Weatherization Grantee Health and Safety (H&S) Plan

1.0 – General Information

Additional information that does not fit neatly in one of the other sections of this document.

Acronyms/Definitions:

ECM – energy conservation measure IRM – incidental repair measure HSM – health and safety measure
Cost Justified – measure that achieves a savings-to-investment ratio of 1.0 or greater when correctly modeled using the Weatherization Assistant software
Primary System (or system of units) – system that is most relied upon to provide heating/cooling through the season.
Secondary system/unit – employed only in extreme weather

Minnesota has followed the "House as a System" approach to weatherization since 1990. Both Commerce and Service Provider staff understand that health and safety concerns are important because, when addressed, the lives of low-income persons served by the program are improved, especially those that are particularly vulnerable such as the elderly, persons with disabilities and children.

In addition to assessment of the dwelling, Service Providers assess client health issues in the Client Survey, which includes health and safety questions. This assessment allows Service Providers to capture pre-existing occupant health conditions.

Health and safety issues are a required part of every dwelling audit. Service Providers conduct an on-site audit for each dwelling using the WAPLink software to document the audit. WAPLink (using the WA API) includes a detailed assessment of potential hazards. The assessment sets a framework for individual weatherization work plans. In some instances, the hazard must be remedied prior to the start of weatherization. In other instances, the hazard is addressed as part of weatherizing the dwelling.

Service Providers must defer a dwelling when the health and safety problems are beyond the scope of weatherization activities. Service Providers evaluate each dwelling individually and make decisions accordingly. Commerce staff regularly provide assistance to Service Providers in problem-solving specific situations. All health and safety problems and their resolutions are documented in individual household files.

Leveraging

Assessments of indoor air quality problems are conducted at the time of the energy audit. Because conditions in each dwelling vary greatly, potential remedies are developed on a case-by-case basis. Possibilities might include ventilation or allowable repairs within the scope of weatherization, client education, and/or referrals to other potential fund sources for work that is outside the scope of the Weatherization Program.

Health and safety issues are addressed at a number of levels throughout Minnesota's Weatherization Assistance Program (WAP). Minnesota's WAP Policy Manual is incorporated by reference into all grant contracts with Service Providers. The policy manual is updated regularly so it is compliant with current USDOE rules and guidance and the Minnesota State Plan.

Commerce conducts a policy training each year to inform all Service Providers of policy changes for the upcoming program year. In addition, any regulatory/policy updates or new test standards are delivered to Service Providers via email.

Commerce allows Service Providers to budget health and safety costs outside the overall per unit average and monitors statewide averages regularly. Minnesota strives to keep health and safety costs reasonable, recognizing weatherization's primary goal of energy conservation.

Pollution Occurrence Insurance: Commerce strongly recommends Service Providers carry appropriate Pollution Occurrence Insurance.

Client/building owner notification: Commerce requires that clients and rental property owners/landlords be notified in writing in all instances where a health and safety issue is found. This includes but is not limited to the issues listed in the remainder of this Plan. Minnesota developed a standard *Notice of a Safety Problem* form that must be signed by the Service Provider, the client and/or landlord and must be included in the client file. Documentation given to the client and/or landlord must include client name and address, dates of the audit/assessment and when the client was informed of a potential health and safety issue, a clear description of the problem, a statement indicating if or when and under what conditions weatherization could continue, the responsibility of all parties involved, and the client(s) signature(s) indicating that they understand and have been informed of their rights and options.

Referrals: In cases where the scope or cost of needed repairs is beyond the range of the weatherization program, Service Providers refer clients to housing rehabilitation programs and other funding sources wherever possible.

2.0 – BUDGETING

Grantees are encouraged to budget H&S costs as a separate category and, thereby, exclude such costs from the Average Cost Per Unit (ACPU) cost limitation. This separate category also allows these costs to be isolated from energy efficiency costs in program evaluations. H&S costs that 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 Grantee's Department of Energy (DOE)-approved energy audit tool.

Select which option used below.

Separate H&S Budget ☑	Contained in Program Operations ☐

3.0 – H&S EXPENDITURE LIMITS

Pursuant to 10 CFR 440.16(h), Grantees must establish H&S expenditure limits for their Program and provide justification for those limits by explaining the basis and related historical H&S expenditures. DOE acknowledges that it may be necessary for Grantees to deviate from historical expenditures when certain circumstances arise (e.g. funding source changes).

10 CFR 440.16(h)(2) dictates that these limits must be expressed as a percentage of the ACPU. To calculate this percentage use the following formula:

$$Total\ Average\ H\&S\ Cost\ per\ Unit = \frac{H\&S\ budget\ amount}{Program\ Operations\ budget\ amount}$$

For example, if the ACPU is $5,000 and a Grantee's Program expends an average of $750 per dwelling on energy-related H&S measures, the Total Average H&S Cost per Unit would equal 15 percent. DOE acknowledges that this percentage may vary significantly between Grantees due to different geographical areas and depending upon the availability of other funding sources, resource availability, etc. Low percentages should include a statement of what other funding supports H&S costs, while larger percentages will require greater justification and relevant historical support.

15 percent is not a maximum limit on H&S expenditures. DOE will conduct a secondary level of review on H&S Plans with a Grantee request of more than 15 percent of Program Operations used for H&S purposes, . ***DOE strongly encourages using the table below***

in developing justification for the requested H&S budget amount. *In accordance with 10 CFR 440.18(d)(15), these funds are to be expended by the Program in direct weatherization activities, "of which is necessary before, or because of, installation of weatherization materials." This same section of the regulation excludes the H&S costs from the ACPU limitation if H&S costs are budgeted separately.*

DOE recommends reviewing recent budget requests and compare those to actual H&S 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 annual plan.

H&S expenditure limits and justification explaining the basis for setting the limits.

The analysis was conducted using the last completed program year (PY19). Commerce is requesting a health and safety average of $1,457.

Minnesota also utilizes LIHEAP funding to pay for health and safety measures. Service Providers are instructed to manage Health and Safety costs between DOE funds and LIHEAP to maintain an appropriate Average H&S Cost Per Unit.

Utilizing the spreadsheet embedded below, provide a full list of H&S measures using historical data from your program, including average cost, and frequency rate. If installing more than a single instance of one measure in a unit (e.g. multiple CO alarms), Grantees may aggregate costs so that frequency does not exceed 100%, or enter a justification into the measure column, which explains why that measure has a frequency rate of over 100%. The spreadsheet will auto calculate your expected Total Average H&S Cost per Unit.

