

Massachusetts DOE WAP Health and Safety Plan – 2016

All DOE WAP funded Health and Safety Measures outlined in this Guidance must be completed consistent with the requirements of the DOE/NREL Standard Work Specifications. (SWS) <https://sws.nrel.gov/>
Most of the Health and Safety elements of the SWS are outlined in Section 2.00 <https://sws.nrel.gov/spec/2>

Budgeting (Check one):

The grantee is encouraged to budget health and safety costs as a separate category and, thereby, excludes such costs from the average per-unit cost calculation. This separate category also allows these costs to be isolated from energy efficiency costs in program evaluations. The grantee is reminded that, if health and safety costs are budgeted and reported under the program operations category rather than the health and safety category, the related health and safety costs must be included in the calculation of the average cost per home and cost-justified through the audit.

Separate Health & Safety Budget

Contained in Program Operations

Incidental Repairs (List repairs, if any, that will be removed as health and safety measures and implemented as incidental repairs.):

If the grantee chooses to identify any health and safety measures as incidental repairs, they must be implemented as such under the grantee's weatherization program in all cases – meaning, they can never be applied to the health and safety budget category. In order to be considered incidental repairs, 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.

DHCD is not proposing moving any measures previously reported as Health and Safety to the Incidental Repair category. Incidental Repairs are described in Section V.5.1 Technical Guides and Materials the Master File of the State Plan.

Per Weatherization Program Notice 12-9 Incidental Repairs are defined as “material installations performed because it is deemed necessary for the effectiveness of one or more Energy Conservation measures.” Subgrantees are required to document the need for Repair Measures and the related energy conservation measures that the repair are intended to protect. Only incidental repairs necessary for the effective performance or preservation of weatherization installations are allowed. Major repairs are considered those with costs exceeding \$500. Examples of these may include repairing roof leaks or repairing areas of unsafe wiring or replacing sections of knob and tube wiring to allow for the installation of insulation in attics and sidewalls. Other minor repairs under \$500 include cutting and finishing accesses to attics and knee wall areas, repairs to siding, minor repairs to windows and doors, flashing, masonry repairs.

Health and Safety Expenditure Limits (Provide a per-unit average percentage and justification relative to the amount. Low percentages should include a statement of what other funding is being used to support health and safety costs, while larger percentages will require greater justification and relevant historical support.):

The grantee must set health and safety expenditure limits for their subgrantees, providing justification by explaining the basis for setting these limits and providing related historical experience. 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 average cost per dwelling unit. For example, if the average cost per dwelling is \$5000, then an expenditure of \$500 per dwelling would equal 10 percent expenditures for health and safety. 10 percent is not a limit on H&S expenditures but exceeding this amount will require ample justification. These funds are to be expended by subgrantees in direct weatherization activities. While required as a percentage of the average unit cost, if budgeted separately, the health and safety costs are not calculated into the per-house limitation.

Per-Unit Average Percent: 13.2%

Massachusetts is requesting a Health and Safety average cost per unit of \$625 for the FY 2015. This represents 13.2% of the average cost per unit (APCU) of \$4,725 in DOE Program Operations. Massachusetts plans to continue to maintain a Program Operations APCU significantly lower than DOE's allowable (\$7,105 for FY 2016) so that Subgrantees can utilize DOE WAP funds in more units. However, once DOE WAP funds are used in a unit, all Health and Safety requirements must be implemented including ASHRAE 62.2.-2013. DHCD has also established a maximum of \$2,500 of DOE WAP Health and Safety that can be spent on a DOE WAP unit.

While Massachusetts WAP Subgrantees have been installing vented bathroom fans under the provisions of the DOE WAP Health and Safety requirements for many years, compliance with ASHRAE 62.2-2013 includes additional requirements to the device installed and the venting system as well as may require multiple devices in some homes. The average cost of ASHRAE 62.2-compliant whole house and/or required spot ventilation (where no fan exists) is \$750. The cost of the ASHRAE compliant ventilation systems may be higher than national average costs because the installation requires the involvement of multiple trades and permitting requirements depending on the community and code enforcement officials. The building permit required for the

ventilation device would be part of the normal WAP procedure but the fan also requires a licensed electrician and an electrical permit and depending on the installation, an ASHRAE 62.2 compliant duct system installed by licensed sheet metal worker and a required sheet metal installation permit. Most of the homes that we serve have additional health and safety needs that must be addressed such as moisture and bulk water issues, carbon monoxide/smoke detectors, combustion systems mitigation.

DHCD and the Massachusetts WAP Subgrantee network have made a deliberate effort to maintain a low ACPU for Program Operations of \$4,725 to enable more households to be served with DOE funds than if a higher APCU were implemented. WAP Subgrantees and the low-income families served in Massachusetts have access to significantly more utility-funded efficiency programs than DOE funds. During CY 2016 an estimated \$36M will be available for a variety of programs for single and small multi-family (2-4 unit) homes. The utility funds permit similar building shell measures to the DOE WAP but have minimal provisions for health and safety and repair needs. In addition to the DOE funds, Subgrantees can spend up to an average of \$4,500 in air sealing and insulation, \$4,500 in heating system improvements and additional funds are available for electric base-load measure on an eligible home. DHCD also administers a LIHEAP-funded heating system repair and replacement program that provides heating system repairs, maintenance, efficiency improvements and replacements for DOE eligible households. Subgrantees have the ability determine an appropriate balance of DOE funds for cost effective building shell efficiency improvements and related health and safety requirements and utility funds and/or LIHEAP heating system program funds to ensure that each household served receives a complete package of appropriate measures. At this time the DOE health and safety funds are a crucial component of the mix. The WAP Subgrantee Network through the Low-Income Energy Affordability Network (LEAN) is working with the Massachusetts utilities and the regulatory agency, Department of Public Utilities (MA DPU) to access additional utility resources for DOE-like health and safety measures but until more funds are available, DOE funds are important to the mix. While the ACPU for Health and Safety is high when compared to the ACPU in Program Operations in DOE funds, the actual value of the services received by the household using the combined resources of DOE, utility efficiency funds and LIHEAP heating system improvements is significantly greater.

DHCD will review and track Subgrantee Health and Safety expenditures throughout the grant period. If it appears that a Subgrantee will have unexpended Health and Safety funds, the funds will be reprogrammed to the Program Operations line budget line and additional DOE WAP units will be completed.

Deferral Policy (Provide a detailed narrative of the grantees overall deferral policy):

Deferral may be necessary if health and safety issues cannot be adequately addressed according to WPN 11-6 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. In the judgment of the auditor, any conditions that exist, which may endanger the health and/or safety of the workers or occupants, should be deferred until the conditions are corrected. Deferral may also be necessary where occupants are uncooperative, abusive, or threatening. The grantee should be specific in their approach and provide the process for clients to be notified in writing of the deferral and what corrective actions are necessary for weatherization to continue. The grantee should also provide a process for the client to appeal to a higher level in the organization.

There are circumstances when it is appropriate for a WAP agency to defer or provide no weatherization service to an otherwise eligible unit until an unsafe or potentially dangerous condition is corrected. The health and safety of clients, Subgrantee staff and weatherization contractors is of primary concern. All personnel must maintain a high level of awareness concerning the potential hazards associated with the weatherization process in situations that may involve Health and Safety concerns or other problematic issues. The Massachusetts Health and Safety Guidance outlines many of the specific criteria that would require a deferral of services and provides a "Deferral of Services Notice," to be signed by the local agency and client that outlines the reason for the deferral and conditions that must be remedied before the work can commence. Some of the typical reasons for deferral include, the structural condition of the building, the existence of any number of Health and Safety concerns, (i.e excessive mold, sewerage, animal waste, pest infestations), and illegal activities being conducted on the premises. Copies of the Deferral of Services Notice is left with the client, maintained in the Subgrantee client file and provided to DHCD.

The deferral policy does not mean that assistance is never to be provided, but "that services must be postponed until the problems can be resolved and/or other sources of help are found." DHCD requires Subgrantees to act as advocates for clients with health and safety concerns, refer the households to available services and do their best to ensure that problems are resolved so that the weatherization work can eventually be performed. Many WAP Subgrantees within the Community Action Programs network in Massachusetts and the DHCD LIHEAP and CSBG program are actively developing a Benefits Enrollment Coordination (BEC) database that will enable staff to have access to a variety of housing and health related programs and contacts that will enhance their ability to access help for deferral issues.

When problems of a unique nature exist that are not identified in the Health and Safety Guidance, DHCD staff is consulted by agencies before deciding whether to proceed.

Subgrantees are not authorized to complete "partial weatherization" on a unit using DOE WAP funds. If for an identifiable documented reason a Subgrantee must cease work on a unit that some WAP work was started but the unit was not completed, the Subgrantee may invoice and report to DHCD the portion of the work completed by the WAP contractor but the unit will not be considered a completed unit counted towards the Subgrantees minimum required production goal.

From the MA WAP Policy and Procedures Manual:

DEFERRAL OF SERVICES POLICY: WHEN NOT TO WEATHERIZE

There are certain circumstances when it is appropriate for a WAP agency to defer or provide no weatherization service to an otherwise eligible unit, until an unsafe or ineligible condition is corrected. These situations may involve Health and Safety concerns or other problematic situations, some of which are listed below. In unusual situations not identified below or when other problems of a unique nature exist, the DHCD staff should be consulted before deciding whether to proceed.

The U.S. Department of Energy (DOE) states that the deferral policy should not mean that assistance would never be provided, but “that services must be postponed until the problems can be resolved and/or other sources of help are found.” DOE requires that Subgrantees complete the “Deferral of Services Notice” (see sample in Appendix) and provide the client and DHCD with copies when weatherization services must be deferred. Agencies should keep a copy of the deferral form in the client file.

Policy for Health and Safety Concerns

The health and safety of clients, Subgrantee staff and contractors is of primary concern. It is important that all personnel maintain a high level of awareness concerning the potential hazards associated with the weatherization process. Subgrantee staff and contractors must familiarize themselves with all the health and safety issues associated with weatherization. Each home to be weatherized must be individually assessed to determine the existence of potential hazards to workers or clients.

The Massachusetts DOE WAP Health and Safety Guidance is the primary tool to be referenced by Subgrantees when determining if it is appropriate to defer a job. It is usually during the energy audit when significant health or safety concerns are identified which the Subgrantee believes may warrant a deferral because weatherization work in the home may worsen the situation and endanger the client, energy auditor or contractor.

DOE and DHCD requires Subgrantees to act as advocates for clients with health and safety concerns to ensure that problems are resolved so that the weatherization work can eventually be performed.

However, in many cases, repairable energy related Health and Safety hazards may exist in the client home that must be eliminated before or because of the installation of weatherization materials. In those situations, weatherization funds may be obligated to correct these Health and Safety problems. However, agencies must bear in mind that the WAP is not a home rehabilitation program and that the repairs which are undertaken must be those which allow the home to receive weatherization services. Restrictions on the expenditure of program funds are outlined in the Weatherization Technical Manual.

Subgrantees may spend up to a maximum of \$2,500 of DOE Health and Safety funds on an individual dwelling unit.

Health and Safety conditions that may cause the deferral include:

- The client has known health conditions that prohibit the installation of insulation and other weatherization materials.
- The building structure or its mechanical systems, including electrical and plumbing, are in such a state of disrepair that failure is imminent and the conditions cannot be resolved cost-effectively. These situations should be referred to a home rehabilitation related program wherever available.
- The house has sewage or other sanitary problems that would further endanger the client and weatherization installers if weatherization work were performed.
- Moisture and/or mold related problems are severe and cannot be resolved under existing health and safety measures and with available repair funds.
- Dangerous conditions exist due to high carbon monoxide levels in combustion appliances, and cannot be resolved under existing health and safety measures.
- The extent and condition of lead-based paint in the house would potentially create further health and safety hazards.
- In the judgment of the energy auditor, if any condition exists which may endanger the health and/or safety of the subcontractor, the work should not proceed until the conditions are corrected.

Some other problematic situations that may prompt a deferral of service include:

- The structure is for sale, the building or dwelling is for sale, or subject to bankruptcy or foreclosure,
- The structure is part of a legal dispute such that the building or dwelling unit where ownership cannot be confirmed.
- The building or dwelling is scheduled for demolition,
- The dwelling is being used as a commercial enterprise,
- The building or dwelling is in need of extensive rehabilitation which is beyond the scope of the WAP,
- Illegal activities are being conducted in the dwelling unit,

- The client is uncooperative, abusive, or threatening to the subcontractors, auditors, inspectors, or others who must work on or visit the house, or
- When a conflict of interest or appearance of conflict exists (such as when the structure is owned, managed or occupied by an employee, board member, officer or relative of a Subgrantee employee), the unit may not receive services unless approval is obtained from DHCD prior to work being started.

The DOE WAP deferral Form is attached.

Procedure for Identifying Occupant Health Concerns:

Procedures must be developed and explained on how information is solicited from clients to reveal known or suspected occupant health concerns as part of the initial application for weatherization, additional screening of occupants again during the audit, and what steps will be taken to ensure that weatherization work will not worsen the health concern.

Subgrantees and their representatives must take all reasonable precautions against performing work on homes that will subject clients to health and safety risks. Since eligibility for the WAP is based on a household's eligibility for LIHEAP in Massachusetts, the initial intake does not typically permit an interview with the client about potential health issues that may impair the weatherization process. During the initial scheduling of the energy audit and during the audit process, the energy auditor must make an evaluation of the health of the home's occupants. In cases where a person's health is fragile and/or the weatherization activities would constitute a health or safety hazard, the occupants will be required to leave during the work process or the agency and contractor should not begin the work. Work that is completed must in no way contribute to or create an unhealthy condition in the home. All problems and concerns must be fully documented in the client file.

Documentation Form(s) have been developed (Check Yes or No):

Documentation forms must be developed, include the client's 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 weatherization could continue, and the client(s) signature(s) indicating that they understand and have been informed of their rights and options

Yes

No

Clients must be notified of observed hazards, observed health concerns and documented in the "Deferral of Services" form completed and signed and include specific information on steps that need to be taken to resolve the issues identified. The required form is attached.

