

# **Connecticut Weatherization Assistance Program**

## **Operations Manual**

Revised: May 2, 2022

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**Section 100**  
**Administration**

## **100. Introduction**

The Connecticut Weatherization Assistance Program Operations Manual (the CT WAP Operations Manual) provides a comprehensive and dynamic resource to guide state and local agency staff in delivering weatherization services with funds allotted by the U.S. Department of Energy (DOE) consistently and effectively for low-income households throughout Connecticut.

The Manual is a reference book where daily operational program matters can be found as needed. It is arranged and numbered to be easily updated whenever there are changes to the program. It is also designed as a training aid for new staff and a place for existing staff to keep track of the program policies as they evolve and change.

The Manual describes weatherization services in terms of policy, but it is not meant to define the technical aspects of the program. It is different than, but a compliment to, the Connecticut Weatherization Field Guide (083021), which is the more authoritative source for technical information and protocols.

Each level of program administration has a vital role in the delivery of practical weatherization. Each group has inherent responsibilities that degrade the final effect of the services delivered if not conducted appropriately.

Operated effectively, the Connecticut Weatherization Assistance Program (CT WAP) has the outcome of providing needed energy savings to the low-income community. CT WAP also has positive effects on community economic development and energy conservation, making the program a significant economic stimulus to both the individual clientele and the community.

## **101. State Administration**

The Administration of the CT WAP has been transferred to the Department of Energy and Environmental Protection (DEEP) from the Department of Social Services (DSS) in 2012. DEEP may establish different administrative procedures as it assumes total responsibility for CT WAP transmitted after ARRA-related activities at DSS.

As a matter of convention, state agencies are referred to generically as the “State” in this Manual. DEEP is explicitly referred to as the “Grantee.” The local agencies are referred to as the “Subgrantee.”

It is the recipient's responsibility, the “Grantee,” to apply for weatherization funding from DOE, the federal agency that administers funds for CT WAP and oversees the program's federal compliance. Before DOE will release funding, CT WAP is required to annually submit a State Plan to DOE that describes how CT WAP will utilize the funds to fulfill the goals of the program. The CT WAP State Plan includes separate planning narratives for:

- Training and Technical Assistance (T&TA)
- Health & Safety (H&S)
- Program Budget and Production Projections

In addition, CT WAP has the following state-level planning responsibilities:

- Devise and submit state plans to effectively use federal DOE grant funds

- Write and maintain policies and procedures that will optimize the delivery of the program benefits in compliance with state and federal requirements
- Develop and maintain effective hardcopy forms and software formats and efficient procedures that assist in the delivery of services without overburdening program operations
- Develop a statewide budget utilizing all funding resources in the most cost-effective manner possible
- Allocate grant funds among Subgrantees in a fair and efficient formula, one which optimizes the use of the grant dollars
- Set state-wide and local production targets for weatherization activities based on available funding
- Allocate funds for local budgets and budget modifications to ensure compliance, efficiency, and accountability
- Review and approve local plans and budgets to ensure compliance and effectiveness in policy implementation

The State is responsible for staffing the program to ensure that all administrative, fiscal, and programmatic functions are covered at the Grantee level. Personnel staffing at the state level is determined based on need and available funding. At a minimum, staffing functions will include program management, fiscal management, program technical expertise, and program quality field monitoring. State weatherization personnel functions include:

- Overall plan & budget management
- Design and maintenance of policies, procedures, forms, software
- Review and approval of local agency plans and budgets
- Assessment and support of local agency production and claims
- Preparation and submission of federal & state reports
- Administration of T&TA programs
- Local liaison and coordination of services
- State-level appeals process
- Program quality monitoring
- Fiscal and regulatory compliance monitoring

## **102. Policy Advisory Council (PAC)**

DOE requires under 10 C.F.R. § 440.17 that before the expenditure of any grant funds, the State must establish a Policy Advisory Council (PAC) or a state commission or council to advise the development of the DOE Weatherization Program. Members of the PAC must have sensitivity concerning low-income issues and be broadly representative of organizations and agencies, including consumer groups that represent low-income people, the elderly, and Native Americans. States are also allowed to use an existing commission or council to serve as the PAC to advise on the implementation of CT WAP activities.

CT WAP has chosen to use the Low-Income Energy Advisory Board (LIEAB) as its PAC. LIEAB is charged to advise and assist the Office of Policy and Management (OPM) and DSS in the planning, development, implementation, and coordination of energy assistance and CT WAP policies. The current membership of the LIEAB includes representatives from: Connecticut AARP, Connecticut Association for Community



Action (CAFCA), Connecticut Commission on Women, Children, and Seniors, Connecticut Energy Marketers Association (CEMA), Connecticut Local Administrators of Social Services Connecticut Natural Gas Corporation (CNG), Eversource Energy Electric, Eversource Energy Gas, Legal Assistance Resource Center, Norwich Public Utilities (NPU), Office of Consumer Counsel (OCC), Operation Fuel, Public Utilities Regulatory Authority (PURA), Southern Connecticut Gas Company (SCG), AvanGrid Utilities, United Way Connecticut (211), Connecticut Department of Energy and Environmental Protection (CT DEEP), Connecticut Department of Social Services (DSS), and Office of policy and Management (OPM)..

### **103. Subgrantee Selection**

According to its assessment of need, the State may periodically issue requests for proposals from local entities wishing to be a sub-recipient of the DOE grant to provide local services under the CT WAP. The procurement of a Subgrantee will be conducted in an open and competitive proposal process.

Pursuant to 10 C.F.R. § 440.15(a)(3), preference will be extended to agencies which have, or are currently administering an effective program. For an entity in Connecticut to qualify as a new Subgrantee, it must:

- Be a Community Action Agency (CAA) or other public or nonprofit entity
- Be experienced and have performed weatherization or housing renovation
- Be experienced in assisting low-income persons in the area to be served
- Be able to undertake a timely and effective weatherization program
- Be in legal and financial compliance with requirements and regulations established under state and federal law
- Provide a list of the current board of directors or governing body and a copy of the by-laws and other documents concerning the structure and operation of the organization
- Provide proof that the organization has been responsive to the community's needs by citing the programs and services in the energy or human services area that it has implemented or by otherwise demonstrating that the organization has the potential to provide such services efficiently and responsibly
- Establish that it has particular expertise for providing energy conservation programs by demonstrating its management and outreach capabilities, technical skills, and other qualities that render the entity qualified; Establish that it has experience in housing and construction management programs
- Submit a detailed budget and narrative work plan showing how the project will be carried out
- Provide a copy of the most recent annual report and the previous year's financial audit with all management notes and findings

Pursuant to 10 C.F.R. § 440.15(d), any new or additional Subgrantee shall be selected after receiving comment at a public hearing.

### **104. Local Administration**

As stipulated in DOE regulations, CT WAP contracts with local entities throughout the state who are responsible for delivering weatherization services in their assigned territories. Five (5) local non-profits, each a part of the network of eleven (11) Connecticut Community Action Agencies (CAA's) that cover the

entire state, not only provide weatherization, but coordinate those services with a broad range of social services programs for low-income households that they also administer. All towns and counties within the State are covered by the 5 Weatherization Community Action Agencies (Wx CAA's).

The clientele for CT WAP comes primarily from CEAP applications, which are processed at all eleven CAAs. Applications from Non-Wx CAAs are forwarded to the Wx CAA's in the appropriate CT WAP territory.

**104.1 Subgrantees and Regions**

Agency	Service Area PY19- Present
<p><b>The Community Renewal Team, Inc. (CRT)</b>  <b>330 Market Street Hartford, CT 06120</b></p>	<p><b>CRT Region 1 (Hartford/Middletown)</b>                      North Central CT                      South Central CT</p>
	<p><b>CRT Region 2 (Willimantic/New London)</b>                      Eastern CT</p>
<p><b>New Opportunities, Inc. (NOI)</b>  <b>232 North Elm St. Waterbury, CT 06702</b></p>	<p><b>Region 3 (New Haven)</b>                      Southern Connecticut</p>
	<p><b>Region 4 (Waterbury/Meriden/Torrington)</b>                      Northwest Connecticut                      West Central Connecticut</p>
	<p><b>Region 5 (Danbury/Stamford/Bridgeport)</b>                      Southwest Connecticut</p>

**104.2 Local Staffing**

Adequate staffing is essential to the success of CT WAP. The number of full-time local positions depends on the size and needs of the program, and staff planning should reflect required Subgrantee functions in administration, casework, service delivery, fiscal, reporting, quality management, and training. At a minimum, the Subgrantee must have a full-time program manager for weatherization. Weatherization services may be implemented by Subgrantee employed crews or may be contracted to qualified individuals or companies. Adequate numbers of caseworker staff are also needed to manage intake and the ongoing services to program participants. In addition to program staff, each Subgrantee should also employ dedicated administrative and support staff to accomplish program activities.

**104.3 Program Operations**

Subgrantees have the responsibility for all aspects of local program operations. Subgrantees must:

- Conduct casework, outreach, education, and publicity for the CT WAP
- Maintain weatherization staffing with a qualified and well-trained workforce
- Contract for qualified weatherization services, as needed
- Procure services, equipment, materials, and supplies through an open and competitive procurement process
- Track and report on expenditures and production, as required; and
- Participate in T&TA activities

**104.4 Case Work**

Casework staff are expected to perform the following functions which are necessary for effective implementation of the CT WAP:

- Intake of applicants from recipients of CEAP as provided by the CAA
- Maintaining a waiting list of all applicants
- Pulling names from the waiting list in order, according to program priorities
- Verifying the family's eligibility strictly according to CT WAP eligibility rules
- Negotiating and administering landlord part pay agreements
- Providing energy education services to the program clientele
- Explaining the weatherization work and being available to the program clientele for questions or problems
- Maintaining applications, correspondence, forms, and documentation in an organized client file
- Assigning a specific work order tracking number traceable to every step in the weatherization process
- Processing the local client appeals according to Subgrantee procedures

### **104.5 Service Delivery**

Subgrantee staff are responsible for managing tasks to ensure timely and accurate job completion, such as:

- Coordination of weatherization workflow among the Subgrantee crews, the household, and weatherization contractors
- Assigning the unit for the initial energy audit
- Inputting the audit data into the Weatherization Assistant software to help in the determination of cost-effective measures to be installed
- Formulating a work order based on the qualified measures
- Conducting a supervisory review and approval of the finalized work order measures
- Assigning the weatherization work to agency crews or Contractors according to the weatherization needs identified in the work order
- Monitoring the progress of weatherization work on the unit to ensure the work and time frames are in compliance
- Being available to answer questions or resolve issues among the occupants, the crews, and the contractors
- Assigning the completed unit and conducting the final inspection
- Conducting a supervisory review of the final inspection to ensure the work was completed properly, resolving issues with contractors, coordinating any re-works, and so forth
- Paying contractors for completed and inspected work
- Approving units for the claim and reporting them as completed units only after the Final Inspection is passed

### **104.6 Fiscal Administration**

Subgrantees' are responsible for managing weatherization funds in accordance with 2 C.F.R. § 200 et seq. and generally accepted fund accounting principles. For example, Subgrantees are responsible for:

- Preparing Subgrantees program budget according to DEEP’s allocations and the allowable cost categories;
- Requesting budget modifications as needed;
- Reviewing, approving, and paying contractor claims for labor and materials only after the unit has passed the inspection, as required by program policies;
- Submitting the monthly report/claims packets for the reimbursement of weatherization expenditures to DEEP on State prescribed forms;
- Accounting for weatherization funds in accordance with applicable financial regulations and generally accepted fund accounting principles;
- Maintaining a fair and competitive process for the procurement of weatherization related supplies, equipment, and services;
- Accounting fully for the purchase, maintenance, and disposition of inventory;
- Instituting an annual audit of weatherization funds as required by applicable regulations;
- Meeting all reporting requirements regarding weatherization expenditures and production; and
- Cooperating fully with weatherization program monitoring, fiscal reviews, or other requests for fiscal information

For more information, see Connecticut Weatherization Program Operations Manual, § 700, “Claims and Reports.”

