

Delaware WAP Health and Safety Plan

1. Introduction

While weatherization measures effectively reduce energy usage and costs, the nature and effect of the work require that care be taken to avoid unintended consequences. For example, air sealing may tighten a house to the point that indoor air pollutants become a greater problem. Or, faulty combustion appliances may spill deadly carbon monoxide that previously was diluted in the exchange of air through leaks in the envelope, but once the home is tightened, become a serious health concern.

Weatherization work, like any repair work on a house, is likely to alter existing conditions in a home. If a window requiring caulk happens to be coated with lead based paint, care must be taken not to create the serious health issues resulting from spreading dust particles on the floor where a baby may be crawling the next day. If a worker is replacing ducts around pipes that are wrapped with asbestos, serious lung problems could result from the disturbance of the asbestos particles.

Health and safety issues (also referred to as “H&S” herein) are critical for all concerned parties in the WAP. The clients we serve are our first priority, as they are and will be living in the homes we weatherize through our efforts, and their exposure levels are therefore potentially the highest in most health and safety problems. Our WAP Contractors, Subgrantees and state staff are also potentially exposed to health and safety risks, expanding the need for adequate health and safety planning and response protocols for a myriad of potential health and safety issues.

In cases where work activities would constitute a health and safety hazard, precautions should be taken. Partial Weatherization should also be considered where it might be advisable or necessary to limit or avoid particular measure(s) that may exacerbate a health or safety problem. In some cases, weatherization may have to be deferred while hazards are remedied. The response to any one health and safety issue is dependent on the issue, as is the need for testing, client education and training specific to the concern at hand. This plan outlines the issues, allowable actions, training and other aspects of many health and safety concerns. The list of concerns is taken from the US Department of Energy Weatherization Program Notice 11-6, published in 2011 and has been modified for use here in Delaware.

Training is a critical component of health and safety, and training needs are identified in this plan as well as in the annual plan and master plan in our Delaware FY 2012 WAP Base grant application.

2. Responsibilities and Funding

Although the Weatherization Assistance Program is not capable of providing solutions for all health and safety issues, identification of potential hazards is essential to providing safe services. Therefore, each dwelling must be individually assessed by the Energy Auditor to determine the existence of potential hazards to workers and clients. Contractors working in a home may also identify health and safety measures, as might inspectors or other staff. The subgrantee has the ultimate responsibility to see that health & safety of the workers and the occupants is paramount throughout the implementation of weatherization services.

The subgrantee has the responsibility to determine when weatherization work is to be deferred because of health and safety issues, as well as when the deferral is to be lifted. If there is a question on these decisions, the subgrantee may consult with the DNREC. DNREC's deferral policy is found in Section 5 of this plan.

Delaware budgets health and safety costs as a separate category, thereby excluding these costs from the average cost per unit calculation. Creating a separate budget category also allows these costs to be isolated from energy efficiency costs during program evaluations. Delaware limits health and safety expenses to 14% of its DOE Program Operations budget category.

Under some circumstances, correcting certain hazards may be paid for from weatherization funds to the extent that they qualify as "Incidental Repairs" which are necessary for the success of a weatherization measure or group of measures. Incidental repairs are those repairs necessary for the effective performance or preservation of weatherization materials and which are not expressly considered health and safety costs under Section 4 of this plan. Incidental repairs must be included in the SIR for the package of measures and in the average per unit limitation. Incidental repairs are controlled by the energy audit because the package of measures when including the incidental repair costs must achieve an SIR of one or greater to be installed; however, the total incidental repair cost shall be no more than \$400 in any one unit.

Health and safety expenditures, as averaged across all units for the subgrantee, shall be limited to a percentage of the average cost per dwelling unit of 14%. Some houses may require more than the 14% while others will require less. At present, using a sample size of 400 units that DNREC has weatherized since we took over the program, we are averaging \$670 per unit for Health and Safety costs and an average of approximately \$6,500 total program operations expenses per unit. We are therefore currently very close to alignment with the 10% health and safety target in our FFY 2011 Health and Safety Plan and our Master Plan.

However, with the advent of ASHRAE 62.2, we anticipate that H&S costs will increase, and we are therefore projecting a need of 14% per unit average expenditure for FFY 12 and beyond. Additional cost details and experience with 62.2 will refine that estimate in future years, however at the present time, we believe 14% to be a reasonable planning percentage for H&S expenses. The subgrantee is ultimately responsible for assuring that the total health and safety expenditures do not exceed the average for all units. The 14% average limitation is deemed reasonable to address any health and safety issues in accordance with Section 4 of this plan and should allow adherence to the 14% funding allocation limit noted above.

3. Assessment

Identification of health and safety concerns begins at the time of application through assessing occupant preexisting conditions and continues with a conversation with the client where the auditor should solicit concerns directly from the occupant and confirm what was previously reported, followed up with a detailed visual inspection in several key areas of the unit.

The Delaware WAP uses a form for the intake worker and auditor to use in order to assess health and safety concerns of the homeowner and in the home. The form is attached hereto and is expressly made a part of this Plan.

4. Health and Safety Issues Guidance

The following Health and Safety Guidance Table has been developed from the US DOE Weatherization Program Notice 11-6, which provides guidance to state grantees for developing their state-specific health and safety plans. It has been modified to include the required and restricted WPN 11-6 components and incorporate Delaware's state-specific actions and concerns. While not every possible health and safety issue is addressed herein, the guidance should provide enough relevant examples and direction to provide clarity to the many issues surrounding health and safety concerns. DOE funds can and will be spent in accordance with the following table.

