]Weatherization Grantee Health and Safety Plan

Optional Template

☑ POLICY SUBMITTED WITH PLAN

1.0 – GENERAL INFORMATION

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

Massachusetts DHCD's WAP Health and Safety Plan is a comprehensive plan based on DOE's Health and Safety Guidance WPN 22-7. For the majority of the Massachusetts WAP Health and Safety Plan, the Plan concurs with DOE guidance. In certain topical areas, the Massachusetts WAP Health and Safety Plan deviates and provides an alternative guidance. Whenever there is an alternative guidance, the Massachusetts WAP Health and Safety Plan enacts stricter requirements than the DOE guidance. The following sections of the Massachusetts WAP Health & Safety Plan have an alternative guidance:

- Air Conditioning and Heating Systems
- Asbestos (in siding, walls, ceilings, etc.)
- Asbestos (in vermiculite)
- Asbestos (on pipes, furnaces, other small covered surfaces)
- Electrical
- Fuel Leaks
- Lead Based Paint
- Radon
- Safety Devices: Smoke and Carbon Monoxide Alarms, Fire Extinguishers
- Worker Safety (OSHA, etc.)

DHCD has a suggested maximum WAP Health & Safety expenditure limit of $2,500 per dwelling unit. A Subgrantee may expend more than $2,500 in DOE WAP Health & Safety funds on a dwelling unit only with an approved waiver from the DHCD ECU. For the purpose of this Plan, $500 per measure or less, with cumulative measures totaling $2,500 or less, constitute "minor repairs" under Health & Safety. Any measure exceeding $500, with cumulative measures totaling more than $2,500, constitute "major repairs" under Health & Safety and are not able to be addressed as part of a DOE WAP dwelling unit, unless a waiver has been granted by the DHCD ECU.

Regarding section 3.0 (Health & Safety Expenditure Limits) of this Health & Safety Plan, DHCD is opting not to complete the Health & Safety Measure Matrix. In DHCD's WAP BIL allocation formula, each Subgrantee is allotted $1,200 per unit for Health & Safety funding. The $1,200 per unit equates approximately 17% of the total $7,000 in Program Operations allocated per unit. If the total Health and Safety funding allocated to a Subgrantee is not expended during the grant period, the Subgrantee may request of DHCD that the agency can move any unused Health & Safety funds to Program Operations for the purpose of weatherizing more units.

2.0 – BUDGETING

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

Select which option is used below.	
Separate Health and Safety Budget ☑	Contained in Program Operations ☐

3.0 – HEALTH AND SAFETY EXPENDITURE LIMITS

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

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

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

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

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

H&S Measure Matrix - Optional			
Double Click To Open For Editing			
Cells this shade auto calculate			
Enter Measure ↓	**Enter** Cost ↓	**Enter** Frequency % ↓	Auto Calculates
Total Average H&S Cost Per Unit			$0.00
Enter Estimated Production (Annual File: IV.2 WAP Production Schedule) ➔			
Enter Estimated Program Operations Budget ➔			
H&S Budget (Total Average H&S Cost Per Unit * Estimated Production)			$0.00
Requested H&S Percentage Per Unit (H&S Budget/Program Operations)			

4.0 – Incidental Repair Measures

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

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

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

Per Weatherization Program Notice 12-9, Incidental Repairs are defined as "materials and installations performed because they are deemed necessary for the effectiveness of one or more energy conservation measures (ECMs)." Subgrantees are required to document in the client file the need for Incidental Repair measures and the related energy conservation measures that the repairs are intended to protect. Only Incidental Repairs necessary for the effective performance and/or preservation of weatherization installations are allowed. Major repairs are considered to be those with costs exceeding $500 and may include, but are not limited to: roof leak repairs; unsafe wiring repairs; replacing sections of knob and tube wiring to allow for the installation of insulation in attics and sidewalls. Minor repairs under

$500 may include, but are not limited to: cutting/finishing accesses to attics and knee wall areas; siding repairs; window and door repairs; flashing repairs; masonry repairs.

5.0 – DEFERRAL/REFERRAL POLICY

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

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

Yes ☑ No ☐

Where can this deferral/referral policy be accessed?

It can be accessed in the Mass. WAP Policy and Procedures Manual.

There are circumstances when it is appropriate for a WAP agency to defer or provide no weatherization services to an otherwise eligible dwelling unit/client until an unsafe or potentially dangerous condition/situation is sufficiently addressed and remedied. 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 WAP Health and Safety Guidance outlines many of the specific criteria that will require a deferral of services and provides a "Deferral of Services Notice," to be signed by the local agency and client. The Deferral of Services Notice outlines the reason for the deferral as well as conditions that must be remedied before the work can commence. Some of the typical reasons for deferral include, but are not limited to: 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, etc.), and any 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.

DHCD has developed a temporary Deferral of Services Notice specifically for the COVID-19 pandemic. This temporary deferral accounts for situations where a client or family member may have the virus or may have been exposed to the virus, thus necessitating that WAP services be deferred until a later time. The temporary Deferral of Services Notice also accounts for clients who may be apprehensive about allowing either agency staff or contractors into their home for fear of contracting the virus. These clients may voluntarily defer services until a time when they are willing to allow services to occur (as long as they are still eligible for service at that time).

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 any 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 able to access and utilize a Benefits Hub (formerly called Benefits Enrollment Coordination) 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 related issues.

When problems of a unique nature exist that are not specifically identified in the Health and Safety Guidance, a DHCD Energy Conservation Unit staff member must be consulted by Subgrantees before deciding whether to proceed.

Subgrantees are not authorized to complete "partial weatherization" on a dwelling unit using DOE WAP funds. If, for an identifiable and documented reason, a Subgrantee must cease work on a unit where 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 Subgrantee's minimum required production goal.

From the Massachusetts 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 Energy Conservation Unit staff must 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 must 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 weatherization 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 dwelling unit to be weatherized must be individually assessed to determine the existence of potential hazards to both clients and workers.

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 and/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 require 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, energy related Health and Safety hazards may exist in the dwelling unit prior to weatherization work commencing. In those situations, weatherization funds may be obligated to correct these Health and Safety problems. However, agencies must keep 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 result in a deferral of service include, but are not limited to:

- Client has known health conditions that prohibit the installation of insulation and other weatherization materials
- 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
- 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 might 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 must not proceed until the condition(s) are corrected

Other problematic situations that may result in a deferral of service include, but are not limited to:

- Building/dwelling unit is for sale, subject to bankruptcy, or in foreclosure
- Building/dwelling unit is part of an on-going legal dispute such that the building/dwelling unit ownership cannot be confirmed
- Building/dwelling unit is scheduled for demolition
- Building/dwelling unit is being used as a commercial enterprise
- Building/dwelling unit is in need of extensive rehabilitation which is beyond the scope of the WAP
- Illegal activities are being conducted in the building/dwelling unit
- Client is uncooperative, abusive, or threatening to the Energy Auditors, Inspectors, contractors, or others who must work on or visit the building/dwelling unit
- A conflict of interest or appearance of conflict exists (i.e. the building/dwelling unit 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 a DHCD Energy Conservation Unit staff member prior to work commencing

The DOE WAP Deferral of Services Notice form is attached.

6.0 – HAZARD IDENTIFICATION AND NOTIFICATION FORM(S)

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

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

7.0 – HEALTH AND SAFETY CATEGORIES

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

- *Explain whether you concur with existing guidance from WPN 17-06 and how that guidance will be implemented in your Program, if you are proposing an alternative action/allowability, or if the identified category will not be addressed and will always result in deferral. Alternatives must be comprehensively explained and meet the intent of DOE guidance.*
- *Where an Action/Allowability or Testing is "required" or "not allowed" through WPN 17-06, Grantees must concur, or choose to defer all units where the specific category is encountered.*
- *"Allowable" items under WPN 17-06 leave room for Grantees to determine if the category, or testing, will be addressed and in what circumstances.*
- *Declare whether DOE funds or alternate funding source(s) will be used to address the particular category.*
- *Describe the explicit methods to remedy the specific category.*
- *Describe what testing protocols (if any) will be used.*
- *Define minimum thresholds that determine minor and major repairs*
- *Identify minimum documentation requirements for at-risk occupants*
- *Discuss what explicit steps will be taken to educate the client, if any, on the specific category if this is not explained elsewhere in the Plan. Some categories, like mold and moisture, require client education.*
- *Discuss how training and certification requirements will be provided for the specific category. Some categories, like Lead Based Paint, require training.*
- *Describe how occupant health and safety concerns and conditions will be solicited and documented*

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

7.1 – Air Conditioning and Heating Systems

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☐ Alternative Guidance ☑ Results in Deferral ☐

Air Conditioning Unallowable Measure ☑ Heating Unallowable Measure ☐

Funding

DOE ☑ LIHEAP ☑ State ☐ Utility ☑ Other ☐

To the greatest extent possible, Subgrantees must coordinate and utilize funds from the LIHEAP-funded Heating Emergency Assistance Retrofit Task Weatherization Assistance Program (HEARTWAP) and available utility funds for heating system services related work.