Air Conditioning and Heating Systems

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. **Note:** Where an Action/Allowability or Testing is "required" or "not allowed" through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.

Concur with WPN11-6

Alternative Guidance

The replacement or repairs of unsafe or inoperable heating systems are an allowable Health and Safety expense if no alternative funding is available for the work.

Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.

To the greatest degree possible, Subgrantees must coordinate and utilize funds from the LIHEAP-funded heating system repair and replacement program (HEARTWAP) and available utility funds for heating system work.

Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.

If the required work is beyond the scope of the combined resources of HEARTWAP, DOE WAP and utility funds to create a safe condition, the DOE WAP work must be deferred.

Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. **Note:** Some health and safety categories, like combustion gases, require testing.

The resolution of Health and Safety problems identified related to the heating system must be documented as having been completed and determined to be resolved by combustion safety testing prior to weatherization work being completed.

Standards for Deferral: Describe when deferral should take place for the specific health and safety category.

Deferral will take place when the mechanical, electrical, and/or plumbing systems are in such a state of disrepair that the installation of a code compliant heating system cannot be installed using available funding sources.

Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.

All heating system repairs and improvements and replacements must be referred to the HEARTWAP and utility funded programs unless no funds are available.

Training Provision: Discuss how training will be provided for the specific health and safety category. **Note:** Some health and safety

categories, like OSHA, require training.
All current WAP Auditors have received training in combustion efficiency and combustion safety testing. Newly hired staff must receive this training prior to completing any audits without a trained staff member. DHCD staff will use all site visits as an opportunity to observe and train technical staff as it relates to combustion efficiency and combustion safety testing. All WAP energy auditors, quality control inspectors and Grantee monitoring staff will attend mandatory combustion safety training as the program transitions to the ANSI/BPI 1200 combustion safety protocol.
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.
Clients will be provided written information about heating system operation and safety. Those receiving new heating systems will be provided the manufacturer's warranty information and operating instructions.
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.
Heating system contractors removing old heating systems shall dispose of them consistent with Massachusetts waste disposal regulations. Subgrantee contracts with contractors shall contain language requiring proper disposal.
Air Conditioning Installation (as specific to installation as a health and safety measure): Provide a narrative on implementation protocols of air conditioning repair, replacement, and installation including justification for allowability that includes climate justification with degree days and how to define at-risk occupants
DOE funds will not be utilized for air conditioning installations
Heating System Installation (as specific to installation as a health and safety measure): Provide a narrative on implementation protocols of Heating System repair, replacement, and installation including justification for allowability that includes climate justification with degree days
Unless alternative funding is not available, DOE funds will not be used for heating system installation. In the rare instance where no alternative funding exists, DOE Health and Safety funding may be used because the Massachusetts average 5600 degree day requirement is evidence that a family needs a warm home that is safely heated during New England winters.

Appliances and Water Heaters	
Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is "required" or "not allowed" through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	Replacement of water heaters is allowed on a case-by-case basis with prior approval from DHCD.
Alternative Guidance <input type="checkbox"/>	Repair (including venting system) and cleaning are allowed as health and safety measures to improve venting and combustion characteristics to ensure safety. Replacement of other appliances for such as stoves is not allowable; however, repair and cleaning are allowable Health and Safety costs to resolve CO problems.
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE Health and Safety funds are allowable. In some instances, HEARTWAP funding may be used for DHW systems.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If the needed work is beyond the scope or resources of the WAP, the unit must be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
The WAP auditor must test all combustion appliances to determine that they are operating safely by conducting combustion safety testing including worst case draft for vented appliance and for CO levels in the flue gas and ambient air.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
If the appliance is operating in an unsafe manner and there are insufficient DOE Health and Safety funds available to remedy the problem, the unit must be deferred.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
If the appliance is operating in an unsafe manner and there are insufficient DOE Health and Safety funds available to remedy the problem, the unit must be deferred.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
All current WAP Auditors have received training in combustion efficiency and combustion safety testing. Newly hired staff must receive this training prior to completing any audits without a trained staff member. DHCD staff will use all site visits as an opportunity to observe and train technical staff as it relates to combustion efficiency and combustion safety testing.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Clients will be provided written information about combustion appliance operation and safety. Those receiving new DHW systems will be provided the manufacturer's warranty information and operating instructions.	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Plumbing contractors removing old water heaters shall dispose of them consistent with Massachusetts waste disposal regulations. Subgrantee contracts with contractors shall contain language requiring proper disposal..	

Asbestos - in siding, walls, ceilings, etc.

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. **Note:** Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.

Concur with WPN11-6 <input checked="" type="checkbox"/>	Removal of siding is allowed to perform energy conservation measures. All precautions must be taken not to damage siding. Asbestos siding should never be cut or drilled. Recommended, where possible, to insulate through home interior. Asbestos Cement Shingle (ACS) Sidewall protocols developed in conjunction with the MA Department of Environmental Protection shall be used when completing wall insulation of buildings with ACS.
Additional Guidance <input checked="" type="checkbox"/>	

Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.

DOE Funds may be used

Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.

If the needed work is beyond the scope or resources of the WAP, the unit or sidewall insulation measure may be deferred in no other options exist.

Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. **Note:** Some health and safety categories, like combustion gases, require testing.

The following protocol was developed by DHCD and the Massachusetts Department of Environmental Protection (DEP) to address insulating the sidewalls of homes with asbestos cement shingle siding

**Department of Housing and Community Development
Weatherization Assistance Program
Sidewall Insulation**

Contractor’s responsibility regarding the removal and reinstallation of Asbestos Cement Shingles

Background

The Massachusetts Department of Environmental Protection’s (MassDEP’s) asbestos regulation (310 CMR 7.15: <http://www.mass.gov/eea/docs/dep/air/laws/asbestosreg14.pdf>) serve to prevent air pollution and protect public health, safety and the environment by establishing safe handling practices for demolition or renovation activities involving asbestos. This document is intended to provide contractors, working under the Department of Housing and Community Development’s (DHCD) Weatherization Assistance Program (WAP), with guidance regarding MassDEP’s asbestos regulation. The guidance applies specifically to removing and replacing intact asbestos cement shingles that are in good condition.

Before Starting Work

a. Pre-Renovation/Demolition Survey

MassDEP’s asbestos regulation establishes that owners and operators (including contractors) are responsible for determining whether cement siding shingles that will be subject to demolition or renovation contains asbestos. The federal NESHAP regulation requires owners and operators to conduct a “thorough inspection” to determine the location of asbestos containing materials before starting demolition or renovation.¹

If approved DHCD-WAP contractors follow this guidance, it will not be necessary to have a DLS-certified asbestos inspector prepare a written survey report for underground asbestos-cement pipe projects as required by 310 CMR 7.15(4). However, WAP contractors must conduct a “thorough inspection” to determine the presence, location and quantity of asbestos-cement siding shingles. WAP contractors may satisfy this requirement with:

- Manufacturer’s product specifications or other documents identifying the content of particular cement shingle siding materials that may be affected by a removal or repair project, provided that the documentation has been updated to reflect any repairs or alterations; or
- Other measures that demonstrate that a “thorough inspection” has been completed to identify asbestos cement siding shingles that will be affected by a removal or repair project. These measures can include visual identification through field observations of cement siding shingles to be worked on (e.g., the manufacturer’s brand-label markings indicating transite material or the source of the product); or sampling and analysis of cement siding shingle material at a laboratory certified by DLS.

Note: For projects that rely on a visual identification in the field, a DHCD-WAP contractor must be present to survey the cement siding shingles and document in writing what features were used to identify the type of shingles to be removed/repared/replaced.

In addition, the DHCD-WAP contractor may presume that cement siding shingles contain asbestos and manage any repairs or removals in accordance with this guidance and the other applicable requirements of 310 CMR 7.15.

The owner of the residence and the DHCD-WAP contractor who works on the residence at which the asbestos cement siding shingles were

¹ The EPA Asbestos NESHAP regulation requires that the owner or operator shall, “...prior to the commencement of the demolition or renovation, thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos...” 40 CFR part 61.145(a)

removed, repaired or replaced must keep documentation of the pre-demolition/renovation survey, signed and dated by the person who conducted the inspection, for a minimum of two (2) years in the project file. The documentation must indicate what information was relied upon to determine whether the pipe contained asbestos. (See Attachment for the Pre-Demolition/Renovation Survey and Post Abatement Visual Inspection Documentation template.)

b. Notification

A notification must be submitted to MassDEP for each weatherization project that disturbs asbestos-cement siding shingles on an Asbestos Notification Form ANF-001/BWP AQ-04 in accordance with 310 CMR 7.15(6). The notification must be submitted at least ten (10) working days before starting asbestos cement siding shingle removal. The ANF-001/BWP AQ-04 and answers to frequently asked questions about filing notifications are available on MassDEP's web site at: <http://www.mass.gov/eea/agencies/massdep/service/approvals/bwp-aq-04-anf-001.html>. The easiest way to file an asbestos notification is to file it online via MassDEP's online filing system, eDEP: <https://edep.dep.mass.gov/DEPLogin.aspx>.

The ten-working day waiting period can be waived by obtaining an emergency waiver of this waiting period from MassDEP. Emergency waivers allow work to be performed right away. These waivers, which can be obtained by calling the MassDEP Regional Office that covers the town in which the work will be conducted, must be approved by MassDEP before the work starts. (To find your regional MassDEP office, go to the following link: <http://www.mass.gov/eea/agencies/massdep/about/contacts/>. The MassDEP staff person who approves an emergency waiver will provide a project-specific waiver number that must be noted on the notification form.

A notification fee, currently \$100.00, is required when filing an ANF-001/BWP AQ-04. However, asbestos abatements at property owned by cities, towns, counties, districts of the Commonwealth, municipal housing authorities, federally recognized Indian tribe housing authorities, state agencies, the Massachusetts Bay Transportation Authority, and owners of owner-occupied residential properties with four or fewer units are exempt from this fee.

Owners and operators who are planning to remove or repair several asbestos cement siding shingles in phases at one facility/residence over a specific period of time may apply to MassDEP for approval of a "blanket notification", which would cover the entire project for a time period not to exceed one (1) year. While individual ANF-001/BW AQ-04 forms would still need to be submitted for each segment of the work, the blanket approval would eliminate the ten working day advance notification requirement for the individual filings. Information regarding asbestos blanket notifications may be found under the heading "BWP AQ 05 - Application for Asbestos Blanket - Form and Guidance" at the following link: <http://www.mass.gov/eea/agencies/massdep/service/approvals/bwp-aq-05.html>.

An application fee of \$200 is required for each application for a blanket notification approval.

Handling Practices

If you plan to remove asbestos cement shingles that are in good condition, you do not need to construct a sealed work area and use air cleaning provided you otherwise comply with MassDEP's asbestos regulation at 310 CMR 7.15 and you adhere to the "Requirements for Exterior Asbestos-containing Cementitious Shingles, Siding and Panels" found in Section (12) of the Regulation.

In practice, the regulatory requirements can be summarized as follows:

1. The asbestos cement shingles should not be broken, sanded, sawed or drilled at any time during removal or subsequent handling.
2. The asbestos cement shingles must be carefully lowered to the ground after removal to avoid breaking the shingles.
3. A drop cloth should be used under the work area. Industry work practices suggest that the drop cloth should extend a minimum of five feet wide for buildings up to ten feet in height (1 story), and that an additional three feet in width be added to the drop cloth for each additional floor above the ten-foot level. The drop cloth should be periodically cleaned during the removal of the shingles (i.e. pick up and properly package loose shingles), but no later than the end of each work shift, to prevent build up of debris that could otherwise overflow onto the surrounding ground surface.
4. All doors and windows of the side of the building where the removal is taking place should be closed, locked and sealed with polyethylene sheeting and duct taped in a manner sufficient to prevent leakage of dust or debris to interior spaces.
5. Each panel, siding or shingle shall be adequately wetted with amended water prior to removal to minimize release of asbestos fibers to the ambient air. A pump-up type sprayer ("garden sprayer") is commonly used for this purpose. It will deliver a controlled amount of water and prevent flooding; thereby minimizing slip hazards while working on ladders and drop cloths. Amended water means water with a surfactant (e.g. liquid dish soap or window cleaning fluid) added to assist in wetting the asbestos shingles.
6. A bucket of warm soapy water should be maintained at the site for decontamination purposes. Workers hands and faces should be rinsed before any coffee or meal break. All tools should be rinsed off at the end of each workday.

Packaging, Labeling and Disposal

It is understood that the contractors intend to re-apply the same shingle that was initially removed. However, in the event shingles are broken during the removal process and cannot be re-applied, the contractor must properly package, label and dispose of the broken asbestos cement shingle(s). All ACWM must be packaged, labeled, transported, stored and disposed of in accordance with requirements specified at 310 CMR 7.15(15): Asbestos-containing Waste Material Packaging Requirements, 310 CMR 7.15(16): Asbestos-containing Waste Material Transport Requirements, 310 CMR 7.15 (17): Asbestos-containing Waste Material Storage and Disposal Requirements, 310 CMR 7.15(18): Waste Shipment Records and Reports, and 310 CMR 19.061: Special Waste.

1. The wetted broken shingle(s) must be placed and sealed in leak-tight containers and properly labeled [see 310 CMR 7.15(15)]. Removed shingles, siding or panels and associated debris shall be containerized in leak-proof metal, plastic or plastic-lined drums or boxes or wrapped with double thickness plastic sheeting (six-mil minimum thickness each layer) sealed with duct tape no later than the end of each work shift. For asbestos cement shingles, it is advisable to use cardboard boxes wrapped in two (2) layers of 6-mil poly and sealed with duct tape or fiber drums with locking lids, which ensures that the waste remains confined in a leak-tight state.
2. Uncontained asbestos cement shingles, siding or panels shall not be bulk loaded into a truck, dumpster or trailer for storage, transport or disposal.
3. Each container of asbestos waste must be clearly identified with an asbestos warning label in accordance with 310 CMR 7.15(15). The label must state:

DANGER
 CONTAINS ASBESTOS FIBERS
 MAY CAUSE CANCER
 CAUSES DAMAGE TO LUNGS
 DO NOT BREATHE DUST
 AVOID CREATING DUST

The name of the property owner, the address of the site of generation and the date of generation should also be on a label on the exterior of the container.