Under any circumstance, the following themes and requirements shall be adhered to:

- Where removal or replacement is addressed for an allowed health and safety measure in the document, proper disposal is required, and allowed as a health and safety cost.
- Where hazards are identified, clients must be informed in writing and the document must be signed by the client and a copy maintained in the client file.
- While working in homes, contractors will take all possible precautions to not aggravate existing client health and safety concerns. This may be as simple as making sure the client is not present during or after certain measures, or require client relocation while any hazardous situation is present. Deferral should be considered if the condition is such that harming the client cannot be avoided
- State and local (or jurisdiction having authority) codes must be followed while installing health and safety measures.
- Workers must be qualified and adequately trained according to state and local (or jurisdiction having authority) codes specific to the work being conducted (electrical, plumbing, etc.).

With respect to repair and/or replacement of heating units as detailed in the charts below, repair or replacement is an allowable cost under the Delaware program due to the climactic conditions present in this state. Failure to adequately heat a home in our area, which experiences an average of 4014 heating degree days each winter (source; US DOE: <http://apps1.eere.energy.gov/states/residential.cfm/state=DE#avgheat>), may result in illness or death, and as such repair or replacement under certain conditions is an allowable expense.

Health and Safety Issue	Allowability	Standard or Criteria	Testing	Standards for Deferral or Referral	Client Education	Training
Air Conditioning and Heating Systems	<p>“Red tagged”, inoperable, or nonexistent primary heating system replacement, repair, or installation is allowed with health and safety funds, unless the unit is eligible to be installed as an energy conservation measure or prevented by other guidance herein. “System” can mean a central unit or several individually operating units; however, when a central unit is in place, it shall be considered the primary unit, and all other units are to be considered secondary. Replacement or installation of secondary units is not allowed. Unsafe primary or secondary units must be repaired or removed, or deferral is required.</p> <p>Air conditioning system replacement, repair, or installation is not allowed with health and safety funds.</p>	<p>Repair, including clean and tune of primary heating units, is recommended when the level of combustion byproducts are above unit specifications; when dirt or other debris indicate likely inefficient operation. Replacement of heating units is permitted when:</p> <ul style="list-style-type: none"> • the unit has a cracked heat exchanger, • the unit is more expensive to fix than would cost to replace it • It cannot be fixed due to age or parts 	<p>Make sure systems are present, operable, and performing. Perform an energy audit to determine if work should be performed as an energy conservation measure. Also perform a visual inspection of the primary heating unit; efficiency and combustion analysis to determine operating conditions and appropriate action.</p>	<p>Deferral is required in instances where a conversion of the fuel source to another is warranted or requested by the client, unless specifically approved on a case by case basis by the State WAP Administrator and DOE. Referral to other agencies or programs is required in instances where no other weatherization measures are needed or where a client is otherwise not eligible for the program, or where the home is deferred for other reasons not related to HVAC.</p>	<p>Discuss and provide information on appropriate use and maintenance of units and proper disposal of bulk fuel tanks when not removed.</p>	<p>Awareness of guidance. Licensing/certification for HVAC installers as required by jurisdiction having authority.</p>
Appliances and Water Heaters	<p>Replacement of water heaters is allowed on a case-by-case basis, but must be approved by the subgrantees via approval of the work order. Replacement and installation of other appliances are not allowable health and safety costs. Repair and cleaning are allowed. Also see Air Conditioning and Heating Systems and Combustion Gases.</p>	<p>Replacement as a health and safety measure is warranted when the unit is leaking internally, costs more to repair than to replace, is not functioning or where internal combustion or electrical hazards exist that cannot be corrected through repair.</p>	<p>Determine whether appliances/water heaters are performing safely. Perform energy audit to determine if work is performed as an energy conservation measure. Combustion safety testing is required when combustion appliances are present. Inspect venting, gas lines, electrical, and water lines.</p>	<p>Deferral may be needed in instances where replacement is complex or costs more than 150% of the average cost of DHW heaters.</p>	<p>Discuss and provide information on appropriate use, maintenance, and disposal of appliances/water heaters.</p>	<p>Awareness of guidance. Conducting diagnostic training.</p>

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<p>Asbestos - in siding, walls, ceilings, etc.</p>	<p>Sampling for asbestos is an allowable cost, but shall not exceed \$300 per unit taken together. Removal and re-installation is an allowable expense under the Delaware WAP program, but is subject to bidding procedures as outlined.</p> <p>Prior to conducting any asbestos work, the subgrantee shall solicit and receive no less than two written bids from licensed asbestos contractors for the work being recommended by the auditor. The subgrantee shall then choose the lowest bidder. In cases where projected costs exceed \$1500, the subgrantee shall furnish all written bids to DNREC and seek written approval from DNREC to proceed.</p>	<p>Removal of siding (mitigation) is not allowed. Removal and replacement of a small amount of siding to perform side-wall dense pack insulation, is allowed by a certified professional. All precautions must be taken not to damage siding. Asbestos siding should never be cut or drilled. If removal and re-installation is not conducted by a CPSF, the contractor may insulate through the home's interior, or bypass wall insulation as an energy conservation measure altogether.</p>	<p>Only a certified professional service (inspector /auditor) may collect samples to prove that a material is not asbestos.</p>	<p>If the condition of any asbestos in or on the home is deteriorated enough to pose an immediate safety problem to the client or weatherization workers, the Auditor can defer services until the problem is addressed by a trained professional.</p>	<p>The Auditor shall inspect the exterior wall surface and subsurface for asbestos siding during the original audit. If present, the auditor should inform the client that suspected asbestos siding is present and to not disturb it in any way.</p>	<p>Workers should be trained in identifying asbestos containing materials. Any and all work on asbestos must be conducted by individuals or firms licensed or otherwise approved for such activities by the State of Delaware. Licensing information for the State may be obtained at: http://dfm.delaware.gov/envsrv/asbestos/</p>

