00
Total	48	100.00	

**b. EA-3**

	Freq.	Percent	Cum.
Easy	.812	1.76	1.76
Very Easy	1.76	3.83	5.59
Not applicable	43.43	94.41	100.00
Total	46	100.00	

**c. EASY**

	Freq.	Percent	Cum.
Difficult	.42	0.87	0.87
Easy	5.65	11.53	12.39
Very Easy	.73	1.48	13.87
Not applicable	42.20	86.13	100.00
Total	49	100.00	

**d. EA-QUIP**

	Freq.	Percent	Cum.
Very difficult	3.88	5.96	5.96
Difficult	3.30	5.08	11.04
Easy	3.89	5.98	17.02
Very Easy	4.53	6.96	23.98
Not applicable	49.41	76.02	100.00
Total	65	100.00	

**e. HomeCheck**

	Freq.	Percent	Cum.
Easy	5.26	10.74	10.74
Very Easy	2.44	4.97	15.71
Not applicable	41.30	84.29	100.00
Total	49	100.00	

**f. Meadows**

	Freq.	Percent	Cum.
Difficult	1.31	2.62	2.62
Easy	2.36	4.72	7.34
Very Easy	1.58	3.17	10.51
Not applicable	44.75	89.49	100.00
Total	50	100.00	

**g. REES**

	Freq.	Percent	Cum.
Not applicable	45	100.00	100.00
Total	45	100.00	

**h. REM/Rate**

	Freq.	Percent	Cum.
Very difficult	.45	0.83	0.83
Difficult	8.70	16.11	16.94
Easy	3.41	6.31	23.26
Very Easy	.66	1.23	24.48
Not applicable	40.78	75.52	100.00
Total	54	100.00	

**i. SMOC-ERS**

	Freq.	Percent	Cum.
Difficult	1.25	2.72	2.72
Easy	.92	1.99	4.71
Very Easy	1.01	2.20	6.91
Not applicable	42.82	93.09	100.00
Total	46	100.00	

**j. TIPS**

	Freq.	Percent	Cum.
Difficult	.63	0.65	0.65
Easy	24.07	25.08	25.73
Very Easy	11.90	12.39	38.12
Not applicable	59.40	61.88	100.00
Total	96	100.00	

**k. TREAT**

	Freq.	Percent	Cum.
Very difficult	2.52	3.88	3.88
Difficult	4.05	6.23	10.11
Easy	11.71	18.02	28.13
Not applicable	46.72	71.87	100.00
Total	65	100.00	

**l. Weatherization Assistant (NEAT/MHEA)**

	Freq.	Percent	Cum.
Very difficult	10.00	5.98	5.98
Difficult	50.80	27.61	33.59
Easy	77.38	42.06	75.64
Very Easy	22.05	11.99	87.63
Not applicable	22.76	12.37	100.00
<b>Total</b>	<b>184</b>	<b>100.00</b>	

**m. WXEOR**

	Freq.	Percent	Cum.
Difficult	3.44	6.75	6.75
Easy	3.23	6.34	13.09
Very Easy	1.75	3.42	16.51
Not applicable	42.58	83.49	100.00
<b>Total</b>	<b>51</b>	<b>100.00</b>	

**n. Other (please specify) \_\_\_\_\_**

	Freq.	Percent	Cum.
Very difficult	2.21	3.88	3.88
Difficult	10.41	18.26	22.13
Easy	17.99	31.58	53.71
Very Easy	6.31	11.08	64.79
Not applicable	20.07	35.21	100.00
<b>Total</b>	<b>57</b>	<b>100.00</b>	

10. If your agency used a calculation procedure in Program Year 2008, use the following scale to describe how effective you found the applicable procedure(s). *Circle best answer.*

1= Very Ineffective; 2=Ineffective; 3= Effective; 4=Very Effective; 5=N/A

**a. AK Warm**

	Freq.	Percent	Cum.
Effective	.76	1.58	1.58
Very Effective	1.34	2.80	4.38
Not applicable	45.90	95.62	100.00
<b>Total</b>	<b>48</b>	<b>100.00</b>	



**b. EA-3**

	Freq.	Percent	Cum.
Effective	1.93	4.11	4.11
Very Effective	.62	1.33	5.44
Not applicable	44.44	94.56	100.00
-----+			
Total	47	100.00	

**c. EASY**

	Freq.	Percent	Cum.
Ineffective	2.40	4.80	4.80
Effective	1.18	2.35	7.16
Very Effective	2.78	5.54	12.70
Not applicable	43.65	87.30	100.00
-----+			
Total	50	100.00	

**d. EA-QUIP**

	Freq.	Percent	Cum.
Very Ineffective	.96	1.46	1.46
Ineffective	2.32	3.52	4.98
Effective	6.63	10.04	15.02
Very Effective	3.90	5.90	20.92
Not applicable	52.19	79.08	100.00
-----+			
Total	66	100.00	

**e. HomeCheck**

	Freq.	Percent	Cum.
Effective	2.08	4.24	4.24
Very Effective	2.54	5.19	9.44
Not applicable	44.38	90.56	100.00
-----+			
Total	49	100.00	

**f. Meadows**

	Freq.	Percent	Cum.
Very Ineffective	1.61	3.16	3.16
Ineffective	.77	1.50	4.67
Effective	.54	1.05	5.72
Very Effective	2.31	4.53	10.25
Not applicable	45.77	89.75	100.00
Total	51	100.00	

**g. REES**

	Freq.	Percent	Cum.
Not applicable	46	100.00	100.00
Total	46	100.00	

**h. REM/Rate**

	Freq.	Percent	Cum.
Ineffective	.66	1.20	1.20
Effective	12.10	22.01	23.21
Not applicable	42.23	76.79	100.00
Total	55	100.00	

**i. SMOC-ERS**

	Freq.	Percent	Cum.
Very Ineffective	.45	0.91	0.91
Effective	1.72	3.51	4.43
Very Effective	1.01	2.07	6.50
Not applicable	45.82	93.50	100.00
Total	49	100.00	

**j. TIPS**

	Freq.	Percent	Cum.
Very Ineffective	.63	0.65	0.65
Effective	20.55	21.19	21.84
Very Effective	15.67	16.15	37.99
Not applicable	60.15	62.01	100.00
Total	97	100.00	

**k. TREAT**

	Freq.	Percent	Cum.
Very Ineffective	1.50	2.30	2.30
Ineffective	1.21	1.87	4.17
Effective	13.74	21.13	25.30
Very Effective	1.91	2.94	28.24
Not applicable	46.64	71.76	100.00
Total	65	100.00	

**l. Weatherization Assistant (NEAT/MHEA)**

	Freq.	Percent	Cum.
Very Ineffective	7.01	3.86	3.86
Ineffective	29.47	16.11	19.97
Effective	70.47	38.51	58.48
Very Effective	49.24	26.91	85.38
Not applicable	26.75	14.62	100.00
Total	183	100.00	

**m. WXEOR**

	Freq.	Percent	Cum.
Effective	2.51	5.02	5.02
Very Effective	2.71	5.41	10.43
Not applicable	44.79	89.57	100.00
Total	50	100.00	

**n. Other (please specify) \_\_\_\_\_**

	Freq.	Percent	Cum.
Very Ineffective	.61	1.61	1.61
Ineffective	4.09	10.77	12.39
Effective	19.73	51.93	64.32
Very Effective	6.98	18.37	82.69
Not applicable	6.58	17.31	100.00
Total	38	100.00	

11. If your agency used a calculation procedure for at least some dwelling units in Program Year 2008, did your state allow under DOE rules the installation of general heat waste measures (low-cost/no-cost weatherization activities) in those units without the need for an energy justification?

	Freq.	Percent	Cum.
no	115.06	38.74	38.74
yes	181.94	61.26	100.00
Total	297	100.00	

12. Please indicate which of the following general heat waste measures your agency was allowed to install in Program Year 2008. *Check all that apply.*

- **Weatherstripping**

	Freq.	Percent	Cum.
unchecked	8.43	3.81	3.81
checked	212.57	96.19	100.00
Total	221	100.00	

- **Caulking**

	Freq.	Percent	Cum.
unchecked	28.61	12.95	12.95
checked	192.39	87.05	100.00
Total	221	100.00	

- **Insulation for plugging air leaks**

	Freq.	Percent	Cum.
unchecked	28.61	12.95	12.95
checked	192.39	87.05	100.00
Total	221	100.00	

- **Low-flow shower heads**

	Freq.	Percent	Cum.
unchecked	54.18	24.52	24.52
checked	166.82	75.48	100.00
Total	221	100.00	

- **Low-flow faucet aerators**

	Freq.	Percent	Cum.
unchecked	75.91	34.35	34.35
checked	145.09	65.65	100.00
Total	221	100.00	

- **Air filters**

	Freq.	Percent	Cum.
unchecked	69.86	31.61	31.61
checked	151.14	68.39	100.00
Total	221	100.00	

- **Glass patching**

	Freq.	Percent	Cum.
unchecked	56.72	25.66	25.66
checked	164.28	74.34	100.00
Total	221	100.00	

- **Lighting**

	Freq.	Percent	Cum.
unchecked	40.87	18.49	18.49
checked	180.13	81.51	100.00
Total	221	100.00	

- **Hot water tank insulation (water heater wrap)**

	Freq.	Percent	Cum.
unchecked	34.53	15.62	15.62
checked	186.47	84.38	100.00
Total	221	100.00	

- **Water pipe insulation**

	Freq.	Percent	Cum.
unchecked	21.35	9.66	9.66
checked	199.65	90.34	100.00
Total	221	100.00	

- **Other (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
unchecked	204.74	92.64	92.64
checked	16.26	7.36	100.00
Total	221	100.00	

What was the *primary* justification used by your agency in Program Year 2008 for performing work specifically targeted at reducing air infiltration (i.e., air sealing work)? *Check best answer.*

	Freq.	Percent	Cum.
air leakage rate as measured by a blower	271.16	80.46	80.46
work should be performed to address occ	3.15	0.93	81.40
all significant air leakage sites shoul	30.56	9.07	90.46
air sealing work should be performed on	27.24	8.08	98.54
Other	4.90	1.46	100.00
Total	337	100.00	

13. What *other* justifications were used by your agency in Program Year 2008 for performing work specifically targeted at reducing air infiltration (i.e., air sealing work)? *Check all that apply.*

- Work should be performed where the air leakage rate as measured by a blower door test is greater than a minimum number (e.g., minimum ventilation guideline) calculated for the dwelling unit in question

	Freq.	Percent	Cum.
no	268.17	83.28	83.28
yes	53.83	16.72	100.00
Total	322	100.00	

- Work should be performed to address occupant complaints

	Freq.	Percent	Cum.
no	176.13	54.70	54.70
yes	145.87	45.30	100.00
Total	322	100.00	

- All *significant* air leakage sites should be sealed

	Freq.	Percent	Cum.
no	107.45	33.37	33.37
yes	214.55	66.63	100.00
Total	322	100.00	

- Air sealing work should be performed on all dwelling units

	Freq.	Percent	Cum.
no	206.68	64.19	64.19
yes	115.32	35.81	100.00
Total	322	100.00	

- **Other (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
no	302.78	94.03	94.03
yes	19.22	5.97	100.00
Total	322	100.00	

14. What was the *primary* method used by your agency in Program Year 2008 to identify air leakage sites to seal? *Check only one.*

	Freq.	Percent	Cum.
Auditor identified air leakage sites vi	11.44	3.37	3.37
Auditor identified air leakage sites us	252.11	74.37	77.74
Crew identified air leakage sites visua	2.59	0.76	78.51
Crew identified air leakage sites using	65.37	19.28	97.79
Other	7.48	2.21	100.00
Total	339	100.00	

15. What *other* methods were used by your agency in Program Year 2008 to identify air leakage sites to seal? *Check all that apply.*

- **Auditor identified air leakage sites visually and communicated relevant information to crew**

	Freq.	Percent	Cum.
no	139.78	41.73	41.73
yes	195.22	58.27	100.00
Total	335	100.00	

- **Auditor identified air leakage sites using a blower door and/or pressure diagnostics and communicated relevant information to crew**

	Freq.	Percent	Cum.
no	273.96	81.78	81.78
yes	61.04	18.22	100.00
Total	335	100.00	

- **Crew identified air leakage sites visually**

	Freq.	Percent	Cum.
no	180.10	53.76	53.76
yes	154.90	46.24	100.00
Total	335	100.00	

- **Crew identified air leakage sites using a blower door and/or pressure diagnostics**

	Freq.	Percent	Cum.
no	163.02	48.66	48.66
yes	171.98	51.34	100.00
Total	335	100.00	

- **Other (please specify) \_\_\_\_\_**

	Freq.	Percent	Cum.
no	316.00	94.33	94.33
yes	19.00	5.67	100.00
Total	335	100.00	



16. In Program Year 2008, at what point did your agency stop performing air sealing work on a given dwelling unit? *Check all that apply.*

- **When all identified air leakage sites were sealed**

	Freq.	Percent	Cum.
no	234.24	69.51	69.51
yes	102.764	30.49	100.00
Total	337	100.00	

- **When all *significant* air leakage sites were sealed**

	Freq.	Percent	Cum.
no	215.73	64.02	64.02
yes	121.27	35.98	100.00
Total	337	100.00	

- **When the air leakage rate as measured by a blower door test dropped below a minimum number calculated for the dwelling unit in question**

	Freq.	Percent	Cum.
no	94.58	28.06	28.06
yes	242.42	71.94	100.00
Total	337	100.00	

- **When a blower door test indicated that the most recent infiltration reduction measure installed in the dwelling unit was not cost effective**

	Freq.	Percent	Cum.
no	220.47	65.42	65.42
yes	116.53	34.58	100.00
Total	337	100.00	

- **Other (please specify) \_\_\_\_\_**

	Freq.	Percent	Cum.
no	324.48	96.28	96.28
yes	12.52	3.72	100.00
Total	337	100.00	

17. Did your agency do duct sealing work in Program Year 2008?

	Freq.	Percent	Cum.
no	40.22	11.97	11.97
yes	295.78	88.03	100.00
Total	336	100.00	

18. How did your agency determine when duct sealing work was needed for a particular dwelling unit in Program Year 2008? *Check all that apply.*

- **All houses with ducts received duct sealing measures**

	Freq.	Percent	Cum.
no	199.23	67.53	67.53
yes	95.77	32.47	100.00
Total	295	100.00	

- **All houses with return air ducts get sealed**

	Freq.	Percent	Cum.
no	223.32	75.70	75.70
yes	71.68	24.30	100.00
Total	295	100.00	

- **Ducts were sealed in those cases where leakage sites were visible**

	Freq.	Percent	Cum.
no	182.27	61.79	61.79
yes	112.73	38.21	100.00
Total	295	100.00	

- **Ducts were sealed when a blower door test indicated the presence of leaks**

	Freq.	Percent	Cum.
no	136.44	46.25	46.25
yes	158.56	53.75	100.00
Total	295	100.00	

- **Ducts were sealed when duct diagnostics (blower door subtraction, duct blower, or pressure pan measurements) indicated that the leakage rate was greater than a minimum number calculated for the dwelling unit in question**

	Freq.	Percent	Cum.
no	118.56	40.19	40.19
yes	176.44	59.81	100.00
Total	295	100.00	

19. What methods were used by your agency in Program Year 2008 to identify duct leakage sites to seal?  
*Check all that apply.*

- **Auditor identified duct leakage sites visually and communicated relevant information to crew**

	Freq.	Percent	Cum.
no	132.43	44.89	44.89
yes	162.57	55.11	100.00
Total	295	100.00	

- **Auditor identified duct leakage sites using a blower door and communicated relevant information to crew**

	Freq.	Percent	Cum.
no	109.65	37.17	37.17
yes	185.35	62.83	100.00
Total	295	100.00	

- **Auditor identified duct leakage sites using duct diagnostics and communicated relevant information to crew**

	Freq.	Percent	Cum.
no	151.87	51.48	51.48
yes	143.13	48.52	100.00
Total	295	100.00	

- **Crew identified duct leakage sites visually**

	Freq.	Percent	Cum.
no	185.23	62.79	62.79
yes	109.77	37.21	100.00
Total	295	100.00	

- **Crew identified duct leakage sites using a blower door**

	Freq.	Percent	Cum.
no	181.51	61.53	61.53
yes	113.49	38.47	100.00
Total	295	100.00	

- **Crew identified duct leakage sites using duct diagnostics**

	Freq.	Percent	Cum.
no	216.59	73.42	73.42
yes	78.41	26.58	100.00
Total	295	100.00	

- **Other (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
no	283.01	95.94	95.94
yes	11.99	4.06	100.00
Total	295	100.00	

20. In Program Year 2008, at what point did your agency stop performing duct sealing work on a given dwelling unit? *Check all that apply.*

- **When all identified duct leakage sites were sealed**

	Freq.	Percent	Cum.
no	115.86	39.54	39.54
yes	177.14	60.46	100.00
Total	293	100.00	

- **When a blower door test indicated no more flow from the ducts**

	Freq.	Percent	Cum.
no	189.91	64.81	64.81
yes	103.09	35.19	100.00
Total	293	100.00	

- **When the duct leakage rate as measured by duct diagnostics dropped below a minimum number calculated for the dwelling unit in question**

	Freq.	Percent	Cum.
no	127.78	43.61	43.61
yes	165.22	56.39	100.00
Total	293	100.00	

- **Other (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
no	285.96	97.60	97.60
yes	7.04	2.40	100.00
Total	293	100.00	

21. How did you determine when a particular refrigerator should be replaced in Program Year 2008?  
*Check all that apply.*

- **Not allowed to replace refrigerators**

	Freq.	Percent	Cum.
no	270.03	81.34	81.34
yes	61.97	18.66	100.00
Total	332	100.00	

- **Energy use of existing refrigerator was metered**

	Freq.	Percent	Cum.
no	117.84	35.49	35.49
yes	214.16	64.51	100.00
Total	332	100.00	

- **Energy use of existing refrigerator was assumed base on rated/nameplate value**

	Freq.	Percent	Cum.
no	260.89	78.58	78.58
yes	71.11	21.42	100.00
Total	332	100.00	

- **Non-energy criteria were used (e.g., age, color, physical appearance)**

	Freq.	Percent	Cum.
no	302.30	91.05	91.05
yes	29.70	8.95	100.00
Total	332	100.00	

- **Refrigerator was replaced if it was no longer running or could not maintain desired temperature**

	Freq.	Percent	Cum.
no	267.95	80.71	80.71
yes	64.05	19.29	100.00
Total	332	100.00	

- **Other (please specify) \_\_\_\_\_**

	Freq.	Percent	Cum.
no	275.61	83.01	83.01
yes	56.39	16.99	100.00
Total	332	100.00	

22a. How did you determine when a particular air conditioner should be replaced in Program Year 2008?  
*Check all that apply.*

- **Not allowed to replace air conditioner**

	Freq.	Percent	Cum.
no	143.28	42.52	42.52
yes	193.72	57.48	100.00
Total	337	100.00	

- **Energy use of existing air conditioner was metered**

	Freq.	Percent	Cum.
no	324.60	96.32	96.32
yes	12.40	3.68	100.00
Total	337	100.00	

- **Energy use of existing air conditioner was assumed base on rated/nameplate value**

	Freq.	Percent	Cum.
no	316.68	93.97	93.97
yes	20.32	6.03	100.00
Total	337	100.00	

- **Non-energy criteria were used (e.g., age, physical appearance)**

	Freq.	Percent	Cum.
no	327.85	97.29	97.29
yes	9.15	2.71	100.00
Total	337	100.00	

- **Air conditioner was replaced if it was no longer running or could not maintain desired temperature**

	Freq.	Percent	Cum.
no	305.93	90.78	90.78
yes	31.07	9.22	100.00
Total	337	100.00	

- **Other (please specify) \_\_\_\_\_**

	Freq.	Percent	Cum.
no	299.04	88.74	88.74
yes	37.96	11.26	100.00
Total	337	100.00	

- **Not applicable**

	Freq.	Percent	Cum.
no	299.04	88.74	88.74
yes	37.96	11.26	100.00
Total	337	100.00	

22. Which of the following diagnostic procedures did your agency perform in Program Year 2008? *Check all that apply.*

**Pressure diagnostics:**

- **Blower door (house air leakage rate)**

	Freq.	Percent	Cum.
no	4.50	1.33	1.33
yes	334.50	98.67	100.00
Total	339	100.00	

- **Zonal pressure measurements**

	Freq.	Percent	Cum.
no	141.58	41.77	41.77
yes	197.42	58.23	100.00
Total	339	100.00	

- **Room-to-room pressure measurements (distribution balancing)**

	Freq.	Percent	Cum.
no	186.88	55.13	55.13
yes	152.12	44.87	100.00
Total	339	100.00	

- **Duct pressure pan measurements**

	Freq.	Percent	Cum.
no	137.72	40.62	40.62
yes	201.28	59.38	100.00
Total	339	100.00	

- **Duct blower measurements (duct air leakage rate)**

	Freq.	Percent	Cum.
no	228.37	67.36	67.36
yes	110.63	32.64	100.00
Total	339	100.00	



**Space-heating system:**

- **Flue gas analysis (steady-state efficiency measurements)**

	Freq.	Percent	Cum.
no	56.29	16.61	16.61
yes	282.71	83.39	100.00
Total	339	100.00	

- **Heat rise measurements**

	Freq.	Percent	Cum.
no	153.12	45.17	45.17
yes	185.88	54.83	100.00
Total	339	100.00	

- **CO measurements in flues**

	Freq.	Percent	Cum.
no	30.36	8.96	8.96
yes	308.64	91.04	100.00
Total	339	100.00	

- **Draft/spillage (normal operation)**

	Freq.	Percent	Cum.
no	75.22	22.19	22.19
yes	263.78	77.81	100.00
Total	339	100.00	

**Air-conditioning system:**

- **Refrigerant charge (e.g., superheat, subcooling)**

	Freq.	Percent	Cum.
no	306.23	90.33	90.33
yes	32.77	9.67	100.00
Total	339	100.00	

**HVAC components and cross-cutting diagnostics:**

- **Air handler flow rate**

	Freq.	Percent	Cum.
no	259.97	76.69	76.69
yes	79.03	23.31	100.00
Total	339	100.00	

- **Thermostat anticipator current**

	Freq.	Percent	Cum.
no	232.19	68.49	68.49
yes	106.81	31.51	100.00
Total	339	100.00	

- **Worst case draft/spillage (CAZ)**

	Freq.	Percent	Cum.
no	124.54	36.74	36.74
yes	214.46	63.26	100.00
Total	339	100.00	

**Hot-water (water-heating) system:**

- **Flue gas analysis (steady-state efficiency measurements)**

	Freq.	Percent	Cum.
no	95.20	28.08	28.08
yes	243.80	71.92	100.00
Total	339	100.00	

- **CO measurements in flues**

	Freq.	Percent	Cum.
no	40.20	11.86	11.86
yes	298.80	88.14	100.00
Total	339	100.00	

- **Draft/spillage (normal operation)**

	Freq.	Percent	Cum.	
no	77.08	22.74	22.74	
yes	261.92	77.26	100.00	
Total	339	100.00		

- **Water flow rates (showerheads and faucets)**

	Freq.	Percent	Cum.	
no	257.16	75.86	75.86	
yes	81.84	24.14	100.00	
Total	339	100.00		

**Other CO measurements:**

- **CO measurements in equipment rooms**

	Freq.	Percent	Cum.	
no	106.73	31.48	31.48	
yes	232.27	68.52	100.00	
Total	339	100.00		

- **Cooking stove**

	Freq.	Percent	Cum.	
no	59.77	17.63	17.63	
yes	279.23	82.37	100.00	
Total	339	100.00		

- **CO measurements in living areas**

	Freq.	Percent	Cum.	
no	75.76	22.35	22.35	
yes	263.24	77.65	100.00	
Total	339	100.00		

**Other diagnostics and inspections:**

- **Refrigerator energy use**

	Freq.	Percent	Cum.
no	127.01	37.47	37.47
yes	211.99	62.53	100.00
Total	339	100.00	

- **Exhaust fan air flow rate measurement**

	Freq.	Percent	Cum.
no	231.42	68.26	68.26
yes	107.58	31.74	100.00
Total	339	100.00	

- **Infrared scanning (camera)**

	Freq.	Percent	Cum.
no	167.73	49.48	49.48
yes	171.27	50.52	100.00
Total	339	100.00	

- **Radon testing**

	Freq.	Percent	Cum.
no	329.18	97.10	97.10
yes	9.82	2.90	100.00
Total	339	100.00	

- **Lead**

	Freq.	Percent	Cum.
no	275.41	81.24	81.24
yes	63.59	18.76	100.00
Total	339	100.00	

- **Mold and mildew testing**

	Freq.	Percent	Cum.
no	303.64	89.57	89.57
yes	35.36	10.43	100.00
-----+			
Total	339	100.00	

- **Moisture content testing**

	Freq.	Percent	Cum.
no	286.77	84.59	84.59
yes	52.23	15.41	100.00
-----+			
Total	339	100.00	

- **Other (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
no	330.81	97.58	97.58
yes	8.19	2.42	100.00
-----+			
Total	339	100.00	

23. Which of the diagnostic procedures listed below were performed for the first time by your agency in Program Year 2008 or in either of the two years prior to Program Year 2008? If your agency did not use a particular procedure, leave that item blank.  
*Check all that apply.*

**Pressure diagnostics:**

- **Blower door (house air leakage rate)**

	Freq.	Percent	Cum.
no	88.33	58.11	58.11
yes	63.67	41.89	100.00
-----+			
Total	152	100.00	

- **Zonal pressure measurements**

	Freq.	Percent	Cum.
no	99.17	65.25	65.25
yes	52.83	34.75	100.00
-----+			
Total	152	100.00	

- **Room-to-room pressure measurements (distribution balancing)**

	Freq.	Percent	Cum.
no	114.31	75.20	75.20
yes	37.69	24.80	100.00
Total	152	100.00	

- **Duct pressure pan measurements**

	Freq.	Percent	Cum.
no	101.03	66.47	66.47
yes	50.97	33.53	100.00
Total	152	100.00	

- **Duct blower measurements (duct air leakage rate)**

	Freq.	Percent	Cum.
no	114.87	75.58	75.58
yes	37.11	24.42	100.00
Total	152	100.00	

**Space-heating system:**

- **Flue gas analysis (steady-state efficiency measurements)**

	Freq.	Percent	Cum.
no	106.88	70.32	70.32
yes	45.12	29.68	100.00
Total	152	100.00	

- **Heat rise measurements**

	Freq.	Percent	Cum.
no	122.51	80.60	80.60
yes	29.49	19.40	100.00
Total	152	100.00	

- **CO measurements in flues**

	Freq.	Percent	Cum.
no	88.22	58.04	58.04
yes	63.78	41.96	100.00
Total	152	100.00	

- **Draft/spillage (normal operation)**

	Freq.	Percent	Cum.
no	106.71	70.20	70.20
yes	45.29	29.80	100.00
Total	152	100.00	

**Air-conditioning system:**

- **Refrigerant charge (e.g., superheat, subcooling)**

	Freq.	Percent	Cum.
no	142.65	93.85	93.85
yes	9.35	6.15	100.00
Total	152	100.00	

**HVAC components and cross-cutting diagnostics:**

- **Air handler flow rate**

	Freq.	Percent	Cum.
no	135.24	88.98	88.98
yes	16.76	11.02	100.00
Total	152	100.00	

- **Thermostat anticipator current**

	Freq.	Percent	Cum.
no	132.67	87.28	87.28
yes	19.33	12.72	100.00
Total	152	100.00	

- **Worst case draft/spillage (CAZ)**

	Freq.	Percent	Cum.
no	105.00	69.08	69.08
yes	47.00	30.92	100.00
Total	152	100.00	

**Hot-water (water-heating) system:**

- **Flue gas analysis (steady-state efficiency measurements)**

	Freq.	Percent	Cum.
no	105.80	69.60	69.60
yes	46.20	30.40	100.00
Total	152	100.00	

- **CO measurements in flues**

	Freq.	Percent	Cum.
no	97.79	64.34	64.34
yes	54.21	35.66	100.00
Total	152	100.00	

- **Draft/spillage (normal operation)**

	Freq.	Percent	Cum.
no	105.64	69.50	69.50
yes	46.36	30.50	100.00
Total	152	100.00	

- **Water flow rates (showerheads and faucets)**

	Freq.	Percent	Cum.
no	139.33	91.67	91.67
yes	12.67	8.33	100.00
Total	152	100.00	

**Other CO measurements:**

- **CO measurements in equipment rooms**

	Freq.	Percent	Cum.
no	115.63	76.07	76.07
yes	36.37	23.93	100.00
Total	152	100.00	

- **Cooking stove**

	Freq.	Percent	Cum.
no	92.57	60.90	60.90
yes	59.43	39.10	100.00
Total	152	100.00	



- **CO measurements in living areas**

	Freq.	Percent	Cum.
no	105.70	69.54	69.54
yes	46.30	30.46	100.00
Total	152	100.00	

**Other diagnostics and inspections:**

- **Refrigerator energy use**

	Freq.	Percent	Cum.
no	92.06	60.57	60.57
yes	59.94	39.43	100.00
Total	152	100.00	

- **Exhaust fan air flow rate measurement**

	Freq.	Percent	Cum.
no	134.04	88.18	88.18
yes	17.96	11.82	100.00
Total	152	100.00	

- **Infrared scanning (camera)**

	Freq.	Percent	Cum.
no	96.80	63.69	63.69
yes	55.20	36.31	100.00
Total	152	100.00	

- **Radon testing**

	Freq.	Percent	Cum.
no	151.06	99.38	99.38
yes	.94	0.62	100.00
Total	152	100.00	

- **Lead testing**

	Freq.	Percent	Cum.
no	128.55	84.57	84.57
yes	23.45	15.43	100.00
Total	152	100.00	

- |       | Freq.  | Percent | Cum.   |
|-------|--------|---------|--------|
| no    | 140.03 | 92.13   | 92.13  |
| yes   | 11.97  | 7.87    | 100.00 |
| Total | 152    | 100.00  |        |

- |       | Freq.  | Percent | Cum.   |
|-------|--------|---------|--------|
| no    | 141.18 | 92.88   | 92.88  |
| yes   | 10.82  | 7.12    | 100.00 |
| Total | 152    | 100.00  |        |

- |       | Freq.  | Percent | Cum.   |
|-------|--------|---------|--------|
| no    | 144.99 | 95.39   | 95.39  |
| yes   | 7.01   | 4.61    | 100.00 |
| Total | 152    | 100.00  |        |

24. What types of credentials or experience were required of your staff who performed diagnostic procedures in Program Year 2008? *Check all that apply.*

- |       | Freq.  | Percent | Cum.   |
|-------|--------|---------|--------|
| no    | 74.69  | 22.36   | 22.36  |
| yes   | 259.31 | 77.64   | 100.00 |
| Total | 334    | 100.00  |        |

- |       | Freq.  | Percent | Cum.   |
|-------|--------|---------|--------|
| no    | 116.01 | 34.73   | 34.73  |
| yes   | 217.99 | 65.27   | 100.00 |
| Total | 334    | 100.00  |        |

- |       | Freq.  | Percent | Cum.   |
|-------|--------|---------|--------|
| no    | 231.66 | 69.36   | 69.36  |
| yes   | 102.34 | 30.64   | 100.00 |
| Total | 334    | 100.00  |        |

- **Construction experience**

	Freq.	Percent	Cum.
no	201.75	60.40	60.40
yes	132.25	39.60	100.00
Total	334	100.00	

- **Other (please specify)**

	Freq.	Percent	Cum.
no	301.71	90.33	90.33
yes	32.29	9.67	100.00
Total	334	100.00	

25. Approximately how many hours did your agency spend on performing diagnostic procedures for a typical dwelling unit served by your agency in Program Year 2008? \_\_\_\_\_

observations:	321
missing values:	36
mean:	21.52
standard deviation:	197.83
min:	.25
10th percentile:	1
25th percentile:	2
median:	2
75th percentile:	3.5
90th percentile:	5
max:	3500

26. For Program Year 2008 please rate key aspects (cost, training needed, time needed and effectiveness) of the diagnostic procedures listed below.