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

In Massachusetts, unsafe or non-functioning heating systems are primarily addressed through HEARTWAP and utility funding. Unless alternative funding is not available, DOE funds will not be used for heating system installations and repairs. In the rare instance where no alternative funding exists, DOE Health and Safety funding may be used in cases where an approved energy audit shows an SIR less than 1. An SIR greater than 1 would qualify it as an energy conservation measure. Massachusetts' average 5600 degree day requirement is evidence that clients need a warm home that is safely heated during the cold winter months (October-April). If the cost to repair/replace a heating system exceeds the various combined funding sources available, the unit must be deferred.

If a vented combustion space heater is the primary heat source, all service and replacements will be completed with HEARTWAP and utility funding. If an unvented combustion space heater is the primary source of heat, the client must be referred to HEARTWAP and a safe effective vented heating system must be installed prior to weatherization.

DOE funds will not be utilized for air conditioning installations/repairs.

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

WAP funded repair, replacement, or installation of stand-alone electric space heaters is not allowed.

If a vented combustion space heater is observed, and no alternative funds are available, DOE funds may be used. If a replacement is needed, the system should be cost tested with an approved DOE energy audit to determine if the SIR is greater than 1, then completed as an energy efficiency measure. An SIR less than 1 would qualify it as a Health and Safety measure.

If there is an unvented combustion space heater observed, WAP services must be deferred until the client signs an agreement that the space heater will be removed from the dwelling and will not be used after the weatherization work has been completed.

Indicate Documentation Required for At-Risk Occupants
If there is an unvented combustion space heater observed, WAP services must be deferred until the client signs an agreement that the space heater will be removed from the dwelling and will not be used after the weatherization work has been completed. If the cost to repair/replace a heating system exceeds the various combined funding sources available, the unit must be deferred and the Deferral of Services Notice provided to the client.
Testing Protocols
For stand-alone electric space heaters, check circuitry to ensure that there is an adequate power supply for existing space heaters. Provide the client with the recommendation that if electric space heaters must be used temporarily, oil filled radiant tower type electric space heaters are a safer alternative than resistance type electric space heaters provided that the electric circuitry is adequate. For dwelling units where an unvented combustion space heater is observed, the Energy Auditor should conduct an ambient air CO test and make certain that the dwelling unit has operable CO detector(s).
Client Education
Clients will be provided written information about heating system operation and safety. Clients receiving new heating systems will be provided with the manufacturer's warranty information and operating instructions. Deferrals will be provided with the Deferral of Services Notice. For issues concerning electric space heaters, inform client of related hazards and collect a signed waiver if removal is not allowed.
Training
All current WAP Energy Auditors have received training in combustion efficiency and combustion safety testing. Newly hired staff will receive this training prior to completing any audits without a trained staff member. DHCD Energy Conservation Unit staff will use all site visits as an opportunity to observe and train Subgrantee technical staff as it relates to combustion efficiency and combustion safety testing. All Subgrantee WAP Energy Auditors, Subgrantee Quality Control Inspectors, and Grantee Technical Monitors will attend mandatory combustion safety training as the program transitions to the ANSI/BPI 1200 combustion safety protocol. These trainings are currently being taught at the Green Jobs Academy on an on-going, as needed basis.

7.2 - Asbestos - All
What is the blower door testing policy when suspected Asbestos Containing Material (ACM) is identified?
A blower door test must not be performed at a dwelling where vermiculite insulation has been observed. A full-flow blower door test may be performed on a dwelling that has asbestos cement shingles on the exterior sidewall. A reduced-flow blower door test may be conducted (at Energy Auditor's discretion) when asbestos pipe insulation has been identified in a dwelling. The Energy Auditor will make the determination based on the condition of the asbestos pipe insulation and how friable the asbestos insulation appears to be.

7.2a – Asbestos - in siding, walls, ceilings, etc.				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance ☐	Alternative Guidance ☑	Results in Deferral ☐		
Funding				
DOE ☑	LIHEAP ☐	State ☐	Utility ☑	Other ☐
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. It is recommended, where possible, to insulate through the dwelling's interior walls. Asbestos Cement Shingles (ACS) sidewall protocols developed in conjunction with the Massachusetts Department of Environmental Protection (DEP) shall be used when completing wall insulation of buildings with ACS.				
How do you address suspected ACM's in siding, walls, or ceilings that will be disturbed through the course of weatherization work?				

The following protocol was developed by DHCD and the Massachusetts Department of Environmental Protection (DEP) to address insulating the sidewalls of dwellings with asbestos cement shingles 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 (Mass. DEP'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 Mass. DEP'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
Mass. DEP'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 shall 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 transit 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/repaired/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 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 for each weatherization project that disturbs asbestos-cement siding shingles must be submitted to Mass. DEP 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. *(Not all areas of the state can get this notification. In those instances, the dwelling unit sometimes needs to be deferred).* The ANF-001/BWP AQ-04 and answers to frequently asked questions about filing notifications are available on Mass. DEP'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 Mass. DEP's online filing system, eDEP: https://www.mass.gov/how-to/file-an-aq-04-anf-001-asbestos-removal-notification.

The ten (10) working day waiting period can be waived by obtaining an emergency waiver of this waiting period from Mass. DEP. Emergency waivers allow work to be performed right away. These waivers, which can be obtained by calling the Mass. DEP Regional Office that covers the city/town in which the work will be conducted, must be approved by Mass. DEP before the work starts. (To find your regional Mass. DEP office, go to the following link: http://www.mass.gov/eea/agencies/massdep/about/contacts/). The Mass.

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)

DEP 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 Native American 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 Mass. DEP 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 will still need to be submitted for each segment of the work, the blanket approval will 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 Mass. DEP'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 (5) feet wide for buildings up to ten (10) feet in height (1 story), and that an additional three (3) feet in width be added to the drop cloth for each additional floor above the ten (10) 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 as well as 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 any 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, 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.)

Testing Protocols

Any pre and post testing must be done by a DLS certified inspector.

Client Education

Clients will be provided information regarding the existence of suspected asbestos containing materials in the sidewall shingles. Subgrantee staff will advise clients of the importance of not disturbing asbestos containing materials as well as the precautions that will be taken for minimizing breakage and proper disposal of damaged ACS. Subgrantee staff will inform clients that when asbestos is the cause for deferral, the client must provide documentation that the asbestos remediation was conducted by a certified professional before the dwelling is eligible for WAP services.

Training and Certification Requirements

Subgrantee Energy Auditors have been trained to identify ACS, and WAP contractors trained to DEP standards for temporary removal and reinstallation of ACS as well as proper disposal consistent with DEP guidance.

7.2b – Asbestos - in vermiculite

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☐ Alternative Guidance ☐ Results in Deferral ☑

Funding

DOE ☐ LIHEAP ☐ State ☐ Utility ☐ Other ☐

Not applicable.

How do you address suspected ACM's in vermiculite that will be disturbed through the course of weatherization work?

Massachusetts DHCD WAP Vermiculite Policy

Once vermiculite insulation has been visually observed in an eligible DOE-funded dwelling, either during the initial audit or at any time during the weatherization process, all work is to be stopped immediately and the client informed of the finding of said vermiculite. At such time, client education shall be conducted regarding the hazards of vermiculite as well as the options that the client should consider undertaking to address and/or remediate the condition. The MA Vermiculite Notification/Zonolite Attic Insulation Trust Information form must be completed and signed by the Auditor and left with the client.

In all instances, a dwelling that has vermiculite visually identified must be deferred until the hazard has been remediated throughout the dwelling. To the best of his/her ability, an Auditor should also attempt to ensure all other deferral related issues and circumstances in the dwelling are identified and documented to the client with referrals made to other programs/resources for resolution whenever possible.

Recently revealed information has suggested that vermiculite samples should be taken from multiple areas where vermiculite has been located. This is due in part to the fact that asbestos in vermiculite is usually less than 1% and testing 1 or 2 samples may not be representative of all the bags of vermiculite used to insulate a dwelling. It has also been revealed that asbestos fibers in vermiculite can remain airborne for up to as long as 10 hours after being disturbed. Given this recent information, Massachusetts DHCD feels that it represents a significant health and safety risk to both workers and clients to disturb vermiculite during either initial sampling of vermiculite or actual weatherization work. Sampling vermiculite utilizing DOE WAP funds is no longer allowed per the automatic deferral of the unit.