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<p>Asbestos - in vermiculite</p>	<p>Encapsulation by an appropriately trained asbestos control professional is allowed. Removal is not allowed. Sampling for asbestos is an allowable cost, but shall not exceed \$300 per unit taken together.</p> <p>Prior to conducting any asbestos work, the subgrantee shall solicit and receive no less than two written bids from licensed asbestos contractors for the work being recommended by the auditor. The subgrantee shall then choose the lowest bidder. In cases where projected costs exceed \$1500, the subgrantee shall furnish all written bids to DNREC and seek written approval from DNREC to proceed.</p>	<p>When vermiculite is present, take precautionary measures as if it contains asbestos. Do not do a blower door test in the home.</p> <p>Contractors should be careful to utilize personal protection equipment (PPE) while in attics or areas suspected to contain asbestos.</p>	<p>Only a Certified Professional Service Firm (CPSF) (inspector /auditor) may collect samples to prove that a material does not contain asbestos.</p>	<p>If the condition of any asbestos in or on the home is deteriorated enough to pose an immediate safety problem to the client or weatherization workers, the Auditor can defer services until the problem is addressed by a trained professional.</p>	<p>The auditor shall assess whether vermiculite is present. The auditor, if asbestos is present or suspected; the auditor should instruct the client not to disturb the suspected asbestos containing material.</p>	<p>Workers should be trained in identifying asbestos containing materials. Any and all work on asbestos must be conducted by individuals or firms licensed or otherwise approved for such activities by the State of Delaware. Licensing information for the State may be obtained at: http://dfm.delaware.gov/envsrv/asbestos/.</p>

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<p>Asbestos - on pipes, furnaces, and small covered surfaces</p>	<p>Encapsulation is allowed, and must be conducted by an AHERA asbestos control professional. Any encapsulation work should be conducted prior to blower door testing. Removal may be allowed, and must be conducted by a licensed asbestos control professional, subject to the conditions of this section.</p> <p>Prior to conducting any asbestos work, the subgrantee shall solicit and receive no less than two written bids from licensed asbestos contractors for the work being recommended by the auditor. The subgrantee shall then choose the lowest bidder. In cases where projected costs exceed \$1500, the subgrantee shall furnish all written bids to DNREC and seek written approval from DNREC to proceed.</p>	<p>Asbestos should not be disturbed by any WAP worker under any circumstance. If any worker suspects asbestos is or may become "friable", they should utilize asbestos appropriate PPE when working in proximity of the suspected ACM.</p>	<p>AHERA testing is allowed under the WAP and must be conducted by a CPSF.</p>	<p>If the condition of any asbestos in or on the home is deteriorated enough to pose an immediate safety problem to the client or weatherization workers, the Auditor can defer services until the problem is addressed by a trained professional.</p>	<p>The auditor should assume asbestos is present in covering materials and clients should be instructed not to disturb suspected asbestos containing material.</p>	<p>Any and all work on asbestos must be conducted by individuals or firms licensed or otherwise approved for such activities by the State of Delaware. Licensing information for the State may be obtained at: http://dfm.delaware.gov/envsrv/asbestos/.</p>
<p>Building Structure and Roofing</p>	<p>Building rehabilitation is beyond the scope of the Weatherization Assistance Program. Homes with conditions that require more than incidental repair should be deferred. See Mold and Moisture guidance below.</p>	<p>N/A</p>	<p>Visual inspection. Ensure that access to areas necessary for weatherization is safe for entry and performance of assessment, work, and inspection.</p>	<p>If needed repairs cannot be associated with protection of weatherization measures, the home must be deferred and the owner referred to other agencies and programs to address the situation</p>	<p>Notify client of structurally compromised areas.</p>	<p>How to identify structural and roofing issues.</p>

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Code Compliance	Correction of preexisting code compliance issues is not an allowable cost other than where weatherization measures are being conducted. State and local (or jurisdiction having authority) codes must be followed while installing weatherization measures.	Most code compliance is charged with the energy conservation measure associated with it; however, some code compliance is necessary to perform weatherization for the health and safety of the client and is not for the effective performance or preservation of the material (incidental repair), and should be charged to the health and safety budget	Visual inspection. Local code enforcement inspections.	Condemned properties and properties where “red tagged” health and safety conditions exist that cannot be corrected under this guidance should be deferred and the homeowner referred to other source of assistance.	Inform client of observed code compliance issues.	How to determine what code compliance may be required.
Combustion Gases	Proper venting to the outside for combustion appliances, including gas dryers, is required. Correction of venting is allowed when testing indicates a problem. (see also appliance and ventilation sections)	Venting is to be done in accordance with the DE Field Guide and shall be a H&S expenditure as noted in the DE price list. Extra costs for aesthetic purposes shall be the responsibility of the homeowner. When gases exceed action levels as outlined in the Field Guide, subgrantee must be notified immediately and corrective action taken, which may include after-hours service calls or relocation of the resident for a period not exceeding 3 nights.	Testing is required when combustion appliances are present. Inspect venting of appliances and confirm adequate clearances. Test naturally drafting appliances for draft and spillage under worst case conditions before and after work that could have affected worst case conditions. Inspect cooking burners for operability and flame quality.	Deferral is required when combustion gases cannot be properly vented, or when the homeowner refuses to allow venting or to assume the cost of any aesthetic improvements to hide/address the new vent.	Provide client with combustion safety and hazards information, including the importance of using exhaust ventilation when cooking and the importance of keeping burners clean to limit the production of CO.	How to perform appropriate testing; determine when a building is excessively depressurized, and the difference between air free and as-measured.

