Attachment to 614 – Weatherization Health and Safety Plan

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☑ POLICY SUBMITTED WITH PLAN

1.0 – GENERAL INFORMATION

Grantees are encouraged to enter additional information here that does not fit neatly in one of the other sections of this document.

REFERENCES

- Department of Energy Weatherization Assistance Program State Plan
- WAP Agreements
- DOE Weatherization Program Notice 17-7, 19-5
- Michigan Weatherization Field Guide
- CSPM 606.1 Program Requirements – WAP Auditing Tools

PURPOSE

The State Plan for the Weatherization Assistance Program (WAP) and this Weatherization Health and Safety Plan, which is an attachment to the Community Services Policy Manual Item 614, address health and safety (H&S) provisions for weatherization work in Michigan.

According to 10 CFR 440, the following criteria must be meet to qualify as a Health and Safety measure.

- Actions must be taken to effectively perform weatherization work; or
- Actions are necessary as a result of weatherization work

POLICY

Health and Safety (H&S) funds may be used for:

- H&S funds cover the cost of testing and the installation of measures.

- Health and Safety spending is limited to 50% of the total job cost, and the limit is reasonable in light of the primary energy conservation purpose of the Weatherization Assistance Program.

Health and Safety verses Energy Conservation Measures

Some measures can qualify as either a Health and Safety or an energy conservation measure, such as heating system replacements. When the measure can be cost-justified through an audit, the measure must be treated

as an energy conservation measure. When the measure is not cost-justified through an audit, it cannot be treated as an energy conservation measure.

Mandatory Health & Safety Measures

- Installation of smoke detectors shall be placed in accordance with all State Of Michigan and Local Fire/Building Codes. Smoke detectors must be tested to verify operation of installed alarms.
- Carbon Monoxide (CO) Alarm/Detector are required to comply with ASHRAE 62.2 version 2016 in all residences. CO Alarms/Detectors must be tested to verify operation of installed alarms.
- Implementation of program required ASHRAE 62.2 ventilation standard is required.
- Clothes dryers shall be vented to the exterior.

Emergency Procedures

Agency staff must immediately respond to all life threatening Health and Safety issues or situations identified as life threatening. Use the following immediate responses for life threatening issues identified from testing or from other hazards requiring an immediate response.

Procedures on how crews will handle life threatening hazards are observed: (Example: during testing of Combustion Gases when ambient CO is 70 ppm or greater, building structure issues, gas leaks from natural gas and/or propane, electrical fire hazards, electrical water hazards, and others hazards as identified)

- Terminate the inspection
- Immediately notify the homeowner – occupants of the need for all building occupants to evacuate the building.
- Leave the building
- Notify the appropriate emergency services from outside of the home
- Call the Manager for instructions

Reporting of Emergency Situation Requirements
Reporting the emergency is not an indication for action to be taken by the State's Weatherization Office, it is just a reporting requirement to track emergency situations.

Agency must submit an email to the MDHHS-BCAEO@michigan.gov within 24 hours to report the Health and Safety issues identified. The email should include job number, reason for the issue, and the remedy of the life threatening situation. In addition, please provide the time line and people involved in the response taken in the email. Full documentation on the issues identified, response taken with time line, results of response action, and notification email to the BCAEO must be uploaded in FACSPro.

Reporting of Other Situation Requirements
Reporting the other situations that require the agency to notify law enforcement or child protective services is not an indication for action to be taken by the State's Weatherization Office, it is just a reporting requirement to track these situations. The agency must submit an email to the MDHHS-BCAEO@michigan.gov within 24 hours to report the other situation issues identified. The email should include job number, reason for the issue, and the entity that was notified.

Overall Approach to Health and Safety Measures

For each issue listed in the Health and Safety Plan:

All work must meet the objective of the Michigan Weatherization Field Guide and/or the Authority Having Jurisdiction.

Program and manufacturer approved materials and instructions must be used while installing any weatherization measures.

When required, licensed professionals will be employed to install work and/or conduct tests. Workers must be qualified and adequately trained to implement the DOE Standard Work Specifications as well as State and local codes specific to the work being conducted (electrical, plumbing, etc.).

Client education is only required where issue exists.

User's manual for installed equipment will always be provided to client.

Training to perform required testing and correctly apply work is implied.

When a health and safety issue is cause for a deferral, the client must be notified in writing, including the conditions that must be met in order for weatherization to move forward.

Hazard Identification and Notification

A Health and Safety assessment must be performed to identify hazards in the dwelling. When hazards are identified, appropriate testing must be performed when required by the Health and Safety Plan. The client/landlord/property manager must be informed, in writing, of

- All testing results, regardless if they will lead to deferral (send by certified mail separately as necessary based on testing and weatherization timeline), and
- Any identified hazards that will lead to deferral.

The notification must be signed by the client and the assessor/auditor, a copy maintained in the client file, and a copy uploaded in FACSPro.

Installation of Health and Safety Measures

All work must meet the objective of the Michigan Weatherization Field Guide and/or the Authority Having Jurisdiction. Program and manufacturer approved materials and instructions must be used while installing any weatherization measures.

Training

Agency must ensure training for workers to know when the performance of a certain task requires a licensed professional to meet the requirements of the authority having jurisdiction. Agency must ensure workers are qualified and adequately trained to implement the DOE Standard Work Specifications and codes specific to the work being conducted, such as electrical or plumbing.

Client Education

Client education is required when issues exists. For example, client education regarding drainage issues is only required where drainage problems are identified.

Client education is also required on specific topics whether or not issues exist in that area. Those specific topics

are included in the sections that follow.

ASHRAE Requirements

Implementation of program required ASHRAE 62.2 ventilation standard is required. Client refusal of mechanical ventilation, when evaluated and called for pursuant to the Standard, must result in deferral. Guidance on ASHRAE 62.2 2016 installation beyond the details of this H&S Plan can be found in the Michigan Weatherization Field Guide.

Health & Safety Concerns and Additional Guidance

2.0 – BUDGETING

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Grantees are encouraged to budget Health & Safety (H&S) costs as a separate category and, thereby, exclude such costs from the average cost per unit cost (ACPU) limitation. This separate category also allows these costs to be isolated from energy efficiency costs in program evaluations. Grantees are reminded that, if H&S costs are budgeted and reported under the program operations category rather than the H&S category, the related H&S costs must be included in the calculation of the ACPU and cost-justified through the approved energy audit.

Select which option is used below.

Separate Health and Safety Budget ☑	Contained in Program Operations ☐

Budget Management

- The rationale for performing each Health and Safety measure in an individual home and its relationship to the energy conservation measure that necessitated it must be clearly documented in the client file and FACSPro.
- The average Health and Safety expenditure limit is 19.95% of the Program Operations budget.
- Health & Safety measures are charged to their own line item.
- Client file documentation must show costs in appropriate budget categories, including Health and Safety.
- Health and Safety funds cover the cost of testing, and the installation of measures around allowable Health and Safety measures as defined in section 7 of this document.
- Client education or training costs can be charged to Training and Technical Assistance budget.
- All funding sources that will be used to pay for Health and Safety measures to ensure that adequate funds are allocated must be identified.
- Code Compliance: DOE funds will not be used to meet existing code compliance issues unless the installation of a measure necessitates so.

3.0 – HEALTH AND SAFETY EXPENDITURE LIMITS

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Pursuant to 10 CFR 440.16(h), Grantees must set H&S expenditure limits for their Program, providing justification by explaining the basis for setting these limits and providing related historical experience.

Low percentages should include a statement of what other funding is being used to support H&S costs, while larger percentages will require greater justification and relevant historical support. It is possible that these limits may vary depending upon conditions found in different geographical areas. These limits must be expressed as a percentage of the ACPU. For example, if the ACPU is $5,000, then an average expenditure of $750 per dwelling would equal 15 percent expenditures for H&S.

15 percent is not a limit on H&S expenditures but exceeding this amount will require ample justification. These funds are to be expended by the Program in direct weatherization activities. While required as a percentage of the ACPU, if budgeted separately, the H&S costs are not calculated into the per-house limitation. DOE strongly encourages using the table below in developing justification for the requested H&S budget amount. Each H&S measure the Grantee anticipates addressing with H&S funds should be listed along with an associated cost for each measure, and by using historical data the estimated frequency that each measure is installed over the total production for the year.

It is also recommend reviewing recent budget requests, versus expenditures to see if previous budget estimates have been accurate. The resulting "Total Average H&S Cost per Unit" multiplied by the Grantee's production estimate in the Annual File should correlate to the H&S budget amount listed in the Grantee's state plan.

Should a Grantee request to have more than 15 percent of Program Operations used for health and safety purposes, DOE will conduct a secondary level of review. DOE strongly encourages use of this H&S template and matrix to help expedite this process

Health and Safety Measures and Budget

The Average Health and Safety Expenditure Limit is 19.95% of the Program Operations budget. To ensure that program services concentrate on energy efficient measures and the costs must be reasonably justified, H&S measures must not total more than 50% of the total job cost.

If health and safety costs of a job do exceed more than 50% of the total job costs, the Grantee may submit a waiver to BCAEO for approval from technical staff before proceeding. The Grantee is responsible for documenting the email approval from the technical staff and including it with the file documentation. Buildings that cannot be weatherized without the H&S measures shall be deferred. H&S measures are not considered as part of the cumulative SIR and do not need an SIR to install.

In instances where the H&S measure that pushes the H&S cost over 50% of total job cost is an ASHRAE fan or system, the subgrantee may move forward on the project without review and permission from MDHHS-BCAEO technical staff. Items defined as Health and Safety measures and paid from the Health and Safety Line Item:

- Need not be cost-justified by the energy audit, and
- Are not included in the Average Cost Per Unit.