Further justification for unit deferral is the current WAP policy that indicates that a depressurization blower door test should not be conducted in a home where vermiculite is present. Without such a test, major air sealing cannot be performed. Since major air sealing is the number one measure on the Massachusetts WAP priority list, deferral can be further justified in that any other measure performed would be "measure skipping" which is prohibited by DOE.

If during the course of an energy audit or during the course of weatherization services being performed, vermiculite (not previously identified as being present in the dwelling) accidentally enters the living space of the dwelling unit, work is to stop immediately and the client shall be informed. At such time, a remediation procedure is to be followed where the local agency will contact a remediation company and clean-up only the vermiculite that spilled to be followed by air quality testing of the space. Such clean-up and air testing shall be an allowable expense using WAP Health and Safety funds not to exceed the amount stated in the current Massachusetts WAP State Plan. Remediation of the vermiculite throughout the dwelling, however, is NOT an allowable WAP Health and Safety expense.

Non-program funds may be available to assist in the remediation of vermiculite in certain dwellings under specific instances. Please refer to the following websites:

www.zonoliteatticinsulation.com

www.zaitrust.com

Inquiries and questions may also be directed to the Zonolite Trust at: 844-924-2255 (844-ZAI-CALL) and/or e-mailing the Zonolite Trust at: info@zaitrust.com

Testing Protocols

Not applicable. Vermiculite sampling/testing is no longer conducted as part of the WAP procedures within a dwelling unit.

Client Education

Subgrantee staff will formally notify and instruct clients not to disturb vermiculite. Client education will be conducted regarding the hazards of vermiculite as well as the options that the client should consider undertaking to address and/or remediate the condition. The Massachusetts Vermiculite Notification/Zonolite Attic Insulation Trust Information form must be completed and signed by the Energy Auditor and left with the client. Subgrantee staff will inform clients that when vermiculite is the cause for deferral, the client must provide documentation that the vermiculite remediation was conducted by a certified professional before the dwelling is eligible for WAP services.

Training and Certification Requirements

Subgrantee Energy Auditors, QCIs, and contractors are trained on how to identify vermiculite as well as on the Massachusetts WAP vermiculite policy.

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

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☐	Alternative Guidance ☑	Results in Deferral ☐

Funding				
DOE ☑	LIHEAP ☑	State ☐	Utility ☑	Other ☐
Assume asbestos is present in covering materials. Encapsulation may be allowed by an AHERA asbestos control professional under some conditions. Removal may be allowed by an AHERA asbestos control professional on a case by case basis. A reduced-flow blower door test may be conducted (at Energy Auditor's discretion) when asbestos pipe insulation has been identified in a dwelling. The Energy Auditor will make the determination based on the condition of the asbestos pipe insulation and how friable the asbestos insulation appears to be.				
How do you address suspected ACM's (e.g., pipes, furnaces, other small surfaces) that will be disturbed through the course of weatherization work?				
DOE funds may be used under some circumstances, but only with prior DHCD Energy Conservation Unit approval. If an asbestos problem is beyond the scope of DOE WAP, the unit will be deferred. In the case of a heating system replacement, the dwelling unit will be referred to HEARTWAP. DOE WAP funds will not be used for necessary asbestos abatement pertaining to heating systems.				
Testing Protocols				
Asbestos testing is not conducted as part of the WAP procedures within a dwelling unit.				
Client Education				
Subgrantee staff will instruct clients not to disturb suspected asbestos containing material. Energy Auditors will provide asbestos safety information to the client. Subgrantee staff will inform clients that when asbestos is the cause for deferral, the client must provide documentation that the asbestos remediation was conducted by a certified professional before the dwelling is eligible for WAP services.				
Training and Certification Requirements				
Subgrantee Energy Auditors are trained to identify asbestos containing materials (ACM) on pipes, furnaces, boilers, and ductwork. Massachusetts licensed asbestos abatement contractors are the only individuals authorized to disturb ACM.				

7.3 – Biologicals and Infectious Diseases

Concurrence, Alternative, or Deferral				
Concurrence with Guidance ☑	Alternative Guidance ☐	Results in Deferral ☐		
Unallowable Measure ☐				
Funding				
DOE ☑	LIHEAP ☐	State ☐	Utility ☑	Other ☐
Infectious Disease Preparedness and Response 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 unhealthy and/or infectious conditions exist in the dwelling unit which may create a serious risk to occupants or weatherization workers (e.g., COVID-19).				
What guidance do you provide Subgrantees for dealing with biologicals and/or infectious diseases in homes slated for weatherization?				

Infectious Disease Preparedness and Response Visual observation and sensory (odors) will be used to identify problems. The Subgrantee Energy Auditor can complete an inspection to the degree that he/she is not exposed to hazardous contaminants such as raw sewerage, animal waste/carcasses decomposing, and excess garbage.

Hazardous biological conditions must be remediated by an appropriate professional entity. If the problems are beyond the scope of the DOE WAP, the units will be deferred.

During the COVID-19 pandemic, DHCD requires Subgrantee agencies to contact clients prior to agency staff and/or contractors visiting a dwelling unit. The agency must ask a series of four (4) Client Screening Questions to ensure that the client(s) and/or household members are not ill with COVID-19 or have not knowingly been exposed to the virus recently.

Additional information on biologicals may be found at the following websites:

DOE WAP Memorandum 062, May 26, 2020: Weatherization Assistance Program's Response to Guidelines for Opening Up America Again – Phase One & Frequently Asked Questions (FAQs)
https://files.constantcontact.com/d1b76d8c201/d363f6de-381b-4002-a92d-8201a4d45978.pdf

NASCSP: COVID-Considerations for Fieldwork
https://nascsp.org/wp-content/uploads/2020/04/COVID-Considerations-for-Fieldwork.pdf

OSHA: Guidance for Preparing Workplaces for COVID-19 (OSHA 3990-03 2020)
https://www.osha.gov/Publications/OSHA3990.pdf

US Consumer Product Safety Commission: Biological Pollutants in Your Home
https://www.cpsc.gov/safety-education/safety-guides/home/biological-pollutants-your-home

Testing Protocols

No testing of biologicals or infection diseases are performed under the WAP.

Client Education

Subgrantee staff will inform clients of the need for client and worker safety from potentially infectious home or biological pollutant conditions and notify them of the Deferral Policy. Staff will provide information on future possibilities for Weatherization agency once the unsafe conditions no longer exist. During the COVID-19 pandemic, DHCD will require an "Authorization to Proceed" form be provided to any PY 2021 WAP client prior to any WAP work commencing. The Authorization to Proceed form informs the client of the potential risks or proceeding with the weatherization process as it pertains to COVID-19. The client must sign the Authorization to Proceed form prior to any work commencing.

Training

During the COVID-19 pandemic, DHCD required all Subgrantee agency field staff and contractors to complete a required PPE training course. During a pandemic period, Subgrantee staff and contractors are trained to wear Personal Protective Equipment while on the job, maintain safe social distancing at all times as required by the CDC, and interview clients prior to starting work regarding the current health and recent exposure to infectious diseases of all home occupants. Staff are trained when infectious conditions exist to defer the job until safe conditions are established.

7.4– Building Structure and Roofing

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☑ Other ☐

Building rehabilitation is beyond the scope of the DOE Weatherization Assistance Program. Dwellings with conditions that require more than incidental repairs must be deferred.

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

The Energy 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(s), properly documented in the WAP client file (photographs, written observations, etc.), and must be cost effective consistent with DOE requirements.

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

Minor repairs are considered to be those under $500 and may include, but are not limited to: cutting/finishing accesses to attics and knee wall areas; siding repairs; window and door repairs; small area roof repairs. Major repairs are considered to be those with costs exceeding $500 and may include, but are not limited to: roof leak repairs; unsafe wiring repairs; replacing sections of knob and tube wiring to allow for the installation of insulation in attics and sidewalls. The dwelling unit is considered to be beyond the scope weatherization if the costs of cumulative Incidental Repairs exceed $2,500 and no additional funding sources are available.
If priority lists are used, and these repairs are designated as Incidental Repairs, at what point is a site-specific audit required?
A site-specific energy audit is required if the cumulative Incidental Repair costs at a dwelling unit are greater than $1,499.
Client Education
Subgrantee staff will notify clients of structurally compromised areas and other building repairs. 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 and the Hazards Notification and Deferral Policy form left with the client.
Training
Subgrantee Auditors are trained to identify Incidental Repairs and to recognize that major repairs are beyond the scope of the WAP, as well as to understand DOE cost effective requirements.

