Identified Barriers and Opportunities to Make Housing Green and Healthy Through Weatherization

A Report from Green and Healthy Homes Initiative Sites

October 2010

Prepared by the National Coalition to End Childhood Lead Poisoning

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This report was created under Task Order from the Centers For Disease Control and Prevention with support from the U.S. Department of Housing and Urban Development.
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EXECUTIVE SUMMARY

The Green and Healthy Homes Initiative (GHHI) works to eliminate inefficiencies in the delivery of health, safety, weatherization and energy efficiency programs to existing low and moderate income housing through an integrated intervention process and promotion of collaborative efforts that appropriately braid federal, state, local, philanthropic and private sector investments.

With support from the U.S. Department of Housing and Urban Development, Centers for Disease Control and Prevention, Department of Energy, Environmental Protection Agency, the Council on Foundations, the Funders Network for Smart Growth and Livable Communities, the National Environmental Health Association, the White House Office of Recovery Implementation, and over fifteen local and national foundations, GHHI is creating a national movement to improve the integrated delivery of housing interventions that create healthier, safer, more affordable and sustainable housing.

The GHHI completed this assessment of the impact of health and safety issues on pre-audit and audited properties undergoing weatherization in collaboration with DOE Weatherization Assistance Program (WAP) grantees and weatherization providers in 12 of the 14 GHHI designated sites. To date, there has been no information that GHHI site Spirit Lake Nation in North Dakota currently has a WAP program, and New Haven, Connecticut reported from the city’s non-WAP weatherization program. This report provides specific examples and statistics relating to the health and safety issues affecting weatherization work across the sites.

Health and safety hazards create significant obstacles for Weatherization programs throughout the country. In response to those challenges, weatherization programs have developed and implemented a myriad of strategies to try and address the health and safety hazards they encounter. This report contains an in-depth analysis of these strategies and extensive explications of barriers and recommendations garnered from the response of weatherization providers in the field.

The weatherization questionnaire used in this assessment had the following structure:

- **Section A** covered general statistics on Weatherization program activities as they related to health and safety, including costs, time and the number of homes deferred for weatherization because of health and safety hazards.
- **Section B** assessed the prevalence of specific hazards such as lead paint hazards, structural defects, electrical hazards, moisture/ mold/ mildew, pests, clutter/harborage, fire and safety, environmental air hazards, ventilation problems, asbestos and other safety-related issues.
- **Section C** presented a series of free response questions which asked respondents about weatherization policies, comprehensive assessments, energy efficiency and health and safety issues, referral partners for various health and safety issues (if applicable), funding policies for health and safety, workforce readiness and training and suggestions for increased weatherization efficiency.

FINDINGS AND ANALYSIS:

Health and safety issues render homes ineligible for weatherization work though the degree may vary between WAPs. Overall, the average number of homes deemed ineligible in the pre-auditing or auditing phase was 12.88%; however there is a wide variance in why programs find those homes ineligible and there is no direct correlation between the prevalence of reported hazards and the percentage of homes which are ineligible. How respondents utilize referrals and outside funding to address these deferred units can be found in Section C: Qualitative Data: I. Policy for Addressing Health & Safety.
There is a wide range of properties deemed ineligible due to health and safety among the sites’ programs, with highs of 63.95%, 42.33%, and 27.27% in Atlanta, Baltimore, and Denver and lows of 0%, 1.67%, and 5% in New Haven, Oakland, and Chicago. The New Haven site reported from the city’s new Energy Efficiency Rehabilitation Program (EERAP), which had completed 16 audits in the time frame covered by the questionnaire.

The overall average cost of addressing health and safety hazards is $2,172 with no site reporting an average less than $1,200. For WAPs utilizing 10-15% of the cost per unit ($5,000 to $6,500) to address health and safety, the allowable funds range from $500 to $975. The allowable funds are significantly below the average health and safety costs. To supplement those resources, weatherization programs draw on local funds from the city or state, CDBG funds or the private sector to attempt to fill the gaps. Some sites did not have the ability track the costs of addressing health and safety hazards.
The overall time to complete health and safety, along with weatherization work averages 9.5 days. By comparison, the time to complete weatherization work alone is 4.3 days. Although the average time to address health and safety hazards is greater, the majority of sites reported that the average additional time to address health and safety hazards was much less than the time to complete weatherization alone. Atlanta reports 2.5 days for weatherization and 0.5 additional days for health and safety. Cleveland reports 5 days for weatherization and 1.5 additional days to address health and safety. Cowlitz reports 2.5 days to complete weatherization with an additional 1 day to handle health and safety. Oakland reports 10 days for weatherization and 2 additional days for health and safety. New Haven reports 12.5 days for weatherization and 5 additional days for health and safety. There were, however, some sites that report much more time to address health and safety than to complete weatherization alone. Flint reports 4 days to complete weatherization but 30 days to resolve health and safety issues, citing fixing roofs as the most common measure which requires additional time. The times reported are the total time to resolve the issue. The actual remediation work may take a shorter amount of time.

The prevalence of health and safety hazards is significant with ventilation issues, fire and safety hazards, clutter / harborage, mold / moisture / mildew hazards, structural defects and pests all occurring in over 25% of homes undergoing
a WAP audit. Fire and safety hazards are present in over half of homes. Structural defects were found in 30% of the audits with the most common type being leaky roofs. The prevalence of roofing issues is a concern for WAPs because of the high cost and extended time associated with addressing those hazards.

The current strategy for addressing specific hazards is often referring clients to agencies such as the city health department or issue-specific programs such as local roofing organizations. Respondents report that these processes are often not established, integrated into production systems or sustainable. While weatherization and health and safety work may only require a few days altogether to complete, the time spent in searching for funds to address health and safety issues or link the unit up with an applicable service provider creates long, costly delays.

No fully integrated health and safety training or certifications were reported. Only half of the WAPs report the use of a comprehensive assessment form with space to capture health and safety issues. Several sites provide health and safety assessment training to identify hazards and refer deferred homes to relevant program partners before initiating weatherization.

Site partners identify several key areas where GHHI can help: finding funding for currently unaddressed health and safety hazards, technical assistance, a comprehensive assessment tool and data management capacity.

WAPs also expressed an interest in exploring how best to balance the use of health and safety referrals with how well WAP crews and individual workers can be trained to take care of the related hazards, and how this balance relates to pay and wages.
BARRIERS AND RECOMMENDATIONS

The following “Barriers” to addressing health and safety during weatherization and energy efficiency work were identified by the study’s respondents. In response, the GHHI worked with industry experts and the GHHI sites to provide a baseline set of recommendations to address each barrier.

Barrier: The cost to address health and safety hazards is higher than the DOE allowable funding limit per unit. Because funding limits for health and safety interventions are set at 10-15% in each unit, several health and safety needs such as repairing leaking roofs, replacing leaded windows, and mitigating mold are not able to be addressed. These hazards are at best referred and completed by other sources at a later date, and at worst, never completed.

**Recommendation:** Set a minimum of 15% for DOE funding that can be allocated to health and safety per unit. Provide greater clarity to all weatherization grantees to focus those funds on health and safety issues that will stabilize investments or lead to deferrals for weatherization work, including roofing issues, moisture/mold hazards, and ventilation issues. Also provide direction on the leveraging or braiding of aligned programs to address health and safety hazards. Examine possibility of utilizing a budget differential to allocate more than 15% of DOE funds to health and safety hazards in a home. For example, if $5,500 is allowed per unit, and only $3,500 is spent on weatherization, allow $2,000 to be allocated towards eliminating health and safety hazards.

Barrier: The current definition for allowable health and safety hazards under weatherization funding is too narrow and leaves harmful health and safety hazards outside of the scope of work. Prevalent health and safety issues, such as mold, could be addressed within the unit budget, but are excluded in many states because they are not deemed allowable. As a result, some restrictions in weatherization funds leave residual health risks such as furnace replacements that leave behind asbestos-laden ducts.

**Recommendation:** WAP providers have identified a need for a wider range of scope to address all health and safety concerns which impact the long term integrity of the WAP intervention within a housing unit. DOE should work with Healthy Housing specialists to identify an appropriate scope of interventions that can be funded, redefine allowable health and safety hazards, and provide average potential costs for the expanded list of allowable activities.

Barrier: There is a lack of local, state, private sector, or other funding available to leverage with WAP funds to remedy health and safety hazards not addressed by WAP. Where possible, weatherization programs attempt to utilize other sources of funding to address health and safety hazards encountered in homes due to cost or restrictions. The available local, state, and private sector funding sources are often inconsistent, inaccessible, and/or underfunded to provide reliable leveraging.

**Recommendation:** Support GHHI and other efforts to identify clear opportunities for co-investment to leverage funding streams, capture savings of an integrative approach, and attract outside support. Local, state, and private sector funding streams, including philanthropic support, should be linked with weatherization investment to provide a sustainable source of funding to address health and safety hazards. Where health and safety hazard funding gaps exist, they need to be concretely identified and reported so that philanthropic and other private sector partners know where to invest additional resources.

Barrier: The referral systems to address health and safety through other partners are not formalized or efficient. Many of the weatherization programs state that their policy to address health and safety hazards outside the scope of current DOE policy is to refer these homes to local partners who can provide the applicable intervention. Because most of these referral systems are not formalized or set up as an established system, the timeline from referral to intervention can often take months. This significantly delays or outright prohibits the weatherization of the home. The lack of a formal, integrated referral system hinders the overall impact of the weatherization program by causing unnecessary delays and outright impediments to completed units.

**Recommendation:** Support the alignment of programmatic expenditures at a local level, the establishment of learning networks and the triaged co-delivery of services. With a coordinated partnership of health and safety intervention providers and an efficient referral system to reduce the time to address health and safety hazards, the weatherization programs will be more efficient and other providers will be
able to address multiple needs in a larger number of homes. The development of the process of coordination needs to incorporate accountability and maintain a balance of client privacy and confidentiality with efficiency and results. The increased coordination will lead to the creation of more affordable, sustainable and energy efficient homes.

Barrier: There is no approved assessment tool to identify all health and safety hazards in a home. Many of the weatherization programs lack an assessment for health and safety hazards. Without a formalized assessment tool, an established referral system or tracking process cannot be formed. When auditors and assessors go into a home for weatherization and energy efficiency work, without an assessment that captures health and safety information, there is no uniform manner to record and address those issues.

