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Chapter 1 ELIGIBILITY

1000 Eligibility

All households found to be LIEAP eligible, whose homes have not been previously weatherized, are eligible for Weatherization services.

A household which is otherwise LIEAP eligible, but does not meet the LIEAP income eligibility may be eligible for "Weatherization Only" services. To be eligible, an otherwise "LIEAP qualified" household whose income is **no** more than 200% of the FPL would be eligible for "Weatherization Only" services if their home has not been previously weatherized.

Note: To be "income" eligible for LIEAP the household income for households of one through seven must be at or below 60% of the state median income. For households of eight or more income must be at or below 150% of the Federal Poverty Level (FPL).

All households must complete an application for services.

Eligibility determination between heating seasons:

Applications are available all year for weatherization services.

1. When determining eligibility for weatherization during the LIEAP non-heating season (May 1-September 30) agencies must follow the eligibility guidelines for the Low Income Energy Assistance Program (LIEAP).
2. Tribal weatherization households must be determined eligible for the Tribal Low Income Energy Assistance Program or in accordance with the DOE approved state plan as if the applicant had applied during the Tribal heating season. Tribal Indian Households are defined in the Memorandum of Understanding (MOU) between the State of Montana and the Tribe residing within the boundaries of the reservation. Indian households on the reservation may be eligible for weatherization through the Department.
3. Agencies must determine the priority for weatherization-only applicants that apply during the non-heating season unless a primary heating or water system emergency exits.

1100 Priority for Weatherization Services

Households must be Low Income Energy Assistance Program (LIEAP) or "Weatherization Only" eligible to receive weatherization services. Households must be on the priority list supplied by the Department, or the agency must determine the weatherization priority. Prioritization for weatherization services is based upon the household's energy usage with preference given to households containing disabled or elderly members.

Agencies that provide weatherization services for Tribal clients must use information provided by the Tribal Low Income Energy Assistance Program to determine the priority for weatherization services.

Agencies must prioritize the weatherization of dwellings based upon the following:

1. Households can apply for summer weatherization-only services during the non-LIEAP heating season (May 1 – September 30). These households will not be reflected on the Department generated priority list but the agency must determine the weatherization priority based upon the household's energy usage, unless the household is applying with a primary space heat or primary water heat emergency.

   Determine the household's energy usage by using the household's twelve (12) month energy consumption (obtained from the fuel vendor). If there is a household member who is over the age of sixty (60) or disabled (determined under the federal Social Security Administration (SSA) Title II or Title XVI criteria), the energy usage is multiplied by 1.25. This gives a priority number preference to households that contain an elderly and/or disabled member. Take the household's energy usage and see where that would place them on the priority list. Assign the corresponding priority number to the household.

   - **Example**: A household with a disabled member has an annual energy consumption of $2,500.

     Annual Energy Consumption= $2,500

     $2,500 x 1.25 = $3,125

     $3,125 is the household's energy usage. The household would receive the priority number just before the household with a $3,124 energy usage.

   The agency then must compare the calculated priority number to the Department generated priority list to determine when the household will be weatherized.

2. Determine if the household was previously weatherized.

a) Homes not weatherized or weatherized prior to September 30, 1994 are eligible for weatherization with Department of Energy (DOE) and Oil Overcharge (EXXON and STRIPPER WELL) funds.
b) Bonneville Power Administration (BPA) weatherization program does not have a re-weatherization date.
c) Homes not weatherized or weatherized prior to the date ten (10) years before the eligible application date for the current heating season (October – September) are eligible for LIEAP weatherization funds and the NorthWestern Energy (NWE) Free Weatherization Program.

3. A household on the priority list will remain eligible for weatherization services until the new priority list is generated by the Department. The agency priority list is generated for eligible LIEAP households multiple times per program year. Households must be weatherized in order of priority. Agencies can move up a household's weatherization priority based upon an emergency situation, travel considerations (e.g., agency's next weatherization project is out of town; another dwelling with a lower priority number in the same area would also be weatherized by the agency during the program year; both dwellings can be weatherized by the agency to save on travel costs) or due to co-funding a weatherization project with utility funding.

4. Priority for weatherization on Tribal reservations will be based upon such factors as the number of household members, the number of household members who are elderly and/or disabled, the number of household members below the age of six (6), fuel type, emergency situations, and type of dwelling.

1200 Eligible Dwellings

Agencies will perform weatherization services on single family dwellings where the occupants (owners or renters) have been determined eligible for the Low Income Energy Assistance Program (LIEAP) or weatherization programs. Eligible dwellings will be prioritized for weatherization as found in WAP 1100.

Multi-family Dwellings:

Agencies may weatherize multi-family dwelling units from the weatherization priority list if not less than 66% (50% for duplexes and four unit buildings and certain eligible types of large multi-family buildings) of the dwellings in the building are eligible dwelling units. Each dwelling unit should be entered as a separate audit in the Computerized Energy Audit (CEA).

Note: Agencies must receive permission from the Department to weatherize buildings larger than four (4) units.

Note: Montana DEQ sampling requirements apply to dwellings with more than 4 units, even if only a single unit is being weatherized.

Shelters or Group Homes:

Agencies may weatherize shelters or group homes. The number of dwellings that exist in a shelter or group home is based upon either eight hundred (800) square feet of the shelter/group home as a dwelling unit or each floor of the shelter/group home.

Note: When shelter or group home residents are residing in the shelter or group home for reasons associated with being low-income and the mission or purpose of the shelter or group home is to serve low-income people, there is no requirement for application for weatherization. As long as the agency documents that the shelter or group home meets this criteria, the shelter or group home can be weatherized.

For shelters or group homes that do not meet the above criteria, agencies must determine eligibility for weatherizing the shelter or group home based upon the occupants at the time of application. Each occupant must complete an application for assistance, including the manager if the manager lives in the dwelling. Eligibility is based upon the application and verification provided by each occupant.

1210 Non-stationary Campers and Trailers:

The weatherization of non-stationary RV campers and trailers are not eligible for weatherization with any current funding source because of the mobility of the dwelling. The weatherization of non-stationary campers and trailers that do not have a mailing address associated with the eligible applicants is not allowed. The use of a post office box for non-stationary campers or trailers does not meet this requirement.

The RV Camper or Trailer must be located and set in a permanent space. DOE requirements of a permanent mailing address associated with the eligible applicants remain.

If approved, the weatherization of a RV Camper or Trailer will be funded with LIEAP WX funding only.

Note: LIEAP CRF funding of furnace and water heater emergency repairs and or replacement are allowed on LIEAP eligible RV Campers or Trailers.

1220 Owner/Occupant Refusal of Measures:

Before any work is started on the dwelling; all work that intends to be completed must be explained to the owner/occupant. If the owner/occupant refuses **any measure** from the Energy Audit, the agency must walk away from the dwelling. The agency must get a signature from the owner/occupant refusing the work and deferring the project (an EAP-020 can be used to document client refusal). The dwelling would then be considered deferred for weatherization, however, the agency may need to provide the owner/occupant with a copy of the DPHHS-EAP-023 "Notice of Dangerous Conditions" form if a situation exists in the household that would normally be corrected through the weatherization process. A copy of the completed refusal form must be kept in the weatherization case file.

Note: It is recommended to have the owner/occupant sign a refusal form when any measure, regardless of the priority of the measure, is refused and retain the refusal form in the weatherization case file.

1230 Dwelling for Sale:

No owner occupied residence shall be weatherized if it is being offered for sale.

No renter occupied residence shall be weatherized if it is being offered for sale unless it can be demonstrated that the residence will continue to be occupied by eligible tenants.

1240 Owner/Occupant Move:

If the owner/occupant moves from the dwelling or passes away after weatherization work has begun, weatherization of the dwelling may be completed. The agency also has the option to defer the dwelling.

1300 Combustion Appliances in Rental Units

Under what is commonly called "The Montana Residential Landlord and Tenant Act of 1977", Montana law provides:

> (1) 'A landlord:
>
> (e) shall maintain in good and safe working order and condition all electrical, plumbing, sanitary, heating, ventilating, air-conditioning, and other facilities and appliances, including elevators, supplied or required to be supplied by the landlord;
>
> (g) shall supply running water and reasonable amounts of hot water at all times and reasonable heat between October 1 and May 1, except if the building that includes the dwelling unit is not required by law to be equipped for that purpose or the dwelling unit is so constructed that heat or hot water is generated by an installation within the exclusive control of the tenant. (70-24-303, MCA (2014).

Unless a landlord can demonstrate that they are low-income or have some mitigating circumstances, the responsibility for the maintenance, repair or replacement of the combustion appliance in the rental unit is the responsibility of the landlord. Mitigating circumstances may include, but are not limited to:

- The landlord is absent and the agency cannot contact the landlord and the maintenance, repair or replacement of the appliance is necessary to alleviate the health and safety related issue.
- The landlord refuses to maintain, repair or replace the appliance and the occupants of the dwelling have a health and safety issue with the appliance.
- The landlord cannot maintain, repair or replace the appliance in a timely manner to alleviate the health and safety issue.

All mitigating circumstances regarding the landlord not maintaining, repairing or replacing an appliance in a health and safety related circumstance must be documented in the client's case file. The agency can contact the Department for guidance for determining a mitigating circumstance.

1400 Access Agreements

No weatherization work will begin on a dwelling until the occupant and/or owner of the dwelling completes the DPHHS-EAP-013 "Montana Weatherization Assistance Program(s) Access Agreement". Copies of the signed DPHHS-EAP-013 must be provided to the occupant and/or owner of the dwelling and the original signed copy must be maintained in the agency's weatherization file.

Chapter 2 CDS ENERGY AUDIT

2000 Computerized Energy Audit Requirements

The Montana Computerized Energy Audit (CEA) is an Internet-based application used by state and tribal weatherization agencies to initially determine the cost-effectiveness for weatherization measures that may be performed on a dwelling. The CEA also records the actual costs for weatherization measures performed on a dwelling and final cost-effectiveness calculations as part of the completion process.

After the initial inspection of a dwelling has been completed by the agency's certified weatherization inspector/auditor, information regarding the existing conditions in the dwelling is entered into the CEA. The CEA uses existing condition information gathered during the initial inspection and proposed weatherization-related changes to analyze the dwelling as a whole system. The CEA calculates interactions between the envelope of the dwelling, the heating and air exchange systems and the lifestyles of the occupants. The CEA uses information regarding the primary and secondary heat types, the efficiencies of the heat systems, annual energy costs, the number of occupants, the number of occupants who smoke, buffer factors, wind exposure and health and safety hazards. (For more detailed descriptions of the interactions of the components of the CEA and non-feasibility criteria for weatherization measures, see the Standard Work Specifications (SWS) tool found on the National Renewable Energy Laboratory (NREL) web site.) The link to the NREL web site is: https://sws.nrel.gov/.

One of the primary objectives of an auditor performing an energy audit should be to strive to ensure the input values in the audit reflect the most accurate and realistic information available. The certified inspector/auditor enters into the initial CEA the proposed weatherization-related changes to the existing conditions that the agency may perform on the dwelling. (Please see part C. Changes to the Computerized Energy Audit.) The estimated or actual costs (Installation and Materials) associated with performing the proposed changes/services are also entered into the CEA for the respective measures and the CEA determines the cost-effectiveness Savings-To-Investment Ratio (SIR) for attic insulation, floor insulation, wall insulation, crawlspace/rim joist/basement insulation, windows, doors and infiltrative measures. Each of these measures must meet an Individual SIR (Currently 1.0) and the Overall SIR (Currently 1.0) in order to be performed by the agency.

Note: Agency crew/contractor travel costs, transportation costs or agency/contractor overhead costs are not to be entered into the computerized energy audit for any measure. These costs are considered overhead costs that are associated with the individual weatherization project to be expensed to the respective federal funding source. Overhead costs for federal contracts as well as computerized energy audit costs for federal and utility contracts are expensed to the respective contract program operations line item and are considered expenses for the average cost per dwelling. See WAP 6.8 for more detailed information.

Minor repairs costs are not required to meet the Individual SIR criteria, but the costs associated with energy-related Minor Repairs are used in the CEA for the Overall SIR calculation.

Amounts expensed in the CEA for performing inspections/repairs on the heat system, health and safety measures, attic air sealing and the audit costs are not subject to the Individual or Overall SIR calculations, but are subject to contractual limitations and/or averages, i.e. Health and Safety Department of Energy (DOE), Oil Overcharge (EXXON and STRIPPER WELL) and NorthWestern Energy (NWE) expenditures are limited to a fifteen percent (15%) state average.

After the initial CEA is completed, the audit will prioritize, in descending order, the proposed measures by cost-effectiveness. The most cost-effective measures must be completed first during the weatherization of a dwelling.

The CEA does not prioritize work on heat systems, attic air sealing or health and safety measures. The agencies should prioritize work on heating systems and water heaters higher than work on air infiltration, insulation, ventilation and moisture control, windows, doors and general repairs.

Note: If the proposed costs for the weatherization of a dwelling will exceed $9,000, the agency must request and receive written permission from the Department before proceeding with the project. Prior written permission from the Department can be waived in cases of emergency or urgency determined by the agency. The Department still must be contacted for approval after the fact.

The completed CEA must be electronically available for review. The agency must, at a minimum, keep a copy of the final Summary Page in the client's case file. The agency also has the option to print out the entire CEA to be placed in the case file.

2100 Changes to the Computerized Energy Audit

Heating System Seasonal Efficiency:

The Department sets certain parameters in the Computerized Energy Audit (CEA) based upon averaged information for heating system units existing in dwellings. As part of the weatherization of a dwelling, the heating system is inspected, tested and, if necessary, repaired or replaced.

If heating systems are going to be replaced during the course of weatherization work, the seasonal efficiency of **replacement units** (not the seasonal efficiency of unit being replaced) must be reflected in the energy audit.

By requiring agencies to utilize seasonal efficiencies of heating systems that will be utilized to address on-going rather than past heating needs, we are ensuring that decisions regarding which measures to perform are determined based on accurate energy usage characteristics.

Fuel Cost Parameters:

The Department sets certain parameters in the Computerized Energy Audit (CEA) based upon averaged fuel cost data for the state. Parameters for fuel costs for natural gas, electricity, propane, fuel oil, coal and wood are updated by the Department once per year at the start of a contractual time period.

In some instances, non-regulated fuel type prices can change during a contract time period within an agency's service area. If the agency can document a fuel type price change by averaging prices gathered from fuel vendors within the service area, the fuel price per unit for that specific fuel type can be changed by the agency on the individual CEA. The change in the fuel price used in the CEA must be documented in the comments section of the CEA and also in the weatherization case file.

Note: The costs for NorthWestern Energy (NWE) fuel types cannot be changed on the Computerized Energy Audit (CEA).

Units of fuel types are described as follows:

Natural Gas	Dekatherm
Electricity	Kilowatt Hour
Propane/Butane	Gallon
Fuel Oil	Gallon
Coal	Ton
Wood/Hardwood	Cord

Heating Degree Day (HDD) parameters are another change that an agency can make on the individual CEA based upon documented information.

An averaged HDD amount is available for each agency's service area based upon a 30 year average compiled by the National Oceanic and Atmospheric Administration (NOAA). (For a more detailed explanation of Heating Degree Days, please see the Standard Work Specifications tool on the NREL web site.) Individualized Heating Degree Day data can be obtained from http://www.degreedays.net/

Agencies have the option of using in the CEA, the average HDD information for its service area or the actual amount of HDD for localities within the service area. Both the agency's service area average and certain service area locality HDD information is available on the CEA. In some instances, an agency may have documentation of a more specific HDD amount for a specific location within the service area where a dwelling is to be weatherized. The agency can update the HDD information on the individual CEA that will be used in the cost-effectiveness calculations for that dwelling. The weatherization case file must contain the documentation for the use of the HDD information.

Note: If the Heating Degree Day (HDD) average is listed in the Computerized Energy Audit for the location where the dwelling is located and the agency has no additional documented information regarding the area's HDD average, the agency must use the location HHD and not the service area average.

2200 Buy-down of Individual Measures

If the total material and labor costs to perform a weatherization measure brings the individual Savings-to-Investment Ratio (SIR) below 1.0, the owner/landlord/other non-federal funding source can "buy-down" or cost share to bring the SIR up to a 1.0 or greater cost-effectiveness.

For example, the total cost to insulate an attic is $1,000. The CEA will only support $800 to arrive at a 1.0 SIR. The owner of the dwelling is willing to pay $200 as a "buy-down" or cost share. With the owner's contribution, the attic can be insulated. The $800 will be subject to the SIR calculation and the $200 will be recorded on the CEA as a contribution.

2300 Self- Help Towards Weatherization Measures

If the owner/landlord wishes to contribute self-help (other than simple low cost/no cost measures such as install of CFLs, low-flow showerheads, etc) the agency must execute a written, signed contract with the owner/landlord outlining:

- the specifications of the work to be performed;
- the supplies and materials to be provided;
- the deadline for completion;
- liability rests with the owner/landlord; if work not performed by the deadline all supplies/materials must be returned to the agency.

Note: The agency must request and receive written permission from the Department before proceeding. If written permission is granted by the Department the agency must inspect the self-help work to insure proper installation as well as completion of the measure/work.

Chapter 3 AIR LEAKAGE TESTING REQUIREMENTS

3000 Air Leakage Testing Requirements

The blower door is a diagnostic tool used by an agency to measure air leakage (Infiltration) in cubic feet per minute (CFM) and/or natural air changes (NAC) and to identify areas within the dwelling that are in need of air sealing. By using a blower door, the agency can measure air tightness (CFM/NAC) in a dwelling to determine the ventilation rate and energy loss due to infiltration/exfiltration. (For a more detailed explanation of the use of a blower door, please see the Standard Work Specifications (SWS) tool on the National Renewable Energy Laboratory (NREL) site). The link to the NREL site is: https://sws.nrel.gov/. The blower door either pressurizes or depressurizes the dwelling to test the CFM/NAC infiltration rate. The blower door must also be used as a diagnostic tool for zonal comparisons and duct system analysis and repair. Crews must also use a blower door during air sealing to assist with finding leaks. Air sealing measures are to continue as long as they remain cost effective (SIR greater than or equal to 1.0).

The agency is required to document the dates and results of the pre and post-weatherization blower door test results and Zone Pressure Diagnostic results, as well as the signature of the person performing the tests in the weatherization case file.

Weatherization contracts require that a pre- and post-blower test be performed on each dwelling weatherized. The pre-blower door test is usually performed during the initial inspection of the dwelling and the post-blower test is either performed during the agency's final inspection of the dwelling after all weatherization work has been accomplished or as part of actual weatherization infiltration work that is being performed on the dwelling. (See the Standard Work Specifications for the test conditions for performing the blower door tests.)

Air sealing goals will be based on the Auditor's assessment of the opportunities for cost effective air sealing in the home and their expectation of when the economic stop for air sealing will be reached (SIR greater than 1.0.) The goal is to reduce the CFM leakage/NAC infiltration rate in the dwelling as much as is cost effective and allow mechanical ventilation to ensure adequate indoor air quality in the home.

The pre-blower door and Zone Pressure Diagnostic test results must be recorded in the initial Computerized Energy Audit (CEA). The post-blower door test results must be estimated and input into the CEA based upon the dwelling type, the condition of the dwelling and agency's experience in reducing the CFM/NAC rate with all of the proposed weatherization measures to be performed on the dwelling. During the final inspection of the dwelling or at the completion of the proposed weatherization measures/services, the actual post-blower door and Zone Pressure Diagnostic tests will be performed and the actual results must be entered into the weatherization case file and CEA.

When the pre-blower door test results from the initial inspection of the dwelling and estimated post-blower door test results are entered into the Infiltration section of the initial CEA, the agency also must enter the estimated material and labor costs for performing air sealing

measures. This information allows the agency to have the CEA determine the cost-effectiveness of the proposed measures.

After the agency performs the post-blower door and Zone Pressure Diagnostic tests, the agency must input the actual test results in the Infiltration section of the CEA along with the actual material and labor costs (excluding attic air sealing material and labor). When this information is input, the Savings-to-Investment Ratio (SIR) must still be 1.0 or greater.

When a dwelling has duct work from a forced air heating system that runs outside of the building's Pressure Boundary, this home will be subject to duct testing at the audit and following any duct sealing measures. This test is to be completed using Pressure Pans in conjunction with the Blower Door test while the home is depressurized to -50 Pascals (pa). Any register that has a Pressure Pan reading with a pressure difference with reference to the house of 1 pa or greater will be assessed for duct sealing measures.

3100 Performing Air Leakage Tests:

The blower door and Zone Pressure Diagnostic tests must be performed on a dwelling at the audit and following the installation of weatherization measures.

Note: The agency must explain the purpose and procedures for the pre and post blower door tests to the client. If the client refuses the blower-door testing the agency must defer the weatherization of the dwelling.

Note: The agency must defer the audit when there is the possible presence of friable asbestos. If asbestos levels in the vermiculite have been determined to be present, or if the agency is assuming the presence of asbestos without testing, the weatherization of the dwelling must be deferred until the vermiculite has been removed by a certified asbestos abatement contractor and an air clearance exam test has been performed on the dwelling to ensure that there is no asbestos present in the ambient air that would be a health and safety risk.

When the dwelling is deferred for weatherization due to potentially hazardous conditions, the agency must provide the occupants/owner with a copy of the DPHHS-EAP-023 'Notice of Dangerous Conditions' form.

Under extenuating circumstances a post-blower door may be omitted with Departmental approval

The reason for the non-completion of the post-blower door test must be documented in the case file and on the Computerized Energy Audit (CEA).

3200 Pass Rate for Attic Air Sealing of Single Family Dwellings:

For an open (un-floored), unconditioned attic, a pressure difference of 45 Pascals (pa) with reference to the house must be reached while the home is depressurized to -50 pa. If a pressure difference of 45 has not been attained, attic air sealing is to continue. For floored, unconditioned attics, the pass rate will be a pressure difference of 40 pa with reference to the house while the home is depressurized to -50 pa. If the attic is partially floored, a weighted average of floored/un-floored attic area can be used to determine the pass rate. The benefits of ensuring attic floors are air sealed to this standard will be realized in greater energy savings, better indoor air quality, increased comfort, better building durability and fewer contractor call backs.

In rare instances it may not be possible to reach the pass rate for a home. In these cases, the agency must provide photos and a detailed description of what circumstances prohibited the contractor from reaching the passing zone pressure.

3300 Duct System Testing

Pressure pan testing is required on all homes with ductwork present outside of the pressure barrier of the building; this includes virtually all mobile homes. This test is to be completed while the home is depressurized to -50 pa. The target for each register is a pressure difference of 1 pa or less with reference to the house. This test will aid the auditor in the need for duct sealing measures as well as a means to locate the largest leaks in the system. If it is determined by the auditor through the initial duct test that duct sealing measures are not needed, then no duct test will be required at the final inspection/test-out.

Note: the registers closest to the air handler are under the highest pressure

Chapter 4 LEAD SAFE WEATHERIZATION/LPPR

4000 Lead Safe Practices:

All Agencies and contractors performing renovation, repair, and painting projects that disturb lead-based paint in dwellings built prior to 31 December 1977 must be certified and demonstrate that they use certified renovators who are trained by EPA-approved training providers to follow lead-safe work practices. All work will be performed in a Lead-Safe Weatherization (LSW/LRRP) manner as found in the Montana Lead-Safe Weatherization Jobsite Handbook and the Lead Safety for Renovation, Repair and Painting Manual.