Please use the following scale: 1 – very low; 2 – low; 3 – medium; 4 – high; 5 – very high.

*For example, if you view blower door testing as requiring a moderate amount of training, enter a rating of 3 in the Training Needed column. If you view blower door testing as highly effective, enter a rating of 4 in the Effectiveness column.*

	Cost			Training Needed			Time Needed			Effectiveness					
Pressure diagnostics:															
<b>Blower door (house air leakage rate)</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.			
	-----+-----														
	very low	43.25	17.03	17.03	very low	10.88	3.74	3.74	very low	15.76	5.77	5.77			
	low	63.73	25.09	42.12	low	22.53	7.74	11.48	low	58.73	21.51	27.29			
	medium	86.70	34.13	76.25	medium	117.90	40.52	52.00	medium	116.82	42.79	70.08			
	high	43.40	17.09	93.34	high	87.69	30.13	82.13	high	48.68	17.83	87.91			
very high	16.92	6.66	100.00	very high	51.99	17.87	100.00	very high	33.01	12.09	100.00	very high	170.02	56.86	100.00
	-----+-----														
	Total	254	100.00	Total	291	100.00	Total	273	100.00	Total	299	100.00			
<b>Zonal pressure measurements</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.			
	-----+-----														
	very low	49.54	24.90	24.90	very low	8.72	3.74	3.74	very low	15.57	7.38	7.38			
	low	53.24	26.76	51.65	low	21.01	9.02	12.76	low	39.50	18.72	26.10			
	medium	53.72	26.99	78.65	medium	68.79	29.52	42.28	medium	80.85	38.32	64.42			
	high	33.00	16.58	95.23	high	83.28	35.74	78.03	high	47.97	22.73	87.15			
very high	9.49	4.77	100.00	very high	51.20	21.97	100.00	very high	27.11	12.85	100.00	very high	80.64	35.68	100.00
	-----+-----														
	Total	199	100.00	Total	233	100.00	Total	211	100.00	Total	226	100.00			
<b>Room-to-room pressure measurements (distribution balancing)</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.			
	-----+-----														
	very low	48.75	26.07	26.07	very low	11.51	5.23	5.23	very low	21.89	11.06	11.06			
	low	56.15	30.02	56.09	low	38.21	17.37	22.60	low	39.17	19.78	30.84			
	medium	46.72	24.98	81.08	medium	72.52	32.97	55.56	medium	74.11	37.43	68.27			
	high	25.95	13.88	94.96	high	61.07	27.76	83.32	high	39.59	19.99	88.27			
very high	9.43	5.04	100.00	very high	36.69	16.68	100.00	very high	23.23	11.73	100.00	very high	46.17	21.78	100.00
	-----+-----														
	Total	187	100.00	Total	220	100.00	Total	198	100.00	Total	212	100.00			
<b>Duct pressure pan measurements</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.			
	-----+-----														
	very low	49.01	25.53	25.53	very low	12.47	5.64	5.64	very low	24.32	12.22	12.22			
	low	71.13	37.05	62.57	low	45.32	20.51	26.15	low	46.92	23.58	35.80			
	medium	46.70	24.32	86.89	medium	77.81	35.21	61.36	medium	67.52	33.93	69.73			
	high	21.53	11.21	98.10	high	52.00	23.53	84.88	high	44.21	22.22	91.94			
very high	3.64	1.90	100.00	very high	33.41	15.12	100.00	very high	16.03	8.06	100.00	very high	62.70	28.63	100.00
	-----+-----														
	Total	192	100.00	Total	221	100.00	Total	199	100.00	Total	219	100.00			
<b>Duct blower</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.			
-----+-----															

	Cost				Training Needed			Time Needed			Effectiveness					
<b>measurements (duct air leakage rate)</b>	very low	34.95	21.71	21.71	very low	17.38	9.39	9.39	very low	17.11	10.01	10.01	very low	19.31	10.44	10.44
	low	32.08	19.93	41.63	low	23.69	12.81	22.20	low	24.86	14.54	24.55	low	14.45	7.81	18.25
	medium	49.98	31.04	72.68	medium	48.33	26.13	48.33	medium	60.98	35.66	60.21	medium	36.61	19.79	38.04
	high	29.21	18.14	90.82	high	55.55	30.03	78.35	high	40.27	23.55	83.76	high	64.62	34.93	72.97
	very high	14.78	9.18	100.00	very high	40.05	21.65	100.00	very high	27.77	16.24	100.00	very high	50.01	27.03	100.00
	Total	161	100.00	Total	185	100.00	Total	171	100.00	Total	185	100.00				
<b>Space-heating system:</b>																
<b>Flue gas analysis (steady-state efficiency measurements)</b>		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.
	very low	41.40	17.54	17.54	very low	15.27	5.63	5.63	very low	15.28	6.11	6.11	very low	4.33	1.60	1.60
	low	60.99	25.84	43.39	low	22.45	8.28	13.92	low	66.68	26.67	32.78	low	5.82	2.15	3.75
	medium	86.62	36.70	80.09	medium	66.05	24.37	38.29	medium	101.59	40.64	73.42	medium	22.02	8.12	11.87
	high	34.60	14.66	94.75	high	110.61	40.81	79.11	high	45.58	18.23	91.65	high	109.73	40.49	52.36
very high	12.40	5.25	100.00	very high	56.62	20.89	100.00	very high	20.87	8.35	100.00	very high	129.10	47.64	100.00	
	Total	236	100.00	Total	271	100.00	Total	250	100.00	Total	271	100.00				
<b>Heat rise measurements</b>		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.
	very low	62.73	32.51	32.51	very low	22.13	10.01	10.01	very low	27.62	13.54	13.54	very low	5.83	2.65	2.65
	low	54.22	28.09	60.60	low	50.16	22.70	32.71	low	70.32	34.47	48.01	low	18.62	8.46	11.11
	medium	51.61	26.74	87.34	medium	65.62	29.69	62.40	medium	69.80	34.21	82.22	medium	45.59	20.72	31.84
	high	14.57	7.55	94.89	high	48.55	21.97	84.37	high	18.64	9.14	91.36	high	92.59	42.08	73.92
very high	9.87	5.11	100.00	very high	34.54	15.63	100.00	very high	17.62	8.64	100.00	very high	57.37	26.08	100.00	
	Total	193	100.00	Total	221	100.00	Total	204	100.00	Total	220	100.00				
<b>CO measurements in flues</b>		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.
	very low	58.71	24.36	24.36	very low	16.38	5.98	5.98	very low	37.17	14.46	14.46	very low	1.93	0.69	0.69
	low	76.01	31.54	55.90	low	49.88	18.21	24.18	low	77.21	30.04	44.51	low	1.50	0.53	1.22
	medium	71.97	29.86	85.76	medium	84.26	30.75	54.94	medium	83.98	32.68	77.18	medium	41.07	14.62	15.84
	high	16.94	7.03	92.79	high	70.02	25.55	80.49	high	36.35	14.14	91.33	high	83.83	29.83	45.67
very high	17.38	7.21	100.00	very high	53.46	19.51	100.00	very high	22.29	8.67	100.00	very high	152.67	54.33	100.00	
	Total	241	100.00	Total	274	100.00	Total	257	100.00	Total	281	100.00				

<b>Draft/spillage (normal operation)</b>	Freq. Percent Cum.			Freq. Percent Cum.			Freq. Percent Cum.			Freq. Percent Cum.						
	very low	62.83	27.92	27.92	very low	15.64	6.08	6.08	very low	36.38	15.22	15.22	very low	1.52	0.59	0.59
	low	63.90	28.40	56.32	low	33.85	13.17	19.25	low	73.22	30.64	45.86	low	3.54	1.37	1.96
	medium	62.83	27.93	84.25	medium	89.64	34.88	54.13	medium	77.20	32.30	78.16	medium	27.10	10.49	12.45
	high	21.01	9.34	93.59	high	71.35	27.76	81.90	high	32.94	13.78	91.94	high	88.32	34.23	46.69
very high	14.43	6.41	100.00	very high	46.52	18.10	100.00	very high	19.25	8.06	100.00	very high	137.55	53.31	100.00	
	Total	225	100.00	Total	257	100.00	Total	239	100.00	Total	258	100.00	Total	258	100.00	Total
<b>Air-conditioning system:</b>																
<b>Refrigerant charge (e.g., superheat, subcooling)</b>	Freq. Percent Cum.			Freq. Percent Cum.			Freq. Percent Cum.			Freq. Percent Cum.						
	very low	21.04	28.83	28.83	very low	23.26	25.28	25.28	very low	18.73	24.32	24.32	very low	22.86	25.98	25.98
	low	10.67	14.61	43.44	low	4.33	4.71	30.00	low	12.58	16.33	40.66	low	4.63	5.26	31.24
	medium	21.93	30.04	73.47	medium	16.92	18.39	48.38	medium	19.65	25.52	66.18	medium	21.58	24.53	55.77
	high	14.83	20.31	93.78	high	23.63	25.69	74.07	high	20.46	26.57	92.74	high	20.51	23.31	79.07
very high	4.54	6.22	100.00	very high	23.85	25.93	100.00	very high	5.59	7.26	100.00	very high	18.41	20.93	100.00	
	Total	73	100.00	Total	92	100.00	Total	77	100.00	Total	88	100.00	Total	88	100.00	Total
<b>HVAC components and cross-cutting diagnostics:</b>																
<b>Air handler flow rate</b>	Freq. Percent Cum.			Freq. Percent Cum.			Freq. Percent Cum.			Freq. Percent Cum.						
	very low	26.87	24.66	24.66	very low	17.88	13.76	13.76	very low	12.56	11.02	11.02	very low	12.31	9.84	9.84
	low	24.07	22.08	46.74	low	12.86	9.89	23.65	low	24.43	21.43	32.45	low	8.84	7.08	16.92
	medium	37.31	34.23	80.97	medium	35.13	27.03	50.67	medium	37.83	33.19	65.63	medium	36.43	29.14	46.06
	high	13.08	12.00	92.96	high	37.37	28.75	79.42	high	33.65	29.52	95.15	high	42.47	33.98	80.04
very high	7.67	7.04	100.00	very high	26.76	20.58	100.00	very high	5.52	4.85	100.00	very high	24.95	19.96	100.00	
	Total	109	100.00	Total	130	100.00	Total	114	100.00	Total	125	100.00	Total	125	100.00	Total
<b>Thermostat anticipator current</b>	Freq. Percent Cum.			Freq. Percent Cum.			Freq. Percent Cum.			Freq. Percent Cum.						
	very low	37.53	32.08	32.08	very low	24.79	17.83	17.83	very low	19.83	16.53	16.53	very low	14.02	10.38	10.38
	low	41.82	35.74	67.82	low	17.29	12.44	30.27	low	40.91	34.10	50.62	low	10.89	8.07	18.45
	medium	19.39	16.57	84.39	medium	37.21	26.77	57.04	medium	29.74	24.78	75.40	medium	30.56	22.64	41.09
	high	13.39	11.45	95.84	high	41.68	29.99	87.03	high	25.91	21.59	97.00	high	53.89	39.92	81.01
very high	4.87	4.16	100.00	very high	18.03	12.97	100.00	very high	3.60	3.00	100.00	very high	25.64	18.99	100.00	
	Total	117	100.00	Total	139	100.00	Total	120	100.00	Total	135	100.00	Total	135	100.00	Total
<b>Worst case draft/spillage (CAZ)</b>	Freq. Percent Cum.			Freq. Percent Cum.			Freq. Percent Cum.			Freq. Percent Cum.						
	very low	36.45	21.32	21.32	very low	13.07	6.57	6.57	very low	18.22	10.18	10.18	very low	6.68	3.45	3.45
	low	46.86	27.41	48.72	low	19.62	9.86	16.43	low	29.30	16.37	26.55	low	5.01	2.58	6.03
	medium	51.21	29.95	78.67	medium	50.70	25.48	41.90	medium	66.39	37.09	63.64	medium	18.17	9.36	15.39
	high	21.14	12.36	91.03	high	66.52	33.43	75.33	high	38.26	21.37	85.01	high	51.49	26.54	41.93
very high	15.34	8.97	100.00	very high	49.09	24.67	100.00	very high	26.83	14.99	100.00	very high	112.65	58.07	100.00	
	Total	171	100.00	Total	199	100.00	Total	179	100.00	Total	194	100.00	Total	194	100.00	Total
<b>Hot-water (water-</b>																

heating) system:																
<b>Flue gas analysis (steady-state efficiency measurements)</b>		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.
	very low	47.59	23.10	23.10	very low	10.57	4.46	4.46	very low	20.90	9.55	9.55	very low	3.86	1.64	1.64
	low	56.08	27.22	50.32	low	37.65	15.89	20.34	low	60.67	27.70	37.25	low	15.47	6.55	8.19
	medium	64.22	31.18	81.50	medium	74.68	31.51	51.86	medium	89.62	40.92	78.17	medium	26.74	11.33	19.52
	high	21.99	10.68	92.18	high	59.42	25.07	76.93	high	28.15	12.85	91.03	high	70.45	29.85	49.37
	very high	16.11	7.82	100.00	very high	54.68	23.07	100.00	very high	19.65	8.97	100.00	very high	119.48	50.63	100.00
	Total	206	100.00		Total	237	100.00		Total	219	100.00		Total	236	100.00	
<b>CO measurements in flues</b>		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.
	very low	60.12	25.05	25.05	very low	15.78	5.85	5.85	very low	25.49	10.08	10.08	very low	3.35	1.22	1.22
	low	73.86	30.77	55.82	low	43.55	16.13	21.97	low	79.73	31.51	41.59	low	4.10	1.50	2.72
	medium	74.65	31.10	86.93	medium	91.15	33.76	55.73	medium	92.06	36.39	77.98	medium	45.47	16.60	19.31
	high	14.26	5.94	92.87	high	67.81	25.11	80.85	high	36.95	14.60	92.58	high	79.60	29.05	48.37
	very high	17.12	7.13	100.00	very high	51.72	19.15	100.00	very high	18.77	7.42	100.00	very high	141.48	51.63	100.00
	Total	240	100.00		Total	270	100.00		Total	253	100.00		Total	274	100.00	
<b>Draft/spillage (normal operation)</b>		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.
	very low	62.49	27.78	27.78	very low	16.54	6.49	6.49	very low	34.35	14.37	14.37	very low	4.79	1.87	1.87
	low	62.29	27.68	55.46	low	44.26	17.35	23.84	low	72.41	30.30	44.67	low	7.17	2.80	4.67
	medium	68.43	30.41	85.87	medium	80.52	31.58	55.42	medium	86.29	36.10	80.77	medium	27.27	10.65	15.32
	high	11.32	5.03	90.90	high	62.59	24.55	79.97	high	22.87	9.57	90.34	high	73.95	28.89	44.21
	very high	20.47	9.10	100.00	very high	51.09	20.03	100.00	very high	23.09	9.66	100.00	very high	142.82	55.79	100.00
	Total	225	100.00		Total	255	100.00		Total	239	100.00		Total	256	100.00	
<b>Water flow rates (showerheads and faucets)</b>		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.
	very low	60.54	44.84	44.84	very low	48.09	30.44	30.44	very low	42.79	29.71	29.71	very low	20.69	13.09	13.09
	low	31.48	23.32	68.16	low	50.23	31.79	62.23	low	46.05	31.98	61.69	low	19.49	12.34	25.43
	medium	32.34	23.96	92.12	medium	26.40	16.71	78.94	medium	37.43	26.00	87.69	medium	42.00	26.58	52.01
	high	1.74	1.29	93.41	high	16.38	10.37	89.31	high	3.64	2.52	90.22	high	46.75	29.59	81.60
	very high	8.90	6.59	100.00	very high	16.90	10.69	100.00	very high	14.09	9.78	100.00	very high	29.08	18.40	100.00
	Total	135	100.00		Total	158	100.00		Total	144	100.00		Total	158	100.00	
<b>Other CO measurements:</b>																
<b>CO measurements in equipment rooms</b>		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.
	very low	48.37	24.93	24.93	very low	18.12	8.27	8.27	very low	29.86	14.78	14.78	very low	5.02	2.31	2.31
	low	66.84	34.45	59.39	low	54.05	24.68	32.95	low	74.53	36.89	51.68	low	8.81	4.06	6.37
	medium	57.94	29.87	89.25	medium	71.62	32.70	65.65	medium	57.83	28.63	80.30	medium	28.90	13.32	19.69
	high	11.86	6.11	95.37	high	45.50	20.78	86.43	high	30.00	14.85	95.16	high	70.57	32.52	52.21
	very high	8.99	4.63	100.00	very high	29.73	13.57	100.00	very high	9.79	4.84	100.00	very high	103.70	47.79	100.00
	Total	194	100.00		Total	219	100.00		Total	202	100.00		Total	217	100.00	

<b>Cooking stove</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.				
	very low	60.97	28.62	28.62	very low	16.48	6.70	6.70	very low	37.96	16.58	16.58	very low	8.67	3.52	3.52
	low	68.04	31.94	60.57	low	69.86	28.40	35.10	low	77.09	33.66	50.24	low	11.76	4.78	8.30
medium	54.90	25.78	86.34	medium	79.93	32.49	67.59	medium	65.18	28.46	78.70	medium	36.89	15.00	23.30	
high	16.89	7.93	94.27	high	46.82	19.03	86.62	high	32.76	14.30	93.01	high	82.47	33.53	56.83	
very high	12.21	5.73	100.00	very high	32.91	13.38	100.00	very high	16.02	6.99	100.00	very high	106.21	43.17	100.00	
Total	213	100.00		Total	246	100.00		Total	229	100.00		Total	246	100.00		
<b>CO measurements in living areas</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.				
	very low	58.38	29.94	29.94	very low	23.58	10.48	10.48	very low	48.19	23.51	23.51	very low	5.03	2.24	2.24
	low	66.89	34.30	64.24	low	56.03	24.90	35.38	low	59.38	28.97	52.47	low	5.78	2.57	4.80
medium	40.24	20.64	84.88	medium	72.93	32.41	67.80	medium	55.17	26.91	79.38	medium	29.15	12.95	17.76	
high	16.07	8.24	93.12	high	41.47	18.43	86.23	high	28.37	13.84	93.22	high	84.35	37.49	55.24	
very high	13.42	6.88	100.00	very high	30.98	13.77	100.00	very high	13.90	6.78	100.00	very high	100.70	44.76	100.00	
Total	195	100.00		Total	225	100.00		Total	205	100.00		Total	225	100.00		
<b>Other diagnostics and inspections:</b>																
<b>Refrigerator energy use</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.				
	very low	51.71	28.26	28.26	very low	49.23	23.55	23.55	very low	48.51	24.88	24.88	very low	9.80	4.67	4.67
	low	66.57	36.38	64.63	low	54.69	26.17	49.72	low	41.43	21.25	46.13	low	13.48	6.42	11.09
medium	41.25	22.54	87.17	medium	68.40	32.73	82.45	medium	53.26	27.31	73.44	medium	45.13	21.49	32.58	
high	20.58	11.25	98.42	high	24.66	11.80	94.25	high	35.13	18.02	91.45	high	79.94	38.07	70.65	
very high	2.90	1.58	100.00	very high	12.02	5.75	100.00	very high	16.66	8.55	100.00	very high	61.63	29.35	100.00	
Total	183	100.00		Total	209	100.00		Total	195	100.00		Total	210	100.00		
<b>Exhaust fan air flow rate measurement</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.				
	very low	31.25	24.23	24.23	very low	17.84	12.22	12.22	very low	21.84	16.42	16.42	very low	10.96	7.66	7.66
	low	39.43	30.56	54.79	low	31.59	21.64	33.85	low	36.23	27.24	43.66	low	14.89	10.41	18.07
medium	35.34	27.39	82.19	medium	55.75	38.18	72.04	medium	49.15	36.96	80.62	medium	48.77	34.10	52.18	
high	17.96	13.92	96.11	high	27.60	18.91	90.94	high	14.98	11.26	91.88	high	39.74	27.79	79.97	
very high	5.03	3.89	100.00	very high	13.22	9.06	100.00	very high	10.80	8.12	100.00	very high	28.64	20.03	100.00	
Total	129	100.00		Total	146	100.00		Total	133	100.00		Total	143	100.00		
<b>Infrared scanning (camera)</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.				
	very low	23.21	12.97	12.97	very low	12.83	6.11	6.11	very low	16.39	8.49	8.49	very low	8.31	3.94	3.94
	low	15.75	8.80	21.76	low	14.62	6.96	13.07	low	19.90	10.31	18.81	low	4.60	2.18	6.12
medium	38.98	21.77	43.54	medium	62.97	29.98	43.05	medium	75.28	39.00	57.81	medium	29.58	14.02	20.14	
high	58.28	32.56	76.09	high	67.33	32.06	75.12	high	50.61	26.22	84.03	high	77.49	36.73	56.87	
very high	42.79	23.91	100.00	very high	52.25	24.88	100.00	very high	30.82	15.97	100.00	very high	91.01	43.13	100.00	
Total	179	100.00		Total	210	100.00		Total	193	100.00		Total	211	100.00		



<b>Radon testing</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	
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very low	17.23	28.72	28.72	very low	23.53	30.96	18.02	27.72	27.72	very low	19.62	27.63	27.63
low	11.99	19.98	48.70	low	8.92	11.74	7.33	11.28	39.00	low	17.78	25.04	52.67
medium	13.48	22.47	71.17	medium	14.51	19.10	15.09	23.21	62.21	medium	13.86	19.52	72.18
high	10.30	17.17	88.35	high	15.05	19.80	13.81	21.25	83.46	high	9.15	12.89	85.07
very high	6.99	11.65	100.00	very high	13.99	18.40	10.75	16.54	100.00	very high	10.60	14.93	100.00
Total	60	100.00		Total	76	100.00	Total	65	100.00	Total	71	100.00	
<b>Lead testing</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	
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very low	16.18	16.35	16.35	very low	16.72	14.05	9.15	8.55	8.55	very low	10.33	8.99	8.99
low	14.45	14.60	30.94	low	10.40	8.74	11.60	10.84	19.39	low	13.48	11.72	20.71
medium	24.93	25.19	56.13	medium	25.77	21.66	36.33	33.95	53.34	medium	17.90	15.56	36.27
high	14.01	14.15	70.28	high	26.96	22.66	20.11	18.79	72.13	high	24.29	21.12	57.39
very high	29.42	29.72	100.00	very high	39.15	32.90	29.82	27.87	100.00	very high	49.00	42.61	100.00
Total	99	100.00		Total	119	100.00	Total	107	100.00	Total	115	100.00	
<b>Mold and mildew testing</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	
	-----			-----			-----			-----			
very low	16.90	21.95	21.95	very low	21.52	22.42	13.77	16.79	16.79	very low	13.79	15.15	15.15
low	19.17	24.90	46.85	low	10.03	10.45	15.50	18.90	35.69	low	15.20	16.70	31.85
medium	19.98	25.95	72.80	medium	26.00	27.09	27.12	33.08	68.77	medium	22.96	25.23	57.08
high	5.87	7.63	80.43	high	10.13	10.55	4.43	5.41	74.18	high	20.18	22.17	79.26
very high	15.07	19.57	100.00	very high	28.31	29.49	21.18	25.82	100.00	very high	18.88	20.74	100.00
Total	77	100.00		Total	96	100.00	Total	82	100.00	Total	91	100.00	
<b>Moisture content testing</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	
	-----			-----			-----			-----			
very low	16.24	18.89	18.89	very low	20.14	19.55	21.41	23.79	23.79	very low	13.97	14.11	14.11
low	24.88	28.93	47.82	low	23.27	22.60	17.23	19.14	42.93	low	16.57	16.74	30.84
medium	25.98	30.22	78.03	medium	21.88	21.24	24.60	27.34	70.27	medium	18.39	18.58	49.42
high	12.66	14.72	92.75	high	15.59	15.14	11.48	12.76	83.03	high	25.91	26.17	75.60
very high	6.23	7.25	100.00	very high	22.12	21.47	15.28	16.97	100.00	very high	24.16	24.40	100.00
Total	86	100.00		Total	103	100.00	Total	90	100.00	Total	99	100.00	
<b>Other (please specify)</b>	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	
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very low	1.31	16.43	16.43	very low	1.50	18.76	.75	9.38	9.38	very low	1.64	18.26	18.26
low	1.64	20.53	36.96	medium	1.93	24.17	.80	9.96	19.34	low	.76	8.46	26.72
medium	.64	7.97	44.92	high	.75	9.38	3.43	42.93	62.27	high	2.77	30.79	57.51
high	1.84	23.03	67.96	very high	3.82	47.69	3.02	37.73	100.00	very high	3.82	42.49	100.00
very high	2.56	32.04	100.00	Total	8	100.00	Total	8	100.00	Total	9	100.00	
Total	8	100.00											

**SECTION D: CLIENT EDUCATION**

1. Which of the following client education approaches did your agency use in Program Year 2008?  
*Check all that apply.*

**At time of client intake**

**a. Provide literature at time of client intake**

	Freq.	Percent	Cum.
no	139.74	39.70	39.70
yes	212.264	60.30	100.00
Total	352	100.00	

**b. Provide video, CD or DVD at time of client intake**

	Freq.	Percent	Cum.
no	334.264	94.96	94.96
yes	17.74	5.04	100.00
Total	352	100.00	

**c. Provide in-person instruction at time of client intake**

	Freq.	Percent	Cum.
no	205.67	58.43	58.43
yes	146.33	41.57	100.00
Total	352	100.00	

**d. Provide hardware kit at time of client intake**

	Freq.	Percent	Cum.
no	329.50	93.61	93.61
yes	22.50	6.39	100.00
Total	352	100.00	

**At time of audit**

**e. Provide literature at time of audit**

	Freq.	Percent	Cum.
no	88.91	25.26	25.26
yes	263.09	74.74	100.00
Total	352	100.00	

**f. Provide video, CD or DVD at time of audit**

	Freq.	Percent	Cum.
no	343.25	97.51	97.51
yes	8.75	2.49	100.00
Total	352	100.00	

**g. Provide in-person instruction at time of audit**

	Freq.	Percent	Cum.
no	61.56	17.49	17.49
yes	290.446	82.51	100.00
Total	352	100.00	

**h. Provide hardware kit at time of audit**

	Freq.	Percent	Cum.
no	331.79	94.26	94.26
yes	20.21	5.74	100.00
Total	352	100.00	

**At time of weatherization**

**i. Provide literature at time of weatherization**

	Freq.	Percent	Cum.
no	280.87	79.79	79.79
yes	71.13	20.21	100.00
Total	352	100.00	

**j. Provide video, CD or DVD at time of weatherization**

	Freq.	Percent	Cum.
no	347.30	98.67	98.67
yes	4.70	1.33	100.00
Total	352	100.00	

**k. Provide in-person instruction at time of weatherization**

	Freq.	Percent	Cum.
no	117.28	33.32	33.32
yes	234.72	66.68	100.00
Total	352	100.00	

**l. Provide hardware kit at time of weatherization**

	Freq.	Percent	Cum.
no	333.85	94.84	94.84
yes	18.15	5.16	100.00
Total	352	100.00	

**At separate client education visit**

**m. Provide literature at separate client education visit**

	Freq.	Percent	Cum.
no	285.73	81.17	81.17
yes	66.27	18.83	100.00
Total	352	100.00	

**n. Provide video, CD or DVD at separate client education visit**

	Freq.	Percent	Cum.
no	344.55	97.88	97.88
yes	7.45	2.12	100.00
Total	352	100.00	

**o. Provide in-person instruction at separate client education visit**

	Freq.	Percent	Cum.
no	274.02	77.85	77.85
yes	77.98	22.15	100.00
Total	352	100.00	

**p. Provide hardware kit at separate client education visit**

	Freq.	Percent	Cum.
no	337.56	95.90	95.90
yes	14.44	4.10	100.00
Total	352	100.00	

**At time of inspection**

**q. Provide literature at time of inspection**

	Freq.	Percent	Cum.
no	243.71	69.24	69.24
yes	108.29	30.76	100.00
Total	352	100.00	

**r. Provide video, CD or DVD at time of inspection**

	Freq.	Percent	Cum.
no	348.55	99.02	99.02
yes	3.45	0.98	100.00
Total	352	100.00	

**s. Provide in-person instruction at time of inspection**

	Freq.	Percent	Cum.
no	89.32	25.38	25.38
yes	262.68	74.62	100.00
Total	352	100.00	

**t. Provide hardware kit at time of inspection**

	Freq.	Percent	Cum.
no	345.24	98.08	98.08
yes	6.76	1.92	100.00
Total	352	100.00	

**Other**

**u. Group training class**

	Freq.	Percent	Cum.
no	304.44	86.49	86.49
yes	47.56	13.51	100.00
Total	352	100.00	

**v. Other (please specify) \_\_\_\_\_**

	Freq.	Percent	Cum.
no	338.46	96.15	96.15
yes	13.54	3.85	100.00
Total	352	100.00	

2. Which of the following broad topics did your agency cover with clients in Program Year 2008?  
*Check all that apply.*

**a. Thermostat management**

	Freq.	Percent	Cum.
no	40.53	12.17	12.17
yes	292.47	87.83	100.00
Total	333	100.00	

**b. HVAC system operation/maintenance**

	Freq.	Percent	Cum.
no	66.38	19.93	19.93
yes	266.62	80.07	100.00
Total	333	100.00	

**c. Distribution system adjustment and zoning**

	Freq.	Percent	Cum.
no	230.55	69.24	69.24
yes	102.45	30.76	100.00
Total	333	100.00	

**d. Cooling load reduction**

	Freq.	Percent	Cum.
no	247.38	74.29	74.29
yes	85.62	25.71	100.00
Total	333	100.00	

**e. Windows**

	Freq.	Percent	Cum.
no	84.97	25.52	25.52
yes	248.03	74.48	100.00
Total	333	100.00	

**f. Insulation**

	Freq.	Percent	Cum.
no	45.88	13.78	13.78
yes	287.12	86.22	100.00
Total	333	100.00	

**g. Ventilation**

	Freq.	Percent	Cum.
no	95.56	28.70	28.70
yes	237.44	71.30	100.00
Total	333	100.00	

**h. Mold**

	Freq.	Percent	Cum.
no	111.59	33.51	33.51
yes	221.41	66.49	100.00
Total	333	100.00	

**i. Refrigerator**

	Freq.	Percent	Cum.
no	115.00	34.54	34.54
yes	218.00	65.46	100.00
Total	333	100.00	