**Recommendation:** All weatherization programs should implement comprehensive assessment tools incorporating health and safety with weatherization and energy efficiency. This will not only lead to the identification of health and safety hazards quicker and more efficiently, but also allow for an integrated scope of work to create a template for aligning and braiding funding streams. An established comprehensive tool will relieve the burden on auditors and assessors to have to identify and report health and safety issues in a home in an ad hoc manner, and eliminate the unnecessary and costly duplication of efforts.

Barrier: Programs lack capacity to track and manage data related to health and safety. Without a system to track health and safety hazards encountered, programs can neither monitor the prevalence of the various hazards nor assess the effectiveness of interventions. Many of the prevailing health and safety conditions WAP providers encounter in a home go unrecorded, leaving them virtually useless from statistical analyses or policy assessments. Insufficient capacity to record these statistics only subtracts from the overall effort to improve conditions in the housing stock and prevents the appropriate identification and involvement of partners and resources to address those needs.

**Recommendation:** Create shared data platforms and common data metrics to track and manage health and safety hazards found during the auditing process. Establish a unified minimum green and healthy housing standard for all federally supported housing interventions. Incorporate health and safety data in the metrics recorded for WAP activities, including average health and safety expenditures and prevalence of health and safety hazards in the housing stock. By tying the reduction in health and safety hazards with the value those improvements make on families, more investment can be brought in to partner with the WAP funds.

Barrier: DOE rules and regulations may restrict other programs and partners from working on that home. Within any home where WAP funds are being used, DOE rules and regulations may apply even when providers other than WAP grantees and sub grantees are doing work. This prevents weatherization programs from having the full flexibility to integrate other funding sources and other providers into a home. Wage restrictions have been cited by sites as limiting them from utilizing other companies and organizations to conduct health and safety hazard interventions. Regulations regarding funding limits in a weatherized home have also been identified as decreasing the opportunities for outside investment.

**Recommendation:** Examine existing restrictions that inhibit intervention by the private sector for opportunities for ways to adjust those restrictions without sacrificing weatherization, health and safety standards. Explore allowing complementary interventions, such as mold remediation, to be done by contractors and organizations not under WAP wage restrictions, while preserving a commitment to equity and economic opportunity. This will increase opportunities for weatherization programs to leverage resources and formalize partnerships to address health and safety hazards.

Barrier: Health and safety programs may operate under different eligibility systems. WAP programs wishing to utilize other sources of funding to address health and safety hazards have found that programs to address these issues often fall under different eligibility rules and standards. Income eligibility differences can prevent other housing programs that could be used to remediate health and safety hazards from working on the unit.

**Recommendation:** Use the Federal Healthy Homes Working Group to develop uniform criteria for very low, low, and moderate income housing. Promote additional MOUs between DOE and other agencies such as the agreement on certain multi-family buildings as identified by the Department of Housing and
Urban Development (HUD) and the Department of Agriculture (USDA). Agreements among federal agencies will not only increase efficiency and reduce cost, but also may forge the basis for further partnerships in the future.

**Barrier: WAP workers are not trained to fully assess and address health and safety hazards.** Many programs feel the need to refer health and safety issues, including the initial assessment, to other organizations or departments because they are not adequately trained or lack experience. This increases the timeline for remediating health and safety hazards; it is inefficient to have multiple visits to assess the problem and then use multiple organizations to address the problem. Compartmentalized job training, certification, and regulation does not allow for integrated training programs which allow auditors and assessors to analyze multiple needs within a home in one visit.

**Recommendation:** The non-profit and philanthropic community should work with DOE, DOL, CEQ, HUD, and HHS to develop certification standards for green and healthy housing workers, supervisors, contractors, and assessment / inspector specialists. This will not only ensure more efficient WAP programs, but also help provide workers with more flexibility to sustain work post-stimulus and tap into other areas within the green sector.
**INTRODUCTION:**

The home weatherization service providers of the 12 Green and Healthy Homes Initiative (GHHI) designated sites receiving Weatherization Assistant Program (WAP) grants from the U.S. Department of Energy (DOE) were solicited to complete an in-depth questionnaire to quantitatively and qualitatively assess the impact of health and safety issues on pre-audited and audited properties undergoing weatherization. The Coalition to End Childhood Lead Poisoning questioned weatherization participants over a 2-month period that spanned from July to August 2010. The data collected investigates the effect of health and safety on pre-audited and audited properties and how weatherization monies are dispersed, withheld, or referred to outside providers. The most specific question asked in this study is the prevalence of health and safety issues in WAP inspected homes and their impact on houses being denied or delayed for weatherization.

**QUESTION**

This study details weatherization metrics and costs, types of health and safety hazards encountered by participants during the weatherization process as well as policy and funding barriers present in completing the weatherization work in the homes. The study asked participants to provide insight or to propose solutions to removing said barriers in order to increase weatherization efficiency and use of dollars spent. This study focuses not only on cost figures but the sources of weatherization ineligibility. If a pre-audit stage exists in the participant’s weatherization process is ineligibility based primarily on income level, health and safety issues or other factors? How often does ineligibility occur and what are the proposed solutions to creating a higher eligible property rate given the barriers that exist now? And alternatively, if deemed eligible what is the average expenditure amount used to address health and safety issues?

**DESIGN**

This study’s design included three sections (A, B and C), to ensure that each participating site had the opportunity to detail the weatherization data collected from the previous year.

In section A, participants were asked to provide the total number of pre-audits conducted between July 1, 2009 and June 30, 2010 as well as the total number of audited properties that were deemed ineligible due to health and safety issues. In addition, section A asked for the average number of days/hours that was required in order to perform audits of weatherization and health and safety issues, the average number of contractors used to complete the work and classification of performing auditors (i.e. WAP personnel, contractor, or an outside referral).

Section B included applicable pre-audit, audit and total cost figures for lead paint hazards, structural defects, electrical hazards, moisture/ mold/ mildew, pests, clutter/harborage, fire and safety, environmental air hazards, ventilation problems, asbestos and other safety-related issues. Section B was designed in such a way to gain insight into the prevalence of health and safety issues in WAP inspected housing and the impact these issues have on homes being denied or delayed for weatherization work.

Section C included a series of free response questions which asked respondents about the comprehensive assessment form, energy efficiency and health and safety issues, referral partners for various health and safety issues, if applicable a follow-up assessment, funding policies regarding WAP and health and safety funds, workforce readiness and qualification, confusion surrounding weatherization policies and suggestions for increased weatherization efficiency.
**Participants and Methods:**

**Participant Population**

Home weatherization service providers at the 12 GHHI-designated sites that received a Weatherization Assistant Program (WAP) grant from the U.S. Department of Energy (DOE) were solicited to complete an in-depth questionnaire to quantitatively and qualitatively assess the impact of health and safety issues on weatherization efficiency. With the exception of two Native American tribes, the GHHI sites are medium to large urban centers that have disproportionately elevated numbers of low-income and destitute communities associated with a host of health deficiencies due to socio-economic factors and the built environment. Only one of the two Native American tribes, Cowlitz Indian Tribe in Washington, currently receives DOE funds for WAP. To date, there has been no information provided that the GHHI site Spirit Lake Nation in North Dakota currently receives funding for a weatherization program. Responses were received by weatherization service providers from all of the twelve GHHI-designated sites that have WAP: Atlanta, Georgia; Baltimore, Maryland; Chicago, Illinois; Cleveland, Ohio; Cowlitz Indian Tribe, Washington; Denver, Colorado; Detroit, Michigan; Flint, Michigan; Oakland, California; Philadelphia, Pennsylvania; Providence, Rhode Island; and San Antonio, Texas. Of these, ten of the thirteen sites submitted data from Section A or B, with all sites having provided some degree of commentary in Section C and anecdotal evidence for Sections A and B. New Haven, Connecticut reported from the city’s non-WAP weatherization program, the Energy Efficiency Rehabilitation Program (EERAP).

**Methods**

The National Coalition to End Childhood Lead Poisoning, (Coalition) questioned participants over a 2-month period between July and August 2010. Distribution of the questionnaire occurred by e-mail and phone across 20+ identified weatherization providers at the GHHI sites. In addition, limited numbers of questionnaires were distributed to other WAP programs in cities which have contacted the Coalition about being part of the next round of GHHI cities including Houston, Texas, Minneapolis, Minnesota, and Buffalo, New York. The questionnaire is composed of three sections that asked for weatherization metrics and costs, types of health and safety hazards encountered, and policy and funding barriers to completing the work. Respondents were also asked to provide any additional insights or suggestions to removing barriers to weatherization efficiency.

**Questionnaire Components**

Section A covered general statistics on Weatherization Program activities as they related to health and safety. Participants were asked for the number of pre-audits between July 1, 2009 and June 30, 2010, if applicable. Not every WAP service provider performs an in-person audit of homes with some being deemed ineligible at the application process. This stage, if it exists, was considered the pre-audit and ineligibility was based on income level, health and safety issues, or other. In addition, respondents were asked about the number of audited properties found ineligible due to health and safety issues, the number of homes receiving WAP health and safety Funds, the average expenditure amount to address health and safety issues, the average number of days for completion of weatherization and health and safety issues, the average number of contractors, and who performed the audit whether it be an official WAP personnel, contractor, or based on referral.

Section B covered specific categories of home health and safety hazards and their prevalence. Questions included applicable pre-audit, audit, and total cost figures for lead paint hazards, structural defects, electrical hazards, moisture/mold/mildew, pests, clutter/harborage, fire and safety, environmental air hazards, ventilation problems, asbestos, and other safety-related issues not included on the list. This section provides a better understanding of the prevalence of health and safety issues in WAP inspected homes and their impact on houses being denied or delayed for weatherization.

Section C is a series of free response questions which addressed the following areas: current policies and processes to address health and safety, assessments and follow up activities, funding issues, training and workforce, DOE policies and regulations, and other insights, suggestions, and recommendations. Respondents were asked about comprehensive assessment forms for weatherization, energy efficiency and health and safety issues; referral partners for various health and safety issues, if applicable; follow-up assessment; funding policies regarding WAP health and safety funds; workforce
readiness and qualification; confusion about weatherization policies; and suggestions for increased weatherization efficiency.