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Drainage - gutters, down spouts, extensions, flashing, sump pumps, landscape, etc.	The repair of existing drainage devices or minor landscaping designed to direct moisture away from the home is an allowable expense providing repairs do not exceed \$300. Major drainage issues, including landscaping, are beyond the scope of the Weatherization Assistance Program. See Mold and Moisture guidance below.	Repairs will ordinarily involve replacement of gutters and downspouts, sump pumps, flashing, etc. where repair will likely resolve a moisture problem.	Visual inspection.	Homes with conditions that may create a serious health concern that require more funds than can be applied through incidental repairs and H&S expenditures outlined here should be deferred.	Importance of cleaning and maintaining drainage systems. Information on proper landscape design.	How to recognize drainage issues.
Electrical, other than Knob-and-Tube Wiring	Minor electrical repairs are allowed where health or safety of the occupant is at risk. Upgrades and repairs are allowed when necessary to perform specific weatherization measures.	Repairs will ordinarily involve repair of existing wiring and circuits, but may include new circuits and wiring necessary to install ventilation in compliance with ASHRAE 62.2	Visual inspection. Voltage drop and voltage detection testing are allowed.	Deferral is required where expected costs for electrical repairs are in excess of \$500. Referral to other service programs should be made as needed.	Provide information on overloading circuits, electrical safety/risks.	How to identify electrical hazards. Local code compliance.
Electrical, Knob-and-Tube Wiring	Minor upgrades and repairs necessary for weatherization measures and where the health or safety of the occupant is at risk are allowed. Must provide sufficient damning or other means of isolating the knob-and-tube wiring prior to insulation.	Minor repair includes those repairs that can be done for \$300 or less. The cumulative electrical repair costs for knob and tube and other electrical repairs in any one unit cannot exceed \$800	Inspect for presence and condition of knob-and-tube wiring. Check for alterations that may create an electrical hazard. Voltage drop and voltage detection testing are allowed.	Deferral is recommended where the knob and tube wiring cannot be repaired or replaced for less than \$300	Provide information to client on over-current protection, overloading circuits, basic electrical safety/risks.	How to identify electrical hazards. Local code compliance.

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Fire Hazards	Correction of fire hazards is allowed when necessary to safely perform weatherization.	Contractors must comply with NFPA standards and the DE Field Guide, along with applicable codes to prevent hazardous situations where combustible materials are located dangerously close to combustion appliances.	Check for fire hazards in the home during the audit and while performing weatherization.	Deferral is recommended where fire hazards cannot be mitigated or where compliance with NFPA or other codes will exceed \$500 in costs.	Inform client of observed hazards.	How to identify fire hazards.
Formaldehyde, Volatile Organic Compounds (VOCs), and other Air Pollutants	Removal of pollutants is allowed and is required if they pose a risk to workers or home inhabitants.	Removal must be in accordance with federal, state and local codes and cannot exceed \$100	Sensory inspection.	If pollutants pose a risk to workers and removal cannot be performed, or is not allowed by the client, the unit must be deferred.	Inform client of observed condition and associated risks. Provide client written materials on safety and proper disposal of household pollutants.	How to recognize potential hazards and when removal is necessary.
Injury Prevention of Occupants and Weatherization Workers - Measures such as repairing stairs and replacing handrails.	Minor repairs and installation may be conducted only when necessary to effectively weatherize the home; otherwise these measures are not allowed.	Minor repairs are those that can be performed for under \$300, and must be directly related to the need to safely perform weatherization activity.	Observe if dangers are present that would prevent weatherization.	Repairs costing more than \$300 are cause for a unit's deferral if weatherization cannot be safely performed without the repair. Referral to other service programs is recommended.	Inform client of observed hazards and associated risks.	Workers must take all reasonable precautions against performing work on homes that will subject workers or occupants to health and safety risks.