**j. Hot water use**

	Freq.	Percent	Cum.
no	88.95	26.71	26.71
yes	244.05	73.29	100.00
Total	333	100.00	

**k. Water heating system operation/maintenance**

	Freq.	Percent	Cum.
no	137.18	41.19	41.19
yes	195.82	58.81	100.00
Total	333	100.00	

**l. Lighting**

	Freq.	Percent	Cum.
no	54.60	16.40	16.40
yes	278.40	83.60	100.00
Total	333	100.00	



**m. Laundry**

	Freq.	Percent	Cum.
no	187.69	56.36	56.36
yes	145.31	43.64	100.00
Total	333	100.00	

**n. Kitchen appliance operation**

	Freq.	Percent	Cum.
no	194.41	58.38	58.38
yes	138.60	41.62	100.00
Total	333	100.00	

**o. Other baseload electric use**

	Freq.	Percent	Cum.
no	177.79	53.39	53.39
yes	155.21	46.61	100.00
Total	333	100.00	

**p. Energy Star**

	Freq.	Percent	Cum.
no	199.86	60.02	60.02
yes	133.14	39.98	100.00
Total	333	100.00	

**q. Safety monitors (e.g., CO monitors, smoke alarm)**

	Freq.	Percent	Cum.
no	107.05	32.15	32.15
yes	225.95	67.85	100.00
Total	333	100.00	

**r. Energy bills**

	Freq.	Percent	Cum.
no	148.56	44.61	44.61
yes	184.44	55.39	100.00
Total	333	100.00	

**s. Other (please specify) \_\_\_\_\_**

	Freq.	Percent	Cum.
no	321.84	96.65	96.65
yes	11.16	3.35	100.00
Total	333	100.00	

3. Which of the following people provided client education for your agency in Program Year 2008?  
*Check all that apply.*

**a. In-house manager**

	Freq.	Percent	Cum.
no	236.42	70.78	70.78
yes	97.58	29.22	100.00
Total	334	100.00	

**b. In-house education specialist**

	Freq.	Percent	Cum.
no	293.88	87.99	87.99
yes	40.12	12.01	100.00
Total	334	100.00	

**c. Contractor education specialist**

	Freq.	Percent	Cum.
no	313.57	93.88	93.88
yes	20.43	6.12	100.00
Total	334	100.00	

**d. Intake staff person**

	Freq.	Percent	Cum.
no	155.24	46.48	46.48
yes	178.76	53.52	100.00
Total	334	100.00	

**e. Auditor**

	Freq.	Percent	Cum.
no	47.87	14.33	14.33
yes	286.13	85.67	100.00
Total	334	100.00	

**f. In-house weatherization crew chief**

	Freq.	Percent	Cum.
no	199.37	59.69	59.69
yes	134.63	40.31	100.00
Total	334	100.00	

**g. Contractor weatherization crew chief**

	Freq.	Percent	Cum.
no	267.32	80.03	80.03
yes	66.68	19.97	100.00
Total	334	100.00	

**h. In-house weatherization crew member**

	Freq.	Percent	Cum.
no	247.63	74.14	74.14
yes	86.37	25.86	100.00
Total	334	100.00	

i. **Contractor weatherization crew member**

	Freq.	Percent	Cum.
no	289.58	86.70	86.70
yes	44.42	13.30	100.00
Total	334	100.00	

j. **Inspector**

	Freq.	Percent	Cum.
no	126.54	37.89	37.89
yes	207.46	62.11	100.00
Total	334	100.00	

k. **Other (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
no	319.68	95.71	95.71
yes	14.32	4.29	100.00
Total	334	100.00	

4. If in-person instruction was provided by your agency in Program Year 2008, who was your preferred target? *Check best answer.*

	Freq.	Percent	Cum.
Applicant	308.45	94.33	94.33
Other adult member of household	10.51	3.21	97.54
Child living in household	.92	0.28	97.82
Adult not living in household	.46	0.14	97.96
Other	6.66	2.04	100.00
Total	327	100.00	

5. If in-person instruction was provided by your agency in Program Year 2008, was it typically provided to a single person or multiple persons? *Check best answer.*

	Freq.	Percent	Cum.
single person	256.41	78.17	78.17
multiple persons	71.59	21.83	100.00
Total	328	100.00	

6. What types of credentials or experience were required of those who provided client education for your agency in Program Year 2008? *Check all that apply.*

- **College degree**

	Freq.	Percent	Cum.
no	306.20	94.51	94.51
yes	17.80	5.49	100.00
Total	324	100.00	

- **Technical certification**

	Freq.	Percent	Cum.
no	158.17	48.82	48.82
yes	165.83	51.18	100.00
Total	324	100.00	

- **Extensive experience in performing weatherization work**

	Freq.	Percent	Cum.
no	92.88	28.67	28.67
yes	231.12	71.33	100.00
Total	324	100.00	

- **Extensive experience in supervising weatherization work**

	Freq.	Percent	Cum.
no	206.92	63.86	63.86
yes	117.08	36.14	100.00
Total	324	100.00	

- **Educational background**

	Freq.	Percent	Cum.
no	265.42	81.92	81.92
yes	58.58	18.08	100.00
Total	324	100.00	

- **Other (please specify)** \_\_\_\_\_

	Freq.	Percent	Cum.
no	289.04	89.21	89.21
yes	34.96	10.79	100.00
Total	324	100.00	

7. Which of the client education approaches listed below were initiated by your agency in Program Year 2008 and the two years prior to Program Year 2008? *Check all that apply.*

**At time of client intake**

**a. Provide literature at time of client intake**

	Freq.	Percent	Cum.
unchecked	120.71	46.07	46.07
checked	141.29	53.93	100.00
Total	262	100.00	

**b. Provide video, CD or DVD at time of client intake**

	Freq.	Percent	Cum.
unchecked	247.31	94.39	94.39
checked	14.69	5.61	100.00
Total	262	100.00	

**c. Provide in-person instruction at time of client intake**

	Freq.	Percent	Cum.
unchecked	157.27	60.03	60.03
checked	104.73	39.97	100.00
Total	262	100.00	

**d. Provide hardware kit at time of client intake**

	Freq.	Percent	Cum.
unchecked	250.61	95.65	95.65
checked	11.39	4.35	100.00
Total	262	100.00	

**At time of audit**

**e. Provide literature at time of audit**

	Freq.	Percent	Cum.
unchecked	79.18	30.22	30.22
checked	182.82	69.78	100.00
Total	262	100.00	

**f. Provide video, CD or DVD at time of audit**

	Freq.	Percent	Cum.
unchecked	252.86	96.51	96.51
checked	9.14	3.49	100.00
Total	262	100.00	

**g. Provide in-person instruction at time of audit**

	Freq.	Percent	Cum.
unchecked	62.62	23.90	23.90
checked	199.38	76.10	100.00
Total	262	100.00	

**h. Provide hardware kit at time of audit**

	Freq.	Percent	Cum.
unchecked	240.64	91.85	91.85
checked	21.36	8.15	100.00
Total	262	100.00	

**At time of weatherization**

**i. Provide literature at time of weatherization**

	Freq.	Percent	Cum.
unchecked	195.00	74.43	74.43
checked	67.00	25.57	100.00
Total	262	100.00	

**j. Provide video, CD or DVD at time of weatherization**

	Freq.	Percent	Cum.
unchecked	260.98	99.61	99.61
checked	1.02	0.39	100.00
Total	262	100.00	

**k. Provide in-person instruction at time of weatherization**

	Freq.	Percent	Cum.
unchecked	94.05	35.90	35.90
checked	167.95	64.10	100.00
Total	262	100.00	

**l. Provide hardware kit at time of weatherization**

	Freq.	Percent	Cum.
unchecked	246.95	94.26	94.26
checked	15.05	5.74	100.00
Total	262	100.00	

**At time of separate client education visit**

**m. Provide literature at separate client education visit**

	Freq.	Percent	Cum.
unchecked	203.16	77.54	77.54
checked	58.84	22.46	100.00
Total	262	100.00	

**n. Provide video, CD or DVD at separate client education visit**

	Freq.	Percent	Cum.
unchecked	255.59	97.55	97.55
checked	6.41	2.45	100.00
Total	262	100.00	



**o. Provide in-person instruction at separate client education visit**

	Freq.	Percent	Cum.
unchecked	196.53	75.01	75.01
checked	65.47	24.99	100.00
Total	262	100.00	

**p. Provide hardware kit at separate client education visit**

	Freq.	Percent	Cum.
unchecked	249.13	95.09	95.09
checked	12.87	4.91	100.00
Total	262	100.00	

**At time of inspection**

**q. Provide literature at time of inspection**

	Freq.	Percent	Cum.
unchecked	168.31	64.24	64.24
checked	93.69	35.76	100.00
Total	262	100.00	

**r. Provide video, CD or DVD at time of inspection**

	Freq.	Percent	Cum.
unchecked	259.65	99.10	99.10
checked	2.35	0.90	100.00
Total	262	100.00	

**s. Provide in-person instruction at time of inspection**

	Freq.	Percent	Cum.
unchecked	65.79	25.11	25.11
checked	196.21	74.89	100.00
Total	262	100.00	

**t. Provide hardware kit at time of inspection**

	Freq.	Percent	Cum.
unchecked	254.24	97.04	97.04
checked	7.76	2.96	100.00
Total	262	100.00	

**Other**

**u. Group training class**

	Freq.	Percent	Cum.
unchecked	230.31	87.91	87.91
checked	31.69	12.09	100.00
Total	262	100.00	

**v. Other (please specify) \_\_\_\_\_**

	Freq.	Percent	Cum.
unchecked	257.80	98.40	98.40
checked	4.20	1.60	100.00
Total	262	100.00	

8. For Program Year 2008 please rate key aspects (cost, training needed, time needed and effectiveness) of the diagnostic procedures listed below.

Please use the following scale: 1 – very low; 2 – low; 3 – medium; 4 – high; 5 – very high.

*For example, if you view providing literature at the time of client intake as low-cost, enter a rating of 2 in the Cost column. If you view providing literature at the time of client intake as having medium effectiveness, enter a rating of 3 in the Effectiveness column.*

	Cost			Training Needed			Time Needed			Effectiveness						
	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.				
<b>Provide literature at time of client intake</b>	very low	71.66	34.45	34.45	very low	76.74	36.54	36.54	very low	66.04	32.22	32.22	very low	18.43	8.05	8.05
	low	106.31	51.11	85.56	low	61.59	29.33	65.87	low	76.71	37.42	69.64	low	42.89	18.73	26.78
	medium	15.84	7.62	93.18	medium	41.38	19.70	85.57	medium	40.95	19.97	89.61	medium	68.80	30.05	56.82
	high	9.80	4.71	97.90	high	24.24	11.54	97.12	high	16.46	8.03	97.64	high	67.36	29.42	86.24
	very high	4.38	2.10	100.00	very high	6.05	2.88	100.00	very high	4.84	2.36	100.00	very high	31.51	13.76	100.00
	Total	208	100.00		Total	210	100.00		Total	205	100.00		Total	229	100.00	
<b>Provide video, CD or DVD at time of client intake</b>	very low	16.98	22.64	22.64	very low	38.05	49.41	49.41	very low	26.15	35.82	35.82	very low	31.15	37.08	37.08
	low	21.01	28.01	50.66	low	13.04	16.93	66.34	low	20.12	27.57	63.38	low	13.17	15.68	52.76
	medium	14.34	19.12	69.78	medium	14.34	18.63	84.97	medium	13.76	18.85	82.23	medium	15.94	18.98	71.74
	high	9.22	12.29	82.07	high	8.48	11.02	95.99	high	9.11	12.49	94.72	high	12.01	14.29	86.04
	very high	13.45	17.93	100.00	very high	3.09	4.01	100.00	very high	3.86	5.28	100.00	very high	11.73	13.96	100.00
	Total	75	100.00		Total	77	100.00		Total	73	100.00		Total	84	100.00	
<b>Provide in-person instruction at time of client intake</b>	very low	49.81	28.46	28.46	very low	32.34	17.87	17.87	very low	19.53	11.10	11.10	very low	18.09	9.28	9.28
	low	69.43	39.68	68.14	low	34.45	19.03	36.90	low	51.07	29.02	40.11	low	25.85	13.26	22.53
	medium	31.84	18.19	86.33	medium	57.79	31.93	68.83	medium	70.57	40.10	80.21	medium	57.15	29.31	51.84
	high	16.78	9.59	95.92	high	49.31	27.24	96.07	high	30.10	17.10	97.31	high	61.57	31.57	83.41
	very high	7.14	4.08	100.00	very high	7.11	3.93	100.00	very high	4.73	2.69	100.00	very high	32.34	16.59	100.00
	Total	175	100.00		Total	181	100.00		Total	176	100.00		Total	195	100.00	
<b>Provide hardware kit at time of client intake</b>	very low	24.18	31.00	31.00	very low	28.59	34.86	34.86	very low	20.37	26.81	26.81	very low	31.58	37.59	37.59
	low	16.12	20.65	51.65	low	16.70	20.37	55.23	low	21.79	28.68	55.48	low	14.81	17.63	55.22
	medium	14.72	18.87	70.52	medium	13.27	16.19	71.41	medium	17.91	23.57	79.05	medium	13.75	16.37	71.59
	high	11.09	14.21	84.73	high	15.46	18.85	90.26	high	8.62	11.34	90.38	high	17.17	20.44	92.03
	very high	11.91	15.27	100.00	very high	7.99	9.74	100.00	very high	7.31	9.62	100.00	very high	6.69	7.97	100.00
	Total	78	100.00		Total	82	100.00		Total	76	100.00		Total	84	100.00	

	<b>Cost</b>				<b>Training Needed</b>				<b>Time Needed</b>				<b>Effectiveness</b>			
	Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.		Freq.	Percent	Cum.	
<b>Provide literature at time of audit</b>	very low	68.60	30.76	0.76	very low	57.24	25.55	25.55	very low	57.05	25.93	25.93	very low	14.15	5.78	5.78
	low	100.11	44.89	75.65	low	62.54	27.92	53.47	low	86.30	39.23	65.16	low	31.48	12.85	18.62
	medium	30.97	13.89	89.54	medium	59.78	26.69	80.16	medium	54.58	24.81	89.97	medium	78.58	32.07	50.70
	high	20.31	9.11	98.65	high	33.95	15.16	95.32	high	17.09	7.77	97.73	high	75.33	30.75	81.44
	very high	3.02	1.35	100.00	very high	10.49	4.68	100.00	very high	4.99	2.27	100.00	very high	45.46	18.56	100.00
	Total	223	100.00		Total	224	100.00		Total	220	100.00		Total	245	100.00	
<b>Provide in-person instruction at time of weatherization</b>	very low	56.03	27.33	27.33	very low	26.10	12.43	12.43	very low	22.60	10.97	10.97	very low	8.12	3.61	3.61
	low	73.51	35.86	63.19	low	44.29	21.09	33.52	low	64.01	31.07	42.05	low	20.09	8.93	12.54
	medium	45.43	22.16	85.35	medium	74.42	35.44	68.96	medium	86.81	42.14	84.19	medium	60.81	27.03	39.57
	high	20.02	9.77	95.12	high	50.99	24.28	93.24	high	23.09	11.21	95.40	high	85.08	37.82	77.39
	very high	10.00	4.88	100.00	very high	14.19	6.76	100.00	very high	9.49	4.60	100.00	very high	50.87	22.61	100.00
	Total	205	100.00		Total	210	100.00		Total	206	100.00		Total	225	100.00	
<b>Provide hardware kit at time of weatherization</b>	very low	20.28	29.82	29.82	very low	28.10	39.03	39.03	very low	21.11	31.51	31.51	very low	22.16	28.78	28.78
	low	15.37	22.61	52.43	low	17.69	24.57	63.60	low	22.86	34.11	65.62	low	8.82	11.45	40.23
	medium	13.21	19.42	71.85	medium	11.82	16.42	80.02	medium	11.68	17.43	83.05	medium	9.29	12.06	52.29
	high	11.41	16.79	88.64	high	8.56	11.90	91.92	high	8.33	12.44	95.49	high	22.40	29.09	81.38
	very high	7.73	11.36	100.00	very high	5.82	8.08	100.00	very high	3.02	4.51	100.00	very high	14.33	18.62	100.00
	Total	68	100.00		Total	72	100.00		Total	67	100.00		Total	77	100.00	
<b>Provide literature at separate client education visit</b>	very low	17.92	19.69	19.69	very low	37.75	39.33	39.33	very low	20.87	23.19	23.19	very low	21.31	20.89	20.89
	low	23.16	25.45	45.15	low	16.58	17.27	56.59	low	13.72	15.24	38.43	low	15.93	15.62	36.52
	medium	16.98	18.66	63.80	medium	17.19	17.91	74.50	medium	26.01	28.95	67.39	medium	29.06	28.49	65.00
	high	14.84	16.31	80.11	high	20.49	21.34	95.84	high	17.21	19.12	86.51	high	23.17	22.71	87.71
	very high	18.10	19.89	100.00	very high	3.99	4.16	100.00	very high	12.14	13.49	100.00	very high	12.53	12.29	100.00
	Total	91	100.00		Total	96	100.00		Total	90	100.00		Total	102	100.00	
<b>Provide video, CD or DVD at separate client education visit</b>	very low	13.09	21.82	21.82	very low	28.83	45.76	45.76	very low	15.74	26.67	26.67	very low	24.21	36.68	36.68
	low	6.52	10.86	32.68	low	16.38	26.00	71.76	low	8.16	13.82	40.50	low	13.28	20.12	56.80
	medium	14.82	24.69	57.37	medium	5.82	9.24	81.00	medium	12.66	21.46	61.95	medium	13.77	20.87	77.67
	high	7.29	12.15	69.52	high	10.91	17.32	98.32	high	6.68	11.32	73.28	high	11.18	16.94	94.61
	very high	18.29	30.48	100.00	very high	1.06	1.68	100.00	very high	15.77	26.72	100.00	very high	3.56	5.39	100.00
	Total	60	100.00		Total	63	100.00		Total	59	100.00		Total	66	100.00	

	Cost			Training Needed			Time Needed			Effectiveness						
	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.				
<b>Provide in-person instruction at separate client education visit</b>	very low	19.64	20.46	20.46	very low	29.42	28.84	28.84	very low	13.20	13.89	13.89	very low	18.69	17.47	17.47
	low	20.88	21.75	42.21	low	14.93	14.64	43.48	low	13.15	13.84	27.73	low	12.19	11.40	28.87
	medium	21.94	22.85	65.06	medium	23.17	22.71	66.19	medium	31.69	33.35	61.09	medium	21.58	20.17	49.04
	high	11.46	11.94	77.00	high	30.00	29.41	95.60	high	18.67	19.65	80.74	high	34.04	31.81	80.85
	very high	22.08	23.00	100.00	very high	4.48	4.40	100.00	very high	18.30	19.26	100.00	very high	20.49	19.15	100.00
	Total	96	100.00		Total	102	100.00		Total	95	100.00		Total	107	100.00	
<b>Provide hardware kit at separate client education visit</b>	very low	15.21	23.04	23.04	very low	29.26	42.41	42.41	very low	15.96	24.94	24.94	very low	29.04	40.33	40.33
	low	5.63	8.54	31.57	low	9.54	13.83	56.24	low	4.88	7.62	32.56	low	13.10	18.20	58.52
	medium	18.45	27.95	59.53	medium	16.79	24.33	80.56	medium	22.70	35.47	68.03	medium	12.38	17.19	75.72
	high	9.98	15.13	74.66	high	10.90	15.80	96.37	high	7.39	11.55	79.58	high	10.11	14.04	89.76
	very high	16.73	25.34	100.00	very high	2.51	3.63	100.00	very high	13.07	20.42	100.00	very high	7.38	10.24	100.00
	Total	66	100.00		Total	69	100.00		Total	64	100.00		Total	72	100.00	
<b>Provide literature at time of inspection</b>	very low	46.59	32.58	32.58	very low	40.11	27.48	27.48	very low	37.40	26.91	26.91	very low	12.12	7.72	7.72
	low	58.96	41.23	73.81	low	35.45	24.28	51.76	low	50.28	36.17	63.08	low	19.72	12.56	20.28
	medium	22.46	15.71	89.52	medium	39.31	26.92	78.68	medium	33.63	24.20	87.27	medium	43.12	27.47	47.75
	high	7.37	5.16	94.67	high	21.80	14.93	93.62	high	12.19	8.77	96.04	high	50.39	32.10	79.84
	very high	7.62	5.33	100.00	very high	9.32	6.38	100.00	very high	5.50	3.96	100.00	very high	31.64	20.16	100.00
	Total	143	100.00		Total	146	100.00		Total	139	100.00		Total	157	100.00	
<b>Provide video, CD or DVD at time of inspection</b>	very low	20.36	32.31	32.31	very low	31.62	48.64	48.64	very low	23.83	40.39	40.39	very low	21.53	31.66	31.66
	low	9.75	15.47	47.78	low	10.45	16.08	64.72	low	8.77	14.87	55.25	low	8.37	12.32	43.97
	medium	11.72	18.61	66.39	medium	15.17	23.33	88.06	medium	12.94	21.94	77.19	medium	16.67	24.52	68.49
	high	4.36	6.92	73.31	high	5.67	8.72	96.78	high	6.94	11.76	88.95	high	13.87	20.40	88.89
	very high	16.82	26.69	100.00	very high	2.09	3.22	100.00	very high	6.52	11.05	100.00	very high	7.55	11.11	100.00
	Total	63	100.00		Total	65	100.00		Total	59	100.00		Total	68	100.00	
<b>Provide in-person instruction at time of inspection</b>	very low	68.02	30.23	30.23	very low	29.86	12.98	12.98	very low	20.02	9.02	9.02	very low	4.49	1.87	1.87
	low	93.98	41.77	72.00	low	58.47	25.42	38.41	low	81.41	36.67	45.69	low	17.84	7.43	9.31
	medium	36.70	16.31	88.31	medium	67.26	29.24	67.65	medium	77.42	34.87	80.56	medium	64.37	26.82	36.13
	high	18.57	8.25	96.56	high	60.96	26.51	94.15	high	29.92	13.48	94.04	high	92.04	38.35	74.48
	very high	7.73	3.44	100.00	very high	13.44	5.85	100.00	very high	13.24	5.96	100.00	very high	61.26	25.52	100.00
	Total	225	100.00		Total	230	100.00		Total	222	100.00		Total	240	100.00	

	Cost			Training Needed			Time Needed			Effectiveness						
	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.	Freq.	Percent	Cum.				
<b>Provide hardware kit at time of inspection</b>	very low	23.62	36.34	36.34	very low	34.20	50.29	50.29	very low	23.51	37.92	37.92	very low	29.38	42.58	42.58
	low	14.78	22.73	59.07	low	15.57	22.89	73.18	low	14.40	23.23	61.14	low	10.02	14.53	57.11
	medium	12.04	18.53	77.60	medium	11.02	16.21	89.39	medium	15.10	24.36	85.50	medium	11.33	16.42	73.53
	high	7.07	10.87	88.47	high	6.59	9.69	99.08	high	4.08	6.57	92.08	high	10.30	14.93	88.46
	very high	7.49	11.53	100.00	very high	.63	0.92	100.00	very high	4.91	7.92	100.00	very high	7.96	11.54	100.00
	Total	65	100.00		Total	68	100.00		Total	62	100.00		Total	69	100.00	
<b>Group training class</b>	very low	22.39	26.66	26.66	very low	23.28	26.76	26.76	very low	12.92	15.21	15.21	very low	29.88	32.13	32.13
	low	11.28	13.43	40.09	low	4.47	5.14	31.90	low	2.91	3.42	18.63	low	4.77	5.13	37.26
	medium	20.77	24.73	64.82	medium	25.20	28.97	60.86	medium	25.75	30.29	48.92	medium	15.56	16.76	54.02
	high	11.89	14.15	78.97	high	20.92	24.05	84.91	high	23.64	27.82	76.73	high	29.04	31.22	85.24
	very high	17.66	21.03	100.00	very high	13.13	15.09	100.00	very high	19.78	23.27	100.00	very high	13.73	14.76	100.00
	Total	84	100.00		Total	87	100.00		Total	85	100.00		Total	93	100.00	
<b>Other (please specify)</b>	very low	2.94	24.50	24.50	very low	5.41	38.64	38.64	very low	.61	4.70	4.70	very low	5.55	39.65	39.65
	low	3.58	29.80	54.30	low	3.68	26.29	64.92	low	3.62	27.85	32.54	low	3.05	21.81	61.45
	medium	2.82	23.47	77.77	medium	1.28	9.17	74.10	medium	4.08	31.41	63.95	medium	2.32	16.59	78.04
	high	.92	7.67	85.44	high	2.30	16.45	90.54	high	2.78	21.36	85.31	high	1.66	11.86	89.90
	very high	1.75	14.56	100.00	very high	1.32	9.46	100.00	very high	1.91	14.69	100.00	very high	1.41	10.10	100.00
	Total	12	100.00		Total	14	100.00		Total	13	100.00		Total	14	100.00	

9. On average, approximately how many minutes were spent in Program Year 2008 on client education in a typical dwelling? \_\_\_\_\_

**SECTION E: TRAINING**

1. On which of the following weatherization topics did agency staff working on your agency's weatherization efforts receive training in Program Year 2008? *Check all that apply.*

**(1) Diagnostic procedures**

	Freq.	Percent	Cum.
no	27.84	8.78	8.78
yes	289.16	91.22	100.00
Total	317	100.00	

**(2) Insulation**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	51.69	16.30	16.30
yes	265.31	83.70	100.00
Total	317	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	208.00	65.61	65.61
yes	109.00	34.39	100.00
Total	317	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	107.68	33.97	33.97
yes	209.32	66.03	100.00
Total	317	100.00	

**(3) Space heating, ventilation, air conditioning**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	65.72	20.73	20.73
yes	251.28	79.27	100.00
Total	317	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	228.05	71.94	71.94
yes	88.95	28.06	100.00
Total	317	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	117.22	36.98	36.98
yes	199.78	63.02	100.00
Total	317	100.00	

**(4) Infiltration measures**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	28.62	9.03	9.03
yes	288.38	90.97	100.00
Total	317	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	201.31	63.51	63.51
yes	115.69	36.49	100.00
Total	317	100.00	



**-- mobile homes**

	Freq.	Percent	Cum.
no	76.08	24.00	24.00
yes	240.92	76.00	100.00
Total	317	100.00	

**(5) Doors and windows**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	114.63	36.16	36.16
yes	202.37	63.84	100.00
Total	317	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	228.12	71.96	71.96
yes	88.88	28.04	100.00
Total	317	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	138.25	43.61	43.61
yes	178.75	56.39	100.00
Total	317	100.00	

**(6) Hot water heating**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	101.91	32.15	32.15
yes	215.09	67.85	100.00
Total	317	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	224.44	70.80	70.80
yes	92.56	29.20	100.00
Total	317	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	146.27	46.14	46.14
yes	170.73	53.86	100.00
Total	317	100.00	

**(7) Baseloads (e.g., lighting, refrigerators)**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	74.06	23.36	23.36
yes	242.94	76.64	100.00
Total	317	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	221.55	69.89	69.89
yes	95.45	30.11	100.00
Total	317	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	107.40	33.88	33.88
yes	209.60	66.12	100.00
Total	317	100.00	

1a. On which of the following administrative-related topics did agency staff working on your agency's weatherization efforts receive training in Program Year 2008? *Check all that apply.*

**(1) Management**

	Freq.	Percent	Cum.
no	148.06	48.86	48.86
yes	154.94	51.14	100.00
Total	303	100.00	

**(2) Client education**

	Freq.	Percent	Cum.
no	127.38	42.04	42.04
yes	175.62	57.96	100.00
Total	303	100.00	

**(3) Auditing/estimating**

**-- single family dwellings**

	Freq.	Percent	Cum.
no	49.78	16.43	16.43
yes	253.22	83.57	100.00
Total	303	100.00	

**-- multifamily dwellings**

	Freq.	Percent	Cum.
no	205.94	67.97	67.97
yes	97.06	32.03	100.00
Total	303	100.00	

**-- mobile homes**

	Freq.	Percent	Cum.
no	99.83	32.95	32.95
yes	203.17	67.05	100.00
Total	303	100.00	

**(4) Monitoring/quality control**

	Freq.	Percent	Cum.
no	109.77	36.23	36.23
yes	193.23	63.77	100.00
Total	303	100.00	

**(5) Financial topics**

	Freq.	Percent	Cum.
no	168.73	55.69	55.69
yes	134.27	44.31	100.00
Total	303	100.00	

**(6) Outreach and communications**

	Freq.	Percent	Cum.
no	184.17	60.78	60.78
yes	118.83	39.22	100.00
Total	303	100.00	

**(7) Other (please specify) \_\_\_\_\_**

	Freq.	Percent	Cum.
no	291.33	96.15	96.15
yes	11.67	3.85	100.00
Total	303	100.00	

1b. On which of the following health and safety topics did agency staff working on your agency's weatherization efforts receive training in Program Year 2008? *Check all that apply.*

\_\_\_\_\_ Fire safety

	Freq.	Percent	Cum.
no	240.18	74.59	74.59
yes	81.82	25.41	100.00
Total	322	100.00	

Indoor air quality			
	Freq.	Percent	Cum.
no	90.22	28.02	28.02
yes	231.78	71.98	100.00
Total	322	100.00	

Measures to increase security of housing unit			
	Freq.	Percent	Cum.
no	289.32	89.85	89.85
yes	32.68	10.15	100.00
Total	322	100.00	

Measures to reduce common household hazards			
	Freq.	Percent	Cum.
no	216.89	67.36	67.36
yes	105.11	32.64	100.00
Total	322	100.00	

Mold and mildew			
	Freq.	Percent	Cum.
no	96.93	30.10	30.10
yes	225.07	69.90	100.00
Total	322	100.00	

Lead			
	Freq.	Percent	Cum.
no	49.18	15.27	15.27
yes	272.82	84.73	100.00
Total	322	100.00	

Asbestos			
	Freq.	Percent	Cum.
no	223.54	69.42	69.42
yes	98.46	30.58	100.00
Total	322	100.00	

Vermiculite			
	Freq.	Percent	Cum.
no	251.47	78.10	78.10
yes	70.53	21.90	100.00
Total	322	100.00	

General crew safety			
	Freq.	Percent	Cum.
no	134.63	41.81	41.81
yes	187.37	58.19	100.00
Total	322	100.00	

Other (please specify) _____			
	Freq.	Percent	Cum.
no	299.98	93.16	93.16
yes	22.02	6.84	100.00
Total	322	100.00	

2. On which of the following diagnostic procedures did agency staff working on your agency's weatherization efforts receive training in Program Year 2008? *Check all that apply.*

**Pressure diagnostics:**

- Blower door (house air leakage rate)

	Freq.	Percent	Cum.
no	30.62	9.85	9.85
yes	280.38	90.15	100.00
Total	311	100.00	

- Zonal pressure measurements

	Freq.	Percent	Cum.
no	118.82	38.21	38.21
yes	192.18	61.79	100.00
Total	311	100.00	

- Room-to-room pressure measurements (distribution balancing)

	Freq.	Percent	Cum.
no	152.69	49.10	49.10
yes	158.31	50.90	100.00
Total	311	100.00	