**LIMITATIONS**

With the scope of the questionnaire limited to the 14 GHHI sites, (only 12 have at least one current Weatherization Assistance Program) the generalizability of this study is limited. Additional broader studies on weatherization programs should support or add to recommendations gleaned from this scan of GHHI sites. Furthermore, most of the sites are urban areas (besides the two Tribes), so specific health and safety issues faced by weatherization providers in rural areas will not be captured through this analysis. Bias may also exist in this study. Immigrative selection bias may come from participants knowing the purpose of the questionnaire and that may cause participants to adjust numbers. Respondents are also from sites that were selected by the Council on Foundations and the Department of Housing and Urban Development as being part of an initiative designed to integrate weatherization, energy efficiency, and health and safety activities. Thus, the weatherization programs at these sites may entail more capacity or interest for integrating health and safety than other WAPs at non-GHHI sites across the country. Some data in this study is based on anecdotal evidence and requires strong qualitative analysis of the responses.
**Findings:**

**Section A: General Statistics - Health and Safety**

Collectively, around 13,983 audits were performed by responders from the ten site partners in Atlanta, Georgia; Baltimore, Maryland; Chicago, Illinois; Cleveland, Ohio; Cowlitz Indian Tribe, Washington; Denver, Colorado; Flint, Michigan; New Haven, Connecticut; Oakland, California; and San Antonio, Texas. Of these, 1801 were deemed ineligible solely based on health and safety issues, which accounts for 12.88% of all homes audited. How respondents utilize referrals and outside funding to address these deferred units can be found in Section C: Qualitative Data: I. Policy for Addressing Health & Safety.

For respondents that returned pre-audited unit statistics as well as audited unit statistics, additional homes were deferred for health and safety issue. Many homes were deferred for other issues of ineligibility including income. The range of homes found ineligible due to health and safety issues ranged from highs of 63.95%, 42.33%, and 27.27% in Atlanta, Baltimore, and Denver to lows of 0%, 1.67% and 5% in New Haven, Oakland, and Chicago. The New Haven site reported from the city’s new Energy Efficiency Rehabilitation Program (EERAP) that had conducted 16 audits in the time period the questionnaire covered.
The average cost of addressing health and safety issues is $2,172. The highest reported average cost to address health and safety issues was $2,886 in Cleveland. The lowest reported average cost to address health and safety was $1,200 in San Antonio. Some sites did not have the ability to track the costs of addressing health and safety hazards.

The average time to complete weatherization work per unit was 4.34 days. The average time ranged from a high in New Haven of 12.5 days to a low in San Antonio of 1 day.
The questionnaire also asked WAPs about additional time to resolve health and safety issues in each home. The average time to address health and safety issues was 5.19 days. The longest amount of time to address health and safety was found to be in Flint at 30 days and the shortest amount of time was in Atlanta, Baltimore, and Cowlitz at a day or less. Taking out the outliers, the average time drops to 3.65 days. The times reported are the total time to resolve the issue. The actual remediation work may be completed in hours. The average amount of contractors currently utilized per unit was 2.24, with all of the sites reporting between 1 to 3 contractors utilized per unit.
SITE SPECIFIC RESPONSES:

In the San Antonio region, 720 audits were completed between July 1st 2009 and June 30th 2010. Of these audits, 9.58% were rejected for weatherization due to health and safety issues. Of these properties, 10 received flex or discretionary funds with an average expenditure of $5,000 per home. However, there is ambiguity over whether all 10 units that received flex/discretionary funds had been rejected at pre-audit or audit stage or whether a pre-audit stage exists in the weatherization process to begin with. San Antonio provided an approximate figure of $1,200 as the average cost of addressing health and safety issues per home. The site partner hires 3 contractors on average per home weatherization project with an average completion time of 1 and 3 days for addressing weatherization and health and safety issues, respectively. CPS Energy states that the average time of completion (in days) for home and safety issues is 3 days and the average time of completion for weatherization is 1 day. CPS Energy states that on average, 3 contractors are hired per home for weatherization.

In the Atlanta region, 735 audits were completed in the time period between July 1st, 2009 and June 30th, 2010. Of these, 63.95% were ineligible for weatherization due to health and safety issues. A reported $2,000/home is the average cost to address these health and safety issues and 1-2 contractors are used per home weatherization project with an average completion time of 2.5 days to address all weatherization work and half a day for health and safety issues, respectively.

Between July 1st, 2009 and June 30th, 2010, the Baltimore Green & Healthy Homes Program considered 1375 properties for weatherization, with 1007 deemed ineligible due to income eligibility cutoffs (7.94%), health and safety issues (57.80%) and other issues (34.26). Of the remaining 368 homes receiving weatherization service, 95% required the use of WAP health and safety or discretionary funds to address health and safety issues. The average expenditure out of these funds for weatherization and health and safety issues was $595 and $565, respectively.

In the Cleveland region, on average 2 contractors are used for weatherization and other related work in a home with an average completion time of 5 days. Health and safety issues require an average of 3 days to address. All homes rejected due to health and safety issues receive an average $700 per home of discretionary funds. There are no “flex” funds used. The Detroit Shoreway CDO in Cleveland reports 132 completed audits between July 1st, 2009 and June 30th, 2010 with 49 homes deemed ineligible due to health and safety issues upon auditing, resulting in 37.12% of audited homes deemed ineligible due to health and safety. It is important to note that these figures do not take into consideration pre-audit application numbers or rejections and would require an additional interview to acquire. All homes deemed ineligible received unidentified discretionary funds at an average expenditure of $700 per home. The site partner states that there are no “flex” funds within weatherization for this site/state. Further clarification will be needed upon further interview. The site also reported an estimated average cost per home to address health and safety issues at $1,000.

Minneapolis partners report that approximately 60% of the homes contain a pre-existing health and safety issue and another 30% contain potential issues that can become aggravated into health and safety problems after weatherization work is conducted. In addition, every home audited and in need of work due to health and safety concerns receives aid at around $2,200/home with supplemental funding of $900 from WAP Health and safety funding and EAPWAX.

The Chicago site reports approximately 8000 homes audited between July 1st, 2009 and June 30th, 2010. The number of properties deemed ineligible for health and safety issues were reported to be in the hundreds, or around 5%. No information was given regarding pre-audits or audited properties. WAP Personnel from CEDA normally complete the audit. The average cost of addressing health and safety issues within the home, the average time to complete weatherization and home and safety issues, as well as the average number of contractors per house was not provided.

The Cowlitz Tribe completed 60 pre-audits from July 1, 2009 to June 30, 2009. Of these audits 20% were found ineligible for weatherization due to income eligibility limits, health and safety issues, and other. The Cowlitz Tribe did not provide information on the use or amount of flex or discretionary funds used to address health and safety issues handled by weatherization. However, the site partner did provide a general figure of $1,500/home as the average cost to address health and safety hazards.

The public health department in Philadelphia estimates a 50-60% rejection rate, though whether this figure relates to pre-audit rejections or audit rejections is unclear.
Our site partner in Oakland reports 2,080 pre-audits completed and 1500 audits completed from July 1, 2009 to June 30, 2010. Among pre-audited properties, 100 were deemed ineligible with 20 being ineligible due to Health and safety issues. Among the 1500 audited properties, 25 or 1.67% were found to be ineligible for health and safety reasons. The average cost of addressing health and safety was $2500. While the time of completion for weatherization averaged 10 days, the average time to complete health and safety hazard reduction was only 2 days.

New Haven’s weatherization program (the Energy Efficiency Rehabilitation Program) responded to the questionnaire, rather than a WAP sub grantee. The city’s weatherization program is fairly new, just starting work earlier in 2010. The program reports 16 audits completed from January 2010 until June 30. Among the homes audited, none were found to be ineligible for health and safety reasons. The average time to conduct weatherization work was 12.5 days, and the average time to address health and safety hazards is 5 days. There is no current data on the cost to address health and safety, but the program has a maximum amount of $40,000 per house.

Providence WAP partners report that the prevalence of lead hazards is very high in the homes they audit, but they did not provide specific statistical figures.

### Table 1 - Section A Responses

<table>
<thead>
<tr>
<th>Question</th>
<th>Atlanta</th>
<th>Baltimore</th>
<th>Cleveland</th>
<th>Cowlitz</th>
<th>Denver</th>
<th>Flint</th>
<th>New Haven</th>
<th>Oakland</th>
<th>San Antonio</th>
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<td>2 to 3</td>
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\(^1\)Includes both weatherization and H&S remediation.
SECTION B: HOME HEALTH AND SAFETY HAZARDS

Weatherization programs were asked about the prevalence of various types of health and safety hazards that are encountered in the homes that are audited. Fire and safety issues pertaining to missing/defective/spent smoke detectors and carbon monoxide detectors topped the list at 61.1%. The next three most prevalent issues are ventilation issues, clutter / harborage, and structural defects such as roofing issues and holes in walls, ceilings, and floors at 36.5%, 35.8%, and 30.7%, respectively. Roofing issues was repeatedly brought up in interviews with programs as the most significant structural problem.

Both moisture / mold hazards and pests are found in over a quarter of audited homes, at 27.8% and 26.2% respectively. Asbestos, lead paint hazards, environmental air hazards, and electrical hazards are seen in 19.3%, 17.4%, 14.5%, and 10.7% of homes.

SITE SPECIFIC RESPONSES:

The prevailing health and safety issue in San Antonio is fire and smoke safety. During the audit, fire and safety deficiencies occur in 72.08% of homes. Ventilation and environmental air issues are both prevalent in 58.75% of homes. Not all units with health and safety issues will receive aid. The data collected did not allow for a breakdown of the costs by health and safety issues.

For Atlanta, the main health and safety issues encountered during an audit included moisture / mold / mildew - and this is found in 64.63% of homes. Fire and safety issues are present in 61.22% of homes audited. Structural issues came in third, being present in 13.61% of homes audited.

For Baltimore, moisture issues are found in 28.33% of the homes and topped the list as the most common health and safety issue. Structural issues and unlisted other reasons were tied for second at 11.62%. For the fiscal year of 2010, lead paint is recorded in 2.36% of the homes audited.