4. Asbestos-containing waste material, including asbestos-cement shingles, are classified as a special waste under the provisions of the Massachusetts solid waste regulations, 310 CMR 19.061. Therefore, asbestos cement shingles must be disposed at a landfill that is specifically permitted to accept asbestos waste. The best option is to hire a waste hauler or asbestos abatement contractor to transport the asbestos cement shingles to a disposal facility. Many waste haulers and asbestos contractors are familiar with various disposal facilities and frequently transport wastes to out-of-state facilities permitted to accept asbestos waste. The asbestos shingles must be properly packaged and labeled during transport and delivery to the landfill. Asbestos shingles must not be disposed at a transfer station, processing/recycling facility, or municipal waste combustion facility. (See 310 CMR 7.15 (16) "Asbestos-Containing Waste Material Transport Requirements" and 310 CMR 7.15 (17) "Asbestos-Containing Waste Material Storage and Disposal Requirements" for the complete list of regulatory requirements that apply.)

Upon Completion of Work

a. Post-Abatement Visual Inspection Requirement

310 CMR 7.15(8) requires that, upon the conclusion of each asbestos abatement activity, the owner/operator shall ensure that a visual inspection is performed by a DLS-certified asbestos project monitor. The DLS-certified asbestos project monitor must inspect all surfaces within the work area for visible debris and if any is found, the contractor must re-clean the work areas until there is no visible debris.

When asbestos cement siding shingle removal is performed using the methods specified in this guidance document, the final visual inspection must be performed by a DLS-certified asbestos project monitor consistent with the requirements of 310 CMR 7.15.

The owner of the residence and the DHCD-WAP contractor who works on the residence at which the asbestos cement siding shingles were repaired, removed or replaced must keep the documentation of the post-abatement visual inspection, signed and dated by the person who conducted the inspection, for a minimum of two (2) years in the project file. (See Attachment for the Pre-Demolition/Renovation Survey and Post Abatement Visual Inspection Documentation template.)

Standards for Deferral: Describe when deferral should take place for the specific health and safety category.
If the ACS cannot be safely removed and reinstalled consistent with the guidance and insulation cannot be installed through the interior walls the unit may be deferred.
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.
If deferral is necessary, the Subgrantee must refer the client to alternative funding sources that are locally available for rehabilitation and renovation. (i.e. CDBG)
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.
Subgrantee auditors have been trained to identify ACS and WAP contractors trained to DEP standards for temporary removal and reinstallation of ACS and proper disposal consistent with DEP guidance.
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.
Clients must be provided information regarding the existence of suspected ACM in the sidewall shingles and advised them of the importance of not disturbing asbestos containing materials, how precautions will be taken for minimizing breakage and proper disposal of damaged ACS.
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.
Most installations will not result in the need for disposal, but when disposal is required, it must be completed consistent with MA DEP requirements.

Asbestos - in vermiculite

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. **Note:** Where an Action/Allowability or Testing is "required" or "not allowed" through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.

Concur with WPN11-6 <input checked="" type="checkbox"/>	Vermiculite may be tested by Asbestos Hazard Emergency Response Act of 1986 (AHERA) prescriptive sampling by a certified testing laboratory to determine if asbestos is present, though according to the EPA sample testing is not always a reliable indicator of the presence of asbestos. Depressurization blower door testing should not be completed. All WAP related workers must utilize appropriate personal and respiratory protection while working in the attic. Clients must be formally notified and instructed not to disturb. If testing indicates that asbestos is present, encapsulation by AHERA certified, licensed professional is allowed if costs are reasonable. Removal is not allowed using DOE WAP funds.
Alternative Guidance <input type="checkbox"/>	

Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.
DOE funds may be used for testing, however removal is not. Encapsulation may be allowed dependent on cost effective test.
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.
If beyond the scope of DOE WAP unit will be deferred
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when

partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.
If initial the inspection indicate suspected vermiculite is present do not disturb area or conduct blower door test until vermiculite is tested by a certified AHERA prescriptive testing. If testing indicates no asbestos, work may proceed. If testing indicates that asbestos is present, encapsulation by AHERA certified, licensed professional is allowed if costs are reasonable.
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.
Work in areas with confirmed ACM must be deferred.
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.
Referrals will be made to other rehabilitation or abatement programs.
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.
Auditors will be trained on how to identify vermiculite
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.
Clients must be formally notified and instructed not to disturb suspected ACMs.
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.
N/A No ACM will be removed

Asbestos - on pipes, furnaces, other small covered surfaces

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	Assume asbestos is present in covering materials. Encapsulation may be allowed by an AHERA asbestos control professional under some condition. Blower door testing must not be conducted if friable asbestos is present. Removal may be allowed by an AHERA asbestos control professional on a case by case basis.
Alternative Guidance <input type="checkbox"/>	
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE funds may be used under some circumstance only with prior DHCD approval. In the case of a heating system replacement, DOE WAP funds will not be used for necessary asbestos abatement.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If asbestos problem is beyond the scope of DOE WAP the unit will be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
The energy auditor will perform visual inspection to identify suspected ACM. If suspected friable asbestos is present the auditor should complete as much of the energy audit as possible without disturbing the ACM. No blower door depressurization test shall be conducted. WAP work that will not disturb the ACM (attic air sealing and insulation, dense pack sidewall insulation) may be completed. Heating system measures must be referred to HEARTWAP. If abatement is required for a heating system replacement, HEARTWAP funds will be used.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
If the ACM is in poor condition and area containing the ACM cannot be isolated from WAP work, the unit must be deferred.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Deferred units must be referred to alternative rehabilitation or abatement programs.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Auditors are/will be trained to identify ACM on pipes furnaces boilers and ductwork. MA Licensed Asbestos abatement contractors are the only individuals authorized to disturb ACM.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Clients should be instructed not to disturb suspected asbestos containing material. Provide asbestos safety information to the client.	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Disposal must be consistent with MA DEP requirements.	

Biologicals and Unsanitary Conditions - odors, mustiness, bacteria, viruses, raw sewage, rotting wood, etc.

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	Remediation of conditions that may lead to or promote biological concerns and unsanitary conditions is allowed including repairing or removing the condition that creates the problem. Addressing bacteria and viruses is not an allowable cost. Deferral may be necessary in cases where a known agent is present in the
Alternative Guidance <input type="checkbox"/>	

<input type="checkbox"/>	home that may create a serious risk to occupants or weatherization workers
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE funds may be used to repair or remedy.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If the problems are beyond the scope of the DOE WAP, the units will be deferred	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
Visual observation and sensory (odors) will be used to identify problems. The Subgrantee auditor can complete and inspection to the degree that he/she is not exposed to hazardous contaminants such as raw sewerage, animal waste/carcasses decomposing garbage. Use of DOE funds to clean-up the results occupants neglect is not allowed. Hazardous conditions must be cleaned up by an appropriate professional entity.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
If conditions present a health risk to the agency auditor or contractor, the unit must be deferred until the situation is remedied.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Units deferred should be referred to local public health departments or rehabilitation program. Elders with problems should be referred to local elder home care agencies.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Subgrantee staff is/will be trained to recognize unsanitary and unsafe work conditions for inspections and contractor's crews and understand when deferral is needed.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Inform client of observed conditions. Provide information on how to maintain a sanitary home and steps to correct deferral conditions. Discuss with elders the availability of assistance.	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Disposal of contaminants must be completed according to state and local requirements.	

Building Structure and Roofing

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is "required" or "not allowed" through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	Building rehabilitation is beyond the scope of the Weatherization Assistance Program. Homes with conditions that require more than incidental repair should be deferred.
Alternative Guidance <input type="checkbox"/>	
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE funds may be used for minor repairs consistent with the Incidental Repair category.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If work is beyond the scope of DOE WAP the unit shall be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
The auditor must conduct a visual inspection of all areas where WAP work will take place to determine that the area is safe for entry, inspection and the planned work. Incidental repairs to structure, electrical wiring, siding or roofing must be deemed necessary for the performance or preservation of the planned energy conservation measure, properly documented in the WAP Client file, (photographs, written observations) and must be cost effective consistent with DOE requirements.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
If the needed repair work does not meet the requirements for Incidental Repairs or costs exceed the ability of the WAP, the unit must be deferred.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Deferred units will be referred to locally available rehabilitation programs.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Subgrantee auditor will be trained to identify Incidental Repairs, recognize the major repairs are beyond the scope of the DOE WAP, and to understand DOE cost effective requirements.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Notify client of structurally compromised areas and other building repairs.	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
All construction debris will be disposed of properly consistent with state and local requirements.	

Code Compliance

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and

comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/> Alternative Guidance <input type="checkbox"/>	Correction of preexisting code compliance issues is not an allowable cost other than where weatherization measures are being conducted. State and local (or jurisdiction having authority) codes must be followed while installing weatherization measures. Condemned properties and properties where “red tagged” health and safety conditions exist that cannot be corrected under this guidance should be deferred.
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE funds may be used to address code compliance where weatherization work, related incidental repairs or required Health and Safety work is being conducted. DOE funds cannot be used to remedy preexisting code problems beyond the scope of the weatherization work.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If the required work is beyond the scope of the DOE WAP the work must be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
The energy audit will conduct a visual inspection and identify needed weatherization work, health and safety requirements and associated Incidental Repairs. The contractor(s) awarded the job shall apply for all required local permits.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
If code compliance requirements are beyond the scope of the WAP, the unit must be deferred	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Homes in need of excessive repairs or rehabilitation to comply with codes should be referred to local rehabilitation programs.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Subgrantee auditors will be trained as to what code compliance issues may be relevant to the WAP.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Clients must be informed of code compliance issues	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Construction debris resulting from code compliance shall be disposed of consistent with state and local requirements	

Combustion Gases

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/> Alternative Guidance <input type="checkbox"/>	Proper venting to the outside for combustion appliances, including gas dryers is required. Correction of venting is allowed when testing indicates a problem.
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE WAP funds may be used. If problems are related to the primary heating system, HEARTWAP funds should be used to the greatest degree possible.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If combustion gas problems are beyond the scope of the DOE WAP or HEARTWAP the unit must be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
Combustion safety testing is required when combustion appliances are present. Inspect venting systems of combustion appliances and confirm adequate clearances and integrity of the system. Test naturally drafting appliances for draft and spillage under worst case conditions before and after air tightening and after all WAP work has been completed as part of the Final Quality Control Visit. Inspect cooking burners for operability and flame quality. Test all combustion appliances and ambient air for CO levels. Document all pre and post WAP testing.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
Deferral shall occur when the conditions are beyond the scope of the combined resources of the DOE WAP, HEARTWAP and utility-funded program administered by the Subgrantee.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
All primary heating system problems should be referred to HEARTWAP and utility funded heating system programs.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Subgrantee auditors are/will be trained in all areas of combustion safety including combustion efficiency testing, worst case draft testing, carbon monoxide testing as well as identifying venting and chimney requirements of various types of combustion appliances. All WAP energy auditors, quality control inspectors and Grantee monitoring staff will attend mandatory combustion safety training as the program transitions to the ANSI/BPI 1200 combustion safety protocol.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Provide client with combustion safety and hazards information, including the importance of using exhaust ventilation when cooking and the	

importance of keeping burners clean to limit the production of CO. Clients must be informed of the importance of heating system maintenance.
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.
Heating systems or venting material removed using DOE or HEARTWAP funds must be disposed of consistent with state and local requirements.
Combustion Gas Problem Discovery: Provide a narrative describing the process to be followed when combustion gas testing reveals health and safety concerns.
The Subgrantee auditor and/or inspector must maintain a documented record in the client file of the results of all combustion testing before and post WAP. All call for service related to an appliance service technician or utility must be documented in the client file.

Drainage - gutters, down spouts, extensions, flashing, sump pumps, landscape, etc.

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	Major drainage issues are beyond the scope of the Weatherization Assistance Program. Homes with conditions that may create a serious health concern that require more than available incidental repair funds should be deferred.
Alternative Guidance <input type="checkbox"/>	
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE WAP Funds may be used for minor repairs to correct water problems	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
Water or drainage problems that preclude the installation of weatherization measures beyond the scope of the DOE WAP will be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
The Subgrantee auditor must complete a visual inspection of the home, gutter and drainage system and inspect the basement/crawlspace for evidence of bulk water problems.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
If costs to prevent bulk water problems are excessive, not cost effective or not possible to remedy, the work shall be deferred.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Referral should be made when bulk water issues (drainage, standing water) cannot be addressed with available funds.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Subgrantee auditors will be trained how to identify drainage issues and evidence of previous water problems.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Clients will be provided information on the importance of maintaining gutter systems and keeping basements dry.	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Any debris resulting for improvements to drainage systems will be disposed of in accordance with state and local requirements.	

Electrical, other than Knob-and-Tube Wiring

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	Minor electrical repairs are allowed where health or safety of the occupant is at risk. Upgrades and repairs are allowed when necessary to perform specific weatherization measures.
Alternative Guidance <input type="checkbox"/>	
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE WAP may be used for minor wiring improvements	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If the cost associated with the needed work is beyond the scope of the DOE, the client will be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
WAP Subgrantee auditors must conduct a visual inspection. Voltage drop and voltage detection testing are allowed. All electrical related work must be completed by a MA Licensed electrician.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
If the required work is beyond the scope of the DOE WAP the unit will be deferred	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Client will be referred to available local home rehabilitation programs.	

Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.
Subgrantee Energy Auditors will be trained to identify basic electrical safety hazards.
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.
Clients will be provided information on electric usage and safety issues.
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.
Any debris associated with electrical improvements will be disposed of in compliance with state and local requirements.

Electrical, Knob-and-Tube Wiring

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input type="checkbox"/> Alternative Guidance <input checked="" type="checkbox"/>	Minor upgrades to knob and tube wiring is allowed to the degree outlined in this guidance and as need to provide the safe installation of insulation.
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE WAP funds may be used for limited K&T wiring improvements to allow insulation installation.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If the cost of K&T wiring improvements is beyond the scope of the DOE the unit must be deferred until problem is corrected.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
Knob and Tube Wiring Protocol	
Subgrantees and contractors are prohibited from installing any type of insulation within 3 inches of active Knob and Tube wiring (K&T) in DOE WAP funded weatherization jobs.	
Subgrantees must ensure that a Massachusetts Licensed Electrician performs an electrical safety inspection prior to beginning the weatherization process in all cases where knob and tube wiring is identified. If the energy auditor is unable to visually inspect areas in older homes where knob and tube wiring is likely to be present, a licensed electrician must complete an electrical safety inspection. The electrician must provide a written report to the Subgrantee regarding the location of all active and inactive K&T wiring prior to any insulation work.	
If the Knob and Tube wiring has been deactivated, but is still in place and the dwelling has been rewired, then insulation may be placed around and in contact with the inactive Knob and Tube wiring. Insulation may be placed over deactivated knob and tube wiring only after the Subgrantee receives written confirmation from a Massachusetts Licensed Electrician.	
Limited replacement of active Knob and Tube wiring is an allowable DOE WAP repair measure. Rewiring is limited by DOE policy to only that which is necessary to allow for the installation of insulation. DOE policy prohibits the complete rewiring of a home because that would be considered a housing rehabilitation measure and is beyond the scope of the WAP.	
If the Knob and Tube wiring is active in an open attic or basement area, all insulation must be kept at least three (3) inches from the Knob and Tube. Blown insulation must be appropriately dammed to keep the insulation from advancing closer than 3 inches from the Knob and Tube wiring. If the Knob and Tube wiring is active in sidewall cavities or other restricted areas (floored attics) that cannot be accessed, insulation must not be installed in those cavities. All cavities that do not contain active K & T should be insulated.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
If the K&T upgrade is beyond the scope of WAP the unit will be deferred. The need for deferral will be determined by evaluating estimated cost of the upgrade as part of the weatherization job and the cost effectiveness of the work with the repair included.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Referrals will be made to locally available home rehabilitation programs	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Subgrantee energy auditors are trained to recognize knob and tube wiring and other potential electrical hazards.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Provide information to client on over-current protection, overloading circuits, basic electrical safety/risks	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Disposal of debris shall be consistent with state and local requirements.	

Fire Hazards

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.
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Concur with WPN11-6 <input checked="" type="checkbox"/> Alternative Guidance <input type="checkbox"/>	Correction of fire hazards is allowed when necessary to safely perform weatherization.
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE WAP funds may be used to correct fire hazards	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If problems are beyond the scope of WAP they will be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
Check for fire hazards in the home during the audit and while performing weatherization. Energy auditors shall inspect clearances of heat producing devices, appliances and venting systems to combustible to make certain that they are within requirements in the Massachusetts State Building Code and the National Fire Protection Association (NFPA) Manual on Clearances for Heat Producing Appliances. If clients heat with a solid fuel stove, the installation must comply with clearance requirements and chimney cleaned as needed. Work on solid fuel appliance and chimneys must be completed by MA Solid Fuel-Burning Appliance Installer Construction Supervisor License (SFCSL). HEARTWAP funds may be used for solid fuel stove repairs and replacements and chimney repairs.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
Deferral must occur if the costs of required repairs or upgrades to fire hazards exceed the available funds from WAP and HEARTWAP.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Referral will be made to appropriate entities if problems are beyond the scope of the WAP and HEARTWAP	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Energy Auditors will receive training in identifying potential hazards and recommended minimum clearances.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Subgrantees must inform client of observed hazards and recommend solutions.	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Disposal of debris produced from remedying fire hazards shall be consistent with state and local requirements	

Formaldehyde, Volatile Organic Compounds (VOCs), and other Air Pollutants

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/> Alternative Guidance <input type="checkbox"/>	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.
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE WAP funds can be used to remedy excessive amounts of VOCs.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If the cost of removal is beyond the ability of DOE WAP to rectify or the client refuses to allow the removal to ensure a safe workplace the unit shall be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
The initial energy auditor must include an inspection for volatile organic compounds (VOCs) stored in the home. Typical VOCs found in the home include: cleaning fluids, paints, solvents, herbicides, pesticides, formaldehyde, fuels, and automotive products. Some VOCs are known to be potential irritants to lungs, eyes, and skin. Some VOCs may be carcinogenic. They are frequently stored under sinks, in closets, and basements. Formaldehyde may be found in a variety of building components including plywood, carpeting, and particleboards. Recommend to clients that they move potentially dangerous materials outside into sheds or garages outside the living space or any other areas that may interact with the living space. Basements are not recommended for storage of VOCs. ASHRAE 62.2-2013 addresses only normal household ventilation requirements and does not ensure adequate ventilation exists if there are high levels of VOCs stored in the home.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
If the client is unwilling to remove or have removed high concentrations of VOCs or if removal costs are beyond the scope of the DOE WAP the unit must be deferred.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Referrals will be made to public health programs that are able to address these issues.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	

Subgrantee auditors are/will be trained to identify VOC's, potential hazards and when removal is necessary.
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.
Provide client education and materials concerning VOCs and indoor air quality issues such as the EPA's Care for Your Air Guide to Indoor Air Quality: http://www.epa.gov/iaq/pdfs/careforyourair.pdf
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.
Disposal of VOCs when necessary shall be consistent with state and local requirements.

Injury Prevention of Occupants and Weatherization Workers – Measures such as repairing stairs and replacing handrails.

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	Workers must take all reasonable precautions against performing work on homes that will subject workers or occupants to health and safety risks. Minor repairs and installation may be conducted only when necessary to effectively weatherize the home; otherwise these measures are not allowed.
Alternative Guidance <input type="checkbox"/>	
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE funds can be used in this category	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If repairs required for workers to safely access necessary work area are beyond the scope of the WAP, the unit must be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
The energy auditor and WAP contractor must observe if dangers are present that would prevent weatherization. If WAP work cannot be safely performed, WAP funds may be used to correct the condition if costs are reasonable .	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
If costs to correct safety concerns are beyond the scope of the DOE WAP the unit must be deferred	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Referrals will be made to locally available home rehabilitation programs.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
WAP energy auditors and contractors must be aware of potential hazards in the workplace.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Clients must be informed of hazards observed and associated risks.	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Any debris created by this measure must be disposed of consistent with state and local requirements.	

Lead Based Paint

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	Follow the Massachusetts Department of Labor Standards (DLS) Lead; Renovation, Repair and Painting Program (RRP), previously administered by the U.S.EPA. In addition to RRP, all weatherization crews working in pre-1978 housing to be trained in Lead Safe Weatherization (LSW) protocols.
Alternative Guidance <input type="checkbox"/>	
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE funds can be used to insure proper containment, worker and occupant protections, and cleanup are implemented as required in the MA DLS regulations and DOE required LWS practices.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If the lead based paint problem requires resources beyond the scope of the WAP the unit shall be deferred	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
All work in pre-1978 housing must be in compliance with the Massachusetts Department of Labor Standards (DLS) Lead; Renovation, Repair and Painting Program (RRP) regulations. All WAP work that may disturb lead-based paint in pre-1978 homes must be completed by MA Lead-Safe Renovation Contractor Licensed (eq. to EPA Certified Firm) companies using MA Lead-Safe Renovator-Supervisors (eq. to EPA Certified Renovator). All work practices must be consistent with the requirements of the MA DLS RRP. That policy can be found here http://www.Mass.gov/leadsafe . Work also must be in compliance with DOE Lead Safe Weatherization (LSW) Practices. Additionally, contractors and Subgrantee staff working in homes must attend DOE LSW Training and any required continuing ed. workshops mandated by the Grantee or Subgrantee.	

Standards for Deferral: Describe when deferral should take place for the specific health and safety category.
Deferral is required when the extent and condition of lead-based paint in the house would potentially create further health and safety hazards.
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.
Deferred units should be referred to the local board of health and lead remediation programs.
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.
All WAP Auditors and Inspectors and Grantee Monitors must be pass the MA DLS RRP Lead-Safe Renovator training (or grandfathered under the EPA Certified Renovator) and DOE LSW training including required LSW Refresher Course. Contractors crews must be receive DOE LSW training and consistent with the Mass RRP a Licensed Lead-Safe Renovator-Supervisor must be on the worksite at all times supervising all crew members during the renovation process and provide training to all crew members under their supervision. Training and certification records for Subgrantee staff and contractors working in the DOE WAP must be maintain by the Subgrantee. Grantee monitors will review contractor files for compliance annually.
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.
The MA DLS RRP Client notification requirement must be documented. The signed form must be maintained as a part of the record for that project and a copy must be maintained in the DOE Client File. The pamphlet can be accessed from the MA DLS Lead RRP website here: http://www.mass.gov/lwd/docs/dos/lead-asbestos/trp-rule/renovaterightbrochure.pdf
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.
Construction and lead based waste must be disposed of in compliance with MA DEP and DLS standards.
Lead Based Paint Compliance: Provide a narrative describing how RRP and LSW implementation will be conducted and how the grantee will verify compliance. The explanation should clearly show an understanding that LSW and RRP are separate requirements and both are required to be met.
<p>All contractors and WAP Subgrantee staff must provide verification of current certification as a Lead RRP Renovator-Supervisor and documentation of successful completion of Lead Safe Weatherization training prior to working on DOE WAP homes. Contractors completing work in pre-1978 homes must include a statement signed by the MA Licensed Lead-Safe Renovator-Supervisor who supervised the work on that unit that Lead RRP and LSW requirements and practices were complied with on the DOE WAP unit. This certification must be submitted as part of that company's invoice for the weatherization work. Testing consistent with MA DLS Lead RRP must be completed and documentation maintained as required. All Subgrantee inspections and DHCD Site Visits will include documentation that the contractor is working in compliance with Lead RRP and LSW protocols (i.e. signage, restricted access, and occupant and worker safety requirements). Violations will result in work stoppage until all required conditions are met. Serious violations will be reported to the Massachusetts Department of Labor Standards. In process inspections of contractors on site by the Subgrantee and DHCD will verify that Lead RRP and LSW training requirements have been met.</p> <p>DHCD's DOE WAP Technical Manual includes the following narrative:</p> <p>Lead paint is a serious health and safety concern when conducting any type of renovation or construction in pre 1978 housing. The DOE has been very proactive in making certain that policies are in place to ensure that weatherization work does not create problems in homes that are served through the program. DOE requires that Lead-Safe practices be used in all buildings that may have lead paint (pre 1978 housing) regardless of the amount that may be disturbed.</p> <p>Generalized lead paint removal is not an allowable activity under the Weatherization Assistance Program. The information in this guidance is not intended to provide specific information for the proper handling of lead. For detailed information regarding lead paint abatement see Commonwealth of Massachusetts' Publications 454 CMR 22.00: http://www.mass.gov/lwd/docs/dos/lead-asbestos/trp-rule/lead-454cmr22-00.pdf and 105 460 CMR: http://www.mass.gov/eohhs/docs/dph/regs/105cmr460.pdf</p> <p>In response to the dangers of lead paint in homes, the U.S Environmental Protection Agency (EPA) developed the Lead Paint: Renovation, Repair, and Painting Program (Lead RRP) that became fully effective April 22, 2010. The EPA Lead RRP provides a framework of required training and certification of workers and companies as well as construction and renovation practices that are intended to reduce the exposure of workers and occupants of homes undergoing painting or renovation. Under the EPA RRP requirements companies are required to be Certified Firms and crew chiefs supervising the work must be Certified Renovators. The EPA Lead RRP also provides important required occupant notification and sign-offs for homes undergoing renovation.</p> <p>Effective July 11, 2010, the Massachusetts Department of Labor Standards (DLS) (formerly, the Division of Occupational Safety) took over the administrative and enforcement requirements of the EPA Lead RRP in Massachusetts. Under the Massachusetts regulations, companies are required to have a Lead-Safe Renovation Contractor License. Entities that were previously EPA Certified Firms were required to apply for a Mass. fee-waived license that will be valid for the five year period of the original EPA Certified Firm. Workers must be trained and certified as a MA Lead-Safe Renovator/Supervisor. EPA Certified Renovators are grandfathered to that status.</p> <p>A comparison of the EPA Lead RRP and the requirements under the MA DLS Lead RRP can be found here: http://www.mass.gov/lwd/labor-standards/lead-program/documents/comparison-of-epa-and-dls-rrp-rule-requirements.html.</p> <p>This guidance is intended to provide Subgrantee staff and contractors working in the weatherization program with general guidelines on addressing lead paint concerns in homes receiving services funded through the DOE WAP. It is not intended to address all the specific requirements of private sector contractors working in the DOE WAP. As Massachusetts Licensed Construction Supervisors and Lead-Safe Renovator/Supervisors, it is each contracting company's responsibility to stay current with the Massachusetts requirements for licensing, permitting, notification, record keeping and job site safety as it pertains to the operation of their business.</p>

To minimize risks to clients and Weatherization personnel:

Household notification requirements: Prior to beginning renovation, repairs, and painting in pre-1978 housing and child-occupied facilities Subgrantees or the weatherization contractor must provide the occupants with, "Renovate Right Important Lead Hazard Information for Families, Child Care Providers and Schools" developed by the US Environment Protection Agency (EPA) and the US Department of Housing and Urban Development (HUD). Subgrantee client files must include documentation that the occupants received the pamphlet. The EPA pre-renovation disclosure form included in the pamphlet may be used for this purpose. The signed form must be maintained as a part of the record for that project. The pamphlet can be accessed from the MA DLS Lead RRP website here: <http://www.mass.gov/lwd/docs/dos/lead-asbestos/rrp-rule/renovaterightbrochure.pdf>

All WAP work that may disturb lead-based paint in pre-1978 homes must be completed by MA Lead-Safe Renovation Contractor Licensed companies using MA Lead-Safe Renovator-Supervisors. All work practices must be consistent with the requirements of the MA DLS RRP. That policy can be found here <http://www.Mass.gov/leadsafe>.