- Duct pressure pan measurements

	Freq.	Percent	Cum.
no	120.63	38.79	38.79
yes	190.37	61.21	100.00
Total	311	100.00	

- Duct blower measurements (duct air leakage rate)

	Freq.	Percent	Cum.
no	173.37	55.74	55.74
yes	137.63	44.26	100.00
Total	311	100.00	

**Space-heating system:**

- Flue gas analysis (steady-state efficiency measurements)

	Freq.	Percent	Cum.
no	90.12	28.97	28.97
yes	220.89	71.03	100.00
Total	311	100.00	

- Heat rise measurements

	Freq.	Percent	Cum.
no	145.93	46.92	46.92
yes	165.07	53.08	100.00
Total	311	100.00	

- CO measurements in flues

	Freq.	Percent	Cum.
no	60.06	19.31	19.31
yes	250.94	80.69	100.00
Total	311	100.00	

- Draft/spillage (normal operation)

	Freq.	Percent	Cum.
no	97.85	31.46	31.46
yes	213.15	68.54	100.00
Total	311	100.00	

#### **Air-conditioning system:**

- Refrigerant charge (e.g., superheat, subcooling)

	Freq.	Percent	Cum.
no	289.66	93.14	93.14
yes	21.34	6.86	100.00
Total	311	100.00	

#### **HVAC components and cross-cutting diagnostics:**

- Air handler flow rate

	Freq.	Percent	Cum.
no	242.78	78.07	78.07
yes	68.22	21.93	100.00
Total	311	100.00	

- Thermostat anticipator current

	Freq.	Percent	Cum.
no	219.83	70.68	70.68
yes	91.17	29.32	100.00
Total	311	100.00	



- Worst case draft/spillage (CAZ)

	Freq.	Percent	Cum.
no	119.52	38.43	38.43
yes	191.48	61.57	100.00
Total	311	100.00	

**Hot-water (water-heating) system:**

- Flue gas analysis (steady-state efficiency measurements)

	Freq.	Percent	Cum.
no	122.16	39.28	39.28
yes	188.84	60.72	100.00
Total	311	100.00	

- CO measurements in flues

	Freq.	Percent	Cum.
no	73.53	23.64	23.64
yes	237.47	76.36	100.00
Total	311	100.00	

- Draft/spillage (normal operation)

	Freq.	Percent	Cum.
no	97.82	31.45	31.45
yes	213.18	68.55	100.00
Total	311	100.00	

- Water flow rates (showerheads and faucets)

	Freq.	Percent	Cum.
no	218.50	70.26	70.26
yes	92.50	29.74	100.00
Total	311	100.00	

**Other CO measurements:**

- CO measurements in equipment rooms

	Freq.	Percent	Cum.
no	107.31	34.51	34.51
yes	203.69	65.49	100.00
Total	311	100.00	

- Cooking stove

	Freq.	Percent	Cum.
no	81.92	26.34	26.34
yes	229.08	73.66	100.00
Total	311	100.00	

- CO measurements in living areas

	Freq.	Percent	Cum.
no	99.81	32.09	32.09
yes	211.19	67.91	100.00
Total	311	100.00	

**Other diagnostics and inspections:**

- Refrigerator energy use

	Freq.	Percent	Cum.
no	150.07	48.26	48.26
yes	160.93	51.74	100.00
Total	311	100.00	

- Exhaust fan air flow rate measurement

	Freq.	Percent	Cum.
no	223.68	71.92	71.92
yes	87.32	28.08	100.00
Total	311	100.00	

- Infrared scanning (camera)

	Freq.	Percent	Cum.
no	167.49	53.86	53.86
yes	143.51	46.14	100.00
Total	311	100.00	

- Radon testing

	Freq.	Percent	Cum.
no	297.47	95.65	95.65
yes	13.53	4.35	100.00
Total	311	100.00	

- Lead testing

	Freq.	Percent	Cum.
no	209.30	67.30	67.30
yes	101.70	32.70	100.00
Total	311	100.00	

- Mold and mildew testing

	Freq.	Percent	Cum.
no	255.99	82.31	82.31
yes	55.01	17.69	100.00
Total	311	100.00	

- Moisture content testing

	Freq.	Percent	Cum.
no	255.07	82.01	82.01
yes	55.93	17.99	100.00
Total	311	100.00	

- Other (please specify) \_\_\_\_\_

	Freq.	Percent	Cum.
no	305.95	98.37	98.37
yes	5.05	1.63	100.00
Total	311	100.00	

3. How many of your agency's staff were trained at the following events in Program Year 2008? *Enter responses next to any categories that apply.*

\_\_\_\_\_ National Weatherization Program Conference

observations:	151
missing values:	206
mean:	2.60
standard deviation:	2.66
min:	0
10th percentile:	1
25th percentile:	1
median:	2
75th percentile:	3
90th percentile:	5
max:	30

\_\_\_\_\_ Affordable Comfort Conference

observations:	135
missing values:	222
mean:	2.59
standard deviation:	2.64
min:	0
10th percentile:	0
25th percentile:	1
median:	2
75th percentile:	3
90th percentile:	6
max:	30

\_\_\_\_\_ Other national conference

observations:	60
missing values:	297
mean:	1.84
standard deviation:	2.03
min:	0
10th percentile:	0
25th percentile:	0
median:	2
75th percentile:	2
90th percentile:	4
max:	10

\_\_\_\_\_ Regional weatherization conference

observations:	115
missing values:	242
mean:	3.22
standard deviation:	2.95
min:	0
10th percentile:	0
25th percentile:	1
median:	2
75th percentile:	4
90th percentile:	7
max:	15

\_\_\_\_\_ Your state's weatherization conference

observations:	160
missing values:	197
mean:	3.73
standard deviation:	3.37
min:	0
10th percentile:	1
25th percentile:	2
median:	3
75th percentile:	5
90th percentile:	7
max:	30

\_\_\_\_\_ Some other relevant conference in your state

observations:	94
missing values:	263
mean:	2.69
standard deviation:	2.85
min:	0
10th percentile:	0
25th percentile:	1
median:	2
75th percentile:	4
90th percentile:	5
max:	20

\_\_\_\_\_ Weatherization conference given by another state

observations:	40
missing values:	317
mean:	1.05
standard deviation:	1.43
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	2
90th percentile:	3
max:	7

\_\_\_\_\_ Some other relevant conference given by another state

observations:	35
missing values:	322
mean:	1.77
standard deviation:	2.84
min:	0
10th percentile:	0
25th percentile:	0
median:	0
75th percentile:	3
90th percentile:	7
max:	10

\_\_\_\_\_ Any state or regional training center class

observations:	143
missing values:	214
mean:	4.77
standard deviation:	6.83
min:	0
10th percentile:	1
25th percentile:	2
median:	3
75th percentile:	6
90th percentile:	10
max:	55

\_\_\_\_\_ Manufacturer's training school class

observations:	63
missing values:	294
mean:	2.23
standard deviation:	3.08
min:	0
10th percentile:	0
25th percentile:	0
median:	2
75th percentile:	2
90th percentile:	5
max:	19

\_\_\_\_\_ Utility training class

observations:	68
missing values:	289
mean:	2.26
standard deviation:	2.64
min:	0
10th percentile:	0
25th percentile:	0
median:	2
75th percentile:	3
90th percentile:	5
max:	14

\_\_\_\_\_ Training classes provided by your agency or those agencies you work for

observations:	111
missing values:	246
mean:	5.68
standard deviation:	6.85
min:	0
10th percentile:	0
25th percentile:	2
median:	4
75th percentile:	6
90th percentile:	13
max:	53

\_\_\_\_\_ One-time state-sponsored class

observations:	77
missing values:	280
mean:	3.91
standard deviation:	5.52
min:	0
10th percentile:	0
25th percentile:	1
median:	2
75th percentile:	5
90th percentile:	10
max:	50

\_\_\_\_\_ Any other class not sponsored by your state (e.g., another state, trade organization)

observations:	49
missing values:	308
mean:	2.32
standard deviation:	3.26
min:	0
10th percentile:	0
25th percentile:	0
median:	2
75th percentile:	3
90th percentile:	6
max:	20

\_\_\_\_\_ Visit to an agency you do not work for training

observations:	76
missing values:	281
mean:	2.05
standard deviation:	1.92
min:	0
10th percentile:	0
25th percentile:	1
median:	2
75th percentile:	3
90th percentile:	5
max:	10



\_\_\_\_\_ Instruction provided by your state to your individual agency or those agencies you work for

observations:	111
missing values:	246
mean:	4.02
standard deviation:	4.8
min:	0
10th percentile:	0
25th percentile:	1
median:	3
75th percentile:	6
90th percentile:	9
max:	30

\_\_\_\_\_ In-person expert visit just to your agency (e.g., peer exchange, consultant)

observations:	100
missing values:	257
mean:	3.68
standard deviation:	4.46
min:	0
10th percentile:	0
25th percentile:	1
median:	2
75th percentile:	4
90th percentile:	7
max:	30

\_\_\_\_\_ Web cast

observations:	46
missing values:	311
mean:	3.14
standard deviation:	7.10
min:	0
10th percentile:	0
25th percentile:	0
median:	2
75th percentile:	2
90th percentile:	6
max:	50

\_\_\_\_\_ Other (please specify) \_\_\_\_\_

observations:	20
missing values:	337
mean:	3.86
standard deviation:	5.22
min:	0
10th percentile:	0
25th percentile:	0
median:	2
75th percentile:	6
90th percentile:	15
max:	17

4. Which of the following weatherization topics listed below were agency staff first trained on in Program Year 2008 and two years prior to Program Year 2008? *Check all that apply.*

(1) Diagnostic procedures

	Freq.	Percent	Cum.
-----+-----			
no	39.61	20.53	20.53
yes	153.39	79.47	100.00
-----+-----			
Total	193	100.00	

(2) Insulation

-- single family dwellings

	Freq.	Percent	Cum.
-----+-----			
no	45.47	23.56	23.56
yes	147.53	76.44	100.00
-----+-----			
Total	193	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
-----+-----			
no	135.69	70.31	70.31
yes	57.31	29.69	100.00
-----+-----			
Total	193	100.00	

-- mobile homes

	Freq.	Percent	Cum.
-----+-----			
no	62.92	32.60	32.60
yes	130.08	67.40	100.00
-----+-----			
Total	193	100.00	

(3) Space heating, ventilation, air conditioning

-- single family dwellings

	Freq.	Percent	Cum.
no	64.05	33.19	33.19
yes	128.95	66.81	100.00
-----+			
Total	193	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
no	140.85	72.98	72.98
yes	52.15	27.02	100.00
-----+			
Total	193	100.00	

-- mobile homes

	Freq.	Percent	Cum.
no	81.34	42.14	42.14
yes	111.66	57.86	100.00
-----+			
Total	193	100.00	

(4) Infiltration measures

-- single family dwellings

	Freq.	Percent	Cum.
no	33.94	17.59	17.59
yes	159.06	82.41	100.00
-----+			
Total	193	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
no	138.51	71.77	71.77
yes	54.49	28.23	100.00
-----+			
Total	193	100.00	

-- mobile homes

	Freq.	Percent	Cum.
no	58.73	30.43	30.43
yes	134.27	69.57	100.00
-----+			
Total	193	100.00	

(5) Doors and windows

-- single family dwellings

	Freq.	Percent	Cum.
no	79.21	41.04	41.04
yes	113.79	58.96	100.00
Total	193	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
no	144.39	74.81	74.81
yes	48.61	25.19	100.00
Total	193	100.00	

-- mobile homes

	Freq.	Percent	Cum.
no	85.21	44.15	44.15
yes	107.79	55.85	100.00
Total	193	100.00	

(6) Hot water heating

-- single family dwellings

	Freq.	Percent	Cum.
no	66.49	34.45	34.45
yes	126.51	65.55	100.00
Total	193	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
no	145.64	75.46	75.46
yes	47.36	24.54	100.00
Total	193	100.00	

-- mobile homes

	Freq.	Percent	Cum.
no	83.01	43.01	43.01
yes	109.99	56.99	100.00
Total	193	100.00	

(7) Baseloads (e.g., lighting, refrigerators)

-- single family dwellings

	Freq.	Percent	Cum.
no	55.10	28.55	28.55
yes	137.90	71.45	100.00
Total	193	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
no	135.70	70.31	70.31
yes	57.30	29.69	100.00
Total	193	100.00	

-- mobile homes

	Freq.	Percent	Cum.
no	78.08	40.46	40.46
yes	114.92	59.54	100.00
Total	193	100.00	

4a. Which of the following administrative-related topics listed below were agency staff first trained on in Program Year 2008 and in the two years prior to Program Year 2008? If your agency did not receive training on a particular subject, leave that item blank.

*Check all that apply.*

(1) Management

	Freq.	Percent	Cum.
unchecked	109.46	58.54	58.54
checked	77.54	41.46	100.00
Total	187	100.00	

(2) Client education

	Freq.	Percent	Cum.
unchecked	80.58	43.09	43.09
checked	106.42	56.91	100.00
Total	187	100.00	

(3) Auditing/estimating

-- single family dwellings

	Freq.	Percent	Cum.
unchecked	40.55	21.69	21.69
checked	146.45	78.31	100.00
-----+-----			
Total	187	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
unchecked	131.32	70.22	70.22
checked	55.68	29.78	100.00
-----+-----			
Total	187	100.00	

-- mobile homes

	Freq.	Percent	Cum.
unchecked	64.57	34.53	34.53
checked	122.43	65.47	100.00
-----+-----			
Total	187	100.00	

(3) Monitoring/quality control

	Freq.	Percent	Cum.
unchecked	83.68	44.75	44.75
checked	103.32	55.25	100.00
-----+-----			
Total	187	100.00	

(4) Financial topics

	Freq.	Percent	Cum.
unchecked	104.97	56.14	56.14
checked	82.03	43.86	100.00
-----+-----			
Total	187	100.00	

(5) Outreach and communications

	Freq.	Percent	Cum.
unchecked	118.67	63.46	63.46
checked	68.33	36.54	100.00
-----+-----			
Total	187	100.00	

(7) Other (please specify) \_\_\_\_\_

	Freq.	Percent	Cum.
unchecked	179.73	96.11	96.11
checked	7.27	3.89	100.00
Total	187	100.00	

4b. Which of the following health and safety topics listed below were agency staff first trained on in Program Year 2008 and in the two years prior to Program Year 2008?

*Check all that apply.*

\_\_\_\_\_ Fire safety

	Freq.	Percent	Cum.
unchecked	157.10	77.01	77.01
checked	46.90	22.99	100.00
Total	204	100.00	

\_\_\_\_\_ Indoor air quality

	Freq.	Percent	Cum.
unchecked	85.44	41.88	41.88
checked	118.56	58.12	100.00
Total	204	100.00	

\_\_\_\_\_ Measures to increase security of housing unit

	Freq.	Percent	Cum.
unchecked	176.46	86.50	86.50
checked	27.54	13.50	100.00
Total	204	100.00	

\_\_\_\_\_ Measures to reduce common household hazards

	Freq.	Percent	Cum.
unchecked	145.96	71.55	71.55
checked	58.04	28.45	100.00
Total	204	100.00	

Mold and mildew			
	Freq.	Percent	Cum.
unchecked	90.34	44.28	44.28
checked	113.66	55.72	100.00
Total	204	100.00	

Lead			
	Freq.	Percent	Cum.
unchecked	51.99	25.48	25.48
checked	152.01	74.52	100.00
Total	204	100.00	

Asbestos			
	Freq.	Percent	Cum.
unchecked	136.93	67.12	67.12
checked	67.07	32.88	100.00
Total	204	100.00	

Vermiculite			
	Freq.	Percent	Cum.
unchecked	161.49	79.16	79.16
checked	42.51	20.84	100.00
Total	204	100.00	

General crew safety			
	Freq.	Percent	Cum.
unchecked	120.23	58.93	58.93
checked	83.77	41.07	100.00
Total	204	100.00	

Other (please specify) _____			
	Freq.	Percent	Cum.
unchecked	182.49	89.45	89.45
checked	21.51	10.55	100.00
Total	204	100.00	



5. On which of the following weatherization topics did your agency provide training to your own in-house staff in Program Year 2008? *Check all that apply.*

(1) Diagnostic procedures

	Freq.	Percent	Cum.
unchecked	54.27	21.88	21.88
checked	193.73	78.12	100.00
Total	248	100.00	

(2) Insulation

-- single family dwellings

	Freq.	Percent	Cum.
unchecked	30.75	12.40	12.40
checked	217.25	87.60	100.00
Total	248	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
unchecked	167.71	67.63	67.63
checked	80.29	32.37	100.00
Total	248	100.00	

-- mobile homes

	Freq.	Percent	Cum.
unchecked	61.81	24.92	24.92
checked	186.19	75.08	100.00
Total	248	100.00	

(3) Space heating, ventilation, air conditioning

-- single family dwellings

	Freq.	Percent	Cum.
unchecked	64.71	26.09	26.09
checked	183.29	73.91	100.00
Total	248	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
unchecked	176.62	71.22	71.22
checked	71.38	28.78	100.00
Total	248	100.00	

-- mobile homes

	Freq.	Percent	Cum.
unchecked	95.37	38.46	38.46
checked	152.63	61.54	100.00
Total	248	100.00	

(4) Infiltration measures

-- single family dwellings

	Freq.	Percent	Cum.
unchecked	26.37	10.63	10.63
checked	221.63	89.37	100.00
Total	248	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
unchecked	171.09	68.99	68.99
checked	76.91	31.01	100.00
Total	248	100.00	

-- mobile homes

	Freq.	Percent	Cum.
unchecked	57.97	23.38	23.38
checked	190.03	76.62	100.00
Total	248	100.00	

(5) Doors and windows

-- single family dwellings

	Freq.	Percent	Cum.
unchecked	69.08	27.85	27.85
checked	178.92	72.15	100.00
Total	248	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
unchecked	180.87	72.93	72.93
checked	67.13	27.07	100.00
Total	248	100.00	

-- mobile homes

	Freq.	Percent	Cum.
unchecked	83.91	33.83	33.83
checked	164.09	66.17	100.00
Total	248	100.00	

(6) Hot water heating

-- single family dwellings

	Freq.	Percent	Cum.
unchecked	72.08	29.06	29.06
checked	175.92	70.94	100.00
Total	248	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
unchecked	182.42	73.56	73.56
checked	65.58	26.44	100.00
Total	248	100.00	

-- mobile homes

	Freq.	Percent	Cum.
unchecked	93.15	37.56	37.56
checked	154.85	62.44	100.00
Total	248	100.00	

(7) Baseloads (e.g., lighting, refrigerators)

-- single family dwellings

	Freq.	Percent	Cum.
unchecked	65.43	26.38	26.38
checked	182.57	73.62	100.00
Total	248	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
--	-------	---------	------

	Freq.	Percent	Cum.
unchecked	176.68	71.24	71.24
checked	71.32	28.76	100.00
-----+			
Total	248	100.00	
-- mobile homes			

	Freq.	Percent	Cum.
unchecked	87.27	35.19	35.19
checked	160.73	64.81	100.00
-----+			
Total	248	100.00	

5a. On which of the following administrative-related topics did your agency provide training to your own in-house staff in Program Year 2008? *Check all that apply.*

(1) Management

	Freq.	Percent	Cum.
unchecked	130.82	52.12	52.12
checked	120.18	47.88	100.00
-----+			
Total	251	100.00	

(2) Client education

	Freq.	Percent	Cum.
unchecked	66.16	26.36	26.36
checked	184.84	73.64	100.00
-----+			
Total	251	100.00	

(3) Auditing/estimating

-- single family dwellings

	Freq.	Percent	Cum.
unchecked	71.16	28.35	28.35
checked	179.84	71.65	100.00
-----+			
Total	251	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
unchecked	176.34	70.25	70.25
checked	74.66	29.75	100.00
Total	251	100.00	

-- mobile homes

	Freq.	Percent	Cum.
unchecked	101.31	40.36	40.36
checked	149.69	59.64	100.00
Total	251	100.00	

(3) Monitoring/quality control

	Freq.	Percent	Cum.
unchecked	99.88	39.79	39.79
checked	151.12	60.21	100.00
Total	251	100.00	

(4) Financial topics

	Freq.	Percent	Cum.
unchecked	133.70	53.27	53.27
checked	117.30	46.73	100.00
Total	251	100.00	

(5) Outreach and communications

	Freq.	Percent	Cum.
unchecked	137.31	54.71	54.71
checked	113.69	45.29	100.00
Total	251	100.00	

(6) Other (please specify) \_\_\_\_\_

	Freq.	Percent	Cum.
unchecked	235.16	93.70	93.70
checked	15.81	6.30	100.00
Total	251	100.00	

5b. On which of the following health and safety topics did your agency provide training to your own in-house staff in Program Year 2008? *Check all that apply.*

_____ Fire safety			
	Freq.	Percent	Cum.
unchecked	154.97	64.04	64.04
checked	87.03	35.96	100.00
Total	242	100.00	

_____ Indoor air quality			
	Freq.	Percent	Cum.
unchecked	77.08	31.85	31.85
checked	164.92	68.15	100.00
Total	242	100.00	

_____ Measures to increase security of housing unit			
	Freq.	Percent	Cum.
unchecked	205.36	84.86	84.86
checked	36.64	15.14	100.00
Total	242	100.00	

_____ Measures to reduce common household hazards			
	Freq.	Percent	Cum.
unchecked	159.27	65.81	65.81
checked	82.73	34.19	100.00
Total	242	100.00	

_____ Mold and mildew			
	Freq.	Percent	Cum.
unchecked	97.30	40.20	40.20
checked	144.70	59.80	100.00
Total	242	100.00	

_____ Lead			
	Freq.	Percent	Cum.
unchecked	56.55	23.37	23.37
checked	185.45	76.63	100.00
Total	242	100.00	

_____ Asbestos			
	Freq.	Percent	Cum.

	Freq.	Percent	Cum.
unchecked	146.20	60.42	60.42
checked	95.80	39.58	100.00
Total	242	100.00	

\_\_\_\_\_ Vermiculite

	Freq.	Percent	Cum.
unchecked	180.42	74.56	74.56
checked	61.58	25.44	100.00
Total	242	100.00	

\_\_\_\_\_ General crew safety

	Freq.	Percent	Cum.
unchecked	98.06	40.52	40.52
checked	143.94	59.48	100.00
Total	242	100.00	

\_\_\_\_\_ Other (please specify) \_\_\_\_\_

	Freq.	Percent	Cum.
unchecked	213.16	88.08	88.08
checked	28.84	11.92	100.00
Total	242	100.00	

6. On which of the following diagnostic procedures did your agency provide training to your staff in Program Year 2008? *Check all that apply.*

**Pressure diagnostics:**

- Blower door (house air leakage rate)

	Freq.	Percent	Cum.
no	17.99	7.37	7.37
yes	226.01	92.63	100.00
Total	244	100.00	

- Zonal pressure measurements

	Freq.	Percent	Cum.
no	115.66	47.40	47.40
yes	128.34	52.60	100.00
Total	244	100.00	

- Room-to-room pressure measurements (distribution balancing)

	Freq.	Percent	Cum.
no	139.62	57.22	57.22
yes	104.38	42.78	100.00
Total	244	100.00	

- Duct pressure pan measurements

	Freq.	Percent	Cum.
no	100.18	41.06	41.06
yes	143.82	58.94	100.00
Total	244	100.00	

- Duct blower measurements (duct air leakage rate)

	Freq.	Percent	Cum.
no	146.75	60.14	60.14
yes	97.25	39.86	100.00
Total	244	100.00	

**Space-heating system:**

- Flue gas analysis (steady-state efficiency measurements)

	Freq.	Percent	Cum.
no	93.45	38.30	38.30
yes	150.55	61.70	100.00
Total	244	100.00	

- Heat rise measurements

	Freq.	Percent	Cum.
no	141.69	58.07	58.07
yes	102.31	41.93	100.00
Total	244	100.00	



- CO measurements in flues
 

	Freq.	Percent	Cum.
no	63.65	26.09	26.09
yes	180.35	73.91	100.00
Total	244	100.00	

- Draft/spillage (normal operation)
 

	Freq.	Percent	Cum.
no	96.09	39.38	39.38
yes	147.91	60.62	100.00
Total	244	100.00	

**Air-conditioning system:**

- Refrigerant charge (e.g., superheat, subcooling)
 

	Freq.	Percent	Cum.
no	230.16	94.33	94.33
yes	13.84	5.67	100.00
Total	244	100.00	

**HVAC components and cross-cutting diagnostics:**

- Air handler flow rate
 

	Freq.	Percent	Cum.
no	193.36	79.25	79.25
yes	50.64	20.75	100.00
Total	244	100.00	

- Thermostat anticipator current
 

	Freq.	Percent	Cum.
no	181.93	74.56	74.56
yes	62.07	25.44	100.00
Total	244	100.00	

- Worst case draft/spillage (CAZ)
 

	Freq.	Percent	Cum.
no	108.49	44.46	44.46
yes	135.51	55.54	100.00
Total	244	100.00	

**Hot-water (water-heating) system:**

- Flue gas analysis (steady-state efficiency measurements)

	Freq.	Percent	Cum.
no	109.31	44.80	44.80
yes	134.69	55.20	100.00
Total	244	100.00	

- CO measurements in flues

	Freq.	Percent	Cum.
no	63.88	26.18	26.18
yes	180.12	73.82	100.00
Total	244	100.00	

- Draft/spillage (normal operation)

	Freq.	Percent	Cum.
no	96.55	39.57	39.57
yes	147.45	60.43	100.00
Total	244	100.00	

- Water flow rates (showerheads and faucets)

	Freq.	Percent	Cum.
no	174.71	71.60	71.60
yes	69.29	28.40	100.00
Total	244	100.00	

**Other CO measurements:**

- CO measurements in equipment rooms

	Freq.	Percent	Cum.
no	115.96	47.52	47.52
yes	128.04	52.48	100.00
Total	244	100.00	

- Cooking stove

	Freq.	Percent	Cum.
no	64.81	26.56	26.56
yes	179.19	73.44	100.00
Total	244	100.00	

- CO measurements in living areas

	Freq.	Percent	Cum.
no	92.84	38.05	38.05
yes	151.16	61.95	100.00
Total	244	100.00	

**Other diagnostics and inspections:**

- Refrigerator energy use

	Freq.	Percent	Cum.
no	112.93	46.28	46.28
yes	131.07	53.72	100.00
Total	244	100.00	

- Exhaust fan air flow rate measurement

	Freq.	Percent	Cum.
no	171.80	70.41	70.41
yes	72.20	29.59	100.00
Total	244	100.00	

- Infrared scanning (camera)

	Freq.	Percent	Cum.
no	143.30	58.73	58.73
yes	100.70	41.27	100.00
Total	244	100.00	

- Radon testing

	Freq.	Percent	Cum.
no	227.85	93.38	93.38
yes	16.15	6.62	100.00
Total	244	100.00	

- Lead testing

	Freq.	Percent	Cum.
no	157.91	64.72	64.72
yes	86.09	35.28	100.00
Total	244	100.00	

- Mold and mildew testing

	Freq.	Percent	Cum.
no	207.40	85.00	85.00
yes	36.60	15.00	100.00
Total	244	100.00	

- Moisture content testing

	Freq.	Percent	Cum.
no	207.22	84.93	84.93
yes	36.78	15.07	100.00
Total	244	100.00	

- Other (please specify) \_\_\_\_\_

	Freq.	Percent	Cum.
no	234.07	95.93	95.93
yes	9.93	4.07	100.00
Total	244	100.00	

7. For each broad subject listed in the left-most column of the following table, put a check mark in the appropriate cell(s) to indicate which training method(s) you believe were most effective for imparting key skills and information in that area to your agency's in-house or contractor weatherization staff in Program Year 2008:

<b>Subject</b>	<b>Conferences</b>	<b>Primarily Field training</b>	<b>Primarily Classroom training</b>	<b>Agency visits</b>	<b>Web casts</b>	<b>Other (please specify)</b>
Management	obs: 271 no: 76 yes: 195	obs: 271 no: 220 yes: 51	obs: 271 no: 177 yes: 94	obs: 271 no: 181 yes: 90	obs: 271 no: 239 yes: 32	
Weatherization installation	obs: 307 no: 215 yes: 92	obs: 307 no: 23 yes: 284	obs: 307 no: 199 yes: 108	obs: 307 no: 254 yes: 53	obs: 307 no: 302 yes: 5	
Auditing/ Estimating	obs: 309 no: 206 yes: 103	obs: 309 no: 72 yes: 237	obs: 309 no: 142 yes: 167	obs: 309 no: 253 yes: 56	obs: 309 no: 296 yes: 13	
Monitoring/ quality control	obs: 287 no: 196 yes: 91	obs: 287 no: 90 yes: 197	obs: 287 no: 168 yes: 119	obs: 287 no: 182 yes: 105	obs: 287 no: 275 yes: 12	
Financial topics	obs: 249 no: 104 yes: 145	obs: 249 no: 218 yes: 31	obs: 249 no: 140 yes: 109	obs: 249 no: 183 yes: 66	obs: 249 no: 223 yes: 26	
Outreach and communications	obs: 230 no: 93 yes: 137	obs: 230 no: 177 yes: 53	obs: 230 no: 136 yes: 94	obs: 230 no: 186 yes: 44	obs: 230 no: 208 yes: 22	
Health and safety	obs: 302 no: 179 yes: 123	obs: 302 no: 89 yes: 213	obs: 302 no: 127 yes: 175	obs: 302 no: 250 yes: 52	obs: 302 no: 292 yes: 10	
Diagnostic procedures	obs: 298 no: 202 yes: 96	obs: 298 no: 39 yes: 259	obs: 298 no: 147 yes: 151	obs: 298 no: 250 yes: 48	obs: 298 no: 292 yes: 6	
Procedures for selecting weatherization measures	obs: 295 no: 192 yes: 103	obs: 295 no: 107 yes: 188	obs: 295 no: 113 yes: 182	obs: 295 no: 240 yes: 55	obs: 295 no: 287 yes: 8	
Client education	obs: 286 no: 145 yes: 141	obs: 286 no: 198 yes: 88	obs: 286 no: 125 yes: 161	obs: 286 no: 243 yes: 43	obs: 286 no: 271 yes: 15	
Other (please specify)	obs: 6 no: 1 yes: 5	obs: 6 no: 5 yes: 1	obs: 6 no: 3 yes: 3	obs: 6 no: 6 yes: 0	obs: 6 no: 5 yes: 1	

8. For each broad subject listed in the left-most column of the following table, please indicate the quality of training received in Program Year 2008 at the training venues listed in the column headings. Please leave cells blank where your agency did not receive training during this period of time.