The rule affects paid contracting renovators; maintenance workers in multi-family housing and painters who are contracted by the agency to work in dwellings built prior to 31 December 1977, including mobile home housing. The requirements apply to renovation, repair or painting activities. The rule does not apply to minor maintenance or repair activities where less than two square feet of lead-based paint is disturbed in a room or where less than 20 square feet of lead-based paint is disturbed on the exterior. **Window & glass replacement is not minor maintenance or repair**.

Agencies will determine the age of the dwelling to be weatherized at the time of the initial inspection. The age of the dwelling will be recorded in the weatherization case file and in the computerized energy audit. Any dwelling built prior to 31 December 1977 is suspect for lead based paint unless it has been certified as lead free. Lead-Safe Weatherization (LSW) practices must be followed in order to minimize exposure to lead dust and debris to the occupants of the dwelling, agency weatherization workers and family members. Lead poisoning can affect a person of any age.

4100 Mobile Homes & Lead:

Agencies and contractors performing renovation; repair and painting projects in mobile homes built prior to 31 December 1977 must determine if the surfaces to be weatherized have not been previously painted. If it is determined that surfaces have not been painted; the mobile home can be determined exempt from LRRP practices. If it cannot be determined that the surfaces have been painted, LRRP practices must be followed. Determination documentation must be maintained in the client file.

4200 Notification of the Possible Presence of Lead Based Paint:

Agencies and or certified firms must provide the lead hazard information pamphlet, "The Lead Safe Certified Guide to Renovate Right" at least seven (7) days prior to weatherization work beginning on a dwelling to owners and occupants of dwellings built prior to 31 December 1977.

Note: Agencies must maintain a signed copy of the "Confirmation of Receipt of Lead Pamphlet" form in the weatherization file or certification of mailing of the pamphlet from the post office at least seven (7) days prior to beginning weatherization.

4300 Lead Testing Procedures:

Paint testing or an assumption of the presence of lead must be made prior to the renovation of all surfaces to be affected by the weatherization work. The agency can test the paint using the EPA-recognized test kits or they can elect to presume that the paint is lead based and LSW/LRRP practices must be followed.

3M LeadCheck; D-Lead and the State of Massachusetts are the only test kits that EPA has approved and the only current method authorized for use in determining the presence of lead in painted surfaces. Only certified renovators can perform the lead test.

4400 Lead Safe Weatherization and Renovation, Repair and Painting (RRP):

When an agency determines that weatherization work will be performed on a dwelling built prior to 31 December 1977 and not determined to be lead free, all work will be performed in a Lead-Safe Weatherization (LSW/LRRP) manner as found in the Standard Work Specifications SWS tool on the NREL web site; the Montana Lead-Safe Weatherization Jobsite Handbook and the Lead Safety for Renovation, Repair and Painting Manual. Appendix A contains a quick guide to Lead-Safe Requirements/Minimum Standards. The link to the NREL web site is: https://sws.nrel.gov/.

Unless a home has been certified as lead free, lead safe weatherization practices must be applied to all pre 31 December 1977 housing. There are two types of containment; Level 1 and level 2. What level of required containment is used is based upon what measures of work you will be doing, and how much paint/dust you are disturbing.

Level 1 containment is required when **less** than 6 sq. ft. of interior surface is disturbed or **less** than 20 sq. ft. of exterior surface is disturbed. Level 1 containment is simply containing the dust that you are disturbing.

If you will be disturbing **more** than 6 sq. ft. of interior surface or **more** than 20 sq. ft. of exterior surface, **or when replacing a window** then Level 2 containment is required.
Level 2 containment is required **for any window replacement or repair, including adding storm windows** unless the paint has been tested and found lead free. Level 2 containment requires photographs of the measures taken be included in the client file.

If you are doing level 2 containment, you are doing LRRP work, all LRRP required paperwork must be completed and contained in the client file with photographs of the containment work.

4500 Reporting and Documentation:

When EPA-recognized test kits are used, the Certified Firm must provide a report to the client (in case of rental, both the client and the landlord) within 30 days after completion of the renovation. The following must be included in the report:

- The date of testing.
- Identification of and contact information for the Certified Firm and Certified Renovator performing the testing.
- Test kit manufacturer's name and kit identification.
- Locations of surfaces tested, descriptions of the surfaces tested, and the results of the testing.
- Copies of the report and documentation of receipt by the client and landlord must be maintained in the client file.

Any LSW/LRRP work performed on dwellings (including mobile homes) built prior to 31 December 1977 and not certified as lead free must be photographed and documented in the weatherization file. The photographs must show the LSW measures undertaken during the work performed on the dwelling, including set-up, safety barriers, and clean up. The photographs must include the visual inspection procedure and cleaning verification (CV) procedure, with the results of the clearance test performed by the certified renovator.

4600 Record Keeping

Records must be retained for three (3) years following completion of renovation.
During the renovation; the agency must ensure the following records are kept at the job site:

- Copies of Firm Certification.
- Certified Renovator Certification.
- Lead Based paint testing results.
- Proof of owner/occupant pre-renovation education.
- Non-certified worker training documentation.

Upon completion of the renovation project these records must all be maintained in the client file with the photographs of the LSW/LRRP work and clearance tests.

Appropriate Blood Lead Level (BLL) baseline tests for workers performing LSW/LRRP work should be maintained in the agency's files.

Chapter 5 HEALTH AND SAFETY

5000 Health and Safety Related Deferrals

The weatherization of a dwelling can be deferred (postponed until a later date) by the agency if providing weatherization services would pose a threat to the health and safety of the occupants, agency staff or contractors. The weatherization will be postponed until the conditions that pose a threat to health and safety have been resolved.

Note: If federal weatherization funds are expensed for any weatherization activities for a dwelling considered by the agency to be deferred or if the dwelling is counted as a completion in a federal contract time period, the re-weatherization dates for Department of Energy (DOE), Oil Overcharge (EXXON and STRIPPER WELL) and the Low Income Energy Assistance Program (LIEAP) weatherization programs apply to the dwelling.

Household eligibility must be verified and current prior to weatherization proceeding after deferral.

Also, under the NorthWestern Energy (NWE) Free Weatherization Program, dwellings where no additional work can be accomplished due to the presence of health and safety issues, the weatherization work on the dwelling is to cease but the agency may expense the NWE weatherization contract for: the installation of a water heater wrap; up to ten (10) feet of pipe insulation for the hot water distribution pipe; low-flow showerheads and faucet aerators; compact fluorescent lamps (CFL); gas appliance inspections and tune-ups; carbon monoxide (CO) alarm and one (1) energy education visit. NWE will reimburse the agency 100% of the costs of the above and providing these services does not subject the dwelling to the federal re-weatherization dates.

Health and safety circumstances that justify the deferral of weatherization services include, but are not limited to:

- The occupant has a known health condition that prohibits the installation of insulation or other weatherization materials.
- The building structure or the mechanical systems within the dwelling, including electrical and plumbing, are in such a state of failure or imminent failure and the conditions cannot be cost-effectively resolved.
- The dwelling has sewage or other sanitary problems that would further endanger occupants, agency staff or contractors if weatherization work was performed.
- The dwelling has been condemned or electrical, heating, plumbing or other equipment has been condemned (‘red-tagged’ as a hazard) by local or state building officials or utilities.
- There are moisture problems in the dwelling that are so severe they cannot be cost-effectively resolved under existing health and safety measures or minor energy-related repairs.

- Dangerous conditions exist due to high carbon monoxide levels in combustion appliances within the dwelling which cannot be resolved under existing health and safety measures.
    - It is recommended that the agency address the high carbon monoxide levels or provide the client with information on how to address the issue.
    - If the agency identifies high carbon monoxide levels during the "end of the day CAZ depressurization and spillage test", the agency must address and resolve the high carbon monoxide issues.
- The occupant/owner is uncooperative, abusive or threatening to agency staff and/or contractors who must visit the dwelling to perform weatherization-related measures or services.
- The extent and condition of lead-based paint, mold or asbestos located in the dwelling would potentially create further health and safety risks.
- In the judgment of the Department or weatherization agency, any condition exists which may endanger the health and or safety of the occupant, agency staff or contractor.

The reasons for the deferral of a weatherization project must be documented in the weatherization case file. The agency must provide the occupant/owner with a copy of a completed DPHHS-EAP-020 AGENCY HEALTH AND SAFETY AND WORK AGREEMENT. This form lists the health and safety conditions that must be addressed by the occupant or owner prior to weatherization work beginning or continuing on the dwelling. The form also lists the weatherization measures that are scheduled for the dwelling and requests that the agency be notified when these conditions have been corrected. A copy of this completed form is given to the occupant, a copy to the owner and a copy is retained in the weatherization case file.

5100 Health and Safety Related Repairs

The health and safety of weatherization clients, weatherization agency staff and weatherization contractors is a prime concern of the Department. It is important that weatherization agency staff and contractors be aware of the potential hazards of the weatherization process and minimizes risks to clients, workers and contractors.

Note: For more detailed explanations of weatherization agency requirements under the United States Department of Labor Occupational Safety and Health Act (OSHA); Hazard Communication Standards for Safety Data Sheets (SDS); the Montana Safety Culture Act and Weatherization Safety Hazards, refer to the Standard Work Specification tool on the NREL web site. .

Each dwelling inspected or weatherized by an agency must be assessed to determine the existence of potential health and safety hazards to occupants and/or agency staff or contractors. When a health and safety hazard, situation or condition is determined by the agency that cannot be corrected with weatherization contract funds, the agency must defer the weatherization of the dwelling and provide the occupant and owner with a copy of the DPHHS-EAP-020 AGENCY HEALTH AND SAFETY AND WORK AGREEMENT. (See WAP 2-3 Health and Safety Related Deferrals.)

Health and safety funds can be expended for: electrical repairs/maintenance, minor plumbing repair, limited rain gutter installation or repair, vapor barrier installation or repair, exhaust equipment installation or repair, pressure relief valve installation, repair or modification, glass repair or replacement, fire barrier installation or repair when required by code, other combustion appliance testing and repair, safety equipment and/or instructional materials, space heat replacements and water heater replacements.

Note: Funds cannot be expensed to the NorthWestern Energy (NWE) Free Weatherization Program contract for natural gas space and water heater replacements unless there is condemnation (‘red-tag’ as a hazard) by a NWE service person. (See the NWE Service Order that is an attachment to the agency’s NWE Free Weatherization contract.)

Health and safety circumstances that justify the deferral of weatherization services include, but are not limited to:

- The occupant has a known health condition that prohibits the installation of insulation or other weatherization materials.
- The building structure or the mechanical systems within the dwelling, including electrical and plumbing, are in such a state of failure or imminent failure and the conditions cannot be cost-effectively resolved.
- The dwelling has sewage or other sanitary problems that would further endanger occupants, agency staff or contractors if weatherization work was performed.
- The dwelling has been condemned or electrical, heating, plumbing or other equipment has been condemned (‘red-tagged’ as a hazard) by local or state building officials or utilities.

- There are moisture problems in the dwelling that are so severe they cannot be cost-effectively resolved under existing health and safety measures or minor energy-related repairs.
- Dangerous conditions exist due to high carbon monoxide levels in combustion appliances within the dwelling which cannot be resolved under existing health and safety measures.
    - It is recommended that the agency address the high carbon monoxide levels or provide the client with information on how to address the issue.
    - If the agency identifies high carbon monoxide levels during the "end of the day CAZ depressurization and spillage test", the agency must address and resolve the high carbon monoxide issues.
- The occupant/owner is uncooperative, abusive or threatening to agency staff and/or contractors who must visit the dwelling to perform weatherization-related measures or services.
- The extent and condition of lead-based paint, mold or asbestos located in the dwelling would potentially create further health and safety risks.
- In the judgment of the Department or weatherization agency, any condition exists which may endanger the health and or safety of the occupant, agency staff or contractor.

Note: The replacement of an electric domestic water heater (DWH) is an allowable health and safety expenditure under the NorthWestern Energy (NWE) Free Weatherization program if the unit has been condemned by an HVAC specialist. To qualify for NWE funding, replaced and replacement appliances must use electricity supplied by NWE and meet the overall 15% average limit for Health & Safety related costs.

5200 Limitation of Expenditures

The Department of Energy (DOE) and Oil Overcharge (EXXON and STRIPPER WELL) weatherization contract limit the amount of funds available for health and safety related expenditures. This limitation is an averaged amount per dwelling which is set at fifteen percent (15%) of funds and this amount is designated as a line item in the respective contracts.

The Bonneville Power Administration (BPA) weatherization contracts also limit the amount of funds available for health and safety measures in a line item. The contract also specifies that repair costs, including costs to repair or replace electric heaters or furnaces if they are broken, not working or fail to properly heat the dwelling, cannot exceed an average of 30% of total dwelling costs.

Other weatherization contracts do no limit the amount of funds that can be spent on health and safety conditions.

5210 Other sources of funding

In some instances the weatherization agency may determine that a health and safety hazard, situation or condition in a dwelling being weatherized meets the criteria for Emergency Assistance under the Low Income Energy Assistance Program (LIEAP) Contingency Revolving Fund (CRF).

The following is the LIEAP Emergency Assistance criteria:

> "Emergency Assistance under the Low Income Energy Assistance Program (LIEAP) may be provided to an eligible household in the following circumstances only when such circumstances present an imminent threat to the health and safety of the household. **Note:** The household is responsible, at its own expense, for documenting that circumstances exist which present a serious, immediate threat to the household. The local contractor may in its discretion, assist the household in identifying and documenting such circumstances, if the local contractor has the expertise and resources to do so.

5220 Conditions of Emergency:

1. The household's primary supply of energy is interrupted because of weather conditions and another supply or a different type of energy is necessary.
2. Weather or other forces outside the control of the household damages the household's dwelling and causes the dwelling to suffer a severe loss of heat.
3. Hazardous or potentially hazardous conditions exist in the household's primary home water heating and/or space heating system, and safety modifications are required (a no heat situation is considered potentially hazardous, excluding terminations for non-payment).
4. Any other home energy related conditions caused by severe weather conditions, fuel shortages and/or acts of God.
5. Documented Medical Need from a medical provider.

Note: The identification, removal and/or abatement of asbestos is not an allowable use of Emergency Assistance funds.

A household eligible for the Low Income Energy Assistance Program (LIEAP) which has an emergency as defined above is eligible for Emergency Assistance.

A household which would be eligible for the Low Income Energy Assistance Program (LIEAP) had the household applied and which has an emergency as defined above is also eligible for Emergency Assistance.

5230 Amount of Assistance:

Emergency Assistance payments may be made on behalf of the eligible household for actual costs necessary to alleviate the emergency up to $250 per program year. **Exceptions:** In situations where the costs of alleviating a life threatening emergency exceeds $250, Emergency Assistance payments for actual costs may be made when the contractor determines before the services are rendered that the services are necessary to alleviate a life threatening situation.

Requests for Emergency Assistance payments for actual costs can be made after services are rendered. The request must be made within forty-eight (48) hours of the service and the contractor must determine that the services were necessary to alleviate a life threatening situation.

No Emergency Assistance payments will be made for costs which are the liability of a third party, unless the household assigns to the Department, in writing, its rights to such third party payments. (The household assigns the rights to third party payments when the application for assistance is signed.) In emergency circumstance call your Department of Public Health and Human Services (DPHHS) Field Monitor for guidance.

Emergency Assistance benefits are available from October through September.

5240 Timelines:

In life threatening situations, the Agency must provide some form of assistance to resolve the emergency within eighteen (18) hours from the request for Emergency Assistance if the household is financially and otherwise eligible to receive such assistance. In all other emergency situations, the Agency must provide some form of assistance to resolve the emergency within forty-eight (48) hours if the household is financially or otherwise eligible to receive such assistance. The Agency must document the request for Emergency Assistance and the resolution using the Low Income Energy Assistance Program (LIEAP) Emergency Assistance Request Form (DPHHS EAP-250) or its equivalent. (See copy in LIEAP 600-7.)

The above time limits do not apply in a geographic area affected by a disaster or emergency if the Secretary of the U.S. Department of Health and Human Services determines that the disaster or emergency makes compliance with the time limits impracticable. This exception to the time limits applies when the Secretary of the U.S. Department of Health and Human Services designates a natural disaster or if a major disaster or emergency is designated by the President under the Disaster Relief Act of 1974."

The weatherization agency must work closely with the LIEAP program in the identification of health and safety hazards, situations and conditions that meet the LIEAP Emergency Assistance criteria. Expenditures under the LIEAP CRF are not considered federal weatherization funds and are not subject to weatherization contract averages and percentage limitations.

5300 Mold:

For dwelling units where mold conditions have been identified, the agency must provide the occupant with a signed copy of the DPHHS-EAP-032 "Montana Mold Assessment and Release Form". A copy of the signed form must be maintained in the weatherization file.

5400 Medical Marijuana Act

Agencies cannot refuse to weatherize a dwelling for an occupant who is otherwise eligible based on their use of medical marijuana. The Medical Marijuana Act provides that a person who possesses a registry identification card issued pursuant to 50-46-103 may not be penalized in any manner or be denied any right or privilege. See Section 50-46-201(1), MCA.

There is nothing illegal in going about weatherization activities in a dwelling where occupants are smoking or growing cannabis, there is no legal obligation to determine whether occupants are properly registered, and there is no legal obligation to report the smoking or growing of cannabis.

If agency staff and/or contractors have an allergy to smoke or a health condition such that the person's health or well-being would be impaired by being exposed to smoke directly or indirectly, that person is not required to work in a dwelling where cannabis is used. However, weatherization services have to be provided. Non-health related reasons are not grounds for a person to be excused from working in a dwelling where cannabis is used if there is no one else available to do the work. Agency staff and/or contractors may ask the occupant not to smoke in the work area.

Note: Agency staff or contractors may not disclose the fact a person whose dwelling they have weatherized is registered in the Medical Marijuana Program or the fact that they saw the person using medical marijuana. Section 50-46-202, MCA, provides as follows:

> Disclosure of confidential information relating to medical use of marijuana -- penalty. (1) A person, including an employee or official of the department or other state or local government agency, commits the offense of disclosure of confidential information relating to medical use of marijuana if the person knowingly or purposely discloses confidential information in violation of 50-46-103. (2) A person convicted of disclosure of confidential information relating to medical use of marijuana shall be fined not to exceed $1,000 or be imprisoned in the county jail for a term not to exceed 6 months, or both.

5500 ASHRAE Standard 62.2.2016

Purpose: This standard defines the roles of and minimum requirements for ventilation systems, and the dwelling envelope intended to provide acceptable indoor air quality (IAQ) in residential dwelling units.

Scope: This standard applies to spaces intended for occupancy within single family dwelling units and multi-family dwelling units, including manufactured and modular dwelling units.

- The goal is to prevent major problems that result from poor indoor air quality.
- The standard considers chemical, physical and biological contaminants that can affect air quality. Local sources of contamination such as excessive moisture, smoke, CO and chemical Volatile Organic Compounds (VOCs) should be eliminated as much as possible. Spot ventilation of cooking and bathing is addressed with local ventilation with minimum flow rates. Overall air quality is addressed with continuous flow rates.

Subgrantees should use the most current ASHRAE 62.2 ventilation standards for all homes that are weatherized.

Training: MSU Weatherization Training Center (WTC) provides the most current ASHRAE 62.2 specific training & technical assistance.

WAP Memorandum 007: If the final mechanical ventilation rate for existing buildings is 15 CFM or less, then installation of an ASHRAE fan is not required.

Final Inspection Form: Agencies must use a Department approved final inspection form and the most current ASHRAE 62.2 Field Input Form (or equivalent) to document ASHRAE 62.2.2016 compliance.

"Dwelling Unit as a System" considerations:

1. A standardized protocol should be followed during the weatherization process that coordinates the order in which weatherization measures are completed in order to protect the Health and Safety (H&S) of the clients.
2. Tighter dwellings can be in conflict with open combustion gas appliances. Consider additional combustion air and improved venting. Always perform a Worst Case Combustion Appliance Zone (CAZ) test at the end of each day in which envelope or duct sealing takes place where open combustion appliances are in use (per SWS 2.0201.1i).
    a. Auditors, HVAC techs, and contractors conducting end of day CAZ testing need to monitor ambient CO levels during testing (not to exceed 35ppm ambient).
    b. Worst Case CAZ testing is not required when there are no open combustion appliances present.
3. ASHRAE 62.2.2016 allows for aggressive air sealing of the home. Acceptable Indoor Air Quality (IAQ) is maintained through the provision of a Minimum Ventilation Rate (MVR), as specified in ASHRAE 62.2.16. The energy savings associated with a tighter home exceed the cost of running an ASHRAE fan.

4. Air flow between rooms should be checked to provide adequate mixing of fresh air.
5. Tighter houses can be an H&S concern if the client does not use and maintain mechanical ventilation systems.
6. Compartmentalization: measurement of airtightness changed to 0.3 CFM 50 per square foot of envelope area.
    a. This is not a mandatory threshold.
7. De Minimis: For existing buildings, if the final ventilation requirement (considering deficits and infiltration) is less than or equal to 15 CFM than installation of a fan is NOT required.
8. Multifamily units can get an infiltration credit for **horizontally-attached** dwelling units
    a. Duplexes, triplexes and row houses, etc.
    b. Credit is reduced based on common wall area (including the garage)
    c. **Stacked dwelling** units do not get an infiltration credit

5550 ASHRAE Client Education & Participation

Client education & benefits:

- Similar to all weatherization measures, client Refusal is NOT an option. Provide Client Ed and obtain client permission for the most current ASHRAE 62.2 standards prior to commencing other weatherization measures.
- Use the State provided ASHRAE client education brochure to guide the conversation with the client.
    - The program combines additional air sealing with smart, healthy ventilation.
    - Ask about clients concerns with focus on Indoor Air Quality (IAQ), Health and Safety and moisture. Provide information and solutions to address concerns.
    - If air sealing is performed, the savings from reduced infiltration will be greater than the cost of running the fan as prescribed.
    - With potential improvement in IAQ, there may be a reduction in respiratory related health issues
    - Client homes should see a decrease of condensation or moisture collection. (Windows, ceilings, etc.)
- Alert occupants to potential hazards contributing to poor IAQ after tightening up a home without installing mechanical ventilation such as; moisture, odors, chemicals, smoking, pets, etc. If these are observed, document and consider increasing the flow rate of the continuous fan.
- Instruct clients on correct operation of the fans and importance of periodic maintenance.
- Provide information on relative humidity. When humidity is above 60%, have clients check fans, increase speed and usage.
- Encourage the occupants to use the kitchen range hood every time they cook.
- Encourage the occupants to place a Label on the wall switch that states, “Ventilation Fan, leave on at all times.”
- Show the client how the controls work and how to periodically clean the fan.

For more information go to: http://wxplushealth.org/

5600 ASHRAE Health & Safety:

- CO detectors must be installed in all dwellings, including dwellings with only electric appliances. (Chapter 6, Section 6.9 Carbon Monoxide Alarms)
    - NFPA 720, Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment, will meet all applicable laws, codes and standards (per SWS 2.0201.2C). For more information go to: http://www.nfpa.org/codes-and-standars/document-information-pages?mode=code&code=720&tab=about (Note: You must register to view the NFPA content at the link above)
- If the home contains an existing CO alarm, assess for replacement. It is recommended that CO alarms be replaced every five years.
- Educate client on the importance of not removing the CO alarm, what it means if the alarm is triggered and what steps to take if the alarm goes off.

5650 ASHRAE Protocol

The use of the blower door during air sealing is required by the SWS. It allows for tighter homes with increased energy savings and improved Indoor Air Quality (IAQ).

Fan installation; in most cases, fan installation or replacement will take place before attic insulation and other weatherization shell measures.