•Subgrantees must assume that any paint in homes built before 1978 contains lead unless it has been verified otherwise.

•Examples of Lead-Safe practices include (but are not limited to):

- Work area containment to prevent dust and debris from leaving the work area. The containment requirements vary depending on the activities conducted and location of the work. Work on the exterior of the building has additional containment requirements.
- The prohibition of certain work practices like open face burning and the use of power tools without HEPA exhaust control.
- Thorough clean-up followed by a verification procedure to minimize exposure to lead-based paint hazards.
- MA DLS standards require that a Licensed Lead-Safe Renovator-Supervisor be on the worksite at all times supervising all crew members during the renovation process.

The MA DLS RRP training and certification process for renovators and firms requires many specific protocols for when the RRP requirements must be met and what work practices are required depending upon individual circumstances. The EPA's "Small Entity Compliance Guide to Renovate Right, EPA's Lead-Based Paint Renovation, Repair and Painting Program" provides simplified guidance of how and when these regulations apply. The brochure can be accessed here: <http://www2.epa.gov/sites/production/files/documents/sbcomplianceguide.pdf> Information regarding Massachusetts specific requirements can be accessed at the MA DLS website: <http://www.mass.gov/lwd/labor-standards/lead-program/rrp.html>

Additional detailed specifications regarding the health and safety of workers in the construction industry can be found in Construction Industry OSHA Safety and Health Standards (299 CFR 1926/1910) and the specific worker safety requirements in the EPA's "Lead: Renovation, Repair, and Painting Program" (LRRPP) Final Rule. See also Section 9.5 Lead- Safe Procedures within the Northern Edition Weatherization Field Guide.

In addition to the Lead RRP program requirements, DOE requires that Lead Safe Weatherization (LSW) practices be conducted at all times when working in pre-1978 housing. All workers (crew chief, crew members, energy auditors and inspectors) must receive Lead Safe Weatherization Training based on a DOE approved curriculum. Subgrantees must include this verification in the WAP Contractor's files. DHCD will verify this information during Program Assessments.

DOE LEAD SAFE WEATHERIZATION INFORMATION

Lead Safe Weatherization (LSW) is defined by the U.S. Department of Energy (DOE) as a set of techniques designed to: minimize the production of lead paint dust and chips, prevent the spread of dust and chips, and to include a thorough cleaning of the work area once the work is completed.

U.S. Department of Energy's Policy Regarding Lead-Based Paint in Homes

Lead-based paint dust and other residues are hazards that Weatherization workers are likely to encounter in older homes. HUD estimates that four million homes have significant lead-based paint hazards. Furthermore, Weatherization work may directly disturb lead-based paint, possibly creating hazardous conditions. While the authorizing legislation for DOE's Weatherization Assistance Program (WAP) does not specifically address lead-based paint hazard reduction, DOE's policy is that Weatherization workers must be aware of the hazard and conduct Weatherization activities in a safe work manner to avoid contaminating homes with lead-based paint dust and debris, and to avoid exposing themselves and their families to this hazard.

It is important to remember that WAP's legislated purpose is to install energy efficiency measures in weatherization client's homes in order to lessen their energy cost burden. WAP is not funded to do lead-based paint abatement work, or to do lead-based paint hazard control or stabilization. In the process of weatherizing a home, workers sometimes encounter and have to disturb painted surfaces that are known or presumed to contain lead-based paint. When that happens, DOE funds may be used to minimize the potential hazard associated with the specific painted surfaces that workers are directly disturbing in the course of installing an energy efficiency measure, but DOE funds may not otherwise be used for abatement, stabilization, or control of the lead-based paint hazard that is in the house.

Post-Weatherization Cleanup

Cleanup at the completion of Lead-Safe Weatherization work requires the use of a HEPA vacuum, (a HEPA filter in a standard vacuum is NOT an acceptable alternative) wet cleaning methods, a visual inspection and the collection and disposition of any dust, debris or chips with the rest of the jobsite waste.

Pollution Occurrence Insurance Coverage

Massachusetts requires WAP Subgrantees to maintain a POI policy adequate to protect against potential incurred liability. Verification of this coverage is completed annually.

U.S. Department of Energy's Minimum Standards for Lead Safe Weatherization (LSW)

Safe work practices must be implemented to minimize exposure to hazards for the customer and the workers, while allowing Weatherization to occur in a cost-effective manner and to not hinder production. The effort required will be based on the hazard, the work specifications, and customer health issues.

CHECK Federal, state, and local regulations.

- OSHA has rules for worker safety.
- States and local communities may have rules for waste disposal.

To meet the LSW minimum standards, crews and contractors MUST follow the general principles of working clean and working wet. Best practices for working clean and working wet are available in the benchmark LSW procedures and curriculum and should be reviewed and consistently enforced on LSW jobs.

A. Requirements

1. Weatherization Worker Protection

LSW includes these procedures and safety precautions:

- Wear personal protective gear specifically suited for the particular LSW measure. Use at least ½ face respirators with HEPA filters that are approved by the National Institute for Occupational Safety and Health (NIOSH).
- Use disposable overalls (with hood or a disposable painter's cap), gloves (cloth, plastic, or rubber as appropriate), goggles, and disposable shoe/boot covers.
- Keep dust to a minimum and confine dust and paint chips to the work area.
- Clean up area during and after work.
- During Weatherization, wash your hands and face frequently, particularly when leaving the work area and especially before leaving the area for the purpose of eating, drinking, or smoking.
- Before leaving a confined work area, remove your protective clothing and protective shoe/boot covers to avoid exposing others.
- Before leaving a confined work area, and before returning tools and equipment to vehicles, clean all tools to avoid exposing others and creating a lead-hazard to the next Weatherization job.
- Get annual medical exams to check blood lead levels. Do non-lead-related work if your blood lead level gets too high.
- Inform your employer if you develop signs of lead poisoning.

2. Client Notification

Consistent with the EPA and MA DOS RRP Program Subgrantees must provide occupants of the home the EPA brochure, Renovate Right Important Lead Hazard Information for Families, Child Care Providers and Schools. A copy of the signed acknowledgement must be included in the client file.

For occupied homes, the Weatherization staff, crew, or contractor must have an adult tenant or homeowner sign an acknowledgement after receiving the pamphlet. The pamphlet can also be sent by certified mail with receipt to be placed in the client file.

In multi-unit housing, the agency must:

- Provide written notice to each affected unit (notice must describe: general nature and locations of the planned renovation activities; the expected starting and ending dates; statement of how occupant can get pamphlet at no charge); or
- Post informational signs (signs must describe general nature and locations of the renovation and the anticipated completion date) and post the EPA pamphlet. (If pamphlet is not posted then agencies are required to provide information on how interested occupants can review a copy of the pamphlet or obtain a copy at no cost from the Weatherization Program).
- Delivery to owner/occupant. Owner's and/or occupant's signature with acknowledgment or certificate of mailing. The owner/occupant must acknowledge receipt of the EPA pamphlet prior to start of renovation that contains the address of unit undergoing renovation, name and signature of owner or occupant, and the date of signature. It must be in same language as "contract for renovation" for an owner-occupied (or the same language as the lease for occupant of non-owner occupied) target housing.

If the subgrantee cannot get a signed acknowledgment (either the occupant is not home or refuses to sign the form), then the self-certification section of the form must be signed to prove delivery.

The acknowledgement form must be filed and remain with the client file for three years from date of signature. In addition to providing a copy of the pamphlet to owners and occupants, the subgrantee and or weatherization contractor must discuss the hazards associated with lead-based paint and lead dust, and describe how they will conduct LSW in the home.

B. General LSW Work Practice Standards

- Crews and contractors must take steps to protect occupants from lead-based paint hazards while the work is in-progress using appropriate containment strategies.
- Occupants, especially young children or pregnant women, may not enter the work site. Occupants are allowed to return only after the work is

done and the home has passed a visual inspection.

- Occupants' belongings must be protected from lead contamination. This can be done by removing them from the work area or covering them in protective bags and sealing it to prevent dust from getting on the items.
- 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 (e.g., work will take several days and involves the kitchen, bathrooms, or bedrooms that cannot be sealed off from use), occupants must move out of the unit or the work must be deferred until containment can be achieved.
- A Certified Renovator must supervise and inspect Weatherization work of any type and scale to ensure it is being done properly.
- Ensure containment does not interfere with occupant and worker egress in an emergency.

C. Containment

Containment is anything that stops any dust or debris from spreading 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.

- NEVER - allow residents and pets access to the work area while work is underway.
- NEVER - open windows and doors allowing lead dust to float into other parts of the building or outside.
- NEVER - allow furniture and other objects to remain in the Weatherization work area while Weatherization work is being performed unless they are covered and sealed in polyethylene sheeting or bags.

Every home and every specific Weatherization measure is unique; therefore the level of containment required will be based on the hazards present, the age of the home, the scope of work activities, and any customer health issues. Although Weatherization jobs require individual assessments, LSW work generally falls into two levels of containment and the related standards are outlined below.

Level 1 Containment

Level 1 Containment is required in pre-1978 homes when less than 6 square feet of interior painted surface per room or 20 square feet 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 which must be kept secure.

Measures requiring Level 1 Containment may include:

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

Level 2 Containment

Level 2 Containment is required when Weatherization activities will disturb more than 6 square feet of interior surface per room or 20 square feet 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 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 painted 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

Additionally, Level 2 containment must ALWAYS be used where any of the following is conducted (even if the activities will disturb less than the hazard de minimis levels within the Level 1 category):

- Window replacement
- Demolition of painted surface areas

D. Proper LSW Clean-Up and Debris Disposal

Following the containment standards in the previous section will minimize the level of effort required to properly clean up the job site. All dust, dirt, material scraps, containers, wrappers, and work related debris must be removed from the customer's home. A HEPA vacuum should be used to clean up the work areas. Further cleaning may be necessary based on the hazard.

At the conclusion of the job, once all workers have “cleaned” the work areas thoroughly, Weatherization workers must adhere to the following:

•Safe and Secure Disposal:

- o Bag and gooseneck-seal all waste in 6-mil. plastic bags.
- o Safely dispose of all waste in accordance with federal, state, and local regulations.

• Visual Inspection Verification:

Checking the quality of worksite cleanliness is a two-phase process:

- o Phase 1: Worker visual inspection during the cleaning process; look for any visible paint chips, dust, or debris as you clean, using proper techniques.
- o Phase 2: Supervisor visual inspection after cleanup. There should be no evidence of settled dust following a cleanup effort. If dust is observed, the Weatherization crew must be required to repeat the cleaning.

If work is done outside the house, the grounds around the dwelling and all exterior horizontal surfaces should also be examined visually to make certain that all waste and debris have been removed and that paint chips were not left behind. To comply with the Lead RPP Rule, cleaning verification using EPA-developed cards are required. Specific steps required of the Licensed Renovator/Supervisor during the cleaning verification process are available in the Lead RPP Rule. All individuals completing work or inspecting homes receiving DOE WAP funds must receive training on LSW protocols based on a DOE approved curriculum. Lead RRP training and certification does not preclude the need for DOE LSW Training.

Mold and Moisture

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. **Note:** Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.

Concur with WPN11-6 <input checked="" type="checkbox"/>	Limited water damage repairs that can be addressed by weatherization workers and correction of moisture and mold creating conditions are allowed when necessary in order to weatherize the home and to ensure the long term stability and durability of the measures. Where severe Mold and Moisture issues cannot be addressed, deferral is required.
Alternative Guidance <input type="checkbox"/>	

Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.

WAP Funds can be used for minor repairs and mitigation of water and moisture issues. Mold testing and remediation is not an allowable weatherization expense.

Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.

If serious mold problems exist, weatherization must be deferred the problem is resolved.

Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. **Note:** Some health and safety categories, like combustion gases, require testing.

Visual assessment of all areas of the home is required. Use of a moisture meter is recommended. Areas with suspected mold must be identified and documented with pictures. If large concentrations of mold in an individual area or throughout the building exist (greater than 20 sq. ft. according to EPA standards), deferral is required. If sources of moisture causing the problems can be identified and mitigated through adequate ventilation, dehumidification, or elimination WAP work can proceed. Provide client with instructions on cleaning existing concerns consistent with EPA recommendations.

Standards for Deferral: Describe when deferral should take place for the specific health and safety category.

Deferral is required if severe moisture conditions cannot be corrected before weatherization. Units with moderate to severe suspected mold must be deferred

Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.

Clients will be referred to locally available resources for home rehabilitation and healthy homes.

Training Provision: Discuss how training will be provided for the specific health and safety category. **Note:** Some health and safety categories, like OSHA, require training.

Subgrantee auditors will be provided training in identifying suspected mold and identifying and determining potential causes of high moisture levels.

Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. **Note:** Some health and safety categories, like mold and moisture, require client education.

Provide the client with information, notification and documentation of areas with existing mold issues. Provide the client with the EPA Guide, Mold, Moisture and Your Home: <http://www.epa.gov/iedmold1/pdfs/moldguide.pdf>.

Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.

Any waste or debris generated through the WAP work will be disposed of consistent with state and local requirements.

Mold Protocols: Provide a narrative describing protocols for addressing mold found in the client’s homes. The protocol should include a method of identifying the presence of mold during the initial audit or assessment, notification to the client, and crew training on how to alleviate mold and moisture conditions in homes.