If the measure is an approved WAP expenditure and the audit justifies the costs with an SIR equal to or greater than 1.0, the measure must be performed and costs charged as an Energy Conservation Measure (ECM). If the measure is not an eligible ECM, the measure may be charged as a Health and Safety (H&S) measure. The measure may be considered for H&S repair or replacement only after it is determined that the measure is not cost-effective.

CSPM 614
http://www.michigan.gov/documents/dhs/CSPM_600_Series_215133_7.pdf CSPM 600 Series

H&S Measure Matrix - Optional			
Double Click To Open For Editing			
Cells this shade auto calculate			
Enter Measure ↓	**Enter** Cost ↓	**Enter** Frequency % ↓	Auto Calculates
Gas valve Replacement	$100.00	11.0%	$11.00
ASHRAE Compliant Fan	$800.00	80.0%	$640.00
Energy Recovery Ventilator	$1,250.00	1.0%	$12.50
High Efficiency Furnace	$2,000.00	16.0%	$320.00
Power Vented Water Heater	$1,500.00	20.0%	$300.00
Electric Water Heater	$850.00	2.0%	$17.00
Dryer Vent Complete	$120.00	25.0%	$30.00
CO & Smoke Detectors	$60.00	65.0%	$39.00
Chimney Liner	$600.00	15.0%	$90.00
Vent Connector	$174.47	10.0%	$17.45
Roof Repair	$250.00	5.0%	$12.50
Replace out-dated Flex Gas Line	$100.00	5.0%	$5.00
Ground Moisture Barrier	$175.00	40.0%	$70.00
Asbestos on pipes, small surfaces	$500.00	2.5%	$12.50
Total Average H&S Cost Per Unit			$1,576.95
Enter Estimated Production (Annual File: IV.2 WAP Production Schedule) ➔			2,336
Enter Estimated Program Operations Budget ➔			18,875,075
H&S Budget (Total Average H&S Cost Per Unit * Estimated Production)			$3,683,748.19
Requested H&S Percentage Per Unit (H&S Budget/Program Operations)			19.5%

4.0 – Incidental Repair Measures

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If Grantees choose to identify any H&S measures as incidental repair measures (IRMs), they must be implemented as such under the Grantee's weatherization program in all cases – meaning, they can never be applied to the H&S budget category. In order to be considered IRMs, the measure must fit the following definition and be cost justified along with the associated efficiency measure;

Incidental Repairs means those repairs necessary for the effective performance or preservation of weatherization materials. Such repairs include, but are not limited to, framing or repairing windows and doors which could not otherwise be caulked or weather-stripped and providing protective materials, such as paint, used to seal materials installed under this program.
(10 CFR 440 "Definitions")

Incidental Repair Measures

Any measure referenced in conjunction as an Energy Conservation Measure will be considered an Incidental Repair Measure, otherwise they will be considered a Health and Safety Measure. Incidental Repairs means those repairs necessary for the effective performance or preservation of weatherization materials. Such repairs include, but are not limited to, framing or repairing windows and doors which could not otherwise be caulked or weather-stripped and providing protective materials, such as paint, used to seal materials installed under this program.

The following measures will be performed as Incidental Repair Measures (IRM) when an Energy Conservation Measure (ECM) is installed that they could be attached to as an IRM. In accordance to WPN 12-9, IRMs are measures necessary for the effective performance or preservation of installed ECMs. If the measures cannot be attached as an IRM to an ECM, the measures may be charged to Health and Safety as a stand alone measure.

- Moisture Repairs
- Vapor Retarder Installation
- Electrical Repairs

Repairing a small roof leak will be charged to Incidental Repair Measures when attic insulation is installed. To pay for a roof repair under Health & Safety, please see details in section 7.6 of this document.

CSPM 607
http://www.michigan.gov/documents/dhs/CSPM_600_Series_215133_7.pdf CSPM 600 Series

5.0 – DEFERRAL/REFERRAL POLICY

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Deferral of services may be necessary if H&S issues cannot be adequately addressed according to WPN 17-06 guidance. The decision to defer work in a dwelling is difficult but necessary in some cases. This does not mean that assistance will never be available, but that work must be postponed until the problems can be resolved and/or alternative sources of help are found. If, in the judgment of the auditor, any conditions exist which may endanger the health and/or safety of the workers or occupants, the unit should be deferred until the conditions are corrected. Deferral may also be necessary where occupants are uncooperative, abusive, or threatening. Grantees must be specific in their approach and provide the process for clients to be notified in writing of the deferral and what conditions must be met for weatherization to continue. Grantees must also provide a process for the client to appeal the deferral decision to a higher level in the organization.

Grantee has developed a comprehensive written deferral/referral policy that covers both H&S, and other deferral reasons?

Yes ☑ No ☐

Where can this deferral/referral policy be accessed?

CSPM 609
http://www.michigan.gov/documents/dhs/CSPM_600_Series_215133_7.pdf CSPM 600 Series

6.0 – HAZARD IDENTIFICATION AND NOTIFICATION FORM(S)

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Documentation forms must be developed that include at a minimum: the client's name and address, dates of the audit/assessment and when the client was informed of a potential H&S issue, a clear description of the problem, a statement indicating if, or when weatherization could continue, and the client(s) signature(s) indicating that they understand and have been informed of their rights and options.

Documentation Form(s) have been developed and comply with guidance?

Yes ☑ No ☐

Agencies have the option of using the standard Hazard Identification and Notification form to notify clients of potential issues defined in section 7 of this document. Agencies may elect to use an alternate form if that form

meets the minimum requirements of notification to the client as specified throughout section 7 of this document.
CSPM 614 Attachment B Hazard Identification and Notification Form

7.0 – HEALTH AND SAFETY CATEGORIES

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For each of the following H&S categories identified by DOE:

- *Explain whether you concur with existing guidance from WPN 17-07 and how that guidance will be implemented in your Program, if you are proposing an alternative action/allowability, or if the identified category will not be addressed and will always result in deferral. Alternatives must be comprehensively explained and meet the intent of DOE guidance.*
- *Where an Action/Allowability or Testing is "required" or "not allowed" through WPN 17-07, Grantees must concur, or choose to defer all units where the specific category is encountered.*
- *"Allowable" items under WPN 17-07 leave room for Grantees to determine if the category, or testing, will be addressed and in what circumstances.*
- *Declare whether DOE funds or alternate funding source(s) will be used to address the particular category.*
- *Describe the explicit methods to remedy the specific category.*
- *Describe what testing protocols (if any) will be used.*
- *Define minimum thresholds that determine minor and major repairs*
- *Identify minimum documentation requirements for at-risk occupants*
- *Discuss what explicit steps will be taken to educate the client, if any, on the specific category if this is not explained elsewhere in the Plan. Some categories, like mold and moisture, require client education.*
- *Discuss how training and certification requirements will be provided for the specific category. Some categories, like Lead Based Paint, require training.*
- *Describe how occupant health and safety concerns and conditions will be solicited and documented*

Grantees may include additional H&S categories for their particular Programs. Additional categories must include, at a minimum, all of the same data fields as the DOE-provided categories. Two additional tables have been created to utilize.

7.1 – Air Conditioning and Heating Systems

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Concurrence, Alternative, or Deferral				
Concurrence with Guidance ☐	Alternative Guidance ☑	Results in Deferral ☐		
Air Conditioning Unallowable Measure ☑	Heating Unallowable Measure ☐			
Funding				
DOE ☑	LIHEAP ☑	State ☐	Utility ☐	Other ☐

The project shall be deferred until additional funds can be secured (from listed sources below) to cover costs exceeding the H&S budgeted amount. Alternate funding such as LIHEAP, MPSC, HUD, USDA, Municipal Health Department and Emergency Funds shall be utilized to address this particular health and safety category. Other local funding may be available and utilized.

Budget Category Decisions: Perform a full DOE-approved energy audit prior to deciding how to categorize the cost of space heater repair or replacement. A space heater may only be replaced with Health and Safety funds if it is the primary heating unit. If the measure is an approved WAP expenditure and the audit justifies the costs with an SIR equal to or greater than 1.0, the measure must be performed and costs charged as an Energy Conservation Measure (ECM). If the measure is not an eligible ECM, the measure may be charged as a Health and Safety (H&S) measure.

How do you address unsafe or non-functioning primary heating/cooling systems?

When the Energy Auditor or any other weatherization employee encounters an unsafe or inoperable heating appliance during the heating season, if WAP funds are unable to correct the issue, weatherization work should not proceed until the condition is corrected.

Code Compliance and Inspection Requirements: Compliance with the DOE Space Heater Policy is required. Un-vented space heaters as the primary heat source must be replaced with vented space heaters prior to any weatherization activities. The purchase/installation of un-vented space heaters is prohibited. Installation of space heaters requires knowledge of appropriate industry standards and comply with the applicable building code(s) in the municipality where installation is taking place. Building permits shall be secured, where required for all space heater work. This is a program operations cost. The manufacturer approved initial start-up procedures must be followed before any heater is put into operation. Agencies are reminded that even licensed heating contractors may not be aware of the stringent requirements of the Weatherization Program, so their work should be reviewed by Program staff. These requirements should be sent to the contractor prior to their installation of a heating system as part of their contract with the agency. Safety inspections related to the space heater should include, but not be limited to, a check for adequate floor protection, and code-compliant clearances to walls and other combustible materials. Even though many vented space heaters are manufactured with spill switches, it is still a requirement that a worst-case depressurization draft test be performed on all vented units.

Electric Space Heaters: DOE will not permit any DOE-funded weatherization work other than minor repairs on electric space heaters. This does not preclude the use of other funding sources for the replacement or major repair of electric space heaters, but the Department does not encourage it because of:

- Lower output ratings (size);
- Risk of fire hazards; and,
- Inadequate electrical systems in older homes, which frequently cannot safely carry the power required to operate an electric heater.

