

# Findings from Survey Administered to Trainees of Weatherization Training Centers



Beth Hawkins  
Erin Rose  
Bruce Tonn  
Ingo Bensch

September 2014

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Environmental Sciences Division

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WEATHERIZATION TRAINING CENTERS**

Beth Hawkins, Oak Ridge National Laboratory  
Erin Rose, Oak Ridge National Laboratory  
Bruce Tonn, Oak Ridge National Laboratory  
Ingo Bensch, Energy Center of Wisconsin

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Prepared by  
OAK RIDGE NATIONAL LABORATORY  
Oak Ridge, Tennessee 37831-6283  
managed by  
UT-BATTELLE, LLC  
for the  
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## ACRONYMS

ARRA	American Recovery and Reinvestment Act
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
CY	Calendar Year
BPI	Building Performance Institute
DOE	Department of Energy
ECW	Energy Center of Wisconsin
EPA	Environmental Protection Agency
HERS	Home Energy Rating System
HVAC	Heating, Ventilation and Air Conditioning
LEED	Leadership in Energy and Environmental Design
NAHB	National Association of Home Builders
OJT	On-the-Job Training
ORNL	Oak Ridge National Laboratory
OWIP	Office of Weatherization and Intergovernmental Programs
PY	Program Year
RRP	Renovation, Repair and Painting
WAP	Weatherization Assistance Program



## ACKNOWLEDGEMENTS

The work presented in this report was funded by the U.S. Department of Energy's (DOE) Office of Weatherization and Intergovernmental Programs (OWIP).

This report summarizes findings from two surveys administered to trainees that completed weatherization related courses at U.S. Department of Energy (DOE) funded training centers in 2011. Survey tools for this study were developed by staff from the Oak Ridge National Laboratory (ORNL) as one component of the National Evaluation of the Weatherization Assistance Program.

ORNL contracted with the Energy Center of Wisconsin (ECW) and the research team of APPRISE Incorporated to implement this study. ECW took primary responsibility of administering the initial survey and the APPRISE research team took responsibility for administering the follow-up survey. ORNL conducted data analysis.

We would like to thank David Carroll and Kathy Davis from APPRISE for survey administration. We also thank the staff from the training centers for encouraging the trainees to take part in this longitudinal study and most importantly we thank the survey respondents themselves.



## ABSTRACT

This report summarizes findings from two surveys administered to trainees that completed weatherization related courses at U.S. Department of Energy (DOE) funded training centers in Calendar Year (CY) 2011. This report is just one component of a national evaluation of DOE's Weatherization Assistance Program (WAP) managed by ORNL. The overarching goal of this study is to assess the influence of DOE funds on skilled workforce development within the weatherization industry and beyond. The findings presented herein characterize the 837 survey respondents that attended the weatherization training centers and their future career plans, as well as findings regarding course content and trainee satisfaction. It should be noted that this study is not an evaluation of the quality of training provided by the training centers. A follow-up survey was administered in CY 2013 to 37 of the same respondents. This longitudinal study provided the researchers the opportunity to track employment related activities of this trained workforce, i.e. gained employment, continued their current careers, changed careers, and change in annual income.



## 1. INTRODUCTION

The main objective of this study is to assess the influence of U.S. Department of Energy (DOE) training funds funneled through the Weatherization Assistance Program (WAP) on skilled workforce development within the weatherization industry and beyond. WAP is a DOE funded program that enables income-eligible families to reduce their energy bills by making their homes more energy efficient.

This study is one component of the national evaluation of WAP that is being managed by Oak Ridge National Laboratory (ORNL) on behalf of DOE. The main purpose of the overall evaluation—and the collection of reports stemming from this work<sup>1</sup>—are to provide a comprehensive review of Program performance to enable DOE to guide the future direction of the program, as well as to provide information to potential funders in order to support leveraging activities.

This study utilized two surveys. One survey was administered to individuals who received training at weatherization training centers in 2011. The second survey was a follow-up survey administered to a small sample of the same respondents. The pages that follow summarize findings from these surveys<sup>2</sup> and include characterizations of the trainees and their future career plans in the field of low-income weatherization or otherwise. This report also captures the level of satisfaction that the trainees reported. It should be noted that this study was not intended to evaluate the quality of training provided by the training centers. The follow-up survey allowed for a longitudinal study to be performed, thereby providing researchers the opportunity to track employment related activities of this trained workforce, i.e. gained employment, continued their current careers, changed careers, and change in annual income.

The methodology employed for this study is presented in Section 2.0. The initial survey (See Appendix A) providing the bulk of the methodology includes questions designed to provide an overview of the trainees; level of education, current employment status, current job satisfaction, annual income, and health insurance. These findings are presented in Section 3.0. Section 4.0 presents results based on questions related to prior training and certifications. Questions were posed related to training delivered by the training center such as content, format and trainee satisfaction. These findings are presented in Section 5.0. The follow-up survey (See Appendix B) included questions intended to capture employment related activities such as those mentioned above. These findings are presented in Section 6.0. Observations are included in Section 7.0

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<sup>1</sup> Several additional reports will be issued as part of the national evaluation that address indoor air quality in weatherized homes; energy savings and non-energy benefits attributable to weatherization activities; a process evaluation report; a series of case studies for WAP agencies; a program characterization and eligible population report; and an occupant/client satisfaction report. See <http://weatherization.ornl.gov>

<sup>2</sup> Sample sizes for findings presented vary considerably depending on applicability of questions to trainees. Sample sizes are provided within tables and figures.



## 2. METHODOLOGY

To best access the trainee population the assistance of 34 weatherization training centers was requested (See Appendix C), resulting in the completion of 837 web-based surveys administered between May 2011 and November 2011. Although a substantial number of surveys were collected, the results are not representative of the trainee population nationally with 48% of the surveys completed by trainees at one training center. Out of 34 centers, 23 had trainees complete the survey with some centers opting out or unable to participate; either they had not yet started training or were pre-occupied with start-up efforts. Only 8 centers had been in operation prior to the American Recovery and Reinvestment Act (ARRA) of 2009. Through the appropriation of these stimulus funds 26 additional training centers were established. It should be noted that the opening of these centers was on an expedited time frame due to the deadlines set for ARRA fund expenditures. Another barrier to participation involved lack of web-access. In addition, enthusiasm regarding participation in the evaluation varied between centers and their trainees. These factors contributed to the wide range in counts of completed surveys across all training centers.

Upon completion of the survey, these trainees were asked to provide contact information for analysts to contact them at a later date, allowing for a longitudinal study of weatherization training to be completed; 70% of the respondents agreed. This provided the opportunity to track jobs these trainees acquired through the training received, to provide insights into different career paths they make take, and to establish the degree to which the trainees contracted with low-income weatherization providers post-ARRA. This task was completed with the understanding that opportunities and constraints faced by the trainees two years out may well be dependent upon local economic conditions. This second survey was administered in the summer of 2013.

Additional analysis was conducted on a subsection of survey respondents that, at the time of the initial survey, had been working in low-income weatherization for two years or less or had not received any type of formal training within the last five years. This task was designed to shed light on what happens post-ARRA stimulus funding to the newly or less experienced trainees. Applying the aforementioned criteria resulted in 265 cases. A higher rate of attrition resulted in a smaller sample size than desired: only 152 of the 265 cases listed their email addresses, and an additional 25 did not have email addresses, but did have phone numbers. Researchers contacted the 25 respondents that provided phone numbers in an attempt to get their email addresses. Lastly, 88 cases (33%) did not have either a phone number or email address. These issues resulted in a final sample of 177 trainees contacted via email for participation in the online survey. The response rate was 21%; 37 surveys were completed.



### 3. TRAINEE OVERVIEW

This section characterizes the group of survey participants that attended the WAP training center programs and presents the findings related to the following questions<sup>3</sup>: (1) Who attended these training programs? (2) What was their educational background? (3) Had they been working in low-income weatherization prior to the training? If not, which industries were they employed in? (4) Were they looking for a career change and/or to increase their skills and knowledge applicable for their current job and what were their future goals for employment?

#### 3.1 DEMOGRAPHICS

Of those surveyed, 92% were male and 94% spoke English as their native language; the remaining 6% were mostly Spanish speaking. Figure 3.1 presents the count of trainees by race and ethnicity, which reflects that the participating training centers serve a fairly narrow demographic. Persons identifying as Caucasian were the majority at 56%, with Black or African American identified as the next largest group at 24%, followed by 11% Hispanic or Latino, 1.6% American Indian or Alaska Native, 0.5% Asian, 0.3% Native Hawaiian or other Pacific Islander, and 6% preferred not to answer.<sup>4</sup> The age distribution was fairly evenly distributed (See Figure 3.2) between the ages of 26-55. The average (mean) age for all participating trainees was 41 years old.

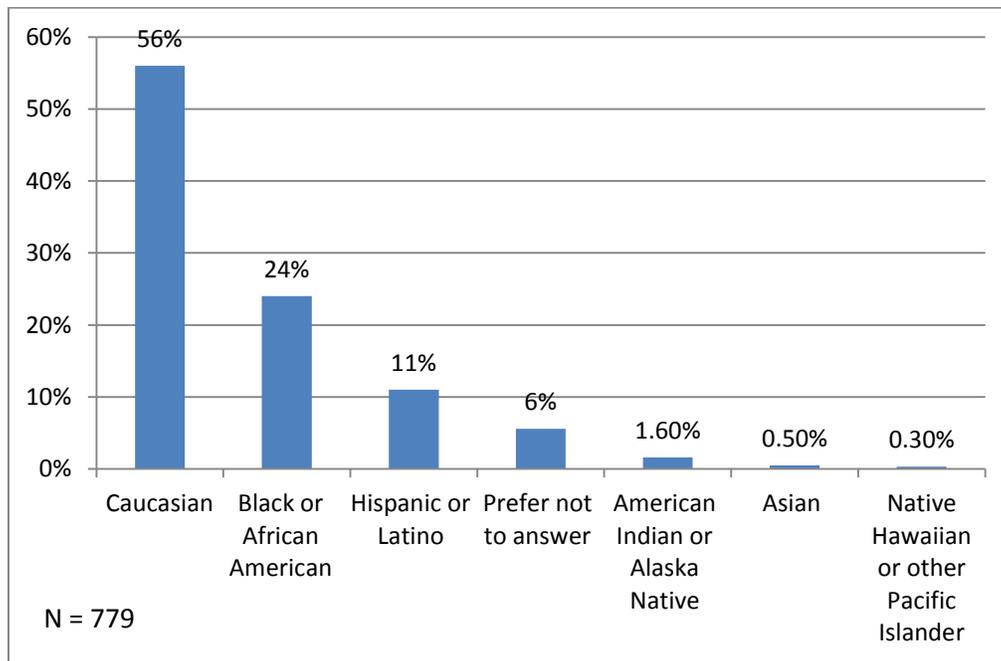
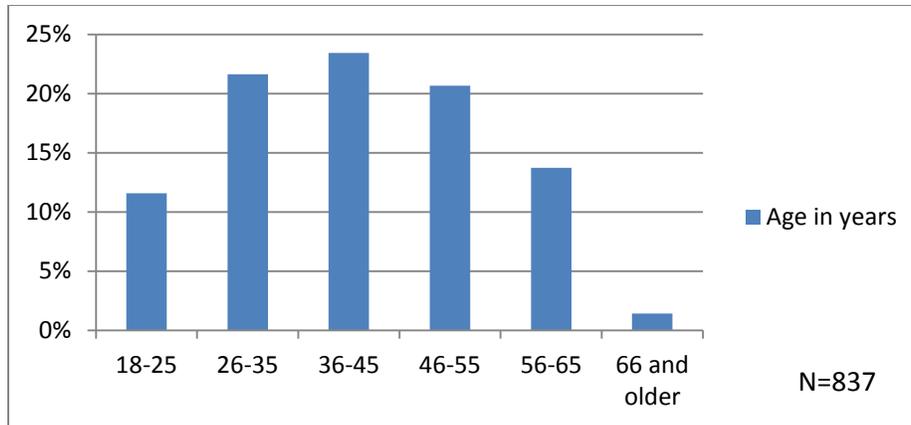


Figure 3.1. Race and Ethnicity

<sup>3</sup> Further in the report, Section 5.1, Figure 5.1 presents the topics that trainees reported best described the content of the training they had just completed. The majority of respondents reported courses with a focus on Lead Safe Weatherization (LSW) or Lead-Based Paint Renovation, Repair and Painting (RRP); therefore, it is possible that results may be skewed towards a broader-than-typical audience including home renovations and painting companies in addition to WAP staff.

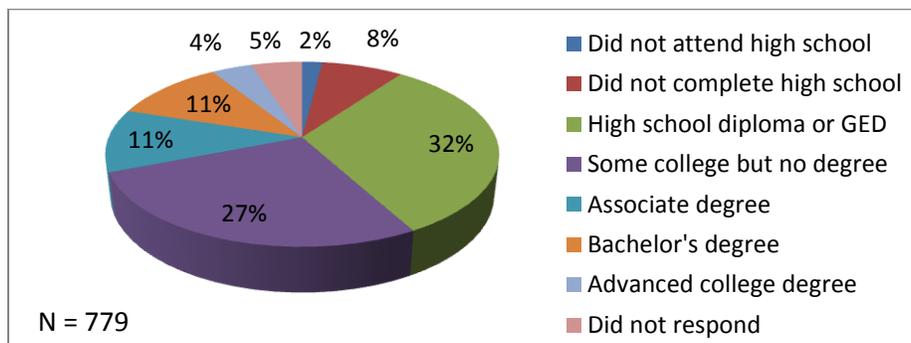
<sup>4</sup> Excluding the training center that supplied 48% of the completed surveys, of the remaining sub set of trainees, 45% were Caucasian, 23% Black or African American, 17% Hispanic or Latino, 1.6% American Indian or Alaska Native, 0.7% Asian, 0.2% Native Hawaiian or other Pacific Islander, and 6% preferred not to answer.



**Figure 3.2. Age distribution**

### 3.1.1 Education

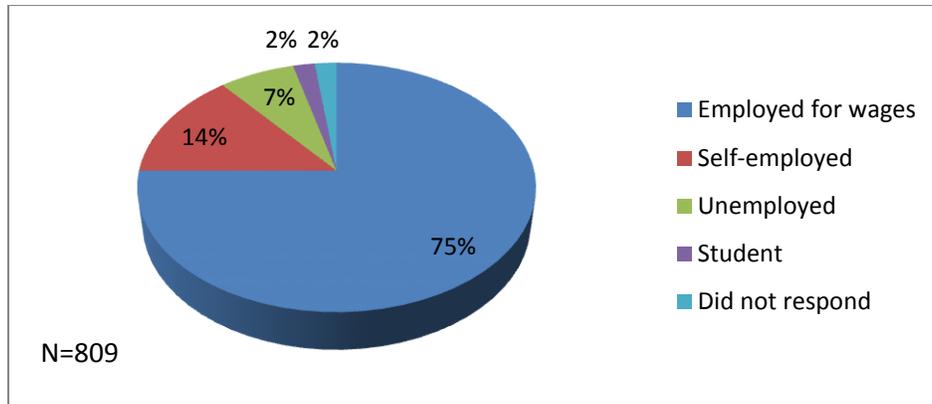
Findings revealed various levels of education among the trainees (See Figure 3.3); 32% had received a high school diploma or GED, 27% had attended some college, and 26% have received some type of college degree (with 4% of those holding an advanced college degree), 10% did not complete high school, and 2% did not attend high school at all.