The initial inspection of the home must include a thorough mold and moisture assessment, inspection and documentation of any existing problems. Subgrantees must utilize the standard form the Massachusetts WAP Mold Inspection and Release Form included in the WAP

Technical Manual, digital photographs and additional narrative as needed to document the problems. Diagnostics using a moisture meter is recommended. Existing mold and/or moisture problems will very likely worsen if the home is tightened and inadequate steps are taken to address the underlying issues. If serious mold problems exist, weatherization must be deferred the problem is resolved. Subgrantees must use the deferral of services policy outlined in this guidance in these instances. Provide the household with educational material such as the EPA Guide, Mold, Moisture and Your Home: <http://www.epa.gov/iedmold1/pdfs/moldguide.pdf>.

Look for and identify potential moisture and mold problems. Thoroughly investigate to determine the sources of the moisture. In the living space look for evidence of condensation on windows and exterior walls, (stains and/or mold and mildew) especially in areas with limited air circulation such as behind furniture and in closets. Check the bathroom ceilings for dark spotting, determine if existing bath fan (if any) are operable and properly vented to the outside. In the basement/crawlspace check for standing water, open sumps, dirt floors, leaking pipes and drains and water stains on the foundation walls. In attic spaces look for staining on the roof sheathing and rusted or frost-covered roofing nails. Note if staining is consistent through the whole attic space or localized. Potential sources of excessive moisture levels in a home include:

Dirt crawlspaces with no vapor barrier; standing water in the basement or crawlspace; unvented (or defective) combustion appliances; unvented clothes dryers; improperly vent bathroom fans, firewood stored in the basement or living space; excessive house plants; large number of inhabitants in small living space; defective plumbing; defective or non-existent gutters and downspouts; high ground water tables; standing water in basement or crawlspace; leaking roofs; windows; and sidewalls.

To extent possible within the parameters of the DOE WAP determine appropriate measures to reduce the water and moisture problems by first implementing mitigation measures such as diverting rainwater with gutters and downspouts and grading, repairing leaks in roofs, siding, windows, doors and other building shell components, cover all exposed ground in crawlspace areas with a continuous min. 6 mil polyethylene ground moisture barrier, overlapped and sealed at seams and extend up the foundation a minimum of 6 inches and sealed with an appropriate durable sealant. Provide the client with information about moisture generating activities and suggestions on how to reduce moisture levels. Ventilation to current ASHRAE 62.2 standards is required (unless unit is deferred) but the Standard does not take into consideration high levels of background moisture. Additional ventilation at the source may be possible and required. Bath and kitchen fans used as part of ASHRAE compliance can also be operated at a higher CMF rate when needed, to reduce occupant-produced (showering, cooking, pets, or other lifestyle issues) moisture levels.

Occupant Preexisting or Potential Health Conditions

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. **Note:** Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.

Concur with WPN11-6 <input checked="" type="checkbox"/>	When a person’s health may be at risk and/or the work activities could constitute a health or safety hazard, the occupant at risk will be required to take appropriate action based on severity of risk. Temporary relocation of at-risk occupants may be allowed on a case by case basis after consultation and approval from DHCD. Failure or the inability to take appropriate actions must result in deferral.
Alternative Guidance <input type="checkbox"/>	

Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.

DOE WAP funds may be used under some circumstances with prior approval.

Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.

If health concerns of the resident(s) as it relates to the WAP work cannot be addressed through the program, the unit must be deferred.

Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. **Note:** Some health and safety categories, like combustion gases, require testing.

Subgrantees and their representatives must take all reasonable precautions against performing work on homes that will subject clients to health and safety risks. During the intake and energy audit process, the Subgrantee must make an evaluation of the health of the home’s occupants. Without requesting specific medical information, the client should be asked if any household members have asthma-like or any respiratory issues or other health concerns that the program should be aware of. In cases where a person’s health is fragile and/or the weatherization activities would constitute a health or safety hazard, the occupants will be required to leave during the work process or the agency and contractor should not begin the work. Work that is completed should in no way contribute to or create an unhealthy condition in the home. All problems and concerns must be fully documented in the client file.

Standards for Deferral: Describe when deferral should take place for the specific health and safety category.

Deferral will occur when precautions cannot be practically taken to avoid harm to the client or family members

Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.

Referrals will be made to locally available programs such as healthy homes and elder services agencies.

Training Provision: Discuss how training will be provided for the specific health and safety category. **Note:** Some health and safety categories, like OSHA, require training.

Subgrantee will be made aware of healthy homes issues and resources and resources available regarding client health issues and how to assess occupant preexisting conditions and determining what action to take if the home is not deferred.

Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. **Note:** Some health and safety categories, like mold and moisture, require client education.

Provide client with information about resources for home health issues

Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.

N/A

Occupational Safety and Health

Administration (OSHA) and Crew Safety

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. **Note:** Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.

Concur with WPN11-6 <input checked="" type="checkbox"/>	Workers must follow OSHA standards including Confined Space regulations and Material Safety Data Sheets (MSDS) and take precautions to ensure the health and safety of themselves and other workers. MSDS must be available wherever workers may be exposed to hazardous materials.
Alternative Guidance <input type="checkbox"/>	

Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.

DOE WAP funds can be used

Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.

If beyond the scope of the DOE WAP the unit will be deferred.

Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. **Note:** Some health and safety categories, like combustion gases, require testing.

Grantee staff will have personal protection equipment (PPE) available for conducting home inspections consistent with OSHA requirements for the type of work they are inspecting. Manufacturer’s Safety Data Sheets (MSDS) for materials encountered during typical weatherization work must be available for grantee staff.

Subgrantee audit and inspection staff will have PPE equipment available for all home inspections consistent with OSHA requirements for the work that is completed. MSDS for materials typically encountered in their daily work must be made available for auditors/inspectors.

Contractors and their crews are covered by the requirements of OSHA Standards Title 29 Code of Federal Regulations (CFR) Part 126:

https://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1926.

Contractors and local Subgrantees will be provided information and training regarding OSHA required Hazard Communication including <https://www.osha.gov/Publications/OSHA3696.pdf> and similar related materials. Contractors and their crews must be aware of and have access to the MSDS and related information for the materials they may deal with in typical weatherization work

Grantee and Subgrantee inspectors, auditors and contractors and their crews are subject to [OSHA 1926.1207](#) Confined Space in Construction regulations.

Standards for Deferral: Describe when deferral should take place for the specific health and safety category.

Deferral will occur when the OSHA required activity is beyond the scope of the DOE WAP.

Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.

Referrals will be made to alternative programs.

Training Provision: Discuss how training will be provided for the specific health and safety category. **Note:** Some health and safety categories, like OSHA, require training.

Grantee and Subgrantee staff will be trained in the importance and use of PPE. OSHA 10 Job Site Safety, Training and Confined Space in Construction Training is required of Grantee and Subgrantee auditors and inspectors. Attendance must be documented and information maintained in local agency records for staff and contractor files. DHCD will continue to provide worker safety training during on-site training completed in conjunction with the IREC Accredited WAP Training Center, the Green Jobs Academy.

Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. **Note:** Some health and safety categories, like mold and moisture, require client education.

Information about job site safety and MSDS will be available to clients at their request.

Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.

Disposal must be consistent with state and local requirements.

OSHA and MSDS Compliance: Provide a narrative describing procedures for implementation of OSHA and MSDS requirements related to crew and worker safety, how the 10 and 30 hour training requirements will be met, and what the process is for determining if crews are utilizing good safe work practices according to all requirements (EPA, OSHA, etc.).

WAP contractors are required to provide WAP Subgrantees with documentation of completion of OSHA 10 training. Information is maintained in the contractor’s file at the Subgrantee and reviewed by DHCD staff during monitoring visits. Workers must be provided information and receive training on potentially hazardous materials that may be encountered on WAP jobsites. Manufacturers Safety Data Sheets (MSDS) as well as appropriate OSHA Safety information must be available at worksites. Workers must be trained in the requirements of OSHA Confined Spaces in Construction rule. During WAP Field visits DHCD staff will inspect in process work to determine that WAP Contractors and their crews are utilizing safe work practices and maintain required MSDS and related information on-site consistent with WAP and OSHA requirements.

Pests

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. **Note:** Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.

Concur with WPN11-6 <input checked="" type="checkbox"/>	Pest removal is allowed only where infestation would prevent weatherization. Infestation of pests may be cause for deferral where it cannot be reasonably removed or poses H&S concern for workers. Screening of windows and points of access is allowed to prevent intrusion.
Alternative Guidance <input type="checkbox"/>	

Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.

DOE WAP funds can be used.
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.
If pest infestation is beyond the scope of WAP will be deferred.
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.
Subgrantee energy auditors will assess the presence and degree of infestation and risk to worker. Pest infestation that may prevent weatherization activity or potentially lead to the degradation of weatherization materials must be corrected prior to weatherization or the unit deferred. Care should be taken that installed materials are protected from pest intrusion. When repairing or fillings cracks and holes to the exterior, use a metal mesh filler to prevent future intrusion.
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.
If cost for remedy of pest problems are beyond the scope of the program, the unit must be deferred.
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.
Referrals will be made to locally available home rehabilitation programs and healthy homes and public health entities.
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.
Energy auditors will be made aware of pest concerns in housing including the EPA's Controlling Pests at Home information: http://www.epa.gov/pesticides/controlling/index.htm
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.
Provide client with information about identified problems and associate risks. Provide clients with information about pest control such as the EPA's Preventing Pests at Home: http://www.epa.gov/oppfead1/Publications/preventpest.pdf
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.
All waste will be disposed of consistent with state and local requirements.

Radon

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is "required" or "not allowed" through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
<input checked="" type="checkbox"/> Concur with WPN11-6 <input type="checkbox"/> Alternative Guidance	Whenever site conditions permit, exposed dirt must be covered with a vapor barrier except for mobile homes. In homes where radon may be present precautions should be taken to reduce the likeliness of making radon issues worse.
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
Testing is allowed using DOE funds. Full mitigation systems are not.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If required measures are beyond the scope of the DOE WAP the unit will be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
Radon testing is allowed and recommended in locations with an identified high radon potential. The EPA Radon information and map for Massachusetts is available here: http://www.epa.gov/radon/states/massachusetts.html . While full radon mitigation systems are not allowed, measures may be taken to reduce levels (ground cover, cover open sumps, patch cracks) and precautions must be taken to reduce the likelihood of making problems worse. Additional information for homeowners can be found in the EPA's Consumer's Guide to Radon: http://www.epa.gov/radon/pdfs/consguid.pdf and the Citizens Guide to Radon: http://www.epa.gov/radon/pdfs/citizensguide.pdf and the Massachusetts Department of Health and Human Services <i>Public Health Fact Sheet on Radon</i> http://www.mass.gov/eohhs/gov/departments/dph/programs/environmental-health/exposure-topics/radiation/radon/public-health-fact-sheet-on-radon.html .	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
If levels greater than 4 pico-Curies per liter (pC/l) are indicated by testing that cannot be reduced within the scope of the DOE WAP allowable work will be deferred.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Referrals will be made to locally available home rehabilitation and public health programs.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Subgrantee energy auditors will be trained on radon issues as they relate to weatherization including what it is, how it occurs and enters homes, what factors may make conditions better or worse.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Provide clients with information about radon test results and EPA and/or MA fact sheet referenced above.	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Materials and debris associated with testing or precautions will be disposed of consistent with state and local requirements.	

Refrigerant

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/> Alternative Guidance <input type="checkbox"/>	Reclaim refrigerant per Clean Air Act 1990 section 608 as amended by 40 CFR82, 5/14/93
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE WAP may be used.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If beyond the scope of the DOE WAP the unit will be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
The DOE WAP does not generally fund refrigerator replacements in Massachusetts because of the availability of utility funding however when completed with DOE or utility funds the contractor is required to dispose of the old refrigerator in accordance with Clean Air Act 1990 section 608 as amended by 40 CFR82, 5/14/93	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
Deferral will occur when required work is beyond the scope of the DOE WAP or utility funded program.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Referrals will be made to locally available programs.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Contractors working with refrigerants are required to comply with EPA-approved section 608 type I or universal certification	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Clients must be instructed not to disturb refrigerants	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Disposal of all refrigerators and refrigerants must be consistent with the Clean Air Act 1990 section 608 as amended by 40 CFR82, 5/14/93	

Smoke, Carbon Monoxide Detectors, and Fire Extinguishers

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/> Alternative Guidance <input type="checkbox"/>	Installation of smoke/CO detectors is allowed where detectors are not present or are inoperable. Replacement of operable smoke/CO detectors not an allowable cost.
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE WAP funds are allowed	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
Installation is not allowed unless other DOE WAP funded measures are part of the scope of work.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
Install smoke and/or CO detectors in units with a combustion appliance or an attached garage where no detectors exist or the existing unit is inoperable or has exceeded the manufacturers expect life of the device. Installation must be consistent with the Massachusetts Building Code. A fire extinguisher is an allowable H&S expense in homes that use a solid fuel appliance.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
Deferral will occur when required work is beyond the scope of the DOE WAP	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Referrals will be made to locally available housing programs and the enforcement entity for CO and Smoke detectors, the local fire department.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Subgrantees will be trained on the appropriate installation and code requirements for smoke and CO detectors	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Clients will be provided information on the importance of smoke and CO detectors and their operation and where applicable on the operation of a fire extinguisher. The MA Department of Public Safety’s Fire Services Division has produced a Consumer’s Guide to CO Alarm Requirements	

available here: http://www.mass.gov/eopss/docs/dfs/osfm/pubed/flyers/carbon-monoxide-safety-guide.pdf
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.
Nonfunctioning and outdated detectors removed from DOE WAP homes will be disposed of consistent with state and local requirements.
Smoke/CO Detector Installation: Provide a narrative describing smoke/CO Detector installation parameters and procedures.
Installations of smoke/CO detectors will be consistent with the requirements of the Massachusetts Building Code and the manufacturer's recommendations. The Massachusetts code requires a CO detector on each occupied level of the dwelling and on levels of the home with bedrooms, within 10 feet of each bedroom door.