For Cleveland, fire and safety, lead paint, and electrical hazards are the most prevalent at 55.75%, 44.64%, and 37.30% respectively. Environmental air issues, clutter / harborage, ventilation, and structural hazards are all above 25% as well.
Chicago reported leaking roofs, lead, and asbestos as hazards seem most often, but did not provide detailed quantities for each hazard.

The main health and safety issues encountered by The Cowlitz Tribe are as follows: ventilation issues account for 62.5% of the health and safety issues in the homes, fire and safety issues account for 62.5% as well, and structural issues came in 3rd, present in 50% of homes audited.

In terms of health and safety hazards, the most prevalent issues in Denver were moisture / mold / mildew hazards and structural issues, both of which were found in over 60% of audited properties. Moisture / mold / mildew hazards were seen almost universally, with a rate of 90.91%. Lead paint hazards, fire and safety issues, and ventilation problems were seen almost half the time with rates of 45.45%. Environmental air hazards were seen in 36.36% of audits.

In Flint over half of the homes audited found several health and safety concerns such as structural hazards in 81.45%, lead paint, fire and safety, ventilation, and clutter / harborage in 66.79% of homes.

In terms of specific health and safety hazards, Oakland reports near ubiquitous fire and safety and clutter / harborage hazards. Pests, asbestos, and ventilation issues were also found in approximately 2/3 of all audited properties. Structural hazards were found in 23% of homes and electrical hazards were found in 13%.

The main health and safety issue encountered in San Antonio is fire and safety items in 72.08% of homes. Ventilation and environmental air issues are tied at 58.75% of homes.

New Haven reports 3 specific hazards to be found in the majority of audited homes: lead paint hazards in 75% of units, structural issues in 68.75% of units, and asbestos in 68.75% of units. Clutter / harborage issues were found in 37.5% of homes, electrical hazards are found in 31.25% of homes, and moisture / mold hazards and ventilation issues are both seen in 25% of audited properties.

Providence partners report lead as the health and safety hazard seen most often in homes undergoing weatherization audits.
SECTION C: QUALITATIVE DATA

Provided below are highlighted responses received from WAP service providers from all of the thirteen GHHI-designated sites that have weatherization programs as well as other GHHI-associated sites. Section C is a series of free response questions which address the following areas: Current policies and processes to address health and safety; Assessments and follow up activities; Funding issues; Training and workforce; How GHHI can help; DOE policies and regulations; and other insights, suggestions, and recommendations.

Respondents were asked about comprehensive assessment forms for weatherization, energy efficiency and health and safety issues; referral partners for various health and safety issues, if applicable; follow-up assessment; funding policies regarding WAP health and safety funds; workforce readiness and qualifications; weatherization policies; and suggestions for increased weatherization efficiency. The specific questions are provided in the Appendix Questionnaire for reference.

I. POLICY FOR ADDRESSING HEALTH & SAFETY

The Baltimore site reports that if WAP is able to justify using health and safety/incidental repair funds, then WAP funds are used to address those hazards as part of weatherization. If WAP funds are not available to address those issues, Baltimore currently has a strategy for external referral to address health and safety issues. For example, if a client is found ineligible, the client is then referred to the WHAT Committee (a case management collaboration headed by the city’s WAP that includes the health department, the Coalition, Rebuilding Together, Baltimore Neighborhood Energy Challenge, and other service providers) or denied funds. Although not explicitly stated by the Philadelphia site, the site partner described an external referral process for clients and owners to contact a WAP provider that offers basic system repair services. Unfortunately, this service currently has a 2-year wait time.

Based upon the answers of the Atlanta region, SEA receives funding from the City of Atlanta (CDBG) which allows Atlanta to correct moisture issues that lead to mold, whereas all other homes are deferred and will likely never receive weatherization. If WAP funds are not available to address weatherization Atlanta currently does not have a strategy for
external referral to address health and safety issues. Oakland utilizes a state OSHA document to address health and safety concerns.

Unlike Atlanta, Cleveland has a referral system for lead abatement that goes straight to the Cleveland Health Department. Both sites are diverse in their methods of handling health and safety hazards as well as weatherization work. The Minneapolis region reports that health and safety hazards are handled in-house and external referrals are either never or seldom needed to mediate a problem. It was found that in the San Antonio region, WAP regulations state that all health and safety items must first be mitigated before any weatherization measures are installed. ARRA funds are used to install the health/safety measures, with the City of San Antonio and Bexar County as program partners who are able to support some of the units with health issues on a case by case basis. CPS Energy (San Antonio) states that they do not have an external referral system in place to address health and safety issues.

Based upon the Cowlitz Tribe questionnaire results, Washington State allows 10% for health and safety. On the other hand, Bonneville Power Administration allows 30%, but tribes are funded in 6 states and a concern of the Cowlitz Tribe is having enough funds to cover a full weatherization program. The process of performing weatherization on a home takes anywhere from 3-4 weeks per home, and this figure is aggregated from paperwork to finish. Switching over to the Chicago region, there is a diverse set of responses depending on the kind of issue present. For lead, Chicago’s weatherization provider CEDA runs 3 lead programs where they receive referrals from the health department for units with children identified with EBLLs. There is no preventative lead work. For roofing issues, CEDA refers properties to a city roofing program. The City roofing program only handles 500 roofs per year, usually tapped out in a few months. CEDA has also tried to have roofing organizations provide services for free when they encounter roofing issues. For weatherization plus interventions, state funds are used.

New Haven’s Energy Efficiency Rehabilitation Program (EERAP) refers lead paint hazards to the city’s health department if the homeowner is eligible. Currently, health and safety hazards besides lead have to be paid out-of-pocket by the homeowner. This delays and sometimes precludes homeowners from taking full advantage of the program.

II. ASSESSMENTS AND FOLLOW-UP

The Atlanta region reports that their staff visits the home to inspect areas identified previously as being in deferral condition. If it has been corrected, then weatherization proceeds. If not, the occupant is advised on what remains to be corrected and why. The Center for Working Families in Atlanta uses a comprehensive survey to assess health and safety, energy, and weatherization issues, however no information about a follow-up assessment was provided. Although Cleveland and Baltimore both use a comprehensive assessment, in terms of follow-up they differ slightly. In Baltimore, WAP conducts a quality control inspection of every house. Some programs such as the Senior Home Independence Preservation (SHIP) project for senior citizens conduct a more intensive follow-up. In Cleveland all referrals are followed up by visual inspection. External referrals are followed up by the Detroit Shoreway CDO (Cleveland) via visual inspection. Oakland does not utilize a comprehensive assessment but does conduct an extensive follow-up survey in which they leave materials for the residents and verbally educate them about health and safety. New Haven is working to implement the GHHI comprehensive assessment and conducts follow up assessments for all properties after work has been completed.

In addition to the Chicago partner site, the San Antonio partner site does not currently use a comprehensive assessment survey in the auditing process. In terms of follow up, for the units receiving weatherization work, a final inspection is performed after the health and safety measures are mitigated and all applicable weatherization measures have been installed. The Cowlitz Tribe would like to improve on their assessments and follow-up since they currently do not use a
comprehensive assessment during their audit nor do they conduct a follow-up. If WAP funds are not available to address weatherization the Cowlitz Tribe currently has a strategy for external referral to address health and safety issues.

### III. Funding

The Cowlitz Tribe reported that as far as WAP health and safety funds are concerned, no differences exist between tenant and owner status in terms of using funds, except with voluntary donations by owner of Rental Properties- which does not happen very often. The funding for the weatherization program comes from contracts of the Department of Commerce on an as-needed basis and provides 10% allowable funds for health and safety from the state. The average expenditure for DOC funding is $6,500.00 with no BPA limit, but the funding is limited.

Based upon the answers provided by the Baltimore region, weatherization is fully funded up to an average of $6,500 per house (includes WAP program support of about $1,100/house) Maryland Dept. of Housing and Community Development (DHCD) policy states that health and safety expenses should fall within the $500 average per house limit that they have established for incidental repairs. Aside from public housing (starting FY11) and some nonprofit-operated group homes, Baltimore has only been weatherizing owner-occupied units. San Antonio partners report that in the time period from July 1st, 2009 to June 30th, 2010, 10 properties out of 720 audited homes received flex or discretionary funding for the proper implementation of weatherization. The average expenditure of flex or discretionary dollars for those homes was $5,000.

According to the data provided by Cuyahoga County, Cleveland health and safety assessments are performed through WAP funds and if WAP funds cannot be utilized, the Cleveland region looks to CDBG, Healthy Homes, or Program income for funding. Chicago can use up to $5200/house for weatherization including any applicable health and safety interventions. Oakland reports that funding is not sufficient to address all health and safety issues in audited properties, and cites funding as the most significant barrier to addressing health and safety in more homes.

Because New Haven’s EERAP program is not WAP funded, their limit for funding per house is much higher at $40,000. Under the current program, however, funding for health and safety hazards besides lead comes from the homeowner.

### IV. Training / Workforce

According to the responses received from the Baltimore region, WAP requires an MHIC license before hiring a potential contractor. WAP’s pay rate for contractors is based on rate schedule for services offered. Contractors must pay workers Davis-Bacon wages, which in Baltimore City is $16.10/hr for basic weatherization work, $17.37/hr for HVAC/furnace work, and $18.69/hr for window replacement (all rates include a portion that may be covered by benefits offered by employer). The Atlanta region also requires a HVAC state license to hire a potential contractor and all weatherization contractors must receive DOE approved training. Atlanta also uses Davis-Bacon rates, not qualified, but experienced in the specific DOE requirements for HVAC / duct work.

The Cowlitz tribe reported that they require: license, bond, insurance and POI- Lead Safe Weatherization Lead Renovator Certification before hiring a potential contractor. The average contractor pay rate is $18.00-$20.00 unless prevailing wage is required. And according to their response it is difficult to find contractors in the area and to form a crew catered towards the needs of the Cowlitz tribe. Chicago’s workforce training is done in-house and in-house training is provided by 6 trainers. Energy auditors are certified by the state following a 7-week course. Chicago weatherization provider CEDA also does certifications for insulation contractors. Mold and moisture assessments are also part of the training components.