The following procedures are to be followed on every weatherized home:

1. Auditor will use Residential Energy Dynamics calculator (RED Calc) to determine the ventilation needs of the dwelling unit. The following data will be gathered and used:
    a. The dwelling unit size (floor area and height) will be measured and the number of occupants noted.
    b. Use initial blower door to measure infiltration leakage rate; all blower door measurements shall include and deduct baseline pressure readings.
    c. Measure existing exhaust fans; actual air flow rates must be used (do not use fan ratings listed on the fan).
    d. Document existence of operable kitchen and bath windows.
2. The Auditor will interview the occupants for indications of poor air quality and moisture problems, and then must inspect the home for these issues. **Clients cannot refuse this measure and still receive other Wx improvements.**
3. Zonal Pressure Diagnostic procedures must be used to determine the potential for attic air sealing. Large bypasses from the basement/crawlspace to the attic will also be sealed.
    a. Priority will be on sealing the attic to the pass rate in section 3200
    b. Common walls between attached garages must also be air sealed from the living space.
    c. Openings in the basement/crawlspace ceiling will only be sealed if it has been defined as the pressure boundary.
    d. Air sealing in basements/crawlspaces will be focused on the rim joist & foundation walls.
    e. Above grade framed walls will be sealed last, typically by dense packing.
4. The Auditor will run a calculation to determine the required the most current ASHRAE 62.2 mechanical ventilation rate and develop an installation strategy for each dwelling. The whole-building fan flow rate for planning can be determined with the Whole Building Leakage Rate Solver tool at the bottom of RED Calc. The final, whole-building fan setting will be determined by the Auditor at the Final Inspection (based on observed conditions) and will be recorded on the Final Inspection Form.
5. Fan installation design shall prioritize the most cost effective option that meets the most current ASHRAE 62.2 requirements.
6. Replacement of existing bath fans with larger or adjustable 2 speed fans will often be the preferred approach and may be all that is required.
7. Installers are required to utilize blower door testing during Air Sealing (per SWS 3.1001).

   a. General air sealing may stop when the air sealing economic stop (SIR equal to or greater than 1.0) is achieved.
8. If open combustion appliances exist in the home, Worst Case Combustion Appliance Zone testing will be done at the end of each day that air sealing takes place (per SWS 2.0201.1i). If necessary, improved venting and additional combustion air will be provided.
   a. Auditors, HVAC techs and technicians conducting end of day CAZ testing need to monitor ambient CO levels during testing (not to exceed 35 PPM ambient).
   b. **No dwelling will be left with combustion appliances that fail the spillage test**.
9. Post weatherization, the dwelling unit will receive air leakage testing and fan flow testing of the ventilation systems. These numbers will be used to re-calculate and confirm that the dwelling unit meets the most current ASHRAE 62.2 requirements. This information is to be recorded in CDS Energy Audit (EA) and on the Final Inspection form.
   a. The cost of implementing the most current ASHRAE 62.2 will be entered in the Health & Safety Sections of CDS EA.
   b. Comments in the Health and Safety section of the audit are imperative; please explain what was done regarding ASHRAE.
10. When the most current ASHRAE 62.2 may not be feasible or poses significant challenges, the Agency can request an ASHRAE Waiver. Documentation of why must be placed in CDS EA and in the client file. Examples of when a request for an ASHRAE Waiver is needed includes:
   a. Substandard electrical,
   b. When outside air is worse than indoor air. Documentation is required.
   c. Occasionally, structural or spatial conditions may preclude fan installation.
   d. If the audit identifies that only base load measures are necessary (insulation levels & air tightness are good), and acceptable indoor air quality already exists as defined by the most current ASHRAE 62.2 and demonstrated by results of the initial assessment including diagnostic testing, ASHRAE may not be required. Question #12 at http://waptac.org/Additional-Pages/FAQ-ASHRAE-62002E2.aspx for specifics.

11. If the most current ASHRAE 62.2 CANNOT be completed, documentation of state approval is required. Documentation that indoor air quality is acceptable shall be placed both in Energy Audit and in the client file.

5700 ASHRAE Ventilation Systems

Local Mechanical Exhaust: Ideally, local mechanical exhaust will be used in kitchens and bathrooms. If there is acceptable indoor air quality (IAQ) and the most current ASHRAE 62.2 required mechanical ventilation rate is satisfied in the home, then it is up to the Auditor's discretion as to whether to install local exhaust where none is present (see ASHRAE 62.2.2016 Normative Appendix A-Existing Buildings). As a general guideline, it is considered difficult to achieve acceptable indoor air quality when there is no operable window or exhaust fan in a bathroom or kitchen (all fans must be exhausted outdoors). Natural gas and propane ovens/ranges must have local ventilation installed when practical. When local kitchen ventilation is not practical, a whole-building ventilation fan may be used.

1. In dwelling units with an enclosed kitchen either a demand controlled or continuous mechanical system may be installed. An enclosed kitchen means the permanent openings to other spaces don't exceed a total of 60 square feet.
2. In dwelling units with a non-enclosed kitchen only a demand controlled mechanical exhaust system may be installed.
3. Use 100 CFM if the fan is a range hood (including appliance-range hood combinations)
4. Use 300 CFM for kitchen exhaust fans, including downdraft.
5. If existing local exhaust in the kitchen and bathrooms do not meet these ventilation requirements, then the alternative compliance path derived, whole-building exhaust system can compensate with higher flow rates.
6. Agencies can still use 100 CFM as the baseline for the deficit calculation.
7. Half bathrooms and laundry areas do not require exhaust fans.
    a. Half baths are bathrooms which do not contain a bathtub, shower, a spa, laundry appliances or a similar source of moisture.
8. Clothes dryers shall be exhausted directly to the outdoors.

Note: Two (2) ventilation systems are optimal, and may be required.

Whole Dwelling Unit Ventilation: A continuously operating mechanical exhaust system shall be designed to be operated without client/occupant intervention. The system may be part of a balanced mechanical system, or provide for exhaust only**.**

1. **Periods of Operation:** The system shall be designed to operate during all hours.
2. **Controls and Operation:**
    a. A readily accessible manual ON-OFF control, including but not limited to a fan switch or a dedicated circuit breaker, shall be provided.
    b. Controls need to include a text-based labels or an icon indicating the system's function
    c. For multi-family dwelling units, the manual ON-OFF control shall not be required to be readily accessible. .
3. **Ventilation Rates:** Use the most current Residential Energy Dynamics calculator (RED Calc) to determine the appropriate ventilation rate. The RED Calc Tool can be found online:
   http://www.residentialenergydynamics.com/REDCalcFree/Tools/ASHRAE6222016

a. Based on the CFM of ventilation air needed per hour, determine the appropriate fan run time; this may require intermittent fan settings.
b. If using a timer on a multi setting or higher speed fan, set to cycle at least once every three hours (once per hour is better).
c. Variable Ventilation:
    i. Short-term intermittent – at least once every 3 hours
        1. Having a 60 CFM fan run for 20 minutes every hour counts the same as having a 20 CFM fan running continuously
        2. A short-term exposure limit of 5 times the long term exposure limit which must be considered when using non-continuous ventilation.

4. **Airflow Measurement:** The airflow required for local exhaust is defined as the quantity of exhausted air by the ventilation system installed. This will be measured by using a flow hood, flow grid or other airflow measuring device anywhere along the system.

5. **Sound:**
    a. Demand-controlled kitchen exhaust fans need to be rated for sound at a maximum of 3 sones or less, at one or more airflow settings greater than or equal to 100 CFM.

5750 ASHRAE System Sizing and Design

Data Collection and Calculations:

1. The Auditor will collect the following information:
    a. Square footage of conditioned space (interior dimensions)
        - Includes all above-grade and below-grade finished areas as defined in ANSI Standard Z765.
            1. Finished area: An enclosed area in a house that is suitable for year-round use that is consistent with the rest of the house. (Z765-2013)
            2. Grade: The ground level at the perimeter of the exterior finished surface of a dwelling
            3. Unfinished basements are not counted as 'floor area'
    b. Number of Bedrooms plus one or the number of occupants, whichever is greater. The capacity of the fan installed must be large enough to meet the number of bedrooms, but may be set to the auditor's determination of the ventilation needs based on number of occupants living in the dwelling
    c. Pre and Post weatherization Blower Door Readings.
    d. Dwelling unit height.
    e. Kitchen and Bath fan flow rates, make & model.
    f. The existence of operable Kitchen and Bath windows.
    g. Opportunities for improving exhaust ducting will be considered.
2. The Auditor will use RED Calc to compute the required Whole Dwelling Unit Ventilation Rates.

System Design:

1. Auditors should familiarize themselves with the performance and condition of existing fans and the possibilities for running additional ductwork and wiring in the house.
2. Auditor should run a variety of scenarios with the sizing calculator to obtain a preferred system design. The Auditor should consider the following:
    a. Prioritize increased air sealing and adjust the continuous fan flow rate to compensate. The Whole-Building Leakage Rate Solver in RED Calc can help size the fan based on building air leakage rate. This strategy is more effective at saving energy than leaving a leaky dwelling with a smaller fan.
    b. Upgrading ducts or replacing existing fans is more cost effective than new installations
    c. Consider the ease of installation; fan location, vent terminus and wiring connections
    d. Effectiveness of Ventilation;
        i. Continuous fans are more effective if located high in a central location.
        ii. Target pollution sources with local ventilation.
    e. Client input:
        i. Noise and comfort concerns may dictate location
        ii. Use the quietest fans possible (see WTC training materials for sone ratings applicable in a variety of fan scenarios)

5800 ASHRAE Equipment

Fans:

- Use HVI rated fans. Fan and Range hood performance data can be found at: Home Ventilation Institute certified products, http://www.hvi.org/proddirectory/index.cfm
- A list of recommended fans, range hoods and controls will be provided by a Montana Weatherization Training Center.
- Agencies will document preferred fan models. They are encouraged to obtain bulk pricing from their suppliers
- Use the quietest fans available whenever possible, per ASHRAE and SWS requirements
- Direct Current motors are preferred over Permanent Split Capacitor motors for efficiency and improved flow rates.
- Mobile homes are often difficult to retrofit. Consider side wall fans or an inline fan mounted under the belly.
- Combined intake/exhaust
    - Where a combined exhaust/intake termination is used to separate intake air from exhaust air originating in a living space, no minimum separation distance between these two openings is required. For these combined terminations, the exhaust air concentration within the intake airflow shall not exceed 10%, as established by the manufacturer.
    - Combined exhaust/intake is not allowable in kitchens
    - Typically used in a heat-recovery ventilator (HRV)
- Unvented heaters
    - Allows specifications to be placed regarding unvented space heaters.
    - The change from "vented" to "installed" in Section 6.4 is to address all the aspects of a proper installation, not just the venting.

Controls:

- A readily accessible manual ON-OFF control, including but not limited to a fan switch or a dedicated circuit breaker, shall be provided.
- Controls need to include a text-based labels or an icon indicating the system's function
- For multi-family dwelling units, the manual ON-OFF control shall not be required to be readily accessible.
- An "Off" switch, located under the fan cover or under the wall switch plate is sufficient for access. If an override switch is present on a wall switch plate it must be labeled to ensure that the building is being appropriately ventilated.
- It is recommended that switches come from the same manufacturer as the fan, unless technical specifications are clarified with the manufacturer. Speed controls are especially troublesome if not matched to the right motor type.
- Choose simple, easily understood switches for clients; avoid programmable switches in most cases.

Wiring:

- Per Montana Electrical Code, all wiring shall be done by a Licensed Electrician
    - Exception: fan with pigtail, for example a crawlspace or attic inline fan, can be plugged into an existing receptacle.
- Fan and control features will determine the number of wires between switch and fan. In most cases, new wiring, receptacles, and switches will have to be installed.
- Existing wiring and receptacles can be used if the fan type and control functions are compatible.
- Identify substandard electrical systems in dwellings; minor electrical repairs are allowable, but if major electrical work is required, please work with your field monitor.
- Do not connect new ventilation devices to existing knob-and-tube wiring.

Ducting:

- Material:
    - Smooth wall vent pipe (PVC or metal) shall be used.
    - Smooth wall, flexible Aluminum duct should be minimized.
    - Flexible vinyl duct is not allowed.
    - Insulate to R-8 in all unconditioned areas. Do not use bubble wrap.
    - Seal all joints with durable metal tape. Use zip ties to connect flex duct to rigid.
    - Mechanically secure the exterior of the vent hood to the siding or roofing and seal with exterior caulk.
- Layout:
    - Keep duct runs to the minimum length possible. Use long sweeps instead of sharp corners
    - Use vent hoods with back draft dampers. Avoid placing vent hoods on the windward side of dwelling units. Locate either in gable end walls or on the roof.
    - Don’t dump exhaust air into the attic or soffit. If exhausting through the soffit, use a soffit hood that has sufficient throw.
    - Where possible, slope all ductwork to the outside of the building. Avoid droops in the ductwork to prevent moisture collection and ponding.
    - Makeup air dampers:
        - Gravity or barometric dampers are not allowable components of passive makeup air systems for combustion appliances.
        - This change was made because of concerns that such dampers do not reliably open at the low pressures (-1 to -5 Pa) that have the potential to backdraft atmospherically-vented appliances.

5850 ASHRAE Legal Authority

DOE: Requiring implementation of the most current ASHRAE 62.2

1. Regulation: Health and Safety Guidance WPN 11-6
   http://waptac.org/data/files/website_docs/government/guidance/2011/wpn%2011-6.pdf
2. FAQs: http://waptac.org/Additional-Pages/FAQ-ASHRAE-62002E2.aspx

Montana Statutes:

1. A person who plugs in an electrical appliance where an approved electrical outlet is already installed may not be considered as an installer.
   http://leg.mt.gov/bills/mca/50/60/50-60-602.htm
2. Requiring the use of Licensed Electricians, getting a permit:
   http://bsd.dli.mt.gov/bc/ele_prm.asp

National Electrical Code (NEC) 2011
https://ia700805.us.archive.org/20/items/gov.law.nfpa.nec.2011/nfpa.nec.2011.pdf

Other Relevant Codes

International Residential Code (IRC) 2012
https://ia700701.us.archive.org/8/items/gov.law.icc.irc.2012/icc.irc.2012.pdf

1. 3 ACH50 air tightness: N1102.4, Table N1102.4.1.1
2. Mechanical Ventilation: M1501
   a. Clothes Dryer Exhaust: M1502
   b. Range Hoods: M1503
   c. Mechanical Ventilation: M1507
3. Duct Systems (including ventilation) M1601
4. Fuel Gas & Combustion Air for gas appliances: G2407
5. Venting of gas appliances: G2427, G2428
6. Electrical: E34-43

International Energy Conservation Code (IECC) 2012 (Use the IRC for more detail)
https://law.resource.org/pub/us/code/ibr/icc.iecc.2012.pdf

1. Insulation Levels: R402
2. Air Leakage: R402.4
3. Ducts: 403.2

International Mechanical Code:
https://ia600409.us.archive.org/22/items/gov.law.icc.imc.2012/icc.imc.2012.pdf

1. Natural Ventilation: Section 402
2. Mechanical Ventilation: Section 403
3. Clothes Dryer Exhaust: Section 504
4. Kitchen Exhaust Equipment: Section 505
5. Energy Recovery Ventilation Systems: Section 514

Additional Resources:

- http://www.heyokasolutions.com/default.asp
- Short RED Calc Tutorial: https://www.youtube.com/watch?v=QHcD14enLcE
- Extended RED Calc Tutorial: https://www.youtube.com/watch?v=zM2tsMEi1GY

Installation advice:

- Step by step with photos: http://www.thisoldhouse.com/toh/how-to/intro/0,,689843,00.html

Standard Work Specification (SWS) Details; includes Exhaust, Supply, Whole Dwelling Unit Ventilation and additional resources: https://sws.nrel.gov/spec/6

Chapter 6 ASBESTOS GUIDANCE

6000 Asbestos

Asbestos is a fibrous mineral occurring in natural deposits. Because asbestos fibers are resistant to heat and most chemicals, they have been mined for use in over 3,000 different products, including vermiculite. There are two families of asbestos, serpentine and amphibole. Chrysotile asbestos is in the serpentine family. Amosite, Crocidolite, Anthophylite, Tremolite, and Actinolite asbestos are in the amphibole family.

Vermiculite is a mined material that when expanded has been used as insulation in millions of dwellings across the nation. Vermiculite is a loose fill insulation sometimes found in attic and wall areas of dwellings to be weatherized. Some vermiculite insulation contains amphibole asbestos fibers which are considered more harmful than serpentine fibers usually found in pipe insulation, siding, and other products. Dust containing asbestos can become airborne within a dwelling if contaminated vermiculite is disturbed.

Asbestos is a known carcinogen that can cause lung cancer and other lung related diseases.

Note: Weatherization funding and the Low Income Energy Assistance Program (LIEAP) Emergency Assistance Contingency Revolving Fund (CRF) cannot be used for asbestos abatement, which includes baseline testing, cleaning, and post-weatherization testing. Referrals may be made to other funding sources such as the USDA Rural Development "504 Grant or Loan Program".

6100 Vermiculite Insulation:

Whenever vermiculite insulation is discovered during the initial inspection of a dwelling to be weatherized, **no blower door testing or any other weatherization measures should be performed until the vermiculite has been tested for the presence of asbestos.** The agency has the option not to perform testing on the vermiculite and to assume that the vermiculite contains asbestos. The dwelling would then be considered deferred for weatherization, and the agency must then provide the occupants/owner with a copy of the DPHHS-EAP-023 'Notice of Dangerous Conditions'. A copy of the completed form must be kept in the weatherization case file.

If asbestos levels in the vermiculite have been determined to be present, or if the agency assumes that the vermiculite contains asbestos, the weatherization of the dwelling must be deferred until the vermiculite has been removed by a certified asbestos abatement contractor and an air clearance exam has been performed on the dwelling to assure that there is no asbestos present in the ambient air that would be a health and safety risk to the occupants, agency staff or contractors. When the dwelling is deferred for weatherization, the agency must provide the occupants/owner with a copy of the DPHHS-EAP-023 'Notice of Dangerous Conditions'. The agency must also provide the owner with a copy of the vermiculite test results when testing is performed. A copy of the completed form(s) must be kept in the weatherization case file.

6200 Non-Vermiculite Asbestos Containing Materials in Siding:

If asbestos siding is present, whether or not it will be disturbed, the weatherization of the dwelling must be deferred until the asbestos has been removed by a certified asbestos abatement contractor and an air clearance exam has been performed on the dwelling to assure that there is no asbestos present in the ambient air that would be a health and safety risk to the occupants, agency staff or contractors. When the dwelling is deferred for weatherization, the agency must provide the occupants/owner with a copy of the DPHHS-EAP-023 'Notice of Dangerous Conditions'. A copy of the completed form must be kept in the weatherization case file.

6300 Non-Vermiculite Asbestos Containing Materials in Thermal System Insulation:

If thermal system insulation (asbestos-containing material applied to pipes, fittings, boilers, tanks, ducts, or other interior structural components that prevent heat loss or gain or water condensation) is discovered during the initial inspection of a dwelling to be weatherized, no blower door testing or any other weatherization measures should be performed until the insulation has been tested for the presence of serpentine asbestos. The agency has the option not to perform testing on the insulation and to assume that the insulation contains serpentine asbestos in excess of one percent (1%). The dwelling would then be considered deferred for weatherization, and the agency must then provide the occupants/owner with a copy of the DPHHS-EAP-023 'Notice of Dangerous Conditions'. A copy of the completed form must be kept in the weatherization case file.

If asbestos levels in thermal system insulation (TSI) have been determined to contain serpentine asbestos in excess of one percent (1%), or if the agency assumes that the insulation contains serpentine asbestos in excess of one percent (1%), the weatherization of the dwelling must be deferred until the asbestos has been removed by a certified asbestos abatement contractor and an air clearance exam has been performed on the dwelling to assure that there is no asbestos present in the ambient air that would be a health and safety risk to the occupants, agency staff or contractors. When the dwelling is deferred for weatherization, the agency must provide the occupants/owner with a copy of the DPHHS-EAP-023 'Notice of Dangerous Conditions'. A copy of the completed form must be kept in the weatherization case file.

Note: If asbestos levels in the insulation have been determined to contain serpentine asbestos equal to or less than one percent (1%), then the insulation is considered non-asbestos containing material and weatherization may continue as long as other health and safety hazards do not prevent it.

Note: If thermal system insulation (TSI) containing asbestos is present in a large, multi-family dwelling, please call your field monitor. Work done on large, multi-family heating systems may be allowed by DOE on a case-by-case basis. Department approval is required.

Note: Montana DEQ sampling requirements apply to dwellings with more than 4 units, even if only a single unit is being weatherized.

6400 Testing for the Presence of Asbestos Containing Materials (ACM)

Initial weatherization inspections of dwellings are performed by the agency's certified energy auditor who is trained in the recognition of asbestos containing materials (ACM). Whenever an attic or wall area is inspected, the certified energy auditor must wear protective clothing and equipment and take precautions to prevent contamination of the living area.

Note: It is recommended that an auditor is trained in the recognition of ACM by completing the OSHA-approved Asbestos Inspector Initial Training.

When it is discovered that vermiculite is present in an attic or wall area, the agency must determine if the weatherization will be deferred or if the vermiculite will be tested by a *National Voluntary Laboratory Accreditation Program* (NVLAP accredited) laboratory to determine if asbestos is present.

6500 Types of Laboratory Testing Methods

Currently there are two types of tests for the presence of asbestos fibers in bulk building materials, they are:

PLM Testing – Polarized Light Microscopy (PLM), often referred to as the Chatfield Testing Method is the technique most often employed for the analysis of bulk building materials. The light microscopy technique utilizes the unique features of polarized light to observe mineral specific optical properties. In this manner, PLM can differentiate asbestos from non-asbestos fibers and further classify the various species that compose the asbestos mineral family.

The technique records the identity of the non-asbestos fibrous component of each bulk building material sample. The PLM procedure provides an economical technique for screening large numbers of samples. However, there are limitations to light microscopy testing due to the magnification (100-400X) employed and due to other interferences present in the building material matrix.

PLM results are reported as a percentage of the total sample. PLM utilizes a few protocols for the quantification process. The reduction process usually employed on Non-Friable Organically Bound (NOB) building materials is particularly well suited for TEM confirmation of negative PLM samples.

TEM Testing - Transmission Electron Microscopy (TEM) represents the most sophisticated technology available for characterizing asbestos minerals. TEM asbestos testing employs magnification and chemical and mineral tools to determine the difference between asbestos and non-asbestos materials.

This technique is now the standard for most airborne investigations including post abatement clearance testing as well as diagnostic and environmental monitoring activities. Using magnifications routinely at 20,000X or greater and employing powerful chemical (EDXA) and mineralogical (SAEDP) tools, a TEM can differentiate, not only asbestos from non-asbestos fibers, but also can classify the several species that comprise asbestos minerals.

6600 Testing Procedures

Agencies are allowed to use either the PLM or TEM testing method. If the TEM test is used, it must be a bulk sample test, not an airborne test and the sample must be gathered by MSU certified personnel not a private contractor specifically hired to gather samples.

The agency must request the NVLAP accredited laboratory to use the Polarized Light Microscopy (PLM) Modified EPA/600/R-04/004 (Chatfield) method or the Transmission Electron Microscopy (TEM) method of testing.

If test results indicate that the **serpentine** asbestos level is equal to or less than one percent (1%), weatherization of the dwelling may continue.

If test results indicate that **amphibole** asbestos is present at any level, weatherization of the dwelling must be deferred.