Solid Fuel Heating (Wood Stoves, etc.)	
Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is "required" or "not allowed" through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	Maintenance, repair, and replacement of primary indoor heating units is allowed where occupant health and safety is a concern. Maintenance and repair of secondary heating units is allowed
Alternative Guidance <input type="checkbox"/>	
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE WAP funds are allowed however to the greatest degree possible maintenance, repair, and replacement of primary heat solid fuel appliances should be referred to the HEARTWAP program.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If the scope of work required is beyond the capacity of the DOE WAP and HEARTWAP the unit must be deferred.	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
Solid fuel heating appliance work should be referred to the HEARTWAP Program for services and all work completed consistent with the requirements of that program and the Massachusetts Building Code	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
Deferral will occur when required work is beyond the scope of the DOE WAP and HEARTWAP.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Referrals will be made to locally available housing programs and the local code officials.	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Subgrantees will be trained on the appropriate installation and code and clearance requirements, and combustion appliance zone testing.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Clients will be provided in the information about safe operations of the solid fuel appliance and how to recognize depressurization problems.	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Systems and venting components will be disposed of consistent with state and local requirements.	

Space Heaters, Stand Alone Electric	
Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is "required" or "not allowed" through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	Repair, replacement, or installation is not allowed. Removal is recommended and should be performed by WAP along with proper disposal.
Alternative Guidance <input type="checkbox"/>	
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE funds will not be used.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
N/A	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
Check circuitry to ensure adequate power supply for existing space heaters. Provide the client with recommendation that if electric space heaters must be used temporarily, that oil filled radiant tower type electric space heaters are a safer alternative than resistance type heaters provided that the electric circuitry is adequate. DOE funds may not be used to purchase any type of electric space heater.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
Deferral is required if unsafe conditions exist regarding electric space heaters and the client is unwilling to make corrections.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Referrals will be made to locally available housing program and code officials if significant problems exist that cannot be remedied	

Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.
Subgrantee energy auditor will be trained in the requirements of this guidance and identifying unsafe conditions
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.
Inform client of hazards and collect a signed waiver if removal is not allowed.
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.
All space heaters removed from DOE WAP client's homes must be disposed of consistent with state and local requirements

Space Heaters, Unvented Combustion

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is "required" or "not allowed" through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input type="checkbox"/>	If there is an unvented combustion space heater being used in the building, WAP services must be deferred until the client signs an agreement that the heater will be removed from the dwelling and will not be used after the work has been completed.
Alternative Guidance <input checked="" type="checkbox"/>	
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE WAP funds cannot be used to repair an unvented combustion appliance. If the unvented combustion appliance is the sole source of heat, the client must be referred to the HEARTWAP program and a safe effective heating system installed prior to weatherization.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
N/A	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
Subgrantee auditors that identify an unvented combustion space heater should immediately notify the client that no DOE WAP work will be completed until the unvented combustion appliance is removed and a safe heating system can be installed and refer the client to the HEARTWAP program as high priority heating system replacement. The auditor should conduct an ambient air CO test and make certain that the home has operable CO detector(s).	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
The use of an unvented combustion space heater requires deferral	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
The subgrantee will directly refer the client to the HEARTWAP Program as a high priority heating system replacement	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Subgrantee energy auditors will be trained in ambient air CO testing and the dangers of unvented combustion space heaters	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Inform the client of the many dangers of unvented combustion space heaters including CO, CO2, NO2 water vapor	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Any unvented combustion spacers removed will be disposed of consistent with state and local requirements.	

Space Heaters, Vented Combustion

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is "required" or "not allowed" through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	Vented space heaters will be treated the same a warm air furnaces
Alternative Guidance <input type="checkbox"/>	
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
If the space heater is the primary heat source, all service and replacements will be completed with HEARTWAP and utility funding. If a secondary heat source or no alternative funds are available DOE funds can be used. If a replacement is needed, the system should be cost tested with an approved DOE Audit to determine if SIR is greater than 1, then completed as an efficiency measure. If not and a replacement is needed for health and safety reasons DOE Health & Safety funds can be used.	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If alternative funding or DOE funding is unable to address the required remediation, the unit will be deferred	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
Vented space heaters must be tested for combustion safety and efficiency. If the unit is defective or unsafe, referral should be made to the HEARTWAP or utility funded heating system programs. All repairs or replacements will be completed by an individual licensed to complete the	

work and all permits required by the local authority having jurisdiction will be applied for.
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.
If costs to repair or replace exceed the available resources, the unit will be deferred.
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.
Referral will first go to the HEARTWAP. If insufficient funds are available, refer to local rehabilitation or housing programs.
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.
Subgrantee auditors will be training in combustion efficiency and combustion safety testing.
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.
Clients will be provided space heater operation and safety information.
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.
Space heaters replaced will be disposed of consistent with state and local requirements.

Spray Polyurethane Foam (SPF)

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	Use EPA recommendations (available online at http://www.epa.gov/dfe/pubs/projects/spf/spray_polyurethane_foam.html) when working within the conditioned space or when SPF fumes become evident within the conditioned space. When working outside the building envelope, isolate the area where foam will be applied, take precautions so that fumes will not transfer to inside conditioned space, and exhaust fumes outside the home.
Alternative Guidance <input type="checkbox"/>	
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE WAP funds may be used	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
N/A	
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.	
Check for penetrations in the building envelope. Crews should use sensory inspection inside the home for fumes during foam application. If the application of spray polyurethane foam cannot be used safely in accordance with EPA regulations, an alternative insulating/air sealing protocol must be used.	
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.	
Deferral will occur when precautions cannot be taken to assure the safety of clients or workers.	
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.	
Referrals will be made when needs are outside the resources of the DOE WAP	
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.	
Subgrantee energy auditors will be trained on the health and safety issues concerning SPF. Installers will be trained on the use of various types foam products including MSDS sheets and required Personal Protective Equipment.	
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.	
Provide clients with notification of the plans to use polyurethane foam and precautions that may be necessary	
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.	
Disposal of spray foam containers shall be in accordance with manufacturer’s instructions and state and local requirements. Waste foam will be disposed of consistent with state and local requirements.	

Ventilation

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. Note: Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.	
Concur with WPN11-6 <input checked="" type="checkbox"/>	ASHRAE 62.2-2013 is required to be met to the fullest extent possible, when performing weatherization activity. Existing fans and blower systems should be updated if not adequate.
Alternative Guidance <input type="checkbox"/>	
Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.	
DOE WAP funds can be used for compliance	
Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.	
If existing problems in the home beyond the scope of DOE WAP prevent ASHRAE 62.2-2013 compliance, the unit will be deferred.	

<p>Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.</p>
<p>The Subgrantee auditor must conduct an ASHRAE 62.2 evaluation to determine ventilation requirements using ASHRAE tables found in the standard or an approved spreadsheet or web-based tool. Post weatherization blower door numbers can be estimated to calculate an estimate of the final required ventilation rate but must be adjusted to actual requirements after the need has been determined. ASHRAE 62.2 is a minimum standard and additional ventilation may be necessary and is allowed to address higher concentrations of humidity or pollutants.</p>
<p>Standards for Deferral: Describe when deferral should take place for the specific health and safety category.</p>
<p>Deferral will occur when DOE resources are inadequate to address home ventilation requirements as determined by ASHRAE standards and other indoor air quality issues</p>
<p>Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.</p>
<p>Unit will be referred to local available home rehabilitation or public health programs.</p>
<p>Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.</p>
<p>ASHRAE 62.2 training will be provided by to WAP energy auditors and inspectors and DHCD Field Staff on the requirements of ASHRAE 62.2-2013 including the basic requirements of the standard, determining minimum ventilation requirements, measuring existing and installed equipment, specifying ventilation systems, verifying installation effectiveness. DHCD will continue training WAP Technical staff on the requirements of ASHRAE 62.2-2013.</p>
<p>Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.</p>
<p>Clients will be provided information about the ventilation system operation and use consistent with the requirements of the ASHRAE 62.2-2010 standard.</p>
<p>Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.</p>
<p>Material waste generated as a result of ventilation device installation will be disposed of in compliance with state and local requirements.</p>
<p>ASHRAE 62.2 Compliance: Provide a narrative describing implementation of ASHRAE 62.2, which will be required during the 2012 program year. Grantees must provide justification if making changes to ASHRAE 62.2 specific to their housing stock and local considerations.</p>
<p>All units submitted to DHCD for production credit using DOE funds must have documented compliance with ASHRAE Standard 62.2-2013 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings. A copy of that standard is available for purchase at the ASHRAE website here: https://www.ashrae.org/. The Standard provides the for minimum building ventilation requirements and replaces previously determined and referenced Building Tightness Limits (BTL), Minimum Ventilation Guidelines (MVG), the previous ASHRAE 62.2-2010 and any other guidelines that delineate an acceptable minimum building leakage rate or air changes in the DOE WAP.</p> <p>This guidance is to provide basic requirements for documentation that the provisions of the Standard have been complied with on a unit that is being reported using DOE WAP funds. It will not provide all the formulas and calculations and variables that are part of the Standard. This guidance will provide links to resources for additional information, training resources and compliance tools. DHCD has provided all WAP technical staff with training on the requirements for compliance with ASHRAE 62.2 Standard through the Greens Jobs Academy (GJA), the DOE-funded WAP Training Center. Additional training is available from many different entities. DHCD will also provide ongoing training as needed. DOE WAP Training and Technical Assistance (T&TA) funds can be used to pay for expenses related to additional ASHRAE 62.2-2013 training.</p> <p>To document compliance of ASHRAE 62.2-2013 Residential Ventilation Standard, the DOE WAP Client file must include at a minimum, a documentation of the calculations used to determine the required mechanical ventilation rate and a completed checklist that itemizes and documents compliance with other requirements of the Standard.</p> <p>Links to calculation resources and sample compliance checklists are included as part of this guidance.</p> <p>The basic requirements of ASHRAE 62.2-2013 include:</p> <p>“A mechanical exhaust system, supply system, or combination thereof shall be installed for each dwelling unit to provide whole building ventilation with outdoor air each hour at no less than the rate specified in Table 4.1a(below) or calculated using Equation 4.1A: “</p> $Q_{tot} = 0.03A_{floor} + 7.5(N_{br} + 1)$ <p>Where</p> <p>Q_{tot} = total required ventilation rate, cfm A_{floor} = floor area of residence N_{br} = number of bedrooms (not less than 1)</p> <p>Additional Local Ventilation requirements:</p> <ul style="list-style-type: none"> • All full bathrooms must have a 50 CFM on-demand or 20 CFM continuous fan • All kitchens must have either a 100 CFM on-demand fan which must be a vented range hood if the flow rate is less than 5 room air changes per hour (ACH) or a fan which delivers 5 ACH.

- If the kitchen or bath does not have the amount of ventilation stated above it must be provided or Normative Appendix A – Existing Buildings of ASHRAE 62.2-2013 must be used for sizing whole house ventilation.

Other requirements include:

- Attached garages must be adequately sealed from living space to prevent migration of contaminants
- Clothes dryers must be vented to exterior (except condensing dryers must be piped to a drain)
- Installed fans must comply with some rating requirements in accordance with the airflow and sound ratings procedures of the Home Ventilating Institute (HVI 915)
 - Whole house or continuous ventilation fans: maximum 1.0 sone
 - Intermittent local exhaust fans: maximum 3 sone
 - Existing fans used to satisfy ventilation requirements are not subject to sone requirements
- Air flow of whole house fan must be verified by actual measurement
- House must be prescriptively sealed between living space and attic and crawlspace.
- Adequate combustion air must be provided for combustion appliances
 - Where atmospheric vented appliances are inside occupied space, additional requirements if two largest exhaust fans have flow rate > 15cfm/100 square feet of floor area.
- Carbon Monoxide detection or warning equipment must be installed in homes with combustion appliances
- The ventilation system design for the building must be documented and system use information provided to the occupants.
- Readily accessible controls must be provided to the occupant and must be appropriately labeled
- Provides sizing procedures of ventilation devices and ducting
- Outlines equipment parameters
- Requires that the installed system be tested and verified

Table 4.1a from ASHRAE 62.2-2013

Ventilation Air Requirements, cfm					
	BEDROOMS				
Floor Area (ft ²)	1	2	3	4	5
501-1000	30	38	45	53	6
1001 – 1500	60	68	75	83	90
1501 – 2000	75	83	90	98	105
2001 – 2500	90	98	105	113	120
2501 – 3000	105	113	120	128	135
3001 – 3500	120	128	135	143	150
3501 – 4000	135	143	150	158	165
4001 – 4500	150	158	165	173	180
4501 – 5000	165	173	180	188	195

According to the Standard Section 4.1.2 Infiltration Credit: *“If a blower door test has been done then a credit for estimated infiltration may be taken using the following procedure....”*

Determine an Effective Annual Average Infiltration Rate (Q_{inf}) using one of two approved methods; the ASTM or CGSB Procedures which are outlined in detail in the Standard. After series of complex calculations the formula becomes:

$$Q_{fan} = Q_{tot} - Q_{inf}$$

Where

Q_{fan} = required mechanical ventilation rate, cfm

Q_{tot} = total required ventilation rate

Q_{inf} = may be no greater than 2/3 Q_{tot} : (see Normative Appendix A for exceptions for existing Buildings)

While the calculations to determine the Q_{inf} outlined in the Standard are complex, available spreadsheets and web-based calculators incorporate the formulas simplifying the process of determining the “infiltration credit”.

The WAP is dealing with only existing occupied homes. Many will not have whole house mechanical ventilation systems or the required kitchen or bath ventilation systems that satisfy the local ventilation requirements of the Standard, if there were no other options, WAP would be installing multiple ventilation devices in most homes. The Standard provides alternative compliance path, the Normative Appendix A – Existing Buildings. .