**Figure 3.3. Educational background**

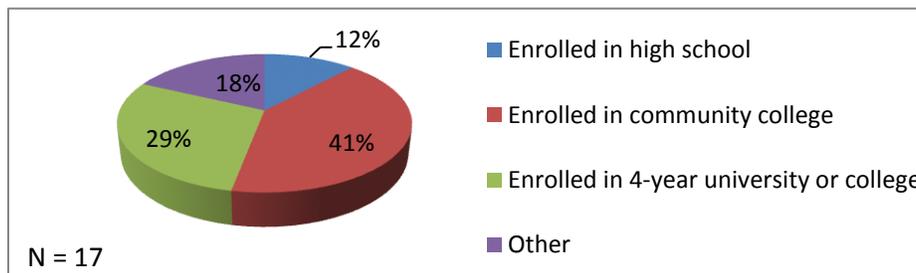
### 3.1.2 Employment

The majority of the trainees were employed at the time of the survey; either employed for wages or self-employed (See Figure 3.4). Only 7% were unemployed while 2% were students. However, of the unemployed trainees, 93% reported that they had actively been seeking employment in the previous 4 weeks.



**Figure 3.4. Employment status at time of training**

Of the 2% of trainees that reported they were currently students (N=17), 24% stated they completed the training to satisfy course requirements and 12% were required to take the training as part of their participation in a community-based social program (e.g. Teens at Risk). Figure 3.5 below provides a break-down of the students' current educational status, which reveals that the majority was enrolled in a community college and 12% was enrolled in high school.



**Figure 3.5. Educational status of trainees reported as students**

### 3.1.3 Annual Income

Figure 3.6 presents a comparison of self-reported annual income between low-income weatherization staff trainees and those not working in low-income weatherization (hereafter to be referred to as NON-low-income weatherization staff). It appears that the mass of the distribution for low-income weatherization staff is mostly concentrated on the left side of the chart, with the most reported annual income being within the range of \$30,000-\$40,000. However, 16% did report they earned below \$10,000 a year and 5% reported \$75,000 and above. As for the non-low-income weatherization staff, the chart leans more to the right, with 15% reporting annual incomes of \$40,000-\$50,000 a year, 8% reporting \$75,000 and above.

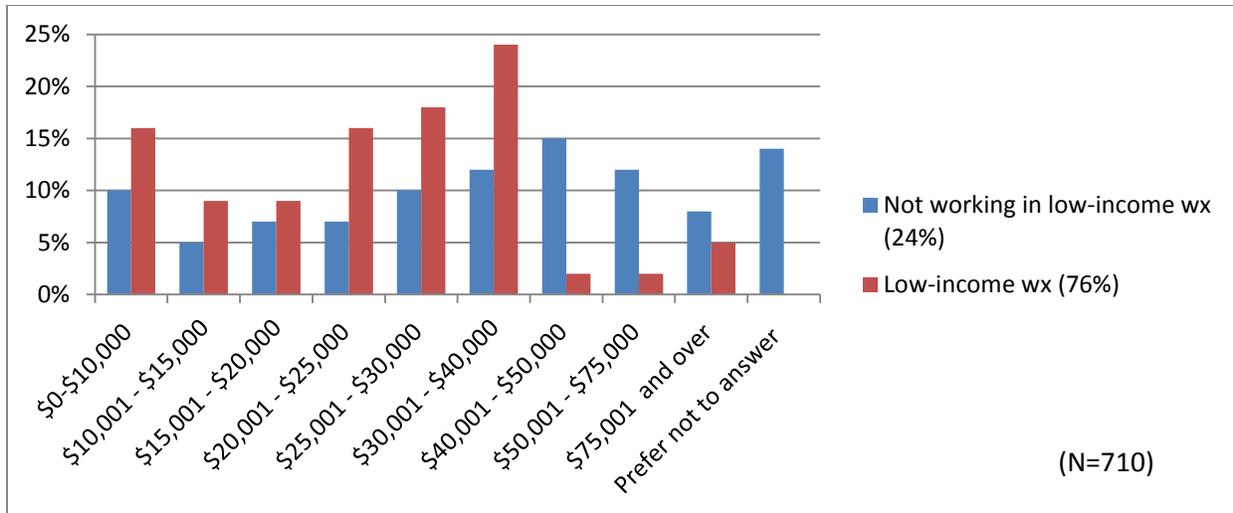


Figure 3.6. Annual income from primary job

### 3.2 LOW-INCOME WEATHERIZATION STAFF

Figure 3.7 shows that 78% of the trainees that were already working in low-income weatherization were employed with a local weatherization agency and 12% with a private weatherization contractor. Only 10% selected “Other”, which was lower than expected.<sup>5</sup> One example filled in for this category was Heating, Ventilation and Air Conditioning (HVAC) technicians.

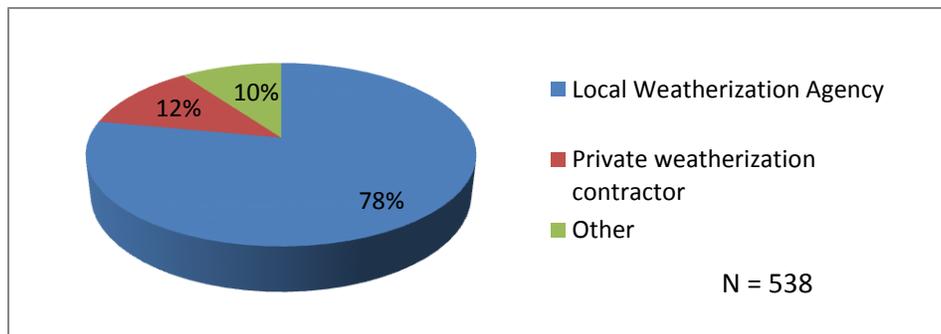
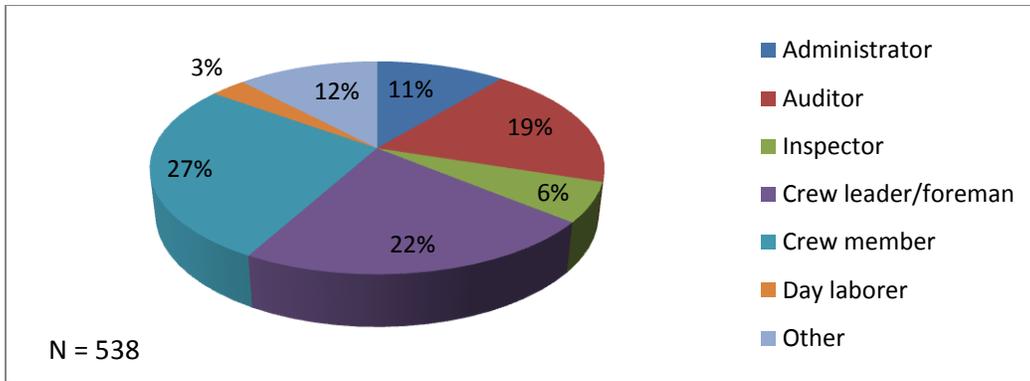


Figure 3.7. Place of employment for low-income weatherization staff at time of training

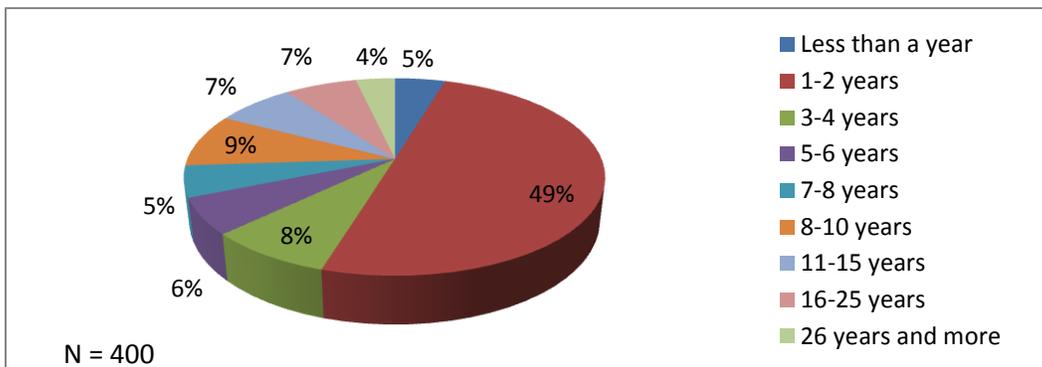
Figure 3.8 shows that the job positions held by the trainees surveyed were fairly evenly distributed between Crew Members (27%) and Crew Leaders (22%). Of those surveyed, 19% reported being auditors. A small percentage of Administrators, Inspectors and Day Laborers comprised the remaining 32% of given job titles; 12% reported their title as “other” (See Appendix D for list of job titles included in this category).

<sup>5</sup> As part of the National Evaluation of WAP, case studies were conducted on 15 weatherization agencies. Through these case studies it was found that there was a good mix of those that employed in-house crews and those that used subcontractors. These subcontractors could include electricians, plumbers, and HVAC technicians, some even subcontract out for energy audits, and Quality Assurance inspections. In addition, some utility companies provide low-income weatherization programs that subcontract for all aspects of the weatherization process. Therefore one would expect that the percentage of trainees that would fit into this “Other” category would be much higher.



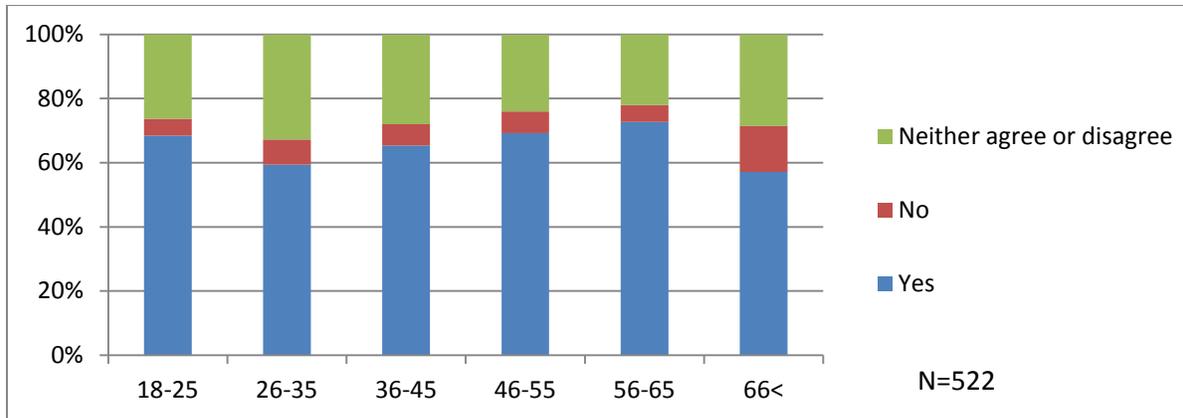
**Figure 3.8. Primary low-income weatherization job title**

The trainees were asked how many years they had been working in low-income weatherization. The average (mean) was 5.8 years. However, the most reported they were relatively new to the industry as 49% had been in the field for 1-2 years. The remaining was fairly evenly distributed among the other value ranges. Interestingly, 8% of those surveyed, reported working in this industry for more than 26 years; nearly as long as the Program is old (See Figure 3.9).



**Figure 3.9. Length of time working in low-income weatherization**

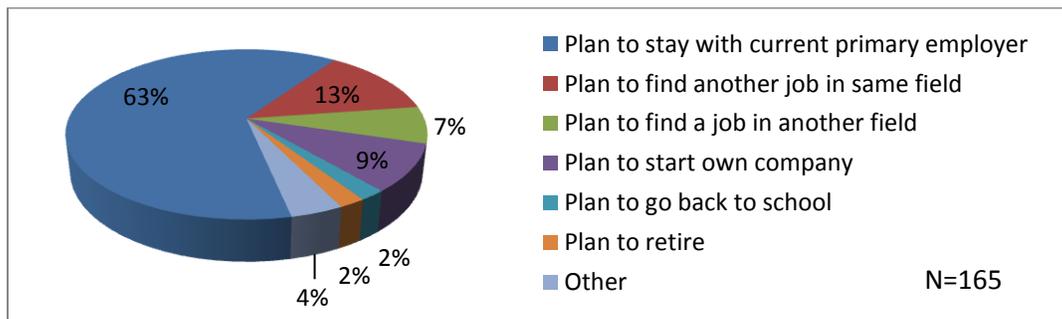
Two-thirds of the respondents currently working in low-income weatherization consider this industry to be their long-term career and 32% of those reported that it was ‘likely’ or ‘highly likely’ they would be unemployed if they did not have a job with their current weatherization employer. Figure 3.10 presents percentages of respondents that either agreed or disagreed that they consider low-income weatherization their long-term career grouped by age bracket. It was unanticipated that the distribution be fairly equal between age brackets. From these data, it appears that even those in the younger age brackets are entering this industry with intentions to remain.



**Figure 3.10. Trainees working in low-income weatherization that agree or disagree that low-income weatherization is their long-term career - by age bracket<sup>6</sup>**

### 3.3 NON-LOW-INCOME WEATHERIZATION STAFF

Out of the 165 trainees that reported *not* working in low-income weatherization 43% replied it was likely or highly likely they would be unemployed if they didn't have their current job. Again, this survey was administered during the time when ARRA funding supplemented regular appropriation funds allowing for employment opportunities when there may not have been otherwise. Figure 3.11 characterizes self-reported career plans of the trainees for the next two years. Findings revealed that 63% of the trainees plan on staying with their current non-low-income weatherization employer and 13% plan to stay in the same field, but not with the same employer. It could be argued that the 7% that plan to find a job in another field may have intentions to move into the low-income weatherization industry, but seems unlikely as that would technically still be the home performance industry.