6610 Sample Gathering Requirements:

Samples for testing must be taken by an individual trained in vermiculite sample gathering. A fit-tested air purifying respirator equipped with N, P, or R 100 filters, a disposable protective suit and Nitrile gloves are required. The respirator must meet the minimum assigned protection factor (APF) for asbestos. Along with PPE, procedures for sampling must include:

- Setting up a containment area to separate the attic/wall access from the rest of the living area. For thermal system insulation (TSI), contain the sampling area with 6-mil plastic;
- Sampling from at least three (3) different locations per area;
- Sealing the samples in containers adequate to protect the materials from disbursement;
- Leaving the testing and containment area clean by using a HEPA vacuum and wet wipes;
- Documenting where samples are taken and that they are taken at random;
- Sending samples to a NVLAP accredited laboratory for analysis using the PLM Chatfield method;
- Providing test results to the owner and keeping test results in the weatherization case file.
- Costs for the containment, sampling, and testing of the vermiculite are entered under "Asbestos" in the health and safety section of the energy audit.

Special care must be taken to clean tools and equipment used in sampling (in accordance with OSHA standards) in order to prevent a false positive result of the next sampling.

These procedures pertain to the health and safety hazards of asbestos and the following:

- OSHA 1910.134(iii) (http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=12716&p_table=standards);
- DOE requirement to remedy health and safety hazards, which are necessary before, or because of, the installation of weatherization materials;
- Lack of weatherization funding for baseline asbestos testing of a dwelling;

- General asbestos removal not approved as a health and safety weatherization cost;
- Occupants at risk from work activities that would constitute a health or safety hazard will be required to leave the home during those work activities;
- Lack of weatherization funding for temporary shelter of above occupants;
- Results of the Montana Asbestos-Safe Weatherization Demonstration Project June 30, 2010 final report (http://www.ncat.org/special/reach.php);

6700 No-Heat Emergencies and Asbestos Containing Materials

In some instances an agency may defer weatherization on a dwelling due to the presence of vermiculite containing asbestos in the dwelling (or asbestos found in other parts of the dwelling). After the deferral, the household may have a health and safety related emergency with a furnace or domestic water heater (DWH).

The agency may address the health and safety emergency with weatherization and/or LIEAP CRF, but must make every effort to minimize exposure to any asbestos containing materials (ACM) for occupants, agency staff and contractors.

Note: It is recommended to use CRF when possible. If weatherization funds are used, you cannot return to weatherize for a specified number of years.

If the health and safety emergency work cannot be completed because of the potential risks to the occupants, agency staff or contractors, the asbestos must be removed by a certified asbestos abatement contractor and an air clearance exam must be performed before any work can begin. An alternate heat source must be provided (free-standing space heaters) to the client until resolved.

Note: The costs for the abatement and testing cannot be charged to any weatherization program grant, or to the Contingency Revolving Fund (CRF). Referrals may be made to other funding sources such as the USDA Rural Development “504 Grant or Loan Program”.

6710 Asbestos Containing Materials and Asbestos Tape found on Furnace Ducts:

When a hazardous or potentially hazardous condition is encountered regarding asbestos tape or asbestos covering on furnace ducting and there is no procedure that would not disturb the hazard, then the agency shall work with the respective field monitor to determine an appropriate course of action; which may include an alternate heat source or installing a new appliance in a different location of the dwelling.

Chapter 7 FUEL SWITCH GUIDELINES AND RESTRICTIONS

7000 Fuel Switching

Fuel switching is a weatherization measure to replace a dwelling's primary space and/or water heating source with a lower cost fuel primary space and/or domestic water heating source. The purpose of the fuel switch is to provide the low-income occupants with a safe and economical space and/or domestic water heating source and to decrease the energy burden on the household's income.

The agency uses the Fuel Switch Computerized Energy Audit (FSCEA) to determine if a fuel switch can be cost-effectively completed for either the primary space heat source or the domestic water heating source. The agency inputs data regarding the existing primary heat source and/or domestic water heating source and the proposed primary heat source and/or domestic water heating source and the FSCEA determines if the fuel switch meets the Savings-to-Investment Ratio (SIR) (Currently 1.0) to cost-effectively switch from the high cost fuel for space and/or water heating to the lower costing fuel.

The FSCEA takes into consideration the existing fuel type for space and/or domestic water heating appliances, the annual energy consumption costs for space and/or water heating, the fuel price of the existing primary space and/or domestic water heating fuel type, material costs, labor costs, the seasonal efficiency of the proposed replacement primary space heater and/or domestic water heating appliance, the Annual Fuel Utilization Efficiency (AFUE) rating if the replacement system is central, the proposed fuel type, the proposed fuel price, the approximate life of the appliance(s) to be replaced, and the number of Kilo Watts removed if the existing appliance is electric.

7100 Restrictions

Fuel switches **are not to be expensed** or counted as completions under the Department of Energy (DOE), Oil Overcharge (EXXON and STRIPPER WELL) Weatherization Assistance Program.

Fuel switches are not to be expensed or counted as completions under the Bonneville Power Administration Weatherization Program.

7200 Buy-down

If the total material and labor cost to fuel switch a dwelling's high cost primary fuel space and/or water heating source with a lower costing fuel primary space and/or domestic water heating source brings the Savings-to-Investment Ratio (SIR) below 1.0, the owner/landlord/other non-federal funding source can "buy-down" or cost share to bring the SIR up to a 1.0 or greater cost-effectiveness.

For example, the total material and labor costs to fuel switch a domestic water heater from electricity to natural gas is $1,000. The FSCEA will only support $800 to arrive at a 1.0 SIR. The owner of the dwelling is willing to pay $200 as a "buy-down" or cost share. With the owner's contribution, the domestic water heater can be fuel switched.

Chapter 8 COMBUSTION APPLIANCES AND WATER HEATERS

8000 Heating Systems

Heating systems are appliances used to heat a dwelling. As part of the weatherization of a dwelling the heating system is inspected, tested and if necessary, repaired or replaced. Combustion Appliances must be tested for proper operation and safety. The agency must complete the DPHHS-EAP-008 'Heating Worksheet' regarding the testing and operation of the unit. Worst Case Combustion Appliance Zone (WC CAZ) testing is required during the initial audit, at the end of each day that significant air sealing takes place (per SWS 2.0201.1i) and at the time of the final inspection where open combustion systems are present.

The auditor will test heating systems in accordance with SWS 2.02. The results of the testing will inform the auditor whether or not a 'Clean and Tune' or other service will be needed by an HVAC technician. When a 'Clean and Tune' or other service is recommended for a heating system, the issues must be noted in Energy Audit. The chart below lists the applicable tests for different heating systems required at the audit and final inspection.

	Gas leak	CAZ depressurization	Spillage	CO Ambient	CO Undiluted	Combustion air	Visual inspection
Category I	✓	✓	✓	✓	✓	✓	✓
Category III	✓	✗	✗	✓	✓	✓	✓
Category IV	✓	✗	✗	✓	✓	✗	✓
Direct Vent Mobile Home	✓	✗	✗	✓	✓	✗	✓
Un-vented space heater	✓	✗	✗	✓	✗	✓	✓
Oven	✓	✗	✗	✓	✓	✗	✓
range	✓	✗	✗	✓	Optional	✗	✓

Note: If a direct vent appliance is not equipped with a combustion air inlet to the unit, the appliance must be tested in accordance with a Category I appliance.

The efficient operation of heating systems is a critical aspect of general heat waste. Detailed combustion system safety and efficiency standards are found in the Standard Work Specifications (SWS) tool on the NREL web site. The link to the NREL site is: https://sws.nrel.gov/.

At the conclusion of each work day in which envelope or duct sealing measures have been performed, WC CAZ depressurization and spillage testing will be performed on open combustion appliances. This will ensure work completed in the home has not adversely affected the operation of the heating system. End of day WC CAZ testing results need to be recorded and maintained in the client file. Test results should be recorded on "The End of Day WC CAZ Test Documentation Form" (or equivalent).

Note: Auditors, HVAC techs and contractors conducting end of the day CAZ testing must monitor Carbon Monoxide (CO) levels in ambient air.

Per DOE's WPN 11-6 Maintenance, repair, and replacement of **primary** indoor heating units is allowed where occupant health and safety is a concern. Maintenance and repair of **secondary** heating units is allowed.

The CDS Energy Audit must contain the correct Seasonal Efficiency. If during the audit of the dwelling it is determined that the heating system cannot be repaired and must be replaced, the seasonal efficiency of the new heating system must be entered into the energy audit before the dwelling can be submitted as a completion.

8100 Relocation of Existing Heating Systems

The relocating of heating systems refers to the moving of a heating system from floor to floor of a dwelling or a dramatic change to an existing heating systems placement within the dwelling; not slight changes in location due to sizing and venting requirements/restrictions.

The heating system as a whole not necessarily only the appliance would need to be "Red tagged". In other words, the system/appliance is too dangerous for the client to operate in its present condition. Only a Utility Company Furnace Technician or Independent Furnace Contractor can "Red tag" an appliance or system.

In order to relocate the heating system, the act of relocating would need to be the most cost effective solution, to bring the system out of "Red tagged" status. Relocation would usually be a rare situation and pre-approval from the Department is required prior to relocating.

Relocating heating systems is allowable under WAP Health and Safety Guidance **WPN 11-6**; which states: "Red tagged", inoperable, or nonexistent heating system replacement, repair, or installation is allowed where climate conditions warrant, unless prevented by other guidance herein.

8200 Copper Piping

The replacement of any natural gas fueled furnace or water heater copper piping is an allowable health and safety measure with written permission from the Department. Continual flaking of copper sulfide caused by the amount of hydrogen sulfide within the natural gas has the potential to thin the pipe and eventually cause pinholes and leaks. Continual flaking of the copper sulfide, causing the flakes themselves to fall and be carried into the appliance could possibly block burners or be deposited into gas valves causing the valve to foul. This rule applies to only natural gas fueled copper piping. Any replacement costs associated with this measure must be charged to the LIEAP Weatherization fund.

Note: Replacement is allowed from the natural gas source to the appliance(s) only. No other replacement lines will be considered; whole house line replacement is not an allowable cost.

8300 Duct Sealing

Duct leakage can lead to many problems in a dwelling, the most common being wasted energy. Other problems can include thermal discomfort, substandard indoor air quality, and combustion venting failure. Ductwork leakage can take place 1) within the confines of the conditioned envelope of the building or 2) to and from the outdoors.

Air leakage to or from the outdoors wastes more energy than leakage within the confines of the thermal envelope. Mobile home ducts and site built homes with ductwork in crawl spaces or attics are susceptible to leakage to and from the outdoors.

Although duct leakage within the conditioned envelope usually does not have a significant energy impact, it might impose a hazard to occupant health by causing poor indoor air quality due to backdrafting combustion appliances. These potential problems are addressed on site by an energy audit and by performing a worst-case draft test.

Duct work is not required to be insulated in conditioned spaces; however, it should be sealed if it contributes to dangerous levels of CAZ depressurization. Very little efficiency can be gained by insulating duct work in a conditioned space (less than 2%).

However, a substantial amount of energy can be saved by sealing duct work in an unconditioned space (up to 15%). These numbers are based on the BPI distribution efficiency look-up table. Duct insulation on all ducts located in unconditioned basement and crawl spaces will be a minimum of R-8 with an attached vapor barrier. Instructions for properly installing duct insulation and sealing ducts can be found in the Standard Work Specifications tool on the NREL web site.

Duct system testing is required for all dwellings with duct work outside the Pressure Boundary; this includes virtually all mobile homes. Most commonly this test will be performed with pressure pans during the blower door test.

Note: Boiler system delivery lines may be wrapped regardless of whether they are in a conditioned space; the heat loss through unwrapped lines is significant enough to justify wrapping boiler system delivery lines even in a conditioned space.

8400 Wood or Coal Stoves:

Per DOE's WPN 11-6 Maintenance, repair, and replacement of **primary** indoor wood heating units is allowed where occupant health and safety is a concern. Maintenance and repair of secondary wood heating units is allowed.

In households where a secondary heat source is wood and the dwelling contains a non EPA approved woodstove, or a woodstove that presents a hazardous condition to the household, the agency may elect to replace the appliance using LIEAP Weatherization funding; written permission from the Department is required prior to replacement.

The agency can also address this condition by providing the client a DPHHS-EAP-023 'Notice of Dangerous Conditions' form, with a copy placed in the client file.

8500 Wood Stove Hearth Pads:

Manufacturer recommended requirements for the appliance are to be followed regarding Non-Combustible flooring. At a minimum Non-Combustible flooring must extend under the entire stove, continuing for 12" past the sides and 18" in front of any loading doors. This applies to new wood stove appliances and any secondary heat source appliances that the agency elects to address via repair or replacement.

Note: A Hazardous/Potentially Hazardous condition form (EAP-023) must be provided to clients whose primary or secondary appliances are not addressed and the appliance does not meet minimum Non-Combustible flooring requirements.

8600 Domestic Water Heaters

Domestic water heaters (DWH) are appliances used to heat water for use by occupants of the dwelling. As part of the weatherization of a dwelling the DWH is inspected, tested and if necessary, insulated, repaired or replaced. (For a more detailed description of the materials and requirements for insulating a DWH, see the Standard Work Specifications (SWS) tool on the NREL web site.) The link to the NREL site is: https://sws.nrel.gov/.

Combustion DWH must be tested for proper operation and safety in accordance with SWS 2.02. The agency must complete the DPHHS-EAP-8 'Heating Worksheet' regarding the testing and operation of the unit. The results of the testing will inform the auditor whether or not a 'Clean and Tune' or other service will be needed by an HVAC technician. When a 'Clean and Tune' or other service is recommended for a water heater, the issues must be noted in Energy Audit.
At the conclusion of each work day in which significant envelope or duct sealing measures have been performed, depressurization and WC CAZ spillage testing will be performed on natural draft and power-vented combustion water heaters. This will ensure work completed in the home has not adversely affected the operation of the water heater.

End of day WC CAZ testing results need to be recorded and maintained in the client file. Test results should be recorded on "The End of Day WC CAZ Test Documentation Form" (or equivalent).

Notes:

Auditors, HVAC techs and technicians conducting end of the day CAZ testing need to monitor carbon monoxide (CO) levels in ambient air (not to exceed 35 ppm).

Electric DWH appliances must be inspected for wiring or other electrical hazards.

The flue on a category I, natural draft water heater should go up and out. The minimum pitch for a flue is rise of ¼ inch per lateral foot.

If the Natural Gas hot water tank cannot be vented in compliance with code due to location or unforeseen circumstance; power venting or a Health and Safety switch to an electric tank may be authorized. Contact your Field Monitor for approval prior to proceeding.

8650 Earthquake Straps on Water Heaters

All Mobile Home water heaters in the state of Montana shall be anchored or strapped to resist displacement due to earthquake motion using metal supports.

In single family and multi-family housing, Earthquake straps must be installed if the appliance is replaced, serviced or relocated per IRC M1307.2.

8700 Domestic Water Heater Repairs

Costs for the testing, tuning and repair of the DWH are entered into the Computerized Energy Audit (CEA) in the Water Heater section – documentation is required of issues requiring repair or replacement. In certain instances, repairs made to the DWH may meet the criteria for use of the Low Income Energy Assistance Program (LIEAP) Emergency Assistance Contingency Revolving Fund (CRF) where there is a hazardous or potentially hazardous condition existing in the dwelling's primary water heating system and safety modifications are required. When repair conditions exist in the DWH that meet the Emergency Assistance requirements the agency can charge the repair expenses to the LIEAP CRF.

All repairs made to a DWH must be completed to applicable code. Any repairs not made to code are the responsibility of the agency.

8800 Domestic Water Heater Replacements

In some instances, adequate repairs cannot be made to a DWH or the DWH has been condemned ('red tagged') by the agency, utility service person or a fuel vendor and the unit must be replaced. (See WPN 11-6 Weatherization Health and Safety Guidance)

Costs for the replacement of the DWH are entered into the Computerized Energy Audit (CEA) in the Water Heater Replacement section. The DWH being replaced may meet the criteria for use of the Low Income Energy Assistance Program (LIEAP) Emergency Assistance Contingency Revolving Fund (CRF) where there is a hazardous or potentially hazardous condition existing in the dwelling's primary water heating system and safety modifications are required. When a replacement condition exists for the DWH that meets the Emergency Assistance requirements the agency can charge the replacement expenses to the LIEAP CRF.

Costs for a natural gas DWH replacement cannot be charged to the NorthWestern Energy (NWE) contract funds unless a service person condemns ('red tags') the unit. The NWE condemnation number must be entered into the CEA when expensing NWE contract funds in the CEA.
All replacement DWH must be installed to applicable code, including applicable plumbing codes that may require the replacement to be performed by a licensed plumber. Any DWH replacement not made to code is the responsibility of the agency.

Note: The replacement of an electric domestic water heater (DWH) is an allowable expenditure under the NorthWestern Energy (NWE) Free Weatherization Program if the appliance has been condemned by an HVAC specialist. This must be documented in the client file.

The use of tank-less water heater appliances as replacements under any of the weatherization and/or Low Income Energy Assistance Program (LIEAP) Contingency Revolving Fund (CRF) programs is allowable only with prior written permission from the Department.

8900 Mobile Home Domestic Water Heaters

DWH appliances located in manufactured (mobile) homes must be certified for use in a mobile home.

Inside access DWH appliances that are not certified for use in a mobile home must be replaced by the agency as the unit does not meet code and poses a health and safety risk to the occupants.

Outside access DWH appliances that are not certified for use in a mobile home should be replaced by the agency as the unit does not meet code and potentially poses a health and safety risk to the occupants.

In some instances, the agency may determine that an outside access DWH appliance that is not certified for use in a mobile home does not pose a health and safety risk to the occupants. Any testing or repair work performed by an agency on the outside access DWH appliance that is not certified for use in a mobile home is the responsibility of the agency. The agency must provide the occupants/owner with a copy of the DPHHS-EAP-023 'Notice of Dangerous Condition(s)' form stating that the agency has identified a potentially dangerous condition existing with the DWH appliance that is not certified for use in a mobile home.

Temperature and Pressure relief drain pipes attached to the T&P valves on inside and outside access DWH must extend through the flooring of the mobile home and also through the belly board area to allow for water discharge. This location requirement minimizes water damage to the floor area as well as the insulation under the floor and the belly board area.

8910 Electric Water Heaters in Mobile Homes

Electric Water heaters that have either an Underwriter Laboratories ANSI/UL 174 listing or the HUD Section 3280.707 listing stamped to the tank, meet mobile/manufactured home standards. Provided the tank is stamped mobile home approved; ANSI/UL 174 or HUD Section 3280.707 no hazardous condition form or replacement of the appliance is required.

Note: If electric inside or outside access DWH's are not mobile-home approved, agencies may still replace them since they are not up to code, but a notice of dangerous conditions form is not required.

8920 Outside Access Water Heater Closets in Mobile Homes:

Water heater closets with an exterior wall addressed by one of the following measures:

a. The exterior access door and associated exterior walls of closets containing electric, propane or natural gas water heaters shall be insulated, if possible. If the door and associated wall can be insulated, the water heater can also be wrapped with insulation.
b. Cover air vents if they are present in the door or associated exterior wall.
c. Bring combustion air from underneath the belly or through the skirting by installing an appropriately sized metal chute with a rodent barrier.

Outside Access Water Heater Doors – If the agency elects to address an outside access water heater door, the costs may be entered in the CDS Energy Audit under Heating System-Space Heat or Energy Related Repair Costs (Incidental Repairs).

Note: If insulation work is to be completed on the water heater closet and the tank has to be removed to allow for access, the agency must ensure that the water heater is mobile home approved. The agency can replace the tank if it is not mobile home approved; but they cannot re-install a non-mobile home approved tank.

If it is not possible to insulate the closet door and associated wall area:

The installation of water heater wrap on electric, natural gas and propane water heaters is recommended unless it will void the warranty. A water heater wrap must not obstruct the following:

a. The temperature and pressure relief valve.
b. Drain valve.
c. Electrical line.
d. Burner assembly
e. Draft diverter and/or flue
f. Thermostats
g. High limit switch

Insulation must be kept at least two inches away from where the electrical line attaches to the water heater. The tank should be wrapped with an insulation jacket. Large holes in the closet walls that allow air leakage into the interior must be sealed. All plumbing within the closet that is susceptible to freezing must be insulated. An adequate amount of combustion air must be provided to combustion water heaters.

Note: If the closet cannot be insulated and a water heater jacket cannot be installed due to clearance inside the closet, an insulation blanket can be attached to the closet door. The agency must meet clearance standards and all pipes, both hot and cold, must be insulated.

- The Standard Work Specifications require 6ft of pipe wrap on hot and cold water lines.
- NWE requires 10ft of pipe wrap on hot and cold water lines.

Chapter 9 SAVINGS TO INVESTMENT PRODUCING MEASURES

9000 Insulation Degradation

Insulation degradation can occur due to many factors; moisture, rodents and poor installation are the main culprits, particularly in mobile homes. The Department of Energy uses the Building Performance Institute (BPI) as a technical and training conduit for energy auditors and energy conservation techniques. The computation of R-values when auditing eligible dwellings shall follow BPI degradation standards listed below:

1. Measure the insulation thickness.
2. Determine the condition of the installation using the following criteria:
   - Good - No gaps or other imperfections.
   - Fair - Gaps over 2.5% of the insulated area.
   - Poor—Gaps over 5% of the insulated area.
3. Look up the effective R-value of the installed insulation using the condition and measured inches.

	"Good"	*"Fair"*	*"Poor"*
Measured Batt Thickness (inches)	**Effective R-value (2.5 per inch)**	**Effective R-value (1.8 per inch)**	**Effective R-value (0.7 per inch)**
0	0	0	0
1	3	2	1
2	5	4	1.5
3	8	5	2
4	10	7	3
5	13	9	3.5
6	15	11	4
7	18	13	5
8	20	14	5.5
9	23	16	6
10	25	18	7
11	28	20	8
12	30	22	8.5

**Derived from ASHRAE document "Heat Transmission Coefficients for Walls, Roofs, Ceilings, and Floors" 1996*

9010 Attics

Adequate insulation in a dwelling reduces heat loss and lowers client energy bills. As part of the weatherization of a dwelling the insulation in the attic must be inspected for existing R-value and when possible additional insulation added to raise the R-level to industry standards.

A receipt for the insulation installed must be given to the occupant and posted in the attic. For loose-fill, the receipt must show the coverage area, initial installed thickness, minimum settled thickness, R-value, and the number of bags used. To figure out the R-value of the insulation, use the data that the manufacturer gives you. The receipt must be dated and signed by the installer.

No insulation will be installed on top of non-Insulation Contact (non-IC) rated fixtures.

The attic access stairs and hatch should both be insulated to match R-value of attic.

Detailed installation and efficiency standards regarding attic spaces can be found in the Standard Work Specifications tool on the NREL web site.

Note: Air sealing of the attic may be entered in the 'Miscellaneous' section of the CEA.

Special precautions will be taken if knob and tube wiring is present.

- Knob and tube wiring will be inspected and certified to be safe.
- A warning sign will be installed at all entries to the attic about the presence of live knob and tube wiring.
- Example:

- A dam that does not cover the top of the live knob and tube wiring will be created to separate insulation from the wire path when insulation is installed.

9100 Walls

Adequate insulation in a dwelling reduces heat loss and lowers client energy bills. As part of the weatherization of a dwelling the insulation in the walls must be inspected for existing R-value and when possible additional insulation added to raise the R-level to industry standards.