The Appendix A - Existing Buildings allows the calculation of the ventilation deficits from each of the required areas (whole house, bathroom(s) and kitchen) as well as provides an additional Infiltration credit, ... *“If the airtightness of the building envelope has been measured, the required mechanical ventilation rate may be reduced as described in Section 4.1.2”*.

The PowerPoint Presentation titled ASHRAE 62.2 for WAP on the WAP TAC website here: <http://waptac.org/WAP-Standardized-Curricula/ASHRAE-62002E2.aspx> (titled PPT_ASHRAE 62 2 for WAP) and the additional materials from that website provide information for understanding what is expected and required to ensure compliance. In addition, the presentation and workbook provided at the GJA Training provide a very thorough explanation on the use of the formula and the requirements of the Alternative Compliance Supplement. The files on the CD provided to training attendees also provide a number of useful resources. **When using existing fan flow in the alternative compliance supplement, the existing flow rate must be verified by measurement.** The infiltration credit within the alternative compliance supplement must be based on an accurate measurement consistent with *ANSI/ASHRAE 136*.

Calculation resources include:

Paul Raymer of Heyoka Solutions, LLC (<http://www.heyokasolutions.com/>) offers comprehensive combination classroom and hands on training on ASHRAE 62.2 and his website offers an Excel based calculation tool. The worksheet tool must be purchased from the website: http://www.heyokasolutions.com/ASHRAE_62_2_2013_Whole_Building_Spreadsheet_p/ashrae6213wbcw.htm. Heyoka Solutions also offers comprehensive compliance checklists.

Rick Karg, of R.J. Karg Associates (<http://www.karg.com/>) a long time WAP trainer, has developed compliance calculators: a no-cost web-based tool (RED Calc Free) available at the Residential Energy Dynamics website (<http://www.residentialenergydynamics.com/>). The Zip Test Pro³ (<http://www.karg.com/software.htm>) is a comprehensive Building & Energy Diagnostics Software designed to be used with the Texas Instruments TI-89 Titanium calculator. The software can be purchased independently or as a complete package installed on the TI-89. ResVent 62.2, an App available for iPhone and iPad can be purchased (\$20) from the App Store (no Android version available). ResVent currently does not have an update to provide 62.2-2013 but the update should be available in the near future.

The Energy Conservatory, (<http://www.energyconservatory.com/>) manufacturer of the Minneapolis Blower Door has a module in the TECTITE software (<http://www.energyconservatory.com/software>) that provides ASHRAE 62.2-2010 compliance calculations.

All website resources along with the WAP TAC Training Curriculum listed above and the Data Files on the GJA CD offer considerable information and tools to assist in understanding the requirements of ASHRAE 62.2-2013 and what is necessary for compliance. The compliance tools will determine the whole building continuous ventilation required according to the Standard. Continuous operation of the whole house fan is the preferred method because it is more efficient from an energy use perspective and the lower CFM will reduce the possibility of house depressurization (and possibility of combustion appliance back-drafting). The Standard does allow intermittent operation of the fan provided that the CFM requirement is fully satisfied every four hours. The calculations will provide necessary information to determine if the house needs additional ventilation, what size device is needed and the run time necessary (continuous or intermittent and if intermittent, how long).

A print-out from any of these spreadsheets or a manual calculation in the client file will satisfy the requirement to document the proper sizing, flow and rate of an installed mechanical ventilation system.

Once the required ventilation rate has been determined, mechanical ventilation must be installed that can deliver the required rate and be verified through measurement. That requires the installation of a mechanical ventilation system with appropriate controls and a well designed and installed duct system that terminates outside the building. The system must have controls that are readily accessible to the occupants. New mechanical ventilation devices that are continuously operated or used for whole house ventilation must be rated at 1 sone or less; intermittent devices for spot ventilation must be 3 sones or less. If

existing fans are used as part of the required mechanical ventilation, their flow performance must be measured but they are not subject to some ratings.

There are several design systems that can be used to provide the necessary mechanical ventilation including exhaust only systems, supply only systems, balanced systems, (supply and exhaust) heat recovery ventilator (HRV) Energy Recovery Ventilator (ERV) and Supply to an existing air handler system. Each has their own advantages and disadvantages as well as significant variations in cost to install, operate and maintain. Which design is chosen depends on the individual circumstances of the building and ventilation needs. In many cases the simplest system with the lowest cost will be a high performance, well controlled exhaust system using a bath fan for required spot ventilation and whole house ventilation or as exhaust only in conjunction with a passive supply vent. The cost of an HRV or ERV and necessary ductwork and wiring may be cost prohibitive in the program. A supply only system unless connected directly to ductwork is typically not appropriate in cold weather climates.

The most common installation in the WAP in Massachusetts will likely be some variation of an exhaust only system (possibly with a passive intake supply), either a surface mounted ducted fan or an inline fan with single or multiple exhaust points. The location of installation and design decisions must be based on the specific needs of the home, accessible space for installations, ability to vent to the outside and cost of the installation.

When a new ventilation device is installed it must be an efficient, high quality unit and have a control system that is designed and rated for ASHRAE 62.2-2013 compliance (some rating, variable speed capability, low electrical usage). Many new fans have timing and flow rate controls built into the unit, simplifying wiring requirements and use 6" exhaust ductwork to reduce the flow restrictions the can be problematic with 4" duct systems.

The installation of the mechanical ventilation must be consistent with the standards outlined in *Section 6: Ventilation* of the DOE/NREL Standard Work Specifications (SWS) Tool. (<https://sws.nrel.gov/spec/6>). The installation must comply with Massachusetts Building Code requirements.

The proper ducting of the exhaust fan to the outside is necessary to ensure that the device delivers the required performance. The ASHRAE Standard provides specification for prescriptive duct sizing.

ASHRAE 62.2-2010 TABLE 5.3 Prescriptive Duct Sizing

Duct Type	Flex Duct				Smooth Hard Duct			
	50	80	100	125	50	80	100	125
Fan Rating in CFM								
Diameter	Maximum Duct Length in feet							
3"	X	X	X	X	5'	X	X	X
4"	56'	4'	X	X	114'	31'	10'	X
5"	NL	81'	42'	16'	NL	152'	91'	51'
6"	NL	NL	158'	91'	NL	NL	NL	168'
7"	NL	NL	NL	NL	NL	NL	NL	NL

This Table assumes no elbows. Deduct 15 ft of allowable duct length for each elbow.

X= not allowed, any length of duct this size will exceed rated pressure drop

NL= no limit on duct length of this size

For duct runs longer than 125 feet consult the full Table 5.3 in the ASHRAE 62.2 Standard

- Determine the duct material that will be used for the installation (smooth hard preferred).
- Identify the fan rating(s) used to provide whole-building and local ventilation exhaust (cfm).
- Select the column that corresponds to the required fan rating for the system. If the required fan rating (airflow cfm) is not shown on the chart and falls between columns, use the next highest fan rating column for determining the duct length and diameter. The Table is not applicable to fan ratings greater than 125 cfm.

- Select the preferred duct diameter to determine the corresponding maximum allowable duct length from the fan rating column for each exhaust fan.
- If the allowable length of (straight) duct is not sufficient for the design, select the next higher diameter of duct, and recalculate the allowance. An "NL" in the table indicates that any length of duct for that diameter is in compliance. Any elbows in the duct system are the equivalent of 15 feet of straight duct.

Provided that it is approved by DOE, DHCD will allow the following exception to the ASHRAE 62.2-2013 Standard:

- If the whole-building minimum ventilation requirement is 15 CFM or less, the energy auditor may make an educated decision on whether or not to install a whole house ventilation system. The reasons for not installing a ventilation system when the minimum CFM requirement is between 1 and 15 shall be documented in the client file. This decision shall be based on all of the following criteria:
 - A moisture assessment of the dwelling,
 - An indoor air quality assessment of the dwelling,
 - The health of the occupants, and
 - Other factors deemed significant by the energy auditor.

If the whole building minimum ventilation requirement is greater than 15 CFM, a system supplying the minimum ventilation airflow must be installed.

Subgrantees must also determine an appropriate work sequence to minimize the requirement of additional visits to the home or determining that mechanical ventilation is required after all work is completed resulting in the need to install a fan after the attic has been air sealed and insulated. A potential work sequence could include: The initial audit includes information about existing fans, (including measured flow) and determine the maximum ventilation requirements under “as is” conditions including the existing infiltration rate. The auditor can then determine an estimated post weatherization infiltration rate. The mechanical ventilation system is installed prior to insulation being added and sized based on the estimated needs of the post weatherized home. After all weatherization work is completed and the actual final CFM₅₀ is determined the mechanical ventilation requirement is calculated and the fan set to provide that requirement. Verification of the flow rate is documented. Combustion safety testing must also be completed with the fan operating to ensure proper operation and venting of combustion appliances.

Measurement of the flow rate of existing fans and verification of the flow rate of installed fans is a required element of the Standard. The measurement must be completed with instrumentation that will provide an accurate CFM flow of the fan. Several commercially available products are available to document this requirement including The Energy Conservatory’s (TEC) Exhaust Fan Flow Meter and Duct testing equipment manufactured by TEC and Retrotec, used in conjunction with a digital manometer.

Customer education about the need and purpose of ventilation and specific information about the system installed are part of the requirements of the Standard. The final steps must include providing the occupants:

- Information on ventilation systems installed
- Instructions on proper operation and maintenance of the ventilation system
- Information on controls (which shall be labeled as to their function)

To document of compliance with ASHRAE 62.2-2013 Residential Ventilation Standard, the DOE WAP Client file must include at a minimum, a documentation of the calculations used to determine the required mechanical ventilation rate and a completed checklist that itemizes and documents compliance with all requirements of the Standard. A variation of the sample checklist provided by the WAP TAC Website follows.

Window and Door Replacement, Window Guards

Concurrence or Alteration: Check if you concur with existing guidance from WPN 11-6 or if you are using an alternative action/allowability. Include the guidance action/allowability from WPN 11-6 or alternative guidance in the space provided. Alternatives must be explained and comply with DOE guidance. **Note:** Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 11-6, the grantee must concur or choose to defer all units where the specific issue is encountered. Allowable items under WPN 11-6 leave room for determining if the issue or testing will be addressed and in what circumstances.

Concur with WPN11-6 <input checked="" type="checkbox"/>	Window and Door Replacement, repair, or installation is not an allowable health and safety cost but may allowed as an incidental repair or an efficiency measure if cost justified
Alternative Guidance <input type="checkbox"/>	

Funding: State that DOE funds are being used or indicate that alternate funding sources will be used to address this particular health and safety category.

DOE WAP Health and Safety funds cannot be used unless extenuating circumstances exist as related to other allowable health and safety measures. Prior DHCD approval is required.

Beyond Scope of DOE WAP: Describe how the issue will be treated if beyond the scope of DOE WAP.
Window and door work beyond the scope of the WAP will be referred to locally available home rehabilitation programs.
Standards for Remedy: Describe the standards for remedy of the health and safety category, including testing protocols. Also include when partial weatherization would be appropriate. Note: Some health and safety categories, like combustion gases, require testing.
Windows and door replacement cannot be installed with DOE WAP Health & Safety funds unless extenuating circumstances exist related to another allowable health and safety measure. All other replacement, repair, and installation must meet SIR guidelines based on a DOE approved audit.
Standards for Deferral: Describe when deferral should take place for the specific health and safety category.
Deferral will be necessary if the required work is beyond the scope of the WAP and available utility funding.
Standards for Referral: Describe when referral should take place for the specific health and safety category. If possible, include associated referral agencies.
Units will be referred to local rehabilitation programs.
Training Provision: Discuss how training will be provided for the specific health and safety category. Note: Some health and safety categories, like OSHA, require training.
WAP auditors and inspectors will be made aware of the guidance.
Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.
Clients will be provided required notification if Lead Paint RRP or LSW apply.
Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.
Debris generated will be disposed of consistent with state and local requirements.

ASHRAE 62.2–2013 Residential Ventilation Standard

Auditor/Inspector Check List

All boxes must be checked or marked N/A.

- The dwelling unit is a single family or multifamily residential building of three stories or less above grade, including manufactured and modular housing.
- For a continuously operating system, calculate the whole building ventilation rate.
 $Q_{fan} = 0.01A_{floor} + 7.5 \times (N_{br} + 1)$: Table 4.1a: Spreadsheet or Software:
 Verification included
- The planned ventilation strategy includes: (check applicable circle)
 - a mechanical exhaust system
 - a mechanical supply system
 - a combination thereof; a balanced system with supply and exhaust air (e.g. HRV or ERV)
- All bathrooms have fans rated at 50 CFM on-demand or 20 CFM continuous.
- The kitchen has a fan rated at 100 CFM on-demand or 5ACH based on kitchen volume. If the kitchen fan delivers less than 5ACH, it is a vented range hood.
- All whole building fans installed are rated 1 sone or less.
- All local occupant controlled fans installed are rated at three sone or less.
- All clothes driers are vented to exterior.
- Adjoining garage(s) are sufficiently air sealed from the living space to prevent migration of contaminants.
- The building is adequately air-sealed between living space and attic and crawlspace.
- The whole building fan providing IAQ ventilation air operates automatically without requiring occupant intervention.
- If the fan providing the IAQ ventilation air is set to cycle on & off, the entire on/off cycle is completed within four hours.
- The delivered ventilation rate meets the formula outlined in the curriculum.
- All fan controls are readily accessible and properly labeled.
- Required Client Education Information and Materials has been provided.
- CO Alarms are installed as required.

Table 4.1a from ASHRAE 62.2-2013

Ventilation Air Requirements, cfm					
	BEDROOMS				
Floor Area (ft ²)	1	2	3	4	5
501-1000	30	38	45	53	6
1001 – 1500	60	68	75	83	90
1501 – 2000	75	83	90	98	105
2001 – 2500	90	98	105	113	120
2501 – 3000	105	113	120	128	135
3001 – 3500	120	128	135	143	150
3501 – 4000	135	143	150	158	165
4001 – 4500	150	158	165	173	180
4501 – 5000	165	173	180	188	195