### **104.7 Reporting**

Subgrantees are required to submit the following reports within DEEP’s required timeframe and on forms prescribed by DEEP as follows:

- Monthly and grant-to-date production reports
- Monthly and grant-to-date expenditure reports
- Program demographics and statistics
- Davis Bacon Act related reports, including employee pay information (ARRA only)
- Ad-hoc reports as requested by DEEP or DOE

For more information, see Connecticut Weatherization Program Operations Manual, § 700, “Claims and Reports.”

### **104.8 Quality Assurance**

Subgrantees are responsible for conducting quality assurance reviews to ensure that staff and contractors are adhering to program policies and work standards and that work completed meets all requirements, including:

- Client income eligibility;
- Dwelling unit eligibility;
- Agreed upon project timelines;
- Expenditure limits;
- Approval of waivers by DEEP, where required;
- All required paperwork is completed and in files;

- All required weatherization testing protocols are implemented and followed;
- All protocols for weatherization measures are being performed;
- All Health and Safety (H&S) tests and protocols are being conducted;
- Workmanship and material standards are met; and
- Only appropriately certified and licensed personnel are being used to conduct the work

DEEP will also conduct periodic monitoring reviews to ensure that the above-listed areas are met and that Subgrantees' administrative processes are in place. DEEP will send a written report to Subgrantees with its review findings. Subgrantees are responsible for responding to the monitoring reports within thirty (30) calendar days of the date of the monitoring report. The Subgrantee will respond to the findings and recommendations with corrective action taken when required for compliance.

For more information, see Connecticut Weatherization Program Operations Manual, § 600, "Quality Assurance."

### **104.9 Training and Technical Assistance**

As part of its effort to improve the quality of weatherization services, DEEP will devise an ongoing T&TA regimen, including a comprehensive set of training requirements that will apply to Grantee staff and Contractors and Subgrantee Staff and Contractors.

### **104.10 Other Responsibilities**

The responsibilities of Subgrantees are the subject of most of the remainder of this program manual. Subgrantees weatherization administrators must thoroughly understand every aspect of the program in order to plan and implement this highly complex program.

## **105. Subgrantee Allocation**

Each year, the Grantee is awarded a Total Program Allocation from DOE, which identifies the Base Program Budget Component and the T&TA Budget Component.

Pursuant to 43 U.S.C. § 6865(a)(1), Grantees may allocate up to 15% of any grant to administrative purposes. Of this 15%, Grantees may only use up to 7.5% for administering the CT WAP at the state level. Grantees then must award the other 7.5% to its Subgrantees for administration. Grantees are allowed to retain T&TA funding at the state level to pay for training, training staff, monitoring staff, and training tools and equipment. Grantees are also able to provide T&TA funding to Subgrantees to provide additional training or allow local staff and contractors to attend other training. DEEP keeps 7.5% of administrative funds and a portion of T&TA funds to administer the CT WAP. DOE also allows Grantees to allocate up to an additional 5% of the weatherization grant for administration for those Subgrantees awarded less than \$350,000.

Currently, DEEP allocates these weatherization funds as follows:

- Materials (Based on Formula)
- Program Support (Based on Formula)
- Liability Insurance (Actual Cost)
- Pollution Insurance (Actual Cost)

- Administration (Based on Formula)
- Financial Audit (Actual Cost)
- Health & Safety (Based on Formula)
- Training and Technical Assistance (T&TA) (Based on Needs Analysis)

Subgrantees that are in good standing will receive funding each year unless Subgrantees withdraws from program participation. In some instances, funding may be withheld in full or in part based on serious issues found in DEEP monitoring or auditing.

When allocating DOE funds to Subgrantees, the Subgrantee, The State and Subgrantee Administration Budgets are determined based on 10% of Total Program Allocation. DEEP also considers:

- Financial Audit Budget
- Pollution Occurrence Insurance Budget
- Liability Insurance Budget
- Amount of funding needed for T&TA (for State and Subgrantees). These amounts are deducted from the T&TA Budget Component, and if there is a balance in the budget, it is allocated to Program Services

The above category budgets amounts are then deducted from the Total Program Allocation, and the amount remaining is allocated to the Materials, Program Support, and H&S categories.

**105.1 Allocation Formula (Administration and Program Operations)**

An allocation formula is used to ensure that weatherization funds are distributed across the various CT WAP Service territories according to need and all applicable Federal regulations.

Subgrantees’ H&S funds are calculated as 14.86% of the total grant, including any carry forward.

The number of units to be produced statewide is determined by dividing the amount of program dollars by the Average Cost Per Unit (ACPU).

The total amount of program dollars and units statewide are distributed according to the CT WAP multiplier calculated based on need contained in the table below: <b>CT WAP Multiplier</b>	
Region 1	0.2526
Region 2	0.2679
Region 3	0.1031
Region 4	0.1068
Region 5	0.2659

**Note:** For every \$2.50 budgeted for Program Support, \$1.00 is budgeted for materials so as to maintain a 2.5 to 1 Ratio.

**105.2 Production Goals**

DEEP will monitor production reports submitted by Subgrantees during the contract to determine whether the number of weatherization completions and Subgrantee expenditures meet quarterly goals

or any goals developed to address augmented production periods. If Subgrantees' production falls substantially below the projected schedule of production, DEEP may require a written corrective action plan for bringing production in line. Approval and ongoing evaluation of any corrective action plan will remain in effect until satisfactory results have been achieved.

If production continues to fall short of program and corrective action goals, DEEP may, at its sole discretion, suspend, de-obligate, and re-distribute all or any portion of the funds allocated to Subgrantees.

Contracted production time frames that result in 9 or fewer months of production will utilize monthly production goals based on the number of months to produce 100% of the projected annual goal.

**Example:** A 9-month production period would require a minimum of 11% of the annual production goal to be completed each month concurrently to ensure that each Subgrantee's projected annual goals will be met.

## **106. Subgrantee Contract**

The CT WAP is conducted under a contract between the Grantee and Subgrantees(s) for the allocation of weatherization funds. The amount of funds distributed to Subgrantees under the contract will be determined by the Grantee based on the amount of weatherization funding available and the allocation formula.

The standard period of the contract is normally one year or until otherwise terminated as stipulated in the contract. Contract periods of more than one year may be executed within DEEP's discretion.

## **107. Codes of Ethics**

Subgrantees(s) must maintain written codes of conduct. These codes are specified in the contract and must include employees, officers, and agents of Subgrantees, which may include their families, partners, or related organizations.

### **107.1 Conflicts of Interest**

No employee, officer, or agent of the Grantee or Subgrantees shall participate in the election, award, or administration of a weatherization contract or subcontract if a real or apparent conflict of interest would be involved.

No employee, officer, agent, or contractor of the Grantee or Subgrantee who may be in a position to participate in the decision-making process may derive an inappropriate personal or financial interest or benefit from any activity funded through a contract or subcontract, either for him or for those with whom he has family or business ties.

The officers, employees, and agents of the Grantee and of Subgrantees shall neither solicit nor accept gratuities, favors, or anything of monetary value from Subgrantee(s) or contractors, or parties to contracts or subcontracts, or any client this program serves.

If any organization, agency, or company responding to a procurement request offers such gratuities, favors, or anything of monetary value to any officers, employees, and agents of the Grantee and of

Subgrantees, said entity and its employees will be disqualified from participation in current and future weatherization contracts.

### **107.2 Discrimination Prohibition**

Subgrantees(s) and its contractor(s) may not discriminate against any applicants, staff, personnel, suppliers, clients, or others connected to the weatherization program on the basis of race, color, creed, religion, sex, sexual orientation, gender identity, age, national origin, disability, present or past military status, or any other characteristic protected by applicable state or federal laws.

### **107.3 Debarment and Suspension**

Subgrantees must certify that within the last five (5) years, and afterward annually, neither the organization nor its principals are debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in a weatherization contract with DEEP, the State of Connecticut, or any federal department or agency. Subgrantees must contractually require the same certification by its contractors.

### **107.4 Drug-Free Workplace**

Subgrantees must make a good faith effort to provide and maintain a drug-free workplace. Subgrantees are required to provide written notice to DEEP within ten (10) days after receiving actual notice that an employee has been convicted of a criminal drug violation occurring in the workplace.

### **107.5 Criminal Background Investigation**

All subgrantees, their staff, and their contractors must agree to undergo criminal background checks.

### **107.6 Ownership of Intellectual Property**

All copyright and patent rights to all papers, reports, forms, materials, creations, or inventions created or developed in the performance of the CT WAP are the sole property of the CT WAP as administered by DEEP.

### **107.7 Religious Activities**

The rendering of weatherization services is non-sectarian in nature. As such, Subgrantees must ensure that religious activities are not a part of any activities funded under the grant.

### **107.8 Political Activity**

Subgrantees must ensure that the funding provided by DEEP through any weatherization contract or agreement is not used to further any political or voter activity of any kind. Subgrantees must comply with applicable provisions of the Hatch Act (5 U.S.C. §§ 1501-1508 and §§ 7324-7326), which limit the political activities of employees whose principal employment activities are funded in whole or in part with weatherization funds.