Please use the following scale: 1 – very low; 2 – low; 3 – medium; 4 – high; 5 – very high

<b>Subject</b>	<b>National Weatherization Program Conference</b>	<b>Affordable Comfort Conference</b>	<b>Regional Weatherization Conference</b>	<b>State Weatherization Conference</b>	<b>State/Regional Training Center</b>	<b>Training Provided by Your Own Agency</b>
<b>Management</b>	obs: 115 very low: 10 low: 7 medium: 32 high: 45 very high: 21	obs: 80 very low: 6 low: 6 medium: 29 high: 25 very high: 14	obs: 84 very low: 1 low: 9 medium: 35 high: 22 very high: 17	obs: 129 very low: 7 low: 13 medium: 32 high: 51 very high: 26	obs: 76 very low: 8 low: 0 medium: 20 high: 30 very high: 17	obs: 115 very low: 8 low: 3 medium: 37 high: 34 very high: 32
<b>Weatherization installation</b>	obs: 90 very low: 6 low: 7 medium: 13 high: 50 very high: 13	obs: 88 very low: 4 low: 5 medium: 26 high: 30 very high: 23	obs: 82 very low: 1 low: 5 medium: 17 high: 36 very high: 22	obs: 121 very low: 4 low: 13 medium: 32 high: 51 very high: 20	obs: 121 very low: 1 low: 0 medium: 15 high: 57 very high: 49	obs: 156 very low: 2 low: 2 medium: 32 high: 61 very high: 59
<b>Auditing/Estimating</b>	obs: 90 very low: 2 low: 7 medium: 19 high: 49 very high: 13	obs: 81 very low: 5 low: 3 medium: 24 high: 31 very high: 18	obs: 77 very low: 1 low: 6 medium: 17 high: 39 very high: 14	obs: 118 very low: 2 low: 15 medium: 37 high: 49 very high: 15	obs: 139 very low: 2 low: 1 medium: 26 high: 59 very high: 50	obs: 147 very low: 0 low: 1 medium: 34 high: 70 very high: 41
<b>Monitoring/quality control</b>	obs: 82 very low: 6 low: 8 medium: 31 high: 25 very high: 12	obs: 61 very low: 3 low: 5 medium: 20 high: 21 very high: 12	obs: 70 very low: 0 low: 6 medium: 27 high: 23 very high: 15	obs: 103 very low: 3 low: 21 medium: 22 high: 32 very high: 25	obs: 91 very low: 1 low: 1 medium: 25 high: 43 very high: 20	obs: 126 very low: 0 low: 7 medium: 27 high: 48 very high: 43
<b>Financial topics</b>	obs: 75 very low: 8 low: 14 medium: 20 high: 22 very high: 12	obs: 54 very low: 3 low: 13 medium: 16 high: 11 very high: 11	obs: 54 very low: 1 low: 11 medium: 19 high: 24 very high: 10	obs: 93 very low: 6 low: 15 medium: 23 high: 30 very high: 18	obs: 55 very low: 6 low: 5 medium: 14 high: 17 very high: 13	obs: 93 very low: 2 low: 15 medium: 20 high: 28 very high: 27
<b>Outreach and communications</b>	obs: 68 very low: 8 low: 2 medium: 28 high: 15 very high: 14	obs: 54 very low: 7 low: 9 medium: 19 high: 13 very high: 6	obs: 58 very low: 1 low: 3 medium: 29 high: 12 very high: 13	obs: 82 very low: 4 low: 13 medium: 28 high: 23 very high: 13	obs: 55 very low: 3 low: 9 medium: 17 high: 10 very high: 15	obs: 97 very low: 5 low: 9 medium: 21 high: 33 very high: 28
<b>Health and safety</b>	obs: 85 very low: 2 low: 10 medium: 21 high: 36 very high: 16	obs: 83 very low: 6 low: 5 medium: 24 high: 28 very high: 19	obs: 77 very low: 0 low: 5 medium: 20 high: 31 very high: 21	obs: 113 very low: 5 low: 9 medium: 35 high: 42 very high: 21	obs: 124 very low: 1 low: 1 medium: 19 high: 60 very high: 43	obs: 137 very low: 1 low: 4 medium: 28 high: 61 very high: 42
<b>Diagnostic procedures</b>	obs: 83 very low: 1 low: 8 medium: 26 high: 28 very high: 20	obs: 87 very low: 3 low: 5 medium: 31 high: 25 very high: 22	obs: 77 very low: 0 low: 3 medium: 24 high: 28 very high: 21	obs: 106 very low: 3 low: 14 medium: 30 high: 34 very high: 24	obs: 135 very low: 1 low: 1 medium: 22 high: 52 very high: 60	obs: 139 very low: 1 low: 2 medium: 35 high: 60 very high: 41
<b>Procedures for selecting weatherization measures</b>	obs: 79 very low: 5 low: 5 medium: 22 high: 33 very high: 13	obs: 69 very low: 6 low: 4 medium: 23 high: 23 very high: 13	obs: 66 very low: 1 low: 4 medium: 20 high: 23 very high: 18	obs: 102 very low: 5 low: 12 medium: 22 high: 34 very high: 30	obs: 121 very low: 1 low: 0 medium: 22 high: 54 very high: 43	obs: 135 very low: 0 low: 1 medium: 29 high: 62 very high: 43

Client education	obs: 82 very low: 10 low: 11 medium: 23 high: 26 very high: 13	obs: 74 very low: 5 low: 15 medium: 23 high: 20 very high: 11	obs: 66 very low: 0 low: 9 medium: 17 high: 25 very high: 15	obs: 97 very low: 9 low: 14 medium: 27 high: 29 very high: 18	obs: 1 very low: 5 low: 5 medium: 32 high: 32 very high: 16	obs: 138 very low: 1 low: 9 medium: 39 high: 48 very high: 41
Other (please specify)	obs: 3 very low: 2 low: 0 medium: 1 high: 0 very high: 0	obs: 2 very low: 1 low: 0 medium: 1 high: 0 very high: 0	obs: 2 very low: 1 low: 0 medium: 1 high: 0 very high: 0	obs: 2 very low: 1 low: 0 medium: 1 high: 0 very high: 0	obs: 3 very low: 1 low: 0 medium: 1 high: 0 very high: 1	obs: 5 very low: 1 low: 0 medium: 1 high: 1 very high: 2

9. For those staff working in your agency who needed to have knowledge about the following list of weatherization topics in Program Year 2008, how well trained were they in each area in Program Year 2008? Please use the following scale: 1 – not at all well trained; 2 – not well trained; 3 – moderately well trained; 4 – well trained; 5 – very well trained; 6 – not applicable *Circle best answer.*

(1) Diagnostic procedures

	Freq.	Percent	Cum.
not at all well trained	2.07	0.66	0.66
not well trained	9.37	2.99	3.64
moderately well trained	56.75	18.07	21.72
well trained	125.50	39.97	61.69
very well trained	113.67	36.20	97.89
n/a	6.64	2.11	100.00
Total	314	100.00	

(2) Insulation

-- single family dwellings

	Freq.	Percent	Cum.
not well trained	11.10	3.52	3.52
moderately well trained	49.20	15.62	19.14
well trained	122.91	39.02	58.16
very well trained	122.98	39.04	97.20
n/a	8.81	2.80	100.00
Total	315	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
not at all well trained	19.21	7.22	7.22
not well trained	23.72	8.92	16.14
moderately well trained	29.39	11.05	27.19
well trained	67.17	25.25	52.44
very well trained	46.82	17.60	70.04
n/a	79.70	29.96	100.00
Total	266	100.00	

-- mobile homes

	Freq.	Percent	Cum.
not at all well trained	5.01	1.72	1.72
not well trained	14.71	5.06	6.78
moderately well trained	46.01	15.81	22.59
well trained	102.38	35.18	57.77
very well trained	101.76	34.97	92.74
n/a	21.12	7.26	100.00
Total	291	100.00	

(3) Space heating, ventilation, air conditioning

-- single family dwellings

	Freq.	Percent	Cum.
not at all well trained	.92	0.30	0.30
not well trained	24.38	7.89	8.19
moderately well trained	65.65	21.24	29.43
well trained	115.51	37.38	66.81
very well trained	89.44	28.94	95.76
n/a	13.11	4.24	100.00
Total	309	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
not at all well trained	18.31	7.02	7.02
not well trained	30.48	11.68	18.69
moderately well trained	39.21	15.02	33.72
well trained	54.83	21.01	54.73
very well trained	35.03	13.42	68.15
n/a	83.14	31.85	100.00
Total	261	100.00	

-- mobile homes

	Freq.	Percent	Cum.
not at all well trained	4.80	1.66	1.66
not well trained	21.85	7.54	9.19
moderately well trained	57.16	19.71	28.90
well trained	101.56	35.02	63.92
very well trained	83.63	28.84	92.76
n/a	20.99	7.24	100.00
Total	290	100.00	



(4) Infiltration measures

-- single family dwellings

	Freq.	Percent	Cum.
not at all well trained	.82	0.26	0.26
not well trained	13.62	4.30	4.56
moderately well trained	43.83	13.83	18.38
well trained	117.72	37.13	55.52
very well trained	133.45	42.10	97.61
n/a	7.57	2.39	100.00
Total	317	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
not at all well trained	17.66	6.72	6.72
not well trained	23.35	8.88	15.59
moderately well trained	34.14	12.98	28.58
well trained	55.24	21.00	49.58
very well trained	53.74	20.43	70.01
n/a	78.86	29.99	100.00
Total	263	100.00	

-- mobile homes

	Freq.	Percent	Cum.
not at all well trained	4.48	1.51	1.51
not well trained	16.19	5.47	6.99
moderately well trained	38.58	13.03	20.02
well trained	100.28	33.88	53.90
very well trained	119.78	40.46	94.36
n/a	16.68	5.64	100.00
Total	296	100.00	

(5) Doors and windows

-- single family dwellings

	Freq.	Percent	Cum.
not at all well trained	5.63	1.85	1.85
not well trained	12.60	4.13	5.98
moderately well trained	62.84	20.60	26.58
well trained	100.99	33.11	59.69
very well trained	101.75	33.36	93.05
n/a	21.19	6.95	100.00
Total	305	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
not at all well trained	17.85	6.87	6.87
not well trained	20.60	7.92	14.79
moderately well trained	34.34	13.21	28.00
well trained	58.00	22.31	50.30
very well trained	45.05	17.33	67.63
n/a	84.16	32.37	100.00
Total	260	100.00	

-- mobile homes

	Freq.	Percent	Cum.
not at all well trained	7.12	2.46	2.46
not well trained	15.39	5.32	7.79
moderately well trained	43.54	15.07	22.86
well trained	98.63	34.13	56.98
very well trained	95.96	33.21	90.19
n/a	28.35	9.81	100.00
Total	289	100.00	

(6) Hot water heating

-- single family dwellings

	Freq.	Percent	Cum.
not at all well trained	1.57	0.51	0.51
not well trained	28.06	9.17	9.68
moderately well trained	68.79	22.48	32.16
well trained	97.81	31.96	64.13
very well trained	96.49	31.53	95.66
n/a	13.28	4.34	100.00
Total	306	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
not at all well trained	19.63	7.49	7.49
not well trained	23.80	9.09	16.58
moderately well trained	43.60	16.64	33.22
well trained	50.23	19.17	52.39
very well trained	42.21	16.11	68.50
n/a	82.53	31.50	100.00
Total	262	100.00	

-- mobile homes

	Freq.	Percent	Cum.
not at all well trained	5.22	1.82	1.82
not well trained	28.54	9.98	11.80
moderately well trained	56.04	19.60	31.40
well trained	82.75	28.93	60.33
very well trained	90.18	31.53	91.87
n/a	23.27	8.13	100.00
Total	286	100.00	

(7) Baseloads (e.g., lighting, refrigerators)

-- single family dwellings

	Freq.	Percent	Cum.
not at all well trained	6.58	2.20	2.20
not well trained	22.00	7.36	9.56
moderately well trained	58.49	19.56	29.12
well trained	96.43	32.25	61.37
very well trained	96.27	32.20	93.57
n/a	19.23	6.43	100.00
Total	299	100.00	

-- multifamily dwellings

	Freq.	Percent	Cum.
not at all well trained	19.48	7.64	7.64
not well trained	17.08	6.70	14.34
moderately well trained	36.84	14.45	28.79
well trained	51.63	20.25	49.03
very well trained	47.54	18.64	67.68
n/a	82.43	32.32	100.00
Total	255	100.00	

-- mobile homes

	Freq.	Percent	Cum.
not at all well trained	9.23	3.26	3.26
not well trained	21.26	7.51	10.77
moderately well trained	44.94	15.88	26.65
well trained	89.58	31.65	58.31
very well trained	92.89	32.82	91.13
n/a	26.00	8.87	100.00
Total	283	100.00	

9a. For those staff working in your agency who needed to have knowledge about the following list of administrative-related topics, how well trained were they in each area in Program Year 2008? Please use the following scale: 1– not at all well trained; 2 – not well trained; 3 – moderately well trained; 4 –well trained; 5 – very well trained; 6 – not applicable *Circle best answer.*

(1) Management

	Freq.	Percent	Cum.
not at all well trained	.74	0.23	0.23
not well trained	19.68	6.23	6.46
moderately well trained	66.86	21.16	27.62
well trained	111.00	35.13	62.75
very well trained	106.00	33.26	96.01
n/a	12.62	3.99	100.00
<b>Total</b>	<b>316</b>	<b>100.00</b>	

(2) Client education

	Freq.	Percent	Cum.
not at all well trained	3.38	1.10	1.10
not well trained	20.56	6.70	7.80
moderately well trained	63.47	20.67	28.47
well trained	119.81	39.03	67.50
very well trained	87.41	28.47	95.97
n/a	12.36	4.03	100.00
<b>Total</b>	<b>307</b>	<b>100.00</b>	

(3) Auditing/estimating

-- single family dwellings

	Freq.	Percent	Cum.
not well trained	5.42	1.72	1.72
moderately well trained	59.27	18.88	20.60
well trained	119.55	38.07	58.67
very well trained	120.99	38.53	97.21
n/a	8.78	2.79	100.00
<b>Total</b>	<b>314</b>	<b>100.00</b>	

-- multifamily dwellings

	Freq.	Percent	Cum.
not at all well trained	16.09	6.02	6.02
not well trained	21.12	7.91	13.94
moderately well trained	41.29	15.46	29.40
well trained	68.64	25.71	55.11
very well trained	42.55	15.94	71.04
n/a	77.31	28.96	100.00
Total	267	100.00	

-- mobile homes

	Freq.	Percent	Cum.
not at all well trained	2.87	0.97	0.97
not well trained	10.77	3.63	4.59
moderately well trained	46.06	15.51	20.10
well trained	114.54	38.57	58.66
very well trained	102.26	34.43	93.10
n/a	20.50	6.90	100.00
Total	297	100.00	

(4) Monitoring/quality control

	Freq.	Percent	Cum.
not well trained	11.34	3.83	3.83
moderately well trained	71.16	24.04	27.87
well trained	116.94	39.51	67.38
very well trained	86.60	29.26	96.63
n/a	9.96	3.37	100.00
Total	296	100.00	

(5) Financial topics

	Freq.	Percent	Cum.
not at all well trained	5.65	1.90	1.90
not well trained	17.80	5.99	7.90
moderately well trained	64.87	21.84	29.74
well trained	107.43	36.17	65.91
very well trained	77.52	26.10	92.01
n/a	23.76	7.99	100.00
Total	297	100.00	

(7) Outreach and communications

	Freq.	Percent	Cum.
not at all well trained	9.62	3.27	3.27
not well trained	16.33	5.55	8.82
moderately well trained	73.89	25.13	33.96
well trained	108.45	36.89	70.84
very well trained	63.05	21.45	92.29
n/a	22.66	7.71	100.00
Total	294	100.00	

(8) Other (please specify) \_\_\_\_\_

	Freq.	Percent	Cum.
not at all well trained	2.77	8.66	8.66
not well trained	1.32	4.13	12.79
moderately well trained	1.12	3.49	16.28
well trained	3.29	10.28	26.55
very well trained	3.73	11.66	38.21
n/a	19.77	61.79	100.00
Total	32	100.00	

9b. For those staff working in your agency who needed to have knowledge about the following list of health and safety topics, how well trained were they in each area in Program Year 2008? Please use the following scale: 1– not at all well trained; 2 – not well trained; 3 – moderately well trained; 4 –well trained; 5 – very well trained; 6 – not applicable.

*Circle best answer.*

(1) Fire safety

	Freq.	Percent	Cum.
not at all well trained	12.47	4.30	4.30
not well trained	34.06	11.74	16.04
moderately well trained	78.91	27.21	43.26
well trained	79.95	27.57	70.83
very well trained	53.91	18.59	89.42
n/a	30.69	10.58	100.00
Total	290	100.00	

(2) Indoor air quality

	Freq.	Percent	Cum.
not at all well trained	3.52	1.12	1.12
not well trained	20.45	6.53	7.66
moderately well trained	67.42	21.54	29.20
well trained	111.71	35.69	64.89
very well trained	101.44	32.41	97.30
n/a	8.46	2.70	100.00
Total	313	100.00	

(3) Measures to increase security of housing unit

	Freq.	Percent	Cum.
not at all well trained	27.50	9.89	9.89
not well trained	65.85	23.69	33.58
moderately well trained	37.96	13.65	47.23
well trained	38.09	13.70	60.93
very well trained	26.62	9.57	70.50
n/a	82.00	29.50	100.00
Total	278	100.00	

(4) Measures to reduce common household hazards

	Freq.	Percent	Cum.
not at all well trained	12.98	4.52	4.52
not well trained	48.02	16.73	21.26
moderately well trained	56.24	19.59	40.85
well trained	86.90	30.28	71.13
very well trained	41.97	14.62	85.76
n/a	40.88	14.24	100.00
Total	287	100.00	

(5) Mold and mildew

	Freq.	Percent	Cum.
not at all well trained	11.28	3.75	3.75
not well trained	37.41	12.43	16.18
moderately well trained	95.26	31.65	47.82
well trained	85.48	28.40	76.22
very well trained	52.93	17.58	93.81
n/a	18.64	6.19	100.00
Total	301	100.00	

(6) Lead

	Freq.	Percent	Cum.
not well trained	26.80	8.59	8.59
moderately well trained	73.86	23.67	32.26
well trained	113.68	36.43	68.70
very well trained	88.71	28.43	97.13
n/a	8.96	2.87	100.00
Total	312	100.00	

(7) Asbestos

	Freq.	Percent	Cum.
not at all well trained	17.06	5.88	5.88
not well trained	47.53	16.39	22.27
moderately well trained	86.58	29.5	52.13
well trained	66.30	22.8	74.99
very well trained	42.91	14.80	89.78
n/a	29.63	10.22	100.00
Total	290	100.00	

(9) Vermiculite

	Freq.	Percent	Cum.
not at all well trained	33.07	12.12	12.12
not well trained	59.86	21.93	34.04
moderately well trained	55.22	20.23	54.27
well trained	44.86	16.43	70.70
very well trained	33.61	12.31	83.01
n/a	46.37	16.99	100.00
Total	273	100.00	

(9) General crew safety

	Freq.	Percent	Cum.
not at all well trained	1.23	0.42	0.42
not well trained	11.85	4.00	4.42
moderately well trained	46.14	15.59	20.01
well trained	105.45	35.63	55.63
very well trained	103.10	34.83	90.46
n/a	28.22	9.54	100.00
Total	296	100.00	



(10) Other (please specify) \_\_\_\_\_

	Freq.	Percent	Cum.
not well trained	5.85	27.84	27.84
moderately well trained	3.47	16.51	44.35
well trained	1.09	5.17	49.52
very well trained	3.26	15.51	65.03
n/a	7.34	34.97	100.00
<b>Total</b>	<b>21</b>	<b>100.00</b>	

10. For those staff working in your agency who needed to have knowledge about the following list of diagnostic topics, how well trained were they in each area in Program Year 2008? Please use the following scale: 1 – not at all well trained; 2 – not well trained; 3 – moderately well trained; 4 – well trained; 5 – very well trained; 6 – not applicable. *Circle best answer.*

**Pressure diagnostics:**

- Blower door (house air leakage rate)

	Freq.	Percent	Cum.
not well trained	8.09	2.54	2.54
moderately well trained	48.49	15.25	17.79
well trained	117.06	36.81	54.60
very well trained	137.07	43.10	97.71
n/a	7.29	2.29	100.00
<b>Total</b>	<b>318</b>	<b>100.00</b>	

- Zonal pressure measurements

	Freq.	Percent	Cum.
not at all well trained	13.29	4.43	4.43
not well trained	25.13	8.38	12.81
moderately well trained	51.32	17.11	29.92
well trained	94.71	31.57	61.48
very well trained	85.51	28.50	89.99
n/a	30.04	10.01	100.00
<b>Total</b>	<b>300</b>	<b>100.00</b>	

- Room-to-room pressure measurements
 

	Freq.	Percent	Cum.
not at all well trained	9.30	3.20	3.20
not well trained	28.67	9.85	13.05
moderately well trained	57.35	19.71	32.76
well trained	79.06	27.17	59.93
very well trained	82.40	28.32	88.24
n/a	34.21	11.76	100.00
Total	291	100.00	

- Duct pressure pan measurements
 

	Freq.	Percent	Cum.
not at all well trained	9.71	3.30	3.30
not well trained	24.07	8.19	11.49
moderately well trained	62.17	21.15	32.64
well trained	87.61	29.80	62.44
very well trained	82.16	27.94	90.38
n/a	28.28	9.62	100.00
Total	294	100.00	

- Duct blower measurements (duct air leakage rate)
 

	Freq.	Percent	Cum.
not at all well trained	18.74	6.65	6.65
not well trained	31.23	11.08	17.72
moderately well trained	45.10	15.99	33.72
well trained	69.58	24.67	58.39
very well trained	66.65	23.63	82.02
n/a	50.69	17.98	100.00
Total	282	100.00	

**Space-heating system:**

- Flue gas analysis (steady-state efficiency measurements)

	Freq.	Percent	Cum.
not at all well trained	7.38	2.43	2.43
not well trained	14.05	4.62	7.05
moderately well trained	47.84	15.74	22.79
well trained	100.28	32.99	55.77
very well trained	112.81	37.11	92.88
n/a	21.64	7.12	100.00
<b>Total</b>	<b>304</b>	<b>100.00</b>	

- Heat rise measurements

	Freq.	Percent	Cum.
not at all well trained	15.52	5.31	5.31
not well trained	31.16	10.67	15.98
moderately well trained	39.64	13.58	29.56
well trained	86.95	29.78	59.34
very well trained	83.88	28.72	88.06
n/a	34.86	11.94	100.00
<b>Total</b>	<b>292</b>	<b>100.00</b>	

- CO measurements in flues

	Freq.	Percent	Cum.
not at all well trained	2.70	0.86	0.86
not well trained	7.14	2.28	3.14
moderately well trained	55.99	17.89	21.03
well trained	107.05	34.20	55.23
very well trained	127.01	40.58	95.81
n/a	13.10	4.19	100.00
<b>Total</b>	<b>313</b>	<b>100.00</b>	

- Draft/spillage (normal operation)

	Freq.	Percent	Cum.
not at all well trained	8.80	2.87	2.87
not well trained	12.77	4.16	7.03
moderately well trained	47.73	15.55	22.57
well trained	104.39	34.00	56.58
very well trained	115.21	37.53	94.11
n/a	18.07	5.89	100.00
<b>Total</b>	<b>307</b>	<b>100.00</b>	

**Air-conditioning system:**

- Refrigerant charge (e.g., superheat, subcooling)

	Freq.	Percent	Cum.
not at all well trained	47.69	17.93	17.93
not well trained	38.52	14.48	32.41
moderately well trained	21.52	8.10	40.51
well trained	18.37	6.91	47.42
very well trained	15.49	5.82	53.25
n/a	124.37	46.75	100.00
Total	266	100.00	

**HVAC components and cross-cutting diagnostics:**

- Air handler flow rate

	Freq.	Percent	Cum.
not at all well trained	25.58	9.14	9.14
not well trained	46.62	16.65	25.79
moderately well trained	53.77	19.20	44.99
well trained	53.39	19.07	64.06
very well trained	41.66	14.88	78.94
n/a	58.98	21.06	100.00
Total	280	100.00	

- Thermostat anticipator current

	Freq.	Percent	Cum.
not at all well trained	20.72	7.35	7.35
not well trained	37.87	13.43	20.78
moderately well trained	49.05	17.39	38.17
well trained	57.68	20.45	58.62
very well trained	53.73	19.05	77.68
n/a	62.95	22.32	100.00
Total	282	100.00	

- Worst case draft/spillage (CAZ)

	Freq.	Percent	Cum.
not at all well trained	11.8	4.02	4.02
not well trained	18.58	6.30	10.32
moderately well trained	46.70	15.83	26.15
well trained	82.64	28.01	54.16
very well trained	104.94	35.57	89.73
n/a	30.29	10.27	100.00
Total	29	100.00	

**Hot-water (water-heating) system:**

- Flue gas analysis (steady-state efficiency measurements)

	Freq.	Percent	Cum.
not at all well trained	8.93	2.95	2.95
not well trained	14.55	4.80	7.75
moderately well trained	40.16	13.25	21.00
well trained	99.99	33.00	54.00
very well trained	108.08	35.67	89.67
n/a	31.30	10.33	100.00
<b>Total</b>	<b>303</b>	<b>100.00</b>	

- CO measurements in flues

	Freq.	Percent	Cum.
not at all well trained	4.97	1.61	1.61
not well trained	11.71	3.79	5.40
moderately well trained	37.20	12.04	17.44
well trained	113.23	36.64	54.08
very well trained	127.37	41.22	95.30
n/a	14.52	4.70	100.00
<b>Total</b>	<b>309</b>	<b>100.00</b>	

- Draft/spillage (normal operation)

	Freq.	Percent	Cum.
not at all well trained	5.50	1.80	1.80
not well trained	15.14	4.95	6.74
moderately well trained	53.16	17.37	24.12
well trained	102.19	33.39	57.51
very well trained	116.69	38.13	95.65
n/a	13.32	4.35	100.00
<b>Total</b>	<b>306</b>	<b>100.00</b>	

- Water flow rates (showerheads and faucets)

	Freq.	Percent	Cum.
not at all well trained	15.89	5.54	5.54
not well trained	33.63	11.72	17.26
moderately well trained	49.03	17.08	34.34
well trained	79.20	27.60	61.93
very well trained	56.29	19.61	81.55
n/a	52.96	18.45	100.00
<b>Total</b>	<b>287</b>	<b>100.00</b>	

**Other CO measurements:**

- CO measurements in equipment rooms

	Freq.	Percent	Cum.
not at all well trained	5.13	1.74	1.74
not well trained	7.54	2.55	4.29
moderately well trained	52.18	17.69	21.98
well trained	97.98	33.21	55.20
very well trained	102.90	34.88	90.08
n/a	29.28	9.92	100.00
Total	295	100.00	

- Cooking stove

	Freq.	Percent	Cum.
not at all well trained	1.11	0.36	0.36
not well trained	10.29	3.35	3.71
moderately well trained	53.08	17.29	21.01
well trained	113.12	36.85	57.85
very well trained	112.55	36.66	94.52
n/a	16.84	5.48	100.00
Total	307	100.00	

- CO measurements in living areas

	Freq.	Percent	Cum.
not at all well trained	1.21	0.41	0.41
not well trained	8.74	2.95	3.36
moderately well trained	44.28	14.96	18.32
well trained	104.99	35.47	53.79
very well trained	114.34	38.63	92.42
n/a	22.43	7.58	100.00
Total	296	100.00	

**Other diagnostics and inspections:**

- Refrigerator energy use

	Freq.	Percent	Cum.
not at all well trained	8.26	2.80	2.80
not well trained	17.01	5.77	8.56
moderately well trained	60.69	20.57	29.14
well trained	92.00	31.19	60.32
very well trained	83.00	28.13	88.46
n/a	34.05	11.54	100.00
Total	295	100.00	

- Exhaust fan air flow rate measurement

	Freq.	Percent	Cum.
not at all well trained	29.07	10.65	10.65
not well trained	44.51	16.30	26.95
moderately well trained	44.19	16.19	43.14
well trained	66.51	24.36	67.50
very well trained	45.13	16.53	84.03
n/a	43.60	15.97	100.00
Total	273	100.00	

- Infrared scanning (camera)

	Freq.	Percent	Cum.
not at all well trained	27.32	9.29	9.29
not well trained	34.99	11.90	21.19
moderately well trained	76.19	25.91	47.11
well trained	61.98	21.08	68.19
very well trained	51.49	17.51	85.70
n/a	42.04	14.30	100.00
Total	294	100.00	

- Radon testing

	Freq.	Percent	Cum.
not at all well trained	57.76	22.65	22.65
not well trained	30.60	12.00	34.65
moderately well trained	13.87	5.44	40.09
well trained	16.10	6.31	46.40
very well trained	12.55	4.92	51.32
n/a	124.13	48.68	100.00
Total	255	100.00	

- Lead testing

	Freq.	Percent	Cum.
not at all well trained	26.00	9.49	9.49
not well trained	31.00	11.31	20.80
moderately well trained	35.85	13.08	33.89
well trained	48.77	17.80	51.69
very well trained	60.35	22.02	73.71
n/a	72.03	26.29	100.00
Total	274	100.00	

- Mold and mildew testing

	Freq.	Percent	Cum.
not at all well trained	42.90	16.13	16.13
not well trained	31.97	12.02	28.15
moderately well trained	36.47	13.71	41.86
well trained	37.01	13.91	55.77
very well trained	24.70	9.29	65.06
n/a	92.95	34.94	100.00
Total	266	100.00	

- Moisture content testing

	Freq.	Percent	Cum.
not at all well trained	42.80	16.27	16.27
not well trained	37.52	14.27	30.54
moderately well trained	38.80	14.75	45.29
well trained	40.57	15.43	60.72
very well trained	21.60	8.21	68.93
n/a	81.71	31.07	100.00
Total	263	100.00	

- Other (please specify)

	Freq.	Percent	Cum.
not at all well trained	3.61	22.54	22.54
well trained	1.02	6.35	28.88
very well trained	1.04	6.51	35.39
n/a	10.34	64.61	100.00
Total	16	100.00	

11. Overall, how well trained were your agency's weatherization crews in Program Year 2008? *Check best answer.*

	Freq.	Percent	Cum.
very poorly trained	1.04	0.33	0.33
poorly trained	6.21	1.97	2.30
neither well nor poorly trained	78.71	24.99	27.29
well trained	134.52	42.70	70.00
very well trained	94.52	30.00	100.00
Total	315	100.00	



11. What were the barriers that prevented your crews from receiving all the training they need? *Check all that apply.*

\_\_\_\_\_ Lack of training funds

	Freq.	Percent	Cum.
no	172.30	68.92	68.92
yes	77.70	31.08	100.00
Total	250	100.00	

\_\_\_\_\_ Cannot take crews out of the field long enough for training

	Freq.	Percent	Cum.
no	104.99	42.00	42.00
yes	145.01	58.00	100.00
Total	250	100.00	

\_\_\_\_\_ Training not available at the right times

	Freq.	Percent	Cum.
no	100.58	40.23	40.23
yes	149.42	59.77	100.00
Total	250	100.00	

\_\_\_\_\_ Training not available at the right places

	Freq.	Percent	Cum.
no	173.51	69.40	69.40
yes	76.49	30.60	100.00
Total	250	100.00	

\_\_\_\_\_ Available training is poor in quality

	Freq.	Percent	Cum.
no	230.42	92.17	92.17
yes	19.58	7.83	100.00
Total	250	100.00	

**SECTION F: INSPECTION**

1. Which of the following types of post-weatherization quality control inspection did your agency perform on your weatherized dwelling units in Program Year 2008?