Instructions: Double-click icon directly below to open, view and edit Measure Matrix Spreadsheet. Complete the spreadsheet by entering the required information. To save, close the spreadsheet and it will save to this document.

Measure Matrix Final.xlsx

4.0 – Incidental Repair Measures

Any measures that could potentially be identified as H&S but the Grantee chooses to instead identify and treat those measures as incidental repair measures (IRMs), must be implemented consistently throughout the Grantee's weatherization program. The measure must fit the regulatory definition of an IRM and be cost justified along with the associated energy conservation measure and/or package of measures. 10 CFR 440.3 defines Incidental Repairs as, "those repairs necessary for the effective performance or preservation of weatherization materials."

H&S measures identified and treated as IRMs within your Program.

Allowable measures are detailed here in the Allowable Measures Chart found in Appendix C of our MN WAP Policy Manual. This document provides guidance regarding categorizing measures and indicates when designation as incidental repairs is appropriate.

5.0 – Occupant Pre-Existing or Potential Health Conditions and Hazard Identification and Notification Form(s)

Grantees must include policies/procedures for informing clients of the aspects of weatherization that may put a client with pre-existing health conditions at risk during installation of measures. This screening may occur as part of the initial application for weatherization and/or during the energy audit. Procedures must include what steps will be taken and/or available to the client to

ensure that weatherization work will not aggravate pre-existing health conditions. Additionally H&S assessments are required to identify hazards in the home. For those hazards identified, appropriate testing is required when applicable. The client/landlord/property manager must be informed in writing of all testing results, including identification of a hazards revealed by the testing that will lead to deferral/referral.

Grantees are required to develop documentation forms that include at a minimum:

- *Occupant Pre-existing or Potential Health Conditions;*
  - *Screen occupant(s) to self-report known or suspected health concerns either as part of initial application for weatherization, during the energy audit, or other parts of the weatherization process as specified;*
  - *Inform client in writing of any known risks; and*
  - *Provide client with Subgrantee point of contact information in writing so client can inform of any issues.*
- *Hazard Identification Notification Form*
  - *The occupant(s) (and Landlord's, if applicable) name and address;*
  - *Date(s) of the energy audit/assessment and when the occupant(s) (and Landlord, if applicable) 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 occupant(s) (and Landlord's, if applicable) signature(s) indicating that they understand and have been informed of their rights and options.*

Procedure for soliciting occupants' health and safety concerns related to components of their homes
Weatherization Staff use the Client Participation form to prepare clients for Weatherization Services specifically in relation to dust.
Procedure for determining whether occupants suffer from health conditions which may be negatively impacted by the act of weatherizing their dwelling
In PY21, the statement about client dust clean-up will be amended to include language verifying that the client had an opportunity to discuss remediation steps as it relates to aggravation of pre-existing health conditions in the household.
Procedure for addressing potential health concerns including pre-existing health conditions when they are identified
Weatherization Staff will be trained in remediation strategies including options for avoiding blowing insulation in the home or departure of the client from the home.
Documentation Form(s) have been included for review?
Yes ☐ No ☑
Location where forms have been uploaded/submitted
Separate attachment to SF424 ☐ Separate attachment to H&S Plan ☐

6.0 – HEALTH AND SAFETY CATEGORIES

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

- *Explain whether you concur with existing guidance from Weatherization Program Notice (WPN) 17-7 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 require comprehensive explanations as to how it meets the intent of DOE guidance.*
- *Where an action/allowability or testing is "required" or "not allowed" through WPN 17-7, Grantees must concur, or choose to defer all units where the specific category is encountered.*
- *Any activities that are marked as deferral/referrals must contain the H&S reasons specified within the Master File Section V.1.2 Box 5 Deferral/Referral.*
- *Unless an alternate funding source(s) is declared, utilize DOE funds to address the particular category.*
- *Describe the explicit methods to address the specific category.*
- *Describe in detail what testing protocols (if any) used to assess the particular category.*
- *Define and quantify minimum thresholds that determine minor, major, and limited definitions and the criteria used to make a determination on a case-by-case basis.*
- *Define "at-risk" occupant(s) and identify minimum documentation requirements for them.*
- *Client Education activities specific to H&S reasons is required within the Master File Section V.8.4 Training and Technical Assistance of the annual application.*
- *Training activities specific to H&S reasons is required within the Master File Section V.8.4 Training and Technical Assistance of the annual application.*

6.1 – Air Conditioning and Heating Systems		
Concurrence, Alternative or Deferral		
Concurrence with DOE Guidance ☑	Alternative Guidance ☐	Results in Deferral/Referral ☐
Air Conditioning Unallowable with DOE Funds ☐	Heating Unallowable with DOE Funds ☐	
Other Funding Source Addresses H&S Issue ☑ LIHEAP, State		
Procedure for unsafe or non-functioning <u>primary</u> heating/cooling systems		

Heating Systems:

Primary heating systems (space and water heating plants) are evaluated at the energy audit following current testing protocols, and results are recorded in the client file. Any unsafe or non-functional system is corrected (repaired, replaced, or rendered inoperable) before additional work is called for. If an unsafe primary system cannot be corrected, the dwelling must be deferred. All other heating system work must be completed prior to or in conjunction with building shell work following all testing protocols.

All primary heating systems are first modeled in the WAPLinksoftware (using WA API) for replacement as an ECM. If the replacement measure is not cost justified, a clean & tune measure is evaluated. In the case where the replacement/clean & tune measure is either not cost justified or does not correct the unsafe condition, health and safety funds are used to correct the unsafe situation.

Heating plant replacements require a Manual J calculation based on estimated post weatherization housing characteristics.

In cases where unsafe conditions such as back drafting or high in-flue or ambient carbon monoxide levels are identified by a crew or contractor during the course of weatherization, work that will contribute to the unsafe condition will stop immediately and the WAP Service Provider that issued the work will be contacted and informed of the situation. Together the Service Provider and crew/contractor will take actions to ensure that the dwelling is left in a safe condition.

Air Conditioning:

Minnesota includes Air Conditioning systems in its energy modeling.

Minnesota does not repair or replace air conditioners as an ECM, except in the case of multifamily buildings. Minnesota does repair or replace air conditioners as a HSM in any of the following situations:

- medical necessity
- leaking component causes a mold hazard
- leaking component could drip onto a heat exchanger of a heating plant

Minnesota does allow repairs to air conditioning components as an IRM when needed to protect heating plant components from water damage.