The agency must use a blower door and IR camera to verify proper installation while crews are on-site. This will ensure the gaps and framing edges (windows and fire breaks) in the thermal boundary, roof-wall joints, floor-wall joints, etc., are found and insulated. (SWS 4.1103.2a)

A receipt for the insulation installed must be given to the occupant and posted. Documentation should include insulation material and R-value. The receipt must be dated and signed by the installer.

Notes:

- EPS (Expanded Polystyrene) and XPS (Extruded Polystyrene) must have a code approved ignition or thermal barrier.
- Air sealing of wall holes and penetrations may be entered in the 'Infiltration Section' of the Energy Audit.
- If the material installed is visible every attempt should be made to match the aesthetic qualities of the original structure.
- It is preferred that balloon framed cavities are blocked at the bottom and top of the wall cavity and dense packed.

Detailed installation and efficiency standards regarding wall spaces can be found in the Standard Work Specifications tool on the NREL web site.

9200 Floors

Adequate insulation in a dwelling reduces heat loss and lowers client energy bills. As part of the weatherization of a dwelling the insulation in the floor must be inspected for existing R-value and when possible additional insulation added to raise the R-level to industry standards.

A receipt for the insulation installed must be given to the occupant and posted. For loose-fill, the receipt must show the coverage area, initial installed thickness, minimum settled thickness, R-value, and the number of bags used. To figure out the R-value of the insulation, use the data that the manufacturer gives you. The receipt must be dated and signed by the installer.

Notes:

- Air sealing of seams and penetrations may be entered in the 'Infiltration Section' of the Energy Audit.
- Sills must be sealed.

Detailed installation and efficiency standards regarding floor spaces can be found in the Standard Work Specifications tool on the NREL web site.

9300 Crawlspaces/Basements

Adequate insulation in a dwelling reduces heat loss and lowers client energy bills. As part of the weatherization of a dwelling the insulation in the crawlspace or basement must be inspected for existing R-value and when possible additional insulation added to raise the R-level to industry standards.

A receipt for the insulation installed must be given to the occupant and posted. For loose-fill, the receipt must show the coverage area, initial installed thickness, minimum settled thickness, R-value, and the number of bags used. To figure out the R-value of the insulation, use the data that the manufacturer gives you. The receipt must be dated and signed by the installer.

The chart below shows the required R-values by Climate Zone. Montana is Zone 6.

	Continuous Rigid Insulation, Interior or Exterior	Interior Cavity Insulation
Zone 1	0	0
Zone 2	0	0
Zone 3	5	13
Zone 4, except marine	10	13
Zone 5 and marine 4	15	19
Zone 6-8	16	19

Detailed installation and efficiency standards regarding wall spaces can be found in the Standard Work Specifications tool found on the NREL web site.

The agency must alert the homeowner to never store hazardous materials in the crawl space to maintain indoor air quality. (SWS 2.0701.2c)

PROHIBITED: DO NOT store Hazardous or Flammable Materials in this space.

9310 Vapor Barriers

Durable, effective ground moisture barrier provides long-lasting access and minimizes ground vapor. A ground moisture barrier that covers 100% of the exposed dirt crawl space floor will be installed.

Installation of the ground moisture barriers can be found in the Standard Work Specifications tool on the NREL web site.

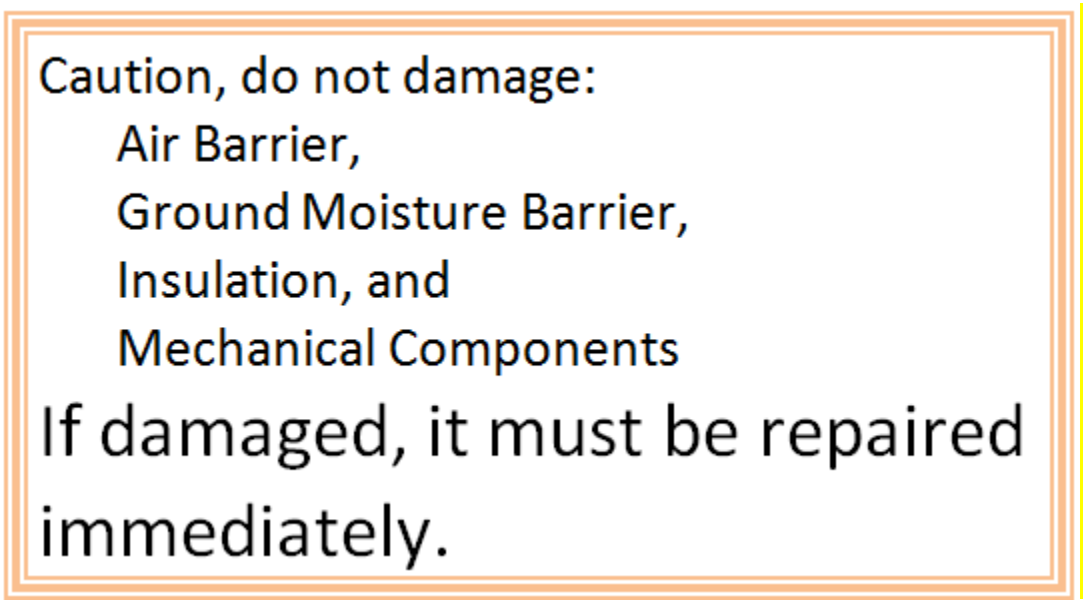
A ground moisture barrier will not be installed if it interferes with the established drainage pattern (e.g. seasonal drainage) as per 2.0403.2h.

Installation of a ground moisture barrier is at the discretion of the auditor for mobile homes per SWS 2.0403.4a. Ground moisture barriers are required in all crawl spaces where exposed earth is present for both vented and un-vented crawlspaces per SWS 2.0403.1b, 2.0403.2b.

Ground cover moisture barriers must extend a minimum of 6 inches up the foundation wall and be fastened and air sealed.

The homeowner must be advised that all plastic has a life span much shorter than the home (5 years), and it will need replacing to remain effective.

A durable, easily seen sign will be installed at all accesses inside of the crawl space.
Example:



9350 Mobile Home Skirting

If the mobile home skirting is already insulated, enter the information into the audit. When entering the existing R-value take into consideration the condition of and existing R-value of the skirting. If the energy audit will allow for additional belly insulation based on the proposed SIR the belly insulation should be added.

Generally, the mobile home belly should be insulated. There are situations in which the belly cannot be insulated. Repair, installation, insulation, flashing, or skirting stiffener/high wind support related to mobile home skirting are not allowable weatherization procedures without written permission from the Department.

The request for approval for the repair, installation, insulation, flashing, or skirting stiffener/high wind support related to mobile home skirting must include the reason(s) why any other weatherization measure to insulate the floor area (belly insulation) cannot be performed on the dwelling.

The request must also show that the costs for skirting the mobile home meet an acceptable Savings-to-Investment Ratio (SIR) (Currently 1.0) in the Rim Joist/Crawlspace/Basement Wall section of the Computerized Energy Audit (CEA).

Written approval must be received from the Department prior to any procurement, repair, installation, insulation, flashing, or skirting stiffener/high wind support on mobile home skirting can begin.

Closeable skirting vents should be used as needed to control moisture and airflow under the mobile when the pressure/thermal boundary has not been defined at the skirting.

RV Campers and pull-trailers will normally not be considered for skirting based on the mobility of the dwelling.

9400 Windows and Doors

Windows:

1. Existing U Value - Window replacement follows the Standards Work Specifications tool found on the NREL web site for windows. The agency can input existing U values of up to 1.2 into the CDS Energy Audit without department approval. To use an existing U value of greater than 1.2; the agency must request and receive written permission from the Department before proceeding. The Department can approve an existing U value of up to 1.5 on a case by case basis.

2. In rare instances, it is allowable to replace a window as part of blower door guided air sealing under the Infiltration Section of the Energy Audit when it doesn't meet an SIR of 1.0 under the Window Section of the Energy Audit.

   Example: A small jalousie style window in a bathroom.

   The agency must obtain written Departmental approval prior to allocating any window replacement, repair, or installation charges to the Infiltration Section of the CDS Energy Audit.

Doors:

1. Residence Primary Door - Door replacement must show an SIR of 1.0 or greater. Solid core replacement doors **without windows** are to be used. Auditors should use care in completing the door section of the Computerized Energy Audit such that doors with windows **should not** be treated as solid-core doors.

2. Outside Access Water Heater Doors – If the agency elects to address an outside access water heater door, the costs may be entered in the CDS Energy Audit under Heating System-Space Heat or Energy Related Repair Costs (Incidental Repairs).

3. Existing U Value - Existing U values can be referenced from manufacturer information or found in the Help section of CEA. The agency can input existing U values of up to 1.2 into the CDS Energy Audit in situations that the condition of the existing door warrants such a value. Photos of existing door are required in the client file. Department approval is not required for 1.2 or less existing U values. For use of an existing U value of greater than 1.2; the agency must request and receive CDS approval or written permission from the Department before proceeding. The Department can approve an existing U value of up to 1.5 on a case by case basis.

4. Doors with a Window – A door with a window can be installed if the client or landlord is willing to pay the cost differential between a standard core door and a standard core door with a window.

   Example:
   Standard door with a 1.0 or better SIR payback – Cost $300.00

Standard door with an energy efficient window – Cost $375.00

Client or landlord pays difference of $75.00 to the agency for installation of the door. The $75.00 is then put back into the Weatherization Program and applied to the actual cost of the door.

Note: It remains the intent of the Montana Weatherization program to focus weatherization work on insulating the core measures of a dwelling. The core measures are Attics, Walls, Floors, Furnaces, Infiltration and Crawlspaces.

Egress Compliance - Window and Door

Energy Related Repair Costs (Incidental Repair) can be used to correct window or door egress issues when compliance issues are triggered by weatherization activities. Incidental Repair can be used to replace, repair or install doors and windows to comply with egress codes when a door or window doesn't pay back as an energy conservation measure in CDS Energy Audit.

This is restricted to situations where a code-compliant egress window or door is required, is inoperable, is removed or needs to be replaced. The wall framing must be able to support the replacement or installation of a door or window, i.e. a header is present in the wall. The entire cost of the window or door installation for code-compliant egress will need to be charged to Incidental Repair when it doesn't pay back as an energy conservation measure.

The agency must obtain written Departmental approval prior to allocating any window or door replacement, repair or installation charges to Incidental Repair.

9500 Infiltration

Adequate air sealing in a dwelling reduces heat loss and lowers client energy bills. As part of the weatherization of a dwelling, air sealing is to continue as long as it is cost effective. Air sealing will be prioritized and completed based on the amount of pressure contributing to air exfiltration/infiltration driven by the Stack Effect. Air sealing measures are to be prioritized starting with the attic, followed by the basement/crawl space, and only proceeding to the rest of the home after these high priority areas have been sealed.

It is required that the crews and contractors use a blower door to determine the economic stop point while air sealing.

Air sealing will be verified using a blower door, Zone Pressure Diagnostics and smoke device prior to installing insulation.

Detailed air sealing practices can be found in the Standard Work Specifications (SWS) tool on the NREL web site. The link to the NREL web site is: https://sws.nrel.gov/.

In rare instances, it is allowable to replace a window as part of blower door guided air sealing under the Infiltration Section of the Energy Audit when it doesn't meet an SIR of 1.0 under the Window Section of the Energy Audit.

Example: A small jalousie style window in a bathroom.

The agency must obtain written departmental approval prior to allocating any window replacement, repair, or installation charges to the Infiltration Section of the CDS Energy Audit.

9600 Minor Repair Measures

The cost of incidental minor repairs, if such repairs are necessary to make the installation of Weatherization materials effective, or allow for client/crew/contractor safety, are allowable costs.

Any minor repair costs associated with a specific SIR measure must be charged to that measure in the audit. An example of this would be, if an agency is insulating an attic as part of the weatherization of the dwelling, the costs for any ceiling repairs would be placed into the attic section of the CDS Energy Audit.

If minor repairs are needed to allow for protection of existing insulation in the dwelling or to allow for client/crew/contractor safety; the costs of these repairs must be placed in the Minor Repair section of the CDS Energy Audit.

All minor repair costs to the dwelling are Savings to Investment Ratio (SIR) driven and must maintain a minimum 1.0 SIR in both the individual measure and the overall SIR of the CDS Energy Audit.

Egress Compliance - Window and Door

Energy Related Repair Costs (Incidental Repair) can be used to correct window or door egress issues when compliance issues are triggered by weatherization activities. Incidental Repair can be used to replace, repair or install doors and windows to comply with egress codes when a door or window doesn't pay back as an energy conservation measure in CDS Energy Audit.

This is restricted to situations where a code-compliant egress window or door is required, is inoperable, is removed or needs to be replaced. The wall framing must be able to support the replacement or installation of a door or window, i.e. a header is present in the wall. The entire cost of the window or door installation for code-compliant egress will need to be charged to Incidental Repair when it doesn't pay back as an energy conservation measure.

The agency must obtain written departmental approval prior to allocating any window or door replacement, repair or installation charges to Incidental Repair.

Chapter 10 MISCELLANEOUS MEASURES

10000 Smoke Alarms

Smoke alarms shall be installed in all dwellings unless the dwelling already contains a working smoke alarm. Smoke alarms shall be installed and in locations specified according to the manufacturer's instructions. Verification of operation of any existing smoke alarm is required. Any existing smoke alarm that is inoperable must be replaced.

Smoke alarms will be installed in the following locations: 1. In each sleeping room; 2. Outside each separate sleeping area in the immediate vicinity of the bedrooms; 3. On each additional story of the dwelling, including basements and habitable attics. (Per WPN 14-01) (International Residential Code (IRC) Section R313 Smoke Alarms)

Agency personnel must inform occupants of the features of the smoke alarms, instruct the occupants on use and testing of the smoke alarm and what course of action to take if the alarm sounds. Occupants will also be given the manufacturer's 800 telephone number for additional information and instructions. All questions regarding the smoke alarm warranty should be addressed by the manufacturer through the 800 telephone number.

The costs for the installation of smoke alarms must be entered in the CEA in the 'Other Combustion Appliance" section of the Health and Safety section.

Note:
From WAP 11-6: Fire Extinguishers: Providing fire extinguishers is allowed only when solid fuel is present.

10100 Carbon Monoxide Alarms

An approved CO alarm will be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in all dwelling units. CO alarms will comply with UL 2075. Single-station CO alarms will comply with UL 2034 and will be installed in accordance with this code and the manufacturer's installation instructions. Per WPN 14-01, full compliance with the most current ASHRAE 62.2. and NFPA 720-2015, section 9.6.1 is required.

Agency personnel must inform occupants of the features of the CO alarms, instruct the occupants on use and testing of the alarm and what course of action to take if the alarm sounds. Occupants will also be given the manufacturer's 800 telephone number for additional information and instructions. All questions regarding the alarm's warranty should be addressed by the manufacturer through the 800 telephone number.

<u>If a CO alarm is not installed in a client's dwelling under the NWE Free Weatherization Program, the agency must note the reason why the alarm was not installed in the Computerized Energy Audit (CEA).</u>

CO alarms must be installed to the manufacturer's specifications by the agency and not left at the dwelling for the client to install.

The costs for the installation of a CO detector must be entered into the Computerized Energy Audit (CEA) in the CO alarm section.

Battery operated and hardwired CO detection or warning equipment will be installed in accordance with ASHRAE 62.2 and manufacturer specifications as required by the authority having jurisdiction. (SWS 2.0301.2a and 2.0301.2b).

10200 Appliance Replacements

Refrigerator replacement is no longer an eligible weatherization measure (effective 11/15/2011).

BPA funds may be used to:

- replace non Energy-Star rated clothes washers with Energy-Star rated clothes washers.
- provide a new microwave oven, if electric cooking exists and there is no working microwave oven. (Any existing non-functional microwave ovens shall be removed and taken to a facility for recycling);

Chapter 11 WX PROGRAM TRAINING

11000 Training and Certification Requirements

The Department contracts with the Montana State University's Weatherization Training Center to provide weatherization related training throughout the program year. Some training courses are considered Tier 1. Tier 1 trainings are comprehensive, occupation specific trainings that follow a curriculum aligned with the DOE Job Task Analysis (JTA) for that occupation. Other trainings are considered Tier 2 trainings. Tier 2 trainings are single issue, short-term training events aimed to strengthen the field such as ASHRAE, dense packing and others. Conference trainings are considered Tier 2 trainings.

The Montana Weatherization Training Center (MTWTC) policy defines what the prerequisites and standard requirements are for students to be admitted to a Montana Weatherization Training Center course. IHSB & MTWTC work together to provide the following definable training pathway for weatherization students and to make clear what the prerequisites and requirements are for each course offered at the Montana Weatherization Training Center.

Procedures

On the student application form, students must detail their previous training experience or equivalent experience to ensure that the student is prepared and qualified for each course offered. The Montana Weatherization Training Center training coordinator then reviews each registration form and provides approval for the student to attend the course based on experience, training, and expertise. Agency Weatherization Directors approve each student's participation in any course to make sure that the course is appropriate for their career path and ability. On the registration form there is a required signature from the Agency Director and the student so that the MTWTC, the student, and the agency director are all aware of a student's participation in any given training. The definition of requirements and prerequisites are available on the MTWTC website (http://www.weatherization.org) for download and are provided below. This ensures consistent and equitable treatment of students and a formalized set of prerequisites for each course taught at the MTWTC.

MTWTC Course Prerequisites and Course Completion Summary

Weatherization Fundamentals—Beginning

- Must be an employee or contractor for a Weatherization Agency.
- If not employed by an agency, student must be able to detail construction or residential energy reduction experience.
- Complete registration form and attain monitor approval.
- Successful completion of course includes perfect attendance to all lectures and lab activities, active class participation, and at least a 70% on the final exam.
- Student must review and initial each of the BPI/JTA requirements as provided on the BPI Certification prep form provided and reviewed during the course. The lead course

instructor will sign off each student's form to ensure that each student is competent in all of the job task analysis.

Weatherization Fundamentals—Intermediate

- Successfully complete Weatherization Fundamentals—Beginning. Requirements for successful completion of course are full attendance, active class participation, and at least a 70/100 on final exam.
- Must be an employee or contractor for a Weatherization Agency.
- If not employed by an agency, student must be able to detail construction or residential energy conservation experience.
- Complete registration form and attain monitor approval.
- Student must review and initial each of the BPI/JTA requirements as provided on the BPI Certification prep form provided and reviewed during the course. The lead course instructor will sign off each student's form to ensure that each student is competent in all of the job task analysis.

EPA Renovation, Repair, and Painting Rule (RRP)

- As this is a required course for any contractor to work professionally on a home built prior to 1978, there are no prerequisites other than to fill out registration form, attend the 8-hour class, and receive a grade of higher than a 70%.
- RRP course produces a 5 year Lead Renovator Certification. The certification is renewed with successful completion of a refresher course, prior to certification expiration.

Weatherization Crew Leader Management

- Successfully complete Weatherization Fundamentals—Beginning.
- Successfully complete Weatherization Fundamentals—Intermediate.
- Successfully complete Basic Furnace.
- Successfully complete EPA Renovation, Repair, and Painting Rule.
- Successfully complete Single Family Energy Auditor.
- Requirements for successful completion of course are full attendance, active class participation, and at least a 70% on final exam.
- Must be an employee or contractor for a Weatherization Agency.
- If not employed by an agency, student must be able to detail construction or residential energy reduction experience.
- Complete registration form and attain agency director approval.
- Student must review and initial each of the BPI/JTA requirements for Weatherization Installer Certification as provided on the BPI Certification prep form provided and reviewed during the course. The lead course instructor will sign off student forms to ensure that each student is competent in all of the job task analysis before moving on to the next course.

Mobile Home Weatherization

- Successfully complete Weatherization Fundamentals—Beginning.

- Successfully complete Weatherization Fundamentals—Intermediate.
- Successfully complete Basic Furnace.
- Requirements for successful completion of course are full attendance, active class participation, and at least a 70% on final exam.
- Must be an employee or contractor for a Weatherization Agency.
- If not employed by an agency, student must be able to detail construction or residential energy reduction experience.
- Complete registration form and attain agency director approval.
- Student must review and initial each of the BPI/JTA requirements for Weatherization Installer Certification as provided on the BPI Certification prep form provided and reviewed during the course. The lead course instructor will sign off student forms to ensure that each student is competent in all of the job task analysis before moving on to the next course.

Basic Furnace

- Successfully complete Weatherization Fundamentals—Beginning.
- Successfully complete Weatherization Fundamentals—Intermediate.
- Requirements for successful completion of course are full attendance, active class participation, and at least a 70% on final exam.
- Must be an employee or contractor for a Weatherization Agency.
- If not employed by an agency, student must be able to detail construction or residential energy reduction experience.
- Complete registration form and attain agency director approval.
- Student must review and initial each of the BPI/JTA requirements for Weatherization Installer Certification as provided on the BPI Certification prep form provided and reviewed during the course. The lead course instructor will sign off student forms to ensure that each student is competent in all of the job task analysis before moving on to the next course.

OSHA 10

- Successfully complete Weatherization Fundamentals—Beginning.
- Successfully complete Weatherization Fundamentals—Intermediate.
- Requirements for successful completion of course are full attendance, active class participation, and at least a 70% on final exam.
- Must be an employee or contractor for a Weatherization Agency.
- If not employed by an agency, student must be able to detail construction or residential energy reduction experience.
- Complete registration form and attain agency director approval.
- Student must review and initial each of the BPI/JTA requirements for Weatherization Installer Certification as provided on the BPI Certification prep form provided and reviewed during the course. The lead course instructor will sign off student forms to ensure that each student is competent in all of the job task analysis before moving on to the next course.

Single Family Energy Auditor

- Successfully complete Weatherization Fundamentals—Beginning.
- Successfully complete Weatherization Fundamentals—Intermediate.
- Successfully complete Basic Furnace.
- Successfully complete EPA Renovation, Repair, and Painting Rule.
- Requirements for successful completion of course are full attendance, active class participation, and at least a 70% on final exam.
- Must be an employee or contractor for a Weatherization Agency.
- If not employed by an agency, student must be able to detail construction or residential energy reduction experience.
- Complete registration form and attain agency director approval.
- Student must review and initial each of the BPI/JTA requirements for Weatherization Installer Certification and the Energy Auditor Certification as provided on the BPI Certification prep form provided and reviewed during the course. The lead course instructor will sign off student forms to ensure that each student is competent in all of the job task analysis before moving on to the next course.