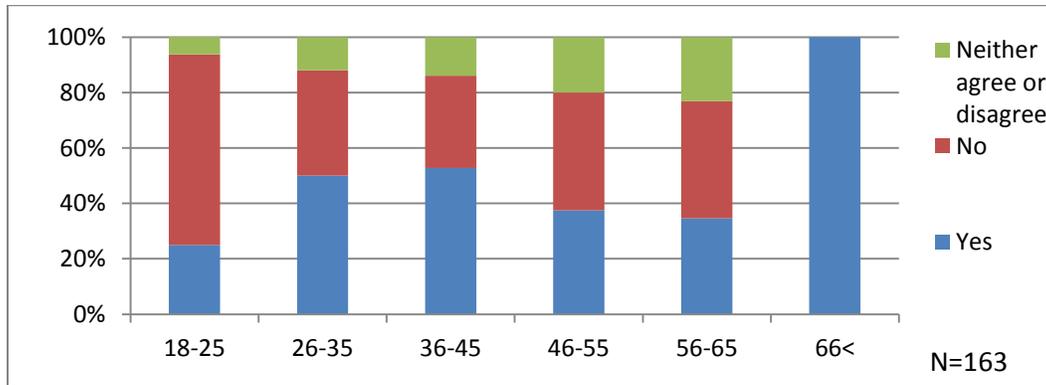


**Figure 3.11. Future career plans for non-low-income weatherization staff trainees**

Only 44% of those surveyed belonging to the non-low-income weatherization group agreed or strongly agreed they view low-income weatherization as a long-term career compared to approximately 66% of those in the low-income weatherization group. Figure 3.12 breaks down this group into age brackets. 25% of non-low-income weatherization staff within the 18-25 age group, which is much less than the 68% of the low-income weatherization staff in the same age bracket, consider this industry a long-term career. As a whole, regarding the non-low-income weatherization staff, it appears that the older the trainee is the

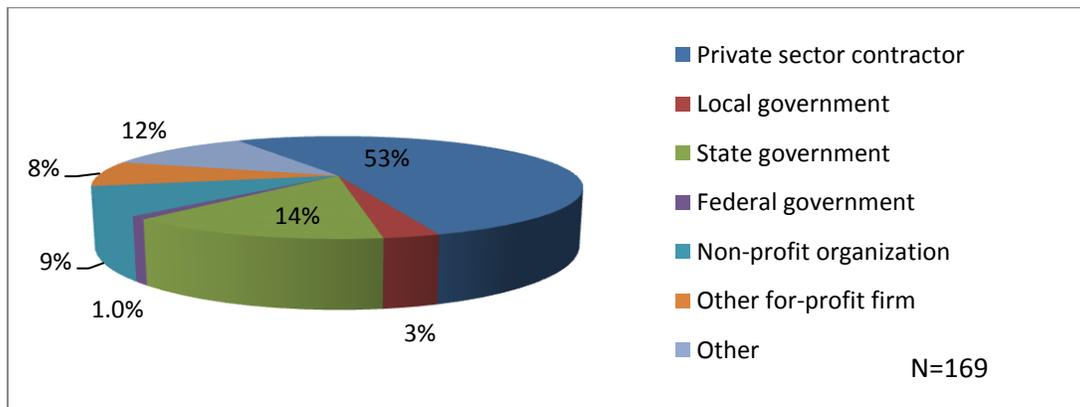
<sup>6</sup> The survey responses, 'strongly agree' and 'agree' are grouped together in the blue column as yes; 'strongly disagree' and 'disagree' are grouped in the red column as no. This figure does not report the 'neither agree nor disagree' responses.

more they perceive low-income weatherization as a viable career, especially the 66 + group, which is quite the opposite from those that were currently working in this industry.<sup>7</sup>



**Figure 3.12. Trainees not working in low-income weatherization that agree or disagree that they view low-income weatherization as a long-term career - by age bracket<sup>8</sup>**

Figure 3.13 presents that slightly less than half of the trainees surveyed in this group were employed with a contractor in the private sector; the remaining half reported employment in the government and non-profit sectors, and with other types of for-profit firms. It is interesting that 9% of these trainees reported being employed with a non-profit organization that does provide non-low-income weatherization services.

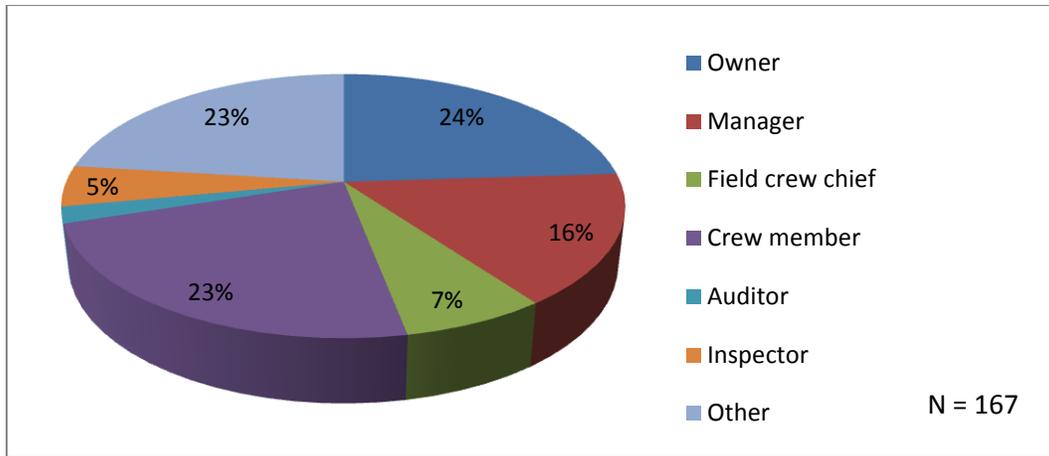


**Figure 3.13. Place of employment for NON-low-income weatherization staff at time of training**

Referring to Figure 3.14 one can see that the most frequently reported job titles are Owners, Crew Members, and Other at 24%, 23% and 23% respectively.

<sup>7</sup> With the exception of the 66< age bracket where the sample size is quite small at n=3.

<sup>8</sup> The survey responses, 'strongly agree' and 'agree' are grouped together in the blue column as yes; 'strongly disagree' and 'disagree' are grouped in the red column as no. This figure does not report the 'neither agree nor disagree' responses.



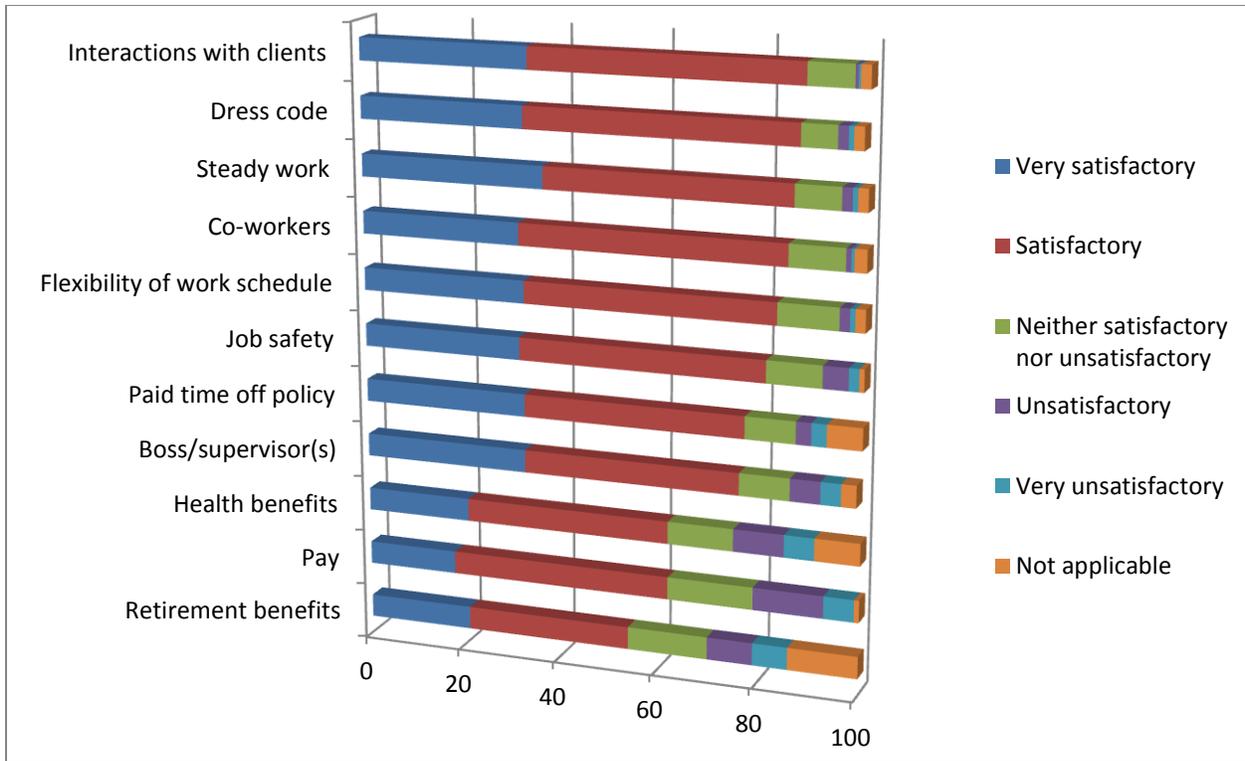
**Figure 3.14. Job titles reported that best describe current place of employment (NON-low-income weatherization staff)**

### 3.4 SATISFACTION WITH CURRENT JOB

Trainees were asked to rate their satisfaction levels across 11 aspects related to their current place of employment. The majority of both groups of trainees reported they were at least “Satisfied” across the board, with some aspects rated “Very Satisfied”.

For those trainees working in low-income weatherization, 93% responded that they were either satisfied or very satisfied with their interaction with clients. Dress code and flexibility of work schedule appear to be additional aspects offering satisfaction at 90% of the trainees being either satisfied or very satisfied. Ratings on benefit related aspects that included health benefits, paid time-off policy and retirement benefits, had the lowest percentage of satisfaction levels at 52%, 61% and 46% respectively. Worth noting is that these also had the highest percentage of non-applicable responses; therefore, it appears that benefits may not be available to at least 14% of the low-income weatherization staff; this statistic is supported in the next section entitled Health Insurance (Section 2.7).

On this same thread, 31% of the responses related to “pay” landed in the satisfactory or unsatisfactory ratings. Figure 3.15 presents more specifically the ratios of satisfaction levels among the 11 aspects.



**Figure 3.15. Trainee satisfaction levels related to low-income weatherization employment**

Similarly, trainees employed in NON-low-income weatherization reported positively across all aspects related to employment; a significant majority reported they were satisfied or very satisfied in most categories. After comparing these two groups of trainees there is some variation in numbers, but overall the findings suggest similar patterns in rankings. Interaction with clients received the highest percentage at 88%. That being said, it appears the low-income weatherization staff might be more fulfilled with this social service aspect of their job (93%). This claim is supported through anecdotes shared during interviews with low-income weatherization staff derived from other components of the WAP evaluation. Again, the ratings on benefit related aspects had the highest percentage of non-applicable responses. Specifically, 28% responded NA to retirement benefits, 22% paid time-off policy and 16% health benefits. With regard to pay, this group similarly responded with the highest percentage of unsatisfactory to very unsatisfactory ratings, at 28%. Lack of benefits and unsatisfactory income seems to be more of an issue among all aspects of their job for all trainees, but this story is not unique to this industry compared to other industries in the U.S. Table 3.16 presents more specifically the ratios of satisfaction levels among the 11 aspects.

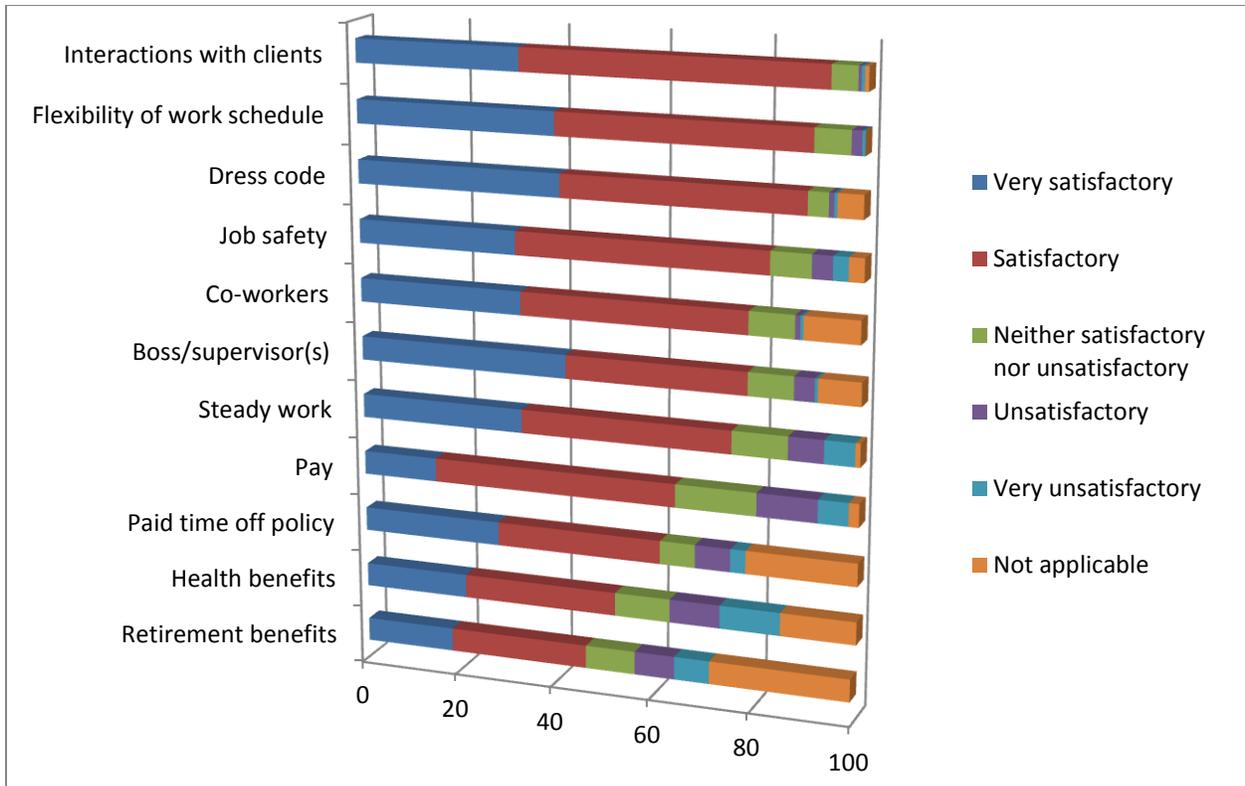


Figure 3.16. Trainee satisfaction levels related to non-low-income weatherization employment

### 3.5 HEALTH INSURANCE

Between the two groups of trainees, low-income and non-low-income weatherization staff, those that answered yes to having any type of health insurance coverage was comparable, 75% and 72%, respectively. The survey revealed that 72% of the trainees employed in low-income weatherization had insurance provided through their current primary employer, as opposed to only 50% of the non-low-income weatherization staff. It is more frequent that those not working in low-income weatherization must purchase their own insurance (18%) or rely on a family member to provide their insurance (23%). Figure 3.17 presents reported sources of health care providers.