Procedure for unsafe or non-functioning <u>secondary</u> heating systems, including unvented secondary space heaters

Heating Systems:

Secondary heating systems (space and water heating plants) are evaluated at the energy audit following current testing protocols and results are recorded in the client file. Any unsafe system is corrected (repaired, removed, or rendered inoperable) before additional work is called for. If an unsafe secondary system cannot be corrected the dwelling must be deferred. Replacement of secondary heating systems is not allowed.

Definition of and documentation required for "at-risk" occupants

The client must provide a signed letter from a medical doctor that justifies the medical need for air conditioning. Medical conditions requiring air conditioning could include but are not limited to asthma, <u>emphysema or heart disease.</u>

Testing protocols

Required tests are listed in MN WAP Policy Manual 4.5.3 and Appendix D.

For combustion equipment, a visual inspection of the chimney and flue is conducted. For solid fuel appliances, a visual inspection for soot on building assemblies near the unit or flue is conducted.

6.2 – Asbestos (Confirmed and/or Presumed Asbestos Containing Material)

Concurrence, Alternative or Deferral

Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐

Unallowable Measure with DOE Funding ☐ Other Funding Source Addresses H&S Issue ☑ LIHEAP

Asbestos on Heating, Ventilation and Air Conditioning (HVAC) systems, distribution, venting and other small surfaces that will be disturbed through the course of weatherization work policy

Space heating systems in single or multi-family dwellings may have components that contain asbestos such as duct and boiler pipe wrap or parts of the heating plant itself. Testing to determine if a material is an ACM is an allowable health and safety expense as is the encapsulation or removal of an ACM under the following conditions:

- At any point during the WAP process, if the ACM is friable, it must be encapsulated or removed prior to the resumption of work or blower door testing by a Minnesota Department of Health certified professional, in accordance with the Asbestos Hazard Emergency Response Act (AHERA).
- If the ACM is intact (not friable) but will be disturbed as part of the WAP work (i.e. duct sealing or heating plant replacement) it must be encapsulated or removed by a Minnesota Department of Health certified professional in accordance with the Asbestos Hazard Emergency Response Act (AHERA).

Any additional asbestos removal may not proceed without Commerce approval.

In the cases above, the clients are provided with asbestos safety information and are instructed not to disturb the suspected asbestos containing material.

Asbestos in attics, walls, floors roofs and foundations that will be disturbed through the course of weatherization work policy

Service Provider and contractors will take reasonable and necessary precautions to prevent asbestos contamination in the home. The general abatement of asbestos siding or replacement with new siding is not an allowable HSM. All WAP workers that are removing or reinstalling asbestos siding will follow all working safety protocols as detailed in the SWS.

1-4 Unit dwelling: Asbestos siding, commonly called slate or Transite siding, is assumed to be an ACM unless testing determines otherwise. The presence of slate siding that is in good condition does not prevent the installation of dense packed insulation. To insulate walls in dwellings where asbestos-containing siding is present, the siding must be removed in a manner that allows the siding to remain as intact as possible.
Drilling asbestos-containing siding is not allowed. WAP installers are allowed to remove asbestos-containing siding as long as asbestos-safe work practices are performed when doing so. The cost of removal and reinstallation of slate siding can be included in the associate ECM.

After the walls have been insulated, the siding must be reinstalled in a manner that allows the siding to remain as intact as possible. Keeping asbestos-containing siding intact greatly reduces a health risk to workers or clients. Chipped, cracked or brittle asbestos-containing siding may require that walls be insulated from the interior of the dwelling.

5+ Unit dwelling: Dwellings with five or more units fall under EPA asbestos regulations, which have more stringent requirements governing removal. EPA asbestos regulations apply to structures or dwellings used for, or once used for, commercial purposes. Removal of siding from these structures may be allowed once the applicable standards are determined and applied. If removal of asbestos-containing siding is not
necessary, other weatherization measures may be applied to these structures.

Vermiculite that will be disturbed through the course of weatherization work policy

Vermiculite insulation in attics is assumed to be contaminated with asbestos fibers. The Asbestos Containing

Material (ACM) test that is utilized for contiguous materials such as heating chamber liners and pipe wrap is not designed to work with a material that is contaminated by friable asbestos, as is the case with vermiculite. Therefore, Commerce does not require Service Providers to test vermiculite.

When vermiculite is present within a home Service Providers may choose from the following courses of actions:

- Defer the home.
- Utilize non-DOE funds as available to hire a contractor certified by the Minnesota Department of Health (MDH) to remove the vermiculite from the home. The contractor must obtain a permit from MDH and all work done in accordance with MDH asbestos removal protocols. As the MDH only regulates asbestos removal that has tested positive according to the ACM test mentioned above, Commerce requires that all abatement of vermiculite being conducted with non-DOEfunds be done so, assuming the vermiculite is positive for asbestos according to the ACM test.

Addition notes on vermiculite:

- The cost for removal of vermiculite insulation is not allowed using DOE funds.
- When deferral is necessary due to the presence of vermiculite, and the homeowner has the vermiculite removed, the homeowner must provide documentation that a MDH certified professional performed the remediation before weatherization work continues.
- All WAP workers operating in areas with vermiculite will follow all safety protocols as detailed in the SWS. The cost of removal is not allowed using DOE funds.
- DOE funds may be used for testing by a MDH certified professional.
- Once asbestos is properly removed, a previously deferred home can be weatherized.

Blower door testing policy when asbestos/vermiculite is present
Positive pressure blower door testing will be used when vermiculite insulation is present. When a material within the pressure boundary of the dwelling (other than vermiculite) is suspected of being an ACM and is friable, blower door testing is not allowed until the friable material is either confirmed to be a non ACM or it has been encapsulated or removed in accordance with all applicable rules.
Testing protocols
A visual inspection of exterior wall surface and subsurface, floors, walls, and ceiling for suspected ACM is conducted during the energy audit and again prior to drilling or cutting. In dwellings, which contain vermiculite insulation, all vermiculite insulation is assumed to contain asbestos. Weatherization of a dwelling containing vermiculite may only proceed if an MDH certified contractor removes the vermiculite and the work is done assuming the material is an Asbestos Containing Material.
Documentation requirements
Safety Assessment Form, MDH Certificate, Photographs

6.3 – Biologicals and Unsanitary Conditions

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

Concurrence, Alternative or Deferral/Referral		
Concurrence with DOE Guidance ☑	Alternative Guidance ☐	Results in Deferral/Referral ☐
Unallowable Measure with DOE Funding ☐	Other Funding Source Addresses H&S Issue ☑ LIHEAP	
Biological and unsanitary conditions in dwellings policy		

Service Providers are continually alert to potential and actual problems with biological contaminants such as

mold, moisture, and rotting wood. Each energy audit contains a sensory assessment of these issues with photos and other documentation such as moisture meter readings, as needed. Auditors and inspectors are trained to identify mold and moisture problems. The presence of large amounts of mold or mildew are grounds for deferral. Service Providers are encouraged to contact Commerce in situations where mold is present in more than isolated areas or where a moisture source is not apparent. Work may proceed in cases where there is a small amount of mold or mildew where the source can be determined and, in the judgement of the service provider staff, can be addressed through a combination of controlling the moisture source and the addition of ventilation (ASHRAE 62.2-2016). Testing for mold, mildew or other biological contaminants or the cleaning of mold are not allowed USDOE expenses. Instructions on general cleaning of small amounts of mold can be provided to the homeowner.