Weatherization Inspector

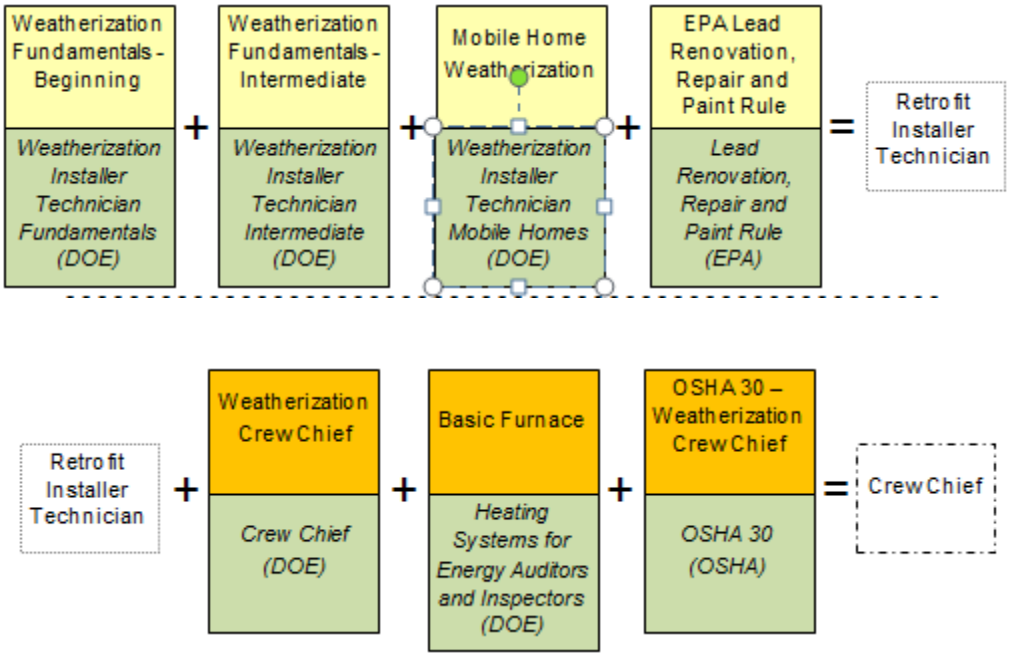
- Successfully complete Weatherization Fundamentals—Beginning.
- Successfully complete Weatherization Fundamentals—Intermediate.
- Successfully complete Basic Furnace.
- Successfully complete Single Family Energy Auditor.
- Successfully complete OSHA 10.
- Requirements for successful completion of course are full attendance, active class participation, and at least a 70% on final exam.
- Must be an employee or contractor for a Weatherization Agency.
- If not employed by an agency, student must be able to detail construction or residential energy reduction experience.
- Complete registration form and attain agency director approval.
- Student must review and initial each of the BPI/JTA requirements for Weatherization Installer Certification, Energy Auditor Certification, and Inspector Certification as provided on the BPI Certification prep form provided and reviewed during the course. The lead course instructor will sign off student forms to ensure that each student is competent in all of the job task analysis.

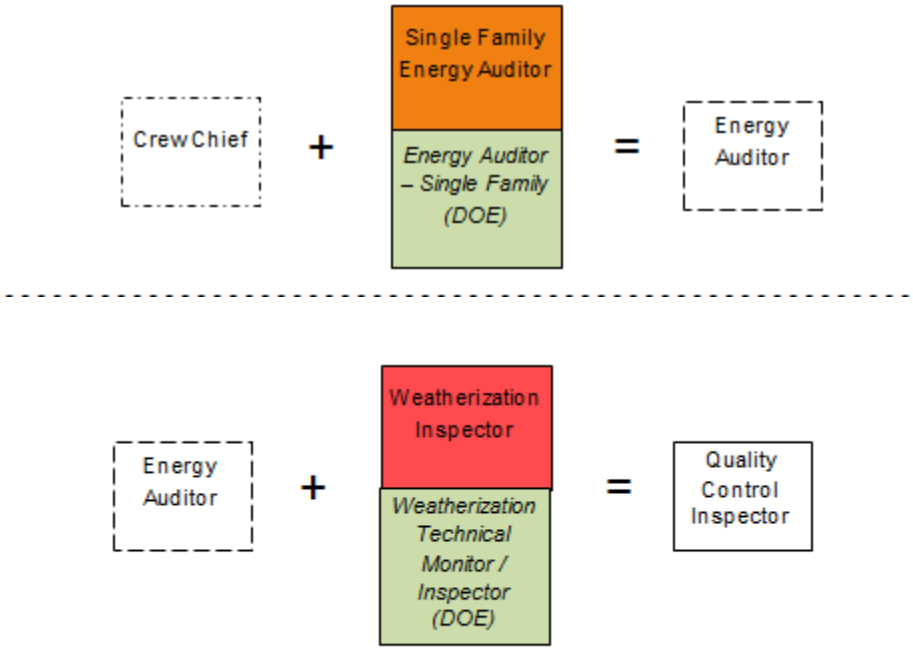
11010 Training and Certification Courses

Training opportunities are offered each program year. When the schedule is developed for each upcoming year, the MTWTC and DPHHS consider Agency training needs and requests. Agencies may request specific training, such as insulation training for mobile homes, addressing multifamily units, managerial training, procurement training, hot water heaters, or specified heating system training, such as electric furnaces or wood stoves.

The following flow chart outlines the training courses in relation to cumulative accomplishment and advancement through the Job Task Analyses (JTA). There are four JTAs: Retrofit Installer, Crew Chief, Energy Auditor and Quality Control Inspector. As per Weatherization Program Notice 15-4 and Montana State Policy, the Quality Control Inspector (QCI) is a required certification for those conducting final inspections on Department of Energy (DOE) weatherization jobs.

Montana Weatherization Training Center courses and curricula tracks teaching material aligned with the four Job Task Analyses requirements. Course names are shown above the corresponding curriculum.





QCI individuals must be approved by the Building Performance Institute to sit for the required written and field tests, and must receive a passing grade to achieve QCI certification. QCI certification is renewed every three years. In order to be eligible for recertification, candidates must have accumulated a minimum of **24 qualifying continuing education units (CEUs)** over the three years of certification. When the minimum CEU requirement is met the candidate must successfully complete the field examination that is current at the time of renewal. Candidates who do not meet the CEU requirements must retake the written and field exam that is current at the time of renewal. Candidates must also re-attest to and sign the Code of Ethics to be eligible for recertification.

Note: The Department requires the OSHA 10 class for all weatherization workers.

Chapter 12 WX PROGRAM MANAGEMENT

12000 Equipment Inventory and Disposal

Local agencies are required to maintain an inventory of equipment with a purchase price of $5,000 or more. The agency is required to send to the Department on an annual basis a copy of the inventory of equipment purchased for $5,000 or more.

All equipment purchased for use in the weatherization program, regardless of acquisition costs, must be maintained on the agency's perpetual inventory until disposed of or no longer used in the program. A physical inventory of the property must be taken and the results reconciled with the property records at least once every two years (see section 12300 for a list of information required in local agency property records).

A. If a local agency has no need for equipment that was not purchased with DOE funds and that has a current per unit fair market value of $5,000 or less, the equipment can be sold or otherwise disposed of with no further obligation to the Federal awarding agency (unless otherwise provided for in the terms and conditions of the Federal award.

B. If a local agency has no need for equipment purchases with DOE funds, regardless of fair market value, or with weatherization funds where the current per unit fair market value is in excess of $5,000, The local agency must do the following:

   (1) Request disposition instructions from the Federal awarding agency if required by the terms and conditions of the Federal award. The Federal awarding agency is entitled to an amount calculated by multiplying the current market value or proceeds from the sale by the Federal awarding agency's percentage of participation in the cost of the original purchase (note: the local agency may, with permission, be eligible to retain $500, or 10% of the proceeds, whichever is less, for its selling and handling expenses.
   (2) If purchased with Department of Energy (DOE) funds, offer the equipment to local agencies with weatherization programs.
   (3) This process is coordinated through local agency representative wishing to dispose of the equipment.
   (4) Equipment will be given to local agencies on a first come first serve basis

C. If not purchased with DOE funds, equipment may be used as trade-in for newly purchased equipment.

If no local agencies want the equipment purchased with DOE funds, the agency may, with written Department approval, sell or dispose of the equipment.

   a. The local agency must sell or dispose of the equipment in compliance with the agency's fiscal policies.

b. If the equipment is sold the agency must use the income in the program or programs which originally purchased the equipment.
c. Proceeds from equipment sales must be tracked and reported as program income.
d. All equipment purchased for use in the weatherization program, regardless of acquisition costs, must be maintained on the agency's perpetual inventory until disposed of or no longer used in the program.

12005 LIEAP WX Equipment Disposal

1. Equipment purchased with LIEAP funds no longer needed by the sub grantee that initially purchased it will be offered to other Montana LIEAP sub grantees at no charge. If no other LIEAP sub grantee in the state accepts the equipment, the sub grantee that initially purchased the equipment shall sell it at fair market value. All proceeds from the sale of equipment purchased with LIEAP funds will be reinvested into the LIEAP Program.
2. If the agency wishes to sell the equipment a bid-offering will be publicly advertised and provided to prospective bidders. The bidder with the highest bid will be awarded the equipment.
3. An HRDC is required to send an email for permission to dispose of their equipment to the department for approval.

12010 Equipment Disposal Recordkeeping

1. Agency files must include the following documentation regarding disposal of equipment purchased for $5,000 or more with weatherization funds:
   a. Copy of written notification to the Department regarding intent to dispose of weatherization equipment.
   b. Copy of written Departmental approval to sell the equipment.
   c. Any data relevant to the ultimate disposition of the property, including at a minimum, the date of disposal and the sale price.

12100 WX Client File Documentation Checklist

The Client Wx file must be retained for a period of 4 years from the date of the closeout of the contract under which the funds used for the Weatherization were charged. A signed copy of this checklist must be included in each Client File:

Client files must include the following documentation (the documentation can be combined):

- ☐ Priority number or reason for deviating from the priority list and LIEAP Case ID, If there is a deviation from the Department-supplied priority list, please provide:
    a. Reason for deviation.
    b. Calculated priority number using formula found in WAP Section 1100. Priority is based upon elderly/disabled status, energy burden and/or emergency.
- ☐ Central Database System (CDS) Energy Audit Number.
- ☐ A completed Audit form and Job Order Worksheet (or an acceptable substitute) and itemized financial records showing work completed and cost of each weatherization measure, including a total for all measures completed.
- ☐ Documented use of the Blower Door including pre-weatherization, production and final inspection test results including Zone Pressure Diagnostics and Duct system test (when applicable), dates performed and worker sign off.
- ☐ Documentation of WC CAZ results obtained at the conclusion of each workday in which significant air or duct sealing has occurred (where open combustion equipment is present). The "End of Day WC CAZ Test Documentation" form (or equivalent) can be used.
- ☐ Documentation of reasons for installation of Health and Safety measures performed on the dwelling as part of the weatherization process.
- ☐ Documentation of procurement for any non-contracted services.
- ☐ Copy of the "Weatherization Assistance Program(s) Access Agreement" (DPHHS-EAP-013)
- ☐ Any applicable notices relative to hazardous conditions, health and safety related deferrals, or owner/occupant refusal of SIR qualified measures (EAP-020/EAP-023/Mold form). Client Signatures must be on all notices.
- ☐ Documentation of compliance with Lead Renovation Repair and Painting (LRRP) and lead safe weatherization (LSW) protocols as outlined in the Lead Safety for Renovation, Repair and Painting training course and Student Manual. Please include copies of the following:
    a. Test kit results report provided to the client and landlord
    b. A complete and signed occupant/landlord confirmation of receipt of the "Renovate Right-Important Lead hazard Information for Families, Child Care Providers and Schools" pamphlet
    c. Pre-renovation education records
    d. On the job records
    e. Post renovation report

  Please note that in addition to containment photos in the client file, the CDS Energy Audit must contain a sampling of photographic documentation of lead safe

weatherization procedures for all dwellings where the agency performs any LRRP/LSW work, including window and/or door replacement or repair (If applicable).

- ☐ Completed Heating Worksheet (DPHHS-EAP-008) with Contractor/Agency HVAC Technician signature.
- ☐ DOE completions require a completed Onsite Final Inspection Form with client and QCI certified final inspector's signatures. If the home is reviewed as part of a monitoring visit, two QCI signed final inspection forms should be included in the client file; one from the original final inspection and one form the Monitor's inspection.
- ☐ Non-DOE funded completions require a completed Onsite Final Inspection form with client and final inspector's signatures.
- ☐ Documentation of Asbestos bulk sample testing (PLM/TEM) documentation (If applicable).
- ☐ If emergency assistance is provided during weatherization, documentation of the conditions of the emergency and compliance with the 18/48 hour rules (as applicable must be recorded on a LIEAP Emergency Assistance Request Form (DPHHS-EAP-250).
- ☐ Documentation of clients being asked about pre-existing or potential health concerns, at the time of the initial audit, must be recorded on Appendix B (or equivalent).
- ☐ Documentation of Historic Preservation processes, when relevant and as described in Chapter 18 of the Montana Weatherization Assistance Program manual.
- ☐ Energy Education Survey with client signature and a copy of the Energy Education Summary report with client and local agency representative signatures. If energy education is not conducted, an explanation must be included.
- ☐ If doors are replaced during weatherization, a photo of the original door(s) must be present.
- ☐ Copies of all client correspondence including complaints, documented resolution, call backs, client requests, etc.

Employee Responsible for File Content Review:_____

Signature:_____Date:_____

12200 Counting funding source completions:

Department of Energy dwelling units must have a final Quality Control Inspection to be counted as a completion.

CDS Energy Audits for homes weatherized under this Task Order need to be completed by the tenth day of the month (January, April, July and October) past the end of the quarter (March, June, September and December). After the tenth of the month (January, April, July and October) audits can no longer be completed in CDS Energy Audit for the previous quarter. The State reports completions to DOE quarterly. To receive credit for the completion, the audit must be submitted as complete by the tenth of the month following the end of the quarter. The quarterly program status report will automatically be generated by utilizing the CDS Demographics Report.

Units must be counted in the contract period in which they are completed

All goods, services, and equipment must be purchased by the last day of the contract to be charged to that contract.

Local agency fiscal files must include copies of final closeout reports for each funding source.

12300 Inventory control:

Property and equipment:

1. Local agencies will maintain their inventory and capital asset records according to the funding source:
    a. DOE, Exxon and Stripper Well Contracts – Uniform Guidance.
    b. LIEAP – Uniform Guidance
2. When acquiring tangible personal property (equipment, tools, etc.), procedures concerning purchasing, prior approval, bids, grant contract, etc. will be followed.
3. Equipment and tools with a value established by the Federal regulations will be placed on the local agency's inventory.
4. As equipment is added to the local agency's inventory, the following information will be recorded in the inventory records:
    a. Acquisition date.
    b. Acquisition cost.
    c. Description (including color, model, and serial number or other identification number).
    d. Source of the equipment, including all Federal award numbers, if applicable.
    e. Whether the title vests in the local agency or the Federal Government.
    f. Information to calculate the Federal share of the cost of the equipment, if applicable.
    g. Location of the asset.
    h. Depreciation method, if applicable.
    i. Estimated useful life, if applicable.
5. A physical inventory of all assets on inventory will be taken on an annual basis, at a minimum, by the local agency or at any other time required by grantors. The physical inventory shall be reconciled to the property log and adjustments made as necessary.

12310 Inventory of materials:

Description of Inventory:

1. The local agency will maintain an inventory of materials used for home weatherization.

   Examples of such items include:
   - Door knobs.
   - Roof vents.
   - Bags of insulation.
   - CFL's
   - Water Heater Blankets
   - Aerators
   - Showerheads
   - Smoke alarms
   - CO alarms

12320 Accounting for Inventory:

1. The local agency will establish a written inventory policy. The written policy must include the coordination of all functions – including scheduling, completions, purchasing, storage, and cash flow.

2. The local agency will maintain records, perform inventories, and maintain control systems to prevent loss, damage, or theft of equipment, materials, and supplies.

3. All materials received must be accounted for by invoices from vendors which describe the material(s), number of units, total costs, shipping charges, if any, and sales tax.

12330 Usage of Inventory:

A daily usage system must be a central feature of the inventory system. The agency must maintain records showing materials put into and removed from inventory to be installed as part of the weatherization services.

A physical count of inventory will be performed every fiscal year at a minimum.

Chapter 13 CLIENT EDUCATION

13000 Client Education

There are two parts to client education. Households receive energy education, and they receive health and safety education.

For health and safety education, this policy section follows Department of Energy (DOE) WPN 11-6, the latest guidance.

WPN 11-6: Over the years, a number of issues have been addressed to ensure that weatherization activities do not cause or exacerbate health and safety problems for workers and occupants. While not every possible health and safety issue is addressed herein, the guidance should provide enough relevant examples and direction to provide clarity to the many issues presented.

Client Education & Participation Required Due to ASHRAE 62.2
Client education & benefits:

- Similar to all Wx measures, client refusal is NOT an option. Provide Client Ed and obtain client permission for the most current ASHRAE 62.2 prior to commencing other Wx measures.
- Be positive, this is a significant improvement to the program! A feature not available in the past.
- Use the State provided ASHRAE client education brochure to guide the conversation with the client.
    - The program combines additional air sealing with smart, healthy ventilation.
    - Ask about clients concerns with focus on Indoor Air Quality (IAQ), H&S, and moisture. Provide information and solution to address concerns.
    - If air sealing is performed, the savings from reduced infiltration will be greater than the cost of running the fan as prescribed.
    - With potential improvement in IAQ, there may be a reduction in respiratory related health issues.
    - Client homes should see a decrease of condensation or moisture collection. (Windows, ceilings, etc.)
- Alert occupants to potential hazards contributing to poor IAQ after tightening up a home without installing mechanical ventilation such as; moisture, odors, chemicals, smoking, pets, etc. If these are observed, document and consider increasing the use/flow rate of the continuous fan.
- Instruct clients on correct operation of the fans and importance of periodic maintenance.
- If using a simple wall switch, place a Label on switch; “Ventilation Fan - Leave On at All Times.”

  For more information go to: http://wxplushealth.org/

13100 Energy Education:

Energy education must be provided to every household unless it is refused by the applicant. Sub-grantees conduct energy education using the Energy Education System (EES). If not enough data history is available for EES, households should still receive basic energy education. Energy education, or why energy education could not be completed, must be documented in client files. All charges for energy education are entered under "Customer Education Costs" in the energy audit.

13200 Health and Safety Education:

Client health and safety education must be provided to every household for issues identified during the audit or during weatherization. It is also required that occupants be asked about pre-existing or potential health concerns at the time of the initial audit. This information should be compared to the household's response on the LIEAP/Weatherization application.

The Department has a "Client Education" checklist of issues that, when identified, are required to be discussed with occupants, along with written materials by the EPA and DOE. The occupant must sign and date the checklist and other required forms. Sub-grantees may use the Department checklist (see Appendix B) and EPA/DOE materials or their own as long as all of the same issues are discussed and documented with dated signatures in the client file.

The Department "Client Education" checklist and EPA/DOE materials follow WPN 11-6 guidelines and requirements to the fullest extent possible. While every possible health and safety issue is not addressed by WPN 11-6 and therefore the Department checklist, where hazards are identified, clients must be informed in writing and the document must be signed and dated by the client. A copy must be maintained in the client file.

All EPA materials are obtained and may be printed from the EPA website at http://www.epa.gov. Some materials may also be ordered from the EPA at http://www.epa.gov/ncepihom/ordering.html.

All DOE materials are obtained and may be printed from the DOE web site at http://www.energysavers.gov.

Chapter 14 FISCAL REQUIREMENTS

14000 General Standards for Allowable Costs

Allowable weatherization costs must be:

1. Reasonable for the performance of the contract and of benefit to the program for which the funds are provided.
2. Allocated to the contract under these policies.
3. Conform to any limitations or exclusions set forth in these policies or in the contract as to type or amount of cost of items.
4. Consistent with policies and procedures that apply uniformly to other activities of the organization and are accorded consistent treatment.
5. Determined in accordance with generally accepted accounting principles.
6. Adequately documented.

Local agency files must include all required expenditure documentation. See funding source contract for specific terms and conditions, policies and procedures, or policies and guidelines for allowable costs specific to each funding source (e.g. WPN 11-03 issued by DOE, effective December 15, 2010 provides the following:

GUIDANCE: As a general rule, Grantees and sub-grantees may not charge the WAP for additional work on homes that have already been reported to DOE as completed, weatherized units. Once a home is reported to DOE as complete, the required final inspection indicates that all applicable work performed was done so in a workmanlike manner, including all work that may have been contracted out such as furnace work, etc. Performing activities such as routine maintenance, repairs, or warranty-type work is not permitted using DOE funds for work beyond those costs already invoiced. Grantees and sub-grantees may use other funds that are not included as a part of their DOE WAP budget plans to pay for the costs associated with these activities.

See funding source contract for allowable weatherization measures and fund source limitations and allowances.

14100 Method of Compensation:

The Department will reimburse local agencies for all allowable costs upon receipt of authorized requests for reimbursement.

Local agencies are responsible for complying with all applicable guidelines and procedures, demonstrating responsible management of cash flow, inventory control, equipment purchase, and administrative costs.

a. If a local agency wants to subcontract work under this program, the agency's subcontract template must be reviewed and approved by the Department. Once the template has been approved, the agency can use the contract for all subcontracts.
b. Subcontractors must be selected using competitive procedures among potential bidders for weatherization services.
c. Local agencies must keep records that fully disclose the following:
   (1) Amount and disposition of funds received.
   (2) Total cost of a weatherization project.
   (3) Source and amount of funds used from all funding sources.
d. Records must be retained for three (3) years from the last financial audit or the completion of the contract, whichever is later.
e. NWE Records must be retained for seven (7) years past the completion of the contract.

14200 Reports:

Local agencies will provide reports or answers in writing to specific questions, reports or surveys requested by the Department or its funding sources by the specified deadline.

a. Requests for vehicles purchased with DOE funding require prior written DOE approval. Allow ninety (90) days for DOE review.

14400 Authorized Expenditures:

OMB (Office of Management and Budget) Uniform Guidance, is used as general guidelines for determining which weatherization costs are allowed.

Exceptions exist where costs conform to specific categories in the applicable contract, policies and procedures, weatherization budget, state law, or local ordinance.

The Department determines the proper interpretation of the federal or state procedures as they relate to costs allowed or prohibited under this program.

1. Local agency files must include the following documentation:
   a. Description of agency subcontracting process and copies of pertinent contracts and procurement procedures.
   b. All necessary records that disclose fiscal accountability.
2. Inventory Control.
3. See funding source contract for allowable weatherization measures and fund source limitations and allowances.
4. DOE, Exxon and Stripper Well uses OMB Uniform Guidance
5. DOE, Exxon and Stripper Well uses OMB Uniform Guidance.
6. LIEAP follows OMB Uniform Guidance.

Chapter 15 ADMINISTRATIVE/PROGRAM COSTS

15000 Administrative Costs/Production Overhead

Administrative or Production Overhead (referred only to NWE funding) are costs associated with those functions of a general nature not clearly identifiable with a program. These functions may include, if identified, planning, budgeting and accounting, and establishment and direction of local agency policies, goals, and objectives.

Note: For NWE production overhead, expenditures shall not exceed 35% of the contractor's actual expenditure of total contract funds at any point in the duration of the contract

1. Allowable administrative costs are:
   - Non-Specific Board/committee meetings.
   - Executive Director.
   - Non-Specific staff meetings.
   - Office management.
   - Accounting, auditing, and budgeting.
   - Corporate legal services.
   - Personnel management.
   - Purchasing and distribution of supplies.
   - Insurance and bonding.
   - Central clerical services.
   - Word processing, computer services and equipment.
   - Organizational Policy and Procedure Development
   - Record keeping.
   - Office space/facilities lease or rental.
   - Utilities in the office space/facilities.
   - Telephone equipment and services.
   - Administrative staff training.