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Lead Based Paint	Lead safe weatherization practices are allowable H&S expenses where costs are incurred during the emplacement of weatherization measures.	Follow EPA's Lead; Renovation, Repair and Painting Program (RRP) and Lead Safe Weatherization (LSW), which requires containment regardless of the square footage of disturbed area (level 1 containment for small areas below RRP de minimis levels).	Testing is allowed. Job site set up and cleaning verification is required by a Certified Renovator. Documentation (signed acknowledgment, photos, etc.) is required to be verified by subgrantee and placed in client file. Assessments will be conducted during routine monitoring in the field to ensure all workers are properly trained and performing work under EPA and DOE standards.	Deferral is required when the extent and condition of lead-based paint in the house would potentially create further health and safety hazards.	Follow RRP requirements.	All weatherization crews working in pre-1978 housing must be trained in Lead Safe Weatherization (LSW) and be accompanied by an EPA Certified Renovator. Grantee Monitors/Inspectors must be Certified Renovators and receive LSW training.
Mold and Moisture	Limited water damage repairs and correction of moisture and mold creating conditions are allowed as H&S measures when necessary in order to weatherize the home and to ensure the long term stability and durability of the measures. Moisture prevention measures, such as vapor barriers, are allowable and paid in accordance to the DE WAP Price list. Mold testing and mold remediation are not allowable costs.	Moisture repair problems requiring less than \$500 in repair costs per unit are permissible.	Visual assessment is required and diagnostics such as moisture meters are recommended pre and prior to final inspection. Significant moisture issues are defined as any mold and water stains in excess of one square foot. Minor moisture problems are defined as having less than one square foot of visible mold or water stains.	If moisture issues are significant, the moisture condition must be corrected or the unit deferred. Many moisture conditions may not be severe but an attempt should still be made to correct them. For minor mold or moisture problems, weatherization can continue as long as proper ventilation is installed:	Provide client notification and disclaimer on mold and moisture awareness.	National curriculum on mold and moisture or equivalent.

Health and Safety Issue	Allowability	Standard or Criteria	Testing	Standards for Deferral or Referral	Client Education	Training
Occupant Preexisting and Potential Health Conditions	Temporary relocation of at-risk occupants may be allowed as a H&S measure if a person's health may be at risk and/or the work activities could constitute a health or safety hazard.	Relocation is permissible when no other viable option exists and where relocation lasts no longer than 5 days and costs less than \$500, and when relocation will afford ample time to resolve the H&S problem.	Require occupant to reveal known or suspected health concerns as part of initial application for weatherization. Screen occupants again during audit.	An inability to meet the standards provided herein must result in deferral. Referral to the state Division of Public Health or other health professional is recommended.	Provide client information of any known risks. Provide worker contact information so client can inform of any issues.	How to assess occupant preexisting conditions and determining what action to take if the home is not deferred. Awareness of potential hazards.
Occupational Safety and Health Administration (OSHA) and Crew Safety	Following OSHA standards in any health and safety related activity is an allowable expense and required by state and federal law.	See OSHA Standards MSDS must be posted wherever workers may be exposed to hazardous materials.	Grantees must perform assessments to determine if crews are utilizing safe work practices. Assessments will be conducted during routine monitoring in the field to ensure all workers are properly trained and performing work under OSHA standards.	If OSHA rules cannot be followed for whatever reason, the job must be deferred.	Not applicable.	OSHA 10 hour training is required for all workers. OSHA 30 hour training is required for crew leaders.
Pests	Pest removal is allowed only where infestation would prevent weatherization. Screening of windows and points of access is allowed to prevent intrusion.	To be an eligible expense, pest removal must be reasonable assured of long term success and cost no more than \$400.	Assessment of presence and degree of infestation and risk to worker.	Infestation of pests may be cause for deferral where it cannot be reasonably removed or poses health and safety concern for workers.	Inform client of observed condition and associated risks.	How to assess presence and degree of infestation, associated risks, and need for deferral.

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Radon	Vapor barriers and other precautionary measures intended to prevent the exacerbation of radon problems are allowable H&S costs. Radon mitigation is not an allowable H&S cost. Radon testing is not an allowable cost.	When site conditions permit exposed dirt must be covered with a vapor barrier (not including mobile homes). Vapor barriers must be sealed at the seams and to sidewalls and other penetrations to the fullest extent possible. In homes where radon may be present, precautions should be taken to reduce the likeliness of making radon issues worse, including sealing sump pumps and cracks, air sealing between crawl and conditioned space, ventilation and air balancing strategies	Testing is recommended by the client but is not an allowable expense under the Delaware WAP.	Homes with documented radon problems may be deferred if measures are expected to aggravate existing radon problems or precautionary measures are likely to be ineffective.	Provide client with EPA consumer's guide to radon. Clients may also be referred to the Delaware Healthy Homes program at http://dhss.delaware.gov/dph/hsp/hhinsid eradon.html	Contractors should be trained in radon occurrence and precautions.
Refrigerant	Reclaiming refrigerant is an allowable H&S cost, however it will normally not be a H&S cost unless the replacement or repair is done as a H&S measure	Reclaiming practices should be done in accordance with the 1990 Clean Air Act, section 608, as amended, and all other state and federal statutes	EPA testing protocols.	N/A	Clients should be informed not to disturb refrigerant.	EPA-approved section 608 type I or universal certification.