Remediation of conditions that may lead to or promote biological concerns and unsanitary conditions is allowed as an HSM or IRM within Commerce prescribed requirements noted on the most current version of the Allowable Measures Chart and cost averages or limits.

Remediation of odors, viruses or bacteria problems is beyond the scope of weatherization and is not allowed. If a known agent in a dwelling may create a serious risk to occupants or weatherization workers, then deferral may be necessary.

In addition, weatherization installers and contractors are also alert to the possibility that biological contaminant issues, not evident at the time of the energy audit, could arise in the course of installing weatherization materials. If post-audit problems are discovered, crews and contractors are required to notify Service Provider staff to determine if weatherization work can continue.

Basements and crawlspaces can be a source of potential biological contaminants. Auditors are trained to identify and evaluate how best to address each situation and determine allowable measures to address situations or recommend deferral for cases outside the scope of the program.

- Crawlspaces that are physically connected to a building but not within the pressure boundary as determined by pressure diagnostics are not part of the house as a system. Examples include:
  - Foundation under a small entryway
  - Cantilevered floor with vented skirting (site built or mobile home).

- Accessible basements and crawlspaces within the pressure boundary shall have all exposed soil and sump systems covered in accordance with the SWS. The home will have ventilation installed to meet the ASHRAE 62.2 standard. Auditors will evaluate any grading or drainage issues that may cause bulk moisture to enter the home and call for mitigation within allowed measures and cost limits on the allowable measures chart.

Testing protocols

Sensory inspection as part of the energy audit, moisture meter testing as needed.

6.4 – Building Structure and Roofing (e.g., roofing, wall, foundation)

Concurrence, Alternative or Deferral/Referral

Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐

Unallowable Measure with DOE Funding ☐ Other Funding Source Addresses H&S Issue ☑ LIHEAP

Structural issues in dwellings policy

As part of the energy audit, a visual assessment of any roofing and/or structural problems along with photos and other documentation is needed. Repairs are allowed in order to protect the safety of clients and installers both during and after the weatherization process. Repairs must be allowable Incidental Repairs as defined by WPN 19-5 and be within the cost limitations as defined by the current DOE state plan.

Dwellings in need of rehabilitation beyond the scope and cost limits of weatherization are referred to other programs and funding sources. Weatherization activities are either deferred until rehabilitation activities are complete or, in some instances, are completed simultaneously with rehabilitation activities.

Define and quantify minor or allowable structure and roofing issues. At what point are these considered beyond the scope of weatherization?

Repairs are beyond the scope of weatherization if they involve:

- More than 100 square feet of missing sheetrock.
- Roofing or structural repairs that exceed $400 in material and labor to correct.

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

Not applicable.

6.5 – Code Compliance

Concurrence, Alternative or Deferral/Referral

Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐

Unallowable Measure with DOE Funding ☑ Other Funding Source Addresses H&S Issue ☑ LIHEAP, State

Code compliance issues in dwellings policy

All weatherization work in Minnesota is required to be completed to the standard contained in the applicable code. This applies in places where codes are actively enforced and as a work standard where code enforcement is lacking. Service Provider staff and contractors are expected to be aware of health and safety issues associated with building codes. Correction of pre-existing code compliance issues is not an allowable expense other than where weatherization measures are being conducted. In these situations, the specific code triggering the work must be documented in the client file. State codes must be followed when installing WAP measures.

6.6 – Combustion Gases

Concurrence, Alternative or Deferral/Referral

Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐

Unallowable Measure with DOE Funding ☐ Other Funding Source Addresses H&S Issue ☑ LIHEAP, State

Combustion gas issues discovered during testing, including those that require an immediate response policy

In cases where unsafe conditions such as back drafting or high in flue or ambient carbon monoxide levels are identified by a crew or contractor during the course of weatherization, work that will contribute to the unsafe condition will stop immediately and the Service Provider that issued the work will be contacted and informed of the situation. Together the Service Provider and crew/contractor will take actions to ensure that the dwelling is left in safe condition.

Testing protocols

Testing of combustion appliances, including heating plants, water heaters, ovens (excluding burners, visual inspection only), and space heaters, is required during the energy audit. Acceptable test procedures are included in the current Minnesota Field Guide, the Minnesota Policy Manual, and supplemental documents that can be found on the Department of Commerce website. The policy manual, field guide, and supplements provide standards that must be met before weatherization can proceed.

The Minnesota Policy Manual requires that naturally-drafting appliances are tested for spillage under worse case Combustion Appliance Zone (CAZ) conditions and are verified to be operating safely before and after any weatherization activities that change the pressure balance in the dwelling, such as: air sealing, increasing exhaust ventilation, duct sealing, insulating, etc. Mechanical work must be completed before or in conjunction with air sealing/insulation work. In extreme cases, a family may be asked to leave the dwelling until a problem is remedied. USDOE funds cannot cover costs for temporary relocation in these instances.

Minnesota also requires the measurement and recording of the pressure in the CAZ under worst-case conditions. This information is collected as part of the worst-case CAZ spillage test. The worst case CAZ pressure is compared to the CAZ limit defined in the SWS for each appliance. Measured CAZ pressures that exceed the CAZ limit may, depending on the situation, require action to correct. Minnesota has developed a detailed procedural document with the help of local building science experts to help guide field staff through the decision making process around health and safety remediation of CAZ and spillage issues.

As part of the worst case CAZ test the effect of unsealed return ducts is measured. In cases where return ducts inside the thermal boundary on single-family homes causes a negative pressure, action will be taken to reduce the negative pressure. This is typically done through duct sealing or relief venting between the CAZ and the rest of the house.

Duct sealing within the thermal boundary will be to remediate depressurization concerns.