### **107.9 Campaign Contribution and Solicitation Ban**



either Subgrantees nor its principals shall make a contribution to or solicit contributions on behalf of an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of State, or Treasurer; or to a political committee authorized to make contributions or expenditures to or for the benefit of such candidates; or to a party committee.

### **107.10 Legislative Contact**

Subgrantees may not use weatherization funds to lobby or to directly or indirectly influence action on any legislation or appropriation matters before federal or state legislative bodies. However, nothing in this section prohibits Subgrantees from providing educational or other information regarding the weatherization program, as appropriate.

### **107.11 Whistleblower Protection**

Subgrantees may not discharge, demote, or otherwise discriminate against an employee as a reprisal for disclosing “whistleblower” information, such as mismanagement, abuse, fraud, legal violations, or non-competitive procurement, and so forth.

### **107.12 Client Confidentiality**

Subgrantees, including their contractors, must ensure the confidentiality of client information per federal and state confidentiality laws which include but are not limited to the Health Insurance and Portability and Accountability Act of 1996 (HIPAA). This includes the requirement to encrypt all electronic data classified as confidential.

## **108. Other Requirements**

Subgrantees must adhere to all policies, stipulations, terms, and requirements set forth in the following:

- Contracts and agreements between Subgrantees and the Grantee, and funded under the DOE grants;
- CT WAP Plan and subsequent revisions, as approved by the DOE;
- CT WAP (2022)Operations Manual;
- Connecticut Weatherization Field Guide (083021); and
- All other weatherization guidance documents, as approved and issued by DEEP or DOE.

Throughout the term of any contract between the Grantee and Subgrantees for weatherization services contract, all Subgrantees must:

- Adhere to DOE’s regulations regarding nondiscrimination in federally assisted programs, in accordance with 10 C.F.R. Part 1040 *et seq.*, as amended;
- Expend and administer funds in accordance with the DOE’s financial assistance regulations defined in 10 C.F.R. Part 200 *et seq.*, as amended;
- Comply with the Americans with Disabilities Act of 1990;
- Comply with the federal Rehabilitation Act of 1973 regarding access to programs and facilities by individuals with disabilities;

- Comply with all reporting requirements relative to client abuse and neglect, including but not limited to requirements related to children and relative persons with developmental disabilities or relative to elderly persons;
- Utilize small and minority business and women’s business enterprises in accordance with 2 C.F.R. § 200.321 where applicable;
- Utilize Minority Business Enterprises as defined by C.G.S. § 4a-60 to 4a-60a and 4a-60g;
- Subject to determining the qualifications for all employment positions, give priority to hiring welfare recipients who are subject to time-limit welfare and must find employment. Subgrantees will determine the number and types of positions to which this section applies;
- Submit reports to DEEP in a timely and accurate manner as prescribed according to procedures;
- Conduct all procurement transactions in such a manner so as to provide, to the maximum extent possible, free and open competition;
- Require that contractors comply with federal standards in the purchase of supplies and other expendable property, equipment, and services;
- Retain financial records, supporting documents, statistical records, and all program or other records pertaining to Subgrantees’ contract with DEEP for a period of three (3) years from the date of the final expenditure report by Subgrantees. If litigation, claim, or audit is started before the expiration of the 3-year period, the records must be maintained for a 3-year period from when all litigation, claims or audit findings involving the records have been resolved and final action taken;
- Have in place a system used to determine the order of service for program eligible clients, applied equally to both owners and renters; and prioritizes eligible households that have members who are elderly, disabled, children 6 and under; or are high energy user households;
- Ensure that services are provided only to eligible households and dwellings;
- Ensure that ineligible dwellings are not re-weatherized, including those that received weatherization services within less than 15 years as defined by 42 U.S.C. § 6865(c)(2);
- Comply with the current Connecticut H&S Plan as approved by DOE;
- Comply with certification and training requirements as set forth in the approved CT WAP State Plan, the CT WAP Operations Manual and other approved and issued state guidance documents;
- Comply with applicable EPA and DOE regulations ensuring that lead safe weatherization work practices are followed, as applicable;
- Submit for payment only work that has been inspected and report units as completed only after they have passed final inspection;
- Perform no additional work on units that have been reported as completed under the DOE program, except as may be re-weatherized under program policies;
- Monitor and maintain expenditure levels within all cost limits, including the ACPU, as well as other limits further defined in this manual;
- Maintain a record of all maintenance performed on vehicles, as well as a “mileage log” for each vehicle utilized for the provisions of CT WAP services;
- Report any vehicle accidents related to contracted services and theft of CT WAP materials and/or equipment, in writing to DEEP within 30 days of such event(s). Any occurrence of theft of property valued at more than \$100.00 must be reported to the police, and a copy of the resulting police report must be submitted to DEEP in a timely manner.

## **109. Insurance Requirements**

Subgrantees are required to provide, at a minimum, the following insurance coverage. These requirements also apply to Subgrantees contractors.

### **109.1 Indemnification**

Subgrantees are contractually required to hold the State harmless from and against any and all claims for injury, loss of life, or damage to or loss of use of property caused or alleged to be caused, by acts or omissions of Subgrantees, its agents, employees, assigns, and invitees on or about the premises and which arise out of Subgrantees' performance, or failure to perform as specified in Subgrantees' contract.

### **109.2 Liability**

Subgrantees must provide comprehensive general liability insurance coverage in the minimum amount of one million dollars (\$1,000,000) for bodily injury and property damage, with a minimum amount of \$500,000 for each. Upon request, Subgrantees must provide the State with Certificates of Insurance that document the required coverage, the limits of liability and coverage dates of Subgrantees policies. All documents and coverage must be current.

### **109.3 Pollution Occurrence**

Subgrantees must provide Pollution Occurrence Insurance coverage in the minimum amount of at least \$500,000.00 per occurrence.

### **109.4 Workers Compensation**

Subgrantees must provide Workers' Compensation as required by state law.

### **109.5 Unemployment Compensation**

Subgrantees must provide Unemployment Compensation as required by state law.

### **109.6 Misappropriation Bond**

Subgrantees shall provide a bond or insurance coverage for all persons who will be handling funds or property received or disbursed as a result of its contractual agreement with the State in an amount equal to one-half of the total annual of funding provided to Subgrantees through the State, or \$250,000 whichever is less, to be effective for the period of Subgrantees' contract plus three (3) years for purposes of discovery.

Subgrantees' coverage must provide protection against losses resulting from criminal acts and wrongful and negligent performance of the person's duties and it must specify DEEP as an additional insured.

### **109.7 Cancellation of Insurance Policy**

Subgrantees are required to immediately notify DEEP if any required insurance is canceled or modified in amount. In the event of a cancellation of Subgrantees' coverage, DEEP will make no further disbursements to Subgrantees until certification is provided by a company that the coverage has been

restored. In the event such verification is not received by DEEP within ten (10) days of the Notice of Cancellation, Subgrantees must agree to return the balance of all monies paid to Subgrantees under its contractual agreement.

## **110. Subgrantee Fiscal Audit**

Subgrantees are required to conduct an annual financial audit of any and all expenditures of weatherization funds. The audit must be conducted by an independent certified public accountant selected by an open and fair competitive procurement process.

The audit may either be conducted as a part of an agency-wide audit, or as an individual audit of weatherization funds. It is to be performed in accordance with Federal and State single audit standards and applications, including the applicable provisions of the OMB Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*.

The complete audit report, including management letters and audit recommendations must be submitted to DEEP by Subgrantees within thirty (30) days of the receipt of the completed audit, or the receipt of a notice from the auditor that the audit cannot be completed. The reason(s) for an incomplete audit must be stated clearly by the auditor and Subgrantees.

### **110.1 Fiscal Audit Findings**

DEEP will review the audit for material problems with the accounting systems of the Subgrantee, questioned costs and disallowed costs. Subgrantees will be required to submit a written analysis of root cause of findings and a written plan for corrective action of findings, within a time frame set by DEEP. Follow-up on the corrective action will be monitored in DEEP's administrative review of Subgrantees.

DEEP will address any disallowed costs to Subgrantees' Fiscal and Program Staff.

## **111. Subgrantee Plan and Budget**

Subgrantees must submit a contract and budget to DEEP that describes how program services and production goals will be met over the contract period.

### **111.1 Plan**

DEEP provides production goals for each Subgrantee service area, including those areas only covered by the Subgrantee for weatherization.

Application Process: The Subgrantees' plan must explain the process that is in place for receiving weatherization applications, particularly from CEAP service areas that are covered by the Subgrantees for weatherization.

Crew Staffing: Subgrantees must detail the extent to which they use their own crews and/ or contractor crews. The budget must indicate the estimated number of each type of personnel. Subgrantees must have available the specific responsibilities of each staff.

Local Health and Safety: Subgrantees must ensure compliance with the approved State H&S plan, both in its own operation of the weatherization services and in the requirements for its weatherization Contractors.

For more information, see CT WAP Operations Manual, § 400 “Health and Safety.”

### **111.2 Budget and Budget Narrative**

Subgrantees must submit an annual line-item budget detailing the projected use of allocated contract funds during the program year. The budget projections should be tied to production goals based on the ACPU and other limits. The line-item budget includes details by cost category as shown in the following chart:

Section No./ Category Line Items	Subcategory Line items
703.1 Materials	<ul style="list-style-type: none"> <li>• Contractor Materials Installed in Completed Units</li> <li>• Agency Materials Installed in Completed Units</li> </ul>
703.2 Program Support (Direct)	<ul style="list-style-type: none"> <li>• Storage</li> <li>• Contractor Installed Measures – Labor</li> <li>• Contractor-Other (attach itemized sheet)</li> <li>• Maintenance, Repair, Tools, Equipment &amp; Vehicles Insurance for Tools, Equipment and Vehicles</li> <li>• Purchase of Non-Expendable Tools, Equipment and Vehicles</li> <li>• Purchase of Expendable Tools and Equipment</li> <li>• Annual Lease of Tools and Equipment</li> <li>• Salaries - Crew</li> <li>• Salaries – Supervisory</li> </ul>
703.2 Program Support (Indirect)	<ul style="list-style-type: none"> <li>• Salaries - Program Staff</li> <li>• Fringe Benefits</li> <li>• Transportation</li> <li>• Program: Other (attach itemized sheet)</li> <li>• Audit Fees</li> <li>• Purchase/Lease of Vehicle(s)</li> </ul>
703.3 Training and Technical Assistance (T&TA)	<ul style="list-style-type: none"> <li>• Actual Direct Cost</li> </ul>
703.4 Insurance (Liability)	<ul style="list-style-type: none"> <li>• Actual Direct Cost</li> </ul>
703.5 Insurance (Pollution)	<ul style="list-style-type: none"> <li>• Actual Direct Cost</li> </ul>
703.6 Financial Audit	<ul style="list-style-type: none"> <li>• Actual Direct Cost</li> </ul>
703.7 Health and Safety (Agency)	<ul style="list-style-type: none"> <li>• Actual Direct Cost</li> </ul>
703.8 Administration	<ul style="list-style-type: none"> <li>• Salaries</li> <li>• Fringe Benefits Travel</li> <li>• Other (Attach Itemized Sheet)</li> </ul>

For more information regarding cost definitions and additional detail, see CT WAP Operations Manual, § 703, “Cost Categories.”