Work on such systems may make local agencies liable for inadequate electric wiring and any damages that result.

Fireplaces – Special Considerations: Fireplaces present special hazards that are affected by weatherization. If draft is poor, smoke may downdraft into the living space causing poor indoor air quality. It is likely the occupants will ventilate in these situations. Near the end of a wood fire, glowing coals will remain, radiating heat, while the draft lowers and allows the top of the chimney to cool, further reducing draft. The reduced oxygen available to the glowing coals causes production of CO without the smoke that encourages space ventilation. This is a dangerous situation as the CO enters the living space due to the lowered draft, causes drowsiness of occupants, and sometimes worse. For this reason it is extremely important to make sure there is a CO alarm installed in this combustion zone and occupants are educated to the danger signs and what to do.

> **Inspection/Evaluation:** Assessing solid fuel fired appliances involves inspecting the venting/chimney and the overall installation to ensure it adheres to the applicable code: NFPA 211 or other as determined by the authority having jurisdiction. Appliances should be inspected pre- and post-weatherization.
>
> Conduct pre- and post- weatherization worst case CAZ depressurization testing in spaces having a fireplace. If fireplaces are left operational, the vent must meet code or the home cannot be weatherized. Fireplaces may be permanently disabled if it is determined that the client will not use it or it is obviously inadequate.

To evaluate operation of other combustion appliances, the blower door can be set to run at 300 CFM (set up as for depressurization testing), or other Grantee-approved flow, to mimic the airflow dynamics likely when the fireplace is in use.

Manufactured Homes – Special Considerations: The Manufactured Home Construction and Safety Standards (https://portal.hud.gov/hudportal/HUD?src=/hudprograms/mhcss) require all fuel-burning, heat-producing appliances in mobile homes, except ranges and ovens, to be vented to the outside.

All fuel-burning appliances in mobile homes, except ranges, ovens, illuminating appliances, clothes dryers, must be installed to provide for the complete separation of the combustion system from the interior atmosphere of the manufactured home (i.e., to draw their combustion air from outside).

Masonry Chimneys: Masonry chimneys used by vented space heaters should be properly lined in compliance with the International Fuel Gas Code (IFGC). When WAP installs new equipment it must meet local code requirements. Masonry chimneys that have been retired (i.e. not being used by existing equipment) should be assessed for energy savings opportunities such as air sealing and capping to reduce thermal bypass.

Solid-Fueled Space Heaters: Solid fueled space heaters include wood stoves, coal stoves, pellet stoves, and fireplaces. Wood, coal, and pellet fired furnace and boiler systems should be treated as vented heating systems and are not covered here.

Assess solid fuel-fired appliances to ensure safe installation prior to weatherization activities taking place. Repair or removal is an allowed H&S measure for primary and secondary solid fuel-fired heating appliances. Replacement is allowed for primary solid fuel heating appliances but replacement is not allowed for secondary heating appliances. Repair of flues and proper installation (e.g. protection of combustibles), is required for both primary and secondary solid fuel heating appliances. Install replacement primary heaters and/or flues according to applicable codes, standards and manufacturer's instructions. Provide adequate combustion air.

Unvented Gas- and Liquid-Fueled Space Heaters: This policy applies to unvented space heaters fueled by natural gas, propane or kerosene. This policy is consistent with the IRC and the IFGC and is divided to address primary and secondary heat sources. Unvented space heaters are not allowed in manufactured homes.

Primary Heat Sources: DOE will not permit any DOE-funded weatherization work where the completed dwelling unit is heated with an unvented gas- and/or liquid-fueled space heater as the primary heat source. The primary heat source must be replaced with a vented unit prior to weatherization. The replacement unit should be sized so it is capable of heating the entire dwelling unit, consistent with audit requirements described in 10 CFR 440.21(e)(2).

Secondary Heat Sources:
Secondary unvented units that conform to the safety standards of ANSI Z21.11.2 may remain as back-up heat sources. DOE is allowing this flexibility primarily to provide low-income clients an emergency back-up source of heat in the event of electrical power outages. When selecting items to leave behind, give preference to code-compliant units that do not require electricity.

Secondary unvented units that do not meet ANSI Z21.11.2 must be removed and properly disposed of prior to weatherization but may remain until a replacement heating system is in place. Repair of secondary unvented units is not allowed. Secondary unvented units that meet the ANSI Z21.11.2, but are not operating safely, must be removed and properly disposed of.

An unvented gas- and liquid-fueled space heaters that remains in a completed single-family house after weatherization shall:

- Not have an input rating in excess of 40,000 Btu/hour;
- Not be located in, or obtain combustion air from sleeping rooms, bathrooms, toilet rooms, or storage closets, except:
  - One listed wall-mounted space heater in a bathroom if permitted by the authority having jurisdiction which --:
    - Has an input rating that does not exceed 6,000 Btu/hour;
    - Is equipped with an oxygen-depletion sensing safety shut-off system; and
    - The bathroom has adequate combustion air;
  - One listed wall-mounted space heater in a bedroom if permitted by the authority having jurisdiction, which --:
    - Has an input rating that does not exceed 10,000 Btu/hour;
    - Is equipped with an oxygen-depletion sensing safety shut-off system; and
    - The bedroom has adequate combustion air.

Vented Gas- and Liquid-Fueled Space Heaters: Treat vented gas- and liquid-fueled space heaters the same as furnaces in terms of combustion safety testing, repair and replacement. This policy applies to vented space heaters fueled by natural gas, propane, or oil.

Primary Heating System Repair, Replacement or Installation

The primary system is defined as the system that is most relied upon to provide heating throughout the season. Heating systems will be replaced as health and safety if the auditor or mechanical contractor has determined the system is a health or safety issue for the household. Additionally, the audit shows that the replacement is not an energy conservation measure.

Costs related to unsafe heating systems repair or replacement are determined by SIR value. If SIR greater than 1, charge to Energy Conservation Measure (ECM) and if SIR is less than 1, charge to Health and Safety budget.

Disposal Procedures shall be in compliance with all local, state and federal EPA requirements.

When a space conditioning system does not qualify as an ECM, the following conditions must be met before the unit can be replaced or repaired with Health and Safety funds:

- "Red tagged," inoperable, or nonexistent primary heating system may be replaced, repaired, or installed where climate conditions warrant, consistent with this guidance.
- Use proper sizing protocols (Manual J, State Approved sizing protocols, NEAT/MHEA outputs, etc.) based on post-weatherization housing characteristics, including installed mechanical ventilation, when installing or replacing a heating appliance.

- Unsafe primary units must be repaired, replaced and removed, or rendered inoperable, or deferral is required.
- Replacement or installation of secondary units is not allowed.
- Unsafe secondary units, including space heaters, must be repaired, removed or rendered inoperable, or deferral is required. Compliance with the DOE Space Heater Policy is required. Un-vented space heaters as the primary heat source must be replaced with vented space heaters prior to any weatherization activities.

Furnace Filters:
Furnace filters may be provided as an allowable H&S measure.

How do you address unsafe or non-functioning secondary heating systems, Including unvented secondary space heaters?

The secondary system is defined as the system that is employed only in extreme weather. Replacement or installation of secondary units is not allowed.

Unsafe secondary units, including space heaters, must be repaired, removed or rendered inoperable, or deferral is required.

For further information on secondary Unvented Gas- and Liquid-Fueled Space Heaters, see section above.

Indicate Documentation Required for At-Risk Occupants

- Any documentation that supports the existence of an at-risk occupant will be included in the client file. All reasonable efforts will be made to ensure the safety of at-risk occupants.
    - Documentation with signature from the client's physician indicating a client's health is at-risk without the installation of the air-conditioning system is necessary to prove the client is defined as "at-risk".

Testing Protocols

Refer to the Michigan Weatherization Field Guide for appropriate testing protocols as detailed in chapters 1 and 8.

Client Education

Client education is provided during the energy audit, installation of measures, and during the QCI inspection.

Client Education

- When deferral is necessary, provide information to the client, in writing, describing conditions that must be met in order for weatherization to commence. A copy of this notification must also be placed in the client file.
- Discuss appropriate use and maintenance of units.
- Provide all paperwork and manuals for any installed equipment.
- Discuss and provide information on proper disposal of bulk fuel tanks when not removed as part of the weatherization work.
- Where combustion equipment is present, provide safety information including how to recognize depressurization.
- Dirty or non-existent furnace filters shall be evaluated for replacement. Clients shall be instructed in proper intervals for replacement of the filters.

Training
• Weatherization Assistance Program Health and Safety policy training on allowable activities. • Licensing and/or certification for HVAC installers as required by authority having jurisdiction (AHJ). • CAZ depressurization test and inspection training.

7.2 – Asbestos – All

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What is the blower door testing policy when suspected Asbestos Containing Material (ACM) is identified?

When friable Presumed Asbestos Containing Material (PACM) is suspected, in the home, the blower door test will not be conducted to avoid disturbing friable ACM particles and the work will be deferred until all friable PACMs have either been tested and confirmed to not be ACM or safely removed and disposed of by an authorized agency. "Friable" means the material can be crumbled, pulverized, or reduced to powder by the pressure of an ordinary human hand. In cases where a home was deferred due to PACM and then later approached for weatherization, the client must provide documentation that the PACM was tested and confirmed to not be an ACM by a certified tester or a certified professional performed the removal or remediation of asbestos and the client must provide results of the Air Quality Testing (to ensure air quality is safe for workers). Michigan follows the EPA guidelines that ACM is defined as material containing 1% or more of asbestos. If an agency tests potential ACM and determines that it contains levels of asbestos between 0% and 1%, the staff or contractor interacting with the material must wear personal protective equipment.