*Check all that apply.*

- Visual inspection of installed measures

	Freq.	Percent	Cum.
no	3.14	0.90	0.90
yes	347.86	99.10	100.00
Total	351	100.00	

- Verification of insulation depths/quantities

	Freq.	Percent	Cum.
no	28.94	8.24	8.24
yes	322.06	91.76	100.00
Total	351	100.00	

- Verification of operation of measures installed

	Freq.	Percent	Cum.
no	37.11	10.57	10.57
yes	313.89	89.43	100.00
Total	351	100.00	

- Assessment of quality of measures installed

	Freq.	Percent	Cum.
no	40.97	11.67	11.67
yes	310.03	88.33	100.00
Total	351	100.00	

- Identification of needed measures that were not installed

	Freq.	Percent	Cum.
no	94.31	26.87	26.87
yes	256.69	73.13	100.00
Total	351	100.00	

- Blower door test

	Freq.	Percent	Cum.
no	19.22	5.48	5.48
yes	331.78	94.52	100.00
Total	351	100.00	

- Heating system efficiency test (flue gas analysis)

	Freq.	Percent	Cum.
no	75.01	21.37	21.37
yes	275.99	78.63	100.00
Total	351	100.00	

- Draft/spillage tests of heating systems

	Freq.	Percent	Cum.
no	72.38	20.62	20.62
yes	278.62	79.38	100.00
Total	351	100.00	

- Carbon monoxide (CO) monitoring

	Freq.	Percent	Cum.
no	38.16	10.87	10.87
yes	312.84	89.13	100.00
Total	351	100.00	

- Infrared scanning

	Freq.	Percent	Cum.
no	204.00	58.12	58.12
yes	147.00	41.88	100.00
Total	351	100.00	

- Identification of unresolved health and safety issues

	Freq.	Percent	Cum.
no	111.69	31.82	31.82
yes	239.31	68.18	100.00
Total	351	100.00	

- Discussion with occupants
 

	Freq.	Percent	Cum.
no	39.27	11.19	11.19
yes	311.73	88.81	100.00
Total	351	100.00	

- Other (please specify) \_\_\_\_\_
 

	Freq.	Percent	Cum.
no	331.94	94.57	94.57
yes	19.07	5.43	100.00
Total	351	100.00	

2. Which of the following post-weatherization quality and control inspection topics listed below were agency staff first trained on in Program Year 2008 and in the two years prior to Program Year 2008? If your agency does not use a particular approach, leave that item blank. *Check all that apply.*

- Visual inspection of installed measures
 

	Freq.	Percent	Cum.
unchecked	24.59	12.42	12.42
checked	173.41	87.58	100.00
Total	198	100.00	

- Verification of insulation depths/quantities
 

	Freq.	Percent	Cum.
unchecked	29.95	15.12	15.12
checked	168.05	84.88	100.00
Total	198	100.00	

- Verification of operation of measures installed
 

	Freq.	Percent	Cum.
unchecked	38.89	19.64	19.64
checked	159.12	80.36	100.00
Total	198	100.00	

- Assessment of quality of measures installed

	Freq.	Percent	Cum.
unchecked	38.90	19.64	19.64
checked	159.10	80.36	100.00
Total	198	100.00	

- Identification of needed measures that were not installed

	Freq.	Percent	Cum.
unchecked	60.92	30.77	30.77
checked	137.08	69.23	100.00
Total	198	100.00	

- Blower door test

	Freq.	Percent	Cum.
unchecked	21.04	10.62	10.62
checked	176.96	89.38	100.00
Total	198	100.00	

- Heating system efficiency

	Freq.	Percent	Cum.
unchecked	54.57	27.56	27.56
checked	143.43	72.44	100.00
Total	198	100.00	

- Draft/spillage tests of heating systems

	Freq.	Percent	Cum.
unchecked	58.89	29.74	29.74
checked	139.11	70.26	100.00
Total	198	100.00	

- Other diagnostic tests
- Identification of unresolved health and safety issues
- Discussion with occupants
- Other

	Freq.	Percent	Cum.
unchecked	191.14	96.53	96.53
checked	6.86	3.47	100.00
Total	198	100.00	

3. For Program Year 2008 please rate key aspects (cost, training needed, time needed and effectiveness) of the following types of post-weatherization quality control inspection procedures.

Please use the following scale: 1 – very low; 2 – low; 3 – medium; 4 – high; 5 – very high.

*For example, if you view visual inspection of installed measures as requiring a low level of training, enter a rating of 2 in the Training Needed column. If you view visual inspection of installed measures as highly effective, enter a rating of 4 in the Effectiveness column.*

	<b>Cost</b>	<b>Training Needed</b>	<b>Time Needed</b>	<b>Effectiveness</b>
<b>Visual inspection of installed measures</b>	obs: 264 very low: 70 low: 102 medium: 73 high: 14 very high: 4	obs: 279 very low: 20 low: 46 medium: 97 high: 73 very high: 42	obs: 272 very low: 21 low: 65 medium: 117 high: 54 very high: 14	obs: 299 very low: 0 low: 8 medium: 37 high: 127 very high: 126
<b>Verification of insulation depths/quantities</b>	obs: 260 very low: 79 low: 120 medium: 43 high: 15 very high: 3	obs: 275 very low: 36 low: 88 medium: 79 high: 53 very high: 18	obs: 267 very low: 39 low: 78 medium: 107 high: 31 very high: 12	obs: 295 very low: 1 low: 12 medium: 30 high: 131 very high: 121
<b>Verification of operation of measures installed</b>	obs: 258 very low: 66 low: 103 medium: 69 high: 16 very high: 3	obs: 272 very low: 24 low: 59 medium: 87 high: 67 very high: 34	obs: 263 very low: 17 low: 73 medium: 112 high: 45 very high: 15	obs: 293 very low: 1 low: 7 medium: 47 high: 118 very high: 120
<b>Assessment of quality of measures installed</b>	obs: 260 very low: 66 low: 108 medium: 64 high: 16 very high: 5	obs: 274 very low: 21 low: 47 medium: 87 high: 76 very high: 42	obs: 265 very low: 13 low: 61 medium: 123 high: 49 very high: 18	obs: 292 very low: 1 low: 10 medium: 42 high: 129 very high: 109
<b>Identification of needed measures that were not installed</b>	obs: 247 very low: 80 low: 96 medium: 44 high: 20 very high: 7	obs: 263 very low: 20 low: 50 medium: 76 high: 64 very high: 52	obs: 253 very low: 20 low: 81 medium: 93 high: 35 very high: 23	obs: 277 very low: 7 low: 20 medium: 65 high: 100 very high: 84
<b>Blower door test</b>	obs: 257 very low: 42 low: 66 medium: 99 high: 33 very high: 16	obs: 272 very low: 16 low: 32 medium: 85 high: 92 very high: 46	obs: 261 very low: 8 low: 60 medium: 108 high: 54 very high: 30	obs: 291 very low: 2 low: 6 medium: 28 high: 102 very high: 153
<b>Heating system efficiency test (flue gas analysis)</b>	obs: 225 very low: 42 low: 60 medium: 81 high: 28 very high: 14	obs: 244 very low: 13 low: 21 medium: 57 high: 102 very high: 51	obs: 231 very low: 6 low: 48 medium: 105 high: 49 very high: 22	obs: 257 very low: 0 low: 3 medium: 39 high: 95 very high: 119
<b>Draft/spillage tests of heating systems</b>	obs: 228 very low: 56 low: 80 medium: 62 high: 19 very high: 11	obs: 247 very low: 12 low: 30 medium: 78 high: 78 very high: 49	obs: 234 very low: 17 low: 54 medium: 97 high: 45 very high: 20	obs: 259 very low: 0 low: 9 medium: 29 high: 101 very high: 119
<b>Carbon monoxide (CO) monitoring</b>	obs: 236 very low: 59 low: 80 medium: 63 high: 18 very high: 15	obs: 252 very low: 14 low: 51 medium: 83 high: 61 very high: 43	obs: 239 very low: 19 low: 80 medium: 85 high: 27 very high: 27	obs: 267 very low: 0 low: 6 medium: 27 high: 101 very high: 133

<b>Infrared scanning</b>	obs: 185 very low: 27 low: 24 medium: 46 high: 40 very high: 47	obs: 202 very low: 10 low: 25 medium: 66 high: 57 very high: 43	obs: 191 very low: 11 low: 30 medium: 82 high: 39 very high: 28	obs: 211 very low: 1 low: 13 medium: 37 high: 72 very high: 88
<b>Identification of unresolved health and safety issues</b>	obs: 240 very low: 72 low: 81 medium: 60 high: 17 very high: 9	obs: 256 very low: 17 low: 50 medium: 65 high: 72 very high: 51	obs: 247 very low: 14 low: 74 medium: 95 high: 39 very high: 23	obs: 271 very low: 4 low: 10 medium: 61 high: 104 very high: 91
<b>Discussion with occupants</b>	obs: 252 very low: 91 low: 99 medium: 40 high: 13 very high: 8	obs: 265 very low: 29 low: 64 medium: 79 high: 63 very high: 30	obs: 254 very low: 24 low: 88 medium: 87 high: 36 very high: 19	obs: 284 very low: 3 low: 25 medium: 77 high: 93 very high: 86
<b>Other (please specify)</b>	obs: 3 very low: 1 low: 1 medium: 1 high: 0 very high: 0	obs: 3 very low: 1 low: 1 medium: 0 high: 0 very high: 1	obs: 3 very low: 1 low: 1 medium: 0 high: 1 very high: 0	obs: 6 very low: 0 low: 0 medium: 1 high: 3 very high: 2

4. Approximately how many hours did it take to perform a typical post-weatherization quality control inspection in Program Year 2008, by the major components listed below?

Scheduling observations:	322
missing values:	35
mean:	.83
standard deviation:	1.85
min:	0
10th percentile:	.2
25th percentile:	.5
median:	.5
75th percentile:	1
90th percentile:	1
max:	30

Travel observations:	324
missing values:	33
mean:	1.49
standard deviation:	5.48
min:	.02
10th percentile:	.5
25th percentile:	.5
median:	1
75th percentile:	1.5
90th percentile:	2
max:	90

On-site work observations:	317
missing values:	40
mean:	2.72
standard deviation:	5.52
min:	0
10th percentile:	1
25th percentile:	1
median:	2
75th percentile:	2.5
90th percentile:	4
max:	48

Post-inspection analysis and write-up observations:	319
missing values:	38
mean:	1.7
standard deviation:	5.62
min:	0
10th percentile:	.5
25th percentile:	1
median:	1
75th percentile:	2
90th percentile:	2
max:	90

Other observations:	85
missing values:	272
mean:	1.36
standard deviation:	3.83
min:	0
10th percentile:	0
25th percentile:	.5
median:	1
75th percentile:	1
90th percentile:	1
max:	30



TOTAL of all components observations:	357
missing values:	0
mean:	6.16
standard deviation:	14.80
min:	0
10th percentile:	0
25th percentile:	3
median:	4.5
75th percentile:	6
90th percentile:	9
max:	240

5. Which of the following parties were involved in performing your agency's post-weatherization quality control inspections in Program Year 2008? *Check all that apply.*

- In-house manager

	Freq.	Percent	Cum.
no	154.51	46.68	46.68
yes	176.49	53.32	100.00
Total	331	100.00	

- In-house inspection specialist

	Freq.	Percent	Cum.
no	89.84	27.14	27.14
yes	241.16	72.86	100.00
Total	331	100.00	

- Contractor inspection specialist

	Freq.	Percent	Cum.
no	296.22	89.49	89.49
yes	34.78	10.51	100.00
Total	331	100.00	

- In-house weatherization crew chief

	Freq.	Percent	Cum.
no	249.28	75.31	75.31
yes	81.72	24.69	100.00
Total	331	100.00	

- Contractor weatherization crew chief

	Freq.	Percent	Cum.
no	306.59	92.63	92.63
yes	24.41	7.37	100.00
Total	331	100.00	

- In-house weatherization crew member

	Freq.	Percent	Cum.
no	303.71	91.76	91.76
yes	27.29	8.24	100.00
Total	331	100.00	

- Contractor weatherization crew member

	Freq.	Percent	Cum.
no	317.62	95.96	95.96
yes	13.38	4.04	100.00
Total	331	100.00	

- Other (please specify) \_\_\_\_\_

	Freq.	Percent	Cum.
no	299.31	90.42	90.42
yes	31.69	9.58	100.00
Total	331	100.00	

5a. Which party was primarily responsible for post-weatherization quality control inspections? *Check best answer.*

	Freq.	Percent	Cum.
in-house manager	69.62	21.10	21.10
in-house inspection specialist	196.68	59.60	80.70
contractor inspection specialist	10.50	3.18	83.88
in-house wx crew chief	21.96	6.66	90.54
contractor wx crew chief	2.92	0.88	91.42
in-house wx crew member	4.57	1.39	92.81
other	23.74	7.19	100.00
Total	330	100.00	

6. What types of credentials or experience did your agency's post-weatherization quality control inspectors have in Program Year 2008? *Check all that apply.*

- Technical certification

	Freq.	Percent	Cum.
no	82.06	24.94	24.94
yes	246.94	75.06	100.00
Total	329	100.00	

- Extensive experience performing pre-weatherization audits

	Freq.	Percent	Cum.
no	88.03	26.76	26.76
yes	240.97	73.24	100.00
Total	329	100.00	

- Extensive experience performing weatherization work

	Freq.	Percent	Cum.
no	138.10	41.98	41.98
yes	190.90	58.02	100.00
Total	329	100.00	

- Extensive experience supervising weatherization work

	Freq.	Percent	Cum.
no	169.10	51.40	51.40
yes	159.90	48.60	100.00
Total	329	100.00	

- Construction experience

	Freq.	Percent	Cum.
no	149.65	45.49	45.49
yes	179.35	54.51	100.00
Total	329	100.00	

- Other (please specify) \_\_\_\_\_

	Freq.	Percent	Cum.
no	305.48	92.85	92.85
yes	23.52	7.15	100.00
Total	329	100.00	

7. Please indicate the level of experience for the agency staff engaged post-weatherization quality control inspections in Program Year 2008 in each of the following functional areas:

	<b>Very High</b>	<b>High</b>	<b>Average</b>	<b>Low</b>	<b>Very Low</b>
Performing weatherization work	Freq.    Percent    Cum.				
	-----+-----				
	very low	6.57	2.05	2.05	
	low	19.09	5.95	7.99	
	average	61.96	19.30	27.29	
	high	114.10	35.54	62.84	
	very high	119.29	37.16	100.00	
-----+-----					
Total	321	100.00			
Supervising weatherization work	Freq.    Percent    Cum.				
	-----+-----				
	very low	7.94	2.53	2.53	
	low	18.61	5.93	8.46	
	average	60.80	19.36	27.82	
	high	104.66	33.33	61.15	
	very high	122.00	38.85	100.00	
-----+-----					
Total	314	100.00			
Working in construction	Freq.    Percent    Cum.				
	-----+-----				
	very low	14.18	4.55	4.55	
	low	20.97	6.72	11.27	
	average	90.80	29.10	40.37	
	high	102.67	32.91	73.28	
	very high	83.38	26.72	100.00	
-----+-----					
Total	312	100.00			
Performing pre-weatherization audits	Freq.    Percent    Cum.				
	-----+-----				
	very low	3.16	0.97	0.97	
	low	20.96	6.43	7.40	
	average	49.23	15.10	22.50	
	high	105.68	32.42	54.92	
	very high	146.97	45.08	100.00	
-----+-----					
Total	326	100.00			

8. For those dwelling units for which post-weatherization quality control inspections were performed by your agency in Program Year 2008, typically how many days after weatherization completion did the initial inspection take place? \_\_\_\_\_

observations:	322
missing values:	35
mean:	9.29
standard deviation:	13.86
min:	0
10th percentile:	1
25th percentile:	3
median:	5
75th percentile:	10
90th percentile:	20
max:	180

9. In those cases where a Program Year 2008 post-weatherization quality control inspection revealed a problem with the job performed, what action was most commonly taken in response to that finding? *Check one.*

- Sent original crew or contractor back to correct problem \_\_\_\_\_
- Sent different crew or contractor to correct problem \_\_\_\_\_
- Sent crew supervisor to correct problem \_\_\_\_\_
- Sent someone from state office to correct problem \_\_\_\_\_
- No action taken \_\_\_\_\_
- Other (please specify) \_\_\_\_\_

	Freq.	Percent	Cum.
-----+-----			
Sent original crew or contractor back t	310.42	94.07	94.07
Sent different crew or contractor to co	3.63	1.10	95.17
Sent crew supervisor to correct problem	10.52	3.19	98.35
Other	5.43	1.65	100.00
-----+-----			
Total	330	100.00	

10. What *other* actions were taken in Program Year 2008 in response to the discovery of a problem with the weatherization job performed? *Check all that apply.*

- Sent original crew or contractor back to correct problem

	Freq.	Percent	Cum.
-----+-----			
no	282.28	94.09	94.09
yes	17.72	5.91	100.00
-----+-----			
Total	300	100.00	

- Sent different crew or contractor to correct problem

	Freq.	Percent	Cum.
no	167.00	55.67	55.67
yes	133.00	44.33	100.00
Total	300	100.00	

- Sent crew supervisor to correct problem

	Freq.	Percent	Cum.
no	161.17	53.72	53.72
yes	138.83	46.28	100.00
Total	300	100.00	

- Sent someone from state office to correct problem

	Freq.	Percent	Cum.
no	269.41	89.80	89.80
yes	30.59	10.20	100.00
Total	300	100.00	

- No action taken

	Freq.	Percent	Cum.
no	276.62	92.21	92.21
yes	23.38	7.79	100.00
Total	300	100.00	

- Other (please specify) \_\_\_\_\_

	Freq.	Percent	Cum.
no	236.93	78.98	78.98
yes	63.07	21.02	100.00
Total	300	100.00	

11. In Program Year 2008, how many of the dwelling units weatherized by your agency required some additional work as a result of the findings of your post-weatherization quality control inspections?

\_\_\_\_\_

observations:	280
missing values:	77
mean:	18.47
standard deviation:	60.09
min:	0
10th percentile:	0
25th percentile:	2
median:	6
75th percentile:	15
90th percentile:	30
max:	1000

11a. Of those requiring some additional work, how many had work done that probably resulted in more energy savings? \_\_\_\_\_

observations:	267
missing values:	90
mean:	14.92
standard deviation:	46.77
min:	0
10th percentile:	0
25th percentile:	1.5
median:	5
75th percentile:	10
90th percentile:	25
max:	560

12. What were the three most common problems found in the dwelling units inspected by your agency in Program Year 2008?

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_

13. In Program Year 2008, did your agency use findings from your post-weatherization quality control inspections to provide feedback to your in-house or contractor crews on workmanship or related issues? \_\_\_\_\_

	Freq.	Percent	Cum.
no	13.72	4.23	4.23
yes	310.28	95.77	100.00
Total	324	100.00	

14. To what extent does post-weatherization quality control inspection affect the quality of future weatherization work?

	Freq.	Percent	Cum.
No extent	2.48	0.75	0.75
Little extent	17.81	5.40	6.15
Moderate extent	63.90	19.36	25.51
Substantial extent	128.66	38.99	64.50
Very substantial extent	117.15	35.50	100.00
Total	330	100.00	

15. Did the observation of problems with the quality of weatherization work lead to changes in weatherization training for your staff?

	Freq.	Percent	Cum.
no	119.25	36.58	36.58
yes	206.75	63.42	100.00
Total	326	100.00	

15a. If Yes, what changes were made? \_\_\_\_\_

16. Did your agency observe weatherization training sessions to help identify potential problem areas for inspecting in the field (e.g., with respect to installation of measures that trainees seemed to have trouble understanding)?

	Freq.	Percent	Cum.
no	188.81	59.37	59.37
yes	129.19	40.63	100.00
Total	318	100.00	

16a. If Yes, briefly describe how your in-field inspection activities were affected by your training session observations.

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**APPENDIX F: BUILDING & HOUSING UNIT INFORMATION SURVEYS**



**Frequencies include weighted responses from DF2 and DF3.**

**DF2: HOUSING UNIT INFORMATION SURVEY**

Thank you for your prompt response to this data request which is part of the national evaluation of the Weatherization Assistance Program. Evaluation results will provide essential feedback to the weatherization community and inform policymakers about the program's effects on clients' energy consumption, cost savings, and non-energy benefits.

This survey collects detailed information about homes weatherized (or waitlisted) by your agency that have been selected for analysis by the national evaluation. The data you supply will be used with billing history data to better understand energy savings attributable to the Weatherization Assistance Program.

Please use this form (DF2) to provide information about any single family detached and attached houses, mobile homes, or individual units within multi-family buildings. The Building Information Survey (DF3) should be used to document information on small or large multifamily buildings in which the whole building and all units in the building were weatherized or are waitlisted. Refer to the definitions of each building type provided at the end of the survey because these definitions are slightly different than those commonly used within the Weatherization Assistance Program.

All of the information obtained from this survey will be protected and will remain confidential. The data will be analyzed in such a way that the information provided cannot be associated back to your state, your agencies, or the housing units and clients that your state served.

Thank you in advance for completing this survey.

Public reporting burden for this collection of information is estimated to average forty hours per weatherization agency, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of the Chief Information Officer, Records Management Division, IM-11, Paperwork Reduction Project (1910-5151), U.S. Department of Energy, 1000 Independence Ave SW, Washington, DC, 20585-1290; and to the Office of Management and Budget (OMB), OIRA, Paperwork Reduction Project (1910-5151), Washington, DC 20503.

Form completed by: \_\_\_\_\_ Date: \_\_\_\_\_

Unit identification number (to be completed by the evaluation team): \_\_\_\_\_

**IDENTIFICATION**

1. Subgrantee (agency) name: \_\_\_\_\_

2. State: \_\_\_\_\_

3. Agency job number: \_\_\_\_\_

4. Occupant name: \_\_\_\_\_

5. Site address: \_\_\_\_\_ 6. City: \_\_\_\_\_

**WEATHERIZATION INFORMATION**

[Question 7 intentionally deleted.]

Weatherization dates (not audit or inspection dates):

8a. Started: \_\_\_\_\_

8b. Completed: \_\_\_\_\_  
(month) (day) (year)

9. Was this a “reweatherized” unit? (*check only one*)

	Freq.	Percent	Cum.
No	12,412.69	95.81	95.81
Yes	285.38	2.20	98.02
DK	256.93	1.98	100.00
Total	12,955	100.00	

10. Does the housing unit meet your state’s definition for being a high residential energy user? (*check only one*)

	Freq.	Percent	Cum.
No	3,400.97	28.10	28.10
Yes	3,177.77	26.26	54.37
Not Applicable (DF3 only)	458.54	3.79	58.15
No state definition	2,017.51	16.67	74.83
DK	3,046.20	25.17	100.00
Total	12,101	100.00	

12. Does the housing unit meet your state's definition for being a household with a high energy burden? *(check only one)*

	Freq.	Percent	Cum.
No	2,749.27	24.11	24.11
Yes	3,330.27	29.21	53.32
No state definition	2,561.66	22.47	75.79
DK	2,759.80	24.21	100.00
Total	11,401	100.00	

12. Did this client file a complaint about the weatherization services you provided? *(check only one)*

	Freq.	Percent	Cum.
No	11,724.50	91.31	91.31
Yes	132.38	1.03	92.34
DK	983.11	7.66	100.00
Total	12,840	100.00	

## HOUSING UNIT

13. Building type – see definitions at the end of the survey: *(check only one)*

	Freq.	Percent	Cum.
Single-family detached	6,190.26	47.55	47.55
Single-family attached	374.71	2.88	50.43
Single-family det/att unknown	908.16	6.98	57.41
Mobile home	2,364.35	18.16	75.57
Small multifam (2-4 units)	1,053.22	8.09	83.66
Large multifam (5+ units)	2,063.61	15.85	99.51
Shelter	0.14	0.00	99.51
DK	63.56	0.49	100.00
Total	13,018	100.00	

14. Number of stories above grade: *(check only one)*

	Freq.	Percent	Cum.
1	4,515.13	45.50	45.50
2	3,533.52	35.61	81.10
3	346.68	3.49	84.60
4+ (DF2), 4 (DF3)	217.39	2.19	86.79
5-9 (DF3 only)	489.92	4.94	91.72
10-19 (DF3 only)	89.75	0.90	92.63
20+ (DF3 only)	86.91	0.88	93.50
Not applicable	117.81	1.19	94.69
DK	526.90	5.31	100.00
Total	9,924	100.00	

15. If single-family attached, number of units attached (adjacent) to this unit: *(check only one)*

	Freq.	Percent	Cum.
1	176.01	11.21	11.21
2	81.52	5.19	16.40
3	21.37	1.36	17.76
4+	47.34	3.02	20.78
Not applicable	734.33	46.77	67.55
DK	509.43	32.45	100.00
Total	1,570	100.00	

16. If mobile home, number of rooms that have been added on: *(check only one)*

	Freq.	Percent	Cum.
none	1,869.24	70.46	70.46
1	188.91	7.12	77.58
2	38.89	1.47	79.04
3	13.25	0.50	79.54
4+	13.95	0.53	80.07
98	98.75	3.72	83.79
DK	430.01	16.21	100.00
Total	2,653	100.00	

17. If small or large multifamily building, number of units in the building: *(check only one)*

	Freq.	Percent	Cum.
1	4.35	1.27	1.27
2	103.47	30.25	31.53
3	29.37	8.59	40.11
4	25.15	7.35	47.47
5-9	32.15	9.40	56.87
10-19	22.33	6.53	63.39
20-29	23.36	6.83	70.23
30-49	23.36	6.83	77.06
50-99	16.54	4.84	81.89
100+	35.88	10.49	92.38
Not applicable	12.54	3.67	96.05
DK	13.51	3.95	100.00
Total	342	100.00	

18.

Ownership (*check only one*)

	Freq.	Percent	Cum.
Owner occupied	10,462.18	86.42	86.42
Rental	1,584.42	13.09	99.51
Other	38.39	0.32	99.83
DK	21.01	0.17	100.00
<b>Total</b>	<b>12,106</b>	<b>100.00</b>	

19. Year house/building originally built: (*check only one*)

	Freq.	Percent	Cum.
2000+	172.71	1.34	1.34
1990s	678.51	5.25	6.58
1980s	1,193.36	9.23	15.81
1970s	1,936.15	14.97	30.78
1960s	956.82	7.40	38.18
1950s	1,060.87	8.20	46.38
1940s	670.32	5.18	51.56
1930s	485.42	3.75	55.32
1920s	521.88	4.04	59.35
1910s	465.28	3.60	62.95
1900s	590.55	4.57	67.52
Before 1900	311.98	2.41	69.93
DK	3,889.15	30.07	100.00
<b>Total</b>	<b>12,933</b>	<b>100.00</b>	

Conditioned floor area at the time of weatherization: (*include the basement only if it is intentionally conditioned*)

20a. Heated floor area: \_\_\_\_\_ ft<sup>2</sup>  Don't know

20b. Air conditioned floor area: \_\_\_\_\_ ft<sup>2</sup>  Don't know

21a. Primary fuel used to heat the unit during the winter before weatherization: (*check only one*)

	Freq.	Percent	Cum.
Natural gas	7,216.99	55.41	55.41
Propane	1,161.72	8.92	64.33
Kerosene (fuel oil #1)	281.37	2.16	66.49
Fuel oil (#2)	1,270.73	9.76	76.24
Fuel oil (#6)	48.40	0.37	76.62
Electricity	2,615.57	20.08	96.70
Wood	214.36	1.65	98.34
Coal	18.49	0.14	98.48
District steam	22.94	0.18	98.66
Other	101.27	0.78	99.44
DK	73.17	0.56	100.00
<b>Total</b>	<b>13,025</b>	<b>100.00</b>	

21b. Primary fuel used for water heating before weatherization: (*check only one*)

	Freq.	Percent	Cum.
None (post-coded)	10.41	0.08	0.08
Natural gas	6,211.32	48.79	48.87
Propane	673.37	5.29	54.16
oil/kerosene (post-coded)	479.27	3.76	57.92
Electricity	4,494.14	35.30	93.22
Other	150.89	1.19	94.40
DK	712.59	5.60	100.00
<b>Total</b>	<b>12,732</b>	<b>100.00</b>	

22. Type of *primary* space-heating system before weatherization: (*check only one*)

	Freq.	Percent	Cum.
Central furnace	7,526.02	58.59	58.59
Heat pump	269.70	2.10	60.69
Electric, built-in	564.45	4.39	65.08
Steam or hydronic	2,260.73	17.60	82.68
Wall furnace	490.68	3.82	86.50
Room space heater (non-portable)	582.04	4.53	91.03
Portable space heater	211.45	1.65	92.68
Cooking stove	7.10	0.06	92.73
None	233.92	1.82	94.55
DK	699.91	5.45	100.00
<b>Total</b>	<b>12,846</b>	<b>100.00</b>	



23. If small or large multifamily building, was the primary space-heating system shared with other housing units? (*check only one*)

	Freq.	Percent	Cum.
No	555.14	46.69	46.69
Yes	508.73	42.79	89.48
Not applicable	18.67	1.57	91.05
DK	106.45	8.95	100.00
Total	1,189	100.00	

24. Supplemental fuel(s) used to heat the unit during the winter before weatherization: (*check all that apply*)

- Natural gas

	Freq.	Percent	Cum.
No	11,575.19	90.42	90.42
Yes	1,225.81	9.58	100.00
Total	12,801	100.00	

- Propane/LPG

	Freq.	Percent	Cum.
No	12,541.16	97.97	97.97
Yes	259.84	2.03	100.00
Total	12,801	100.00	

- Kerosene (#1 fuel oil)

	Freq.	Percent	Cum.
No	12,718.99	99.36	99.36
Yes	82.01	0.64	100.00
Total	12,801	100.00	

- Fuel oil (#2 fuel oil)

	Freq.	Percent	Cum.
No	12,676.47	99.03	99.03
Yes	124.53	0.97	100.00
Total	12,801	100.00	

- Electricity
 

	Freq.	Percent	Cum.
No	11,615.76	90.74	90.74
Yes	1,185.24	9.26	100.00
Total	12,801	100.00	

- Wood
 

	Freq.	Percent	Cum.
No	12,295.39	96.05	96.05
Yes	505.61	3.95	100.00
Total	12,801	100.00	

- Other (specify: \_\_\_\_\_)
 

	Freq.	Percent	Cum.
No	12,766.58	99.73	99.73
Yes	34.42	0.27	100.00
Total	12,801	100.00	

- None
 

	Freq.	Percent	Cum.
No	6,183.68	48.31	48.31
Yes	6,617.33	51.69	100.00
Total	12,801	100.00	

- Don't know
 

	Freq.	Percent	Cum.
No	10,099.61	78.90	78.90
Yes	2,701.39	21.10	100.00
Total	12,801	100.00	

25. Type of *operable* air conditioning system present before weatherization: (*check all that apply*)

- Central air conditioner/heat pump
 

	Freq.	Percent	Cum.
No	10,232.65	79.59	79.59
Yes	2,624.35	20.41	100.00
Total	12,857	100.00	

- Window/wall units

	Freq.	Percent	Cum.
No	9,995.73	77.75	77.75
Yes	2,861.27	22.25	100.00
Total	12,857	100.00	

- Evaporative cooling system (“swamp coolers”)

	Freq.	Percent	Cum.
No	12,536.96	97.51	97.51
Yes	320.04	2.49	100.00
Total	12,857	100.00	

- None

	Freq.	Percent	Cum.
No	10,701.76	83.24	83.24
Yes	2,155.24	16.76	100.00
Total	12,857	100.00	

- Don’t know

	Freq.	Percent	Cum.
No	7,873.70	61.24	61.24
Yes	4,983.30	38.76	100.00
Total	12,857	100.00	

26. Number of window/wall air conditioning units: (*check only one*)

	Freq.	Percent	Cum.
0	4,627.76	38.91	38.91
1	1,251.56	10.52	49.44
2	532.86	4.48	53.92
3	161.67	1.36	55.28
4+	46.80	0.39	55.67
DK	5,271.35	44.33	100.00
Total	11,892	100.00	

[Questions 27 and 28 intentionally deleted.]