**111.3 Budget Modifications**

Connecticut only allows for one type of budget modification which is the transfer of funds from the Program Support to the Materials cost category. In some situations, after DOE approval, a Subgrantee may be allowed to reallocate funds from the T&TA line item to Program Operations (Materials and Program Support).

A formal written request for transfer must be submitted to DEEP for approval. In addition, Subgrantees must submit a Line-Item Budget revision to DEEP for approval and adjust the contract Grant Budget Column on the Financial Report.

Once money has been moved into the Materials Budget category, it cannot be moved back to Program Support, or to any other budget category.

The following procedures are to be followed to request a reallocation of these funds:

- Prior to any request, the Subgrantee must conduct a budgetary analysis to calculate what funds are needed to cover program support expenditures (e.g., salaries, fringe benefits) through the end of the contract term or in a specified duration of a contract period so as to ensure that they do not run into a lack of funds after the transfer.
- Grantees must take into account units in process and the amount of funds encumbered as a result of these works in process. This will allow for an accurate assessment of the projected expenditures.
- The Subgrantee should request to reallocate only enough funds to cover a 2-month period. This is to ensure that the Subgrantee does not end up without funds to cover an unexpected program support expense. There is no limit on the amount of transfers an agency may request, provided they have the funds available for reallocation, so this should not be a deterrent from following best practice.
- The funds reallocated should be a negotiable amount, because again, once funds are moved into the Materials Budget Category they cannot be moved back into Program Support.

## **112. Funds Management**

The proper administration of funds begins with the quality of the Subgrantees' own internal fiscal controls and accounting procedures. Subgrantees must maintain written fiscal procedures which are periodically reviewed and approved by its governing board. The disbursement of weatherization funds must be properly documented and tracked in a systematic, transparent method.

### **112.1 Financial Records**

All Accounting records related to budgets, claims, and purchases must be maintained in accordance with 10 C.F.R., Part 600, and CT WAP Operations Manual, and generally accepted accounting principles for fund accounting. Subgrantees' financial records shall include, but are not limited to:

- Accounting books, ledgers, charts;
- Time sheets, payroll forms, wage records;
- Accounting reports, bank statements;
- Fiscal reviews, audits;
- Tax records, tax withholding records;
- Source documents, bills, claims, canceled checks;
- Job descriptions, pay rates, pay schedules; and
- Other fiscal forms and reports, as required by the State.

Such records shall be sufficient to fully document Subgrantees' financial activities, including Subgrantees' claims for reimbursement under its weatherization contract with DEEP. All fiscal accounting records must be made available to the DOE, the State, DEEP, or other appropriate agencies, upon request.

#### **112.1.1 Tracking Expenditures**

Subgrantees must track expenditures monthly, over the period of the contract, so that funding allocations are not over-expended. It is the responsibility of Subgrantees not to exceed line-item

limitations, among the average cost- per-home, H&S limits, and incidental repair expenditure limits over the period of the contract.

Expenditures must be tracked and reported separately for each weatherization funding source. Expenditures are reported monthly to DEEP.

Accounting systems will be evaluated as a part of DEEP’s administrative monitoring process, as well as in Subgrantees’ fiscal audit.

## **112.2 Production Records**

Subgrantees must maintain all of the required documentation supporting production for each work order in accordance with this policy. Records are to be filed by a unique work order number and cross-referenced with the client’s name, the date the unit passed final inspection and the address of the weatherized unit.

It is incumbent upon Subgrantees to require weatherization contractors to maintain and submit documentation required by the program.

DEEP requires that Subgrantees submit a Building Weatherization Report (BWR) for every dwelling unit completed that has passed the final inspection. The BWRs are submitted to support the production data on Subgrantees’ monthly report.

For more information on detailed monthly reporting requirements and a description of the BWR form, see CT WAP Operations Manual, § 700 “Claims and Reports.”

## **112.3 Program Income**

Program income is an amount of money received by Subgrantees for activities which are not a part of the grant work but are supported directly by staff, equipment, materials, supplies, and so forth as funded by the weatherization grant. This includes most payments received by Subgrantees for work conducted outside the program but utilizing weatherization program resources.

Program income is subject to 2 C.F.R. Part 200. Program income is to be treated as an addition to program funds and is subject to the same rules as appropriated funds. Leveraged utility company funds and landlord contributions are not considered to be program income for purposes of the CT WAP.

## **112.4 Landlord Contributions**

Subgrantees are required to seek a contribution towards the cost of weatherization from the landlord. The requirement applies to single-family dwellings, including small multi-family dwellings (up to 4 units) and some large multi-family dwellings (5+ units) weatherized under the 50% or 66% eligibility rules.

The amount of the contribution will be equal to twenty percent (20%) of the material costs per eligible unit. The maximum amount of the landlord contribution will be \$500 per eligible unit. Pursuant to 10 C.F.R. § 440.22(d), landlord contributions to install weatherization measures in a unit are not considered program income or leveraged funds. However, such contributions must be applied to the cost of the specific job for which they are made, and the amount must be identified on the Final Installed Measures Report. Subgrantees’ claim for that unit should reflect a credit for the amount paid by the landlord and



is to be reported on the financial report concurrently as the unit is being submitted as a completion to DEEP.

#### **112.4.1 Landlord Contribution Waivers**

Subgrantees may waive the landlord contribution on a case-by-case basis. Should a landlord request a waiver, this request and accompanying justification as to why a waiver is necessary must be submitted, in writing, to Subgrantees. If a Subgrantee approves the waiver request, the documentation should be attached to the weatherization agreement form and kept in the client file.

#### **112.5 Leveraged Funds**

To the extent practicable, federal weatherization funds should be used to leverage funds that would not be made available in the absence of federal or state funds for carrying out weatherization activities. DOE permits states to use a percentage of their grant to undertake leveraging activities which may be used to supplement the program or run a parallel program. Allowable activities include:

- Paying for agency staff involved in leveraging
- Hiring a consultant to explore and develop partnerships
- Holding leveraging meetings
- Preparing technical materials
- Facilitating voluntary match funds from non-Federal resources

**Note:** DEEP has not set aside funds for leveraging purposes for the CT WAP program

#### **112.6 Segregation of Funds**

CT WAP is supported by the DOE WAP grant. Funds received from separate sources, even though they may each be used for the same purpose of weatherization, must still be maintained in separate accounts.

In no instance may weatherization funds be co-mingled with funds for any other program sources.

This policy does not preclude the coordinated use of funds from various sources, as allowed by the rules and regulations covering each of those funds.

#### **112.7 Supplanted Funds**

Weatherization funds may not be used to supplant other state or local funds which may be used instead, for the same purpose.

#### **112.8 Capital Expenditure**

Subgrantees may not use weatherization grant funds for the purchase or improvement of land.

Weatherization funds may not be used for the purchase, construction, or improvements of any building or other facility. This does not preclude the use of funds for residential weatherization or other energy-related home repairs.

### **113. Equipment**

As defined by 10 C.F.R. § 600.202, equipment is an item of tangible, non-expendable, personal property having a useful life of more than one year and an acquisition cost of \$5,000 or more per unit.

A unit generally is an individual item but may also be an aggregation of items needed for the unit to function. The primary example of an aggregated unit is a computer system which requires a central processing unit, a keyboard, a monitor, and a printer to be useable.

Equipment purchased by Subgrantees with funds awarded under the grant is the property of the CT WAP. It may not be used for any purpose other than the defined program activities without written permission and instruction from DEEP.

Equipment may not be purchased, transferred or disposed of by Subgrantees without prior written permission and instruction from DEEP.

In the event that a Subgrantee contract with DEEP is not renewed, or terminates for any reason, equipment purchased with program funds must be returned to DEEP as property of the CT WAP.

Subgrantees must maintain records of the procurement of equipment, ongoing equipment inventory records, and records of the disposition of equipment in accordance with retention guidelines pursuant to 2 C.F.R. 200.

### **113.1 Weatherization Equipment, Tools, and Materials**

Specialized equipment, supplies, tools and weatherization materials purchased by Subgrantees with the funds awarded in a contract, regardless of the unit cost or the useful life of the items, are to be considered weatherization program property. Such property shall only be disposed of in a manner prescribed by DEEP.

Such items include, but are not limited to:

- blower doors
- duct blasters
- manometers
- CO detectors
- smoke detectors
- refrigerators
- insulation materials
- laptop computers
- specialized software
- computer equipment
- other software, equipment, tools and materials purchased by and for the weatherization program.

In the event that a Subgrantee's contract with DEEP is not renewed, or terminates for any reason, the specialized weatherization equipment, tools or leftover materials purchased with program funds must be returned to DEEP, as property of the CT WAP. At the instruction of DEEP, such items must be delivered to another Subgrantee or another location, as required.

This policy does not refer to items purchased by Subgrantees' weatherization contractor for use in the program, unless specific weatherization funds were granted by or through Subgrantees for that procurement.

## **114. Inventory**

Subgrantees are required to track the purchase, use and disposition of all inventories acquired with weatherization funds. An inventory list maintained by Subgrantees must be made available upon request and for annual monitoring DEEP in its administrative review.

A physical inventory of parts, materials, supplies and equipment is required quarterly and reported to DEEP annually. Discrepancies are identified in the closeout package and included on the financial page.

Daily records must be maintained to account for the inventory materials taken in and out of Subgrantees' warehousing facility. It must be possible to track items used on the weatherization of an individual unit through inventory records, back to the point of purchase.