In addition, an inspection of the venting for all combustion appliances is conducted. All combustion appliances designed to be vented must be properly vented to the outside. When testing indicates an issue with the venting, it will be corrected in accordance with the SWS. If unsafe conditions, whose remediation is necessary to perform weatherization, cannot be remedied by repair or tuning, replacement is an allowable H&S measure. In cases where both repair and replacement is an option, a cost comparison of the options will be included in the client file.

When all weatherization activities are completed, testing is repeated at final inspection. Tests performed at the audit and the final inspection include: carbon monoxide in the flue, worst case CAZ spillage, CAZ pressure, and fuel leaks. Every dwelling must pass a worst case CAZ spillage test during the energy audit, before the installers begin work, daily while completing work, once installers complete work, and again at final inspection.

6.7 – Electrical		
Concurrence, Alternative or Deferral/Referral		
Concurrence with DOE Guidance ☑	Alternative Guidance ☐	Results in Deferral/Referral ☐
Unallowable Measure with DOE Funding ☐	Other Funding Source Addresses H&S Issue ☑ LIHEAP	
Electrical hazards, including knob & tube wiring, in dwellings policy		

Electrical – Other Than Knob and Tube: Weatherization audits in Minnesota assess and document electrical hazards, especially as they pertain to weatherization activities. Both the policy manual and the field guide contain information on how to identify and address electrical issues. Wires are inspected to ensure that they are not bare or frayed. Service boxes are inspected to ensure that they have secure covers.

Correcting general electrical wiring problems is generally not an allowable weatherization measure. However, instances where electrical issues are directly related to the weatherization process, health and safety funds may be used for repairs. If it is determined that a hazardous situation exists, the problem is corrected before weatherization work commences. If a hazardous situation is discovered during weatherization work, all work must cease until the hazardous situation is corrected.

If repairs are beyond the scope of the weatherization program to address, Service Providers refer clients to rehabilitation programs and other fund sources where possible. A licensed electrical contractor must perform any electrical work needed to correct a problem.

Electrical – Knob and Tube: Minnesota uses health and safety dollars to address knob and tube wiring when it has a direct impact on weatherization activities. Any insulation activities completed where knob and tube wiring is present must conform to applicable codes. Knob and tube wiring repair/replacement in attics and walls is completed before insulation activities begin. In consultation with the Minnesota Board of Electricity, the following protocol has been developed:

• Service Providers must verify if the knob and tube system is in service before proceeding with any additional measures.

• Service Providers must inspect the wiring that will be covered to determine the type(s) of wiring present, the circuit protection, wiring condition, and to identify any other hazards.

• Service Providers must obtain permission from the homeowner or authorized agent to install proper over-current protection. If permission is not given, insulation cannot be installed.

• Install insulation only as follows:

o In those areas where knob and tube wiring is active, circuits must be protected by properly sized over-current protection;

o Insulation is to be placed up to a depth of two inches from the underside of the knob and tube wiring, provided that an open air space is permanently maintained above such wires; OR

o Barriers must be installed in such a manner around knob and tube wiring to ensure that the insulation shall not directly cover the wiring, and an adequate air space of at least one inch on all sides is maintained.

o Document whether sidewall cavities are insulated. Sidewalls containing live knob and

Define and quantify minor electrical issues. At what point are these considered beyond the scope of weatherization?

Service providers may make minor repairs to correct hazardous situations for items up to $800 in labor and materials for non-knob and tube electrical work without Commerce approval. In cases where the non-knob and tube electrical hazard is greater than $800, Commerce approval is required. Commerce will consider these situations on a case-by-case basis. Factors considered are total cost, total energy savings of the WAP activities, location of the hazard, status of WAP activities, etc.

Knob and tube replacement in areas where insulation is being installed is allowable. The cost is first considered an IRM when the replacement protects an installed ECM or ensures the effectiveness of an installed ECM. Replacement is considered an HSM measure only if no funds are available for an IRM and it directly poses a health and safety risk to the workers or occupants.

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

Not applicable.

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

Concurrence, Alternative or Deferral/Referral

Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐

Unallowable Measure with DOE Funding ☐ Other Funding Source Addresses H&S Issue ☑ LIHEAP

Formaldehyde, VOCs, flammable liquids and other air pollutants in dwellings policy

Describe Guidance Provided To Subgrantees Here
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. **Fire Hazards:** All energy audits include an assessment of fire hazards within the dwelling. This assessment may include, but is not limited to, clearances to combustibles, creosote build-up, and storage of flammable materials in proximity to combustion appliances. Resolution of these types of hazards may include health and safety measures before or during weatherization activities, depending on the nature and severity of the problem. Clients are educated and informed in writing by all Weatherization staff and workers about potential hazards. Inspectors and auditors are trained on fire hazards. VOCs: Volatile Organic Compounds (VOCs) are widely used as ingredients in many household products, such as paints, varnishes, fuels, and many cleaning, disinfecting, cosmetic, and hobby products. These products can release organic compounds as vapor when they are used and, to some extent, when they are stored. Formaldehyde is a volatile organic compound found in many building materials and household products, such as new carpets and plywood. These products release organic compounds over time. Organic compounds sometimes have adverse health effects on people. At this time, Commerce does not allow the removal of materials deemed to contain excessive amounts of VOCs. Because of the potential adverse health effects, local Service Providers must take this into consideration when air-sealing and when deciding on the need for ventilation. Clients must be informed and educated about this potential health issue. If it is not possible to control the VOCs, weatherization work must be deferred. Testing for VOCs is not allowed using DOE funds.
None

6.9 – Fuel Leaks *(please indicate specific fuel type if policy differs by type)*		
Concurrence, Alternative or Deferral/Referral		
Concurrence with DOE Guidance ☑	Alternative Guidance ☐	Results in Deferral/Referral ☐
Unallowable Measure ☐		
Fuel leak remediation protocols		
Fuel leak testing is a require part of all energy audits and QCI inspection. When a minor gas leak is found on the utility side of service, the utility must be contacted before work may proceed. Fuel leaks that are the responsibility of the client (vs. the utility) must be repaired before additional weatherization measures are installed.		
At what point are fuel leaks considered beyond the scope of weatherization?		
Fuel leak repairs that are accessible are an allowable expense. If the leak requires opening a closed building assembly, such as a wall cavity, it is beyond the scope of weatherization and would result in a deferral.		
Testing protocols		
Minnesota follows the combustion gas detection protocols from BPI 1200.		