San Antonio works with the City of San Antonio and Bexar County to support some of units with health issues on a case by case basis by utilizing the appropriate ARRA funds. Information regarding training programs and the actual curriculum were not provided. Like San Antonio, Detroit Shoreway CDO in Cleveland provided no specific description of training.
programs or curriculum was provided. However, all housing-based health concerns are referred to various external entities for remediation. Oakland reports no issues in finding certified contractors in mechanical and electrical trades to work on weatherizing units. New Haven utilizes contractors approved by the city who meet licensing and insurance requirements.

V. DOE REGULATIONS / POLICY

The most prevalent recommendation received was a request to DOE to provide more flexibility in funding and spending on health and safety issues. Sites recommend less boundary restrictions and more funding for a greater range of health and safety hazards. Specific hazards and issues such as roofs, window replacements, mold, and asbestos were brought up as not being able to be addressed using WAP funds in various states. Site partners find the DOE rules to be restrictive and called for more relaxation on multifamily housing rules. Specifically, sites reported disapproval that if WAPs use outside funding in a unit that is utilizing weatherization funds, all work must fall under DOE rules. Sites bring up Davis-Bacon requirements as another specific challenge to getting outside partners to do work in homes to address health and safety. Other sites recommended that DOE offer more tribal funding and recommend more MOUs and agreements with other programs and agencies.

VI. WHERE GHHI CAN HELP

According to the responses received from the Chicago, New Haven, and Oakland site partners, funding is an area in which GHHI can assist. Additional funding would be utilized in Chicago to cover expenses of mitigating health/safety items found in applicable homes, window replacement, help to combat roofing issues and radon interventions when needed. A number of interventions cost upwards of $5200 per/unit, and additional funding would be beneficial. New Haven cites GHHI’s model of integrating disparate programs and funding streams as a way to address more health and safety hazards, and improve the quality of life of residents. The Cowlitz Tribe and Cleveland reported they would benefit from GHHI’s help in the areas of technical assistance, funding and gathering information to add more personnel to the program to address health and safety issues and minimal technical assistance if the program becomes crew based. GHHI can help the Atlanta site address funding for mold remediation and other health and safety issues.

The Baltimore region cited database development and funding for data gathering and input as an area GHHI could provide assistance. This site partner also thought it would be helpful to compare information on collaborative and integrative cases. Based upon the answers provided by the San Antonio region, GHHI can provide further assistance by providing a comprehensive assessment form, data management tools, technical assistance, and funding to cover expenses of mitigating health/safety items found in applicable homes.

VII. INSIGHTS / SUGGESTIONS / RECOMMENDATIONS

The collected responses from Baltimore welcomed additional collaboration on training and what is needed for crews/crew leaders/auditors, including apprentice-like field training; tiers of wage levels are offered by various contractors/agencies so that a better sense of pay rate can establish itself; and what the optimum mix of combined work done by one contractor vs. referring out specialties to maximize efficiencies while still leaving room in this field for small contractors. In addition, Baltimore welcomed additional collaboration on developing a common Green & Healthy Homes checklist or criteria for a Baltimore model that could serve nationally and also provide additional information-sharing on cost efficiencies experienced and data gathered so to collectively make the most effective case possible for Green & Healthy Homes.

Based upon the responses of the Chicago WAP Directors, a suggestion was made that utility companies could be made more influential partners in the GHHI efforts. The Chicago WAP Director expressed that LIHEAP is corporate welfare. Their recommendations include the need for a mpg-like rating system for home energy efficiency that is required. They also suggest having energy audits subsidized, with homeowners paying $50 and utilities or the government paying the balance. The Atlanta site expressed concern that the cost of addressing all the mechanical issues can easily reach the DOE maximum per house leaving no funds for insulation and other “pure weatherization” measures. And according to the
responses collected from the Cowlitz Tribe, equipment and a certified crew could provide quality job control and jobs for crews and contractors. Cowlitz program representatives responded that if they had funding like the State CAP agencies, they would be able to perform quality work in-house with less turnaround time. New Haven respondents cited their biggest challenge as finding funding sources to cover issues not found in current federal or state programs, as well as building up the administrative capacity to implement a single, one-touch approach to improving housing conditions.
Discussion:

**Analysis**

Although this study is being conducted in only 14 GHHI related sites, the generalizability of the results come from the geographical spread of the cities and tribes involved and the variance in size and scale of the weatherization programs contacted. The data and statistics gathered from GHHI sites will likely be corroborated in other broader studies.

To a varying degree in different WAPs, health and safety issues render homes ineligible for weatherization work. Overall, the average number of homes deemed ineligible in the pre-auditing or auditing phase is 12.88%, but there is a wide variance in the range that programs find those homes ineligible, and there is no direct correlation between the prevalence of reported hazards and the percentage of homes which are ineligible. Some programs such as Flint have high prevalence of health and safety hazards yet less than 10% of homes are deemed ineligible for weatherization. Other programs with average rates of health and safety hazards have seen upwards of 63.95% and 42.3% of audited homes ineligible, such as in Atlanta and Baltimore. The size of WAP program does not correlate to ineligible or deferred homes, with the four largest scanned programs, Atlanta, Baltimore, Chicago, and Oakland making up the highest and lowest percentages. Differences exist between policies of how to address health and safety hazards when they are encountered, the capacity to draw from supportive funds or direct homes health and safety intervention providers to address those issues, and the flexibility of state regulations to address weatherization-related health and safety hazards. The use of pre-audits by some WAPS can lower the prevalence of health and safety problems reported when only tracking audit data, because homes may not move forward into the auditing process for reasons of health and safety.

The average cost to address health and safety hazards is just over $2,100. With the spending limits already placed on the amount of DOE funds which can be spent per unit, the cost to address health and safety hazards may restrict whether WAPs can address them. No responses were below $1,200 for the average cost to address health and safety, and Cleveland reports over $2,800 per unit. 10-15% of allowable funds per unit under current regulations would allow for $500-$975 in funding addressing health and safety. This is far below the average amount of funds needed. The cost was not dependent on the scale of the program, with Cowlitz at 60 audits in the past year showing similar health and safety costs to San Antonio at 720 in the past year.

The average time to address weatherization and health and safety hazards is 9.5 days. The comparable time to complete weatherization work alone is 4.3 days. Although the average time to address health and safety hazards is greater, the majority of sites reported that the average additional time to address health and safety hazards was much less than the time to complete weatherization alone. Atlanta reports 2.5 days for weatherization and 0.5 additional days for health and safety. Cleveland reports 5 days for weatherization and 1.5 additional days to address health and safety. Cowlitz reports 2.5 days to complete weatherization with an additional 1 day to handle health and safety. Oakland reports 10 days for weatherization and 2 additional days for health and safety. New Haven reports 12.5 days for weatherization and 5 additional days for health and safety. There were, however, some sites that report much more time to address health and safety than to complete weatherization alone. Flint reports 4 days to complete weatherization but 30 days to address health and safety, citing fixing roofs as the most common measure which requires additional time. Denver reports 2 days to complete weatherization with 14 additional days to address health and safety, and San Antonio reports 1 day to complete weatherization with additional 3 days to address health and safety. The times reported are the total time to resolve the issue. The actual remediation work may be completed in hours.
The prevalence of health and safety hazards is significant with ventilation issues, fire and safety hazards, clutter / harborage, mold / moisture / mildew hazards, structural defects, and pests all occurring in over 25% of homes undergoing a WAP audit. Fire and safety hazards are encountered in over half of homes. For structural defects, found in over 30% of weatherization audits, the most common reported from staff from subgrantees is leaky roofs. The prevalence of roofing issues is a concern for WAPs because of the high cost and extended time associated with addressing those hazards.

Regional differences have been found in the types of health and safety hazards. We find that mold is the predominant health and safety issue in Atlanta, Georgia; Baltimore, Maryland; and Denver, Colorado. In drier, warmer climates such as San Antonio, Texas, we find that fire and safety issues top the list at 72.1% where environmental air and ventilation issues are tied for the 2nd most prevalent at 58.8%. There is no strong correlation between a specific type of health and safety hazard and the rate of ineligible homes.

The limit on funding for weatherization was reported as between $5,000 and $6,500, with around 10-15% of funds being able to be utilized for health and safety hazards. Because many of the health and safety hazards cannot be addressed solely with the allowable WAP funds or solely by the weatherization provider under current funding rules and regulations, WAP programs have attempted to leverage other funding sources and programs. WAPs report attempting to address any issues found under current WAP funds and then augmenting those resources with local funds from the city or state, CDBG, or the private sector. WAPs also refer homes to other departments such as health or to other service providers to remediate health and safety hazards prior to weatherization.

Only half of the programs utilize some form of a comprehensive assessment where health and safety issues were included with weatherization and energy efficiency. The majority of sites reported that a follow up inspection and assessment was made post intervention, with the most prevalent type of follow up being a visual inspection.

The delays from when health and safety hazards are identified until they are addressed are a challenge reported by WAPs. Where referral processes exist, the time to link the unit up with applicable service providers can take anywhere from weeks to up to two years.

For workers, sites report that pay wages for DOE work comes under Davis-Bacon regulations. No fully integrated health and safety training or certifications were reported. WAPs responded that workers and contractors used were certified either by the state or jurisdiction or national weatherization training certifications such as BPI. Some sites have training which includes some health and safety assessment for the purpose of referring those identified hazards to partners prior to the home being weatherized.
DOE regulations and rules were reported by many sites to be restrictive as they relate to overall funds to address health and safety hazards and the definition of health and safety. Common hazards seen such as mold, lead, and leaky roofs are not able to be addressed because of these restrictions.

WAP partners identify several main areas in which GHHI can help them address health and safety. First, by helping the programs find funds to remediate health and safety issues which they are currently unable to address. GHHI can also help by providing technical assistance in how to address health and safety in an integrated manner with weatherization without putting burdens on WAP. For the programs that do not currently use a comprehensive assessment, GHHI can provide that tool, and also help current users on improving their assessments. Lastly, GHHI can aid WAPs in supporting data management and tracking for health and safety issues.