Specific staff person(s) must be designated as responsible for the following duties:

- Signing authority on purchase orders
- Maintaining inventory records
- Overseeing a quarterly physical inventory
- Authorizing the disposal of obsolete or damaged inventory
- Reconciling inventory records and authorizing adjustments

### **114.1 Schedule**

Subgrantees must maintain an up-to-date inventory schedule for all items purchased for use in the weatherization program. The following information must be available for review by DEEP and is reported on Subgrantees' closeout report at the end of each contract year:

- Identification: the item name, brand, brief description, model #, serial #
- Location: physical location of the item
- Condition Code: a description of the condition of the item based on the condition codes provided by the Department
- Availability for Disposition: current disposition of the item, including availability of the item for disposal.
- Acquisition Date: date the item was acquired by the program (with backup procurement forms)
- Acquisition Cost: cost and source of funds (including the specific grant award number)

Inventory must be kept in a facility with clean and adequate space. The building must be accessible, protected, and secure.

The inventory is tracked by funding source. The value of property in inventory is based on the purchase price. Property is reported in two broad categories of expendable and non-expendable.

Expendable Property Purchased with Weatherization Funds: Inventory items are considered expendable when they are to be used up in the actual weatherization of units. This category includes items such as:

- weatherization materials
- parts
- building components
- installation items (smoke and CO detectors).

Tracking includes:

- Materials in inventory purchased with DOE funds, including
- Materials in Work-In-Process
- Materials ordered but not received

Non-Expendable Property: Inventory items are considered non-expendable when they are necessary and used to weatherize units. This category would include tools, equipment, and vehicles. Tracking includes:

- Items purchased with DOE Funds
- Items purchased with other than DOE Funds

## **114.2 Disposition**

Subgrantees must keep complete records of the procurement, use, and disposal of items in its inventory. Purchases for inventory must be fully documented. Backup documents must be available for review with the inventory schedule containing the following information:

- a justification for the procurement process used on the purchase
- documentation of the procurement of the item(s)
- documentation of prior approval, when required, and
- purchase order, invoice, receipt, other source document(s)

Use of weatherization parts and materials from Subgrantees' expendable property inventory are to be tracked and recorded by individual weatherization job in which the item is used. Jobs should be identified by work order number.

Grantee may not purchase or maintain an inventory which exceeds an amount necessary for the performance of the program activities under the contract agreement.

Disposal of Equipment: Because equipment purchased with weatherization funds is considered the property of the program, Subgrantees must notify the Department prior to disposing of equipment. Subgrantees will be instructed as to how such equipment is to be disposed of. The Department will assist Subgrantees in establishing the fair market value for which the item must be sold.

In certain situations, equipment may be depreciated over time by Subgrantees. Upon request, Subgrantees shall submit all relevant depreciation schedules with its independent audit report.

For more information, see CT WAP Operations Manual, §§ 114 (Equipment) & 118 (Procurement).

## **114.3 Reports**

Although Subgrantees must track inventory throughout the year, at the end of the grant year, a closing inventory report is to be submitted along with the Subgrantees' fiscal and programmatic closeouts. The reports, submitted on spreadsheets provided by DEEP, shall include inventory schedules and summaries which must be certified by the authorized Subgrantee administrator.

For the year-end report, Subgrantees must conduct a physical inventory which will detail the quantities of inventory items and show any discrepancy between book inventory and actual counts.

DEEP will provide the documents to be completed, along with the due date for submission. The packet will include:

- Summary and Certification for the Inventory of Non-Expendable Property (Word)
- Schedule of Property Acquired with DOE Funds (Excel)
- Schedule of Property Acquired with Non-DOE Funds (Excel)
- Summary and Certification Expandable Property Purchased with Weatherization Funds
- Physical Count of Materials in Inventory.
- Summary and Certification of Expendable Property Purchased with DOE Funds, including:
  - A summary of DOE expendable property installed in dwelling units not reported as completed prior to end of program year
  - Materials in work-in process with attached detailed schedule of items, quantities and costs of materials in each job. An excel spreadsheet is provided by the State.
  - Materials ordered but not received with attached detailed schedule of all materials ordered but not delivered prior to end of program year. This applies only to those Subgrantees that accounts for purchases when purchase orders are issued rather than when materials are received. An excel spreadsheet is provided by the State.
- The total of DOE expendable property in the inventory.

#### **114.4 Reconciliation**

The final report of inventory results from a year-end physical count of items in Subgrantees' inventory compared to the book inventories kept over the period of the contract year. The form in the inventory packet is the Supplemental Reconciliation Form (with instructions), and it is used to determine inventory variances which may be reimbursable to the program. Up to two percent (2%) in materials variance is allowed when the closeout package is submitted at the end of a contract period.

#### **115. Closeout**

No later than forty-five (45) days following a termination of its contract or the conclusion of the annual contract period, Subgrantees shall submit final closeout documents. Closeout documents are provided by DEEP (in spreadsheet formats) for submission.

##### **115.1 Final Status Reports**

The Final DOE Monthly Weatherization Status Reports packet of reports includes final program statistics, Final Expenditure Report, the Inventory Close-Out Packet and Supplemental Reconciliation Form.

Subgrantees' Final Expenditure Report will include all remaining costs to be claimed for materials, program support, T&TA, liability insurance, pollution insurance, financial audit, and administration.

All units reported on and claimed for the year must be completed units.

The final reports on completed units and expenditures must, at the end of the contract period, comply with all cost category definitions, including expenditure limits. The expenditures must meet overall budget allocations, individual line-item limits, the materials v. program support limits, and cost per unit limitations.

For more information, see CT WAP Operations Manual, §§ 706.2(Unit Completion Definition) & 701 (Overall Cost Limitations).

### **115.2 Final Inventory Reports**

The Final Inventory Reports packet of reports includes inventory summaries and agency certifications accounting for expendable and non-expendable property inventory. Subgrantees are required to complete an annual physical inventory of all property used for weatherization purposes.

For more information, see CT WAP Operations Manual, § 115.3, "Inventory Reports."

### **115.3 Disallowed Costs**

The total final claim must be offset either by Subgrantees or by DEEP with credits for:

- Any amount in excess of the total contract;
- Any amount which exceeds the limit of ten percent (10%) on a specific line item;
- Any amount which exceeds the allowable average cost per unit over the period of the contract;
- Any amount which causes the Subgrantee to exceed the amount ratio between materials and program support cost categories;
- Subgrantee settlement of disallowed costs found in an audit; and
- Subgrantee settlement for incorrectly expended funds that cannot be transferred to a correct cost category, as determined by DEEP's fiscal monitoring. Any other amounts as determined between Subgrantees and DEEP.

In the event that a contract is terminated, Subgrantees must return to DEEP in full any unexpended funds within thirty (30) days, or such funds may, at the discretion of DEEP, be carried over and used as part of a new contract period if a similar contract is to be executed.

For more information on cost categories and monthly reporting, see CT WAP Operations Manual, § 700, "Claims and Reports."

### **115.4 Final Supplemental Reconciliation**

The Final Supplemental Reconciliation form is only to be completed to detail any variances in the final inventory for the grant year.

For more information, see CT WAP Operations Manual, § 115.4, "Inventory Reconciliation."

## **116. Advanced Funding**

A funding advance may be available to Subgrantees. Advance funds are available on a one-time basis and are not guaranteed in future funding rounds, or from any other funding sources.

An advance payment of up to 25% of the total contract is issued to Subgrantees upon the approval and execution of the contract.

The advance of funds will be subject to administrative monitoring by DEEP.

Note: In cases where DOE has authorized pre-award spending, the total allowable pre-award expenditure limit shall be no greater than that which would be allowed as a 25% advance payment.

The advance payment is generally drawn down during the last quarter of the program year or sooner depending on Subgrantee performance. There is usually no advance remaining by the end of the contract period. If there is an unspent advance, Subgrantee will be directed to refund the State.

## **117. Procurement**

Subgrantees is required to purchase all goods and services in an open and free competition which results in the best product or service being received for the most reasonable cost.

### **117.1 Procurement Regulation**

Subgrantees must have agency procurement policies and procedures in place, which will ensure that all purchases under the weatherization grant – supplies, materials, equipment and contractual services - are made in a manner that is transparent and competitive. The procurement procedures must meet all guidelines set by DEEP, the Department of Administrative Services, and DOE. Applicable procurement regulations include:

- DOE Regulations at 2 C.F.R. Part 200
- Conn. Gen. Stat. § 4a-40 *et seq.*

### **117.2 Types of Procurement**

All purchases with weatherization funds, no matter the cost, must be made on a competitive basis and documented by the Subgrantee's accounting records. The procurement method to use generally depends on the level of funds to be expended and the complexity of the item or service. In most cases, the lowest cost item is selected, however higher priced items may be selected when there is a reasonable justification, as noted below.

For more information, see Conn. Gen. Stat. § 4a-57.

#### **117.2.1 Small Purchase**

Small purchases utilize relatively direct and informal procurement methods for securing services, supplies, or other items that do not cost more than \$5,000 in the aggregate. All items are to be purchased on a competitive basis, but the formality of the purchase process may vary according to the Subgrantee's and the State's procurement policies. Unless otherwise stated for specific items, small purchases do not require prior approval by DEEP.

#### **117.2.2 Invitation to Bid (ITB)**

All purchases with an aggregate cost of \$5,000 or more require a more formal process. Such items or services for which cost is the sole factor, and no other comparative factors are involved, should be purchased through a competitive bid process, usually called the Invitation to Bid (ITB).

This price level also requires the prior approval by DEEP before any purchase is made. (Note that other specific expenditures may also require prior approval.)

Subgrantees' approved and current procurement policies and procedures must be on file.

An ITB is to be issued by Subgrantees detailing the description and specifications of the item to be purchased. Specifications may not be written that limit the procurement to a particular brand. While reasonable or irrelevant variations in the bid item may be allowed for, and different brands of the same item must be considered, the ITB is used when price is the determining factor for selection. The ITB process then requires that the purchase be made from the lowest price quoted by a responsive and responsible bidder.

All bids received by Subgrantees must be kept sealed and secured by agency purchasing personnel until the specified date and time of the bid opening.

If any or all bids are rejected for any reason other than price, sound documentation for such must be written and placed with other bid materials.

The bid packet that is issued must be fully documented by Subgrantees, along with the selection process and subsequent purchase records. Invitations are issued to all prospective bidders at the same time. Strict deadlines and other requirements must apply to all bidders equally.

The following must be included in the bid materials for review and audit by DEEP:

- Written, prior approval of the bid purchase from DEEP.
- A written description of the item or service to be purchased, with detailed specifications, as applicable.
- Date, time, location and minutes of the bid opening.
- Selection methodology for the bid lowest price bid.
- A record of a minimum of three written invitations for bids.
- A record of all quotes received for the purchase.
- Detailed record of the reason for the rejection of any bidder.
- Approval of the purchase signed by the authorized administrative or financial Subgrantee official.
- Purchase record, receipt, invoice, etc.; and,
- Contracts or other agreements which result from and govern the purchase of the item or service, as applicable.