**HOUSEHOLD**

29. Household annual income (as used to determine program eligibility): \$\_\_\_\_\_ per year

observations:	11401
missing values:	2716
mean:	14819.81
standard deviation:	13103.42
min:	0
10th percentile:	5489
25th percentile:	8424
median:	12750
75th percentile:	19014.94
90th percentile:	26833
max:	1112400

30. Total number of occupants: (*check only one*)

	Freq.	Percent	Cum.
1	4,793.06	39.55	39.55
2	2,786.65	22.99	62.54
3	1,635.02	13.49	76.03
4	1,357.75	11.20	87.23
5	805.24	6.64	93.88
6	419.78	3.46	97.34
7	155.25	1.28	98.62
8	50.20	0.41	99.03
9+	51.07	0.42	99.46
DK	65.98	0.54	100.00
Total	12,120	100.00	

31. Check if the housing unit was occupied by at least one person who was: (*check all that apply*)

- Elderly (60 or older)

	Freq.	Percent	Cum.
No	5,052.40	50.43	50.43
Yes	4,965.60	49.57	100.00
Total	10,018	100.00	

- Disabled

	Freq.	Percent	Cum.
No	5,611.03	56.01	56.01
Yes	4,406.97	43.99	100.00
Total	10,018	100.00	

- Native American

	Freq.	Percent	Cum.
No	9,774.63	97.57	97.57
Yes	243.37	2.43	100.00
Total	10,018	100.00	

- A child (as defined by your state)

	Freq.	Percent	Cum.
No	6,673.17	66.61	66.61
Yes	3,344.83	33.39	100.00
Total	10,018	100.00	

32. Number of children (as defined by your state): (*check only one*)

	Freq.	Percent	Cum.
0	4,102.07	51.30	51.30
1	1,510.64	18.89	70.19
2	1,301.01	16.27	86.45
3	659.12	8.24	94.70
4	301.87	3.77	98.47
5+	116.41	1.46	99.93
DK	5.87	0.07	100.00
Total	7,997	100.00	

33. Number of elderly (60 or older): (*check only one*)

	Freq.	Percent	Cum.
0	3,296.35	38.46	38.46
1	4,292.27	50.08	88.55
2	965.76	11.27	99.82
3	9.79	0.11	99.93
4	.86	0.01	99.94
DK	4.96	0.06	100.00
Total	8,570	100.00	

34. Number of disabled : (*check only one*)

	Freq.	Percent	Cum.
0	3,637.86	43.07	43.07
1	4,055.70	48.02	91.09
2	664.48	7.87	98.96
3	57.99	0.69	99.65
4	12.99	0.15	99.80
5+	2.17	0.03	99.82
DK	14.80	0.18	100.00
Total	8,446	100.00	

35. Year moved into housing unit: (*check only one*)

	Freq.	Percent	Cum.
2008	177.13	1.58	1.58
2007	295.23	2.63	4.21
2006	224.02	2.00	6.21
2005	256.67	2.29	8.50
2000-2004	715.99	6.38	14.88
1995-1999	378.28	3.37	18.26
1990-1994	285.47	2.55	20.80
1985-1989	226.07	2.02	22.82
1980-1984	155.88	1.39	24.21
1975-1979	149.67	1.33	25.54
1970-1974	132.95	1.19	26.73
1965-1969	109.47	0.98	27.70
1960-1964	76.75	0.68	28.39
1955-1959	51.06	0.46	28.84
1950-1954	53.31	0.48	29.32
Before 1950	69.47	0.62	29.94
DK	7,856.58	70.06	100.00
Total	11,214	100.00	

36. Is the household headed by a single parent? (*check only one*)

	Freq.	Percent	Cum.
No	8,356.94	69.48	69.48
Yes	2,056.78	17.10	86.58
DK	1,614.28	13.42	100.00
Total	12,028	100.00	

37. Race and ethnicity of the head of household: (*check all that apply*)

- American Indian or Alaska Native
 

	Freq.	Percent	Cum.
No	11,793.62	97.92	97.92
Yes	250.38	2.08	100.00
Total	12,044	100.00	

- Asian
 

	Freq.	Percent	Cum.
No	11,950.51	99.22	99.22
Yes	93.49	0.78	100.00
Total	12,044	100.00	

- Black or African American
 

	Freq.	Percent	Cum.
No	10,040.20	83.36	83.36
Yes	2,003.80	16.64	100.00
Total	12,044	100.00	

- Native Hawaiian or other Pacific Islander
 

	Freq.	Percent	Cum.
No	12,021.32	99.81	99.81
Yes	22.68	0.19	100.00
Total	12,044	100.00	

- White
 

	Freq.	Percent	Cum.
No	5,559.40	46.16	46.16
Yes	6,484.60	53.84	100.00
Total	12,044	100.00	

- Hispanic or Latino
 

	Freq.	Percent	Cum.
No	11,351.06	94.25	94.25
Yes	692.94	5.75	100.00
Total	12,044	100.00	

- Don't know

	Freq.	Percent	Cum.
No	9,442.97	78.40	78.40
Yes	2,601.03	21.60	100.00
Total	12,044	100.00	

**AUDIT**

38. Primary method used to select weatherization measures for this house (excluding health, safety, and repair measures and general heat waste measures): (*check only one*)

	Freq.	Percent	Cum.
Priority list	6,607.73	51.16	51.16
Calculation procedure	5,897.08	45.65	96.81
Other	412.19	3.19	100.00
Total	12,917	100.00	

39. If a calculation procedure was used, the name of the procedure(s): (*check all that apply*)

- AK Warm

	Freq.	Percent	Cum.
No	6,136.51	98.58	98.58
Yes	88.49	1.42	100.00
Total	6,225	100.00	

- EA-3

	Freq.	Percent	Cum.
No	5,967.05	95.86	95.86
Yes	257.95	4.14	100.00
Total	6,225	100.00	

- EASY

	Freq.	Percent	Cum.
No	6,019.25	96.69	96.69
Yes	205.75	3.31	100.00
Total	6,225	100.00	



• EA-QUIP			
	Freq.	Percent	Cum.
No	5,623.20	90.33	90.33
Yes	601.80	9.67	100.00
Total	6,225	100.00	

• HomeCheck			
	Freq.	Percent	Cum.
No	6,180.06	99.28	99.28
Yes	44.94	0.72	100.00
Total	6,225	100.00	

• Meadows			
	Freq.	Percent	Cum.
No	6,140.76	98.65	98.65
Yes	84.24	1.35	100.00
Total	6,225	100.00	

• REES			
	Freq.	Percent	Cum.
No	6,225	100.00	100.00
Total	6,225	100.00	

• REM/Rate			
	Freq.	Percent	Cum.
No	5,981.99	96.10	96.10
Yes	243.01	3.90	100.00
Total	6,225	100.00	

• SMOC-ERS			
	Freq.	Percent	Cum.
No	6,225	100.00	100.00
Total	6,225	100.00	

- TIPS

	Freq.	Percent	Cum.
No	5,623.16	90.33	90.33
Yes	601.84	9.67	100.00
Total	6,225	100.00	

- TREAT

	Freq.	Percent	Cum.
No	5,912.70	94.98	94.98
Yes	312.30	5.02	100.00
Total	6,225	100.00	

- Weatherization Assistant (NEAT/MHEA)

	Freq.	Percent	Cum.
No	3,567.05	57.30	57.30
Yes	2,657.95	42.70	100.00
Total	6,225	100.00	

- WXEOR

	Freq.	Percent	Cum.
No	6,106.09	98.09	98.09
Yes	118.91	1.91	100.00
Total	6,225	100.00	

- Other (specify: \_\_\_\_\_ )

	Freq.	Percent	Cum.
No	5,331.38	85.64	85.64
Yes	893.62	14.36	100.00
Total	6,225	100.00	

- Not applicable

	Freq.	Percent	Cum.
No	6,085.90	97.77	97.77
Yes	139.10	2.23	100.00
Total	6,225	100.00	

## DIAGNOSTICS AND INSPECTIONS

If you know when a diagnostic/inspection procedure was performed, please check the appropriate box(es) in the first three response columns. If a diagnostic/inspection procedure was performed but you do not know when, please check the box in the “Performed?” column.

Diagnostic measurement or inspection	Diagnostic/inspection performed during:			Performed?
	Audit/house assessment	Measure installation	Post-inspection	
Pressure diagnostics:				
40a. Blower door measurement (house air leakage rate)	obs: 12585 no: 2782 yes: 9802	obs: 12585 no: 8309 yes: 4276	obs: 12585 no: 4379 yes: 8206	obs: 13027 no: 2321 yes: 10706
40b. Zonal pressure	obs: 12858 no: 9882 yes: 2976	obs: 12858 no: 11446 yes: 1412	obs: 12858 no: 10480 yes: 2378	obs: 13027 no: 9687 yes: 3340
40c. Room-to-room pressures (distribution system balancing)	obs: 12941 no: 10877 yes: 2064	obs: 12941 no: 11981 yes: 960	obs: 12941 no: 11271 yes: 1670	obs: 13027 no: 10546 yes: 2481
40d. Duct pressure pan measurements	obs: 12863 no: 10567 yes: 2296	obs: 12863 no: 12028 yes: 835	obs: 12863 no: 11175 yes: 1688	obs: 13027 no: 10435 yes: 2592
40e. Duct blower measurement (duct air leakage rate)	obs: 12964 no: 12514 yes: 450	obs: 12964 no: 12673 yes: 291	obs: 12964 no: 12670 yes: 274	obs: 13027 no: 12279 yes: 748
40f. Blower door subtraction meas. (duct air leakage rate)	obs: 12945 no: 12311 yes: 634	obs: 12945 no: 12836 yes: 109	obs: 12945 no: 12533 yes: 412	obs: 13027 no: 12237 yes: 790
Space-heating system:				
41a. Flue gas analysis (steady-state efficiency measurement)	obs: 12874 no: 6778 yes: 6096	obs: 12874 no: 10969 yes: 1905	obs: 12874 no: 8260 yes: 4614	obs: 13027 no: 6096 yes: 6931
41b. Heat rise	obs: 12827 no: 9378 yes: 3449	obs: 12827 no: 11169 yes: 1658	obs: 12827 no: 9866 yes: 2961	obs: 13027 no: 8399 yes: 4628
41c. CO level in flue	obs: 12861 no: 5683 yes: 7178	obs: 12861 no: 10577 yes: 2284	obs: 12861 no: 7399 yes: 5462	obs: 13027 no: 4871 yes: 8156
41d. CO level of equipment room	obs: 12852 no: 8371 yes: 4481	obs: 12852 no: 11636 yes: 1216	obs: 12852 no: 9116 yes: 3736	obs: 13027 no: 7976 yes: 5051
41e. Draft/spillage (normal operation)	obs: 12837 no: 7083 yes: 5754	obs: 12837 no: 11205 yes: 1632	obs: 12837 no: 8165 yes: 4672	obs: 13027 no: 6566 yes: 6461
41f. Worst case draft/spillage (CAZ)	obs: 12893 no: 8114 yes: 4779	obs: 12893 no: 10835 yes: 2058	obs: 12893 no: 9119 yes: 3774	obs: 13027 no: 7531 yes: 5496
41g. Safety inspection	obs: 12757 no: 3781 yes: 8976	obs: 12757 no: 9959 yes: 2798	obs: 12757 no: 6367 yes: 6390	obs: 13027 no: 3283 yes: 9744
Air-conditioning system:				
42a. Refrigerant charge (e.g., superheat or subcooling)	obs: 13007 no: 12782 yes: 225	obs: 13007 no: 12886 yes: 121	obs: 13007 no: 12851 yes: 156	obs: 13027 no: 12731 yes: 296
42b. Safety inspection	obs: 12893 no: 11553 yes: 1340	obs: 12893 no: 12576 yes: 317	obs: 12893 no: 12085 yes: 808	obs: 13027 no: 11452 yes: 1575

Diagnostic measurement or inspection	Diagnostic/inspection performed during:			Performed?
	Audit/house assessment	Measure installation	Post-inspection	
HVAC components:				
43a. Air handler flow rate	obs: 12911 no: 12371 yes: 540	obs: 12911 no: 12415 yes: 496	obs: 12911 no: 12506 yes: 405	obs: 13027 no: 11933 yes: 1094
43b. Thermostat anticipator current	obs: 12883 no: 11670 yes: 1213	obs: 12883 no: 12449 yes: 434	obs: 12883 no: 12383 yes: 500	obs: 13027 no: 11393 yes: 1634
Hot-water (water-heating) system:				
44a. Flue gas analysis (steady-state efficiency measurement)	obs: 12777 no: 8859 yes: 3918	obs: 12777 no: 11836 yes: 941	obs: 12777 no: 9861 yes: 2916	obs: 13027 no: 8604 yes: 4423
44b. CO level in flue	obs: 12776 no: 6648 yes: 6128	obs: 12776 no: 10878 yes: 1898	obs: 12776 no: 8223 yes: 4553	obs: 13027 no: 6087 yes: 6940
44c. CO level of equipment room	obs: 12884 no: 9261 yes: 3623	obs: 12884 no: 11893 yes: 991	obs: 12884 no: 9926 yes: 2958	obs: 13027 no: 8943 yes: 4084
44d. Draft/spillage (normal operation)	obs: 12830 no: 7742 yes: 5088	obs: 12830 no: 11286 yes: 1544	obs: 12830 no: 8807 yes: 4023	obs: 13027 no: 7369 yes: 5658
44e. Worst case draft/spillage (CAZ)	obs: 12942 no: 9317 yes: 3625	obs: 12942 no: 11343 yes: 1599	obs: 12942 no: 10056 yes: 2887	obs: 13027 no: 8942 yes: 4085
44f. Hot water temperature	obs: 12765 no: 7625 yes: 5140	obs: 12765 no: 11609 yes: 1156	obs: 12765 no: 10213 yes: 2552	obs: 13027 no: 7252 yes: 5775
44g. Shower head flow rate	obs: 12885 no: 11088 yes: 1797	obs: 12885 no: 12162 yes: 723	obs: 12885 no: 12009 yes: 876	obs: 13027 no: 10808 yes: 2219
44h. Faucet flow rate	obs: 12932 no: 11669 yes: 1263	obs: 12932 no: 12342 yes: 590	obs: 12932 no: 12257 yes: 675	obs: 13027 no: 11397 yes: 1630
44i. Safety inspection	obs: 12751 no: 4088 yes: 8663	obs: 12751 no: 10212 yes: 2539	obs: 12751 no: 7018 yes: 5733	obs: 13027 no: 3675 yes: 9352
Other CO measurements:				
45a. Cook stove	obs: 12788 no: 8381 yes: 4407	obs: 12788 no: 12018 yes: 770	obs: 12788 no: 10296 yes: 2492	obs: 13027 no: 8180 yes: 4847
45b. Kitchen	obs: 12844 no: 9488 yes: 3356	obs: 12844 no: 12181 yes: 663	obs: 12844 no: 10694 yes: 2150	obs: 13027 no: 9281 yes: 3746
45c. Main living area	obs: 12839 no: 9478 yes: 3361	obs: 12839 no: 12036 yes: 8083	obs: 12839 no: 10406 yes: 2433	obs: 13027 no: 9204 yes: 3823
Other diagnostics and inspections:				
46a. Refrigerator energy use	obs: 12787 no: 8109 yes: 4678	obs: 12787 no: 12235 yes: 552	obs: 12787 no: 12007 yes: 780	obs: 13027 no: 7964 yes: 5063
46b. Exhaust fan air flow rate	obs: 12946 no: 11524 yes: 1422	obs: 12946 no: 12339 yes: 607	obs: 12946 no: 11976 yes: 970	obs: 13027 no: 11300 yes: 1727

Diagnostic measurement or inspection	Diagnostic/inspection performed during:			Performed?
	Audit/house assessment	Measure installation	Post-inspection	
46c. Infrared scanning (camera)	obs: 12854 no: 10586 yes: 2268	obs: 12854 no: 12422 yes: 432	obs: 12854 no: 10950 yes: 1904	obs: 13027 no: 10301 yes: 2726
46d. Radon testing	obs: 13016 no: 12948 yes: 68	obs: 13016 no: 13012 yes: 4	obs: 13016 no: 12977 yes: 39	obs: 13027 no: 12946 yes: 81
46e. Other (specify: _____ )	obs: 12865 no: 11821 yes: 1044	obs: 12865 no: 12338 yes: 527	obs: 12865 no: 12276 yes: 589	obs: 13027 no: 11787 yes: 1240
46f. Other (specify: _____ )	obs: 13016 no: 12685 yes: 331	obs: 13016 no: 13001 yes: 15	obs: 13016 no: 12944 yes: 72	obs: 13027 no: 12687 yes: 340
46g. Other (specify: _____ )	obs: 13021 no: 12858 yes: 163	obs: 13021 no: 13012 yes: 9	obs: 13021 no: 12957 yes: 64	obs: 13027 no: 12858 yes: 169

Record the diagnostic measurements taken on **THIS** housing unit: *(fill in all that were taken)*

Diagnostic measurement	Pre-weatherization	Post weatherization
House air leakage (blower door measurement):		
47a. Air leakage rate (cfm)	obs: 11239 min: 0 max: 104000 mean: 3750.85 median: 3108	obs: 10947 min: -50 max: 187450 mean: 3138.80 median: 2100
47b. House WRT outside pressure difference (Pa)	obs: 8520 min: -50.80 max: 50164 mean: 137.60 median: 50	obs: 8263 min: -60 max: 50145 mean: 87.30 median: 50
Duct leakage (pressure pan measurements):		
48a. Sum of pressure pan readings (Pa)	obs: 1792 min: -378 max: 10118 mean: 57.34 median: 14.3	obs: 1660 min: -119.2 max: 22256 mean: 34.31 median: 4
48b. Number of registers included in sum	obs: 1706 min: 0 max: 2900 mean: 8.45 median: 7	obs: 1556 min: 0 max: 525 mean: 7.52 median: 7
48c. House WRT outside pressure difference (Pa)	obs: 1264 min: -50 max: 2390 mean: 32.99 median: 50	obs: 1216 min: -50 max: 3200 mean: 34.18 median: 50
Duct leakage (duct blower measurements):		
49a. Total duct leakage rate (cfm)	obs: 414 min: -50.30 max: 18134 mean: 823.61 median: 145	obs: 388 min: -1.7 max: 7500 mean: 552.26 median: 140
49b. Duct leakage to the outside (cfm)	obs: 217 min: 0 max: 3646 mean: 156.81 median: 0	obs: 197 min: 0 max: 3200 mean: 128.79 median: 0
49c. Duct WRT outside pressure difference (Pa)	obs: 310 min: -50 max: 300 mean: 15.70 median: 0	obs: 294 min: -50 max: 300 mean: 17.04 median: 0
Steady-state efficiency (flue gas analysis):		
50a. Primary space-heating system (%)	obs: 5881 min: 0 max: 61777 mean: 81.92 median: 80	obs: 6208 min: 0 max: 9036 mean: 77.40 median: 82
50b. Secondary space-heating system (%)	obs: 230 min: 0 max: 100 mean: 48.77 median: 65	obs: 221 min: 0 max: 100 mean: 49.39 median: 65

50c. Hot water heater (%)	obs: 1604 min: -.02 max: 160 mean: 78.10 median: 79.30	obs: 1553 min: -.02 max: 136 mean: 79.05 median: 80
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## MEASURES INSTALLED

If you know whether in-house crew or a contractor installed a given measure, please check the appropriate box in the first two response columns. If a measure was installed but you do not know whether it was installed by in-house crew or a contractor, please check the box in the “Installed?” column.

Measure	Installed by		Installed?
	In-house crew	Contractor	
Air sealing work:			
51a. General house caulking and weatherstripping (e.g., doors, windows)	obs:12782 no: 7631 yes: 5151	obs: 12782 no: 8827 yes: 3955	obs: 13035 no: 3777 yes: 9258
51b. House air sealing emphasizing bypasses (leaks identified by auditor and/or crew <b>without using a blower door</b> )	obs: 12887 no:10862 yes: 2025	obs: 12887 no: 11388 yes: 1499	obs: 13035 no: 9375 yes: 3660
51c. House air sealing emphasizing bypasses (leaks identified by auditor and/or crew <b>with aid of a blower door</b> )	obs: 12638 no: 7892 yes: 4746	obs: 12638 no: 9858 yes: 2780	obs: 13035 no: 5316 yes: 7719
51d. Air distribution system (duct) sealing and repair <sup>36</sup>	obs: 12779 no: 10254 yes: 2525	obs: 12779 no: 11372 yes: 1407	obs: 13035 no: 8886 yes: 4149
51e. Other non-window air sealing work (specify: _____)	obs: 12991 no: 12135 yes: 856	obs: 12991 no: 12594 yes: 397	obs: 13035 no: 11745 yes: 1288
51f. Other non-window air sealing work (specify: _____)	obs: 13015 no: 12909 yes: 106	obs: 13015 no: 12907 yes: 108	obs: 13035 no: 12802 yes: 233
Insulation:			
52a. Attic insulation (installed where there was no existing insulation)	obs: 12781 no: 11852 yes: 929	obs: 12781 no: 11113 yes: 1668	obs: 13035 no: 10204 yes: 2831
52b. Attic insulation (added to existing insulation)	obs: 12717 no: 10123 yes: 2594	obs: 12717 no: 10591 yes: 2126	obs: 13035 no: 8028 yes: 5007
52c. Attic insulation (existing insulation level not recorded)	obs: 12976 no: 12636 yes: 340	obs: 12976 no: 12460 yes: 516	obs: 13035 no: 12107 yes: 928
52d. Wall insulation (normal density—two-hole gravity blow technique)	obs: 12862 no: 12656 yes: 206	obs: 12862 no: 12458 yes: 404	obs: 13035 no: 12253 yes: 782
52e. Wall insulation (high density—one-hole tube-fill technique)	obs: 12798 no: 11778 yes: 1020	obs: 12798 no: 11776 yes: 1022	obs: 13035 no: 10779 yes: 2256
52f. Floor insulation	obs: 12909 no: 11611 yes: 1298	obs: 12909 no: 11898 yes: 1011	obs: 13035 no: 10597 yes: 2438
52g. Rim or band joist insulation <sup>37</sup>	obs: 12895 no: 11846 yes: 1049	obs: 12895 no: 12098 yes: 797	obs: 13035 no: 11070 yes: 1965
52h. Foundation wall insulation	obs: 12946 no: 12486 yes: 460	obs: 12946 no: 12526 yes: 420	obs: 13035 no: 12097 yes: 938

<sup>36</sup> Check 51d (Air distribution system (duct) sealing and repair) if duct sealing OR duct repair was performed. Check 55g (Other space-heating system modification (specify: \_\_\_\_\_)) if NEW ductwork was installed. Check 58c (Duct vents, grills, or registers) if new vents, grills or registers were installed.

<sup>37</sup> Check 52g (rim or band joist insulation) if sill box insulation was installed.



Measure	Installed by		
	In-house crew	Contractor	Installed?
52i. Duct insulation	obs: 12981 no: 12342 yes: 639	obs: 12981 no: 12538 yes: 443	obs: 13035 no: 11916 yes: 1119
52j. White roof coat	obs: 13025 no: 12851 yes: 174	obs: 13025 no: 12944 yes: 81	obs: 13035 no: 12770 yes: 265
52k. Skirting	obs: 13029 no: 13009 yes: 20	obs: 13029 no: 12978 yes: 51	obs: 13035 no: 12958 yes: 77
52l. Other insulation (specify: _____ )	obs: 12809 no: 11759 yes: 1050	obs: 12809 no: 11917 yes: 892	obs: 13035 no: 10879 yes: 2156
52m. Other insulation (specify: _____ )	obs: 12977 no: 12895 yes: 82	obs: 12977 no: 12860 yes: 117	obs: 13035 no: 12779 yes: 256
Windows:			
53a. New window (justified because cost effective)	obs: 13003 no: 12126 yes: 877	obs: 13003 no: 11811 yes: 1192	obs: 13035 no: 10945 yes: 2090
53b. New window (justified for reason other than cost effectiveness)	obs: 12992 no: 12720 yes: 272	obs: 12992 no: 12377 yes: 615	obs: 13035 no: 12098 yes: 937
53c. Window glazings <sup>38</sup>	obs: 12790 no: 12239 yes: 551	obs: 12790 no: 12267 yes: 523	obs: 13035 no: 11773 yes: 1262
53d. New window screen	obs: 13029 no: 13015 yes: 14	obs: 13029 no: 12890 yes: 129	obs: 13035 no: 12880 yes: 155
53e. Window lock replacement	obs: 13006 no: 12794 yes: 212	obs: 13006 no: 12778 yes: 228	obs: 13035 no: 12565 yes: 470
53f. Window screen repair	obs: 13032 no: 13029 yes: 3	obs: 13032 no: 13004 yes: 28	obs: 13035 no: 13003 yes: 32
53g. Other window repair (e.g., sashes, frames)	obs: 12979 no: 12523 yes: 456	obs: 12979 no: 12470 yes: 509	obs: 13035 no: 12020 yes: 1015
53h. Storm window	obs: 13016 no: 12671 yes: 345	obs: 13016 no: 12705 yes: 311	obs: 13035 no: 12365 yes: 670
53i. Window shading (e.g., awning, film, sun screen)	obs: 13030 no: 12980 yes: 50	obs: 13030 no: 12920 yes: 110	obs: 13035 no: 12871 yes: 164
53j. Other window treatments (specify: _____ )	obs: 12950 no: 12596 yes: 354	obs: 12950 no: 12501 yes: 449	obs: 13035 no: 12154 yes: 881
53k. Other window treatments (specify: _____ )	obs: 13007 no: 12960 yes: 47	obs: 13007 no: 12945 yes: 62	obs: 13035 no: 12900 yes: 135
Doors:			
54a. New door (justified because cost effective)	obs: 13000 no: 12138 yes: 862	obs: 13000 no: 12160 yes: 840	obs: 13035 no: 11322 yes: 1713

<sup>38</sup> Check 53c (window glazings) for window glass replacement in cases where the window sashes and frame were not replaced.

Measure	Installed by		
	In-house crew	Contractor	Installed?
54b. New door (justified for reason other than cost effectiveness)	obs : 12954 no: 12504 yes: 450	obs: 12954 no: 12385 yes: 569	obs:13035 no: 11952 yes: 1083
54c. Door lock (new or replacement)	obs: 12973 no: 12211 yes: 762	obs: 12973 no: 12367 yes: 606	obs:13035 no: 11619 yes: 1416
54d. Door or door framing repair	obs: 13001 no: 12359 yes: 642	obs: 13001 no: 12345 yes: 656	obs:13035 no: 11707 yes: 1328
54e. Storm door	obs: 13023 no: 12991 yes: 32	obs: 13023 no: 12961 yes: 62	obs:13035 no: 12934 yes: 102
54f. Other door treatments (specify: _____ )	obs: 12939 no: 12175 yes: 764	obs: 12939 no: 12175 yes: 764	obs:13035 no: 11408 yes: 1627
54g. Other door treatments (specify: _____ )	obs: 13019 no: 12911 yes: 108	obs: 13019 no: 12841 yes: 178	obs:13035 no: 12736 yes: 299
Space-heating systems:			
55a. New space-heating system (justified because cost effective)	obs: 12845 no: 12576 yes: 269	obs: 12845 no: 11170 yes: 1675	obs:13035 no: 10925 yes: 2110
55b. New space-heating system (justified for reason other than cost effectiveness)	obs: 12955 no: 12576 yes: 379	obs: 12955 no: 11987 yes: 968	obs:13035 no: 11632 yes: 1403
55c. Space-heating system repair (e.g., controls, safety items, flues)	obs: 12966 no: 12613 yes: 353	obs: 12966 no: 11742 yes: 1224	obs:13035 no: 11408 yes: 1627
55d. Space-heating system tune-up	obs: 12941 no: 12318 yes: 623	obs: 12941 no: 11171 yes: 1770	obs:13035 no: 10562 yes: 2473
55e. Vent damper	obs: 13028 no: 12987 yes: 41	obs: 13028 no: 12985 yes: 43	obs:13035 no: 12946 yes: 89
55f. Intermittent ignition device	obs: 13032 no: 13029 yes: 2	obs: 13032 no: 13015 yes: 17	obs:13035 no: 13013 yes: 22
55g. Other space-heating system modification (specify: _____ ) <sup>39</sup>	obs:12897 no: 12658 yes: 239	obs: 12897 no: 11764 yes: 1133	obs: 13035 no: 11551 yes: 1484
55h. Other space-heating system modification (specify: _____ )	obs: 13024 no: 12983 yes: 41	obs: 13024 no: 12911 yes: 113	obs: 13035 no: 12865 yes: 170
Air-conditioning systems:			
56a. New air conditioner (justified because cost effective)	obs: 13031 no: 12999 yes: 32	obs: 13031 no: 12903 yes: 128	obs:13035 no: 12869 yes: 166
56b. New air conditioner (justified for reason other than cost effectiveness)	obs: 13034 no: 13006 yes: 28	obs: 13034 no: 12960 yes: 74	obs:13035 no: 12932 yes: 103
56c. Air conditioner repair	obs: 13031 no: 13020 yes: 11	obs: 13031 no: 12942 yes: 89	obs:13035 no: 12930 yes: 105

<sup>39</sup> Check 51d (Air distribution system (duct) sealing and repair) if duct sealing OR duct repair was performed. Check 55g (Other space-heating system modification (specify: \_\_\_\_\_)) if NEW ductwork was installed. Check 58c (Duct vents, grills, or registers) if new vents, grills or registers were installed.