7.5 – Code Compliance				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance ☑	Alternative Guidance ☐	Results in Deferral ☐		
Funding				
DOE ☑	LIHEAP ☐	State ☐	Utility ☑	Other ☐
Correction of pre-existing 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 must be deferred.				
What guidance do you provide Subgrantees for dealing with code compliance issues in homes receiving weatherization measures?				
The Energy Auditor will conduct a visual inspection and identify needed weatherization work, Health and Safety issues, and any associated Incidental Repairs. The contractor(s) awarded the job shall apply for all required local permits to ensure compliance with state and local codes. The contractors in Massachusetts working on the WAP are all licensed Massachusetts home improvement contractors/construction supervisor licensed.				
What specific situations commonly trigger code compliance work requirements for your network? How are they addressed?				
If issues are identified, as they pertain to a specific dwelling unit, by a local city/town code official, WAP contractors will meet the specific requirements of the code official.				
Client Education				
Subgrantee staff will inform clients of code compliance issues as they pertain to weatherization work being performed at the dwelling unit.				
Training				
Subgrantee Energy Auditors are trained as to what code compliance issues may be relevant to the WAP.				

7.6 – Combustion Gases				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance ☑	Alternative Guidance ☐	Results in Deferral ☐		
Funding				
DOE ☑	LIHEAP ☑	State ☐	Utility ☑	Other ☐
Proper venting is required for combustion appliances, including gas dryers, to the outside of a dwelling unit. Correction of venting is allowed when diagnostic testing indicates a problem. All primary heating system problems should be referred to HEARTWAP and utility funded heating system programs.				
Testing Protocols				

Subgrantee staff must test naturally drafting appliances for draft and spillage under worst case conditions before and after air sealing, as well as after all weatherization work has been completed as part of the final QCI visit. Staff must test all combustion appliances and ambient air for CO levels and document all pre and post WAP testing results.

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

Combustion safety testing is required when combustion appliances are present. Subgrantee staff must inspect venting systems of combustion appliances and confirm adequate clearances and integrity of the system. Staff must test naturally drafting appliances for draft and spillage under worst case conditions before and after air sealing, as well as after all weatherization work has been completed as part of the final QCI visit. Staff must visually inspect cooking burners for operability and flame quality. Staff must test all combustion appliances and ambient air for CO levels and document all pre and post WAP testing results.

Additional information may be found at the following websites:
https://www.epa.gov/indoor-air-quality-iaq/carbon-monoxides-impact-indoor-air-quality

https://www.cpsc.gov/s3fs-public/464.pdf

http://www.bpi.org/sites/default/files/ANSI-BPI-1200%20Standard%20Practice%20for%20Basic%20Analysis%20of%20Buildings.pdf

Client Education

Subgrantee staff will provide clients 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 will be informed of the importance of periodic heating system maintenance.

Training

Subgrantee Energy Auditors are 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 technical monitors are required to attend mandatory combustion safety training as the program has transitioned to the ANSI/BPI 1200 combustion safety protocol. These trainings are currently being taught at the Green Jobs Academy on an on-going, as needed basis.

7.7 – Electrical

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☐ Alternative Guidance ☑ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☑ Other ☐

WAP Subgrantee Energy Auditors must conduct a visual electrical inspection. Voltage drop and voltage detection testing are allowed. All electrical related work conducted in a dwelling unit must be completed by a Massachusetts licensed electrician.

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

Massachusetts DHCD WAP Knob and Tube Wiring Protocol

Subgrantees and contractors are prohibited from installing any type of insulation within three (3) inches of active Knob and Tube wiring (K&T) on 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 K&T wiring is identified. If the Energy Auditor is unable to visually inspect areas in older homes where K&T 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 K&T 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 K&T wiring. Insulation may be placed over deactivated K&T wiring only after the Subgrantee receives written confirmation from a Massachusetts licensed electrician. Limited replacement of active K&T wiring is an allowable 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 K&T wiring is active in an open attic or basement area, all insulation must be kept at least three (3) inches from the K&T wiring. Blown insulation must be appropriately dammed to keep the insulation from advancing closer than three (3) inches from the K&T wiring. If the K&T wiring is active in sidewall cavities or other restricted areas (i.e. floored attics, etc.) that cannot be accessed, insulation must not be installed in those cavities. All cavities that do not contain active K&T should be insulated.

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

Minor repairs are considered to be those under $500 and may include, but are not limited to: minor wiring improvements, etc. 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. The dwelling unit is considered to be beyond the scope weatherization if the costs of cumulative Incidental Repairs exceed $2,500 and no additional funding sources are available.

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

A site-specific energy audit is required if the cumulative Incidental Repair costs at a dwelling unit are greater than $1,499.

Client Education

Subgrantee staff will provide clients with information on over-current protection, overloading circuits, basic electrical safety/risks, as well as information on electric usage and other related safety issues.

Training

Subgrantee Energy Auditors and contractors are trained to identify basic electrical safety hazards in a dwelling unit, as well as to specifically recognize knob and tube wiring and whether it is active or inactive.

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

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☑ Other ☐

Removal of formaldehyde, VOCs, flammable liquids, and various other indoor air pollutants is allowed and is required if they pose a risk to weatherization workers. If formaldehyde, VOCs, flammable liquids, and/or various other indoor air pollutants pose a risk to weatherization workers, and removal cannot be performed or is not allowed by the client, the unit must be deferred.

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

The Subgrantee Energy Auditor must include an inspection for volatile organic compounds (VOCs) stored in the home. Typical VOCs found in the home include, but are not limited to: 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. Items containing VOCs are frequently stored under sinks, in closets, and in basements. Formaldehyde may be found in a variety of building components including plywood, carpeting, and particleboards. Subgrantee staff will recommend to clients that they move potentially dangerous materials into sheds or garages outside the living space. Basements are not recommended areas for storage of VOCs. ASHRAE 62.2-2016 addresses only normal household ventilation requirements and does not ensure adequate existing ventilation if there are high levels of VOCs stored in the home. If formaldehyde, VOCs, flammable liquids, and/or various other indoor air pollutants cannot be removed, or are not allowed to be removed by the client, the unit must be deferred. The U.S. EPA maintains a webpage on VOCs and their impact on indoor air quality. It may be found at the following link: https://www.epa.gov/indoor-air-quality-iaq/volatile-organic-compounds-impact-indoor-air-quality
Testing Protocols
Not applicable. Beyond visual identification, testing of items identified in section 7.10 does not occur.
Client Education
Subgrantee staff will provide client education as well as materials concerning formaldehyde, VOCs, flammable liquids, and various other indoor air pollutants. Clients may be left with brochures such as the EPA's: "Care for Your Air: A Guide to Indoor Air Quality": https://www.epa.gov/sites/production/files/2014-08/documents/careforyourair.pdf
Training
Subgrantee Energy Auditors are trained to identify formaldehyde, VOC's, flammable liquids, and various other indoor air pollution hazards. They are also trained on situations when removal of such items is necessary.

7.9 – Fuel Leaks *(please indicate specific fuel type if policy differs by type)*				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance ☐	Alternative Guidance ☑	Results in Deferral ☐		
Funding				
DOE ☐	LIHEAP ☑	State ☐	Utility ☑	Other ☐
Oil, natural gas, propane, kerosene, and any other heating fuel capable of leaking is beyond the scope of remediation under WAP. Subgrantee Energy Auditors, QCIs, contractors, and Grantee technical monitors are/will be trained on safety procedures should they identify a fuel leak during the course of providing weatherization services.				
Remediation Protocols				

Massachusetts DHCD WAP/HEARTWAP Gas Leak Detection Policy

The following policy pertains to gas leak detection during WAP/HEARTWAP program activities.

As outlined in the DOE Standard Work Specification (SWS), combustion appliance testing is critical to ensure that appliances do not have potentially fatal problems. If at any time during the WAP/HEARTWAP process, a gas leak is identified by an agency Auditor, Quality Control Inspector, State Monitor, or contractor, the following procedures must be followed.

Upon testing the home's heating system, domestic hot water system, and/or gas appliances for gas leaks, either as a routine WAP/HEARTWAP health and safety procedure or as the result of smelling gas in the home, the tester shall alert the client (and landlord, if applicable) immediately upon identifying a potential gas leak. The tester, after obtaining the client's consent, shall then contact the appropriate gas company in the presence of the client. The tester shall then remain on-site until the gas company arrives and performs their gas leak testing analysis.

In the case when a client does not provide consent to contact the gas company, or insists that the tester not contact the gas company about a suspected gas leak, the tester shall contact the gas company from his/her vehicle outside the residence and remain on-site until the gas company arrives. At that point, the gas company will follow their procedures for addressing the situation.

In the case where a contractor working on behalf of WAP/HEARTWAP identifies a gas leak, the contractor shall inform the client, contact the appropriate gas company, contact the agency's WAP/HEARTWAP Program Manager to update him/her on the situation, and then remain on-site until the gas company arrives.