7.2a – Asbestos - in siding, walls, ceilings, etc.

Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☐ Alternative Guidance ☑ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☑ State ☐ Utility ☐ Other ☐

The existence of asbestos siding that is in good condition does not prevent installing dense-pack insulation from the exterior. Siding may be removed and reinstalled in order to perform the ECM, and the associated costs may be charged as part of the ECM. General abatement of asbestos siding or replacement with new siding is not an allowable H&S cost. If a site is suspected to have asbestos and is unable to concur this guidance, the project shall be deferred until friable asbestos materials have been safely removed and disposed of by an authorized agency and indoor air quality testing shows workers can proceed in a safe environment.

How do you address suspected ACM's in siding, walls, or ceilings that will be disturbed through the course of weatherization work?

Take all reasonable and necessary precautions to prevent asbestos contamination in the home.

Asbestos

Asbestos fibers are microscopic. When disturbed and released into the air, the fibers can be inhaled. Significant exposure may result in lung cancer, asbestosis, or Mesothelioma. Known asbestos containing building components shall not be handled during the course of weatherization work in a way which would cause the transmission of asbestos dust into the air.

Friable asbestos is any asbestos containing product which can be crumbled, pulverized, or reduced to powder by hand pressure. Friable asbestos shall not be touched. If suspected friable asbestos is found in a home, written notification shall be provided to the client/owner. Notice of Asbestos (DHS-4290) is located in the forms section at the end of this manual. A copy of the written notification shall be maintained in the client file.

https://www.energy.gov/eere/wipo/weatherization-program-guidance

Testing Protocols

- Asbestos Hazard Emergency Response Act of 1986 (AHERA) sample collection and testing is allowed and must be conducted by a certified tester.

Client Education

- Referral to the local Health Department is recommended.
- Instruct clients in writing not to disturb suspected ACM.
- Provide asbestos safety information to the client.
- Formally notify client in writing of results if testing was performed.
- When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.

Training and Certification Requirements

- Training will include how to recognize asbestos insulation, potential asbestos containing material found in a home, and existing vermiculite that may contain asbestos. As well as how to avoid disturbing asbestos in any way.

7.2b – Asbestos - in vermiculite

Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☐	Alternative Guidance ☑	Results in Deferral ☐

Funding

DOE ☑	LIHEAP ☑	State ☐	Utility ☐	Other ☐

USDA, Municipal Health Department and Emergency Funds shall be utilized to address this particular health and safety category. Other local funding may be available and utilized.

How do you address suspected ACM's in vermiculite that will be disturbed through the course of weatherization work?
If site is found to have asbestos, this project shall be deferred until all asbestos materials have been safely removed and disposed of by an authorized agency. Disposal Procedures shall be in compliance with all local, state and federal EPA requirements: • When vermiculite is present, assume it contains asbestos unless testing determines otherwise. • Do not perform a blower door test to avoid disturbing the vermiculite. • Use proper respiratory protection while in areas containing vermiculite. • Encapsulation by an appropriately trained asbestos control professional is allowed. • Removal is not allowed. • When deferral is necessary due to asbestos, occupant must provide documentation that a certified professional performed the remediation and an air quality test was performed before work continues. • If this testing determines the vermiculite does not contain asbestos, or the vermiculite is encapsulated, the project may move forward. • Otherwise, this project shall be deferred to the Local Health Department or other EPA affiliate to determine presence of asbestos. • The project shall be deferred until the site is tested and found to be within safe levels in compliance with all local, state and federal EPA requirements.
Testing Protocols
• Asbestos Hazard Emergency Response Act of 1986 (AHERA) sample collection and testing is allowed and must be conducted by a certified tester. • Baseline environmental asbestos sampling is an allowable cost.
Client Education
• Referral to the local Health Department is recommended. • Instruct clients in writing not to disturb suspected ACM. • Provide asbestos safety information to the client. • Formally notify client in writing of results if testing was performed. • When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.
Training and Certification Requirements
• Training will include how to recognize asbestos insulation, potential asbestos containing material found in a home, and existing vermiculite that may contain asbestos. As well as how to avoid disturbing asbestos in any way. • AHERA or state certification to conduct testing. • AHERA or other appropriate asbestos control professional certification/training for encapsulation.

7.2c – Asbestos - on pipes, furnaces, other small covered surfaces

Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☐	Alternative Guidance ☑	Results in Deferral ☐

Funding

DOE ☑	LIHEAP ☑	State ☐	Utility ☐	Other ☐

How do you address suspected ACM's (e.g., pipes, furnaces, other small surfaces) that will be disturbed through the course of weatherization work?

- Assume asbestos is present in suspect covering materials.
- When friable suspected ACMs are present, unless testing determines otherwise, take precautionary measures as if they contain asbestos.
- Do not conduct a blower door test to ensure the friable suspected ACM is not disturbed.
- In cases where the suspected ACM is friable, the project shall be deferred until the site is tested and found to be within safe levels in compliance with all local, state and federal EPA requirements.
- Prior to weatherization, encapsulation is allowed by an appropriately trained asbestos control professional and should be conducted prior to blower door testing if the materials are friable.
- This project shall be deferred to the Local Health Department or other EPA affiliate to determine presence of asbestos.
- If site is found to have friable asbestos, this project shall be deferred until all friable asbestos materials have been safely removed and disposed of by an authorized agency.
- Abatement of ACM within this section is allowable on a case-by-case basis. Requests must be submitted to BCAEO before work is completed and the following items will be considered:
  - Cost of the abatement of asbestos; if the ACM abatement costs remain within 50% of the total job cost, the abatement may be approved by BCAEO
  - Scope of the asbestos; ACM must be isolated to a specific location as noted in the title of this section
    - Approval of abatement under DOE H&S will not be considered in the cases of vermiculite or siding
  - After review of the request, BCAEO will issue a decision to the agency. Only after an approval is issued from BCAEO may the agency proceed with this work.

Testing Protocols

- Asbestos Hazard Emergency Response Act of 1986 (AHERA) sample collection and testing is allowed and must be conducted by a certified tester.

Client Education
• Referral to the local Health Department is recommended. • Instruct clients in writing not to disturb suspected ACM. • Provide asbestos safety information to the client. • Formally notify client in writing of results if testing was performed. • When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.
Training and Certification Requirements
• Training will include how to recognize asbestos insulation, potential asbestos containing material found in a home, and existing vermiculite that may contain asbestos. As well as how to avoid disturbing asbestos in any way. • AHERA or other appropriate asbestos control professional certification/training is required to abate the ACM.

7.5 – Biologicals and Unsanitary Conditions

(odors, mustiness, bacteria, viruses, raw sewage, rotting wood, etc.)

Back to First

Concurrence, Alternative, or Deferral		
Concurrence with Guidance ☐	Alternative Guidance ☑	Results in Deferral ☐
	Unallowable Measure ☐	

Funding				
DOE ☑	LIHEAP ☑	State ☐	Utility ☐	Other ☐

DOE Health & Safety funds may be used for remediation of conditions that may lead to or promote biological concerns and unsanitary conditions is allowed.

What guidance do you provide Subgrantees for dealing with biological and/or unsanitary conditions in homes slated for weatherization?

The Notice of Potential Hazard defines a condition to be eliminated and if outside the scope of Weatherization or client maintenance.

- Remediation of conditions that may lead to or promote biological concerns and unsanitary conditions is allowed.
- Client education and deferral to local Housing Funded programs and Health Department.
- Addressing bacteria and viruses is not an allowable cost.
- See Mold and Moisture section for more information.

Testing Protocols

Sensory inspection followed with issuing a Notice of Potential Hazard defining deferring all weatherization work until condition has been eliminated.

Client Education
• Inform client in writing of observed conditions. • Provide information on how to maintain a sanitary home. EPA handout on remedying Mold and mildew issues when applicable. • When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.
Training
Through local Health Department and the State Extension office. • How to recognize unsafe conditions and when to defer. • Safe work practices when encountering such conditions.

7.6 – Building Structure and Roofing

Back to First

Concurrence, Alternative, or Deferral		
Concurrence with Guidance ☐	Alternative Guidance ☑	Results in Deferral ☐

Funding				
DOE ☑	LIHEAP ☑	State ☐	Utility ☐	Other ☐

Incidental and minor repairs, as defined below, are allowable. Otherwise, project will be deferred until area of repairs can be corrected or eliminated through other funding sources or incidental repairs.

What guidance do you provide Subgrantees for dealing with structural issues (e.g., roofing, wall, foundation) in homes slated for weatherization?

- Building rehabilitation is beyond the scope of the Weatherization Assistance Program.
- A visual inspection shall be followed up with the issuance of the appropriate Notice of potential hazard.
- Homes that require more than minor repairs must be deferred, see the incidental repair policy CSPM 607.
- See Mold and Moisture, Code Compliance, and Pests sections for more information.
- Ensure that access to the portions of the home where weatherization will occur are safe for entry and performance of assessments, work, and inspections.

How do you define "minor" or allowable structure and roofing repairs, and at what point are repairs considered beyond the scope of weatherization?

Incidental Repairs for Minor work

- DOE funds will be used for incidental repairs of Building Structure and Roofing, see the incidental repair policy CSPM 607.

Health & Safety Funds for Minor Work

- If no attic insulation is installed and the repair cannot be an incidental repair, then a minor repair may be done under Health & Safety, if:
  - It resolves a bulk water intrusion issue that is the cause of visible biological growth, and;
  - The limit of spending on such a repair under Health & Safety is $250, and;
  - The H&S roof repair is well documented with written explanation and photos of the biological growth in the client file

Beyond Scope of Weatherization

Project will be deferred until area of repairs can be corrected through other funding sources. Referral shall be made through the Notice of Potential Hazard and recommendations to seek a building inspection by a licensed building QC Inspector or contractor.