### **117.2.3 Requests for Proposal (RFP)**

Purchases of items or services with an aggregate cost of \$5,000 or more for which price is not the sole determining factor, should be let in a competitive negotiation process usually referred to as a Request for Proposals (RFP). While cost is still a strongly determinant factor, the RFP can allow for several other



factors on which to evaluate the proposal. This allows Subgrantees more latitude in criteria for choosing its purchases, particularly in purchasing the services of a contractor.

This price level also requires the prior approval by DEEP before any purchase is made. (Note that other specific expenditures at any level also require prior approval.)

Subgrantees' approved and current RFP procedure is to be used for the purchase must be on file for review.

As there are numerous factors used in choosing weatherization contractors, an RFP process must be used by Subgrantees to select individuals and companies for subcontracting weatherization program services.

Documentation of the process and subsequent purchase records must be maintained by Subgrantees and made available for review and audit. RFP materials must include:

- Written, prior approval from DEEP of the item or service to be purchased.
- A written description of the item or service to be purchased, with detailed specifications and other factors considered in the selection, as applicable.
- A record of a minimum of three written requests for proposals for the purchase.
- A record of all proposals received for the purchase.
- Approval of the purchase signed by the authorized administrative or financial Subgrantee agency official.
- Purchase record, receipt, invoice; and,
- Contracts or other agreements which result from and govern the purchase, as applicable.

#### **117.2.4 Vehicle and Other Equipment**

Subgrantees must use either an ITB or RFP process to purchase equipment, including vehicles. Any purchase of \$5,000 or more requires prior approval from DEEP and DOE.

### **117.3 General Procurement Information**

All Subgrantees must establish written procurement procedures to govern local procurement activities.

Cost plus a percentage of cost purchasing is not allowed. Weatherization program expenditures cannot be made on this basis. Bids and quotes must be based on a firm fixed price.

#### **117.3.1 Procurement Process Documentation**

Subgrantees procurement policies and procedures, as approved by its governing board, must be available for review during DEEP's administrative monitoring and for the Subgrantee audit, as applicable.

#### **117.3.2 Specifications**

One key to effective procurement is to describe in clear and concise terms the description and specifications for the desired item or service to be procured. Some suggested points to make clear, no matter what procurement process is applied, include:

- Complete description of the item or service,
- Special requirements regarding color, design, materials, parts,
- Quantity, minimum and/or maximum number of units, package sizes, as applicable,
- Minimum quality requirements,
- Special delivery requirements,
- Applicable warranty requirements,
- Cost breakdown requirements for the bid (e.g., labor/materials, single item/bulk).
- Any bonding requirements, if necessary for any project exceeding \$99,999.99 will require:
  - Performance bond 100% of contract price
  - Payment bond 100% of contract price

When purchasing materials and parts for weatherization, care should be taken to meet DOE qualitative requirements.

For more information, see CT WAP Operations Manual § 300, “Weatherization Services”, as well as the Connecticut Weatherization Field Guide (083021) for product standards.

### **117.3.3 Advertisement**

Quotes, bids and requests for proposals must be advertised. Advertising ensures a more competitive process and will result in a more reasonable cost.

Ads should be placed in a newspaper with the widest area circulation and far enough in advance to ensure the respondents have time to reply appropriately. Ads may also be posted in other local media and on internet sites related to the proposed service or item to be purchased. Some of the information essential for a good ad includes the following:

- Subgrantee agency name, address, where response should be sent,
- Contact information for obtaining additional information,
- Purpose of the solicitation with a brief description of the item or service
- Directions for responding,
- Notice of any meetings or other means for help with responses,
- Deadlines for responses,
- Statement encouraging responses by small, minority-owned, women owned businesses,
- Statement of limitations on the response, i.e., response will or will not be accepted in certain formats (e.g. mail, email, fax),
- Statement that late responses will not be accepted, if applicable.

### **117.3.4 Minority and Women Business Enterprises**

Subgrantees are encouraged to solicit competitive responses from small businesses, minority- owned businesses and women-owned businesses. This requirement should not be interpreted to mean preferential treatment is given to such entities in the award process. However, efforts should be made to identify such businesses in the area and ensure that they are notified of the availability of opportunities to bid on purchases.

### **117.3.5 Procurement Process Documentation**

All procurement transactions, from start to finish, must be fully documented. Records of individual procurement transactions shall be maintained by Subgrantees in sufficient detail to record the history of the procurement. Documentation must be made available to the State for administrative monitoring and be available for the Subgrantee audit. Procurement records shall include, but are not limited to, the following:

- The rationale for the type of procurement process used (small purchases, price quotes, bids, requests for proposals)
- Documentation of the procurement process (requests, newspaper advertisements, responses, bidder meeting records, proposal documentation, evaluation forms, etc.)
- Evaluation records, tabulation of bids
- Basis for vendor/contractor selection or rejection
- Basis for purchase/ contract price
- Price or quote sheets for those procurements where a more competitive process is not required
- Appropriate written justification and authorization if the low bidder or highest scoring proposal was not selected
- Appropriate signoffs by authorized Subgrantee staff
- Prior approval documentation from DEEP, as required

#### **117.3.6 Evaluation**

The method to evaluate a response, of course, depends on the procurement type, the complexity of the purchase and the dollar level of the purchase. The evaluation, like the procurement process should be designed to ensure the best product for the most reasonable cost. In some cases, the evaluation will simply be a determination of the lowest quoted cost. With more complex purchases, such as weatherization subcontracts, Subgrantees will need to have an evaluation which not only scores the proposal based on price but that takes into account other qualitative factors such as the company's experience, resources, ability to deliver services within time frame request, and staffing.

For more complicated evaluations, such as with contractor proposals, the Subgrantee may want to set up an evaluation committee, including knowledgeable individuals from outside the Subgrantee to score the proposals. Care should be taken to ensure there is no conflict of interest with the evaluation committee members.

#### **117.3.7 Protest Resolution**

Subgrantees should have a process in place for the resolution of protests from individuals or companies regarding the awarding of a purchase or contract. Generally, this would include a review by higher levels of authority within Subgrantees agency followed by a formal letter to the protestor with the results of the review.

### **118. Contractor Procurement**

A significant part of the successful delivery of weatherization program services depends on the selection of Contractors with the specialized experience and knowledge required to apply the wide range of weatherization measures to units in a safe and effective manner.

To ensure the best quality and the most reasonable cost, it is required that the weatherization Contractor be chosen through a well-designed Request for Proposal (RFP) process. The success of Subgrantees largely depends on its initial choice and ongoing handling of the contractors.

### **118.1 Contractor Requirements**

To be successful, Subgrantees must have a procurement process that results in contractors who:

- Demonstrate knowledge of weatherization program requirements
- Demonstrate a capacity to implement program requirements
- Indicate professionalism and a respect for the dignity of clients
- Specify a warrantee for all proposed work and materials
- Document all required licenses, bonds, insurance and other requirements of program, state and local law, regulations or codes
- Indicate company compliance with all required building and other permits
- Have tools and equipment necessary to complete their work within the standards of the program
- Complete all work in accordance with DOE, DEEP, and Subgrantee policies, standards, and requirements.
- Use qualified, well-trained and properly certified and licensed individuals to perform the weatherization work
- Work within H&S standards set by the program, such as lead-safe work practices.

### **118.2 Debarment and Suspension**

The contractor must certify that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from entering into this a contract or agreement by any Federal or State department or agency.

### **118.3 Contractor Types**

In designing an RFP, Subgrantees will likely need several versions targeted to each of the various types of contractors that are needed. A basic RFP for weatherization services may have common parts designed to ascertain qualifications common to all contractors, such as those listed above.

Subgrantees will determine its contracting needs based on its use of in-house crews for weatherization, the volume of work that needs to be covered and the funds available for the work.

Additional sections of the RFP may then be added specifically directed to the requirements for the different contractor types, based on the different measures to be contracted out. A typical list of contractors needed for the weatherization program may include:

- Energy auditor, Quality Control Inspector
- Air sealing and other building shell weatherization contractor
- Insulation contractor
- Window and door contractor
- Heating and ventilation, mechanical systems contractor

- Electrical contractor
- Weatherization materials and parts contractor

For more information, see CT WAP Operations Manual §§ 300, “Weatherization Services” and the Connecticut Weatherization Field Guide (083021).

### **118.4 Supplemental Procurement Process**

The RFP process will result in a pool of contractors available for work on mechanical systems in the unit. If the replacement of heating systems (including heat pumps), water heaters is called for in the unit, Subgrantees must conduct a supplemental procurement process to select and assign the actual contractor. This policy pertains to all replacements no matter the cost category or funding source.

The supplemental process requires Subgrantees to obtain written bids from three (3) of its mechanical contractors. The bids are to be based on an in-person site assessment by each Contractor to determine the replacement requirements. This assessment will ensure that all contractors are bidding on the same item. The job will be awarded to the lowest qualified and responsible bidder for that unit able to deliver the work in the timeframe required. The three bids are submitted to DEEP for prior approval, as a part of the waiver packet on the Standard Quote Form (SQF).