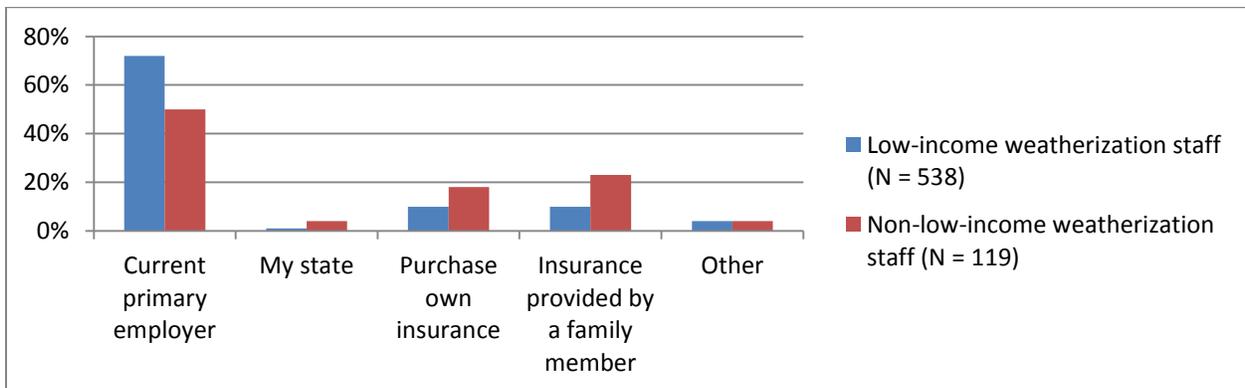


Figure 3.17. Sources of health insurance providers

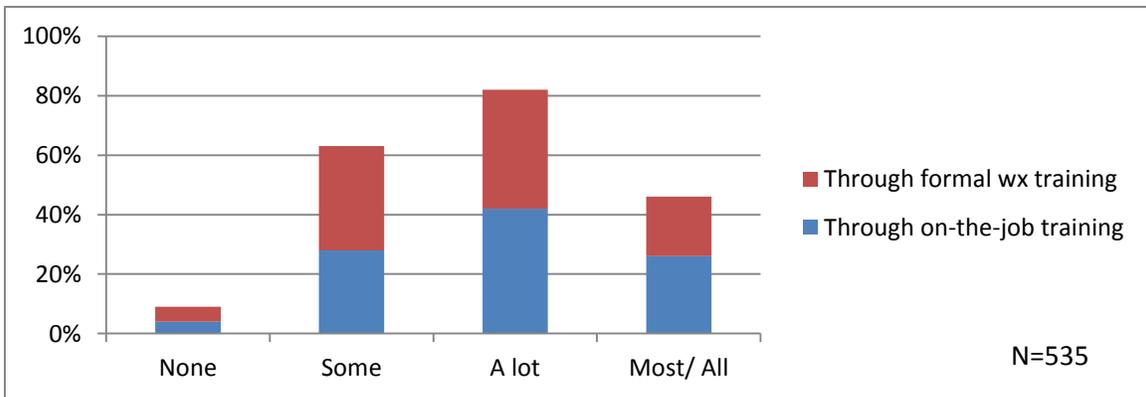
#### 4. PRIOR WEATHERIZATION TRAINING AND CERTIFICATIONS

Section 4.1 presents findings related to the weatherization skills the low-income weatherization staff trainees had developed prior to enrolling in the WAP training center, either through formal training or on-the-job training (OJT).

Section 4.2 presents certifications the trainees reported they already held at the time of the survey. Those findings are broken down into the two groups of training center attendees, low-income weatherization staff and the non-low-income weatherization staff.

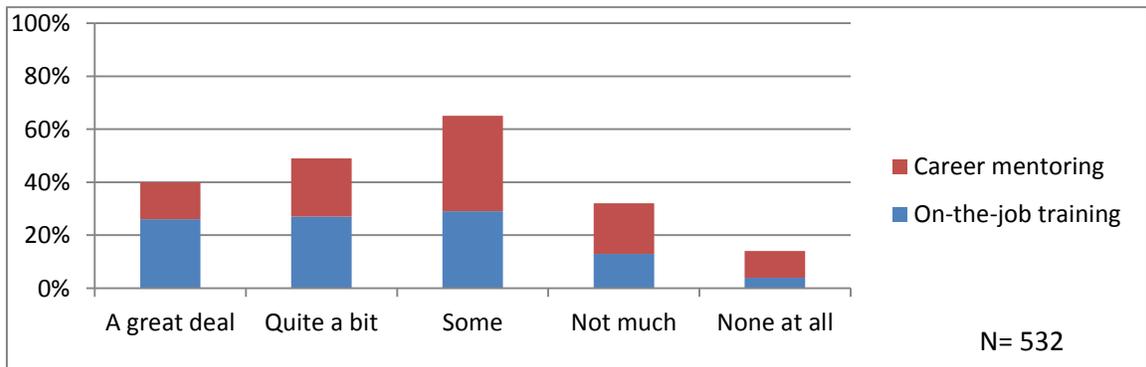
##### 4.1 TRAINING

Figure 4.1 presents the mode in which weatherization skills trainees applied to current weatherization job was previously learned. Findings showed that skills learned through OJT and formal weatherization training were fairly equally reported, with OJT receiving slightly more response frequency.



**Figure 4.1. Mode in which weatherization skills applied to current wx job was previously learned**

Findings show that low-income weatherization staff, in general, received more OJT than career mentoring over the last five years; although it is apparent that career mentoring is occurring in the industry as seen below. Figure 4.2 compares how often these two types of learning methods were experienced.



**Figure 4.2. Amount of weatherization-related on-the-job training and career mentoring received over the last five years**

When asked which types of formal training had been attended in the last five years, 66% of the respondents reported having attended classes at a training center, 31% attended classes provided by a

weatherization agency, and 24% attended at least one weatherization conference. Table 4.1 presents frequencies and breaks down the specific conferences.

**Table 4.1. Types of formal training attended in the last five years**

<b>Formal Training</b>	<b>Frequency (N = 535)</b>
Classroom training at a training center	340
Classroom training at your agency	168
Your state's weatherization conference	126
National Weatherization Training Conference	121
Regional weatherization conference	71
Webcast	60
Affordable Comfort Conference	35
Other (some BPI, RESNET, personal)	26

The next three tables (Tables 4.2, 4.3, 4.4) present topics that the trainees reported being trained in over the past five years, formal or otherwise, related to technical weatherization measures, health and safety, and professional development.

According to the findings presented in Table 4.2, the two most reported topics that weatherization staff had *prior* formal training in were insulation installation (59%) and air sealing measures (54%). These seem to align with the finding that the two most common weatherization measures for WAP households are air sealing (95%) and insulation (75%), and that most homes (83%) weatherized during PY 2008 received at least one diagnostic test.<sup>9</sup>

**Table 4.2. Formal training received on weatherization topics in the past five years**

<b>Topics</b>	<b>Frequency (N = 535)</b>
Insulation	313
Diagnostic testing and assessment procedures	293
Infiltration/air sealing measures	289
Space heating, ventilation, air conditioning	224
Base loads (e.g., lighting, refrigerators)	168
Hot water heating	166
Doors and window installation/repair	165
None of these	99
Other	44

**Table 4.3. Training on health and safety topics in the past five years**

<b>Topics</b>	<b>Frequency (N = 535)</b>
Lead	414
General crew safety	248
Indoor air quality	221

<sup>9</sup> See Bensch, I., Keene, A., Cowan, C., and Koski, K. 2013. National Weatherization Assistance Program Characterization: Describing the Pre-ARRA Program. ORNL/TM-2013/188, Oak Ridge National Laboratory, Oak Ridge, Tennessee, April.

Mold and mildew	206
Asbestos	128
Fire safety	113
Other health and safety	29

**Table 4.4. Training on professional development topics in the past five years**

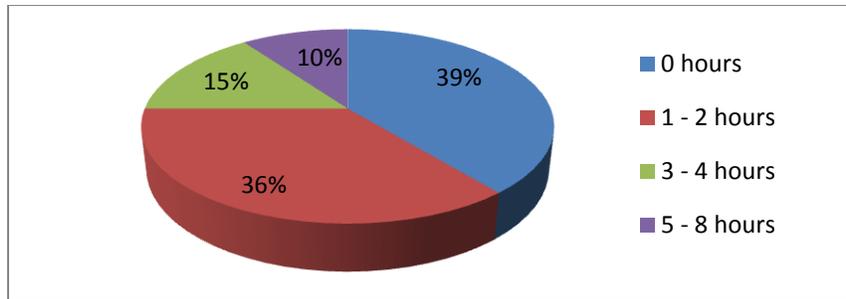
<b>Topics</b>	<b>Frequency (N = 535)</b>
Auditing/estimating for single family dwelling	176
Client education	157
Management	130
Measure installation	122
Monitoring/quality control	108
Auditing/estimating for mobile homes	105
Outreach and communications	62
Auditing/estimating for multifamily dwellings	55
Financial topics	52
Other	11

Table 4.5 presents reported reasons for unmet training needs. It appears that the most common obstacles relate to scheduling conflicts and/or being uninformed of training opportunities. It was stated by 69% of the trainees that they had heard about the training opportunity completed at the training center on the day this survey was completed, from their employer.

**Table 4.5. Reasons for unmet training needs in last five years**

<b>Topics</b>	<b>Frequency (N = 250)</b>
Training not available at the right times	66
Not aware of training opportunities that meet training needs	59
Lack of training funds	50
Training not available at the right places	27
Not senior enough	21
Haven't asked for the training	17
I have to pay for my own training	15
Don't know	51
Other	36
None of these	30

Figure 4.3 reveals that both OJT and career mentoring is being received at their current job 61% of the time. Of those surveyed, 36% of the trainees receive 1-2 hours per week and 15% receive 3-4 hours; 10% report they receive 5-8 hours per week.

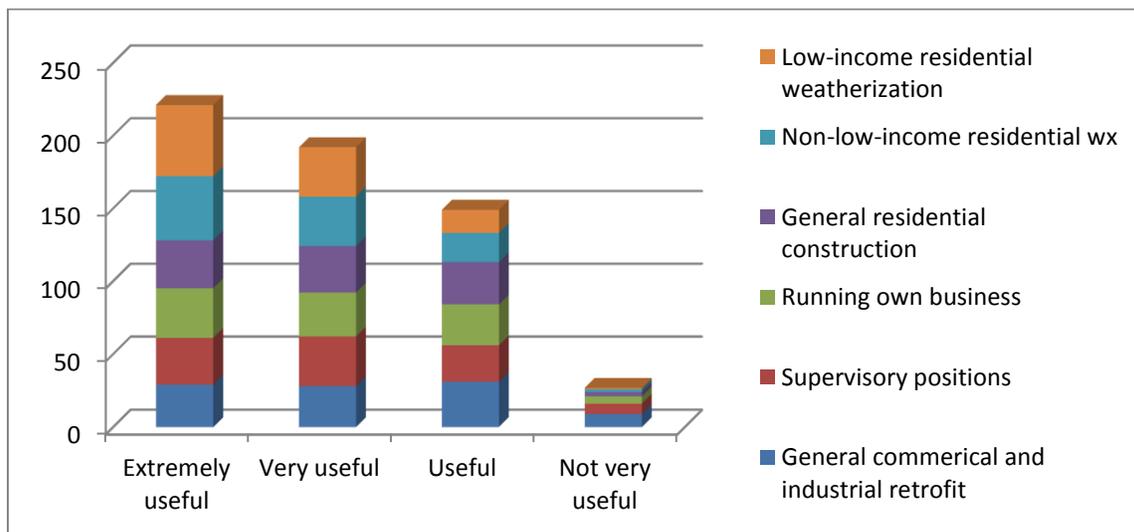


**Figure 4.3. Hours per week of on-the-job training and career mentoring received currently**

The overwhelming majority (90%) of the respondents stated that their prior training (OJT, career mentoring, and formal training) would be useful to them if they had to find a new job, and 92% stated the experience gained would be useful in other fields indicating an awareness of the overlap with broader home performance and other building industries. Figure 4.4 presents just how useful the aforementioned training and experience would be, as reported, and in which industry and job type.

These findings show the frequency of responses are weighted heavily in the extremely useful to useful categories when thinking about the relevance and applicability for related industry fields and in for broader management categories. This seems to indicate that the low-income weatherization workforce feel as if they have transferable training and experience, revealing that through WAP funded training centers, a skilled workforce is being developed.

As expected, previous training and how it relates to both low-income and non-low-income residential weatherization is most frequently reported in the extremely useful category. General commercial and industrial retrofit is reported more frequently than the other industries in the just useful to not very useful category.



**Figure 4.4. Types of industries/job positions ranked with usefulness of prior training and experience**

Table 4.6 presents the training topics that respondents felt they needed in their current job, but have been unable to get. At the top of the list, at 44%, is fire safety. Trainees are also stating they could benefit from additional training in indoor environmental quality and diagnostics.

**Table 4.6. More training needed in these areas for use in current job**

<b>Areas</b>	<b>Frequency (N = 250)</b>	<b>Percentage</b>
Fire safety	109	44%
Indoor air quality	97	39%
Diagnostic testing and assessment procedures	94	38%
Lead	85	34%
Space heating, ventilation, air conditioning for single family dwellings	74	30%
Client education	65	26%
Monitoring/quality control	63	25%
Auditing/estimating for single family dwellings	62	25%
Baseloads (e.g., lighting, refrigerators) for single family dwellings	61	25%
Mold and mildew	61	25%
Insulation for multifamily dwellings	59	24%
Space heating, ventilation, air conditioning for multifamily dwellings	59	24%
Hot water heating for multifamily dwellings	55	22%
Auditing/estimating for multifamily dwellings	53	21%
Door window installation/repair for single family dwellings	51	20%
Hot water heating for single family dwellings	50	20%
Asbestos	50	20%
Hot water heating for mobile homes	49	19%
Space heating, ventilation, air conditioning for mobile homes	48	19%
Infiltration/air sealing measures for multifamily dwellings	48	19%
Baseloads (e.g., lighting, refrigerators) for mobile homes	48	19%
Infiltration/air sealing measures for single family dwellings	46	18%
Insulation for mobile homes	45	18%
Insulation for single family dwellings	44	18%
Baseloads (e.g., lighting, refrigerators) for multifamily dwellings	44	18%
Auditing/estimating for mobile homes	44	18%
Door window installation/repair for mobile homes	41	16%
Infiltration/air sealing measures for mobile homes	37	15%
Door window installation/repair for multifamily dwellings	37	15%
Other	27	1%

Findings presented in Table 4.7 show that there is a suggested need for more training in topics surrounding weatherization of multifamily housing and mobile homes that the trainees have not been able to acquire through prior formal training. It appears that these are areas that could be expanded on in future training courses. Interestingly, door and window installation/repair for all housing types are reported in

high frequency. This may indicate that training centers have tailored course topics to align with policy by training on measures that are not common through WAP, but that both low-income and non-low-income weatherization agencies still require this skill.

**Table 4.7. Those that received most/all wx skills through prior formal training and report a need for more training in these areas**

<b>Areas</b>	<b>Percentage</b>
Door window installation/repair for multifamily dwellings	38%
Space heating, ventilation, air conditioning for multifamily dwellings	36%
Hot water heating for multifamily dwellings	36%
Space heating, ventilation, air conditioning for mobile homes	33%
Door window installation/repair for single family dwellings	33%
Door window installation/repair for mobile homes	32%
Baseloads (e.g., lighting, refrigerators) for multifamily dwellings	32%
Hot water heating for single family dwellings	30%
Baseloads (e.g., lighting, refrigerators) for mobile homes	30%
Infiltration/air sealing measures for multifamily dwellings	29%
Hot water heating for mobile homes	29%
Baseloads (e.g., lighting, refrigerators) for single family dwellings	28%
Insulation for multifamily dwellings	27%
Monitoring/quality control	27%
Asbestos	27%
Auditing/estimating for multifamily dwellings	26%
Fire safety	26%
General crew safety	26%
Space heating, ventilation, air conditioning for single family dwellings	23%
Insulation for single family dwellings	21%
Client education	21%
Indoor air quality	20%
Lead	19%
Mold and mildew	19%
Insulation for mobile homes	18%
Auditing/estimating for single family dwellings	17%
Diagnostic testing and assessment procedures	16%
Infiltration/air sealing measures for mobile homes	16%
Infiltration/air sealing measures for single family dwellings	15%
Auditing/estimating for mobile homes	13%

## 4.2 CERTIFICATIONS

Table 4.8 presents prior national certifications held by the low-income weatherization staff at the time of the training. Almost half of the low-income weatherization staff reported already being “certified” in Lead Safe Weatherization<sup>10</sup> and 39% were certified as a Lead Safe Renovator. Home Energy Rating System (HERS) and Building Performance Institute (BPI) certifications are surprisingly low given the breakdown of respondents; almost two-thirds are auditors, inspectors or crew leaders (See Section 3, Figure 3.8) and 34% reported that they did not hold any of the listed certifications.