If priority lists are used, and these repairs are designated as Incidental Repairs, at what point is a site-specific audit required?
N/A
Client Education
Energy Auditors shall inform the residents of the potential hazard and recommendation to seek remedy of the condition.
Training
How to identify structural and roofing issues.

7.7 – Code Compliance

Back to First

Concurrence, Alternative, or Deferral		
Concurrence with Guidance ☐	Alternative Guidance ☑	Results in Deferral ☐

Correction of preexisting code compliance issues is not an allowable cost other than where triggered by weatherization measures being installed in a specific room or area of the home.

When correction of preexisting code compliance issues is triggered and paid for with WAP funds, cite specific code requirements with reference to the weatherization measure(s) that triggered the code compliance issue in the client file.

USDA, Municipal Health Department and Emergency Funds shall be utilized to address this particular health and safety category. Other local funding may be available and utilized.

Funding				
DOE ☑	LIHEAP ☑	State ☐	Utility ☐	Other ☐

What guidance do you provide Subgrantees for dealing with code compliance issues in homes receiving weatherization measures?
• When identified Code violations shall be listed on a Notice of Potential Hazard, and issued to the occupant. • A deferral of weatherization work will occur until the required Code compliance is met. • Referrals can be made to the customer to contact the local building inspection agents and item of Code incorrectness listed on the Notice of Potential Hazard. • When a condition cannot be corrected within the Incidental Repair costs category, work should be deferred.
What specific situations commonly trigger code compliance work requirements for your network? How are they addressed?
• Follow State and local codes while installing weatherization measures. • Condemned properties and properties where “red tagged” H&S conditions exist that cannot be corrected under this guidance must be deferred. • If code issues are cause for deferral, or if code compliance work is triggered by weatherization work the agency must cite the specific code in the client file.
Client Education
• Energy Auditors shall inform the residents of the potential hazard and recommendation to seek remedy of the condition. • Inform client in writing of observed code compliance issues when it results in a deferral. • When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.
Training
• Code Compliance TrainingIE. Michigan Residential Building License Code Compliance Training

7.8 – Combustion Gases

Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☐	Alternative Guidance ☑	Results in Deferral ☐

Funding

DOE ☑	LIHEAP ☑	State ☐	Utility ☐	Other ☐

Costs related to replacing an appliance are determined by SIR value. If SIR greater than 1, charge to Energy Conservation Measure (ECM) and if SIR is less than 1, charge to Health and Safety budget.

Testing Protocols

- Health and Safety protocol testing provides detection with air sampling equipment to determine elevated levels of combustion gases and their byproducts. When testing indicates a problem, correct the problem.
- When elevated levels are detected, all weatherization work is suspended until a safe environment is restored.
- When weatherization funds cannot address the listed Health and Safety condition, a referral is made to local housing programs and emergency fund sources.
- Combustion safety testing is required when combustion appliances are present.
- Test naturally drafting appliances for spillage and CO during CAZ depressurization testing pre- and post-weatherization and before leaving the home on any day when work has been done that could affect draft (e.g., tightening the home, adding exhaust). Agency will complete and review the Test In and Test Out form for the client file.
- Inspect venting of combustion appliances and confirm adequate clearances.
- Check DOE-approved audit to determine if the appliance can be justified as an ECM prior to replacement as an H&S measure.

Carbon Monoxide

Potential CO related health and safety concerns shall be discussed with the client. The client shall be immediately advised of any serious concerns relative to CO. If CO testing indicates a CO problem, a Notice of Indoor Air Quality Concern, DHS-4289 shall be provided.

Required Actions in Response to Ambient CO Measurements
(from ANSI/BPI-1200, Section 7.3.3.3)

70 ppm or greater	36 ppm-69 ppm	9 ppm- 35 ppm
• Terminate the inspection. • Notify the homeowner - occupant of the need for all building occupants to evacuate the building. • Leave the building and the appropriate emergency services shall be notified from outside the home.	• Advise the homeowner - occupant that elevated levels of ambient CO have been detected. • Open windows and doors. Recommend that all possible sources of CO be turned off immediately. • Where it appears that the source of CO is a permanently installed appliance, recommend that the appliance be turned off and advise homeowner – occupant to contact a qualified professional.	• Advise the homeowner - occupant that CO has been detected. • Recommend that all possible sources of CO be checked and windows and doors opened. • Where it appears that the source of CO is a permanently installed appliance, advise the homeowner - occupant to contact a qualified professional.

Combustion Appliance

- All combustion appliances shall be inspected during energy audit by the BCAEO approved/certified energy auditor and during the Quality Control Inspection by an IREC accredited certified QCI and/or tested by a licensed mechanical contractor. (Reference BPI-1200 standard). Related sections of the SOM approved audit shall be completed. State of MI Mechanical rules and regulations must be adhered to.
- The Combustion Appliance Zone procedure to check for vent stack spillage shall be followed and documented on the SOM approved audit.

Worst Case Draft of Combustion Appliance Zone

Combustion appliances shall be tested under the worst case depressurization of the Combustion Appliance Zone (CAZ). The Worst Case Depressurization of the CAZ testing, when performed, shall be documented on the SOM approved audit. For further information on required CAZ testing, see CSPM 606.2.

How are crews instructed to handle problems discovered during testing, and what are the specific protocols for addressing hazards that require an immediate response?

Emergency Procedures

Agency staff must immediately respond to all life threatening Health and Safety issues or situations identified as life threatening. Use the following immediate responses for life threatening issues identified from testing or from other hazards requiring an immediate response.

Procedures on how crews will handle life threatening hazards are observed: (Example: during testing of Combustion Gases when ambient CO is 70 ppm or greater, building structure issues, gas leaks from natural gas and/or propane, electrical fire hazards, electrical water hazards, and others hazards as identified)

- Terminate the inspection
- Immediately notify the homeowner – occupants of the need for all building occupants to evacuate the building.
- Leave the building
- Notify the appropriate emergency services from outside of the home
- Call the Manager for instructions

Reporting of Emergency Situation Requirements
Reporting the emergency is not an indication for action to be taken by the State's Weatherization Office, it is just a reporting requirement to track emergency situations.

Agency must submit an email to the MDHHS-BCAEO@michigan.gov within 24 hours to report the Health and Safety issues identified. The email should include job number, reason for the issue, and the remedy of the life threatening situation. In addition, please provide the time line and people involved in the response taken in the email. Full documentation on the issues identified, response taken with time line, results of response action, and notification email to the BCAEO must be uploaded in FACSPro.

Reporting of Other Situation Requirements
Reporting the other situations that require the agency to notify law enforcement or child protective services is not an indication for action to be taken by the State's Weatherization Office, it is just a reporting requirement to track these situations. The agency must submit an email to the MDHHS-BCAEO@michigan.gov within 24 hours to report the other situation issues identified. The email should include job number, reason for the issue, and the entity that was notified.

Client Education

- A Notice of Potential Hazard is issued with a detailed listing of the areas in which the condition presented elevated levels of combustion gas and its byproducts.
- Provide client with combustion safety and hazards information.

Training

- State of Michigan trains inspection candidates on ways to determine air samples which would identify potentially hazardous condition within and around the residential dwelling.
- How to perform appropriate testing, determine when a building is excessively depressurized, and the difference between air free and as-measured CO.
- CO action levels.

7.9 – Electrical

Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☐	Alternative Guidance ☑	Results in Deferral ☐

Funding

DOE ☑	LIHEAP ☑	State ☐	Utility ☐	Other ☐

DOE Funds will not be used beyond incidental repairs or a H&S Minor repair as defined below. When the H&S of the occupant/worker(s) is at risk, minor repairs, as defined below, are allowed when necessary for weatherization measures. USDA, Municipal Health Department and Emergency Funds shall be utilized to address this particular health and safety category. Other local funding may be available and utilized.

What guidance do you provide Subgrantees for dealing with electrical hazards, including knob & tube wiring, in homes slated for weatherization?

- Projects that can eliminate knob and tube as an IRM within an ECM or a minor repair can be done.
- If necessary, sufficient over-current protection and damming (if required) prior to insulating building components containing knob and tube wiring, as required by the AHJ, may be completed.
- If the knob and tube cannot be eliminated or dammed in the ways listed above, the project must be deferred. It is required for the project to be deferred until a licensed electrical inspection is conducted and the electrical upgrade is confirmed. USDA, Municipal Health Department and Emergency Funds shall be utilized to address this particular health and safety category. Other local funding may be available and utilized.
- If aluminum wiring is present, work on the home will be stopped until the suspect wiring is inspected and determined to be safe by a licensed electrician. After energy retrofit is completed, wiring will be re-inspected by a licensed electrician.

How do you define "minor" or allowable electrical repairs, and at what point are repairs considered beyond the scope of weatherization?

Minor or allowable electrical repairs under $500.00 to complete weatherization is allowable. Repairs over $500.00 is beyond the scope of weatherization.

If priority lists are used, and these repairs are designated as Incidental Repairs, at what point is a site-specific audit required?

N/A

Testing

- Visual inspection 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.

Client Education

- If electrical hazard is observed, a written Notice of Potential Hazard is delivered to the occupant with specific recommendations to seek professional remedy through a Licensed Electrical Contractor.
- When electrical issues are the cause of a deferral, provide information to client on over-current protection, overloading circuits, and basic electrical safety/risks.

Training

DOE Funds will not be used for training. State of Michigan Electrical Board supplies training curriculum.

7.10 – Formaldehyde, Volatile Organic Compounds (VOCs), Flammable Liquids, and other Air Pollutants

Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☑ State ☐ Utility ☐ Other ☐

What guidance do you provide Subgrantees for dealing with formaldehyde, VOCs, flammable liquids, and other air pollutants identified in homes slated for weatherization?