When asked about suggestions and recommendations, WAPs responded that an area to explore is how best to balance the use of referrals to address health and safety issues and how well WAP crews and individual workers can be trained to take care of those hazards, and how that balance relates to pay and wages. Other WAPs suggested the use of a home rating system to increase demand for weatherization and health and safety activities, and subsidizing assessments through utility company partnerships or government funds. The respondent from Cowlitz suggested that DOE utilize the same rules for the tribes as it does for local community action agencies, which would allow Cowlitz to have its own crew rather than contract out weatherization and health and safety work.
IN DEPTH REPORTS

The following pages list sites’ in depth reports, which provide a micro-view of the weatherization work being done at each respective site as it relates to health and safety. Based upon the respondents’ quantitative and qualitative data, the site reports include statistical breakdowns of audited homes and the prevalence of health and safety hazards, as well as their perspective percentages. Regional differences are apparent; individualistically sites experience health and safety hazards relative to their geographic location. Drawing upon the questionnaire analysis and comprehensive overview of the reports, the Green and Healthy Homes Initiative has identified areas in which work can be improved upon, barriers that can be resolved, as well as recommendations from the field. Collectively, these reports augment and amplify the macro level analysis from this questionnaire and will aid in advancing the work of GHHI at each site.
Weatherization Assessment Results

ATLANTA, GEORGIA

METRICS AND COSTS:
The Center for Working Families is the primary organization driving the GHHI effort in Atlanta, Georgia, having completed 735 audits in the time period between July 1st, 2009 and June 30th, 2010. Of these audits, 63.95% were ineligible for weatherization due to health and safety issues. The organization did not provide information on the use or amount of flex or discretionary funds used to address health and safety issues handled by weatherization. However, the site partner did provide a general figure of $2,000/home as the average cost to address these health and safety issues.

HEALTH AND SAFETY:
The site utilizes an average of 1-2 contractors per home weatherization project with an average completion time of 2.5 days for weatherization and 0.5 days for health and safety issues, respectively. A comprehensive assessment survey is used in the auditing process. The main health and safety issues encountered during an audit include moisture/mold/mildew in 64.63% of homes. Fire and safety issues were present in 61.22% of homes audited, structural issues were present in 13.61% of homes audited. When an issue is discovered, the site provides the client with information on handling these issues. Follow-up assessment methods for the work completed were not provided in the questionnaire responses.

BARRIERS
The WAP Health and safety fund provides funds only for replacements of hot water tanks, furnaces with cracks, electrical work. The funds do not address mold growth which affects 64% of the homes audited in this region. Many times, owners attempt to clean it and upon return, auditors find that the mold is still widespread and prevalent throughout the home. Currently, there is no referral partner for the site. The only course of action available to them is to provide clients with information on how to improve conditions, which are often times ineffective.
Weatherization Assessment Results

BALTIMORE, MARYLAND

METRICS AND COSTS:

Between July 1\(^{st}\), 2009 and June 30\(^{th}\), 2010, the Baltimore Green & Healthy Homes Program considered 1375 properties for weatherization, with 1007 deemed ineligible due to income eligibility cutoffs (7.94%), health and safety issues (57.80%) and other issues (34.26%). Out of the total 1375 properties considered for weatherization, 582 or 42.33% were deferred for health and safety issues. Of the 368 homes receiving weatherization service, 95% required the use of WAP health and safety or discretionary funds to address health and safety issues. The average expenditure of these funds for weatherization and health and safety issues was $595 and $565, respectively. WAP personnel were primarily responsible for completing the audit. The average time of completion reported for weatherization and home safety issues is 2-3 days with an average of 2 contractors per client.

HEALTH AND SAFETY:

For FY2009, moisture issues accounted for 28.33% of health and safety issues found in the home. Alternatively, 11.62% of health and safety issues were structural and “other.” 95% of the structural issues that the program runs across are related to roofing issues. Thus far, for FY2010, lead paint is found present in 2.36% of the homes audited. When health and safety issues are encountered, the partners utilize whichever WAP funds or incidental repair funds are available to remedy it. If completely ineligible, clients are referred to WHAT Committee or denied weatherization of their home. The partner does have a strategy for external referral to address health and safety issues and utilizes a comprehensive assessment survey to assess health and safety, energy, and weatherization issues. In terms of follow-up, the partner states that WAP already does a quality control inspection of every house. In addition, the Senior Home Independence Preservation project for senior citizens contains more intensive follow-up.
BARRIERS:
In Baltimore, additional flexibility in addressing health and safety issues is the primary concern. Bad roofs and moisture/mold issues were the primary setbacks found in their audited homes. Furthermore, 95% of their clients receive some kind of energy-related health & safety services such as ventilation, heating, and moisture management services before weatherization can proceed.
Weatherization Assessment Results

CHICAGO, ILLINOIS

METRICS AND COST:
CEDA (Community and Economic Development Association of Cook County, IL) partially responded to the questionnaire, reporting approximately 8,000 completed audits between July 1st, 2009 and June 30th, 2010 with around 5% of homes deemed ineligible due to health and safety issues upon auditing. It is important to note that these figures do not take into consideration pre-audit application numbers or rejections and would require an additional interview to acquire.

HEALTHY AND SAFETY:
CEDA reports that the most prevalent health and safety issue encountered are leaking roofs. Lead, radon, and asbestos are other health and safety areas of concern. In their auditing procedure, a comprehensive assessment survey is not utilized to assess health and safety, energy, and weatherization issues. The site has a diverse set of responses depending on the kind of issue present. For lead, CEDA runs 3 lead programs where they receive referrals from the health department for units with children identified with EBLLs. There is no preventative lead work. For roofing issues, CEDA refers properties to a city roofing program. The City roofing program only handles 500 roofs per year, usually tapped out in a few months. CEDA has also tried to have roofing organizations provide services for free when they encounter roofing issues.

BARRIERS:
In Chicago, the limit of $5,200 for weatherization prohibits window replacement repair. The site currently refers to RFQs in order to receive window replacement coverage. The weatherization programs currently do not cover health and safety issues CEDA runs across. The city roofing program handles a mere 500 roofs per year and is usually tapped out within a few months. In an effort to combat this, the site has begun to form roofing organizations to provide services for free when they encounter various roofing issues. CEDA reports that funding restrictions exist for any unit where weatherization funds are being utilized. If CEDA uses other funding sources in a weatherized home, all work has to be under DOE rules, which are restrictive. Another barrier reported is the challenge in trying to synthesize the weatherization process with CNT Energy, which is a loan model to the weatherization program’s grant model.
Weatherization Assessment Results

CLEVELAND, OHIO

METRICS AND COST:
The compiled response from Cleveland weatherization providers reported that 504 audits were completed between July 1st, 2009 and June 30th, 2010 with 56 homes deemed ineligible due to health and safety issues. Meaning that of 504 audited properties, 11.11% were deemed ineligible due to health and safety issues. It is important to note that these figures do not take into consideration pre-audit application numbers or rejections and would require an additional interview to acquire. All homes deemed ineligible received unidentified discretionary funds at an average expenditure of $700 per home. The site reports that there are no “flex” funds used within weatherization for this site/state. The site also reported that the estimated average cost per home to address health and safety issues is $2,880 per home. It is important to note that the state’s criteria for “healthy and safety” expenditures include items such as furnace replacements, hot water replacements and electrical work. The “health and safety” expenditures do not cover items such as mold, asbestos, pests, lead, or clutter. The average time of completion reported for weatherization and home and safety issues is 2.8 days with an average of two contractors per client.

HEALTHY AND SAFETY:
Health and safety issues require an average 1.5 days in order to address all areas and a comprehensive assessment survey is utilized to assess health and safety, energy and weatherization issues during the auditing process. According to the responses, fire and safety, lead paint, and electrical hazards were the most prevalent at 55.75%, 44.64%, and 37.30% respectively. Environmental air issues, clutter / harborage, ventilation, and structural hazards are all above 25% as well. The site has a diverse set of responses depending on the kind of issue present. For lead, the site makes a referral to the Cleveland Health Department. Clients/property owners are encouraged to clean up their own mold. The City of Cleveland assists in asbestos abatement work. Pest infestations are cooperatively handled by the owner. And lastly, owners are given referral information on the Cleveland Action to Support Housing and Neighborhood Housing Services for low interest loans for the repair of home structural defects. All external referrals are followed up by the Detroit Shoreway CDO via visual inspection. Cleveland currently conducts a follow-up assessment to ensure proper materials were installed and corrective action was successful.
Barriers:

In Cleveland, mold is prevalent in over 60% of audited homes and cannot be addressed by funding resources. As no referral partner exists in the city, they are left to ask owners to clean it up but this is often left undone and weatherization is left incomplete in these homes. For structural issues such as leaky roofs found in 75.8% of homes, owners are often left with the option of taking out low-interest loans to cover the costs. In addition, the time it takes to find a source to fund repair of health and safety issues or convince an owner to invest in their property can go on for several months. The site provided a detailed report of the obstacles in addressing health and safety with the most prominent concern being a consistent, reliable, and direct funding source. For Cleveland in particular, mold and asbestos issues are cited as widespread and oft-encountered obstacles in initiating weatherization work with funding being particularly difficult to access. In addition, according to the WAP health and safety guidelines, owners/clients of properties and homes must contribute half the cost for the repairs related to electrical problems. Though a majority of their clients/owners participate, tapping into a funding source that provided for such repairs fully would be especially useful. The site partner also explained that though the repair work for home health and safety hazards may only take three days, once a job is identified, the work may actually be deferred for a period of months until a funding source is found. When health issues are detected in the Cleveland area their policies for addressing the issue are to address ASAP with WAP funds. If WAP funds are not allowable the site uses other funding sources such as CDBG, Healthy Homes or Program Income.
Weatherization Assessment Results

COWLITZ TRIBE

METRICS AND COSTS:

The Cowlitz Tribe has completed 60 pre-audits from July 1, 2009 to June 30, 2009. Of these audits 20% were found ineligible for weatherization due to income eligibility limits, health and safety issues, and other. The Cowlitz Tribe did not provide information on the use or amount of flex or discretionary funds used to address health and safety issues handled by weatherization. However, the site partner did provide a general figure of $1,500/home as the average cost to address health and safety issues. The Cowlitz Tribe suggested that health and safety issues related to weatherization could be more effectively addressed if all of the issues involved with health and safety were addressed.