The Massachusetts Department of Public Utilities regulates and tracks gas leak responses by the gas companies. A Class I Odor Call is a call that relates to a strong odor of gas throughout a household or outdoor area, or a severe odor of gas from a particular area. A Class II Odor Call is a call involving an occasional or slight odor of gas at an appliance. Under D.P.U. 12-120-C, the Department requires all gas companies to respond to 97% of all Class I and Class II Odor Calls within 60 minutes.

At no time should any identified gas leak (no matter how small) go unreported! All WAP/HEARTWAP personnel have a responsibility to report all gas leaks. In addition, all WAP/HEARTWAP personnel should notify DHCD's Energy Conservation Unit should any gas company personnel comment negatively or chastise them about being called out for a small leak.

WAP/HEARTWAP personnel must purchase and utilize modern gas leak detectors that display Lower Explosive Limit (LEL) levels as well as lower carbon monoxide (CO) levels. LEL is the lowest concentration (percentage) of a gas or a vapor in air capable of producing a flash of fire in presence of an ignition source (arc, flame, heat, etc.). Building Performance Institute (BPI) 1200, Section 7.1.1.3 LEL Alarm indicates that testing equipment be capable of providing a digital display of the percentage of LEL and/or provide an alarm when detecting combustible gas concentrations exceeding 10% LEL. The DOE SWS notes that any identified danger must be immediately communicated to the client and the dwelling should be evacuated if a gas leak greater than 10% LEL or CO greater than 70 ppm is identified. For gas leak problems where a gas leak less than 10% LEL or ambient CO levels at found to be between 35-70 ppm, the above referenced procedures for notifying the gas company must be followed.

How do you define allowable fuel leak repairs, and at what point are repairs considered beyond the scope of weatherization?

Not applicable, as fuel leak repairs are not addressed by the WAP in Massachusetts.

Client Education

Any fuel leak identified is immediately brought to the attention of WAP clients. Subgrantee staff will educate clients on procedures to follow for any identified fuel leak, as well as possible future fuel leaks.

Training

Subgrantee Energy Auditors, QCIs, contractors, and Grantee technical monitors are trained to identify fuel leaks. Per DHCD WAP policy, identified gas leaks are referred directly to the gas utility. Other home heating fuel leaks are referred to HEARTWAP.

7.10 – Gas Ovens / Stovetops / Ranges

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☑ Other ☐

When inspection/testing at a dwelling unit reveals a problem with a gas oven, stovetop, and/or range, performing standard maintenance or repair on the appliance is an allowable WAP measure. Replacement of a gas oven, stovetop, and/or range is not allowed.

What guidance do you provide Subgrantees for addressing unsafe gas ovens/stoves/ranges in homes slated for weatherization?
Combustion safety testing is required when combustion appliances are present. Subgrantee staff must inspect venting systems of combustion appliances and confirm adequate clearances and integrity of the system. Staff must test naturally drafting appliances for draft and spillage under worst case conditions before and after air sealing, as well as after all weatherization work has been completed as part of the final QCI visit. Subgrantee staff must test all combustion appliances and ambient air for CO levels and document all pre and post WAP testing results. Subgrantee staff must visually inspect each cooking burner for operability and blue flame quality.
Testing Protocols
Subgrantee staff must test all combustion appliances and ambient air for CO levels and document all pre and post WAP testing results. Subgrantee staff must visually inspect each cooking burner for operability and blue flame quality, but do not need to test each individual burner for CO.
Client Education
Subgrantee staff will inform clients as to the best way to perform routine maintenance on gas ovens, stovetops, and/or ranges, as well as all safety related matters pertaining to safe operation of these appliances.
Training
Subgrantee Energy Auditors are trained on issues that make gas ovens, stovetops, and/or ranges unsafe. Staff are also trained as to the proper procedures to follow in cases where unsafe appliances are identified.

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

(please indicate material where policy differs by material)

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

Funding				
DOE ☑	LIHEAP ☐	State ☐	Utility ☑	Other ☐

Client Education
Hazardous waste materials generated as a result of weatherization work shall be disposed of according to all applicable Federal as well as Massachusetts state and local laws. The DOE WAP does not fund refrigerator replacements in Massachusetts because of the availability of utility funding for their Appliance Management Program (AMPS).
Client Education
Subgrantee staff will inform clients of any hazardous materials that will be disturbed as part of the weatherization process (i.e. lead paint, asbestos, etc.). Clients also need to be made aware if there are hazardous materials in the dwelling that may pose a danger to occupants and/or workers.
Training
All Subgrantee Energy Auditors, QCIs, contractors, and Grantee technical monitors are trained on the proper way to dispose of various hazardous materials and ensure that these materials are being disposed of properly according to all applicable Federal and Massachusetts state and local laws.
Disposal Procedures and Documentation Requirements
Disposal of all hazardous materials, as part of the DOE WAP, must be done in accordance with all applicable Federal and Massachusetts state and local laws. If there are any questions regarding disposal of hazardous materials, please refer to the Massachusetts Department of Environmental Protection website at: http://www.mass.gov/eea/agencies/massdep/recycle/hazardous/ or contact the Mass. DEP directly at: 617-292-5500 Additional information regarding lead guidance for home owners and de-leading contractors may be found at the following link: http://www.mass.gov/eea/agencies/massdep/recycle/hazardous/getting-the-lead-out.html Additional information regarding asbestos handling and disposal requirements may be found at the following link: http://www.mass.gov/eea/agencies/massdep/recycle/hazardous/asbestos.html

7.12 – Injury Prevention of Occupants and Weatherization Workers

(Measures such as repairing stairs and replacing handrails)

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

Funding
DOE ☑ LIHEAP ☐ State ☐ Utility ☑ Other ☐
The Subgrantee Energy Auditor and weatherization contractor must observe if hazards are present that might prevent safe weatherization of a dwelling unit. If WAP related work cannot be safely performed, WAP funds may be used to correct the condition, if costs are within reason.
What guidance do you provide Subgrantees regarding allowable injury-related repairs (e.g., stairs, handrails, porch deck board)?
Subgrantee staff and weatherization workers must take all reasonable precautions against performing work on homes that will subject workers and/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.
How do you define "minor" or allowable injury prevention measures, and at what point are repairs considered beyond the scope of weatherization? Quantify "minor" or allowable injury prevention measures.
Minor repairs are considered to be those under $500. Allowable minor injury prevention measures include, but are not limited to, the following: repairing a broken step needed to access basement/attic; repairing/replacing a pull-down attic staircase; moving bulk clutter to access spaces; etc. The dwelling unit is considered to be beyond the scope weatherization if the costs of cumulative Incidental Repairs exceed $2,500 and no additional funding sources are available.
Training
Subgrantee Energy Auditors, QCIs, contractors, and Grantee technical monitors are aware of potential hazards in the workplace, as well as aware of all DHCD related policies to address minor repairs.

7.13 – Lead Based Paint
Concurrence, Alternative, or Deferral
Concurrence with Guidance ☐ Alternative Guidance ☑ Results in Deferral ☐
Funding
DOE ☑ LIHEAP ☐ State ☐ Utility ☑ Other ☐
The Massachusetts WAP will follow the Massachusetts Department of Labor Standards (DLS) Lead; Renovation, Repair, and Painting Program (RRP), previously administered by the U.S. EPA. **Beginning in PY 2018, DOE Lead-Safe Weatherization training and certification are no longer required as part of the Massachusetts WAP.**
Safe Work Protocols

All WAP work conducted in pre-1978 dwellings 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 dwellings must be completed by Massachusetts Lead-Safe Renovation contractor licensed (equivalent to an EPA certified firm) companies using Massachusetts Lead-Safe Renovator-Supervisors (equivalent to an EPA Certified Renovator). All work practices must be consistent with the requirements of the Massachusetts DLS RRP. That policy may be found at the following link: https://www.mass.gov/service-details/lead-safe-renovation

All contractors and WAP Subgrantee staff must provide verification of current certification as a Lead RRP Certified Renovator - Supervisor and documentation prior to working on DOE WAP dwellings. Contractors completing work in pre-1978 dwellings must include a statement signed by the Massachusetts licensed Lead-Safe Renovator-Supervisor who supervised the work on that unit that Lead RRP 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 completed. All Subgrantee inspections and DHCD site visits will include documentation that the contractor is working in compliance with Lead RRP protocols (i.e. signage, restricted access, and occupant/worker safety requirements). Violations will result in immediate work stoppage until all required conditions are met. Serious violations will be reported to the Massachusetts Department of Labor Standards. Occasional in-process inspections of contractors on site by the Subgrantee and DHCD technical monitors will verify that Lead RRP training requirements have been met.

DHCD's DOE WAP Technical Manual includes the following narrative:

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.