- Indoor pollution sources that release gases or particles into the air are a primary cause of indoor air quality problems in homes. Inadequate ventilation can increase indoor pollutant levels by not bringing in enough fresh outdoor air to dilute emissions from indoor sources and by not carrying indoor air pollutants out of the home. High temperature and humidity levels can also increase concentrations of some pollutants.
- Removal of pollutants is allowed and is required if they pose a risk to workers.
- If pollutants pose a risk to workers and removal cannot be performed or is not allowed by the client, the unit must be deferred.

Testing Protocols

Sensory inspection.

Client Education

- A Notice of Potential Hazard shall be issued to the occupant.
- When air quality is at issue, Indoor Air Quality form shall be issued to the occupant.
- Inform client in writing of observed hazardous condition and associated risks.
- Provide client written materials on safety issues and proper disposal of household pollutants.
- When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.

Training

How to recognize potential hazards and when removal is necessary and when deferral is required.

7.11 – Fuel Leaks

(please indicate specific fuel type if policy differs by type)

Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☑ State ☐ Utility ☐ Other ☐

Remediation Protocols

- When a minor gas leak is found on the utility side of service, the utility service must be contacted before work may proceed.
- WAP may repair fuel leaks that are the responsibility of the client (vs. the utility) before weatherizing a unit.
- Notify utilities and temporarily halt work when leaks are discovered that are the responsibility of the utility to address.

How do you define allowable fuel leak repairs, and at what point are repairs considered beyond the scope of weatherization?
• WAP may address fuel leaks up to $300 in cost.
Testing
• Test exposed gas lines for fuel leaks from utility coupling into, and throughout, the home. • Conduct sensory inspection on bulk fuels to determine if leaks exist.
Client Education
Inform clients in writing if fuel leaks are detected.
Training
Fuel leak testing.

7.12 – Gas Ovens / Stovetops / Ranges				Back to First
Concurrence, Alternative, or Deferral				
Concurrence with Guidance ☑		Alternative Guidance ☐		Results in Deferral ☐
Funding				
DOE ☑	LIHEAP ☐	State ☐	Utility ☐	Other ☐
What guidance do you provide Subgrantees for addressing unsafe gas ovens/stoves/ranges in homes slated for weatherization?				
• When testing indicates a problem, entities may perform standard maintenance on or repair gas cooktops and ovens. • If repair listed above does not address the issue, all work shall be deferred when the CO reading for the gas oven exceeds 225 ppm or any of the range top burners exceed 100 ppm. • A Notice of Potential hazard shall be issued to the occupant. • Replacement is not allowed.				
Testing Protocols				
• Visual inspection and CO testing for ovens and stovetop burners				
Client Education				
Inform clients of the importance of using exhaust ventilation when cooking and the importance of keeping burners clean to limit the production of CO.				
Training				
• Training on how to test the burners for safe combustion and gas leaks in the gas piping in and around the range and oven and seal leaks. • Training on measuring CO at the oven in undiluted flue gases.				

7.13 – Hazardous Materials Disposal [Lead, Refrigerant, Asbestos, Mercury (including CFLs/fluorescents), etc.]

(please indicate material where policy differs by material) Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☐ Other ☐

Allowability

- Hazardous Waste Materials generated in the course of weatherization work shall be disposed of according to all local laws, regulations and/or Federal guidelines, as applicable. When hazard materials (refrigerant, mercury thermostats, lead paint dust/chips, etc.) are generated in the course of weatherization work, proper disposal is required, and removal/disposal costs must be included within the Health and Safety line item.

Client Education

Inform client in writing of hazards associated with hazardous waste materials being generated/handled in the home.

Training

- Appropriate Personal Protective Equipment (PPE) for working with hazardous waste materials.
- Disposal requirements and locations.
- Health and environmental risks related to hazardous materials.

Disposal Procedures and Documentation Requirements

- Hazardous Waste Materials generated in the course of weatherization work shall be disposed of according to all local laws, regulations and/or Federal guidelines, as applicable. When hazard materials (refrigerant, mercury thermostats, lead paint dust/chips, etc.) are generated in the course of weatherization work, proper disposal is required, and removal/disposal costs must be included within the Health and Safety line item.
- Document proper disposal requirements in **contract language** with responsible party.
- Refer to Lead and Asbestos sections for more information on those topics.

7.14 – Injury Prevention of Occupants and Weatherization Workers

(Measures such as repairing stairs and replacing handrails) Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☐ Other ☐

When necessary to effectively weatherize the home, workers may make minor repairs and installations, as defined by the Grantee; otherwise these measures are not allowed.

What guidance do you provide Subgrantees regarding allowable injury-related repairs (e.g., stairs, handrails, porch deck board)?

- Inspect for dangers that would prevent weatherization.
- A Notice of Potential hazard shall be issued to the occupant.

How do you define "minor" or allowable injury prevention measures, and at what point are repairs considered beyond the scope of weatherization? Quantify "minor" or allowable injury prevention measures.

Injury prevention refers to minor installations needed to let workers safely access work areas, like replacing a missing or unsafe stair tread on the stairs leading to the attic. This would only be done if work was being done in the attic.

Minor repairs needed that are beyond the scope of weatherization must not exceed are defined as under $200 per job. Repairs that exceed this amount are considered beyond the scope of weatherization.

Training

Hazard identification.

7.15 – Lead Based Paint

Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☑ State ☐ Utility ☐ Other ☐

DOE funds are being used.

- Only those costs directly associated with the testing and lead safe practices for surfaces directly disturbed during weatherization activities are allowable.

Safe Work Protocols

Lead Paint

Lead paint removal is not an allowable activity under the Weatherization Assistance Program.

To minimize risks to clients and weatherization personnel:

- Provide clients and workers with Renovate Right Brochure available at www.epa.gov/lead.
- Use lead safe weatherization practices when disturbing lead based paint.
- Staff and contractors shall assume that any paint on windows and doors contains lead, unless it has been verified otherwise.

All local weatherization operator staff, QC Inspectors, contractors, and crews, must be in compliance with:

- All weatherization contractors, crew persons, Energy Auditors and QC Inspectors are to be, at a minimum, in compliance with EPA LRRP Rule Requirements. Most individuals in these roles must be trained and certified in LRRP or Lead Safe Weatherization (LSW). See Training Requirements section for further details.
- All Federal, state, and local regulations
- OSHA rules for worker safety
- All State and local rules for waste disposal

If paint chips/dust results from weatherization work, the area shall be cleaned in accordance with LRRP Practices.

Ingestion or absorption of lead into the blood stream is a serious health hazard causing brain damage over a period of time. This can be a particularly serious problem with small children, who may ingest paint chips or flakes or dust contaminated with lead products. Serious learning disabilities can result from excessive lead levels in the bloodstream. Workers can be contaminated in the same way as children, but are most likely to be exposed by breathing dust created by sanding or planing surfaces that contain lead based paints.

Lead paint is the primary source of lead in a home. Contamination occurs when lead paint is disturbed by sanding, chipping, or flaking.

- LRRP work practices shall be utilized.

If working on a unit with lead paint, always defer to the LRRP rules, regulations and training. In general remember, that as you scrape, drill, cut, open walls, etc., you are creating dust. You can keep dust down by using the right tools and following some simple practices that minimize and control the spread of dust.

- Control the spread of dust per EPA's Renovation, Repair and Painting standards:
  - You must keep the work area closed off from the rest of the home. The work area must be sufficiently isolated and maintained to prevent the escape of dust or debris
  - You must ensure that all personnel, tools, and all other items exiting the work area are free of dust and debris. Don't track dust out of the work area.

- Use work practices that minimize dust:
  - You should mist areas before sanding, scraping, drilling and cutting to keep the dust down (except within 1 foot of live electrical outlets)
  - You should score paint with a utility knife before separating components
  - You should pry and pull apart components instead of pounding and hammering
  - You must keep components that are being disposed of in the work area until they are wrapped securely in heavy plastic sheeting or bagged in heavy duty plastic bags. Once wrapped or bagged, remove them from the work area and store them in a safe area away from the residents
- Crews must follow EPA's Lead; Renovation, Repair and Painting Program (RRP) when working in pre-1978 housing unless testing confirms the work area to be lead free.
- Deferral is required when the extent and condition of lead-based paint in the house would potentially create further H&S hazards.
- Only those costs directly associated with the testing and lead safe practices for surfaces directly disturbed during weatherization activities are allowable.

Testing Protocols

- Testing to determine the presence of lead in paint that will be disturbed by WAP measure installation is allowed with EPA-approved testing methods.
- Testing methods must be economically feasible and justified.
- Job site set up and cleaning verification by a Certified Renovator is required.
- BCAEO's monitors will verify that crews are using lead safe work practices during monitoring.

Client Education

- Issue EPA pamphlet or safe work practices around the home.
- Follow pre-renovation education provisions for LRRP.
- When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.

Training and Certification Requirements

LSW training is administered through the State of Michigan WAP and is optional when a staff does not have a LRRP Certification. LRRP training provided through EPA accredited trainers.