**Table 4.8. National professional certifications held by low-income weatherization staff**

<b>Certifications</b>	<b>Frequency (N = 500)</b>
Lead Safe Weatherization*	262
Lead Certified Renovator	194
BPI Building Analyst	69
BPI Envelope	28
HERS	15
Residential Building Envelope Whole House Air Leakage Control Crew Chief	14
BPI Residential Building Envelope Accessible Areas Air Leakage Control Installer	13
LEED**	11
BPI Heating	10
BPI Air Conditioning and Heat Pump	8
BPI Manufactured Housing	7
NAHB*** Green Building	6
BPI Multifamily	3
None of these	169 (34%)

\*Lead Safe Weatherization is technically not a national professional certification

\*\*Leadership in Energy and Environmental Design

\*\*\*National Association of Home Builders

Table 4.9 shows the total number of certifications held per low-income weatherization job title. Some respondents reported holding more than one certification, with Auditors collectively having received more certifications than any position (173). Crew Leaders reported 145 certifications, Crew Members reported 113 and Administration staff reported holding 90. Inspectors collectively reported having received only 48 certifications and Day Laborers held 4 certifications.

<sup>10</sup> It should be noted that Lead Safe Weatherization is technically not a national certification; however, within this industry it appears that weatherization staff perceive that infield training on lead safe weatherization is considered equivalent to a certification.

**Table 4.9. Number of prior certifications held per reported low-income weatherization job titles\***

	<b>Admin.</b>	<b>Auditor</b>	<b>Inspector</b>	<b>Crew leader</b>	<b>Crew member</b>	<b>Day laborer</b>	<b>‘Other’</b>
<b># of trainees per job title (total sample = 538)</b>	<b>61</b>	<b>102</b>	<b>30</b>	<b>117</b>	<b>144</b>	<b>15</b>	<b>69</b>
Lead Safe Weatherization**	33	64	20	59	58	2	26
Lead Certified Renovator	29	54	12	50	28	0	21
BPI Building Analyst	10	34	5	7	5	1	7
BPI Envelope	6	6	0	9	3	0	4
HERS	3	4	1	2	4	0	1
Residential Building Envelope Whole House Air Leakage Control Crew Chief	2	3	3	3	2	0	1
BPI Residential Building Envelope Accessible Areas Air Leakage Control Installer	3	2	0	4	2	1	1
LEED	2	0	1	2	4	0	2
BPI Heating	0	3	4	2	0	0	1
BPI Air Conditioning and Heat Pump	0	1	1	3	1	0	2
BPI Manufactured Housing	0	0	1	3	2	0	1
NAHB Green Building	1	2	0	1	2	0	0
BPI Multifamily	1	0	0	0	2	0	0
<b>Total # of certifications held per job title</b>	<b>90</b>	<b>173</b>	<b>48</b>	<b>145</b>	<b>113</b>	<b>4</b>	<b>67</b>

\* Some respondents may hold more than one certification

\*\*Lead Safe Weatherization is technically not a national professional certification

As for non-low-income weatherization staff, almost half of these trainees reported that at the time of the training they did not hold any of the listed certifications. The top two certifications reported were BPI Building Analyst and Lead Safe Weatherization certifications, both reported by only 19% of the trainees. Table 4.10 presents these findings.

**Table 4.10. National professional certifications held by NON-low-income weatherization staff prior to training**

<b>Certifications</b>	<b>Frequency (N = 165)</b>
None of these	81
BPI Building Analyst	32
Lead Safe Weatherization*	32
Lead Certified Renovator	26
HERS	15
LEED	12
NAHB Green Building	11
BPI Envelope	8
BPI Manufactured Housing	3
BPI Heating	3
BPI Air Conditioning and Heat Pump	3
Residential Building Envelope Whole House Air Leakage Control Crew Chief	2
BPI Residential Building Envelope Accessible Areas Air Leakage Control Installer	1

\*Lead Safe Weatherization is technically not a national professional certification



## 5. TRAINING RECEIVED FROM WEATHERIZATION TRAINING CENTER

This section presents findings associated with course content, training methods and trainee satisfaction.

### 5.1 COURSE CONTENT

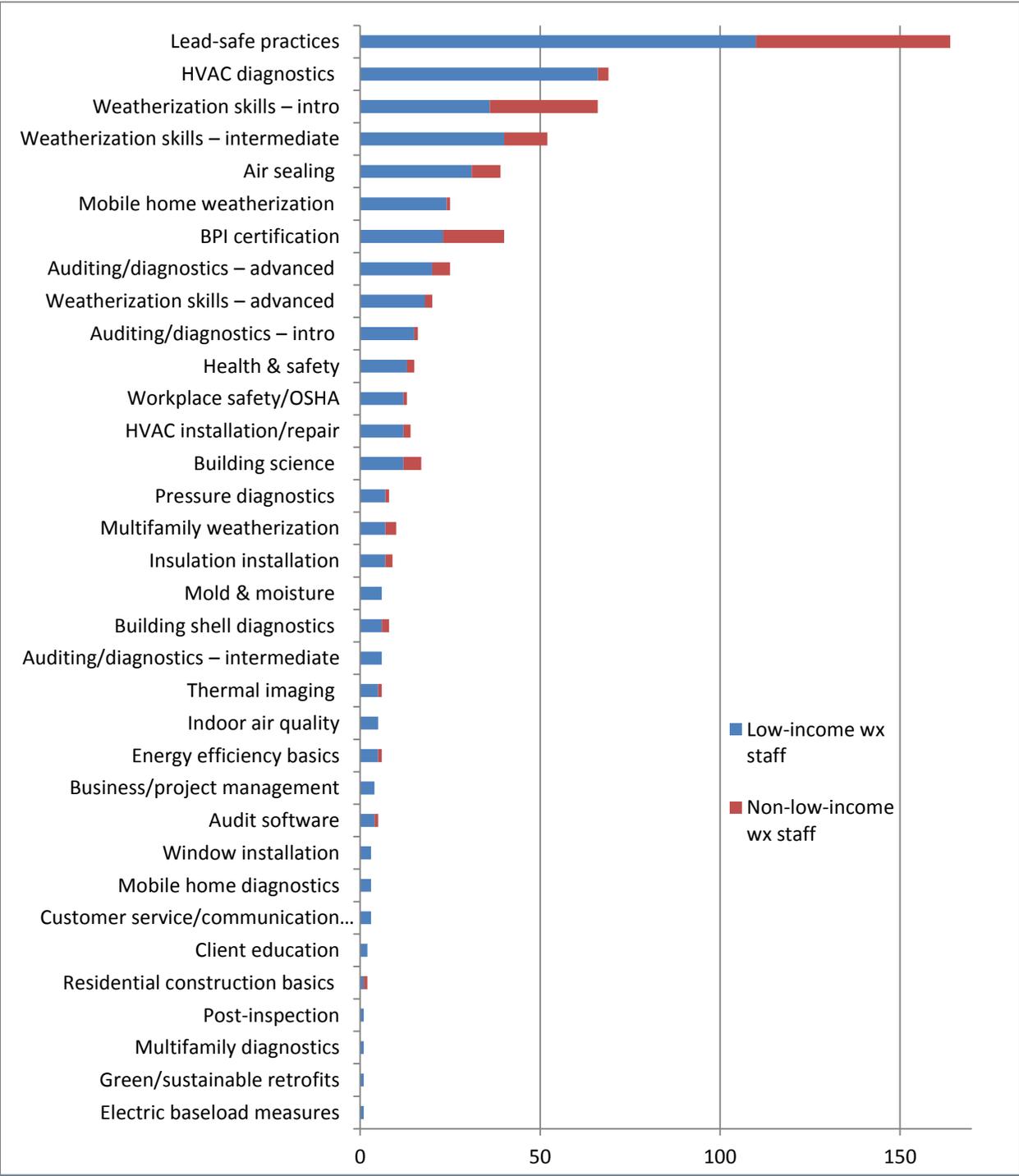
Trainees were asked which topics best describe the content of the training they had just completed at the WAP training center. Several topics are listed in Figure 5.1 along with frequencies, broken down by the two groups of trainees. Lead safe practices were the most frequently reported by both low-income and non-low income weatherization staff. Although, low-income weatherization staff chose this topic almost 50% more than non-low income weatherization staff. This is encouraging since Section 4.1, Table 4.5 previously revealed that lead was fourth on the list of topics trainees reported they needed more training in for use in their current job.

Most likely this increased need for training in lead-related areas is in response to the Environmental Protection Agency's (EPA) Lead-Based Paint Renovation, Repair and Painting (RRP) Rule of 2008<sup>11</sup> (effective April 2010) which requires workers to be certified and trained in the use of lead-safe work practices. Weatherization training centers are, and could continue to be, a necessary platform for providing training for this required certification. This need does extend beyond low-income weatherization staff as all renovation, repair, and painting firms are required to be EPA-certified as well.

EPA also requires all HVAC technicians who "professionally service, repair, open a system or container holding a controlled refrigerant, or dispose of one of these appliances" to be certified with the EPA Section 608 Certifications. HVAC diagnostics was the next reported course description of completed training for those working in low-income weatherization; followed by intermediate weatherization skills. This requirement further validates the argument that weatherization training centers provide training opportunities for necessary certifications needed to provide safe, skilled, knowledgeable weatherization services. Introduction to weatherization skills, BPI certification, and intermediate weatherization skills, in that order, received the highest response rate within the non-low-income weatherization staff (See Figure 5.1 on following page).

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<sup>11</sup> EPA's Lead-Based Paint Renovation, Repair and Painting (RRP) Rule of 2008, aims to protect the public from lead-based paint hazards associated with renovation, repair and painting activities. These activities can create hazardous lead dust when surfaces with lead paint, even from many decades ago, are disturbed. The requirement became fully effective April 22, 2010.



**Figure 5.1. Best describes the content of training completed as reported by both low-income and non-low-income weatherization staff (N=710)**

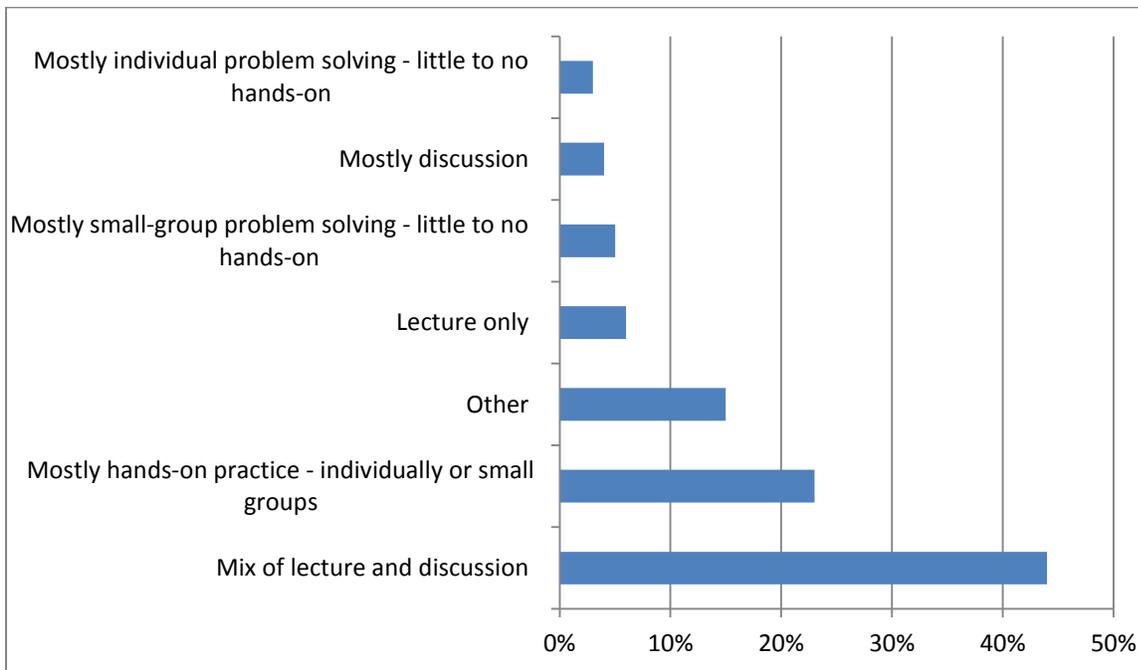
Table 5.1 presents the number of trainees that took a particular course based on the length of time they have been employed in low-income weatherization.

**Table 5.1. Number of trainees per course topic - by years of employment in low-income weatherization (only top 3 most reported course description)**

Course Description	Years of Employment								
	< 1 (n=18)	1-2 (n=205)	3-4 (n=32)	5-6 (n=23)	7-8 (n=20)	9-10 (n=34)	11-15 (n=28)	16-25 (n=26)	26+ (n=14)
Lead-safe practices (n=74)	1	21	8	4	3	4	5	3	3
HVAC diagnostics (n=52)	9	33	5	3	3	10	5	5	1
Weatherization skills – Intermediate (n=36)	3	23	2	1	2	3	2	0	0

## 5.2 TRAINING FORMAT

When the trainees were asked how best to describe the format of the training they had just received (See Figure 5.2) the most reported (44%) chose a mix of lecture and discussion and 23% chose mostly hands-on practice. An explanatory factor for this discrepancy is that not all the trainees took the same courses and/or had the same instructor.



**Figure 5.2. Best describes training format**

### 5.3 TRAINEE SATISFACTION

Trainees responded favorably with regard to the length of the program as 85% stated it was an appropriate length, while only 7% responded that the training was too long and 95% responded that the class size was appropriate. All in all, when the trainees were asked about the overall training experience, 95% agreed or strongly agreed they believed it to be acceptable and 95% stated they would recommend this training to others in the weatherization field.

Figure 5.3 on the following page presents how strongly the trainees agreed or disagreed with specific statements about the training they just received. The findings revealed a very high level of satisfaction; 94-97% agreed or strongly agreed they were satisfied with quality of training, appropriateness of the topics, usefulness of training, applicability of training content to their job, knowledge and teaching ability of the instructors, and satisfaction with training facilities and materials. The statement that received the lowest percentage (69%) was “sufficient focus on renewable energy.” This seems to align with the findings presented earlier when the trainees were asked what best describes the content of the training; Green and Sustainable retrofits received the lowest percentage of all topics at 0.1%.