HEALTH AND SAFETY:

The Cowlitz Tribe utilizes about 2-3 contractors per home weatherization project and uses a comprehensive assessment survey in the auditing process. The average completion time for weatherization work is 3 days, and 8 hours for addressing health and safety issues. The main health and safety issues encountered during the audit includes: ventilation issues account for 62.5% of the health and safety issues in the homes, fire and safety issues accounted for 62.5% as well, and structural issues came in 3rd, present in 50% of homes audited. When an issue is discovered, the site provides the client with information on handling these issues. According to the results of the questionnaire, Washington State allows 10% for health and safety. Bonneville Power Administration allows 30% but they fund tribes in 6 states so funding is lacking for a full weatherization program with $6,500 average expenditures for DOC funding. BPA has no limit but funding is limited.

BARRIERS

The Cowlitz Tribe relayed that more tribal funding and less boundary restrictions are barriers they face. Their core needs include training, a comprehensive assessment form, equipment, and a stronger, certified workforce catered towards the needs of the Cowlitz Tribe. Follow-up assessment methods are not currently utilized in this partner site but they could use assistance with this.
Weatherization Assessment Results

DENVER, COLORADO

SITE METRICS AND COST:

Our site partner in Denver reports that in FY 2009, 27.27% of the homes audited were found to have health and safety hazards that prevented the unit from undergoing weatherization. To address health and safety they are able to utilize $500 out of flex and discretionary funds under the WAP funds. The average amount of time spent on weatherization activities is 2 days, while the average additional time to address health and safety under current practices is 10 days. The average number of contractors doing work on a weatherized home is three.

HEALTH AND SAFETY:

In terms of health and safety hazards, the most prevalent issues were moisture / mold / mildew hazards and structural problems, both of which were found in over 60% of audited properties. Moisture / mold / mildew hazards were seen almost universally, with a rate of 90.91%. Lead paint hazards, fire and safety issues, and ventilation problems were seen almost half the time with rates of 45.45%. Environmental air hazards were seen in 36.36% of audits.

BARRIERS:

In Denver, the WAP Health and safety fund is capped at $500 worth of funds, which is often not sufficient for addressing all health and safety issues. These homes are often passed over and though they perform a monthly follow-up over one year to check for eligibility, they find that the issue has often not been addressed. This is further exacerbated by the fact that the populations they serve are the poorest among the poor, having income levels from 0-200% of federal poverty lines. The extensive legalese found in DOE WAP policy was also cited as an issue preventing efficient weatherization work. The site also provided a couple of recommendations including a “Comprehensive Field Guide” written in layman’s terms as well as a “Comprehensive Book of Referral Outlet” containing all relevant health and safety referral partners in the city. The site noted the importance of also including an accountability and confidentiality agreement to better improve coordination and efficiency of weatherizing units.
**Weatherization Assessment Results**

**FLINT, MICHIGAN**

**SITE METRICS AND COSTS:**

Flint partners report that 8.35% of the 539 audited properties in FY2009 were deemed ineligible for weatherization due to health and safety reasons. The weatherization program typically utilizes $375 of DOE WAP funds for health and safety issues.

The average time to conduct weatherization activities was found to be 4 days. The average time to address health and safety was much greater at 30 days, due to prevalent significant structural issues such as major roof leaks. The average number of contractors found to be working in homes undergoing weatherization work was three.

**HEALTH AND SAFETY:**

In terms of health and safety hazards, structural issues were cited as the most prevalent, with a rate of 81.45%. The respondents brought up leaky roofs as a high cost safety hazard that is seen most often. Lead paint hazards, fire and safety hazards, ventilation issues, and clutter / harborage were all seen in over 2/3 of homes, at 66.79%. Moisture / mold / mildew hazards were found in over 1/3 of all homes, 37.11%.

**BARRIERS:**

In Flint, around 1 out of 20 homes is deferred for weatherization services because of major roof leaks that require roof replacements. Currently, DOE WAP funds are insufficient to cover the cost of roof replacements and so many of these homes are passed up. There is a referral partner available in the city. However, the average wait time is one year due to lacking of funding and a lack of capacity to adequately address the problems in a timely and efficient manner. Also, the WAP health and safety fund is capped at $375 per home, which is only good enough for simple items such as smoke alarms, dryer hoods, kitchen exhaust fans, and venting issues. In addition, DOE funds for asbestos work only allows for 6-12 inches of space or just enough to install a new furnace. The site reports that duct systems are often insulated with asbestos and need to be completely replaced as well. Furthermore, replacement of older, gravity furnaces with newer designs run inefficiently in the older, larger ducts. Clients often report difficulty in keeping a home warm after a furnace replacement. For lead issues, funds are often consumed by other priorities, leaving only enough to replace roughly half of the windows in the home. The concern is the residual risk of childhood lead poisoning left in these homes.
Weatherization Assessment Survey Results

NEW HAVEN, CONNECTICUT

SITE METRICS AND COSTS:

New Haven’s weatherization program (the Energy Efficiency Rehabilitation Program) responded to the questionnaire, rather than a WAP sub grantee. The city’s weatherization program is fairly new, just starting work earlier in 2010. The program reports 16 audits completed from January 2010 until June 30. Among the homes audited, none were found to be ineligible for health and safety reasons. The average time to conduct weatherization work was 12.5 days, and the average time to address health and safety hazards is 5 days. There is no current data on the cost to address health and safety, but the program has a maximum amount of $40,000 per house. The program reports that homeowners have to pay for health and safety improvements out-of-pocket, except for lead abatement if the owner qualifies for the city’s lead program.

HEALTH AND SAFETY:

New Haven reports 3 specific hazards to be found in the majority of audited homes: lead paint hazards in 75% of units, structural issues in 68.75% of units, and asbestos in 68.75% of units. Clutter / harborage issues were found in 37.5% of homes, electrical hazards are found in 31.25% of homes, and moisture / mold hazards and ventilation issues are both seen in 25% of audited properties.

BARRIERS

For the city’s current program, the only health and safety hazards that are able to be covered through the city is lead through the health department. Other health and safety hazards homeowners have to pay out-of-pocket. This can slow down their ability to take full advantage of the energy efficiency rehab program, and leave hazards unaddressed. Also, poor communication between contractors and homeowners increases the time to complete weatherization and related work. Workers could also use more training in health and safety measures. Funding is seen as a major challenge to addressing more health and safety hazards. Another challenge is finding the administrative capacity to create a single, one-touch approach to improving housing conditions.
Weatherization Assessment Results

OAKLAND, CALIFORNIA

SITE METRICS AND COST:

Our site partner in Oakland reported 2,080 pre-audits completed and 1500 audits completed from July 1, 2009 to June 30, 2010. Among pre-audited properties, 100 were deemed ineligible with 20 being ineligible due to health and safety issues. Among the 1500 audited properties, 25 or 1.67% were found to be ineligible for health and safety reasons. The average cost of addressing health and safety was $2500. While the time of completion for weatherization averaged 10 days, the average time to complete health and safety hazard reduction was only 2 days.

In addition, the City of Oakland Office of Housing and Community Development submitted a brief email correspondence with a cursory estimate of 1/3 of all weatherization applications via the Minor Home Repair Program, Home Maintenance Improvement Program and Emergency Home Repair Program being rejected out of an approximate total of 245-275 applications per year. It is important to note that the brief did not distinguish between pre-audit or audited rejections of the property or homes.

HEALTH AND SAFETY:

In terms of specific health and safety hazards, Oakland reports near ubiquitous fire and safety and clutter / harborage hazards. Pests, asbestos, and ventilation issues were also found in approximately 2/3 of all audited properties. Structural hazards were found in 23% of homes and electrical hazards were found in 13%. Oakland utilizes California’s OSHA documentation for high hazard employers’ workplace and illness injury prevention model when conducting work. For follow-up, the organization gives clients a hard copy of contact and verbally teaches them about health and safety maintenance in the home.

BARRIERS:

Oakland responds that they would need more funds to have weatherization contractors address health and safety issues. In order to do work more efficiently, the time it takes for weatherization contractors to receive permits needs to be reduced. Regulations from DOE also needs to be more clear, and more training needs to be conducted to help workers handle homes with broken sewer lines and significant issues relating to cleanliness.
**Site Metrics and Cost:**

CPS Energy is one of the main weatherization providers in the San Antonio region, having completed 720 audits in the time period between July 1st, 2009 and June 30th, 2010. Of these audits, 9.58% were rejected for weatherization due to health and safety issues. Of these properties, 10 received flex or discretionary funds with an average expenditure of $5,000 per home. However, there is ambiguity over whether all 10 units that received flex/discretionary funds had been rejected at pre-audit or audit or even whether a pre-audit stage exists in the weatherization process. Additional information regarding the weatherization application and auditing process will shed light on the issue of whether homes that receive an audit had a proportionally higher chance of receiving flex funds. In addition, the site partner provided an approximate figure of $1,200 as the average cost of addressing health and safety issues per home. The data collected did not allow for a breakdown of the costs by health and safety issue.

**Health and Safety:**

The site partner hires 3 contractors on average per home weatherization project with an average completion time of 1 and 3 days for addressing weatherization and health and safety issues, respectively. CPS Energy does not currently use a comprehensive assessment survey in the auditing process. The main health and safety issue most encountered during an audit is fire and safety items in 72.08% of homes. Ventilation and environmental air issues were tied at 58.75% of homes. When a health and safety issue is discovered, the site partner uses ARRA funds with support of the City of San Antonio and Bexar County to address some units with health issues on a case by case basis. This implies that not all units with health and safety issues will receive aid. For those units receiving weatherization work, a final inspection is performed after the health/safety measures are mitigated and all applicable weatherization measures have been installed.

**Barriers:**

Funding flexibility and availability to mitigate the health and safety issues found in roughly 10% of San Antonio housing stock is another barrier. In the time period from July 1st, 2009 to June 30th, 2010, 10 properties received flex or discretionary funding out of a total number of 720 audited homes where 69 were rejected due to health and safety issues. The average expenditure of flex or discretionary dollars for weatherization was $5,000/home.
Weatherization Assessment Results

MINNEAPOLIS, MINNESOTA

SITE METRICS AND COST:
The partners in Minneapolis provided an e-mail correspondence with estimates of weatherization metrics and some logistical details. The partners report that approximately 60% of the homes audited contain a pre-existing health and safety issue and another 30% have potential issues that can become aggravated into health and safety issues after weatherization work. In addition, every home that is audited and in need of work due to health and safety concerns receives aid at around $2,200/home with supplemental funding of $900 from WAP Health and safety funding and EAPWAX.