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, please refer to The Commonwealth of Massachusetts' Publication 454 CMR 22.00 "De-leading and Lead-Safe Renovation Regulations": http://www.mass.gov/courts/docs/lawlib/400-499cmr/454cmr22.pdf

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 (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 Lead 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. Information on the RRP may be found at the following website: https://www.epa.gov/lead/renovation-repair-and-painting-program

Effective July 11, 2010, the Massachusetts Department of Labor Standards (DLS) 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 Massachusetts fee-waived license that will be valid for the five (5) year period of the original EPA Certified Firm. Workers must be trained and certified as a Massachusetts Lead-Safe Renovator/Supervisor. EPA Certified Renovators are grandfathered to that status.

This guidance is intended to provide Subgrantee staff and contractors working in the WAP 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.

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, "The Lead-Safe Certified Guide to Renovate Right" developed by the U.S. Environment Protection Agency (EPA). 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 Massachusetts 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 Massachusetts Lead-Safe Renovation Contractor licensed companies using Massachusetts Lead-Safe Renovator-Supervisors. All work practices must be consistent with the requirements of the Massachusetts DLS RRP. That policy may be found at the following link: http://www.Mass.gov/leadsafe

•Subgrantees must assume that any paint found 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
- Massachusetts 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 Massachusetts 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 may be accessed at the following link:
http://www2.epa.gov/sites/production/files/documents/sbcomplianceguide.pdf

Additional detailed specifications regarding the health and safety of workers in the construction industry may be found in OSHA 29 CFR 1910 and 1926 as well as the specific worker safety requirements in the EPA's "Lead Paint: Renovation, Repair, and Painting Program" (RPP) Final Rule. Please refer also to section 1.6.3 Lead-Safe Procedures within the Massachusetts Weatherization Field Guide published by Saturn Resource Management.

Testing Protocols

DOE WAP funds may be used to ensure proper containment, worker and occupant protections, and cleanup are implemented as required in the Massachusetts DLS regulations. No lead-based paint sampling and lab testing is conducted using DOE WAP funds. In pre-1978 dwellings, Massachusetts WAP assumes that there is lead-based paint on the premises, and all WAP work is handled according to RRP protocols.

Client Education

The Massachusetts DLS Lead RRP client notification requirement must be documented. The signed form must be maintained as a part of the record for a given project and a copy must be maintained in the DOE client file. The pamphlet "The Lead-Safe Certified Guide to Renovate Right" may be accessed from the following Massachusetts DLS Lead RRP website:
http://www.mass.gov/lwd/docs/dos/lead-asbestos/rrp-rule/renovaterightbrochure.pdf

Training and Certification Requirements

All WAP Energy Auditors, QCIs, and Grantee technical monitors must pass the Massachusetts DLS RRP Lead-Safe Renovator training (or be grandfathered under the EPA Certified Renovator). Contractors must receive training 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 maintained by the Subgrantee. Grantee technical monitors will review contractor files annually for compliance.

Documentation Requirements

DHCD will require all Subgrantees to maintain lead-based paint related documentation in all applicable client files. Documentation that must be included in applicable client files includes: Certified Renovator certification, any additional on-site training provided, a description of any specific action(s) taken, assessment documentation showing the dwelling to be pre-1978, and site photos (or links to digital photo files) showing containment set-up and proper lead protocols. Sampling and lab testing is not conducted using WAP funds, so no sampling/testing documentation is required in client files.

7.14 – Mold and Moisture

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

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑	Alternative Guidance ☐	Results in Deferral ☐

Funding

DOE ☑	LIHEAP ☐	State ☐	Utility ☑	Other ☐

Limited water damage repairs that may be addressed by weatherization workers, as well as correction of moisture and mold creating conditions, are allowed when necessary in order to weatherize the dwelling and to ensure the long-term stability and durability of the measures. When severe mold and moisture issues cannot be sufficiently addressed, deferral of the unit is required. Mold testing and remediation is not an allowable weatherization expense.

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

A visual assessment by the Energy Auditor is required for all exterior and interior areas of the dwelling/property. Use of a moisture meter is highly recommended. Areas with suspected mold/mildew and/or bulk water problems must be identified and documented with pictures. If there are existing large concentrations of mold/mildew in an individual area or throughout the dwelling (greater than 20 sq. ft. according to EPA standards), deferral is required. If sources of moisture causing the problem can be identified and mitigated through adequate ventilation, dehumidification, or elimination, WAP work may proceed. Subgrantee staff must provide the client with suggested options for cleaning existing trouble areas consistent with EPA recommendations, as well as provide information on how to best mitigate moisture related issues going forward.

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

Minor repairs are considered to be those under $500. Allowable minor mold and moisture measures include, but are not limited to, the following: vapor barrier over dirt floors, flashing repair, gutter/downspout repair or installation, drainage mitigation, etc. The dwelling unit is considered to be beyond the scope weatherization if the costs of cumulative Incidental Repairs exceed $2,500 and no additional funding sources are available. If there are existing large concentrations of mold/mildew in an individual area or throughout the dwelling (greater than 20 sq. ft. according to EPA standards), deferral is also required.

Client Education

Subgrantee Energy Auditors must inform the client of any issues identified (i.e. poor landscape drainage, disconnected gutters, bulk water intrusion, etc.) as they pertain to moisture issues impacting the durability of the dwelling and/or the health of the occupants. Subgrantee staff will provide the client with information, notification, and documentation of areas with existing mold and/or moisture issues. Staff may provide the client with the EPA Guide: "Mold, Moisture, and Your Home": https://www.epa.gov/sites/production/files/2016-10/documents/moldguide12.pdf

Training

Subgrantee Energy Auditors are trained to identify suspected mold and moisture related issues, as well as to identify and determine potential causes of high moisture levels.

7.15 – Pests

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☑ Other ☐

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 Health and Safety concern for workers. Screening installation for windows and points of access, and incorporating pest exclusion into air sealing practices, is allowed to prevent intrusion.

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

Subgrantee Energy Auditors will visually assess the presence of and degree of pest infestation risk to weatherization workers. Pest infestation that may prevent weatherization activities, or potentially lead to the degradation of weatherization materials, must be corrected prior to weatherization or the dwelling unit must be deferred. Care should be taken so that installed materials are protected from pest intrusion. When repairing or fillings cracks and holes to the exterior, workers should use a metal mesh filler to prevent future intrusion.

Additional information on pests and safe control practices may be found at the following U.S. EPA website: https://www.epa.gov/safepestcontrol/got-pests-control-them-safely

Define Pest Infestation Thresholds, Beyond Which Weatherization Is Deferred

If the cost for remedy of pest problems are beyond the scope of the program, the unit must be deferred.

Testing Protocols

Not applicable. Testing related to any identification of a pest infestation is not conducted as part of the WAP. Visual inspection is the only required protocol.

Client Education
Subgrantee staff and contractors will provide clients with information about identified pest problems and associate risks. Staff may provide clients with information about pest control such as the EPA's: "Preventing Pests at Home": https://www.epa.gov/sites/production/files/2014-01/documents/preventpest.pdf
Training
Subgrantee Energy Auditors are trained to identify various pest concerns in dwelling units, including the EPA's: "Preventing Pests at Home": https://www.epa.gov/sites/production/files/2014-01/documents/preventpest.pdf

7.16 – Radon

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

Funding				
DOE ☑	LIHEAP ☐	State ☐	Utility ☐	Other ☐

The majority of the State of Massachusetts' geography falls within the U.S. EPA's zone 1 and 2 classification for radon occurrence. The only geographic area for zone 3 is in portions of the immediate greater Boston area. To remain in line with Health & Safety guidance WPN 22-7, precautionary measures will be taken to reduce the likeliness of making any radon issues worse in any dwelling unit weatherized, when such a measure is capable of being installed. Whenever site conditions and local codes permit: 1) exposed dirt within the thermal boundary must be covered with a vapor barrier, except for mobile homes, 2) sump pumps/pits will be covered, and 3) ventilation will occur as required by ASHRAE 62.2-2016. Radon mitigation is not allowed with WAP funds. Radon testing is not allowed using WAP funds. DHCD has concerns with testing for radon in WAP dwellings where a post-weatherization radon test may possibly reveal a higher level than a pre-weatherization radon test. Testing in a dwelling during different times of the year (i.e. summer vs. winter) may yield differing radon levels. The duration of testing in a dwelling might also need to be longer rather than shorter to get an accurate radon level. This might result in certain logistical complications as well as an overall delay in producing a completed WAP unit. Based on these variable parameters concerning radon testing, it is DHCD's current position that radon testing not occur in WAP units.

What guidance do you provide Subgrantees around radon?