- All employees and contractors working on pre-1978 homes must receive training to install measures in a lead-safe manner in accordance with the SWS and EPA protocols, and installation must be overseen by an EPA Certified Renovator.
- Grantee Monitors and Inspectors must be Certified Renovators.
- **Lead Safe Work and Lead Renovator Repair Painting Training**
  - All employees and contractors working on pre-1978 homes must receive training to install measures in a lead-safe manner in accordance with the SWS and EPA protocols, and installation must be overseen by an EPA Certified Renovator. Crews must follow EPA's Lead; Renovation, Repair and Painting Program (LRRP) when working in pre-1978 housing unless testing confirms the work area to be lead free. Different roles in Weatherization have different requirements for Lead Safe Work (LSW) or LRRP training and certification. All required training/certification must be completed within 180 days of the date they are hired. Requirements are as follows:
    - Energy Auditors and Quality Control Inspectors
      - Individuals in these roles must receive either LSW or LRRP training and must follow EPA rules.
    - Mechanical, Electrical and Plumbing Contractors
      - Individuals in this role must follow EPA rules, but there are no training requirements for individuals beyond those listed generally in this section.
    - Shell Contractors and Crews
      - Individuals in these roles must receive either LSW or LRRP training and must follow EPA rules.

Documentation Requirements

Documentation in the contractor file must include Certified Renovator certification; any training provided on-site; description of specific actions taken; lead testing and assessment documentation; and, photos of site and containment set up. Include the location of photos referenced if not in file. Client files include photos and Lead Safe Form.

7.16 – Mold and Moisture

(Including but not limited to: drainage, gutters, down spouts, extensions, flashing, sump pumps, dehumidifiers, landscape, vapor retarders, moisture barriers, etc.)

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Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑	Alternative Guidance ☐	Results in Deferral ☐

Funding

DOE ☑	LIHEAP ☑	State ☐	Utility ☐	Other ☐

What guidance do you provide Subgrantees for dealing with moisture related issues (e.g., drainage, gutters, down spouts, moisture barriers, dehumidifiers, vapor barrier on bare earth floors) in homes slated for weatherization?

Mold & Moisture Assessment

Molds, mildew and spores are primarily caused by excessive moisture levels in the home. Mold remediation is not an allowable DOE expense. These substances can be a significant contributing factor in a number of health problems. Excessive moisture in a home provides an environment that allows mold and mildew to flourish. Dwellings with serious moisture problems shall not be tightened until measures are taken to mitigate the moisture sources.

Mold and Moisture -- Including but not limited to: drainage, gutters, down spouts, extensions, flashing, sump pumps, dehumidifiers, landscape, leaking roofs, vapor retarders, moisture barriers, etc.

All dwellings shall be checked for previous or existing mold and moisture problems. Audit procedures shall include a mold and moisture assessment, including a mold protocol or checklist. The assessment shall be a visual review that includes these four categories:

- General building envelope
- Outside/Site
- HVAC
- Occupied space

If a vapor barrier cannot be installed in a crawlspace home, the job must be deferred.

Testing

- Visual assessment including exterior drainage.
- Diagnostics such as moisture meters are recommended pre-weatherization and at the final inspection.
- Mold testing is not an allowable cost.

How do you define "minor" or allowable moisture-related measures, and at what point is work considered beyond the scope of weatherization?

- Limited water damage repairs that can be addressed by weatherization workers are allowed when necessary in order to weatherize the home and to ensure the long-term stability and durability of the measures.
- Source control (i.e. correction of moisture and mold creating conditions) is allowed when necessary in order to weatherize the home and to ensure the long-term stability and durability of the measures. Source control is independent of latent damage and related repairs.
- Where severe Mold and Moisture issues cannot be addressed, deferral is required.
- Mold cleanup is not an allowable H&S cost.
- Surface preparation where weatherization measures are being installed (e.g., cleaning mold off window trim in order to apply caulk) must be charged as part of the ECM, not to the H&S budget category.

Minor moisture-related measures are allowable up to $250. Vapor barrier installation is also allowable but not subject to the $250 cap.

Client Education

- Visual inspection and issuance of EPA guidelines/pamphlet for remedy.
- Provide client written notification and disclaimer on mold and moisture awareness.
- Provide information on importance of cleaning and maintaining drainage systems.
- Provide information on proper landscape design and how this impacts site drainage and moisture control.
- When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.

Training

- National curriculum on mold and moisture or equivalent.
- How to recognize drainage issues.

7.17 – Pests

Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☐	Alternative Guidance ☑	Results in Deferral ☑

Funding

DOE ☐	LIHEAP ☐	State ☐	Utility ☐	Other ☐

What guidance do you provide Subgrantees for dealing with pests and pest intrusion prevention in homes slated for weatherization?

- All work will be deferred until all infestation of pests are eliminated from work site because it poses H&S concern for workers.
- Issue a Notice of Potential Hazard to the occupant.

Define Pest Infestation Thresholds, Beyond Which Weatherization Is Deferred

When pests and their byproducts are present and pose a hazard to workers and inspection staff.

Testing Protocols

Assessment of presence and degree of infestation and risk to worker.

Client Education
• A Notice of Potential Hazard may be issued. • Inform client in writing of observed condition and associated risks. • When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.
Training
• OSHA training may be utilized. • How to assess presence and degree of infestation, associated risks, and deferral policy.

7.18 – Radon

Back to First

Concurrence, Alternative, or Deferral		
Concurrence with Guidance ☑	Alternative Guidance ☐	Results in Deferral ☐

Funding				
DOE ☐	LIHEAP ☑	State ☐	Utility ☐	Other ☐

What guidance do you provide Subgrantees around radon?

- Radon mitigation, as defined in the Michigan Weatherization Field Guide, is not an allowable H&S cost.
- Clients must sign an informed consent form prior to receiving weatherization services. This form must be kept in the client file.
- In homes where radon may be present, work scope should include precautionary measures based on EPA Healthy Indoor Environment Protocols for Home Energy Upgrades, to reduce the possibility of making radon issues worse.
- Exposed dirt floors must be covered within the pressure/thermal boundary with 6 mil (or greater) polyethylene sheeting, lapped at least 12” and sealed with appropriate sealant at all seams, walls and penetrations.
- Other precautions may include, but are not limited to, sealing any observed floor and/or foundation penetrations, including open sump pits, isolating the basement from the conditioned space, and ensuring crawl space venting is installed.

Testing Protocols

No testing for Radon will be done.

Client Education

- Informed consent form must be signed by all clients and include:
  - Information from the results of the IAQ Study that there is a small risk of increasing radon levels when building tightness is improved;
  - A list of precautionary measures WAP will install based on EPA Healthy Indoor Environment Protocols;
  - Some of the benefits of Weatherization including energy savings, energy cost savings, improved home comfort, and increased safety; and
  - Confirmation that EPA’s A Citizen’s Guide to Radon was received and radon related risks discussed with the client – this guide must be provided to all WAP clients.

Training and Certification Requirements
• Auditors, assessors and inspectors training on radon includes, what it is and how it occurs, including what factors may make radon worse, and precautionary measures that may be helpful. • Workers must be trained in proper vapor retarder installation. • A zonal map can be located at https://www.epa.gov/sites/production/files/2014-08/documents/michigan.pdf • EPA's "A Citizen's Guide to Radon" can be accessed at https://www.epa.gov/sites/production/files/2016-02/documents/2012_a_citizens_guide_to_radon.pdf
Documentation Requirements
Signed acknowledgement form from client

7.19 – Safety Devices: Smoke and Carbon Monoxide Alarms, Fire Extinguishers

Back to First

Concurrence, Alternative, or Deferral		
Concurrence with Guidance ☑	Alternative Guidance ☐	Results in Deferral ☐

Funding				
DOE ☑	LIHEAP ☐	State ☐	Utility ☐	Other ☐

What is your policy for installation or replacement of the following:

Smoke Alarms:

Smoke detectors are required as a health and safety measure. When battery powered smoke detectors are installed they shall be installed in accordance with the manufacturer's recommendations, following state and local code requirements. New batteries may be installed in existing working smoke detectors. (Alkaline are recommended)

When installing hardwired smoke alarms, it will be listed and labeled in accordance with UL 217 and installed in accordance with the IRC or as required by the authority having jurisdiction.

https://sws.nrel.gov/spec/203011

- Smoke alarms may be installed where alarms are not present or are inoperable.
- New installation of hard-wired devices (smoke detectors) as long as it does not include significant spaces (entrances/entry halls/lobbies, areas for public gathering and circulation, primary rooms). If work occurs in a significant space, work shall not damage historic materials or finishes. New wiring shall be concealed.

Carbon Monoxide Alarms:

Carbon Monoxide (CO) alarms shall be installed in each dwelling unit, regardless of heating type in compliance with NFPA 720 and ASHRAE 62.2. Standard for the installation of CO Detection and Warning Equipment shall be consistent with the requirements of applicable laws, codes, standards, and manufacturer's installation guidelines (reference ANSI/UL 2034-09).

Potentially unsafe CO levels determined during the audit shall be documented and written notice shall be provided to the client/landlord/property owner and documented electronically on the SOM approved field audit. A copy of the notice shall be maintained in the client/job file, Notice of Unsafe Conditions (DHS-4288) is located in the forms section at the end of this manual.

Carbon monoxide alarms shall be installed by the Energy Auditor during the audit in a dwelling under the following circumstances:

- Whenever a local agency must defer work and the dwelling unit contains an unsafe combustion appliance
- A combustion appliance is emitting unsafe levels of CO that cannot be immediately remedied
- A combustion appliance has minimal draft and/or spillage and no CO is being produced
- The dwelling contains a fireplace or wood burning stove that draws combustion air from inside the dwelling.
- CO alarms must be installed where alarms are not present or are inoperable.
- New installation of hard-wired devices (carbon monoxide sensors) as long as it does not include significant spaces (entrances/entry halls/lobbies, areas for public gathering and circulation, primary rooms). If work occurs in a significant space, work shall not damage historic materials or finishes. New wiring shall be concealed.
- When a fuel combustion appliance is present in the dwelling with a garage is attached a carbon monoxide alarm/detector shall be installed in compliance with NFPA 720

https://sws.nrel.gov/spec/203012

For further testing requirements refer to CSPM 614 and the Michigan Weatherization Field Guide.