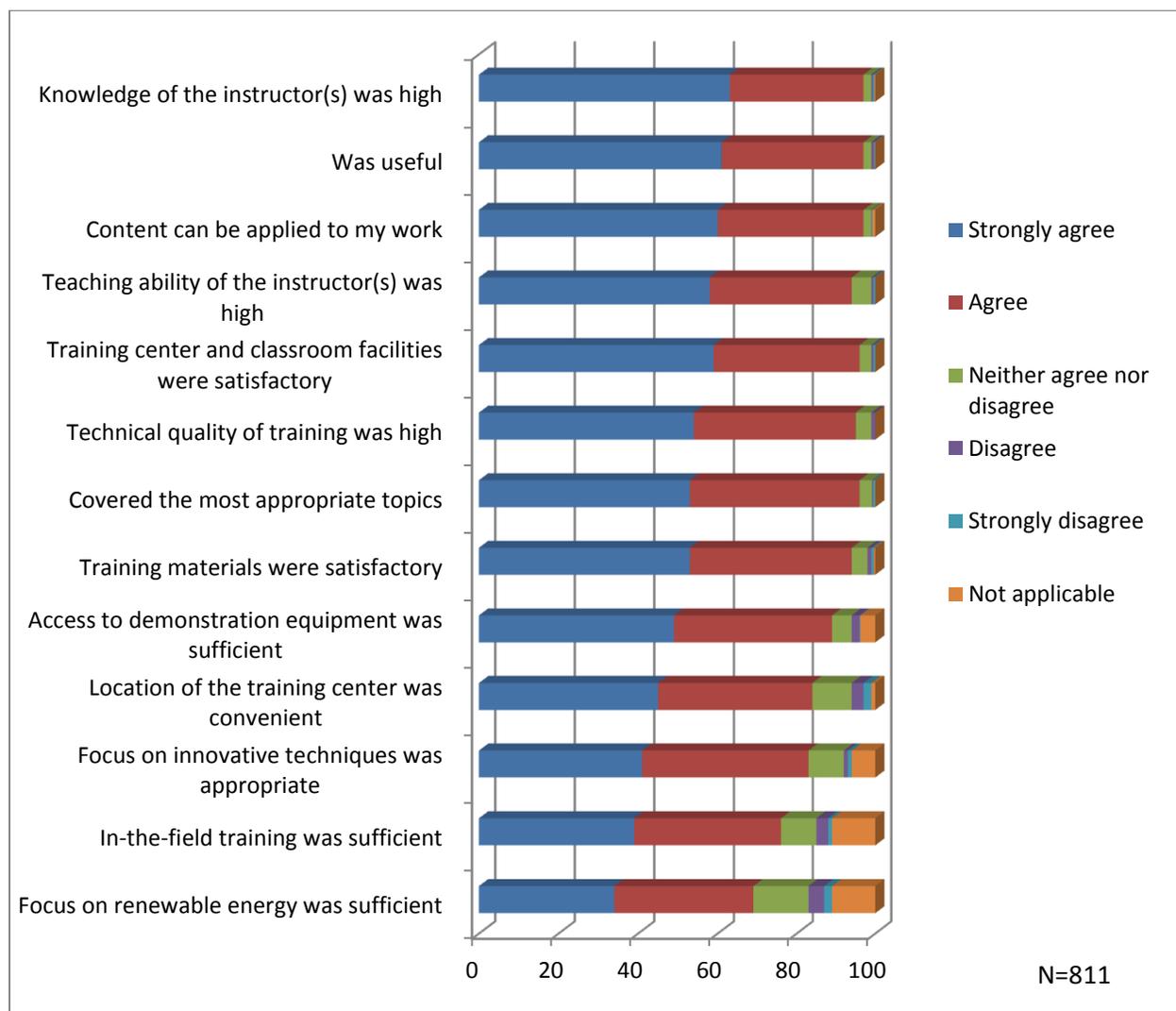


Figure 5.3. Level of satisfaction with training just completed at WAP training center (#'s are percentages)

## 6. FOLLOW-UP SURVEY FINDINGS

This section presents findings from the follow-up online survey administered in the summer of 2013, two years after training was received. Select cases from the original 837 were chosen for this longitudinal study based on pre-determined criteria<sup>12</sup> resulting in a subsample of 265 cases. However, only 152 trainees had listed their email addresses, an additional 25 did not have email addresses but did have phone numbers. Researchers contacted the 25 respondents that provided phone numbers in an attempt to get their email addresses. Lastly, 88 cases did not have either a phone number or email address. These issues resulted in a maximum amount of 177 trainees to contact via email requesting completion of the online survey. This high rate of attrition resulted in a much smaller sample size than desired. The response rate was 21 percent; 37 surveys were completed.<sup>13</sup>

Results from this survey provided researchers the opportunity to track jobs a small number of trainees acquired through the training received, to provide insights into different career paths they may take, and to establish the degree with which the trainees contracted with low-income weatherization providers post-ARRA. Exogenous factors such as local economic conditions posing opportunities or constraints for the trainees during the two years after the initial survey was administered were not controlled for.

### 6.1 EMPLOYMENT STATUS

Survey results revealed a slight shift away from being employed for wages to being self-employed and the rate of trainee unemployment increased by ten percent (See Figure 6.1). The increase in unemployment rates may have been due to the end of ARRA funding. By the summer of 2013, most states and agencies were back to pre-ARRA regular Program funding levels or less. Additionally, the small sample size for this component of the study limits this comparison.

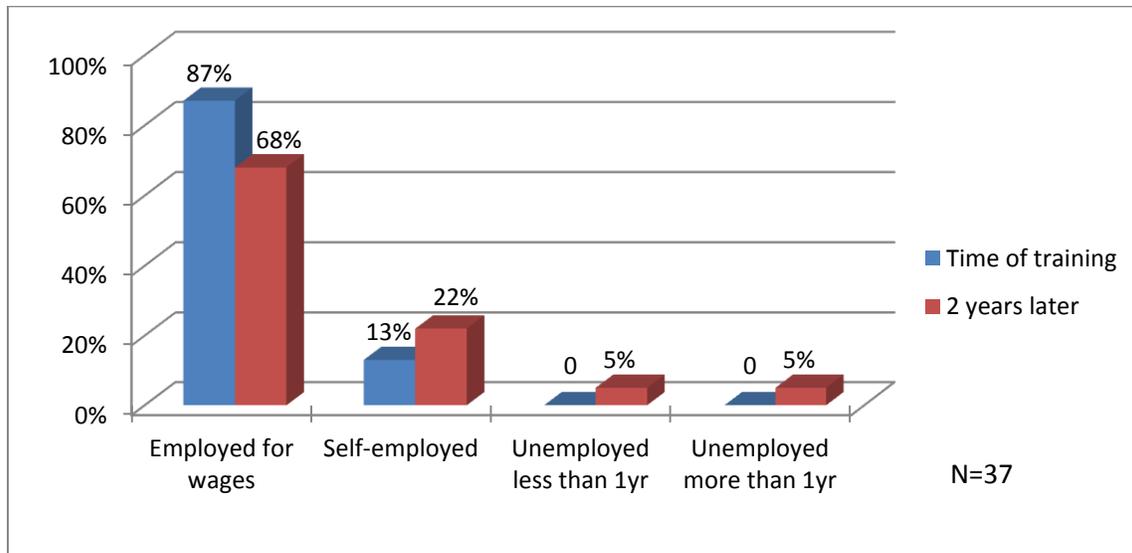


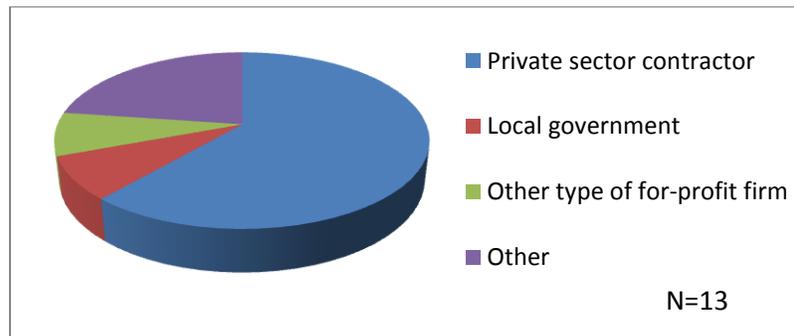
Figure 6.1. Employment status at time of training and two years later

All 37 trainees that took part in the follow-up survey reported they were working in low-income weatherization at the time of the training; two years later four were unemployed and 13 of these trainees

<sup>12</sup> Refer to Methodology (Section 2.0) for details on the criteria.

<sup>13</sup> 41% of these trainees attended the same training center that produced more than half of the initial surveys.

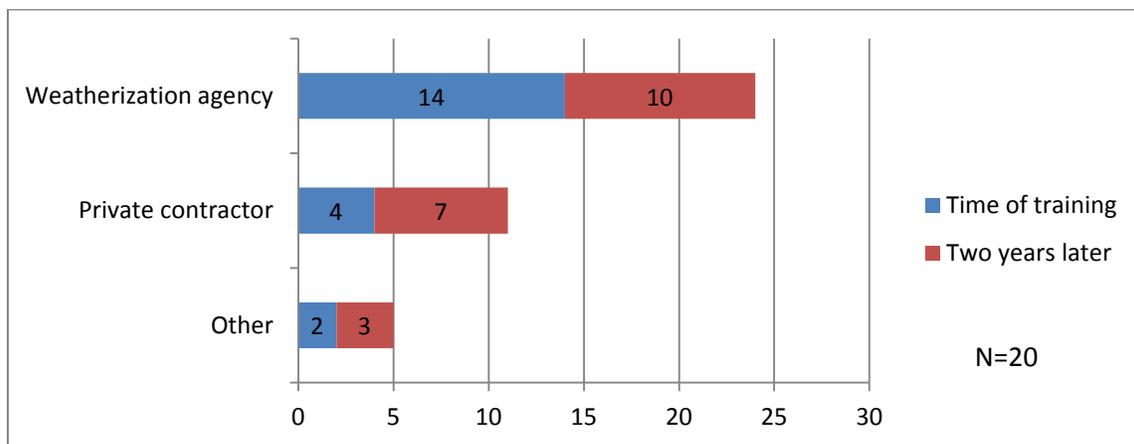
(35%) had moved out of this industry. Of the 13 (See Figure 6.2), eight reported moving to the private sector (four general contractors, three home retrofit contractors and one reported “other”). Of the other five no longer in low-income weatherization, one now works with the local government (still in construction), one with a for-profit firm (chemical transport company), and three reported “other” (construction project manager, factory employee, and general home repair services). It is unknown if these trainees switched careers due to lay-offs by low-income weatherization providers or if this career change was their intended goal.



**Figure 6.2. Current employers of trainees no longer working in low-income weatherization**

Figure 6.3 shows that out of the 20 trainees that are still providing low-income weatherization services, 10 currently work for a weatherization agency (time of training there were 14 working with a local agency), seven now work for a private weatherization contractor (four had already been working for, or as, a private contractor, three had previously been working with an agency), and three reported “other” (one had previously been working with an agency as an intake specialist and is now a senior field supervisor with a utility company. The other two had previously reported “other” at the time of training).

In summary, there was a 29% decrease in employment with a weatherization agency and a movement toward private sector delivery of low-income weatherization (43% increase).



**Figure 6.3. Current employers of trainees still working in low-income weatherization**

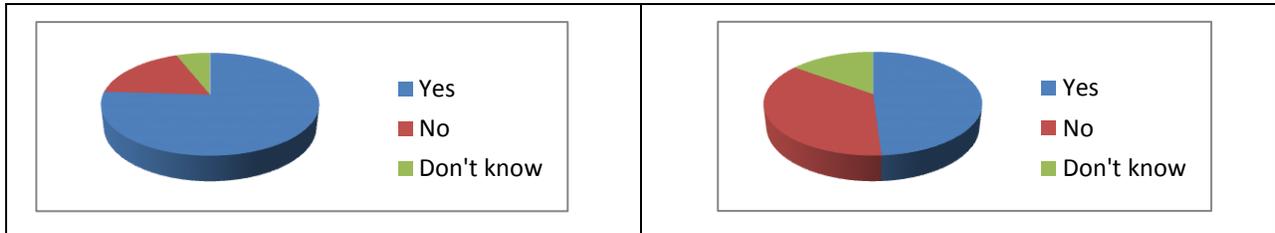
Out of these 20 trainees, 10 experienced a change in their job title. The cross-reference table below (See Table 6.1) compares the number of trainees per job title reported at the time of training to the number of trainees per job title two years later. However, there is no apparent pattern of promotions or changes in title that can be detected from these findings.

**Table 6.1. Comparison between numbers of trainees reported per job title at time of training to number of trainees reported per job title two years later.**

Job title at time of training	Job title two years later					Total
	Admin	Auditor	Inspector	Crew leader	Crew member	
Admin	0	0	1	0	1	2
Auditor	0	5	1	0	1	7
Inspector	0	0	1	0	0	1
Crew leader	1	1	0	1	2	5
Crew member	1	0	1	0	3	5
Total	2	6	4	1	7	20

When the trainees were presented with the question; “Has your weatherization training increased your ability to perform at your current job?” 76% stated in the affirmative (See Figure 6.4). Specific abilities that would contribute to an increase in performance were not provided.

When asked; “Has your weatherization training increased your ability to get a better job?” 49% responded positively as well (See Figure 6.5)



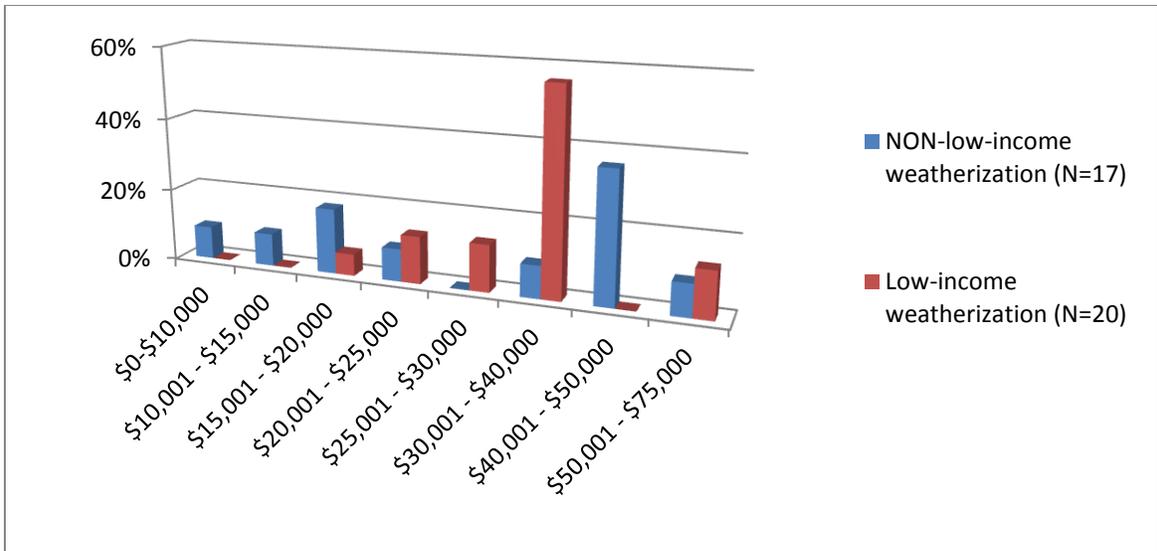
**Figure 6.4. Increased Performance**

**Figure 6.5. Increased Marketability**

**6.2 ANNUAL INCOME**

Out of the 10 trainees that changed job titles, only three received a pay increase. The mean income pre- and post-training was the same at \$25,000-30,000 per year, although more than half of the trainees reported their income at \$30,000-\$40,000.