6.10 – Gas Range/Ovens		
Concurrence, Alternative or Deferral/Referral		
Concurrence with DOE Guidance ☑	Alternative Guidance ☐	Results in Deferral/Referral ☐
Unallowable Measure with DOE Funding ☐	Other Funding Source Addresses H&S Issue ☑	LIHEAP
Unsafe gas range/ovens policy		

Ovens are tested at the audit in accordance with the current BPI standards and include a combustion test of the oven, a visual inspection of the burners, and gas leak detection where gas lines are accessible. Service or repair is allowable when CO limits are exceeded as detailed in the MN Field Guide. Testing of stovetop burners is no longer allowed. Replacement of stoves is not an allowable DOE expense.

Testing protocols

See Appendix D. of the Minnesota WAP Policy Manual (which reference the Minnesota Field Guide and the BPI 1200 Standard).

6.11 – Hazardous Materials Disposal [e.g., Lead, Refrigerant, Asbestos, Mercury (including CFLs/fluorescents), etc.] *(please indicate where policy differs by material)*

Concurrence, Alternative or Deferral/Referral

Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐

Unallowable Measure with DOE Funding ☐ Other Funding Source Addresses H&S Issue ☑ LIHEAP

Hazardous materials disposal policy (existing material/appliance and hazardous material)

When hazardous 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. Refer to lead and asbestos sections for more information on those topics.

Refrigerant Issues: Refrigerator replacements may be completed using USDOE funds. The cost of disposal of the appliance (including refrigerant) may be included in the replacement measure providing it does not drop the measure SIR below one. If the replacement measure SIR drops below one, the cost of reclaiming the refrigerant may be covered as a health and safety cost. Refrigeration appliances that are replaced must be disposed of according to the environmental standards in the Clean Air Act (1990), Section 608, as amended by the Final Rule, 40 CFR 82, May 14, 1993. The party recovering the refrigerant must possess an EPA- approved Section 608 Type II license or an approved universal certification. Clients should be cautioned not to disturb refrigerant.

Documentation requirements

None

6.12 – Injury Prevention of Occupants and Weatherization Workers (e.g., repairing stairs and replacing handrails)

Concurrence, Alternative or Deferral/Referral

Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐

Unallowable Measure with DOE Funding ☐ Other Funding Source Addresses H&S Issue ☑ LIHEAP

Injury prevention measure(s) policy

Service Provider staff is instructed to be alert to any possible client health issues relevant to a broad range of potential weatherization activities. Energy auditors are the primary staff responsible for identifying such issues, either as a part of the actual energy audit or through required interviews with household members. Because these issues may also arise when they are in the dwelling, installers are also trained to identify health and safety issues. Once an issue is identified, Service Provider staff works with the client to address the hazard either directly through the allowable weatherization activities, referrals, or deferral of work. All issues and efforts to resolve them must be documented in the household file and must include a client signature.

In some instances, uncorrected hazards could result in injury to weatherization workers or preclude the completion of weatherization measures. In these instances, Service Providers are allowed to make repairs with incidental repair dollars to enable weatherization activities to be completed, provided they are within the Allowable Measures Chart and within required cost limits. Photos and other documentation of the hazard are required.

Crew/Contractor Health and Safety: The Minnesota Field Guide is incorporated by reference into all Service Provider weatherization contracts with Commerce. The field guide is SWS-aligned and describes Service Provider responsibilities for staff and contractors. The guides address common worker safety issues including vehicle safety, falls, back injuries (proper lifting procedures), exposure to hazardous materials, electrical hazards, repetitive stress injuries, and the use of personal protective gear.

The field guide language requires that local Service Providers and their installers comply with OSHA rules pertaining to worker safety. Service Providers are also required to provide annual training for their crews, auditors, and contractors in all worker and weatherization-related health/safety topics including OSHA 10, HAZCOM 2012, and Confined Spaces training, so that they understand and meet the rules and regulations of the USDOE WAP. Or they may alternatively send them to state-based training to meet this requirement.

Define and quantify minor or allowable injury prevention measures. At what point are these considered beyond the scope of weatherization?

Allowable measures are detailed in the Allowable Measure Chart in appendix C of the Minnesota Policy Manual. Minor is defined as work up to $400 in labor and materials.

6.13 – Lead Based Paint

Concurrence, Alternative or Deferral/Referral

Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐

Unallowable Measure with DOE Funding ☐ Other Funding Source Addresses H&S Issue ☑ LIHEAP

Lead safe work protocols

Appropriate containment and clean up procedures must be used to protect occupants from lead-based paint hazards while weatherization work is in progress. Proper notification of the existence of these hazards must be provided to the occupants. Commerce will verify lead safe containment through photos or on-site monitoring.

When weatherization work is in progress the following steps must be followed, as referenced in WPN 17-7:
- Renovations must be completed by Certified Renovation firms.
- Crews and contractors must use containment procedures to ensure protection of the occupants.
- Occupants, especially young children or pregnant women, may not enter the work site.
- Occupants are allowed to return only after the work is completed and the dwelling has passed a visual inspection or a wipe test, if applicable.
- Occupants' belongings must be protected from lead contamination.
- The work site must be set up to prevent the spread of lead dust and debris.
- Warning signs must be posted at entrances to the worksite when occupants are present; at the main and secondary entrances to the building; and at exterior work sites. The signs must be readable from 20 feet from the edge of the worksite. Signs should be in the occupants' primary language, when practical.
- The work area must be contained.
- If containment cannot be achieved with occupants in the unit, occupants must move out of the unit or the work must be deferred until containment can be achieved. Minnesota does not use USDOE funds for temporary relocation of clients.
- Measures to ensure that containment procedures do not interfere with occupant and worker egress in the case of an emergency must be established.
- Photos of lead safe work containment procedures and other documentation are required in all dwellings where lead safe work practices are used.

Containment procedures must ensure that any dust or debris will not be spread beyond the work area to non-work areas. The level of containment must be determined by the auditor/inspector or supervisor before work is assigned to a crew or contractor.

The level of containment is based on the hazards present, the age of the home, the scope of work activities, and any customer health issues. Lead safe work generally falls into two levels of containment: Level 1 and Level 2 containment and their related standards are outlined in WPN 17-7.

Level 1 containment is required in pre-1978 homes when less than 6 ft2 of interior painted surface per room, or 20 ft2 of exterior painted surface will be disturbed. Level 1 containment consists of methods that prevent dust generation and contains all debris generated during the work process. The containment establishes the work area that must be kept secure. Measures that may fall within this guideline include:

- Installing or replacing a thermostat
- Drilling and patching test holes
- Replacing HEPA filters and cleaning HEPA vacuums
- Changing a furnace filter
- Removing caulk or window putty (interior)
- Removing caulk or window putty (exterior)
- Removing weather-stripping

Level 2 containment is required when Weatherization activities will disturb more than 6 ft2 of interior surface per room, or 20 ft2 of exterior surfaces in homes built prior to 1978. Level 2 containment consists of methods that define a work area that will not allow any dust or debris from that work area to spread. Level 2 containment requires the covering of all horizontal surfaces, constructing barrier walls, sealing doorways, covering HVAC registers with approved materials, and closing windows to prevent the spread of dust and debris.