Fire Extinguishers:
Where solid fuel burning equipment is present, fire extinguishers may be provided as an allowable H&S measure.

Testing Protocols

- All dwellings weatherized shall be tested for CO levels during audits and inspections.
- Tests shall include ambient air checks.
- Levels exceeding 9 parts per million (ppm) shall be documented on the SOM approved audit and corrective action recommended.
- Check existing alarms for operation.
- Verify operation of installed alarms.

Client Education

- A Notice of Potential Hazard or Air Quality Standards is issued detailing remedial action the client should take.
- Carbon monoxide alarms: Client education on appropriate test procedures, maintenance, and the proper action to take when alarm is activated.
- Smoke Alarms: Client education on appropriate test procedures, intervals to replace the batteries shall be documented, and the proper action to take when alarm is activated.
- Provide client with verbal and written information on use of devices installed.

Training

- Where to install alarms.
- Local code compliance.

7.20 – Occupant Health and Safety Concerns and Conditions

Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☐ Alternative Guidance ☑ Results in Deferral ☐

Funding

DOE ☐ LIHEAP ☑ State ☐ Utility ☐ Other ☐

DOE Funds will not be used. USDA, Municipal Health Department and Emergency Funds shall be utilized to address this particular health and safety category. Other local funding may be available and utilized.

What guidance do you provide Subgrantees for soliciting the occupants' health and safety concerns related to components of their homes?

Screen occupants to reveal known or suspected health concerns either as part of initial application for weatherization, during the audit, or both. Only one screening is necessary. This screening is the opportunity for clients to self-report health concerns so that the agency can take these into consideration in order to safely address the client's specific Health & Safety concerns.

Screening the client simply means letting them know that the work may cause dust, and asking them if they or anyone in the house has conditions that might be irritated by the work. Then working with them to make sure weatherization does not make it worse.

Due to the COVID-19 pandemic, all subgrantees have created field protocols, which include their protocols for screening clients and workers, and expectations around field practices for safety, including PPE and social distancing.

What guidance do you provide Subgrantees for determining whether occupants suffer from health conditions that may be negatively affected by the act of weatherizing their home?

Screen occupants to reveal known or suspected health concerns either as part of initial application for weatherization, during the audit, or both. Only one screening is necessary.

Screening the client simply means letting them know that the work may cause dust, and asking them if they or anyone in the house has conditions that might be irritated by the work. Then working with them to make sure weatherization does not make it worse.

What guidance do you provide Subgrantees for dealing with potential health concerns when they are identified?

- When a person's health may be at risk and/or WAP work activities could constitute an H&S hazard, the occupant will be required to take appropriate action based on severity of risk.
- Failure or the inability to take appropriate actions must result in deferral.
- A Notice of Potential Hazard may be issued detailing specific remedy to observed H&S subject.

Client Education

- Inform client in writing of any known risks.
- Provide client with a point of contact information in writing so client can be informed of any issues.
- When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence. A Notice of Potential Hazard may be issued detailing specific remedy to observed H&S subject.

Documentation Form(s) have been developed and comply with guidance? Yes ☑ No ☐

CSPM 614 Attachment Hazard Identification and Notification Form
552 Documentation signed by client.

7.21 – Ventilation and Indoor Air Quality

Back to First

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☐ Other ☐

DOE funds are being used.

Implementation of ASHRAE 62.2 version 2016 is required. Client refusal of mechanical ventilation, when evaluated and called for pursuant to the Standard, must result in deferral.

Identify the Most Recent Version of ASHRAE 62.2 Implemented (optional: identify Addenda used)

All dwellings weatherized shall be evaluated for implementation of program required ASHRAE 62.2 ventilation standard requirements. Compliance requirements (e.g. testing, calculations, fan sizing, fan Sone rating, Whole-home fan flow verification, continuous vs. intermittent fan specifications, file documentation, etc.) shall be performed by the auditor and then verified by the QCI at the final inspection. SOM IWC venting calculations shall be used to determine mechanical sizing requirements. When calculations indicate 15 CFM or less, goals will be considered met and additional mechanical ventilation shall not be added. Method of compliance shall be documented on the 62.2 tab in FACSPro.

Audit procedures shall include a visual review and discussion with the client relative to potential indoor air quality (IAQ) problems, such as:

- Mold
- Presence of moisture
- Combustion by-products/carbon monoxide
- Unstable lead-based paint
- Friable asbestos

If IAQ problems are found, the client shall be advised and written notification shall be provided to the client, landlord, owner, and/or his/her agent. A copy of the written notice shall be maintained in the client file. Notice of Indoor Air Quality (DHS-4289) is located in the forms section in the CSPM in FACSPro or on the www.michigan.gov/bcaeo.

Where possible, "incidental repairs" or "health and safety" measures may be completed to correct IAQ problems in order to allow weatherization work to take place. Client education shall be provided where appropriate.

In addition to asbestos, carbon monoxide, and lead based paint which are addressed in later in the Health and Safety Plan, other IAQ concerns may include:

- Volatile Organic Compounds (VOC): Cleaning fluids, paints, solvents, herbicides, pesticides, and formaldehyde. Known to be potential irritants to lungs, eyes, and skin. Some VOCs may be carcinogenic. VOCs are frequently stored under sinks, in closets, and basements. Formaldehyde may be found in a variety of building components including plywood, carpeting, and particle boards. Recommend moving potentially dangerous material outside of living space into sheds or garages. Basements are not recommended for storage, particularly if leaky ductwork exists.
- Fiberglass: Fibrous glass insulation material. Known to be an irritant to lungs, eyes and skin. Most preliminary research indicates no long-term negative health effects resulting from exposure to high levels of fiberglass, but some studies have indicated that some types of finely chopped blown-in fiberglass may be a potential carcinogen. Exposed fiberglass shall not be left in occupied areas of dwellings. Workers are advised to wear properly rated respirators and protective clothing when working with or around fiberglass.
- Raw Sewage/Methane Gas: Workers must take precautions to avoid direct contact with raw sewage or other unsanitary conditions. Clients must be informed of existing conditions and referred to available resources for assistance.

Testing and Final Verification Protocols

- Implementation of program required ASHRAE 62.2 ventilation standard evaluation to determine required ventilation.
- Measure fan flow of existing fans and of installed equipment to verify performance.
- When the ASHRAE normative Appendix A is employed and an existing fan is being replaced or upgraded to meet to whole-house ventilation requirements, take actions to prevent zonal pressure differences greater than 3 Pascals across the closed door, if one exists.
- When the mechanical ventilation standards cannot be met, alternative ventilation sources will be implemented.
- The unit will be deferred when SHPO or construction barriers prohibit ventilation installation.

Client Education

- Energy Auditors and QC Inspectors will discuss ventilation requirements and usage during on-site visits.
- Provide client with information on function, use, and maintenance (including location of service switch and cleaning instructions) of ventilation system and components.
- Provide client with equipment manuals for installed equipment.
- Include disclaimer that ASHRAE 62.2 does not account for high polluting sources or guarantee indoor air quality.
- Client education includes location of service switch and cleaning instructions.

Training

- Training to implement ASHRAE 62.2 ventilation standards, including proper sizing, evaluation of existing and new systems.
- H&S Training

7.22 – Window and Door Replacement, Window Guards

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Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☑ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☐ Other ☐

Window and door repair and replacement must be charged in accordance with WPN 19-5. Only window and door repairs may be charged as H&S and must be done so in accordance with the policy below.

What guidance do you provide to Subgrantees regarding window and door replacement and window guards?

Window or door repairs are allowable as a H&S measure, if:

- It resolves a bulk water intrusion issue that is the cause of visible biological growth, and;

The H&S Window or Door repair is well documented with written explanation and photos of the biological growth in the client file.

Windor or door replacements are not allowable as a H&S measure.

Testing Protocols

Not applicable

Client Education

- Provide written information on lead risks wherever issues are identified.
- Energy Auditors and QC Inspectors will discuss window safety glass/guards requirements and usage during on-site visits.

Training

- Training is conducted during QC Inspector/Energy Auditor classes.
- OSHA instruction may be provided.
- Awareness of guidance.

7.23 – Worker Safety (OSHA, etc.)

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Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☐ Other ☐

DOE Support funds can be used to cover these training costs. Training costs are a support cost and will be covered within T/TA budget.

How do you verify safe work practices? What is your policy for in-progress monitoring?

- Workers must follow OSHA standards where required and take precautions to ensure the H&S of themselves and other workers.
- All agency staff and contractors must maintain compliance with the current OSHA Hazard Communication Standard, including on-site organized Safety Data Sheets (SDS) (formerly called MSDS).
- Monitoring
  - The BCAEO Weatherization Monitors verify that agency, crews and contractors follow safe work practices.

Training and Certification Requirements

- Use and importance of PPE.
- Safety training appropriate for job requirements. OSHA 10 hour training meets this requirement.
- Ongoing training as required in Hazard Communication Program.

7.24 – Clothes Dryer Venting (Un-vented clothes dryers shall be vented outside)

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Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☐ Other ☐

Remediation Protocols

Weatherization work measures (except mechanical work orders to resolve the above) shall not be installed until unsafe appliances have been repaired, replaced, or removed.

Clothes dryers shall be vented directly to the exterior. Clothes dryers shall be vented using aluminum or galvanized sheet metal or approved aluminum flex duct (UL labeled) and in accordance with SOM Construction Code. Outdoor dryer vent caps shall have a backdraft damper that closes when the dryer is not being used.
Testing Protocols
https://sws.nrel.gov/spec/660051 https://sws.nrel.gov/spec/660053
Client Education
Client Education will include proper maintenance of the dryer vent and lint tray.
Training
Training on how to properly vent a clothes dryer.