Measure	Installed by		Installed?
	In-house crew	Contractor	
56d. Air conditioner recharge/tune-up	obs: 13030 no: 12990 yes: 40	obs: 13030 no: 12844 yes: 186	obs:13035 no: 12804 yes: 231
56e. Ceiling or whole-house fans	obs: 13032 no: 13018 yes: 14	obs: 13032 no: 13002 yes: 30	obs:13035 no: 12989 yes: 46
56f. Other air-conditioning system modification (specify: _____ )	obs: 13013 no: 12921 yes: 92	obs: 13013 no: 12876 yes: 137	obs:13035 no: 12788 yes: 247
56g. Other air-conditioning system modification (specify: _____ )	obs: 13027 no: 13022 yes: 5	obs: 13027 no: 13022 yes:5	obs:13035 no: 13016 yes: 19
Ventilation:			
57a. Exhaust fan in bathroom (new)	obs: 12939 no: 12607 yes: 332	obs: 12939 no: 11685 yes: 1254	obs:13035 no: 11410 yes: 1625
57b. Exhaust fan in kitchen (new)	obs: 13003 no: 12755 yes: 248	obs: 13003 no: 12440 yes: 563	obs:13035 no: 12192 yes: 843
57c. Whole-house ventilation system	obs: 13033 no: 13025 yes: 8	obs: 13033 no: 12963 yes: 70	obs:13035 no: 12954 yes: 81
57d. Other ventilation system improvements (specify: _____ ) <sup>40</sup>	obs: 13007 no: 12304 yes: 703	obs: 13007 no: 12083 yes: 924	obs: 13035 no: 11397 yes: 1638
57e. Other ventilation system improvements (specify: _____ )	obs: 13026 no: 12878 yes: 148	obs: 13026 no: 12860 yes: 166	obs: 13035 no: 12715 yes: 320
HVAC accessories:			
58a. New programmable (setback) thermostat	obs: 12860 no: 12619 yes: 241	obs: 12860 no: 11950 yes: 910	obs: 13035 no: 11734 yes: 1301
58b. New standard thermostat	obs: 12987 no: 12672 yes: 315	obs: 12987 no: 12256 yes: 731	obs: 13035 no: 11946 yes: 1089
58c. Duct vents, grills, or registers <sup>41</sup>	obs: 13018 no: 12167 yes: 851	obs: 13018 no: 12488 yes: 530	obs: 13035 no: 11642 yes: 1393
58d. Standard air filter	obs: 12975 no: 11685 yes: 1290	obs: 12975 no: 11088 yes: 1887	obs: 13035 no: 9821 yes: 3214
58e. High efficiency particulate arresting (HEPA) air filter	obs: 13028 no: 12998 yes: 30	obs: 13028 no: 13012 yes: 16	obs: 13035 no: 12981 yes: 54
58f. Other HVAC accessories (specify: _____ )	obs: 13007 no: 12833 yes: 174	obs: 13007 no: 12654 yes: 353	obs: 13035 no: 12484 yes: 551
58g. Other HVAC accessories (specify: _____ )	obs: 13012 no: 12995 yes: 17	obs: 13012 no: 12956 yes: 54	obs: 13035 no: 12941 yes: 94

<sup>40</sup> Check 57d (Other ventilation system improvements (specify: \_\_\_\_\_ ) if repairs were made to existing bathroom/ kitchen fans.

<sup>41</sup> Check 51d (Air distribution system (duct) sealing and repair) if duct sealing OR duct repair was performed. Check 55g (Other space-heating system modification (specify: \_\_\_\_\_ )) if NEW ductwork was installed. Check 58c (Duct vents, grills, or registers) if new vents, grills or registers were installed.

Measure	Installed by		
	In-house crew	Contractor	Installed?
Water-heating system:			
59a. New water heater (justified because cost effective)	obs: 12999 no: 12922 yes: 77	obs: 12999 no: 12467 yes: 532	obs: 13035 no: 12397 yes: 638
59b. New water heater (justified for reason other than cost effectiveness)	obs: 12938 no: 12831 yes: 107	obs: 12938 no: 12305 yes: 633	obs: 13035 no: 12209 yes: 826
59c. Water-heating system repair	obs: 12937 no: 12662 yes: 275	obs: 12937 no: 12236 yes: 701	obs: 13035 no: 11971 yes: 1064
59d. Water-heater tank insulation wrap	obs: 12830 no: 11033 yes: 1797	obs: 12830 no: 11887 yes: 943	obs: 13035 no: 10099 yes: 2936
59e. Pipe insulation	obs: 12726 no: 9743 yes: 2983	obs: 12726 no: 10746 yes: 1980	obs: 13035 no: 7796 yes: 5239
59f. Low-flow showerhead	obs: 12857 no: 10256 yes: 2601	obs: 12857 no: 11963 yes: 894	obs: 13035 no: 9376 yes: 3659
59g. Faucet aerators <sup>42</sup>	obs: 12843 no: 10514 yes: 2329	obs: 12843 no: 12162 yes: 681	obs: 13035 no: 9857 yes: 3178
59h. Water heater temperature reduction	obs: 12966 no: 12080 yes: 886	obs: 12966 no: 12589 yes: 377	obs: 13035 no: 11711 yes: 1324
59i. Other water heating system measure (specify: _____ )	obs: 12988 no: 12703 yes: 285	obs: 12988 no: 12559 yes: 429	obs: 13035 no: 12285 yes: 750
59j. Other water heating system measure (specify: _____ )	obs: 13029 no: 12998 yes: 31	obs: 13029 no: 12961 yes: 68	obs: 13035 no: 12935 yes: 100
Other baseloads:			
60a. Indoor lighting <sup>43</sup>	obs: 12587 no: 7031 yes: 5556	obs: 12587 no: 10316 yes: 2271	obs: 13035 no: 5152 yes: 7883
60b. Outdoor lighting <sup>44</sup>	obs: 13011 no: 12484 yes: 527	obs: 13011 no: 12618 yes: 393	obs: 13035 no: 12087 yes: 948
60c. Lighting (indoor/outdoor location not recorded)	obs: 12939 no: 12449 yes: 490	obs: 12939 no: 12453 yes: 486	obs: 13035 no: 12000 yes: 1035
60d. Refrigerator (justified because cost effective)	obs: 12907 no: 12389 yes: 518	obs: 12907 no: 11278 yes: 1629	obs: 13035 no: 10769 yes: 2266
60e. Refrigerator (justified for reason other than cost effectiveness)	obs: 13010 no: 12975 yes: 35	obs: 13010 no: 12894 yes: 116	obs: 13035 no: 12866 yes: 169
60f. Other baseload measure (specify: _____ )	obs: 12971 no: 12690 yes: 281	obs: 12971 no: 12744 yes: 227	obs: 13035 no: 12475 yes: 560
60g. Other baseload measure (specify: _____ )	obs: 13031 no: 13013 yes: 18	obs: 13031 no: 12987 yes: 44	obs: 13035 no: 12968 yes: 67

<sup>42</sup> Check 59g (faucet aerators) for low-flow devices installed on faucets.

<sup>43</sup> Check 60a (indoor lighting) for CFL bulbs or high-efficiency light fixtures installed inside the home.

<sup>44</sup> Check 60b (outdoor lighting) for CFL bulbs or high-efficiency light fixtures installed outside the home.

Measure	Installed by		
	In-house crew	Contractor	Installed?
Client education:			
61a. Literature (e.g., brochures, booklets, manuals)	obs: 12766 no: 4291 yes: 8475	obs: 12766 no: 11312 yes: 1454	obs: 13035 no: 3517 yes: 9518
61b. Videos, DVDs, or compact disks (CDs)	obs: 13023 no: 12827 yes: 196	obs: 13023 no: 12980 yes: 43	obs: 13035 no: 12788 yes: 247
61c. Hardware kit and/or kit of weatherization materials	obs: 12940 no: 12203 yes: 737	obs: 12940 no: 12826 yes: 114	obs: 13035 no: 12122 yes: 913
61d. In-home education/discussion <sup>45</sup> conducted, but time not recorded	obs: 12805 no: 7120 yes: 5685	obs: 12805 no: 12074 yes: 731	obs: 13035 no: 6717 yes: 6318
61e. <15 minute total in-home education/discussion time	obs: 12942 no: 11954 yes: 988	obs: 12942 no: 12841 yes: 101	obs: 13035 no: 11897 yes: 1138
61f 15-29 minute total in-home education/discussion time	obs: 12952 no: 11051 yes: 1901	obs: 12952 no: 12540 yes: 412	obs: 13035 no: 10835 yes: 2200
61g. 30 minutes or more total in-home education/discussion time	obs: 13003 no: 12010 yes: 993	obs: 13003 no: 12921 yes: 82	obs: 13035 no: 11989 yes: 1046
61h. Classroom training	obs: 13027 no: 12844 yes: 183	obs: 13027 no: 12972 yes: 55	obs: 13035 no: 12789 yes: 246
61i. Other client education approach (specify: _____ )	obs: 12849 no: 12339 yes: 510	obs: 12849 no: 12646 yes: 203	obs: 13035 no: 12195 yes: 840
61j. Other client education approach (specify: _____ )	obs: 12919 no: 12914 yes: 5	obs: 12919 no: 12874 yes: 45	obs: 13035 no: 12884 yes: 151
Other health, safety, and repair:			
62a. Smoke alarm	obs: 12848 no: 9721 yes: 3127	obs: 12848 no: 10656 yes: 2192	obs: 13035 no: 7568 yes: 5467
62b. CO monitor	obs: 12741 no: 8331 yes: 4410	obs: 12741 no: 10465 yes: 2276	obs: 13035 no: 6095 yes: 6940
62c. Attic ventilation	obs: 12926 no: 12096 yes: 830	obs: 12926 no: 12227 yes: 699	obs: 13035 no: 11411 yes: 1624
62d. Roof repair	obs: 12986 no: 12749 yes: 237	obs: 12986 no: 12645 yes: 341	obs: 13035 no: 12419 yes: 616
62e. Ceiling repair	obs: 13013 no: 12765 yes: 248	obs: 13013 no: 12660 yes: 353	obs: 13035 no: 12415 yes: 620
62f. Wall repair	obs: 13000 no: 12594 yes: 406	obs: 13000 no: 12628 yes: 372	obs: 13035 no: 12228 yes: 807

<sup>45</sup> In-home education/discussion includes time spent talking directly to the WAP client about weatherization and/or energy use issues. It does not include time the WAP client spent observing inspection or weatherization activities being performed.

Measure	Installed by		Installed?
	In-house crew	Contractor	
62g. Floor repair	obs: 13012 no: 12666 yes: 346	obs: 13012 no: 12783 yes: 229	obs: 13035 no: 12438 yes: 597
62h. Foundation repair	obs: 13029 no: 12951 yes: 78	obs: 13029 no: 12960 yes: 69	obs: 13035 no: 12880 yes: 155
62i. Ground vapor barrier	obs: 13023 no: 12189 yes: 834	obs: 13023 no: 12258 yes: 765	obs: 13035 no: 11428 yes: 1607
62j. Gutter or downspout (installed or repaired)	obs: 13031 no: 12970 yes: 61	obs: 13031 no: 12932 yes: 99	obs: 13035 no: 12871 yes: 164
62k. Grading of lot	obs: 13033 no: 13031 yes: 2	obs: 13033 no: 13031 yes: 2	obs: 13035 no: 13025 yes: 10
62l. Plumbing repair	obs: 12996 no: 12808 yes: 188	obs: 12996 no: 12753 yes: 243	obs: 13035 no: 12567 yes: 468
62m. Sewer repair	obs: 13031 no: 13026 yes: 5	obs: 13031 no: 13010 yes: 21	obs: 13035 no: 13006 yes: 29
62n. Electrical repair	obs: 12995 no: 12807 yes: 188	obs: 12995 no: 12503 yes: 492	obs: 13035 no: 12310 yes: 725
62o. Stair repair	obs: 13031 no: 13026 yes: 5	obs: 13031 no: 13019 yes: 12	obs: 13035 no: 13015 yes: 20
62p. Install/repair non-skid material on stairs	obs: 13035 no: 13035 yes: 0	obs: 13035 no: 13034 yes: 1	obs: 13035 no: 13034 yes: 1
62q. Install/repair safety gate at stairs	obs: 13035 no: 13035 yes: 0	obs: 13035 no: 12962 yes: 73	obs: 13035 no: 12962 yes: 73
62r. Install/repair grab bar in bathroom	obs: 13034 no: 13033 yes: 1	obs: 13034 no: 13034 yes: 0	obs: 13035 no: 13034 yes: 1
62s. Install/repair non-skid material in bathtub	obs: 13035 no: 13035 yes: 0	obs: 13035 no: 13033 yes: 2	obs: 13035 no: 13033 yes: 2
62t. Install/repair metal chimney liner	obs: 12925 no: 12877 yes: 48	obs: 12925 no: 12648 yes: 277	obs: 13035 no: 12610 yes: 425
62u. Lead abatement	obs: 13035 no: 13015 yes: 20	obs: 13035 no: 12991 yes: 44	obs: 13035 no: 12971 yes: 64
62v. Asbestos abatement	obs: 13026 no: 13026 yes: 0	obs: 13026 no: 12937 yes: 89	obs: 13035 no: 12937 yes: 96
62w. Removal or safe storage of household poisons	obs: 13035 no: 13035 yes: 0	obs: 13035 no: 13034 yes: 1	obs: 13035 no: 13034 yes: 1
62x. Other H&S <sup>46</sup> and repair items (specify: _____) <sup>47</sup>	obs: 12750 no: 11632 yes: 1118	obs: 12750 no: 11233 yes: 1517	obs: 13035 no: 10138 yes: 2897
62y. Other H&S and repair items (specify: _____)	obs: 12957 no: 12573 yes: 384	obs: 12957 no: 12157 yes: 800	obs: 13035 no: 11820 yes: 1215

<sup>46</sup> Health and safety

<sup>47</sup> Check 62x (Other H&S and repair items (specify: \_\_\_\_\_)) if ventilation for a laundry dryer was repaired or installed.

63. If a new space-heating system was installed, indicate the primary fuel used to heat the unit during the winter after weatherization: (*check only one*)

	Freq.	Percent	Cum.
Natural gas	2,568.22	21.81	21.81
Propane	318.83	2.71	24.52
Kerosene (fuel oil #1)	71.50	0.61	25.13
Fuel oil (#2)	253.22	2.15	27.28
Electricity	448.59	3.81	31.09
Wood	33.58	0.29	31.37
Not applicable	7,959.56	67.60	98.97
Other	5.66	0.05	99.02
DK	115.86	0.98	100.00
Total	11,775	100.00	

64. If a new space-heating system was installed, indicate the type of *primary* space-heating system after weatherization: (*check only one*)

	Freq.	Percent	Cum.
Central furnace	2,259.25	18.93	18.94
Heat pump	90.35	0.76	19.70
Electric, built-in	22.28	0.19	19.89
Steam or hydronic	784.01	6.57	26.46
Wall furnace	169.27	1.42	27.88
Room space heater (non-portable)	201.19	1.69	29.56
Portable space heater	21.11	0.18	29.74
Cooking Stove	6.66	0.06	29.79
None	69.23	0.58	30.37
Not applicable	6,662.92	55.84	86.22
Refused	77.64	0.65	86.87
No Answer	1,447.94	12.13	99.00
DK	119.16	1.00	100.00
Total	11,932	100.00	

**Select "steam or hot water system" for homes heated with boilers.**

65. If a new space-heating system was installed and justified for reasons other than cost effectiveness, identify the reason it was replaced: (*check all that apply*)

- Cost of repair/retrofit exceeded 50% of replacement cost

	Freq.	Percent	Cum.
n/a	7,463.30	75.72	75.72
No	1,849.33	18.76	94.48
Yes	544.37	5.52	100.00
Total	9,857	100.00	

- Existing heating system was not running

	Freq.	Percent	Cum.
--	-------	---------	------

	Freq.	Percent	Cum.
n/a	7,463.30	75.72	75.72
No	1,968.36	19.97	95.68
Yes	425.34	4.32	100.00
Total	9,857	100.00	

- Existing heating system was old (e.g., at end of life, too old to be repaired/adjusted)

	Freq.	Percent	Cum.
n/a	7,463.30	75.72	75.72
No	1,666.7	16.91	92.62
Yes	727.00	7.38	100.00
Total	9,857	100.00	

- To switch fuel

	Freq.	Percent	Cum.
n/a	7,463.30	75.72	75.72
No	2,326.33	23.60	99.32
Yes	67.37	0.68	100.00
Total	9,857	100.00	

- To convert from a steam system to a hot water system

	Freq.	Percent	Cum.
n/a	7,463.30	75.72	75.72
No	2,393.70	24.28	100.00
Total	9,857	100.00	



- Heat exchanger was cracked

	Freq.	Percent	Cum.
n/a	7,463.30	75.72	75.72
No	1,769.68	17.95	93.67
Yes	624.02	6.33	100.00
Total	9,857	100.00	

- Boiler was leaking

	Freq.	Percent	Cum.
n/a	7,463.30	75.72	75.72
No	2,333.54	23.67	99.39
Yes	60.16	0.61	100.00
Total	9,857	100.00	

- Safety switches/controls were not operational and could not be repaired

	Freq.	Percent	Cum.
n/a	7,463.30	75.72	75.72
No	2,355.17	23.89	99.61
Yes	38.53	0.39	100.00
Total	9,857	100.00	

- To replace unvented space heater(s)

	Freq.	Percent	Cum.
n/a	7,463.30	75.72	75.72
No	2,215.95	22.48	98.20
Yes	177.75	1.80	100.00
Total	9,857	100.00	

- Existing heating system was not safe to run for other reason (specify: \_\_\_\_\_)

	Freq.	Percent	Cum.
n/a	7,463.30	75.72	75.72
No	2,242.82	22.75	98.47
Yes	150.87	1.53	100.00
Total	9,857	100.00	

- Other (specify: \_\_\_\_\_)

	Freq.	Percent	Cum.
n/a	7,463.30	75.72	75.72
No	2,216.85	22.49	98.21
Yes	176.84	1.79	100.00
Total	9,857	100.00	

66. Please identify any cost-effective energy-efficiency measures (not repair or health and safety measures) recommended by your energy audit procedures that you were unable to install in this housing unit because of insufficient funds: (*check all that apply*)

- Air sealing

	Freq.	Percent	Cum.
No	10,600.69	97.68	97.68
Yes	252.31	2.32	100.00
Total	10,853	100.00	

- Duct sealing

	Freq.	Percent	Cum.
No	10,761.12	99.15	99.15
Yes	91.88	0.85	100.00
Total	10,853	100.00	

- Attic insulation

	Freq.	Percent	Cum.
No	10,621.59	97.87	97.87
Yes	231.41	2.13	100.00
Total	10,853	100.00	

- Wall insulation

	Freq.	Percent	Cum.
No	10,750.39	99.05	99.05
Yes	102.61	0.95	100.00
Total	10,853	100.00	

• Floor/foundation insulation			
	Freq.	Percent	Cum.
No	10,741.89	98.98	98.98
Yes	111.11	1.02	100.00
Total	10,853	100.00	

• Duct insulation			
	Freq.	Percent	Cum.
No	10,782.11	99.35	99.35
Yes	70.89	0.65	100.00
Total	10,853	100.00	

• New window(s)			
	Freq.	Percent	Cum.
No	10,765.45	99.19	99.19
Yes	87.55	0.81	100.00
Total	10,853	100.00	

• Storm windows(s)			
	Freq.	Percent	Cum.
No	10,770.09	99.24	99.24
Yes	82.91	0.76	100.00
Total	10,853	100.00	

• Door(s)			
	Freq.	Percent	Cum.
No	10,775.21	99.28	99.28
Yes	77.79	0.72	100.00
Total	10,853	100.00	

• Storm door(s)			
	Freq.	Percent	Cum.
No	10,799.70	99.51	99.51
Yes	53.30	0.49	100.00
Total	10,853	100.00	

• New space-heating system			
	Freq.	Percent	Cum.
No	10,807.34	99.58	99.58
Yes	45.66	0.42	100.00
-----+			
Total	10,853	100.00	

• Space-heating system tune-up			
	Freq.	Percent	Cum.
No	10,800.33	99.51	99.51
Yes	52.67	0.49	100.00
-----+			
Total	10,853	100.00	

• New air conditioner(s)			
	Freq.	Percent	Cum.
No	10,774.66	99.28	99.28
Yes	78.34	0.72	100.00
-----+			
Total	10,853	100.00	

• Air conditioner tune-up(s)			
	Freq.	Percent	Cum.
No	10,798.11	99.49	99.49
Yes	54.89	0.51	100.00
-----+			
Total	10,853	100.00	

• HVAC thermostat			
	Freq.	Percent	Cum.
No	10,816.08	99.66	99.66
Yes	36.92	0.34	100.00
-----+			
Total	10,853	100.00	

• New water heater			
	Freq.	Percent	Cum.
No	10,808.48	99.59	99.59
Yes	44.52	0.41	100.00
-----+			
Total	10,853	100.00	

- Water heater insulation wrap

	Freq.	Percent	Cum.
No	10,760.34	99.15	99.15
Yes	92.66	0.85	100.00
Total	10,853	100.00	

- Water flow devices (e.g., showerheads, faucet aerators)

	Freq.	Percent	Cum.
No	10,733.49	98.90	98.90
Yes	119.51	1.10	100.00
Total	10,853	100.00	

- Lighting

	Freq.	Percent	Cum.
No	10,693.82	98.53	98.53
Yes	159.18	1.47	100.00
Total	10,853	100.00	

- Refrigerator

	Freq.	Percent	Cum.
No	10,708.47	98.67	98.67
Yes	144.53	1.33	100.00
Total	10,853	100.00	

- Other:

	Freq.	Percent	Cum.
No	10,730.59	98.87	98.87
Yes	122.41	1.13	100.00
Total	10,853	100.00	

- None

	Freq.	Percent	Cum.
No	624.13	5.75	5.75
Yes	10,228.87	94.25	100.00
Total	10,853	100.00	

67. If energy efficiency measures were checked in the previous question, provide a rough estimate of the cost for installing all the measures checked: \$\_\_\_\_\_

observations:	535
missing values:	13950
mean:	2744.67
standard deviation:	5521.23
min:	0
10th percentile:	40
25th percentile:	478
median:	1467.31
75th percentile:	2745.66
90th percentile:	4800
max:	35771

68. Please identify any repair or health and safety measures recommended by your audit procedures that you were unable to install in this housing unit because of insufficient funds: (*check all that apply*)

- New window(s)

	Freq.	Percent	Cum.
No	10,227.57	99.65	99.65
Yes	36.43	0.35	100.00
Total	10,264	100.00	

- Window glazing(s)

	Freq.	Percent	Cum.
No	10,253.76	99.90	99.90
Yes	10.24	0.10	100.00
Total	10,264	100.00	

- Window screen(s)

	Freq.	Percent	Cum.
No	10,256.41	99.93	99.93
Yes	7.59	0.07	100.00
Total	10,264	100.00	

- Window lock(s)

	Freq.	Percent	Cum.
No	10,250.88	99.87	99.87
Yes	13.12	0.13	100.00
Total	10,264	100.00	

- Window repair

	Freq.	Percent	Cum.
No	10,248.19	99.85	99.85
Yes	15.81	0.15	100.00
Total	10,264	100.00	

- New door(s)

	Freq.	Percent	Cum.
No	10,252.42	99.89	99.89
Yes	11.58	0.11	100.00
Total	10,264	100.00	

- Door lock(s)

	Freq.	Percent	Cum.
No	10,246.73	99.83	99.83
Yes	17.27	0.17	100.00
Total	10,264	100.00	

- Door repair

	Freq.	Percent	Cum.
No	10,224.64	99.62	99.62
Yes	39.36	0.38	100.00
Total	10,264	100.00	

- New space-heating system

	Freq.	Percent	Cum.
No	10,237.11	99.74	99.74
Yes	26.89	0.26	100.00
Total	10,264	100.00	

- Space-heating system repair

	Freq.	Percent	Cum.
No	10,256.16	99.92	99.92
Yes	7.85	0.08	100.00
Total	10,264	100.00	

• New air conditioner(s)			
	Freq.	Percent	Cum.
No	10,230.01	99.67	99.67
Yes	33.99	0.33	100.00
Total	10,264	100.00	

• Air conditioner repair			
	Freq.	Percent	Cum.
No	10,226.09	99.63	99.63
Yes	37.91	0.37	100.00
Total	10,264	100.00	

• Ceiling or whole-house fan(s)			
	Freq.	Percent	Cum.
No	10,260.91	99.97	99.97
Yes	3.09	0.03	100.00
Total	10,264	100.00	

• Exhaust fan(s) or ventilation system			
	Freq.	Percent	Cum.
No	10,214.59	99.52	99.52
Yes	49.42	0.48	100.00
Total	10,264	100.00	

• New water heater			
	Freq.	Percent	Cum.
No	10,221.34	99.58	99.58
Yes	42.66	0.42	100.00
Total	10,264	100.00	

• Water-heating system repair			
	Freq.	Percent	Cum.
No	10,250.12	99.86	99.86
Yes	13.88	0.14	100.00
Total	10,264	100.00	



• Refrigerator			
	Freq.	Percent	Cum.
No	10,215.56	99.53	99.53
Yes	48.44	0.47	100.00
-----+			
Total	10,264	100.00	

• Smoke alarm			
	Freq.	Percent	Cum.
No	10,189.77	99.28	99.28
Yes	74.23	0.72	100.00
-----+			
Total	10,264	100.00	

• CO monitor			
	Freq.	Percent	Cum.
No	10,185.51	99.24	99.24
Yes	78.49	0.76	100.00
-----+			
Total	10,264	100.00	

• Attic ventilation			
	Freq.	Percent	Cum.
No	10,255.52	99.92	99.92
Yes	8.48	0.08	100.00
-----+			
Total	10,264	100.00	

• Roof, wall, floor, or foundation repair			
	Freq.	Percent	Cum.
No	10,243.65	99.80	99.80
Yes	20.35	0.20	100.00
-----+			
Total	10,264	100.00	

• Plumbing/sewer repair			
	Freq.	Percent	Cum.
No	10,249.93	99.86	99.86
Yes	14.07	0.14	100.00
-----+			
Total	10,264	100.00	

- Electrical repair

	Freq.	Percent	Cum.
No	10,255.62	99.92	99.92
Yes	8.38	0.08	100.00
Total	10,264	100.00	

- Other:

	Freq.	Percent	Cum.
No	10,163.42	99.02	99.02
Yes	100.58	0.98	100.00
Total	10,264	100.00	

- None

	Freq.	Percent	Cum.
No	354.11	3.45	3.45
Yes	9,909.89	96.55	100.00
Total	10,264	100.00	

69. If repair or health and safety measures were checked in the previous question, provide a rough estimate of the cost for installing all the measures checked: \$\_\_\_\_\_

observations:	416
missing values:	14074
mean:	1888.27
standard deviation:	5181.53
min:	0
10th percentile:	0
25th percentile:	50
median:	286.75
75th percentile:	1300
90th percentile:	4373.85
max:	39000

## COSTS

Provide the costs associated with installing the measures in **THIS** housing unit from all funding sources. Do **NOT** include any program management costs such as those associated with intake and eligibility determination, audits and house assessments, final inspections, contractor or crew management, and program administration. Also, do **NOT** include installation-related overhead costs such as those associated with vehicles, equipment, and training.

	<b>In-House Crew</b>	<b>Contractor</b>	<b>Enter total if crew/contractor split is unknown</b>	<b>Total</b>
70a. Material costs	obs: 5504 min: 0 max: 20170.5 mean: 1196.49 median: 607	obs: 4432 min: 0 max: 139769 mean: 2668.95 median: 1331.53	obs: 1963 min: 0 max: 198862 mean: 12616.17 median: 618.34	
70b. Labor costs <sup>1</sup>	obs: 4592 min: 0 max: 34350 mean: 1627.16 median: 664.20	obs: 4246 min: 0 max: 92029 mean: 1864.43 median: 1144	obs: 2271 min: 0 max: 87487 mean: 5524.92 median: 0	
70c. Profit/overhead <sup>2</sup>	obs: 1316 min: -394.68 max: 19194.32 mean: 778.09 median: 0	obs: 881 min: 0 max: 7150 mean: 20.65 median: 0	obs: 920 min: 0 max: 5226.80 mean: 256.46 median: 0	
70d. Enter total if material/labor/profit/overhead split is unknown	obs: 722 min: 0 max: 10283 mean: 1522.52 median: 656	obs: 1789 min: 0 max: 799358.69 mean: 27789.37 median: 2745.2	obs: 3333 min: 0 max: 1978573.6 mean: 142968.32 median: 6077.70	
<b>70e. Total</b>				
	<p><sup>1</sup>Crew-based labor costs should be based on the crew's fully loaded hourly rate (rather than the crew's take-home pay rate) which may include costs associated with medical and other insurance, workers compensation, vacations, and other benefits. These labor costs should include the crew's time for traveling to and from the job site.</p> <p><sup>2</sup>If contractor profit and overhead are included in the contractor's material and labor costs, then leave these cells blank.</p>			

Divide the total costs spent on this housing unit (cell in lower right corner of above table) into the following expenditure categories:

<b>Expenditure category</b>	<b>Costs</b>
<b>71a. Cost effective energy-related measures (SIR &gt; 1.0)</b>	obs: 9100 min: 0 max: 1774073.6 mean: 59591.39 median: 2403
<b>71b. Incidental repairs</b>	obs: 4365 min: 0 max: 652800 mean: 2936.71 median: 348
<b>71c. Health and safety and other non-cost effective measures</b>	obs: 8750 min: 0 max: 204500 mean: 6024.94 median: 300
<b>71d. Enter total expenditures if above categories are not known</b>	obs: 3240 min: 0 max: 319945 mean: 4403.28 median: 1753.16
<b>71e. Total</b>	

Divide the total costs spent on this housing unit (cell in lower right corner of the two above tables) into the following funding sources:

<b>Funding source</b>	<b>Total funds</b>
<b>72a. DOE funds</b>	obs: 12858 min: -693 max: 696143.69 mean: 21218.16 median: 1400
<b>72b. Non-DOE funds</b>	obs: 12725 min: 0 max: 1282430 mean: 28270.03 median: 684.96
<b>72c. Enter total expenditures if above categories are not known</b>	obs: 11515 min: 0 max: 326945 mean: 709.34 median: 0
<b>72d. Total</b>	

### Housing Type Definitions

*Single Family Detached – House that provides living space for one family or household, is contained within walls that go from the basement (or the ground floor, if there is no basement) to the roof, and has no walls that are shared (or built in contact) with another household. A manufactured house assembled on site is a single family detached housing unit, not a mobile home.*

*Single Family Attached – House that provides living space for one household, is contained within walls that go from the basement (or the ground floor, if there is no basement) to the roof, has at least one wall that is shared (or built in contact) with an adjacent household, and has an independent outside entrance. An attached house does not have any other households living above or below, and does not share basement or attic space with other housing units. Also, an attached house does not share a heating or cooling system with any other housing units. Examples include row houses, townhouses, condominiums and side-by-side duplexes that do not have shared attics, basements or HVAC equipment.*

*Small Multi-family (2-4 units) – Building with two to four housing units (i.e., building that is divided into living quarters for two, three, or four families or households) in which one household lives above or beside another and does not meet the single family attached house definition. Includes houses originally intended for occupancy by one family (or for some other use) that have since been converted to separate dwellings for two to four families. Typical arrangements in these types of living quarters are separate apartments downstairs and upstairs or one apartment on each of three or four floors.*

*Large multifamily (5 or More Units per Building) – Building with five or more housing units (i.e., building that contains living quarters for five or more families or households) that does not meet the single family attached house definition.*

*Mobile Home – Home that is built on a movable chassis, is moved to the site, and may be placed on a permanent or temporary foundation. If rooms are added to the structure, it is considered a mobile home if the added floor area is less than the mobile home's original floor area; otherwise, it is a single family detached house. A manufactured house assembled on site is a single family detached house, not a mobile home.*

*Shelter - Structure whose principal purpose is to house individuals on a temporary basis who may or may not be related to one another and who are not living in nursing homes, prisons, or similar institutional care facilities.*