Radon testing in WAP units is not allowed in the Massachusetts WAP. Full radon mitigation systems are not allowed using DOE WAP funds. The EPA's radon information map is available at the following link: https://www.epa.gov/radon/find-information-about-local-radon-zones-and-state-contact-information. While full radon mitigation systems are not allowed using DOE WAP funds, precautionary measures (i.e. poly ground cover, open sump pump covers, floor/foundation crack patching, crawl space venting, etc.) may be addressed to reduce radon levels, as well as precautions taken to reduce the likelihood of making any radon problems worse. Additional information for WAP clients and landlords may be found at the following links:

EPA's "A Citizens Guide to Radon": https://www.epa.gov/sites/production/files/2016-12/documents/2016_a_citizens_guide_to_radon.pdf

EPA's "Consumer's Guide to Radon Reduction: How to Fix Your Home": https://www.epa.gov/sites/production/files/2016-12/documents/2016_consumers_guide_to_radon_reduction.pdf

Massachusetts Department of Public Health, Bureau of Environmental Health "Radon Fact Sheet": *http://www.mass.gov/eohhs/docs/dph/environmental/iaq/radon-fact-sheet-2016.pdf*

Testing Protocols

Radon testing in WAP units is not allowed in the Massachusetts WAP Program. Full radon mitigation systems are not allowed using DOE WAP funds.

Client Education

Subgrantee staff will provide clients with the EPA's "A Citizens Guide to Radon", a Massachusetts radon fact sheet, and a Massachusetts radon information sheet that notes various precautionary measures that will be installed as part of the WAP process, when such a measure is capable of being installed. Subgrantee staff will educate clients with a general overview of radon and the hazard that radon might present in a dwelling.

Training and Certification Requirements

Subgrantee Energy Auditors are trained on radon issues as they relate to weatherization work, including: what radon is, how radon occurs and enters homes, and what factors may make conditions better or worse in dwellings where radon may be present.

Documentation Requirements

DHCD will require all Subgrantees to provide clients with an informed consent form as outlined in the DOE WAP guidance prior to receiving WAP services. Clients must sign or initial the form to indicate their acknowledgement and agreement.

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

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☐ Alternative Guidance ☑ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☑ State ☐ Utility ☑ Other ☐

The installation of smoke/CO alarms is allowed where alarms are not present, inoperable, or are deemed to be older than ten (10) years of age in the estimation of the Energy Auditor. The replacement of operable smoke/CO alarms less than ten (10) years of age is not an allowable cost. Energy Auditors are trained to look on the back of the smoke alarm for the date of manufacture. If there is no identifiable date on the back of the smoke alarm, it is presumed to be older than ten (10) years.

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

Smoke Alarms: Allowed, in conjunction with Massachusetts code requirements, where smoke alarms are not present, inoperable, or are deemed to be older than ten (10) years of age in the estimation of the Energy Auditor. Please see Massachusetts General Law, Part 1, Title XX, Chapter 148, Section 26F.

Carbon Monoxide Alarms: Allowed, in conjunction with Massachusetts code requirements, where CO alarms are not present, inoperable, or are deemed to be older than ten (10) years of age in the estimation of the Energy Auditor. Please see Massachusetts General Law, Part 1, Title XX, Chapter 148, Section 26F ½ .

Fire Extinguishers: A fire extinguisher is an allowable Health and Safety expense only in homes that use a solid fuel appliance.

Testing Protocols

Subgrantee Energy Auditors and QCIs must test all identified smoke/CO alarms in a dwelling unit to ensure that they are functional and less than ten (10) years of age.

Client Education

Subgrantee staff will provide clients with information on the importance and operation of smoke/CO alarms, as well as operation of a fire extinguisher, when applicable. The Massachusetts Department of Fire Services has produced the following: "Consumer's Guide to Massachusetts Requirements for Carbon Monoxide Alarms" available here:
http://www.mass.gov/eopss/docs/dfs/osfm/pubed/flyers/carbon-monoxide-safety-guide.pdf

Training

Subgrantee staff are trained on the appropriate installation and code requirements for smoke/CO alarms: Massachusetts General Law, Part 1, Title XX, Chapter 148, Section 26F, Massachusetts General Law, Part 1, Title XX, Chapter 148, Section 26F ½, and Massachusetts Fire Prevention Code 527 CMR 1.00 c 13.7.6. Energy Auditors are trained to look on the back of the smoke alarm for the date of manufacture. If there is no identifiable date on the back of the smoke alarm, it is presumed to be older than ten (10) years. Installations of smoke/CO alarms will be consistent with the requirements of the Massachusetts Building Code and the manufacturer's recommendations. The Massachusetts code requires a CO alarm to be located on each occupied level of the dwelling and on levels of the home with bedrooms, within ten (10) feet of each bedroom door.

7.18 – Occupant Health and Safety Concerns and Conditions

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☑ Other ☐

When a client's health may be at risk and/or the weatherization work activities might 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's Energy Conservation Unit. Failure on behalf of the client, or the inability to take appropriate actions by the Subgrantee, must result in deferral.

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

The Subgrantee Energy Auditor must take all reasonable precautions against recommending weatherization work on dwelling's that will subject clients to health and safety risks. During the energy audit process, the Energy Auditor must discuss the weatherization work to be completed in the dwelling and ask the client if any residents in the home have any health conditions that might be impacted by the planned weatherization work to be completed.

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

Without requesting specific medical information, the Energy Auditor must discuss the weatherization work to be completed in the dwelling and ask the client if any residents in the home have any health conditions (i.e. asthma-like respiratory issues, etc.) that might be impacted by the planned weatherization work to be completed. The Energy Auditor must also visually assess occupant pre-existing conditions and determine what actions to take if the dwelling is not deferred.
What guidance do you provide Subgrantees for dealing with potential health concerns when they are identified?
In cases where a client's health is fragile and/or the weatherization activities performed might constitute a health or safety hazard, the dwelling's at risk occupant(s) will be required to temporarily vacate the dwelling during the weatherization process. The agency and contractor should not begin the work until the occupant(s) at risk have temporarily vacated the dwelling. All problems and concerns related to client temporary vacating must be fully documented in the client file.
Client Education
Subgrantee staff will make clients aware of issues and available healthy homes resources regarding client health issues. Staff will provide clients with information about resources for home health issues.
Documentation Form(s) have been developed and comply with guidance? Yes ☐ No ☑

7.19– Unsanitary Conditions
(odors, mustiness, raw sewage, rotting wood, etc.)

Concurrence, Alternative, or Deferral
Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐
Unallowable Measure ☐
Funding
DOE ☑ LIHEAP ☐ State ☐ Utility ☑ Other ☐
Remediation of conditions that may lead to or promote unsanitary conditions is allowed, including repairing or removing the condition that creates the problem. Deferral may be necessary in cases where a known agent is present in the home that may create a serious risk to occupants or weatherization workers (i.e. raw sewage, etc.).
What guidance do you provide Subgrantees for dealing with biological and/or unsanitary conditions in homes slated for weatherization?
Visual observation and sensory (odors) will be used to identify problems. The Subgrantee Energy Auditor can complete an inspection to the degree that he/she is not exposed to hazardous contaminants such as raw sewerage, animal waste/carcasses decomposing, and excess garbage. Use of DOE funds to clean-up an occupant's neglect is not allowed. Hazardous conditions must be remediated by an appropriate professional entity. If the problems are beyond the scope of the DOE WAP, the units will be deferred. Additional information on biologicals may be found at the following websites: https://www.epa.gov/indoor-air-quality-iaq/biological-pollutants-impact-indoor-air-quality https://www.cpsc.gov/safety-education/safety-guides/home/biological-pollutants-your-home
Testing Protocols
No testing of biologicals and/or unsanitary conditions are performed under the WAP.
Client Education
Subgrantee staff will inform clients of observed conditions and provide them with the Hazards Notification and Deferral Policy form. Staff will provide information on how to maintain a sanitary home and steps to correct deferral conditions. Staff will also discuss with clients the availability of other assistance.
Training
Subgrantee staff and contractors are trained to recognize unsanitary and unsafe work conditions, as well as understand when deferral is needed.

7.20 – Ventilation and Indoor Air Quality

Concurrence, Alternative, or Deferral
Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐
Funding
DOE ☑ LIHEAP ☐ State ☐ Utility ☑ Other ☐
ASHRAE 62.2-2016 is required to be met to the fullest extent possible, when performing weatherization work in Massachusetts. Existing fans and blower systems must be updated if not deemed adequate per testing protocols.

Identify the Most Recent Version of ASHRAE 62.2 Implemented (optional: identify Addenda used)
ASHRAE 62.2-2016 is the most recent version of ASHRAE 62.2 to be implemented for the WAP in Massachusetts.
Testing and Final Verification Protocols

All units submitted to DHCD for production credit using DOE WAP funds must have documented compliance with ***ASHRAE Standard 62.2-2016 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings***. A copy of this standard is available for purchase at the ASHRAE website: https://www.ashrae.org/. The standard provides for the minimum building ventilation requirements and replaces previously determined and referenced Building Tightness Limits (BTL), Minimum Ventilation Guidelines (MVG), the previous ASHRAE 62.2-2013, and any other guidelines that delineate an acceptable minimum building leakage rate or air change rate in the DOE WAP.