In comparison, of the 13 trainees that no longer work in low-income weatherization the majority (36%) reported their annual income slightly higher at \$40,000-\$50,000 (See Figure 6.6).



**Figure 6.6. Comparison of annual salaries of low-income and non-low-income weatherization trainees after receiving training.**

## 7. OBSERVATIONS

### **Training Centers Fill a Niche**

Weatherization training centers provide a platform for both low and non-low-income weatherization staff to attain building science education, skills training, and industry required certifications. Lead-safe practices were by far the most frequently reported course taken for all trainees (See Section 5, Figure 5.1). Survey results showed that not only are trainees new to the industry taking lead safe courses but those working in this industry for 10-20 years are as well. Therefore, these particular classes seem to be relevant for both new hires and seasoned employees.

The need for training on Lead-safe practices extends beyond low-income weatherization staff as all renovation, repair, and painting firms are required to be EPA-certified as a Lead Safe Renovator; this group was well represented with a quarter of the trainees identifying as non-low-income weatherization staff. This is testament to the value of the centers beyond the WAP-driven mission of providing effective training for a quality workforce.

### **Future of Weatherization Training Centers**

Low-income weatherization staff utilizes training centers for formal training; more than two-thirds reported that they have attended classes over the last 5 years. Respondents reported that classes taken in the past were for specific tasks, i.e. insulation, air sealing measures, diagnostics. The trainees reported they could benefit from more training in these following topics: fire safety, indoor air quality, assessment procedures, lead, ventilation, and client education. Multi-family weatherization concepts were reported as topics not often covered that would be useful as well.

Top reasons that training needs were not met in the last five years (Section 4.1, Table 4.5) were that training was not available at the right times or at the right places. This indicates opportunities for distance learning and online courses. Trainees also reported not being aware of training opportunities that meet training needs; perhaps training centers could work with Grantees and Subgrantees to clarify training requirements.

Non-low-income weatherization staff also attends these training centers, albeit a smaller percentage (See Section 3.3). It was shown by the follow-up survey that there was a 35% shift away from being employed in low-income weatherization post-ARRA funding levels. However, almost all of these trainees are still employed in some capacity in the building performance industry. This key finding suggests that training centers play a key role in offering on a diverse set of skills for a diverse set of opportunities within this industry.

With continuous research discoveries and innovation in the areas of building science, indoor environmental quality, and health, training centers provide a pathway for best practices and application of concepts and skills. Increased emphasis on the importance of whole-house weatherization, healthy homes concepts, and newly adopted ASHRAE 62.2 ventilation standards contributes to the continued need of training centers as a resource within an continuously evolving industry. Providing training in techniques for senior field staff to be effective as in-field mentors or on-the-job coaches for innovative techniques and technologies could be a worthwhile opportunity.

Due to the wide range of organizations supporting training outside of low-income weatherization (Refer to Section 3.3, Figure 3.13) opportunities exist to expand marketing efforts beyond the WAP agencies and low-income weatherization providers. For example, non-profits that do not provide low-income

weatherization (housing rehabilitation organizations, Department of Health and Human Services) could benefit from the variety of courses offered.

### **Other Observations**

- The trainee demographics were not very diverse; the majority was English speaking Caucasian men, although there was a fairly even distribution of ages between 26 and 55. However, about half of the surveys were from one training center making these results not representative of all trainees across the country.
- 91% of the trainees were employed at the time of the training, which is an indicator that the trainees or employers were seeking to expand their skills and portfolio of certifications related to their current job rather than to just enter or reenter the workforce.
- Most low-income weatherization job positions were well represented by the trainees with an even distribution of Crew Members, Leaders, and Auditors (Section 3.2, Figure 3.8).
- As for the non-low-income weatherization staff, the attendance of Auditors and those that referred to themselves as “Field Crew Chief” was limited, perhaps due that the fact that there are typically fewer Auditors and Crew Chiefs employed in the industry where more Crew Members are needed to implement the work. However, Crew Members, Owners, and Managers were evenly distributed (Section 3.3, Figure 3.14).
- Job satisfaction is quite high for those working in low-income weatherization -especially interaction with clients and steady work (See Section 3.4, Figure 3.15); similarly non-low-income weatherization staff was quite satisfied with their current job (See Section 3.4, Figure 3.16). For both groups pay and benefits (paid time-off, health and retirement) were reported as areas for improvement.
- Across the board the trainees agreed or strongly agreed they were satisfied with the training content and format received from the weatherization training centers for that particular course taken.

### **Longitudinal Study Observations<sup>14</sup>**

- There was an observed trend away from being employed by low-income weatherization agencies to low-income weatherization delivered by the private sector (Section 6.1, Figure 6.1).
- Almost all trainees that moved out of low-income weatherization still remained in the building performance industry (See Section 6.1).
- The majority of trainees no longer working in low-income weatherization report a higher yearly salary (See Section 6.2, Figure 6.6).
- The majority of trainees perceive their job performance has improved (76%) as a result of the training received (See Section 6.2, Figure 6.4 and Figure 6.5).

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<sup>14</sup> It is important to note that due to the small sample size and without a matched pairs test statistical conclusions, especially related to income, cannot be drawn.

**APPENDIX A. TRAINEE INITIAL SURVEY**



## APPENDIX A. TRAINEE INITIAL SURVEY

For individuals that completed training courses at weatherization training centers.

**Introduction:** Thank you for agreeing to complete this survey. It is being conducted as part of the national evaluation of the Weatherization Assistance Program. In the first part of the survey, you are asked questions about your just completed training. In the second part of the survey, questions focus on your current employment status and employment plans. The survey concludes with a small number of demographic questions. All of the information that we obtain from this survey will remain confidential and will be analyzed in such a way that your answers cannot be associated with your name. Your answers will not be shared with or reported back to anyone within your agency or state.

The next several questions pertain to the training you just completed.

1. What training did you just complete?
2. What is the name of the training center where you are?
3. How did you hear about this training opportunity? (check all that apply)
  - a. From Employer
  - b. From Colleagues
  - c. From School Administrator/Teacher
  - d. From the Internet
  - f. From a Brochure
  - g. From an Advertisement in a Magazine/Trade Publication
  - h. From the News
  - i. Other \_\_\_\_\_

4. How satisfactory are you with the following?

	Very satisfactory	Satisfactory	Neither satisfactory nor unsatisfactory	Unsatisfactory	Very unsatisfactory	Not Applicable
a. Relevance of Training Content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Technical Quality of Training Content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Knowledge of the Instructor(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Teaching Ability of the Instructor(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Classroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

f. Location of the Training Center	<input type="checkbox"/>					
g. In the field training	<input type="checkbox"/>					
h. Access to demonstration equipment	<input type="checkbox"/>					
i. Length of the Training	<input type="checkbox"/>					
j. Overall Training Experience	<input type="checkbox"/>					
k. Focus on renewable energy	<input type="checkbox"/>					
l. Focus on innovation techniques	<input type="checkbox"/>					

These next questions pertain to your employment status and experiences.

5. Are you currently...?

- a. Employed for wages
- b. Self-employed
- c. Out of work for more than 1 year (SKIP to Q49)
- d. Out of work for less than 1 year (SKIP to Q49)
- e. A Homemaker (SKIP to Q54)
- f. A Student (SKIP to Q51)
- g. Retired (SKIP to Q54)
- h. Unable to work (SKIP to Q54)
- i. Refused (SKIP to Q54)

6. Are you employed full-time or part-time?

- a. Full-time
- b. Part-time
- c. Don't Know/Not Sure
- d. Refused

7. How many employers do you have?

- a. One
- b. Two
- c. More than two

8. How many hours per week do you usually work at all of your jobs?

Enter \_\_\_\_\_ hrs

9. Do you currently work for a local agency that conducts low-income weatherization or a private contractor that performs low-income weatherization?

- a. Yes
- b. No (Go to Q35)

10. For whom do you work?

- a. Local weatherization agency
- b. Private weatherization contractor
- c. Other \_\_\_\_\_

11. What is your primary weatherization job title?

- a. Administrator
- b. Auditor
- c. Inspector
- d. Crew leader/foreman
- e. Crew member
- f. Day laborer
- g. Other \_\_\_\_\_

12. How long have you been working for your current weatherization employer?  
\_\_\_\_\_ (Years) \_\_\_\_\_ (months)

13. How long have you been working in low-income weatherization?  
\_\_\_\_\_ (Years) \_\_\_\_\_ (months)

14. How many hours per week do you usually work at all of your jobs?  
Enter \_\_\_\_\_ hrs

15. Do you have health insurance?

- a. Yes
- b. No (go to Question 17)

16. Who provides your health insurance?

- a. Your current weatherization employer
- b. A non-weatherization employer
- c. Your state
- d. You purchase your own insurance
- e. You have insurance through a family member
- f. Other \_\_\_\_\_

17. What is your annual income?

income range	weatherization job	all jobs
\$0-\$10,000	<input type="checkbox"/>	<input type="checkbox"/>

\$10,001 - \$15,000	<input type="checkbox"/>	<input type="checkbox"/>
\$15,001 - \$20,000	<input type="checkbox"/>	<input type="checkbox"/>
\$20,001 - \$25,000	<input type="checkbox"/>	<input type="checkbox"/>
\$25,001 - \$30,000	<input type="checkbox"/>	<input type="checkbox"/>
\$30,001 - \$40,000	<input type="checkbox"/>	<input type="checkbox"/>
\$40,001 - \$50,000	<input type="checkbox"/>	<input type="checkbox"/>
\$50,001 - \$75,000	<input type="checkbox"/>	<input type="checkbox"/>
\$75,001 and over	<input type="checkbox"/>	<input type="checkbox"/>

18. How likely would it be that you would be unemployed if you did not have a job with your current weatherization employer?

- a. Very likely
- b. Likely
- c. Neither likely or unlikely
- d. Unlikely
- e. Very unlikely

19. How satisfactory are these aspects of your job weatherizing low-income homes?

	<b>Very satisfactory</b>	<b>Satisfactory</b>	<b>Neither satisfactory nor unsatisfactory</b>	<b>Unsatisfactory</b>	<b>Very unsatisfactory</b>
a. Pay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Health benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Steady work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Boss/supervisor (s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Co-workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Interactions with clients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Flexibility of work schedule	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Dress code	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Paid time off policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Retirement benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Job safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20. Do you view your current employment in low-income weatherization as a career or just another job?

- a. Definitely a career
- b. Mostly a career
- c. Mostly just a job
- d. Definitely just a job

21. What share of the weatherization skills you apply in your job did you learn...

	None	Some	A Lot	Most / All
a. prior to entering the weatherization field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. through on-the-job training & experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. formal weatherization training (classes, workshops, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22. How much structured weatherization-related ‘on-the-job’ training or mentoring have you had during the past five years?

- a. A great deal
- b. Quite a bit
- c. Some
- d. Not much
- e. None at all

23. Which of the following types of formal training have you attended in the last five years?

(Select all that apply)

- a. National Weatherization Training Conference
- b. Affordable Comfort Conference
- c. Regional weatherization conference
- d. Your state’s weatherization conference
- e. Classroom training at a training center
- f. Classroom training at your agency
- g. Web cast
- h. Other (please specify) \_\_\_\_\_

24. What is the most valuable weatherization training experience you have had in the last five years? \_\_\_\_\_

25. On which weatherization topics have you received formal training in the past five years?

(Select all that apply)

- a. Diagnostic testing and assessment procedures
- b. Insulation
- c. Space heating, ventilation, air conditioning
- d. Infiltration/air sealing measures
- e. Doors and window installation/repair
- f. Hot water heating
- g. Base loads (e.g., lighting, refrigerators)

26. On which topics have you had professional development training in the past five years that could take you to the next level in your weatherization career? (Select all that apply)

- a. Management
- b. Client education
- c. Auditing/estimating for:
  - i. single family dwellings
  - ii. multifamily dwellings
  - iii. mobile homes
- d. Monitoring/quality control

- e. Financial topics
- f. Outreach and communications
- g. Other (please specify)\_\_\_\_\_

27. On which health and safety topics have you received training in the past five years? (Select all that apply)

- a. Lead
- b. Indoor air quality
- c. Mold and mildew
- d. Fire safety
- e. Asbestos
- f. General crew safety
- g. Other health and safety (please specify)\_\_\_\_\_

28. Is there training you think you need in your current job, but have not been able to get?

- a. Yes
- b. No (go to Q31)

29. In what areas do you feel more training would be useful in your current weatherization job? (Select all that apply)

- a. Diagnostic testing and assessment procedures
- b. Insulation for:
  - i. single family dwellings
  - ii. multifamily dwellings
  - iii. mobile homes
- c. Space heating, ventilation, air conditioning for:
  - i. single family dwellings
  - ii. multifamily dwellings
  - iii. mobile homes
- d. Infiltration/air sealing measures for:
  - i. single family dwellings
  - ii. multifamily dwellings
  - iii. mobile homes
- e. Door window installation/repair for:
  - i. single family dwellings
  - ii. multifamily dwellings
  - iii. mobile homes
- f. Hot water heating for:
  - i. single family dwellings
  - ii. multifamily dwellings
  - iii. mobile homes
- g. Baseloads (e.g., lighting, refrigerators) for:
  - i. single family dwellings
  - ii. multifamily dwellings
  - iii. mobile homes
- h. Client education
- i. Auditing/estimating for:
  - i. single family dwellings
  - ii. multifamily dwellings
  - iii. mobile homes
- j. Monitoring/quality control

- k. Lead
- l. Indoor air quality
- m. Mold and mildew
- n. Fire safety
- o. Asbestos
- p. General crew safety
- q. Other (please specify) \_\_\_\_\_

30. What has kept your training needs from being met in the last five years? (Select all that apply)

- a. Lack of training funds
- b. Not senior enough
- c. Training not available at the right times
- d. Training not available at the right places
- e. Available training is poor in quality
- f. Not aware of training opportunities that meet training needs
- g. Haven't asked for the training
- h. I have to pay for my own training
- i. Don't know
- j. None of these
- k. Other (please specify) \_\_\_\_\_

31. What national professional certifications do you have? (Select all that apply)

- a. BPI Building Analyst
- b. BPI Envelope
- c. BPI Residential Building Envelope Accessible Areas Air Leakage Control Installer
- d. Residential Building Envelope Whole House Air Leakage Control Crew Chief
- e. BPI Manufactured Housing
- f. BPI Heating
- g. BPI Air Conditioning and Heat Pump
- h. BPI Multifamily
- i. HERS
- j. LEED
- k. Lead Safe Weatherization
- l. Lead Certified Renovator
- m. NAHB Green Building

32. What other certification do you have? (Please fill in the table below as appropriate)

Organization providing certification	Subject of certification

33. Have you gained training and/or experience from your current low-income weatherization job that could be useful if you had to find a new job?