Measures requiring Level 2 containment may include:
- Drilling holes in interior walls
- Drilling holes in exterior walls
- Removing siding
- Cutting attic access into ceiling or knee walls
- Planing a door in place
- Replacing door jambs and thresholds
- Replacing windows or doors
- Furnace replacements

Level 2 containment must always be used where any of the following is conducted, even if the activities will disturb less than the minimum hazard levels within the Level 1 category:
- Window replacement
- Demolition of painted surfaces

Proper lead safe work clean-up and disposal of debris is required to adequately clean up the job site. All dust, dirt, material scraps, containers, wrappers, and work-related debris must be removed from the client's home. A HEPA vacuum must be used to clean up the work areas. Further cleaning may be necessary, based on the hazard. Disposal of debris must meet federal, state and local regulations.

A visual inspection by the crew or contractor must be completed to ensure that the cleaning process is complete. Clearance must be achieved in accordance with RRP rules. Verification is conducted by the QCI at the time of final inspection of the weatherization work. If debris, paint chips, or dust is observed, the weatherization crew or contractor must repeat the cleaning process. Client files will contain lead testing documentation, a description of lead work done, the certified renovator certificate, photos of lead safe containment and setup, and any training offered on site. In cases where extensive lead testing will take place

to determine whether lead-based paint is present, an analysis of the economic feasibility will be conducted by the Service Provider.

Testing protocols

EPA approved lead testing

Documentation requirements

Notification of a lead hazard must be given to all clients in dwellings that come under the LSW/RRP guidance. All agencies must give each client the lead notification publication, "Renovate Right – Important Lead Hazard Information for Families, Child Care Providers and Schools." A signed certification of receipt of this notice must be present in the client file.

6.14 – Mold and Moisture

(e.g., drainage, gutters, down spouts, extensions, flashing, sump pumps, dehumidifiers, landscape, vapor retarders, moisture barriers)

Concurrence, Alternative or Deferral/Referral

Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐

Unallowable Measure ☐ Other Funding Source Addresses H&S Issue ☑ LIHEAP

Moisture related issues in dwellings policy

Drainage: DOE funds may be used to remedy moisture issues resolved by repair or replacement of gutters, downspouts, grading, flashing, or sump pumps, where the total cost is less than $400. Drainage issues above that cost are beyond the scope of the Weatherization Assistance Program. Homes with such conditions may create a serious health problem and work must be deferred until these issues are addressed by the client or by other funding sources. Clients are notified of such problems in writing.

Mold and Moisture: An indoor air quality problem is excess moisture or humidity in a home. Too much moisture may result in moisture penetration, condensation, and build-up in walls and ceilings. Moisture accumulation may also cause wood rot. Too much indoor moisture or humidity can also lead to the growth of mold and mildew which can cause adverse health effects for the occupants. Energy auditors use the following to identify potential moisture problems when assessing a client's home:

- Damp atmosphere or a musty smell in the dwelling, basement, or crawlspace
- Client complaints of allergy-like symptoms
- Mold growth on walls and ceilings, especially in bathrooms and kitchens
- Mold growth on attic roof sheathing
- Signs of condensation on walls or windows
- Water damage or mold on the underside of roof decking
- Evidence of crawlspace moisture
- Rusted metal in basements, crawlspaces, bathrooms and/or kitchens
- Efflorescence (white, powdery deposits) on concrete or masonry surfaces
- Water stains on foundation walls

Although the entire dwelling is inspected for mold, particular attention is paid to the following areas: bathrooms, kitchens, laundry areas, basement walls, ceilings next to exterior walls, attics, and crawlspaces. The mold assessment, completed in tandem with the moisture assessment, is performed by the auditor.
Auditors document the presence of visible mold. Details are filed in the client file. The existence of mold is documented to confirm that mold was pre-existing and that weatherization activities were not the cause of mold growth.

When a moisture problem is identified, energy auditors determine the source of the problem and outline solutions or generate specific work order measures to mitigate the problem.

Energy auditors inform clients of any mold that is found and of its location. Auditors explain to clients that the auditor is not a mold expert and that the mold assessment was a visual assessment only and that no testing for mold was completed.

Auditors use forms provided by Commerce and the WA software to document and generate specific health and safety measures that address or alleviate moisture problems. Whole Dwelling, Equipment, and Building Shell tabs within WA detail 41 individual remedies, all addressing health and safety concerns. Many of these concerns are related to moisture issues.

Identifying and solving the source of moisture problems is the first priority when a problem is discovered. The following are possible solutions to moisture problems:

Mechanical Ventilation. One of the main strategies for solving moisture problems in a home is mechanical ventilation. Installing intermittent or continuous ventilation is allowed and may be paid for with health and safety funds. Moisture problems may be reduced or eliminated by ventilating areas that routinely generate large moisture loads such as bathrooms, kitchens and laundry areas. Commerce requires Service Providers to implement ASHRAE 62.2-2016 on all dwellings weatherized, effective July 1, 2017. Clients are reminded of the importance of using kitchen exhaust fans while cooking and using bathroom exhaust fans after showers or baths. Clients are instructed how to operate the fans properly.

• Plumbing/Sewer Repairs. Leaking water pipes and sewer lines cause moisture and pose serious health problems for affected dwellings. Auditors carefully note any problems. Minor repairs, costing less than $400 related to plumbing and sewer repairs, may be completed as a part of the weatherization process, provided the repairs are necessary to weatherize the home. Referrals are made to non-weatherization resources that may assist the household in making more substantial repairs to pipes or sewer lines. Cleanup of any unsanitary conditions due to plumbing leaks is the responsibility of the client.

• Attic Bypass Sealing. Attic bypass sealing must be completed on all homes, with the exception of homes that have vermiculite insulation present in the attic. One of the most important benefits of attic bypass sealing is that it prevents the migration of moisture into the attic where it could cause ice dams, wood rot, and mold growth. Pressure diagnostic measurements are taken on both a ‘pre’ and ‘post’ basis to ensure and measure bypass-sealing effectiveness. Bypass sealing is completed as an air-sealing measure when it achieves a SIR of one or more.