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Smoke, Carbon Monoxide Detectors, and Fire Extinguishers	Installation of smoke/CO detectors is allowed where detectors are not present or are inoperable. Replacement of operable smoke/CO detectors is not an allowable cost. Providing fire extinguishers is allowed only when solid fuel is present, and where, at the discretion of the auditor, they are needed.	Installation of smoke/CO detectors shall be in accordance with the DE Field Guide, which requires a smoke alarm on each floor and CO capabilities in proximity to any combustion appliance	Check for presence and operation.	Deferral is recommended where the homeowner refuses the installation of detectors.	Provide client with verbal and written information on use of smoke/CO detectors and fire extinguishers where allowed.	Where to install detectors. Local code compliance.
Solid Fuel Heating (Wood Stoves, etc.)	Maintenance, repair, and replacement of primary indoor heating units is allowed where occupant health and safety is a concern. Maintenance and repair of secondary heating units is not allowed. Chimney sweeps will also be allowed as a health and safety measure.	Maintenance, repair, and replacement are only allowed where excessive smoke or exhaust gases are leaking into the home and causing a health concern.	Required inspection of chimney and flue and combustion appliance zone depressurization.	Deferral is recommended in instances where chimney or flue work is excessive (costing more than 50% of the unit itself).	Provide safety information including recognizing depressurization.	How to perform CAZ depressurization test and proper inspection.
Space Heaters, Stand Alone Electric	Repair, replacement, or installation is not allowed. Removal is recommended.	N/A	Check circuitry to ensure adequate power supply for existing space heaters if removal is not allowed by client.	Deferral would not normally be recommended or required unless space heaters are damaged, being misused, located in unsafe location, etc. and the client refuses removal.	Inform client of hazards. Obtain a signed waiver if not removed.	Awareness of guidance.
Space Heaters, Unvented Combustion	Removal is required.	N/A	N/A	Deferral is required where removal is declined by the homeowner or other heating means are unavailable. Referral to heating assistance programs is advised.	Inform client of dangers of unvented space heaters - CO, moisture, NO2, CO can be dangerous even if CO alarm does not sound.	How to perform air-free CO testing. Understanding the dangers of unvented space heaters.

Health and Safety Issue	Allowability	Standard or Criteria	Testing	Standards for Deferral or Referral	Client Education	Training
Space Heaters, Vented Combustion	Such units should be treated as furnaces.	N/A	Venting should be tested consistent with furnaces.	N/A	N/A	See above
Ventilation	Ventilation installation, repair and replacement is an allowable expense under Delaware's H&S plan. Full compliance with ASHRAE 62.2 must be emplaced by March 31, 2013. In the interim, this ventilation standard is emplaced for 2012 and the reader is referred to Section 6 below further information regarding 62.2.	Ventilation existing in homes should be repaired or replaced if not functioning. If the building is tested at or below the BTL as calculated by the auditor, and no air sealing of the home should be done and supplemental ventilation must be added to the home if such installation can be done for \$500 or less. All ventilation systems must be vented to the exterior of the home as detailed in the Field Guide.	Fan flow may be tested and is an allowable expense.	Deferral may be required where ventilation costs are expected to exceed the allowable limit as determined at the time of the initial audit. Where homes show signs of inadequate ventilation, and the unit is otherwise deferred, the homeowner should be referred to the Division of Public Health Healthy Homes program for further information.	Provide info on importance of adequate ventilation, function, use, and maintenance of vent system. Include disclaimer that ventilation does not account for high polluting sources or guarantee indoor air quality.	Auditors must be trained in calculating building tightness limits and how to observe for signs of poor ventilation and or where to add ventilation to most effectively increase occupants airflow.
Window and Door Replacement, Window Guards	Replacement, repair, or installation is not an allowable health and safety cost but may be allowed as an incidental repair or an efficiency measure if cost justified.	N/A	N/A	N/A	Provide information on lead risks.	Awareness of guidance.

5. Deferral Policy

The Delaware Weatherization Assistance Program may elect to defer a home from receiving weatherization services where health and safety hazards exist for our staff, contractors or our clients or where conditions prevent the safe and effective emplacement of weatherization measures.

Causes For Deferral

Conditions which may cause a home to be deferred, when they cannot be resolved prior to or as a part of weatherization services as defined in this guidance, may include, but are not limited to the following:

- Structurally unsound dwellings.
- Evidence of substantial, persistent infestations of rodents, insects and other vermin.
- Electrical or plumbing hazards
- The presence of sewage in any part of the dwelling unit, basement or crawl space.
- Environmental hazards such as serious moisture problems, carbon monoxide, gas leaks, friable asbestos or other hazardous materials
- Substantial amounts of standing water in the crawl space or basement.
- The presence of animal feces in any area of the dwelling unit where program staff must perform weatherization measures.
- Excessive garbage build-up in and around the dwelling unit which limits the program staff's access to the dwelling and encourages rodent infestations.

In addition to health and safety hazards, other issues may prevent a home from being weatherized. These include:

- Major remodeling is in progress which limits the proper completion of major weatherization measures.
- Uncooperative client: client refuses major weatherization measures or refuses to make modifications necessary to permit major measures from being completed.
- Maintenance and housekeeping practices (hoarding) that are negligent to the point of limiting the access of program staff to the dwelling, or creating an unwholesome working environment.
- An overt threat of violence to any program staff member or any household member during the weatherization process.
- The presence and/or use of any controlled substance in the dwelling unit during the weatherization process.

Deferral Procedures and Contractor Payment

Deferrals at Beginning of Audit

The auditor should first perform the health and safety assessment to determine if weatherization can continue prior to performing the energy audit. If an auditor arrives at a home, begins to review the home and determines it should be deferred prior to concluding the audit, the auditor shall immediately contact the local agency by cell phone to describe the situation and ask for guidance. The auditor should continue with and complete the health and safety assessment, but shall not begin the energy audit if deferral is likely. If possible, the local agency representative may want to meet the auditor in the field to discuss the situation further and brainstorm ideas for getting the home in a condition where an audit can be conducted. No home may be deferred without first having checked with the local agency.