### **118.5 Bidder Assurances**

It is strongly suggested that Subgrantees require an authorized individual with the bidder organization to sign an assurances page agreeing to a list of assurances which are fundamental to the program. The list of assurances below corresponds to policies covered in the CT WAP Operations Manual and should also become a part of any weatherization contract that results from the proposal process. A list of assurances may include the following:

- Bidder acknowledges and agrees that the bid includes the costs of furnishing all labor, materials, tools and special equipment required for weatherization work;
- Bidder assures that weatherization services will be conducted using equipment and materials as approved by Subgrantees and the DEEP;
- Bidder assures that all weatherization measures will be conducted using standard weatherization industry work practices prescribed and approved by Subgrantees and DEEP;
- Bidder assures that its weatherization employees will participate in technical training, appropriate to the work it is providing, as required by Subgrantees and DEEP;
- Bidder agrees to maintain all required certifications and licenses required by the state, the locality, Subgrantees or DEEP;
- Bidder assures that it will comply with weatherization measures in the work order, including all drawings, plans and specifications determined by Subgrantees based on the energy audit and the work priorities set forth in the state weatherization policies;
- Bidder assures that all weatherization work will be properly permitted and completed in conformance to applicable building and other codes;
- Bidder assures that the company will conform to all Federal, State and local codes, regulations and statutes;

- Bidder assures that it will cooperate in Subgrantee compliance with State Historic Preservation requirements;
- Bidder agrees to provide proof of insurance and bonding in types and amounts required by Subgrantees and DEEP;
- Bidder agrees to maintain Workman’s Compensation and Unemployment Compensation insurance as required by law;
- Bidder agrees to furnish Subgrantees with evidence of adequate liability insurance coverage in the form of a Certificate of Insurance that co-insures Subgrantee under this policy at the level of insurance required by the contract;
- Bidder assures that compliance will be maintained with the requirements of the Davis-Bacon Act;
- Bidder assures that no claims for reimbursement will be submitted for work outside of the measures set forth by Subgrantees' work order, without prior, written modification of the order;
- Bidder assures that no claims for reimbursement will be submitted for reimbursement of any costs incurred for any work performed, until such time as Subgrantee has performed an inspection and has determined in writing that any such work has been performed in a satisfactory manner;
- Bidder assures that all funds received for weatherization will be documented and accounted for and using generally accepted accounting methods;
- Bidder assures that its company will make available all records of weatherization work including testing results as required by Subgrantees and DEEP;
- Bidder assures that no gifts, money, other financial remuneration, or gratuities from persons in the company have been provided to Subgrantees, Subgrantees' employees, officers, or other persons associated with Subgrantees, DEEP, or CT WAP;
- Bidder assures that the company does not discriminate against any applicants, personnel, clients on the basis of race, color, creed, religion, sex, sexual orientation, gender identity, age, national origin, disability, present or past military status, or any other characteristic protected by applicable state or federal laws;
- Bidder assures that it is not debarred or suspended from doing business under any federal, State of Connecticut, or local grants. Bidder agrees to verify that the name of the contractor does not appear on the Excluded Parties List System (EPLS);
- Bidder agrees to provide criminal background checks, as required; and
- Bidder agrees to provide a drug free workplace..

## **119. Contractor Agreements**

When subcontracting for CT WAP services and materials, Subgrantees must use contract templates that have been reviewed and approved by DEEP. The use of preapproved templates ensures that all agency contractors are administering the program with consistent and uniform contractual obligations and other legal requirements.

Amendments: Subgrantees’ agreement with contractor(s) may be amended or extended by mutual agreement of the parties at any time during the period of the contract. Such amendment must be completed in writing and approved by the authorized individuals representing each party.

Approval: The contractor agreement(s) must be executed and signed by an authorized signatory and witness from each party, the Subgrantee and the contractor.

Termination: The agreements shall remain in effect for the time period and quantity specified unless the contract is canceled by the Subgrantee because the contractor has failed to:

- Deliver goods or services as described in the attachment, or
- Deliver goods or services in agreed upon time frame.

Policy Compliance: All contractor agreements must explicitly require compliance with CT WAP Operations Manual and the Connecticut Weatherization Field Guide (083021).

### **119.1 Contractor Agreement for Services**

Subgrantees must contractually ensure that contractor(s) deliver weatherization services at the contracted funding amount and within program requirements, including the assignment of qualified personnel furnished with appropriate equipment to perform weatherization in a quality workman- like manner, using prescribed technical protocols, and installing materials that meet or exceed program specifications.

The contract will require that all work meet the workmanship standards of the weatherization program. Standards of workmanship will be at the core of the T&TA that will be a part of the contractor's relationship with the weatherization program.

All weatherization work completed by the contractor must meet descriptions and specifications identical to those quoted in the approved proposal.

Subgrantees' agreement addresses other important requirements of the contractor, including but not limited to the following;

- Indemnify and hold harmless the Subgrantee against liabilities, as specified;
- Furnish all labor and supervision of labor for a proper job;
- Furnish all equipment, tools and supplies for a proper job;
- Only perform the work authorized by the work order issued by the Subgrantee to the Contractor;
- Commence work within ten (10) days of the issuance of an authorized work order and complete the work within the specified time;
- Claim payment for weatherization work only after work is satisfactorily completed, inspected, and accepted as satisfactorily completed by Subgrantee;
- Be paid by Subgrantees within 30 days of the job passing inspection, as defined by Subgrantee's and DEEP's policies;
- Comply with laws prohibiting discriminatory practices against any person or groups of persons, as specified;
- Comply with Anti-kickback laws;
- Recruit employees from workforce training programs;
- Comply with wage and hour laws, including overtime;
- Provide safe working conditions for their workers;

- Permit inspection of all work by authorized local, state, and federal agencies;
- Guarantee all work for one (1) year from the date of final acceptance by the weatherization agency;
- Repair any and all damage resulting from the work performed under the agreement;
- Attend all trainings as may be required by Subgrantee, DEEP or DOE;



- Maintain current all required licenses and certifications applicable to the work under the Contractor agreement;
- Obtain all necessary permits;
- Retain and allow authorized access to all records for a period of three (3) years from the final payment; or, until all audits, litigation or other actions are resolved;
- Certify that neither the contractor nor its principals is debarred or suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation by a federal department or agency;
- Meet procurement requirements required under CT WAP policies; and
- Furnish proof of required insurance coverage.

The Subgrantee and contractor have the option to agree on a Contractor Agreement for Materials and/or Services (Contractor's Agreement) on a job-by- job basis until Subgrantees' procurement is completed and in place for the new program year. Subgrantees must seek Grantee pre-approval for all work conducted during the option period of incomplete procurement.

### **119.2 Contractor Licensure**

Connecticut state statute requires proper licensure and certification to conduct certain types of work on the unit. The Contractor Agreement must require, but not be limited to, the following active licensure and certificates, as applicable to specific Contractors:

- Home Improvement Contractor's Certificate
- Heating, Piping and Cooling License
- Electrician's Licenses (various may apply)
- Plumbing and Piping Licenses (various may apply)
- Sheet Metal License

Licenses that are required under state statute are administered by the:

Connecticut Department of Consumer Protection  
License Services Division  
165 Capitol Avenue, Room 147  
Hartford, CT 06106

*See Conn. Gen. Stat §20-332 et. seq.*

### **119.3 Contractor Insurance**

The contractor is required to have insurance coverage, including:

- Workman's compensation, as required by state statute.
- Manufacturers and contractor's public liability insurance policies with minimum coverage of \$500,000 for each occurrence of bodily injury and \$500,000 for each occurrence of property damage.

### **119.4 Damages for Delays**

The contractor will incur a fifty dollar (\$50) per day penalty for damages resulting from an unauthorized delay in the completion of the work order, beyond the specified time stated in the Contractor's Agreement.

### **119.5 Contractor Agreement for Materials**

The contractor is required to furnish materials that meet or exceed standards required by the CT WAP. The contractor is required to:

- Provide only the materials on an authorized agency purchase order.
- Deliver all materials in the agreed upon timeframe; comply with an assessment of any damages or cancellation of the order resulting from a delay.
- Warrant all materials for two (2) years, over and above any applicable manufacturer's warranty.
- Comply with all policies, procedures and regulations of the CT WAP program.
- Indemnify and hold harmless Subgrantee, DEEP, and the State, against liability, as specified.

The contractor must also agree that the terms of the approved proposal, including accepted bids, quotes and prices are incorporated as part of the contract. A description of the materials to be provided is included in the contract, including:

- Specifications
- Quantity
- Unit Prices (including taxes)

For more information about requirements related to materials and parts, see 10 CFR Part 440, Appendix A. See also CT WAP Operations Manual, § 300 (Weatherization Services), and the Connecticut Weatherization Field Guide (083021).

## **120. – 199. Administration Reserved**

# **Section 200**

## **Client Services**

## **200. Introduction**

Subgrantees are responsible for maintaining a process that works with low-income households, particularly the most vulnerable, to provide effective client services throughout the weatherization process, from the initial application for services, through the performance of weatherization work and to the final inspection of the dwelling.

## **201. Application**

CT WAP uses a single application procedure with CEAP. All households certified as eligible for CEAP are also income eligible for CT WAP and may elect to be placed on the waiting list for weatherization services. As weatherization slots become available, names are then drawn from the waiting list, in the order of their certification date and weighted by the program's priority factors.

### **201.1 Where to Apply**

Subgrantees are responsible for maintaining convenient and equal access points for applying for services. Connecticut households (including individuals) apply for services at the local office of the Community Action Agency (CAA) that covers the area in which the household resides. Nine CAA service territories are located across the State where energy assistance is delivered and income eligibility for CT WAP is determined.

The current list of all CAAs that provide weatherization services include:

#### **Region 1**

\*Community Renewal Team, Inc. (Hartford area) (860) 560-5800 or 1-800-798-3805.  
(Middletown area) (860) 347-4465  
Human Resources Agency of New Britain, Inc. (Bristol/New Britain Area) (860) 223-2288

#### **Region 2**

\*Community Renewal Team, Inc. (Hartford Area) (860) 560-5800 or 1-800-798-3805  
(Middletown Area) (860) 347-4465  
ACCESS, Inc. (Willimantic - Danielson area) (860) 450-7423  
Thames Valley Council for Community Action, Inc. (Norwich-New London area) (860) 425-6681

#### **Region 3**

\* New Opportunities, Inc. (Waterbury Area) (203) 756-8151  
Community Action Agency of New Haven, Inc. (New Haven Area) (203) 387-7700  
TEAM, Inc. (Derby-Ansonia-Shelton area) (203) 736-5420

#### **Region 4**

\* New Opportunities, Inc. (Waterbury Area) (203) 756-8151  
Alliance Community Action Agency of Bridgeport (Bridgeport Area) (203) 384-6904  
The Community Action Agency of Western Connecticut, Inc. (Stamford/Norwalk Area) (203) 748-5422

### **Region 5**

\*New Opportunities, Inc. (Waterbury Area) (203) 756-8151

The Community Action Agency of Western Connecticut, Inc. (Danbury Area) (203) 748-5422

**\*Note:** CAAs may have additional, satellite CEAP application sites during the primary application period.

### **201.2 Right to Apply**

A household cannot be denied the opportunity to make a formal application for weatherization services. An application appointment process may be used, but no one may be deterred or unnecessarily delayed in applying for weatherization benefits. Applications for weatherization shall be made available at any time during the contract period.

Households may apply directly for weatherization benefits without participating in receiving CEAP benefits. The combined CEAP/CT WAP application is still used in this instance and income eligibility is still based on CEAP guidelines.

Any applicant/household member 18 years of age or over may sign the application.

Low-income members of an Indian tribe will receive the same benefits and assistance provided to other low-income persons within the State.

### **201.3 Uniform Application Process**

As noted, the process begins with the intake of a combined application for both programs. Once the household's income eligibility has been determined for CEAP, eligibility for weatherization is automatic, but the household must request those services.