• Health and safety funds are used only in dwellings where necessary bypass sealing has an SIR of less than one.

• Crawlspace Ground Moisture Barriers. Crawlspace moisture can lead to condensation, mold, and rot. Air passing through the soil can contain radon and pesticides. It is important to prevent moisture, radon and other soil gasses from entering the dwelling. This is accomplished by covering the accessible crawlspace ground with a vapor barrier with a perm rating of less than 0.1. This vapor barrier must be installed continuously over the top of the exposed soil with all seams and penetrations sealed to establish a continuous air barrier to seal out water vapor and soil gasses.

• Bulk Water Control. Health and Safety dollars may be used to make repairs to deteriorated roofs and other framing members where such repairs are needed to eliminate or prevent moisture or water from entering the dwelling. These repairs are allowed when necessary to address moisture sources that create health/safety hazards in the dwelling. Doors, window sash or total window replacements are not allowable health and safety activities.

Mold Remediation: Controlling moisture is critical to controlling mold. If mold is found in a home, it is likely the result of moisture, excessive humidity or water intrusion. Moisture problems must be solved before any mold problem is addressed. If the auditor determines that moisture problems can be solved satisfactorily, the Service Provider may determine that the mold will not be disturbed by weatherization activities and work may proceed without the need for remediating the mold.

The Service Provider may defer any work on the home until the mold is remediated by the client or landlord. This policy is recommended if there are large areas of mold growth. If the auditor determines the moisture problem cannot be satisfactorily eliminated, weatherization work must be deferred.

Mold Clean-up Information and Referral: If the weatherization work can be completed without disturbing mold/mildew, or if cleanup is not required, work may be completed at the discretion of the auditor or program manager. If cleanup is required, information on cleanup procedures will be provided to the client. Information sources for mold clean up include but are not limited to the University of Minnesota Extension Service, FEMA, Minnesota Department of Health, and Canada Mortgage and Housing Corporation.

Procedures are designed to protect the health of the occupants and cleanup personnel during remediation.

Define and quantify minor or allowable moisture-related measures. At what point are these considered beyond the scope of weatherization?

See Sections above

6.15 – Pests

Concurrence, Alternative or Deferral/Referral

Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐

Unallowable Measure with DOE Funding ☐ Other Funding Source Addresses H&S Issue ☑ LIHEAP

Pests and pest intrusion prevention policy

Pest removal is allowed only where infestation would prevent weatherization. Screening of windows and points of access, and incorporating pest exclusion into air sealing practices to prevent intrusion is allowed.

In cases where a pest issues is seasonal, Service Providers are encouraged to defer weatherization until the problem can be resolved. Example: Stinging insects are not active in colder weather so weatherization may be deferred until after temperatures are consistently at or below freezing if stinging insects are found.
If there is a menacing domestic animal in a dwelling or if the worker is uncomfortable around the animal, weatherization workers may require the client to restrain the animal before proceeding with weatherization. If the client refuses, weatherization workers may document the situation and defer the work until the situation is resolved.

Animal bites should be immediately responded to and reported. If necessary, workers should seek medical care. If a worker is bitten by a bat, an attempt should be made to kill the bat without destroying the head. The bat should be placed in plastic and shipped to a local lab to test for rabies.

Define and quantify pest infestation thresholds. At what point are these considered Beyond the scope of weatherization

Pest removal is allowed only where infestation would prevent weatherization. Infestation of pests may be cause for deferral where removal costs exceed $400.

6.16 – Radon

Concurrence, Alternative or Deferral/Referral

Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐

Unallowable Measure with DOE Funding ☐ Other Funding Source Addresses H&S Issue ☐ Enter Funding Source

Procedure for radon in dwellings

Radon mitigation is not an allowable health and safety 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. Whenever site conditions permit, cover exposed dirt floors 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 in place or installed.

Radon assessments are not part of weatherization in Minnesota. Dwellings with previously identified radon problems should not be left with an increased negative pressure in the contaminated area after weatherization work. Vapor barriers are installed in dwellings with accessible crawlspaces where there is exposed soil.
Testing protocols
Not applicable
Documentation requirements
Client informed consent form is required on all houses.

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

Concurrence, Alternative or Deferral/Referral
Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐
Unallowable Measure with DOE Funding ☐ Other Funding Source Addresses H&S Issue ☑ LIHEAP
Installation or replacement policy for the following safety devices:
Smoke Alarms: Installation of individual or combination smoke and CO detectors and/or alarms is required when absent, inoperable or expired. Replacement of operable non-expired units is not allowed. Service Providers are required to meet State and local fire codes for the number and placement of installed units.
Carbon Monoxide Alarms: CO alarms must be installed where alarms are not present or are inoperable.
Fire Extinguishers: Installation allowed only in cases where solid fuel is burned as part of the primary heating system.
Testing protocols
Units are tested at energy audit by pressing the test button

6.18 – Ventilation and Indoor Air Quality

Concurrence, Alternative or Deferral/Referral
Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐
Version of American Society of Heating Refrigeration and Air-conditioning Engineers (ASHRAE) 62.2 Implemented (optional: identify Addenda used)
2016, no additional addenda utilized.
Procedures for complying with implemented ASHRAE standard
Exhaust fan flow rates are measured at the energy audit and during the QCI inspection. Required tests are detailed in Appendix D of the WAP Policy Manual. The continuous flow setting at the QCI is based on the actual final blower door results. Room to room pressure tests are conducted and action to relieve pressure is taken when the pressure differential between a room and the house is greater than 3 pa.
Testing protocols
Exhaust fan flow rates testing is required to verify compliance with ASHRAE 62.2 standard..

6.19 – Window Repair, Door Repair

Concurrence, Alternative or Deferral/Referral
Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐
Unallowable Measure with DOE Funding ☑ Other Funding Source Addresses H&S Issue ☑ LIHEAP
Window repair and door repair H&S policy
Window and door replacement, repair, or installation is not an allowable health and safety expense.

6.20 – Worker Safety (e.g., OSHA)

Concurrence, Alternative or Deferral/Referral
Concurrence with DOE Guidance ☑ Alternative Guidance ☐ Results in Deferral/Referral ☐

Unallowable Measure with DOE Funding ☐ Other Funding Source Addresses H&S Issue ☑ LIHEAP
Federal, state and local worker safety requirements policy
Minnesota Service Providers must comply with OSHA (29 CFR 1910 and 1926) regulations, local health and safety plans, and use of Material Safety Data Sheets. Commerce currently performs monitoring for OSHA rules and regulations, as it pertains to the SWS, when performing monitoring on in-progress units.