If it is finally decided to defer the home, the auditor shall have the homeowner sign the deferral form, noting the one or more reasons why the home is deferred. The local agency should then be immediately notified and try to get the homeowner any help or resources needed to correct the situation. If alternate funding can be coordinated to address the health and safety hazard within 60 days of the initial assessment, the work can be delayed and the audit performed once alternate funds are approved.

If deferred at this stage, the auditor will be entitled to a payment as shown on the Delaware price list for an audit cut short for deferral reason. Payment may be made at any time following the determination of deferral, upon receipt of a suitable invoice from the auditor.

If the cause of the deferral is resolved, the local agency shall assign the same auditor to the unit to conclude the audit, and the auditor shall be entitled to the complete payment for the audit as shown on the price list.

Deferrals During Audit

If in the auditor's judgment during the audit, he/she feels the house should be deferred for a problem likely and/or easily fixed - and that the home will eventually be weatherized, the audit may continue, however, the auditor shall immediately contact the local agency by cell phone to describe the situation and ask for guidance. If possible, the local agency representative may want to meet the auditor in the field to discuss the situation further and brainstorm ideas for getting the home in a condition where a deferral may not be necessary. No home may be deferred without first having checked with the local agency.

If it is finally decided to defer the home, the auditor shall have the homeowner sign the deferral form, noting the one or more reasons why the home is deferred. The local agency should then be immediately notified and try to get the homeowner any help or resources needed to correct the situation. The completed audit shall be provided to the local agency.

If deferred, and the audit was completed, the auditor will be entitled to the full audit costs on the price list, however, payment may not be made unless and until the "Administrative Procedures to be followed for Deferred Units" below is concluded.

Deferral At Time Of Measure Installation

Causes for deferral may be discovered at any time during the process of weatherizing a unit, only because causes may not be known until work actually commences, or more close examination by workers reveals something not otherwise discovered. The goal is to discover any and all causes for deferral in the audit stage, and there again, hopefully before an audit ever commences. Deferrals during weatherization installation may also prompt a need for partial weatherization.

a. Deferral at time of initial arrival

Any mechanical or installation contractor arriving on site and, before conducting any work, discovers what they believe to be a cause for deferral shall immediately contact the auditor to discuss the situation and determine a course of action. No work shall be done on the home. If deferral of the unit is agreed upon, the contractor shall fill out a deferral form on site and obtain the client's signature at the time of deferral. The Contractor shall then be entitled to a payment for the deferral as shown on the price list.

b. Deferral after measures are installed, but before work is complete.

Any mechanical or installation contractor arriving on site and, after any billable work is conducted, discovers what they believe to be a cause for deferral, shall immediately contact the auditor and/or the subgrantee to discuss the situation and determine a course of action. Based on the situation, the subgrantee may authorize completion of any one or more measures on the work order and deferral of the home thereafter. If deferral of the unit is agreed upon, the contractor shall fill out a deferral form on site and obtain the client's signature at the time of deferral. The contractor shall then submit an invoice for the work conducted but shall not be entitled to any compensation for the deferral itself as allowable under (a) above.

c. Partial Weatherization –

Partial weatherization is allowable where one or more audit-approved energy conservation measures are or can be installed without any cause for deferral endangering the work conducted, and where the work will not create or exacerbate any health or safety issue. Partial weatherization of homes shall not be done as a routine matter and can only be approved by the subgrantee where billable work was done on the home without knowledge of the deferral cause.

Administrative Procedures for Deferred Units

Any unit that is deferred by the subgrantee must be informed in writing of the deferral and the cause of the deferral. This notice shall be signed by the homeowner and the subgrantee or their agent (auditor, contractor) and the record of such deferral must be kept for three years.

If the unit owner later comes forward with written evidence that the cause of the deferral has been rectified, and they remain eligible, they may again be put on the wait list to receive services.

Deferral Notification and Appeal

Households shall be informed in writing by the local agency when services are denied or withdrawn based on deferral guidelines above. The denial notice will include instruction for appeal of the denial or the steps the household must take to allow the agency to proceed with weatherization services.

**DELAWARE WEATHERIZATION ASSISTANCE PROGRAM
PROGRAM DEFERRAL FORM**

Client Number: _____ Date: _____
Name: _____
Address: _____ County _____
Phone #: _____ (home) _____ (cell/other)

Instructions: In certain cases homes scheduled for audit or weatherization installations work may need to be deferred to correct one or more hazardous or unsafe work environments or because work on the home cannot proceed due to the condition of the home. This deferral can occur before or during an initial audit or before/during installation of weatherization measures. Please be sure to write legibly or type and be as specific as possible. The WAP personnel making the deferral claim should ensure the homeowner is aware of the reason for deferral, have them sign it, and append this form to the Master Work Order and Inspection Form and immediately contact the appropriate local agency. Please make sure all reasons for deferral are documented with photos of existing conditions along with all descriptions on place, location, etc

DEFERRAL REASON: (CHECK ALL THAT APPLY)

- Substantial Amounts of Standing Water in Crawl Space or Basement**
- Ceilings falling in because of roof leaks.** **Leaking roof**
- Rotten and leaking window frames** **Poor drainage around the house**
- Leaking plumbing (supply or drain – open sewer)** **Structurally Unsound**
- Major Remodeling in Progress (limits proper completion of WAP measures)**
- Gross insect issues** **Rodents** **Animal Feces** **Electrical**
- Carbon monoxide** **Mold** **Other**
- Too many items blocking or preventing access to area(s) that require measure installation**
- Uncooperative client: refuses major weatherization measure or refuses to make modifications necessary to permit major measure to be completed.**

Additional explanation: _____

Deferral Obligations and Rights

Homeowners have 60 days from the date this form is signed to correct the reason for deferral and notify, in writing, the local agency of the corrected condition without having to re-apply for the program. Weatherization services may then continue if the source of the deferral is corrected. It is the client's responsibility to ensure the reason for deferral is addressed and the Delaware WAP is under no obligation to correct any deficiencies noted. Appeals to the deferral decision must be made in writing and follow the appeal procedure detailed in the Delaware WAP manual. The local agency shall furnish a copy of that appeal procedure upon request by the home occupant.