- a. Yes
- b. No (skip Q34)

34. How useful could your training and/or experience from your current weatherization job be for a job in these fields and job types?

	Extremely Useful	Very Useful	Useful	Not Very Useful	Not at all Useful
a. Low-income residential weatherization	<input type="checkbox"/>				
b. Non-low-income residential weatherization	<input type="checkbox"/>				
c. General residential construction	<input type="checkbox"/>				
d. General commercial and industrial retrofit	<input type="checkbox"/>				
e. Supervisory positions	<input type="checkbox"/>				
f. Running your own business	<input type="checkbox"/>				

(Go to Q54)

35. Please choose the description that best describes your current primary employer:

- a. Private sector contractor (Choose if you are self-employed in this field)
- b. Local government
- c. State government
- d. Federal government
- e. Non-profit organization
- f. Other type of for-profit firm
- g. Other \_\_\_\_\_

36. How long have you been working for your current primary employer?

\_\_\_\_\_ (Years) \_\_\_\_\_ (months)

37. Please choose the description that best describes your current job.

- a. Owner
- b. Manager
- c. Field crew chief
- d. Crew Member
- e. Auditor
- f. Inspector
- g. Other \_\_\_\_\_

38. How long have you had your current job title?

\_\_\_\_\_ (Years) \_\_\_\_\_ (months)

39. Do you have health insurance?

- a. Yes
- b. No (go to Question 41)

40. Who provides your health insurance?

- a. Your current primary employer
- b. Your state
- c. You purchase your own insurance
- d. You have insurance through a family member

e. Other \_\_\_\_\_

41. What is your annual income from your primary job?

- a. \$0-\$10,000
- b. \$10,001 - \$15,000
- c. \$15,001 - \$20,000
- d. \$20,001 - \$25,000
- e. \$25,001 - \$30,000
- f. \$30,001 - \$40,000
- g. \$40,001 - \$50,000
- h. \$50,001 - \$75,000
- i. \$75,001 and over

42. How satisfactory are these aspects of your job primary job?

	<b>Very satisfactory</b>	<b>Satisfactory</b>	<b>Neither satisfactory nor unsatisfactory</b>	<b>Unsatisfactory</b>	<b>Very unsatisfactory</b>
a. Pay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Health benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Steady work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Boss/supervisor(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Co-workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Interactions with clients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Flexibility of work schedule	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Dress code	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Paid time off policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Retirement benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Job safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

43. How many different employers of all kinds have you had in the last five years? \_\_\_\_\_

44. How likely would it be that you would be unemployed if you did not have a job with your current primary employer?

- a. Very likely
- b. Likely
- c. Neither likely or unlikely
- d. Unlikely
- e. Very unlikely

45. Do you view your current employment as a career or just another job?

- a. Definitely a career
- b. Mostly a career
- c. Mostly just a job
- d. Definitely just a job

46. Please choose the description that best describes your career-related plans for the next two years.

- a. Plan to stay with current primary employer
- b. Plan to find another job in same field
- c. Plan to find a job in another field
- d. Plan to start own company
- e. Plan to go back to school
- f. Plan to retire
- g. Other \_\_\_\_\_

47. What national professional certifications do you have? (Select all that apply)

- a. BPI Building Analyst
- b. BPI Envelope
- c. BPI Residential Building Envelope Accessible Areas Air Leakage Control Installer
- d. Residential Building Envelope Whole House Air Leakage Control Crew Chief
- e. BPI Manufactured Housing
- f. BPI Heating
- g. BPI Air Conditioning and Heat Pump
- h. BPI Multifamily
- i. HERS
- j. LEED
- k. Lead Safe Weatherization
- l. Lead Certified Renovator
- m. NAHB Green Building

48. What other certification do you have? (Please fill in the table below as appropriate)

Organization providing certification	Subject of certification

(Go to Q54)

49. {IF ANSWERED (3) or (4) to Q5} Have you looked for work during the last 4 weeks?

- a. Yes (Go to Q51)
- b.No
- c. Don't Know/Not Sure
- d.Refused

50. {IF ANSWERED (2) or (3) to Q49} What is the main reason you were not looking for work during the LAST 4 WEEKS? CHECK ALL THAT APPLY

- (1) Believes no work available in line of work or area
- (2) Couldn't find any work
- (3) Lacks necessary schooling, training, skills or experience
- (4) Employers think too young or too old
- (5) Other types of discrimination
- (6) Can't arrange child care

- (7) Family responsibilities
- (8) In school or other training
- (9) Ill health, physical disability
- (10) Transportation problems
- (11) Other
- (12) Don't Know/Not Sure
- (13) Refused

(Go to Q54)

51. Please choose the best description of your current educational status.

- a. Enrolled in high school
- b. Enrolled in community college
- c. Enrolled in 4-year university or college
- d. Enrolled in graduate school
- e. Other \_\_\_\_\_

52. Did you take the just completed training to satisfy any course requirements?

- a. Yes
- b. No

53. Were you required to take the just completed training as part of your participation in a community-based social program (e.g., Teens at Risk)?

- a. Yes
- b. No

### **All Respondents**

54. What is your age? \_\_\_\_\_

55. What is your gender?

- a. Male
- b. Female

56. What is the highest level of school you have completed or the highest degree you have received? (Select best option)

- a. Did not attend high school
- b. Some high school but no diploma
- c. High school diploma or the equivalent (For example: GED)
- d. Some college but no degree
- e. Associate degree in college occupational/vocational or academic program
- f. Bachelor's degree
- g. Advanced college degree

57. Please indicate your race and ethnicity. (Select all that apply)

- a. American Indian or Alaska Native
- b. Asian
- c. Black or African American
- d. Hispanic or Latino
- e. Native Hawaiian or other Pacific Islander
- f. Caucasian

58. Is English your native language?

- a. Yes (go to Question 60)
- b. No

59. What is your native language? \_\_\_\_\_

60. What languages can you speak conversantly? \_\_\_\_\_

## **APPENDIX B. TRAINEE FOLLOW-UP SURVEY**



## APPENDIX B. TRAINEE FOLLOW-UP SURVEY

**Introduction:** Thank you for agreeing again to participate in this Trainee Survey being conducted as part of the national evaluation of the Weatherization Assistance Program. All of the information that we obtain from this survey will remain confidential and will be analyzed in such a way that your answers cannot be associated with your name. Your answers will not be shared with or reported back to anyone within your agency or state.

1. Are you currently...?
  - a. Employed for wages
  - b. Self-employed
  - c. Out of work for more than 1 year (SKIP to Q17)
  - d. Out of work for less than 1 year (SKIP to Q17)
  - e. A Homemaker (END SURVEY)
  - f. A Student (SKIP to Q20)
  - g. Retired (END SURVEY)
  - h. Unable to work (END SURVEY)
  - i. Prefer not to answer (END SURVEY)
  
2. Do you currently work in low-income weatherization?
  - a. Yes
  - b. No (Go to Q9)
  
3. For what type of company do you work?
  - a. Local weatherization agency
  - b. Private weatherization contractor
  - c. Other (please specify): \_\_\_\_\_
  
4. What is your primary weatherization job title?
  - a. Administrator
  - b. Auditor
  - c. Inspector
  - d. Crew leader/foreman
  - e. Crew member
  - f. Other (please specify): \_\_\_\_\_
  
5. Have you had a change in your weatherization job title in the past two years?
  - a. Yes
  - b. No (go to Q7)
  
6. Did your change in job title include a pay increase?
  - a. Yes
  - b. No
  
7. What is your annual income from your weatherization job?
  - a. \$0-\$10,000
  - b. \$10,001 - \$15,000
  - c. \$15,001 - \$20,000

- d. \$20,001 - \$25,000
- e. \$25,001 - \$30,000
- f. \$30,001 - \$40,000
- g. \$40,001 - \$50,000
- h. \$50,001 - \$75,000
- i. \$75,001 and over
- j. Prefer not to answer

8. How secure do you feel your job in low-income weatherization is?
- a. Very secure
  - b. Secure
  - c. Neither secure nor insecure
  - d. Insecure
  - e. Very insecure

GO TO QUESTION 12

9. Please choose the description that best describes your current primary employer:
- a. Private sector contractor (Choose this response if you are self-employed in this field)
  - b. Local government
  - c. State government
  - d. Federal government
  - e. Non-profit organization
  - f. Other type of for-profit firm
  - g. Other (please specify): \_\_\_\_\_

10. Please choose the description that best describes what industry you work in:
- a. Home retrofit
  - b. Construction
  - c. Clean energy
  - d. Other (please specify): \_\_\_\_\_

11. What is your annual income from your primary job?
- a. \$0-\$10,000
  - b. \$10,001 - \$15,000
  - c. \$15,001 - \$20,000
  - d. \$20,001 - \$25,000
  - e. \$25,001 - \$30,000
  - f. \$30,001 - \$40,000
  - g. \$40,001 - \$50,000
  - h. \$50,001 - \$75,000
  - i. \$75,001 and over
  - j. Prefer not to answer

12. Has your weatherization training increased your ability to perform at your current job?
- a. Yes
  - b. No
  - c. I don't know

13. Has your weatherization training increased your ability to get a better job?

- a. Yes
- b. No
- c. I don't know

14. Do you have health insurance?

- a. Yes
- b. No (go to Q16)

15. Who provides your health insurance? (Check all that apply)

- a. Your current primary employer
- b. Your state
- c. You purchase your own insurance
- d. You have insurance through a family member
- e. Other (please specify): \_\_\_\_\_

16. How satisfactory are these aspects of your job?

	Very satisfactory	Satisfactory	Neither satisfactory nor unsatisfactory	Unsatisfactory	Very unsatisfactory
a. Pay	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Health benefits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Steady work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Boss/supervisor(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Co-workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Interactions with clients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Flexibility of work schedule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Dress code	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Paid time off policy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Retirement benefits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Job safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

END SURVEY

17. Do you feel that your weatherization training has increased your ability to get a job?

- a. Yes
- b. No
- c. Maybe

d. Don't know

18. Have you looked for work during the last 4 weeks?

- a. Yes (END SURVEY)
- b. No
- c. Not Sure
- d. Prefer not to answer (END SURVEY)

19. What is the main reason you were not looking for work during the last 4 weeks?

(Check all that apply)

- a. No work available in line of work or area
- b. Couldn't find any work
- c. Lacks necessary schooling, training, skills or experience
- d. Employers think I'm too young or too old
- e. Other types of discrimination
- f. Can't arrange child care
- g. Family responsibilities
- h. In school or other training
- i. Ill health, physical disability
- j. Transportation problems
- k. Other (please specify): \_\_\_\_\_
- l. Not Sure
- m. Prefer not to answer

END SURVEY

20. Please choose the best description of your current educational status.

- a. Enrolled in high school
- b. Enrolled in community college
- c. Enrolled in 4-year university or college
- d. Enrolled in graduate school
- e. Other (please specify): \_\_\_\_\_

21. Do you feel that your training has increased your ability to get a job?

- a. Yes
- b. No
- c. Maybe
- d. Not sure

END SURVEY

**APPENDIX C. REGIONAL WEATHERIZATION ASSISTANCE  
PROGRAM TRAINING CENTERS AND PROGRAMS**



## **APPENDIX C. REGIONAL WEATHERIZATION ASSISTANCE PROGRAM TRAINING CENTERS AND PROGRAMS**

### **Regional Weatherization Assistance Program Training Centers and Programs**

- Association for Affordability, Inc. (AEA) - Bronx, NY
- Corporation for Ohio Appalachian Development - (COAD) - Ohio Weatherization Training Center - Athens, OH
- Foundation for Senior Living (FSL) Home Improvements - Phoenix, AZ
- Indiana Community Action Association (IN-CAA) - Indianapolis, IN
- Louisiana Association of Community Action Partnerships (LACAP) - Baton Rouge, LA
- Oregon Energy Coordinators Association (OECA) - Salem, OR
- Pennsylvania College of Technology (PCT) - Williamsport, PA
- Southface Energy Institute - Atlanta, GA

### **State Weatherization Assistance Program Training Centers and Programs**

- Baltimore City Community College (BCCC) - Baltimore, MD
- Bergen County Community Action Partnership, Inc. (BCCAP) - Hackensack, NJ
- Bucks County Community College - Newtown, PA
- Central Council Tlingit and Haida Indian Tribes of Alaska (CCTHITA) - Juneau, AK
- Century Center for Economic Opportunity, Inc. (CCEO) - Lennox, CA
- Colorado Governor's Energy Office - Denver, CO
- Community Housing Partners Corporation (Christiansburg, Virginia)
- Focus: HOPE - Detroit, MI
- Green Jobs Alliance - Hampton, VA
- Kentucky Housing Corporation (KHC) - Frankfort, KY
- Los Angeles Trade and Technical College (LATTC) - Los Angeles, CA
- Maine State Housing Authority (MaineHousing) - Augusta, ME
- New Mexico Mortgage Finance Authority (MFA) - Albuquerque, NM
- Pulaski Technical College (PTC) - North Little Rock, AR
- South Middlesex Opportunity Council (SMOC) - Framingham, MA
- State of Montana (Helena, Montana) Governor's Office of Economic Development (Clearfield, Utah)
- The Board of Trustees of the University of Illinois - Champaign, IL
- The WorkPlace, Inc. - Bridgeport, CT
- University of Central Florida/Florida Solar Energy Center (FSEC) - Orlando, FL
- University of Florida - Gainesville, FL
- University of Massachusetts-Dartmouth - North Dartmouth, MA
- Wilbur Wright College - Chicago, IL
- Wisconsin Energy Conservation Corp. (WECC) - Madison, WI
- WorkNet Pinellas, Inc. - Clearwater, FL



**APPENDIX D. JOB TITLES REPORTED AS “OTHER”**



## APPENDIX D. JOB TITLES REPORTED AS “OTHER”

- Account Manager
- Administrative Assistant
- Architect
- Auditor/Inspector
- Client Intake
- Coordinator/Inspector
- Corporate Accounting Manager
- Director of Energy Program
- Energy Coordinator
- Energy Retro-Fit Specialist
- Estimator
- Field Monitor
- Field Supervisor
- Finance
- Furnace Installer
- General Contractor
- Heating Tech
- HERS Rater
- HERS Trainee
- HVAC Contractor
- HVAC Tech
- HWAP Fiscal Clerk
- Housing Inspector
- Intake Supervisor
- Inventory Control
- Lead Safety Trainee
- Maintenance Technician
- Manager
- None
- Office Assistant
- Office Paperwork
- Owner/General Manager/Crew Foreman
- Owner of Heating Company
- Owner of Company
- Plumber
- Plumber Assistant
- Plumbing Supervisor
- President/Project Manager
- Production Manager for Ventilation Manufacturer
- Production Manager for Mortgage Bank
- Project/Program Manager
- Quality Control Director
- Retro-fit Specialist
- Sales Consultant
- Sales for Subcontractor
- Solar Energy Contractor
- State Weatherization Program Manager
- Sub-Contractor
- Supervisor
- Training Specialist
- WAP Coordinator