2. Allowable Admin/Production Overhead

   - Labor for intake and outreach staff (labor, fringe, payroll taxes, accrued leave (liability), vacation, sick leave, employer's share of life/health/dental/disability insurance and retirement, flexible spending accounts).
   - Off-site supervision for procurement and program management.
   - Postage
   - Clerical support
   - General personal liability and property insurance to be charged to the liability line item of the contract. (DOE Only)
   - Depreciation/Amortization expenses for:

- Building Use (Excluded is the cost of or any portion of the cost of building, equipment, or land purchased using federal funds or donated by the Federal government, contributed by or for a non-profit organization to satisfy a statutory match requirement.)
- Capital improvements
- Equipment (Excluded are vehicles purchased outright with weatherization funds requiring DOE pre-approval)
- Fixed asset

- Professional organization dues or subscriptions
- Equipment maintenance and repair
- Photocopies of applications or materials
- Printing related to materials used in energy conservation education or outreach.
- Taxes and license
- Consumable supplies (office and cleaning supplies).
- Supplies/Uniform Cleaning
- Non-consumable supplies defined as:
  - Non-capital computer equipment.
  - Computer software.
  - Expenditures for supplies for the operation of the weatherization program such as desks, tables, chairs, electronic equipment, cabinets, and any supplies that are not consumed and do not meet capitalization policy.
- Warehouse costs (not included in material costs).
- Non-capital equipment (personal computers, insulation blowers, trailers, blower door machines, etc.)
- Purchase, lease or rental of tools/equipment/vehicles.
- Lodging, per diem, salary and travel costs associated with attending Department sponsored training. (DOE Training and Technical Assistance Plan)
- Delivery of materials.
- Payment of staff involved in purchasing, inventory and distribution of weatherization materials.
- Transportation costs of materials for NWE charge to Production Overhead. All other funding sources this should be charged to Program Operations.
- Transportation of crews, tools and equipment to and from weatherization sites (includes gas, maintenance and insurance of vehicles) for NWE charge to Production Overhead. All other funding sources this should be charged to Program Operations.

- Travel for Weatherization Crew/Contractor for NWE charge to Production Overhead. All other funding sources this should be charged to Program Operations.

3. Indirect Rates
   a. Local agencies may apply an approved indirect cost rate to charge administrative costs only if both of the following conditions are met:
      (1) The agency has an approved indirect cost agreement with a cognizant federal agency.
      (2) The application of indirect cost charges may not result in exceeding applicable contract budget limits.

Note:

1. Local agencies may gain approval of cost allocation plan.
2. Local agency files must include the following documentation:
   a. All applicable costs.
   b. Indirect cost agreement approval letter.

15100 Program Operations/Direct Costs

Definitions:

1. Program Operations Costs – activities clearly identified with a specific program or weatherization of a dwelling. Program Operations costs include material and labor costs associated with installing weatherization measures, making energy-related health and safety or weatherization-related repairs, and other costs directly related to the installation of weatherization measures
2. Material Costs - costs associated with energy conservation materials installed on an eligible dwelling. Only weatherization materials that meet or exceed the standards listed in Appendix A, 10 Code of Federal Regulations (CFR) 440 may be installed on an eligible dwelling. Materials used for insulation, windows, doors and infiltration must be included in and meet the cost-effectiveness calculations of the computerized energy audits. Material costs for minor repairs, heat systems, health and safety, miscellaneous measures and client education must be included in the respective sections of the computerized energy audits.

3. Installation Specific Costs - are all the non-material costs associated with energy conservation measures installed or services performed on an eligible dwelling. Installation costs must be used in the insulation, windows, doors and infiltration sections of the computerized energy audit and must meet and be included in the cost-effectiveness calculations. Installation costs for minor repairs, heat systems, health and safety, miscellaneous measures and client education must be included in the respective sections of the computerized energy audits.

4. Audit costs - averaged costs directly associated with the pre-inspection of a dwelling (including the time involved for the inspection of the dwelling (including the pre-blower door testing)), hourly rate for data input into the computerized energy audit, case documentation, printing work orders, etc., the time involved in the final inspection of the dwelling after the weatherization work is completed (including the post-blower door testing) and the finalization of the computerized energy audit. Audit costs are separate charges that must be charged to each computerized audit. The following spreadsheet can be completed to assist with tracking Audit costs.

   Note: Changes to the agencies' total audit cost requires Departmental approval prior to implementation.

   Note: Quality Control Inspection costs may be included in the audit costs. Quality Control Inspection Costs that exceed the audit costs are tracked separately under QCI Inspection.

Agency Name :	Date:	
Audit Activity	**Number of Hours**	**Total Costs Wages/Fringes/Materials**
Costs Directly Associated with Pre-Inspection		
Dwelling Assessment		
Pre and Post Blower Door Tests (Labor for testing)		
Computerized Energy Audit Data Entry and Analysis		
File Documentation and Job specific paperwork		
Final Inspection and Paperwork		
Finalization of the Computerized Energy Audit		
Other Audit Activities (Describe)		
Total Audit Costs		

Direct Cost Charged to Program Operations

A. Allowable material costs include:
1. Material costs charged by a subcontractor.
2. Purchase and delivery of materials. (See WAP Manual Section 16000, for procurement guidance for recycled insulation materials.)
3. Payment of staff involved in purchasing, inventory, and distribution of weatherization materials.
4. Travel for Crews/Contractor to and from job site.
5. On-site
6. Payment for labor involved in fabricating materials.
7. Purchase of supplies and equipment associated with installing energy measures on homes.
8. Purchase of materials provided to a household during the inspection of a dwelling or for client education purposes.

B. Allowable labor costs include:
1. Labor costs charged by a subcontractor.
2. Local agency weatherization crew costs (salary and all fringe benefits).
3. Installation costs.
4. Direct supervision of program services and other direct program management/oversight responsibilities.

C. Other Related Installation Costs
1. Testing for presence of lead or asbestos
2. Lead Safe Weatherization measures
3. Tools (drills, saws, hammer, IR camera, etc.
4. Building Permits to install materials

5. General supplies (glass cleaner, towels, etc. for weatherization installations.
6. Installation of in-kind materials (donated)
7. Any other costs directly associated with the installation of weatherization materials for a dwelling.

Dwelling Unit Cost Control Records:

1. Local agencies must keep records that track costs for each weatherized dwelling unit and provide information for all weatherization work performed on a unit according to the specific allowances of the different funding sources used separately and in combination with other funding sources.
2. The fiscal records for all dwelling unit expenditures must be traceable and costs charged to each funding source must have supporting documentation.
3. Specific Limits:

Note: When weatherization services are provided with Department of Energy (DOE), Oil Overcharge (EXXON and STRIPPER WELL) and Bonneville Power Administration (BPA) funding, the agency must adhere to the average cost per weatherized dwelling unit established by DOE. DOE adjusts that average limit annually. Average cost limits for other federal and/or utility weatherization projects are contained in the contract with the Department.

Weatherization-related Health and Safety Repairs

Energy-related health and safety expenditures may not exceed the average expenditure limits established for each contract fund source.

Health and Safety Repairs – DOE allows only 15% of all labor, material and on-site supervisory costs. NWE, MDU, and LIEAP will pay 100% for all health and safety repairs or measures. BPA will pay thirty percent (30%) of total dwelling weatherization costs.

Miscellaneous Measures

NWE will pay 100% for presumed cost effective measures of attic air sealing, low-flow shower heads, faucet aerators, duct and pipe wrap, compact fluorescent lamps, carbon monoxide detectors, energy audit costs, client education costs, water heater jackets, heating system safety and tune-up checks and health and safety related measures for primary account holders and 50% for secondary account holders.

Low-Cost/No-Cost Weatherization Activities- (LIEAP Only)

- Low-cost/no-cost services may be provided to an eligible household, only when other measures are not provided.
- Low-cost/no-cost measures, water-flow controllers, furnace or cooling filters, or items that are primarily directed toward reducing air infiltration (weather-stripping, caulking, and glass patching, etc.).
- The occupant or landlord is required to install the low cost/no cost measures.

- Do not count a unit that receives only low-cost/no-cost services as a completed unit on the Quarterly Status Report (DPHHS-EAP-9.1/9.2).
- Specific Limits and Exclusions
  (1) Low-cost/no-cost materials are limited to $75 per dwelling unit.
  (2) No funds may be used for labor costs to install low-cost/no-cost materials.
  (3) Low-cost/no-cost weatherization measures are excluded from the following requirements:
    (a) Re-weatherization dates.
    (b) Average cost per unit expenditure.

Liability Insurance

- Liability insurance is a program cost.
- Costs for liability insurance covering personal injury and property damage for on-site work may be charged to the liability insurance line item of the contract.

Note:

1. Local agencies must organize all bookkeeping and production records systems to account for the different cost allowances and budget categories of the various funding sources involved.
2. Local agencies must report program expenditures to the Department as required.

Chapter 16 WEATHERIZATION RELATED FISCAL RESPONSIBILITIES

16000 Compliance with Federal Rules for Use of Recycled Insulation Materials

1. The Department and local agencies must comply with Environmental Protection Agency (EPA) regulations regarding the use of recycled materials: 10 CFR 247.12, Comprehensive Procurement Guideline for Products Containing Recovered Materials (**www.epa.gov/**).
   a. Local agencies are required to make good faith efforts to procure insulation products that contain recycled materials.
   b. Exceptions to this policy may be made only if the following conditions can be documented:
      (1) Inability of the product to perform its intended purpose.
      (2) Unavailability of the product at a reasonable price.
      (3) Inability to obtain the product within a reasonable period of time.
      (4) Inadequate number of vendors for obtaining and verifying estimates of recovered materials content to insure a satisfactory level of competition at the time of procurement.
2. In addition to meeting procurement specifications, local agencies must establish an affirmative procurement program consisting of four items.
   a. Preference program for purchasing designated items.
      (1) EPA regulations provide three general approaches:
         (a) Minimum content standards that identify the minimum content of recovered materials that an insulation product must contain.
         (b) Case-by-case procurement, allowing competition between insulation products made of new materials and those with recovered materials.
         (c) An alternative approach that accomplishes the same objectives as (a) and (b).
      (2) EPA regulations recommend that the procuring agency use minimum content amount for commercially available insulation products that may contain recovered materials. These include:
         (a) Cellulose, loose fill, and spray-on (75 percent post-consumer recovered paper by weight).
         (b) Perlite composite board (23 percent post-consumer recovered paper by weight).
         (c) Rock wool (50 percent recovered materials).
   b. Promotion program.
   c. Procedures for obtaining estimates and certifications of recovered materials content and for verifying the estimates and certifications.
   d. Annual review and monitoring of the effectiveness of the program.

Note:

1. Local agencies must allow the Department access to all affirmative procurement program documentation upon request.
2. Local agency files must contain the following documentation:
   a. Procurement conditions that prohibit compliance with 10 CFR 247.12.
   b. Verification the agency is in compliance with EPA's affirmative procurement program.

16100 Training and Technical Assistance

1. Expenditure of contract funds awarded specifically for training and technical assistance (T&TA) purposes are subject to the following conditions:
   a. Agency must submit a T&TA Workplan and Budget to the Department for written approval prior to any expenditure being made to the Department of Energy (DOE) contract T&TA line item.
   b. Training must have direct application and benefit to local agency weatherization programs and assigned staff.

      If the training is not strictly for the benefit of the weatherization program staff, local agencies must document how other programs will share the training costs.
   c. Priority is to be given to direct training opportunities for staff, crews, and subcontractors.
   d. Equipment and materials related to training may also be purchased with these funds.
   e. Salaries may not be paid with T&TA funds unless to cover time spent attending or providing training that is directly related to weatherization program job duties, requirements and support.
   f. T&TA funds may not be used to purchase vehicles or equipment for local agencies to perform weatherization services. Cost to purchase vehicles or equipment to support the program must be charged to the specified program costs budget category.
   g. Local agencies must keep T&TA expense documentation on file for review.
2. The Department may occasionally reimburse local agency costs for providing, training travel to receive training and technical assistance through the Peer Exchange Program or special projects.
   a. Prior Department approval is required for this reimbursement.
   b. Local agencies must submit a form designated by the Department.

Note: Local agency files must include the following documentation:
Cost-sharing plan if training is not strictly for the benefit of weatherization program staff.

16200 Vehicles and Equipment

1. Vehicle Purchases:
   a. All purchases of vehicles with values exceeding $5,000 require Department written approval.
      (1) Local agencies must submit a request for the purchase of vehicles over $5,000 to the Department.
      (2) The Department will review each request for approval and provide the agency with a written decision.
   b. Requests for vehicles purchased with Department of Energy (DOE) funding require prior written DOE approval. Allow ninety (90) days for DOE review.
      (1) Vehicles should be acquired with grant funds from DOE only after all other options or funding sources have been explored.
      (2) Lease vs. purchase should be evaluated carefully.
      (3) New vs. used vehicle purchases should be evaluated carefully.
   c. In some instances, purchases made with more than one fund source may be the only way to acquire needed equipment. If the equipment to be purchased for use in the local agency's weatherization program will also be used by other local agency programs, there should be a proportionate share in the purchase cost.
   d. Equipment Allowance
      (1) For the purposes of determining the average cost per dwelling limitation, costs for the purchase of vehicles or other certain types of equipment as defined in 10 CFR part 600 may be amortized over the useful life of the vehicle or equipment.
      (2) If, at the time of purchase, there are no plans to share equipment with a non-weatherization program, but it is deemed desirable in the future, then a rental fee based on proportionate use of the equipment must be applied.

<u>Note:</u> Local agency files must include the following documentation:
   a. Competitive bid documentation for the purchase of equipment.
   b. DOE approval for vehicles purchased with DOE or Oil Overcharge (EXXON and STRIPPER WELL) funds.
   c. Certificates of Title for motor vehicles.

16400 Financial Audits

1. All program funds made available to local agencies will be audited annually in accordance with the following:
    a. Generally accepted accounting principles.
    b. Governmental Auditing Standards ("The Yellow Book") issued by the General Accounting Office (GAO).
    c. The Office of Management and Budget (OMB) Compliance Supplement for Single Audits of State and Local Governments.
    d. OMB Uniform Guidance.
    e. Department of Energy (DOE) 10 CFR 600, Financial Assistance Rules.
    f. All state and federal laws and regulations governing the programs in which local agencies participate.
2. Costs of audits will be incorporated into Department contracts, charged to the local agency's Financial Audit category of expenditure.
3. Local agency auditing will be conducted by a single independent Certified Public Accountant (CPA) firm selected by the local agency.
4. All auditors employed must provide positive assurance to local agencies that they meet independent CPA provisions defined in the Yellow Book, including annual training.

Note: Local agencies must provide the Department with a copy of all audit reports and audit-finding action plans.

Chapter 17 PROCUREMENT

17000 Procurement

Procurement is the methodology used by an agency to obtain goods and services from vendors or contractors.

The standards for procurement are outlined in the Office of Management and Budget (OMB) Uniform Guidance and 10 Code of Federal Regulation (CFR) 600. These standards are furnished to ensure materials and services are obtained in an effective manner and in compliance with applicable federal statutes and executive orders.

All procurement activities shall be conducted in a manner to provide, to the maximum extent practical, open and free competition. It is up to each agency to determine how the standards will be implemented.

Agencies must:

Establish written procurement procedures to provide, at a minimum, that:

- Agencies avoid purchasing unnecessary item.
- Where appropriate, a lease versus purchase analysis is made to determine the most economical and practical procurement.
- Solicit bids that provide for:
  - A clear and accurate description of the technical requirements for the material, product or service to be procured. This description must include the functions to be performed or the performance required, including a range of acceptable characteristics or minimum acceptable standards.
  - Requirements which the bidder must fulfill and all other factors to be used in evaluating proposals.
  - The specific feature of brand name or equal descriptions that bidders are required to meet when such items are included in the solicitation.
  - The acceptance, to the extent practicable and economically feasible, of products, of products and services dimensioned in the metric system of measurement.
  - Preference, to the extent practicable and economically feasible, for products and services that conserve natural resources, protect the environment and are energy efficient.
  - Positive efforts, whenever possible, to utilize small businesses, minority owned firms and women's business enterprises.
- The type of procuring instrument used (e.g. fixed price contract, cost reimbursable contract, purchase orders and incentive contract) shall be determined by the agency but shall be appropriate for the particular procurement and for promoting the best interest of the program and project involved. "Cost plus a percentage of cost" methods of contracting shall not be used.

- Contracts shall be made only with those subcontractors who possess the potential ability to perform successfully under the terms and conditions of the procurement. Consideration shall be given to such matters as contractor integrity, record of past performance, financial and technical resources. Contracts may not be made with those persons listed as "debarred or suspended".
- Agencies shall make available for review any Request For Proposal (RFP) or procurement document when any of the following apply:
  - Procedures fail to comply with the standards found in OMB Uniform Guidance or 10 CFR 600.
  - The procurement is expected to exceed the small purchase threshold and is to be awarded without competition or only one bid or offer is received in response to a solicitation.
  - The procurement which is expected to exceed the small purchase threshold specifies a brand name product.
  - The proposed award which is greater than the small purchase threshold is to be awarded to other than the lowest bidder under a 'sealed bid" procurement.
  - A proposed contract modification changes the scope of a contract or increases the contract amount by more than the amount of the small purchase threshold.
- Large purchases are those made in an amount that is greater than the small purchase threshold found in OMB Uniform Guidance.
- There are two ways for an agency to procure – Sealed Bids and Requests for Proposals (RFP). RFP's are also known as "Competitive Bids or Proposals".

1. <u>Sealed Bids:</u>
   - A preferred method of procurement for construction type projects.
   - Requests for sealed bids are advertised publicly.
   - Bids call for a firm, fixed price contract, lump sum or unit price.
   - Awarded to the responsible bidder whose bid is lowest in price.
   - Bids must be publicly opened at a prescribed time and place.
   - Any and all bids may be rejected for a sound reason.

2. <u>Request For Proposal (RFP) or Competitive Bid/Proposal:</u>
   - Generally used when sealed bids are not appropriate, such as when qualitative factors must be considered and scored for professional services.
   - Prices and "other factors" are considered.
   - Requests must be publicized and must identify all evaluation factors and their relative importance.
   - Agencies must have a method for conducting technical evaluations.
   - Awards are made to the respondent whose proposal is most advantages to the program with price and other factors considered.

- Noncompetitive proposals are those where only one bid is received or only one source is solicited.

Noncompetitive proposals may only be used when it is not feasible under small purchase procedures, sealed bids or competitive proposals and one of the following applies:

- Material or service is only available from a single source.
- Emergency exists.
- Awarding agency authorizes noncompetitive proposal.

➢ Bid package:

The agency's contract or purchasing officer shall prepare a bid package which includes:

- Cover sheet.
- Statement of work specifications or materials to be purchased.
- Minimum requirements.
- Evaluation criteria.
- Work quality standards.
- Proposal format.
- Sample contract.
- Date of bidder's conference, if applicable.
- Right of the agency to accept or reject all bids.
- Period of contract.
- Affirmative action statement.

The agency shall make awards only to responsible contractors possessing the ability to perform successfully under the terms and conditions of proper procurement. Consideration must be given to contractor integrity, compliance with public policy, record of past performance and financial and technical resources.

Minimum requirements cannot be unreasonable or excessive.

<u>Solicitation of sealed bids and Requests for Proposals (RFP):</u>

The establishment of a standard method of advertising procurement activities assures maximum open and free competition. The agency must:

- ➢ Prepare the advertisement newspapers.
- ➢ Prepare a notice to be posted.
- ➢ Submit the advertisement to the newspapers and post the announcement.
- ➢ Secure documentation of the advertisement from the newspapers.
- ➢ Notify all individuals on the agency's bidder's list of the solicitation, if applicable.
- ➢ Record the names of the individuals, firms or businesses requesting bid packages, the date the request was received and the date the bid package was sent.
- ➢ Prepare technical information for bidder's conference.
- ➢ Facilitate bidder's conference.

- Document attendance at bidder's conference and record minutes.

No information about the solicitation will be provided to anyone until the bidder's conference. If the agency does not conduct a bidder's conference, any information provided to prospective bidders must be forwarded and maintained by the agency's Contracts Officer.

Receipt of bids or proposals:

The agency must establish procedures which will be followed to assure equal treatment to all prospective bidders.

- All sealed bids or requests for proposals will be logged into a bid/proposal control sheet.
- When the bid or proposal is received by the agency the bid or proposal will be date stamped and the time of receipt will be documented by the person receiving the bid or proposal.
- The received bids or proposals will be maintained in a secured location until time of opening.
- Return all bids or proposals received or submitted after the closing date. The late bids must be returned unopened with a letter of explanation for the reason of the return.

Evaluation of bids or proposals and contract award:

The agency must evaluate the bids or proposals submitted, select a contractor and award the contract. The agency must assure that the agency's Personnel Policies and Procedures manual provides standards of conduct for employees, officers or agents to avoid conflicts of interest or the appearance of conflicts of interest. The agency will:

- Conduct the bid opening (public or private).
- For public bid openings, the bid amounts will be announced at the opening. The contract is not awarded at a public bid opening.
- Schedule a meeting of the evaluation panel.
- Evaluate bids or proposals for compliance with all requirements.
- Evaluate responsive bids or proposals based on cost criteria established in the bid package. A responsive bid meets all requirements identified in the bid package.
- Prepare a written summary of points and costs for all responsive bidders or proposers.
- Submit the name, bid amount and the justification for the selection of the successful bid or proposal for the contract award to the agency's Contracts Officer.
- Notify the selected contractor and secure:

    1. Certificate of insurance, if applicable.
    2. Copy of required licenses or permits as applicable.
    3. Certification regarding suspension or disbarment.

- Verify insurance coverage for successful bidder or proposer meets requirements.
- Secure a fully executed contract with successful bidder or proposer.

- Provide written notification to unsuccessful bidders.
- After the contract award, unsuccessful bidders or proposers may be informed of the points received and the dollar amounts of the successful bidder.

Protest procedures:

The agency must provide specific actions to be taken should a protest be filed by an unsuccessful bidder or proposer.

- The protester must file a written complaint using the agency's specific format within ten (10) working days after the notice of rejection is mailed. The protest must contain the following:

  1. Notice of protest and the specific reasons for filing.
  2. Statement stating the letter is a protest.
  3. Detailed statement of the grounds for the protest.
  4. A specific request for a ruling by the agency's protest committee and a statement of the relief requested.

- The agency must notify the successful contractor that a complaint of protest has been filed.
- The agency must schedule a meeting of the agency's protest committee to review the complaint. The meeting must be held within ten (10) working days of the filing of the protest and the minutes of the meeting must be recorded. The individuals who sit on the protest committee must be identified in writing prior to the commencement of all procurement activities. The agency's Contracts Officer should not be involved in the protest procedures other than to provide technical support.
- The protest committee must issue a decision within five (5) working days from the date of the meeting.
- The agency must notify the protester of the decision of the protest committee.

Chapter 18 HISTORIC PRESERVATION

18000 Historic Preservation and Weatherization:

Historic Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property.

Properties greater than 50 years old are to be considered for Historic Preservation.

Prior to the expenditure of federal funds to alter any structure or site, the Agency is required to comply with Section 106 of the National Historic Preservation Act (NPA). Section 106 applies to historic properties or sites that are listed on or eligible for listing on the National Register of Historic Places.

In order to fulfill the requirements of Section 106, the Agency must contact the State Historic Preservation Officer (SHPO) to coordinate the Section 106 review as set forth in 36 C.F.R. Part 800.

SHPO contact information is available at the following link: http://mhs.mt.gov/Shpo/Staff.aspx.

18100 Exemptions from Section 106 Review:

The Programmatic Agreement between the Department of Energy (DOE); the Montana Department of Public Health and Human Services (DPHHS) and the Montana State Historical Preservation Office (SHPO) is effective from July 29, 2010 through December 31, 2020. This agreement provides the following:

Recipient will maintain file records with verification that undertakings were determined to be exemptions for a period of three (3) years from project completion and make them available for review if requested by DOE or the ACHP.

If a property has been determined to be ineligible for inclusion in the National Register within the last five (5) years from the date the Recipient made its application for DOE financial assistance, then no further review is required.