Auditor/Installer Signature _____

DATE _____

Auditor Installer name and company (Please print) _____

I have been informed of my rights and obligation under the Delaware WAP and this deferral notice.

Homeowners

Signature _____ **DATE** _____

**Delaware Weatherization Assistance Program
Client Health and Safety Survey**

Client Name: _____

Address: _____ County _____

Phone #: _____ (home) _____ (cell/other)

The Delaware Weatherization Assistance Program (WAP) assists low income homeowners and individuals (“Clients”) with making their homes more energy efficient, thereby increasing their comfort and saving money on energy bills. In the process, we work to ensure their health and safety to the best of our ability.

As a client in the Delaware WAP, I understand that my health and safety, and that of the WAP staff and contractors is a critical component of the Delaware WAP and that any and all weatherization activities, retrofit materials, techniques or practices will be conducted to minimize any health and safety concerns and environmental impacts.

Part 1 – to be completed at client eligibility intake

To provide safe and effective services, it’s necessary to have a sense of the client’s health, and knowledge of any health concerns you have with your home. Therefore, please check the appropriate boxes below and inform the auditor or intake worker with any health concerns you may have with weatherizing your home.

- Chronic allergies _____
- Breathing problems (COPD, Emphysema, etc...) _____
- High blood lead levels _____
- Wheelchair accessibility needs _____
- Mold or other safety concerns in the home _____
- Moisture problems (please be room specific) _____
- Other concerns _____

Part 2 (see reverse side) – to be completed by the auditor

At the beginning of the energy audit, the auditor should perform an initial assessment of the home for health and safety concerns, as well as overall energy conservation opportunities and any causes for deferral of the unit. Health and safety issues may or may not be reason for deferral of the home, the decision of which is made by the auditor during their initial assessment.

A checklist for use by the auditor is shown on the reverse of this page. The auditor should fill it out noting any and all health and safety concerns observed. In addition, the auditor should discuss his or her findings with the homeowner or renter to ensure they understand the findings and can make any corrective actions necessary. If the conditions in the home are such that deferral is needed, the homeowner will be provided the reasons for deferral on a separate notification form. The client must sign this form, which must then be entered in the client’s file. Client refusal to sign should be noted and signed off on by the local agency program manager.

Client Name _____ Address _____ Date Audit Conducted _____

Exterior site inspection	Attic Inspection	Interior Inspection	Combustion Appliances	Garage/Storage	Basement/ Crawlspace Inspection
<ul style="list-style-type: none"> _ Structural, _ Roofing, _ Site drainage, _ Gutters, _ Potential asbestos siding, _ Pest intrusion 	<ul style="list-style-type: none"> _ Recessed and canned lighting _ Chimney/ flue shielding _ Structural and code concerns _ Wiring hazards, including knob and tube _ Adequate ventilation _ Water leaks and moisture problems _ Pest and biologicals _ Vermiculite & potential asbestos _ Fire hazards _ Other 	<ul style="list-style-type: none"> _ Wiring _ Water leaks _ Moisture problems _ Potential mold _ Lead based paint _ Structural and code concerns _ Fire hazard _ Indoor air concerns (improper venting, poor HVAC return sealing/locations) _ Other 	<ul style="list-style-type: none"> _ Proper venting _ Draft problems _ Fire hazards _ Combustibles 	<ul style="list-style-type: none"> _ VOCs _ Hazardous chemicals _ Potential air intrusion into home 	<ul style="list-style-type: none"> _ Vapor barrier _ Wiring _ Water leaks and moisture problems _ Plumbing leaks _ Structural and code concerns _ Potential asbestos _ Fire hazards _ Other

NOTES _____

I have been advised of the above health and safety findings of the Delaware WAP auditor and understand that these findings are preliminary, and do necessarily reflect all of the health and safety concerns found within my home, or the severity of the concern. For items that cannot be addressed through allowable health and safety provisions of WAP, the financial responsibility for correcting these issues are mine and that all corrections should be performed in a professional manor and to code, and may require a licensed professional.

 Clients Printed Name

 Client Signature

 Date

6. ASHRAE 62.2

Delaware is currently fully implementing ASHRAE 62.2 for Program Year 2013. We have spent the last 12 months coming up to speed on the new standard, receiving training on its implementation and instituted the new standard on March 1, 2013. All homes audited after March 1 have followed the new ASHRAE 62.2 standard.

Auditors, program monitors and other technical and administrative staff have each received a total of 4 days of hands on training, both in the classroom and the field and more training is planned in Calendar year 2013 to fine tune our understanding of the calculations, and how to cost effectively ventilate homes, while adhering to the standard.