HEALTH AND SAFETY:
The site did not provide additional information regarding a comprehensive assessment form for health and safety, energy, and weatherization or detail an external referral system for homes that do not meet the criteria to receive weatherization funding. However, based on their provided answers, it can be implied that health and safety hazards are handled in-house and that external referrals are either never or seldom needed to mediate a problem.

BARRIERS:
The most notable concerns reported by the partner is the rate at which funds are being disbursed for health and safety issues and the lack of a renewable, consistent, or reliable source of funding for future clients/owners. Funding is currently used to address a lack of carbon monoxide/smoke detectors, fans, ventilation, combustion safety, moisture issues, and the replacement of failing furnaces and water heaters. The program director states that funding restrictions that forego appliances repair in favor of outright replacement as a cost-ineffective measure that wastes funds. There is concern that potential health and safety issues may occur or even be amplified by the energy efficiency upgrades being made. As an example, after air sealing, new bath fans are needed for proper ventilation. In addition, power-vented water heaters are often needed to replace old ones after installing a new energy efficient furnace to prevent back-drafting.
The goal of this report is to quantitatively and qualitatively assess the impact of health and safety issues on pre-audited and audited properties undergoing weatherization. However due to the demanding schedule of weatherization programs as they continue to ramp up their work to achieve their benchmarks, some of the providers were unable to fully address the survey. Responses from incomplete surveys are listed below, and while they do not contain the same measure of aggregate data, the responses serve as a tool for identifying barriers within each respective site. Listed below are responses from Detroit, MI, Philadelphia, PA, and Providence, RI.

**Detroit, Michigan**

In Detroit, site partners report the $650 maximum limit for WAP health and safety funds as a barrier to address all of the hazards. They also note a policy change from a maximum value amount to an average expenditure being changed to percentage. Also, most of the data requested on the questionnaire was not currently tracked by the state, though they are working on a web-based database system to begin tracking this information.

**Philadelphia, Pennsylvania**

The public health department in Philadelphia estimates a 50-60% rate of health and safety issues leading to deferrals, with leaky roofs being the most common hazard. Whether this figure relates to pre-audit deferrals or audit deferrals is unclear. The public health department has an external referral process for clients/owners to contact a WAP provider that offers basic system repair services. Unfortunately, this service currently has a 2-year wait time.

**Providence, Rhode Island**

Providence weatherization providers report lead hazards are seen in many of the homes that are audited. While the program is exploring establishing a referral system with the city’s lead program to address those hazards, currently WAP completes weatherization and energy efficiency work without addressing the lead hazards.
APPENDIX:
Green and Healthy Homes Initiative

SITE QUESTIONNAIRE - WEATHERIZATION

This questionnaire is being circulated among the 14 GHHI-designated sites. Further instructions and clarification can be found at the end of the document. Your responses will be used to further the goal of integrating weatherization, energy efficiency, and health and safety into best practices – as well as address any barriers you may find in implementing this work. We look forward to receiving your response.

Name: _______________________  Email Address: _______________________
Title: _________________________  Phone Number: _______________________

A. General Statistics

1. Number of pre-audits completed from July 1, 2009 to June 30, 2010 (if applicable):

2. Total number of pre-audited properties deemed ineligible in pre-audit process:
   a.) Number of homes deemed ineligible due to HUD income eligibility limits:
   b.) Number of homes deemed ineligible due to Health and safety Issues:
   c.) Number of homes deemed ineligible to other issues:

3. Number of audits completed from July 1, 2009 to June 30, 2010:

4. Total number of audited properties deemed ineligible due to Health and safety Issues:

4. Number of properties deemed ineligible:
   a.) in pre-audit due to health and safety issues receiving WAP Health and safety or discretionary funds used as part of weatherization intervention:
   b.) in audit due to health and safety issues receiving WAP Health and safety or discretionary funds used as part of weatherization intervention:
   a.) Average expenditure of WAP Health and safety or discretionary dollars used as part of weatherization intervention:

5. Which entities normally complete the audit:
   ☐ WAP Personnel  ☐ Contractor  ☐ Sub-contractor  ☐ Referral  ☐ Other: ________________

6. Average cost of addressing health and safety issues per home:

7. Average time of completion (in days) for weatherization:

8. Average time of completion (hours or days) for home and safety issues:

9. Average number of contractors per house:

B. Home Health and safety Hazards

<table>
<thead>
<tr>
<th>Pre-Audit</th>
<th>Audit</th>
<th>Total Cost</th>
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<tbody>
<tr>
<td>1. Total # homes with lead paint hazards such as peeling or chipping paint:</td>
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</tr>
<tr>
<td>2. Total # of homes with structural defects such as holes in walls, ceilings, floors; or damaged doors and windows:</td>
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<tr>
<td>3. Total # of homes with electric hazards such as loose/exposed wiring or missing outlet panels:</td>
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</table>
4. Total # of homes with **moisture/mold/mildew hazards** including water leaks, condensation, and water damage: __________ __________ __________

5. Total # of homes with **pest** issues such as roaches, rodents, bed bugs, etc.: __________ __________ __________

6. Total # of homes with excess **clutter** or **harborage**: __________ __________ __________

7. Total # of homes with **fire and safety hazards** such as missing/inoperable smoke and carbon monoxide detectors: __________ __________ __________

8. Total # of homes with **environmental air hazards** such as natural gas, sewer gas, and musty air: __________ __________ __________

9. Total # of homes with **ventilation issues**: __________ __________ __________

10. Total # of homes with **asbestos**: __________ __________ __________

Total # of homes with other safety hazards (please list below) __________ __________ __________

a. __________ __________ __________

b. __________ __________ __________

c. __________ __________ __________

### C. Additional Questions

1. Currently, what is your policy in addressing health and safety issues? Please include information on the funds utilized and the program partners who support your efforts. If applicable, how do these health and safety issues in Section B hinder your weatherization efforts?

________________________________________________________________________________________________________

________________________________________________________________________________________________________

________________________________________________________________________________________________________

2. How would your weatherization program benefit and/or be more efficient, if at all, if you had the resources to address health and safety issues found in ineligible homes?

________________________________________________________________________________________________________

________________________________________________________________________________________________________

________________________________________________________________________________________________________

________________________________________________________________________________________________________

________________________________________________________________________________________________________

3. If WAP funds are not available to address weatherization do you currently have a strategy for external referral to address health and safety issues? ☐ Yes ☐ No

4. Does your site currently utilize a comprehensive survey to assess health and safety, energy, and weatherization issues? ☐ Yes ☐ No

5. Where can GHHI help your agency address home and safety issues?

☐ Data Management ☐ Technical Assistance ☐ Comprehensive Assessment Form

☐ Funding (please specify how funding would be utilized) ☐ Other:

________________________________________________________________________________________________________

________________________________________________________________________________________________________

6. After an intervention is completed do you conduct a follow-up assessment? If yes, what is the structure of your follow-up assessment?

________________________________________________________________________________________________________

________________________________________________________________________________________________________
7. How is your weatherization program funding appropriated? Is it based on an absolute maximum amount or on a percentage of costs for weatherization? Or is it fully funded? What is the maximum upper limit available for your program to handle HEALTH AND SAFETY issues from the WAP Health and safety funds?

8. Are there any differences in tenant or owner status in terms of using any WAP Health and safety funding? (Ex. Owners must pay ½ of costs for electrical hazards, etc.)

9. From beginning to end, how many days/months does it take to complete a home weatherization, including all related work addressing HEALTH AND SAFETY issues? (This number should be the difference between the weatherization start approval date and the day of all work’s completed). What are the hurdles in getting the work done efficiently?

10. What certifications do you require before hiring a potential contractor? What is the average contractor pay rate? Do you find it difficult to find qualified contractors?

11. Is there anything in the DOE weatherization regulations that remain unclear or requires additional explanation? What recommendations do you have for the DOE to effectively address HEALTH AND SAFETY issues related to weatherization?

12. What areas of your program do you feel that additional training or technical assistance can be beneficial to handling HEALTH AND SAFETY issues related to weatherization?

13. Please provide us with any insights, suggestions, concerns or questions that you may have:
Comments and Instructions:

Please answer these questions as accurately and thoroughly as possible to the best of your ability. Feel free to contact us at the Coalition to End Childhood Lead Poisoning at (410) 534-6447 if you have any questions:

A. General Statistics
   We understand that not every site performs an in-person audit of a home to determine weatherization eligibility. For those that deem homes ineligible at the application, this is what we refer to as pre-audit. If all homes receive an on-the-ground in-person audit, this does not apply to you. Please write in N/A as the response.

   By “Flex” funds, we are referring to the WAP Health and safety funds. By “discretionary,” we are referring to any external or internal funds used to address the listed “health and safety” issues on the questionnaire.

B. Home Health and Safety Hazards
   This section’s purpose is to gain a better understanding of the prevalence of health and safety issues in WAP properties and their impact on houses being denied or delayed that need weatherization work. We are also interested in the average cost of addressing health and safety issues found in the home. If your agency uses an external referral program partner, we will attempt to contact your program partner to get the total. If your agency does not track this information, please write in N/A as the response.

C. Additional Questions
   Any particular agency may not have the capacity to offer services addressing both weatherization and health and safety issues. This section gathers information about your external referral system and program partners. We are also interested in whether a comprehensive assessment survey instrument is used. This will provide information on barriers such as workforce development/availability, fund restrictions, and other insights you may have on the issues.

Thank you for your participation in this questionnaire. We look forward to receiving your robust response.
ACKNOWLEDGEMENTS:
The Green and Healthy Homes Initiative would like to thank all of the weatherization program participants for their dedication, time, and cooperation. We would also like to thank our GHHI networks and partners around the country for helping to facilitate responses and contacts with their local agencies. Without each site’s support we would not have been able to generate an in-depth analysis of weatherization activities. The US Department of Housing and Urban Development and the Department of Energy provided comments and clarifying questions that were answered in this final version of this report.

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The Green and Healthy Homes Initiative would like to acknowledge the work of its project team for their contributions to this report: Michael T. McKnight, Kinbo J. Lee, Lauren A. Villa, Michael B. Shaw, Rebecca L. Jackson, Kory H. Lemmert, Bertrand L. Cooper, and Cada E. Paulson.

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