If the agency needs to submit a review of proposed undertaking to the SHPO for review, it should submit the requisite form to SHPO.

The Agency **shall not submit** to the SHPO undertakings in accordance with Appendices A or B of this agreement as they do not have the potential to cause effects on historic properties even when historic properties may be present.

18200 Historic Preservation Appendix A

All undertakings will be done in accordance with applicable local building codes or the International Building Code, where applicable. In accordance with 36 CFR 800.3(a)(l), the following undertakings have been determined to have no potential to cause effects on historic properties:

Exterior Work

1. Air sealing of the building shell, including caulking, weather-stripping, and other air infiltration control measures on windows and doors, and installing thresholds in a manner that does not harm or obscure historic windows or trim.

2. Thermal insulation, such as non-toxic fiberglass and foil wrapped, in walls, floors, ceilings, attics, and foundations in a manner that does not harm or damage historic fabric.

3. Blown in wall insulation where no holes are drilled through exterior siding, or where holes have no permanent visible alteration to the structure.

4. Removable film on windows (if the film is transparent), solar screens, or window louvers, in a manner that does not harm or obscure historic windows or trim.

5. Reflective roof coating in a manner that closely resembles the historic materials and form, or with materials that restore the original feature based on historic evidence, and in a manner that does not alter the roofline, or where not on a primary roof elevation or visible from the public right-of-way.

6. Storm windows or doors, and wood screen doors in a manner that does not harm or obscure historic windows or trim.

7. In-kind replacement or repair of primary windows, doors and door frames that closely resemble existing substrate and framing.

8. Repair of minor roof and wall leaks prior to insulating attics or walls, provided repairs closely resemble existing surface composite.

Interior Work

Special Note: Undertakings to interior spaces where the work will not be visible from the public right of way; no structural alterations are made; no demolition of walls, ceilings or floors occurs; no drop ceilings are added; or no walls are leveled with furring or moved, should be automatically excluded from SHPO review. This work includes:

1. Energy efficiency work within the building shell:

a. Thermal insulation in walls, floors, ceilings, attics, crawl spaces, ducts and foundations.
b. Blown in wall insulation where no decorative plaster is damaged.
c. Plumbing work, including installation of water heaters.
d. Electrical work, including improving lamp efficiency.
e. Sealing air leaks using weather stripping, door sweeps, and caulk and sealing major air leaks associated with bypasses, ducts, air conditioning units, etc.
f. Repair or replacement of water heaters.
g. Adding adjustable speed drives such as fans on air handling units~ cooling tower fans, and pumps.
h. Install insulation on water heater tanks and water heating pipes
   - The Standard Work Specifications require 6ft of pipe wrap on hot and cold water lines.
   - NWE requires 10ft of pipe wrap on hot and cold water lines.

a. Install solar water heating systems, provided the structure is not visible from the public right of way.
b. Install waste heat recovery devices, including desuperheater water heaters, condensing heat exchangers, heat pump and water heating heat recovery systems, and other energy recovery equipment.
c. Repair or replace electric motors and motor controls like variable speed drives.
d. Incorporate other lighting technologies such as dimmable ballasts, day lighting controls, and occupant controlled dimming.

<u>Work on heating and cooling systems:</u>

a. Clean, tune, repair or replace heating systems, including furnaces, boilers, heat pumps, vented space heaters, and wood stoves.
b. Clean, tune repair or replace cooling systems, including central air conditioners, window air conditioners, heat pumps, and evaporative coolers.
c. Install insulation on ducts and heating pipes.
   - The Standard Work Specifications require 6ft of pipe wrap on hot and cold water lines.
   - NWE requires 10ft of pipe wrap on hot and cold water lines.

d. Conduct other efficiency improvements on heating and cooling systems, including replacing standing pilot lights with electronic ignition devices and installing vent dampers.
e. Modify duct and pipe systems so heating and cooling systems operate efficiently and effectively, including adding return ducts, replace diffusers and registers, replace air filters, install thermostatic radiator controls on steam and hot water heating systems.
f. Install programmable thermostats, outdoor reset controls, UL listed energy management systems or building automation systems and other HVAC control systems.

g. When replacing existing thermostats, identify and dispose of any mercury containing thermostats in accordance with Environmental Protection Agency (EPA) guidance
    - Paraphrased from 40 CFR 273.14: A universal waste mercury-containing thermostat or container containing only universal waste mercury-containing thermostats should be labeled or marked clearly with any of the following phrases: "Universal Waste-Mercury Thermostat(s)," "Waste Mercury Thermostat(s)," or "Used Mercury Thermostat(s).

Energy efficiency work affecting the electric base load of the property:

a. Convert incandescent lighting to compact fluorescent lamp (CFL) or light emitting diodes (LED).
b. Add reflectors, LED exit signs, efficient HID fixtures, and occupancy (motion) sensors.
c. Replace appliances using BPA funding only.

Health and safety measures:

a. Installing fire, smoke or Carbon Monoxide alarms
b. Repair or replace vent systems on fossil-fuel-fired heating systems and water heaters to ensure that combustion gases draft safely to outside.
c. Install mechanical ventilation, in a manner not visible from the public right of way, to ensure adequate indoor air quality if house is air-sealed to dwelling unit tightness limit.

18300 Historic Preservation Appendix B

In addition to the undertakings provided in Exhibit A; (WAP Undertakings exempt from Section 106 Review), DOE and the SHPO have concluded that the following undertakings do not have the potential to cause effects on historic properties per 36 CFR § 800.3(a)(1):

Category 1 - No Consultation Required

1. General efficiency measures not affecting the exterior of the building:
   a. Energy audits and feasibility studies.
   b. Weatherization of mobile homes and trailers.
   c. Caulking and weather-stripping around doors and windows in a manner that does not harm or obscure historic windows or trim.
   d. Water conservation measures — like low flow faucets, toilets, shower heads, urinals — and distribution device controls.
   e. Repairing or replacing in kind existing driveways, parking areas, and walkways with materials of similar appearance.
   f. Excavating to gain access to existing underground utilities to repair or replace them, provided that the work is performed consistent with previous conditions.
   g. Ventilating crawl spaces.
   h. Replacement of existing HVAC equipment including pumps, motors, boilers, chillers, cooling towers, air handling units, package units, condensers, compressors, heat exchangers that do not require a change to existing ducting, plumbing, electrical, controls or a new location, or if ducting, plumbing, electrical and controls are on the rear of the structure or not visible from any public right of way.
   i. Adding or replacing existing building controls systems including HVAC control systems and the replacement of building-wide pneumatic controls with digital controls, thermostats, dampers, and other individual sensors like smoke detectors and Carbon Monoxide alarms (wired or battery operated).
      - When replacing existing thermostats, identify and dispose of any mercury containing thermostats in accordance with Environmental Protection Agency (EPA) guidance.
   j. New installation of non-hard wired devices including photo-controls, occupancy sensors, Carbon Monoxide alarms, thermostats, humidity, light meters and other building control sensors, provided the work conforms to applicable state and local permitting requirements.
   k. Adding variable speed drive motors.
   l. Insulation of water heater tanks and pipes.
      - The Standard Work Specifications require 6ft of pipe wrap on hot and cold water lines.
      - NWE requires 10ft of pipe wrap on hot and cold water lines.
   m. Furnace or hot water tank replacement that does not require a visible new supply or venting.

Insulation measures not affecting the exterior of the building:

a. Thermal insulation installation in walls, floors and ceilings (excluding spray foam insulation).
b. Duct sealing, insulation, repair or replacement in unoccupied areas.
c. Attic insulation with proper ventilation; if under an effective R8 - add additional R-19 up to R-38 (fiberglass bat only).
d. Band joist insulation R-l to R19 as applicable.
e. Water heater tank and pipe insulation.

Electric base load measures not affecting the exterior of the building:

a. Appliance replacement (upgrade to Energy Star appliances) using BPA funding.
b. Compact fluorescent light bulbs.
c. Energy efficient light fixtures, including ballasts (Replacement).
d. LED light fixtures and exit signs (Replacement).
e. Upgrade exterior lighting (replacement with metal halide bulbs, LEDs, or others) along with ballasts, sensors and energy storage devices not visible from any public right of way.

Chapter 19 Program Violation Referrals

19000 Program Violations/Sanctions

Program Violations – For the purpose of the Low Income Weatherization Assistance Program, a program violation is the act of obtaining assistance to which one is not entitled, by means of willfully submitting false statements or withholding information pertinent to:

- The determination of a recipient's eligibility for assistance; or
- Benefit

WILLFUL WITHHOLDING OF INFORMATION – Includes but is not limited to:

- Willful misstatements (either oral or written) made in response to oral or written questions from the sub-grantee.
- Willful failure by the recipient to report changes in status each year, at time of application or subsequent transfer to other sub-grantee jurisdictions.
- Willful failure by the recipient to report changes in status affecting the benefit award, such as family number, housing size and type, fuel type, etc.
- Willful failure by the recipient to report receipt of a benefit or payment on his/her behalf which he/she knows or should know represents an erroneous benefit award or overpayment.
- Willful transfer of property for the purpose of qualifying for assistance.

19100 Program Violation

SUB-GRANTEE – If an individual appears to have committed a program violation under the Low Income Weatherization Assistance Program, the sub-grantee must report in writing all facts pertaining to the alleged program violation to the Department. The Department may refer the matter to the Department of Public Health and Human Services Quality Assurance Division Program Compliance Bureau.

INTERESTED PARTY – Any interested party may report any individual appearing to have committed a program violation under the Low Income Weatherization Assistance Program to the sub-grantee, or the Department. This referral should be done in writing. The information shall include the name of the recipient, the county in which he/she resides, and the type of assistance that he/she is receiving.

AMOUNT OF A PROGRAM VIOLATION UNDER $10.00 – When the net amount of the alleged program violation is under $10.00 no recoupment will be attempted.

REPORTING SUSPECTED PROGRAM VIOLATION –

1. The 'LIEAP/Weatherization Investigative Referral' form is completed by the Sub-Grantee with a brief explanation of events causing the referral to be made.
    a. The sub-grantee must report, in writing, all facts pertaining to the alleged program violation to the Department.

Note: When the net amount of alleged program violation is under $10.00 no recoupment will be attempted.

2. The IHSB Field Monitor will evaluate and determine if a referral is appropriate.
    a. If not, report back to the agency
    b. If so, the case will be referred to DPHHS Quality Assurance Division Program Compliance Bureau.

3. DPHHS Quality Assurance Division Program Compliance Bureau will review the case.
    a. If additional Information is needed the Program Compliance Bureau will contact the agency directly.
    b. Once investigation is complete findings will be reported to IHSB with one of the following recommendations:
        i. Drop
        ii. Pursue

4. The Field Monitor will review the investigative results and proceed as necessary.
    a. Dropped cases will be reported to the agency.
        i. Document on the Investigation Spreadsheet
    b. Overpayments will be calculated.
        i. Overpayment Letter will be sent with the Fair Hearing language as provided in ARM 37.70.106
        ii. Repayment Agreement will be sent.
        iii. Overpayment box needs to be checked in CDS LIEAP Case

5. The completed LIEAP/Weatherization Investigative Referral form should be kept in the case file for future reference.

6. Overpayments will be recouped in one of the following ways:
    a. Lump Sum Payment in Full
    b. Installment Payments
    c. Reduction of future LIEAP benefits to repay entire unpaid balance.

Note: If there is no response to the repayment request, the household's tax refund may be offset to pay back the Weatherization measures received.

19200 Program Violation Investigations

UNIT'S OBJECTIVES – The department's major objectives are:

- To investigate all referrals of program violation for the Weatherization Assistance Program;
- To refer the matter to the department of justice or the county attorney of the county in which the person resides for further action;

INVESTIGATOR'S CHECKLIST – The following items are presented here to show the kind of contact an investigator from the Quality Assurance Division, Program Compliance Bureau will have with the staff of the sub-grantee. These are some, but not all, of the Investigator's work steps.

- Discuss the case record with the sub-grantee staff who handled the case.
- Obtain any and all documentation that will help in the prosecution of the case, including those items that are not part of the case record. (e.g. payment checks issued by the Department, checks on behalf of the recipient issued by the Department, business office ledger cards or printouts, payroll and personnel information, court records, insurance policies, rent receipts, etc.)
- Review the case record and other evidence with the prosecuting attorney.
- Interview all witnesses as to the facts alleged in the program violation complaint.

APPENDICES

APPENDIX A – Lead Safe Requirements/Minimum Standards

Quick Guide - LSW Minimum Standards Compared to EPA RRP Rule Requirements*

Lead-Safe Requirement/Minimum Standard	Lead-Safe Weatherization Projects	EPA Renovation, Repair and Paint Rule - RRP
Rules/Guidance	WPN, 08-6, WPN 09-6, WPN 11-6	RRP (40 CFR Part 745) 4/22/2008 + 10/5/11 revisions
1. Training**	LSW Benchmark Curriculum Training for all. RRP Certified Renovator Training – 8/4 hours.	RRP Certified Renovator Training – 8 hrs + skill sets. Non-certified workers must be trained job by CR.
2. Certified Renovators on Job**	Applies to Wx	Applies to all Renovations (including Wx)
3. Certified Firm	Applies to agencies having Certified Renovators.	Applies to companies w/ Certified Renovators
4. Pre-1978 Target Housing	All Pre-1978 homes being weatherized	Pre-1978 Target-Housing/Child-Occupied Facilities
5. Lead-Testing	Assume presence of lead or CR may test with EPA Recognized Test Kits (Lead Check swabs or D-Lead). Paint chip testing allowable using NLLAP lab. XRF by Certified Risk Assessor or Inspector.	Assume presence of lead or CR may test with EPA Recognized Test Kits (Lead Check swabs or D-Lead). Paint chip testing allowable using NLLAP lab. XRF by Certified Risk Assessor or Inspector.
6. Client Education – Using EPA Renovate Right publication**	RRP Pre-Renovation Education notification no greater than 60 days prior to work/at least 7 days w/certified mail. Form in file – 3 years	RRP Pre-Renovation Education notification no greater than 60 days prior to work/at least 7 days w/certified mail. Form in file – 3 years.
7. De Minims areas**	LSW applies to ALL Wx Projects having painted surfaces - including mobile homes.	Rule does not apply if job does not disturb more than 6 ft2/room interior or 20 ft2 exterior, unless demolition and replacing windows
8. Client Opt-Out	Does not apply	Does not apply
9. Access Restrictions	Signs and barriers to restrict access, if possible 5 ft. from the interior work space and 20 ft. exterior work space.	Signs and barriers to restrict access from interior work space and 20 ft. exterior work space.
10. Containment**	Level 1 Containment – if less than 6 ft2/rm interior or 20 ft2 exterior. Level 2 Containment – if more than 6 ft2/rm interior or 20 ft2 exterior or power tools are used without HEPA attached shrouds.	Containment – if more than 6 ft2/room interior or 20 ft2 exterior

*States, Tribes, Municipalities and organizations may require more stringent requirements. **HUD work does have more stringent lead control requirements. This information is for reference only and is NOT a substitute for training. For full disclosure of LSW minimum standards and RRP Rule requirements, training is required.
Compiled by the Montana Weatherization Training Center – revised November 30, 2011

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Lead-Safe Requirement/Minimum Standard	Lead-Safe Weatherization Projects	EPA Renovation, Repair and Paint Rule – RRP
11. Prohibited Tools/Practices **	Open-flame burning/torching, heat gun above 1100°F. Power sanding, power grinding, power planing, needle gun, abrasive blasting with HEPA vacuum attached shrouds.	Open-flame burning/torching, heat gun above 1100°F. Power sanding, power grinding, power planing, needle gun, abrasive blasting with HEPA vacuum attached shrouds.
12. Shrouded Tools	Recommended to reduce containment and aid in clean-up. Required on prohibited tools/practices.	Required on prohibited tools/practices.
13. Personal Protection Clothing	Compliance with OSHA. Minimum - Hazardous Communications, Respirator Protection (fit-tested ½ face or disposable HEPA/purple/100 respirator), disposable head covering and disposable coveralls. Additional required depending on job hazards.	Compliance with OSHA. Minimum - Respirator Protection (disposable HEPA/purple/100 respirator), disposable painter's hat and disposable coveralls. Additional required depending on job hazards.
14. Post work, pre-tear down clean-up	1. Pick and bag all debris. From top to bottom HEPA vac and wash/wet-wipe/mist all containment, permanent work surfaces, tools and PPE before removing tools, debris and tearing down containment. 2. wash/wet wipe permanent surfaces. 3. mist containment plastic, fold dirty side in & bag	1. Pick and bag all debris. From top to bottom HEPA vac and wash/wet-wipe/mist all containment, permanent work surfaces, tools and PPE before removing tools, debris and tearing down containment. 2. wash/wet wipe permanent surfaces. 3. mist containment plastic, fold dirty side in & bag
15. Visual Inspection	Certified Renovator to conduct visual inspection following clean-up using "flashlight visual". Re-clean if debris/dust particles found.	Certified Renovator to conduct visual inspection following clean-up using "flashlight visual". Re-clean if debris/dust particles found.
16. Cleaning Verification (CV)	Certified Renovator to conduct cleaning verification using EPA CV card. Re-clean if needed.	Certified Renovator to conduct cleaning verification using EPA CV card. Re-clean if needed.
17. Dust Clearance Examination**	Cost is not allowable Wx expenditure	Permitted using Lead Inspector, Risk Assessor or "Dust Sampling Technician".
18. Solid Waste Disposal	Secure off-site. Dispose as household waste.	Secure off-site. Dispose as household waste.
19. Water Waste Disposal	Collect all waste water, filter and dispose in toilet.	Collect all waste water, filter and dispose in toilet.
20. Recordkeeping**	All forms/documentation related to job keep 3 yrs.	All forms/documentation related to job keep 3 yrs.
21. On-site Forms	Pre-renovation forms and training verification forms must be keep on site.	Pre-renovation forms and training verification forms must be keep on site.
REFERENCE	WxTV Episode – "12 Steps …" www.wxtvonline.org	www.epa.gov/lead

APPENDIX B - Client Education

Client Education

Do any household members have pre-existing or potential health conditions to take into consideration for weatherization of the residence*? ☐No ☐Yes

_____

Please contact the agency with any potential health condition issues.
Name: _____ Phone: _____ Phone: _____

If applicable, provide the occupant with information of any known risks:
☐ _____ ☐☐_____

Air Conditioning and Heating Systems*:
- ☐ Discuss and provide information on appropriate use and maintenance of units

Appliances and Water Heaters*:
- ☐ Discuss and provide information on appropriate use, maintenance, and disposal of appliances/water heaters

Asbestos:
- ☐ Assumption of presence of asbestos containing materials – Notice of Dangerous Conditions form required (DPHHS-EAP-023)
- ☐ Test results are positive for asbestos containing materials – Notice of Dangerous Conditions form required (DPHHS-EAP-023)
- ☐ Provide "EPA Fact Sheet, Protect Your Family from Asbestos-Contaminated Vermiculite Insulation" (EPA #550R09004)

Biological and Unsanitary Conditions:
- ☐ Discuss observed conditions and provide information on how to maintain a sanitary home

Building Structure and Roofing:
- ☐ Discuss observed conditions

Code Compliance:
- ☐ Discuss observed issues

Combustion Gases:
- ☐ Discuss combustion safety and hazards, including exhaust ventilation when cooking and keeping burners clean
- ☐ Provide "Preventing Carbon Monoxide Poisoning" (EPA #100R09009)

Drainage*:
- ☐ Discuss cleaning and maintaining drainage systems – gutters, down spouts, extensions, flashing, sump pumps, etc.
- ☐ Provide "Landscape Windbreaks" (DOE http://www.energysavers.gov/your_home/landscaping/index.cfm/mytopic=11950?print)

Electrical, other than Knob-and-Tube Wiring*:
- ☐ Discuss overloading circuits, electrical hazards (Aluminum wiring)

Electrical, Knob-and-Tube Wiring:
- ☐ Discuss over-current protection, overloading circuits, electrical hazards

Fire Hazards:
- ☐ Discuss observed fire hazards

Formaldehyde, VOCs, and other Air Pollutants*:
- ☐ Discuss observed conditions and associated risks
- ☐ Provide "Care for Your Air: A Guide to Indoor Air Quality" (EPA #402F08008)
- ☐ Pollutants pose a risk to workers and removal cannot be performed or is not allowed. Weatherization deferred - Agency Health and Safety and Work Agreement form required (DPHHS-EAP-020)

Injury Prevention of Occupants and Weatherization Workers:

- ☐ Discuss observed conditions

Lead Based Paint:

- ☐ Discuss conditions and follow Lead Safe Weatherization requirements
- ☐ Discuss conditions and follow EPA's Lead; Renovation, Repair and Painting Program (RRP) requirements

Mold and Moisture*:

- ☐ Provide "Montana Mold Assessment and Release Form" (DPHHS-EAP-032)

Pests:

- ☐ Discuss observed conditions and associated risks

Radon*:

- ☐ Provide "A Citizen's Guide to Radon" (EPA#402K09001)

Refrigerant:

- ☐ Inform occupant not to disturb refrigerant

Smoke/Carbon Monoxide Detectors and Fire Extinguishers:

- ☐ Discuss use of detectors and extinguisher
- ☐ Leave the manufacturer's written information on the use of smoke/CO detectors and fire extinguishers

Solid Fuel Heating:

- ☐ Discuss safety and how to recognize depressurization
- ☐ Provide "Combustion Appliance Backdrafting" (EPA http://www.epa.gov/iaq/homes/hip-backdrafting.html)

Space Heaters - Stand Alone Electric:

- ☐ Discuss safety hazards
- ☐ Removal is not allowed – signed waiver required

I am aware stand-alone electric space heaters present safety risks and will not allow the heater(s) to be removed from the dwelling.

_____ _____ _____

Occupant Name ***Signature*** ***Date***

Space Heaters – Unvented Combustion:

- ☐ Discuss safety hazards, including CO, moisture, and NO2
- ☐ Provide "Preventing Problems with Combustion Equipment" (EPA http://www.epa.gov/iaq/homes/hip-combustion.html)

Spray Polyurethane:

- ☐ Discuss plans to use two-part foam and the precautions that may be necessary
- ☐ Provide "Vacate and Safe Re-Entry Time" (EPA http://www.epa.gov/dfe/pubs/projects/spf/when_is_it_safe_to_re-enter_after_spf_installation.html)
- ☐ Provide other materials that may be necessary

Ventilation (Most Current ASHRAE 62.2)*:

- ☐ Provide written information on function, use, and maintenance of the ventilation system and components
- ☐ Explained to client that ASHRAE standards are a mandatory program requirement that cannot be refused.

Disclaimer: AHSRAE 62.2 does not account for high polluting sources or guarantee indoor air quality.

Other Identified Hazards:

- ☐ _____ ☐ _____ ☐ _____

Relevant issues above have been discussed, and I have received materials as documented. I agree to hold the agency performing weatherization work harmless from future problems associated with pre-existing conditions in the home.

_____ _____ _____

Occupant Name ***Signature*** ***Date***

APPENDIX C – Combustion Appliance Classification

	Negative Pressure in Flue	Positive Pressure in Flue
Non-condensing	**Category I** 83% efficient or less Very common appliances Standard venting: single wall, B-vent, masonry	**Category III** 83% efficient or less Uncommon appliances Specialized venting: Z-vent or manufacturer specific
Condensing	**Category II** Over 83% efficiency Very uncommon, no longer commercially available	**Category IV** Over 83% efficient (usually 90% or above) Low temperature venting: PVC – must be air tight