This guidance serves to provide **basic requirements** for documenting 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, 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 will provide all WAP technical staff with training on the requirements for compliance with the 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 Energy Conservation Unit staff will also provide ongoing training as needed. DOE WAP Training and Technical Assistance (T&TA) funds may be used to pay for expenses related to additional ASHRAE 62.2-2016 training.

To document compliance with ASHRAE Standard 62.2-2016, the DOE WAP client file must include at a minimum, a documentation of the calculations used to determine the required mechanical ventilation rate, as well as a completed checklist that itemizes and documents compliance with other requirements of the standard.

Links to calculation resources and sample compliance checklists are included as part of this guidance.

The basic requirements of ASHRAE 62.2-2016 include:

"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: "

$Q_{tot} = 0.03A_{floor} + 7.5(N_{br} +1)$

Where

Q_{tot} = total required ventilation rate, cfm

A_{floor} = floor area of residence

N_{br} = number of bedrooms (not less than 1)

Additional local ventilation requirements:

- 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 bathroom does not have the amount of ventilation stated above, it must be provided or Normative Appendix A – Existing Buildings of ASHRAE 62.2-2016 must be used for sizing whole-house ventilation.

Other requirements include:

- Attached garages must be adequately sealed from the living space to prevent migration of contaminants
- Clothes dryers must be vented to the exterior (except condensing dryers must be piped to a drain)
- Installed fans must comply with sone 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 sones
        - 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 the living space, attic, and crawlspace.
- Adequate combustion air must be provided for combustion appliances
    - Where atmospheric vented appliances are inside the occupied space, additional requirements if the two largest exhaust fans have a 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 62.2-2016

Ventilation Air Requirements, cfm					
	BEDROOMS				
Floor Area (ft2)	1	2	3	4	5
<500	30	38	45	53	60
501-1000	45	53	60	68	75
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 a 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 addresses only existing occupied dwellings. Many dwellings 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 might be installing multiple ventilation devices in most dwellings. The standard provides an 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 following PowerPoint presentation titled "ASHRAE 62.2 for WAP" is found on the WAPTAC website: 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 Alterative 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*.

A suggested calculation tool for use with ASHRAE 62.2-2016 is as follows: 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 Tools) available at the Residential Energy Dynamics (RED) website: (http://www.residentialenergydynamics.com/). Early in 2018, RED is planning to release the enhanced RED Calc Pro as a mobile-friendly web app (reports, file saving to cloud, collaboration, offline operation, etc.) that will conform with ASHRAE 62.2-2016.

All website resources, along with the WAPTAC 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 62.2-2016 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 (4) hours. The calculations will provide necessary information to determine if the dwelling needs additional ventilation, what size device is needed, and the run time necessary (continuous or intermittent, and if intermittent, how long).

Once the required ventilation rate has been determined, mechanical ventilation must be installed that can deliver the required rate and be verified through measurement. This 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 sone ratings.

There are several design systems that may 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 WAP. A supply only system, unless connected directly to ductwork, is typically not appropriate in cold weather climates.

The most common installation in the Massachusetts WAP 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 dwelling, 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 62.2-2016 compliance (sone rating, variable speed capability, low electrical usage, etc.). Many new fans have timing and flow rate controls built into the unit, simplifying wiring requirements and use 6 inch exhaust ductwork to reduce the flow restrictions the may be problematic with 4 inch 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 applicable 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. **Please refer to Table 5.3 in ASHRAE 62.2-2016**.

For prescriptive duct sizing:

- 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. Table 5.3 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 to 15 feet of straight duct
- All ducting will be insulated to an R-8 value when present in an unconditioned area

Provided that it is approved by DOE, DHCD will allow the following exception to the ASHRAE 62.2-2016 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 dwelling's occupants
    - 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 determine an appropriate work sequence to minimize additional required visits to the home. Subgrantees must also determine if 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 might include: the initial energy 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 Energy Auditor may 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 CFM_{50} is determined, the mechanical ventilation requirement is calculated and the fan set to meet the 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.

Currently, the QCI makes the final determination and settings at the final QCI visit based on the final blower door reading (infiltration credit). 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.

Client education regarding the need and purpose of mechanical 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 mechanical ventilation systems installed
- Instructions on proper operation and maintenance of the mechanical ventilation system
- Information on controls (which must be labeled as to their function)

Client Education

Clients will be provided information about mechanical ventilation operation, use, and maintenance consistent with the requirements of the ASHRAE 62.2-2016 standard. Clients will be informed as to the location of switches that control mechanical ventilation apparatus, as well as on cleaning instruction to maintain proper operation of ventilation apparatus. Clients will also be left with the manufacturer's specifications/operating instructions for any mechanical ventilation apparatus installed in the dwelling unit during weatherization work. Clients will be informed that if mechanical ventilation is called for by the Energy Auditor, and the client refuses the installation, the dwelling unit must be deferred.

Training

ASHRAE 62.2 training will be provided to Subgrantee Energy Auditors, QCIs, and DHCD technical monitors on the requirements of ASHRAE 62.2-2016, including the basic requirements of the standard, determining minimum ventilation requirements, measuring existing and installed equipment, specifying ventilation systems, and verifying installation effectiveness. DHCD will continue training Subgrantee technical staff and contractors on the requirements of ASHRAE 62.2-2016 during regularly scheduled field monitoring visits.

7.21 – Window and Door Replacement, Window Guards

Concurrence, Alternative, or Deferral

Concurrence with Guidance ☑ Alternative Guidance ☐ Results in Deferral ☐

Funding

DOE ☑ LIHEAP ☐ State ☐ Utility ☑ Other ☐

Window and door replacement, repair, or installation is not an allowable Health and Safety measure in the WAP, but may be allowed as an incidental repair or an efficiency measure, if cost justified.

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

Window and door replacement, repair, or installation must not be done with DOE WAP Health & Safety funds unless extenuating circumstances exist related to another allowable Health and Safety measure. Prior approval is required from DHCD's Energy Conservation Unit for any extenuating circumstances. All other window and door replacement, repair, or installation must meet the SIR guidelines based on a DOE approved energy audit.

Testing Protocols

Subgrantee staff will ensure that any window and door replacement, repair, or installation meets the SIR guidelines based on a DOE approved energy audit.

Client Education

Subgrantee staff will provide clients with required notification if lead paint RRP applies.

Training

Subgrantee Energy Auditors and QCIs are made aware of this guidance for window and door replacement.

7.22 – Worker Safety (OSHA, etc.)				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance ☐		Alternative Guidance ☑		Results in Deferral ☐
Funding				
DOE ☑	LIHEAP ☐	State ☐	Utility ☑	Other ☐
Workers must follow OSHA standards including confined space regulations and Safety Data Sheets (SDS). Workers must take precautions to ensure the Health and Safety of themselves and other workers. All Subgrantee staff and contractors must maintain compliance with the current OSHA Hazard Communication Standard. On-site, organized SDSs must be available wherever workers may be exposed to hazardous materials.				
How do you verify safe work practices? What is your policy for in-progress monitoring?				
DHCD requires all Subgrantees to conduct, at minimum, 50% in-process WAP unit inspections. These inspections serve many purposes including verification of safe work practices per DOE WAP requirements. DHCD technical monitors also will visit in-process units occasionally to observe that worker safety protocol and various other Health and Safety protocols are being followed. Beginning in PY 2018, DHCD will require contractors to submit photos showing their various Health and Safety practices (i.e. lead-safe tarps, use of PPE, etc.) which agencies will then place in the appropriate client files. Subgrantee staff can also submit photos for client files that they take during in-process inspections.				
Training and Certification Requirements				
Grantee and Subgrantee staff are trained in the importance and use of personal protection equipment (PPE). OSHA 10 Job Site Safety, Training, and Confined Space in Construction Training is required of both Grantee and Subgrantee Energy Auditors and QCIs. Attendance must be documented and information maintained in Subgrantee records for staff and contractor files. DHCD will continue to provide on-site worker safety training completed in conjunction with the IREC accredited WAP training center, the Green Jobs Academy.				

7.23– <Add in Topic>				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance ☐		Alternative Guidance ☐		Results in Deferral ☐
Funding				
DOE ☐	LIHEAP ☐	State ☐	Utility ☐	Other ☐
Remediation Protocols				
Testing Protocols				
Client Education				
Training				

7.24– <Add in Topic>				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance ☐		Alternative Guidance ☐		Results in Deferral ☐
Funding				
DOE ☐	LIHEAP ☐	State ☐	Utility ☐	Other ☐

Remediation Protocols
Testing Protocols
Client Education
Training