In general, the application steps are as follows:

- The household contacts the CAA in the service area where its residence is located for services under the CEAP and/or CT WAP.
- Depending on the Subgrantee procedures, the CAA issues an appointment time for the CEAP/ CT WAP application to be completed; and gives the household a list of standard information needed to complete the application.
- The potential client visits the CAA at the appointed time where the CEAP/CT WAP application is completed, signed and dated by the applicant with assistance by the Subgrantee intake worker. If additional information or documentation is needed to complete the application, the CAA intake worker gives the household a checklist of what is required that the client must provide within ten (10) days.
- Social security numbers and birth dates must be provided by the applicant for all members in the household.
- The CAA determines the household's eligibility for CEAP benefits and notifies the applicant of its receipt or denial of those benefits

- If the primary heat source is electricity or natural gas, the client must provide a copy of the bill which must be in the applicant's name, or the name of a household member who is of majority status, or an emancipated minor.
- This information should be included in the CEAP file and forwarded to the CT WAP by the CEAP section/ agency. If not, the weatherization program staff must obtain the verification to ensure it is included in the client's eligibility files.
- An eligible household is concurrently issued a CT WAP weatherization participation card or similar form by the CAA, instructing the applicant to return the form to the originating CEAP agency or the appropriate CT WAP agency.
- To participate in the CT WAP, the applicant must sign and return the card.
- Following receipt of the household's participation notification card, the completed application and other required case materials must be sent by the "feeder" CAA to the CT WAP Subgrantee which covers the weatherization service area in which the household resides (if different).
- The CT WAP agency then scores the household's position on the Waiting List according to the CEAP certification date and the program priorities.
- When a weatherization slot becomes available the next applicant is pulled from the Waiting List, in order, by the CT WAP agency.
- The applicant is then notified by the Subgrantee that his name has been pulled from the list.
- The received application and other materials are reviewed by the appropriate CT WAP staff for completeness.
- The applicant is notified of what additional documentation may be needed to verify the information on the application.
- The CT WAP Subgrantee staff then notifies the applicant of program acceptance or denial for weatherization services.
- Denied applicants are given a right to appeal.
- The energy audit, the weatherization work and the final inspection occur with eligible units.

#### **201.4 Waiting List and Priorities**

Because of the demand for weatherization services, a waiting list for services may exist, comprised of households that have qualified for CEAP and requested participation in CT WAP.

Subgrantees are responsible for maintaining the waiting list for its service area(s). The Subgrantee may develop its own tracking procedures for the waiting list. The system must be reviewed and approved by DEEP. It must not only account for the length of time on the list (from the date of CEAP eligibility certification), but also the CT WAP's priorities for serving the most vulnerable households.

CT WAP's service priorities are defined in the CT WAP State Plan and approved by DOE. Priority factors used to determine the order of services must include:

Factor	Definition
<b>Elderly</b>	A household in which at least one member is elderly; defined as 60 years and older.
<b>Disabled</b>	A household in which at least one member is disabled: Disability is established by any member(s) receipt of Medicaid, Social Security Disability, Connecticut State Supplement to the Aged, Blind and Disabled, or Supplemental Security Income. Other medically based documentation from a qualified physician, establishing a disabling medical condition may be used.
<b>Children</b>	A household with at least one young child; defined as a child under six (0-5) years old
<b>High Energy Use</b>	A household which is considered a high energy user; defined as having an annual heating cost exceeding \$2,500
<b>High Energy Burden</b>	A household which is considered a high energy burden; defined as having an annual heating cost exceeding 6% of your household income
<b>Household Size</b>	A household in which there are 8 or more permanent residents living in the same dwelling

## **202. Household Eligibility Determination**

As noted above, CT WAP uses the same guidelines as CEAP to determine the household’s eligibility for weatherization benefits. Once a household is approved for energy assistance benefits under CEAP, it is considered CT WAP income eligible and need only request placement on the appropriate Subgrantee’s list for weatherization benefits.

While the initial eligibility is determined by the energy assistance agency, in the end, it is the Subgrantee’s weatherization office which is responsible for ensuring the household’s eligibility for CT WAP. Therefore, client eligibility must be checked again by the weatherization agency prior to the start of work. Most of the time, checking may simply be a matter of reviewing the files transferred by the CEAP agency to the Subgrantee (or within the same agency) to verify that the household has been determined eligible for the CEAP. It includes ensuring the eligibility of the dwelling unit. In instances where the time has expired since the household’s certification, it will require a complete re-determination of the household’s eligibility.

Additionally, if an energy auditor or other program staff encounters discrepancies between the energy application and the actual household situation such information must be reported to the CT WAP weatherization management. For example, the auditor may notice a difference in the type of housing stock reported or have questions about the number and type of residents in the house. The CT WAP agency must follow up on such discrepancies to ensure that the household is eligible for services.

The eligibility determination by the Subgrantee will always include establishing the additional eligibility of the property for weatherization, as discussed below.

### **202.1 Energy Assistance Program Eligibility**

The U.S. Department of Health & Human Services (HHS), under the Low-Income Home Energy Assistance Program (LIHEAP), provides a block grant of funds to DSS to operate CEAP. CEAP has components which provide regular and emergency energy assistance heating benefits, including:

- CEAP
- Contingency Heating Assistance Program (CHAP)
- Since the eligibility for CT WAP is based on the applicant's certified eligibility for CEAP, some basic information regarding CEAP guidelines may be helpful.
- A household is financially eligible to receive energy assistance benefits if the total, annual gross income of the household is at or below sixty percent (60%) of state median income, adjusted for household size.

Income means all cash receipts earned and/or unearned (benefits) received by all members of the applicant's household. CEAP guidelines specify what actual sources of income, including a portion of liquid assets, are included in the eligibility computations, as well as which sources are excluded from consideration. Income computations and verifications are completed within the guidelines as set forth by CEAP. Applicants must provide proof of income and assets for all household members who have resided in the household at any time in the thirty (30) calendar days prior to the CEAP application date.

A household may also be deemed eligible for CEAP if the entire household receives cash assistance from one of the following programs administered by DSS:

- Temporary Family Assistance (TFA) (Temporary Assistance for Needy Families)
- State Supplement to the Aged, Blind and Disabled
- Refugee Cash Assistance Program
- A household with a mix of income - from both DSS programs and non-DSS sources - are considered eligible for CEAP only if the combined household income, from all sources, falls within the eligibility guideline.

Assets Test (CEAP): All households must provide verification of liquid assets. The liquid asset limit is \$10,000 for homeowners and \$7,000 for all other households. Households, whose liquid assets exceed the appropriate limit, may still be eligible for energy assistance if the household's gross income, when added to the excess liquid assets is within the income guidelines. Liquid assets considered in these computations are:

- Current checking account balance
- Current savings account balance
- Current value of Certificates of Deposit
- Current value of equities, stocks
- Current value of bonds
- Current value of an Individual Retirement Account (if available without penalty to a household member who is at least 59 1/2 years old.)

The purpose of the liquid assets test is to ensure that winter heating assistance dollars go to households most in need; that is, to people without the financial means to heat their home.

**Note:** As of PY2021-2022 the Asset Test is not in place for Energy Assistance in Connecticut. In the future if an Asset Test utilized in CEAP disqualifies a household the disqualified household may still qualify for CT WAP utilizing the CT WAP guidelines on income verification pursuant to 10 C.F.R. § 44022.



## **202.2 CT WAP Eligibility**

Pursuant to 10 C.F.R. § 440.22, CT WAP may consider a household unit eligible for CT WAP once they are determined “eligible for assistance under the Low-Income Home Energy Assistance (LIHEA) Act of 1981, provided that such basis is at least 200 percent of the poverty level determined in accordance with criteria established by the Director of the Office of Management and Budget.” Based on this provision, once a household’s eligibility has been established for the CEAP program, the family is eligible for CT WAP services, if requested.

The determination of CT WAP eligibility is valid for a period of twelve (12) months. In CT WAP, this means that the first step in the process, the energy audit, must begin within twelve months of the date of the family’s certification for CEAP. A review of the family’s eligibility should be conducted when the case is pulled from the waiting list. If, when the name is pulled from the waiting list, there is missing information or, if the twelve-month period is expired, or is about to expire, Subgrantees must have the household’s eligibility for CEAP established before any weatherization services may commence. The re-determination of the household’s CEAP certification does not alter its position in being drawn from the waiting list.

For more information, see DOE Weatherization Program Notice (WPN) 22-3.

### **202.2.1 Eligibility Verification Procedures**

Subgrantees are responsible for maintaining a procedure for the accurate exchange of the names of eligible cases and of pertinent case materials between the CEAP and CT WAP programs.

This procedure may be required with the other local “feeder” CEAP agencies and/or within Subgrantees’ own agency, as applicable. Additional procedures must be in place to re-establish the household’s CEAP eligibility for expired eligibility determinations or other eligibility issues.

CT WAP Subgrantee staff must ensure that the household is eligible for weatherization services by reviewing and approving what was presented on the joint application for CEAP and CT WAP.

Eligibility information can be accessed and maintained in the CEAP software (e.g., CAPTAIN, Fuel Ware) where available for use. The CT WAP staff should review the CEAP benefit award and certification date, the type of dwelling recorded on the application, the household members, and the number of individuals living in the home. Errors can affect the household’s eligibility for weatherization services and should be checked carefully.

It is the Subgrantee’s responsibility to have eligibility and other information available for review by DEEP or other appropriate agencies. Since the household’s CT WAP eligibility is based on its eligibility for CEAP, a copy of the document(s) certifying CEAP is sufficient for the case file. The CT WAP program staff may need to review and obtain relevant documents from CEAP staff to ensure the CT WAP case file is complete.

## **203. Property Eligibility**

Subgrantees must have procedures in place to ensure that the property to be weatherized is eligible. The property must be occupied by a household which has been determined eligible based on program guidelines. Furthermore, Subgrantees must establish who actually owns and occupies the property and obtain the necessary agreements to provide weatherization. Weatherization services may not be duplicated, and a unit may not be re-weatherized until the date that is 15 years after the date such previous weatherization was completed.

### **203.1 Single Family Units**

Single family dwelling units are eligible for weatherization if occupied by an eligible household, based on program guidelines, and not otherwise ineligible as detailed below.

### **203.2 Multi-Family Units**

Weatherization of multi-unit buildings requires that a percentage of the occupants of the building be eligible based on the program guidelines defined above. The percentage depends on the number of units in the multi-unit building:

- For duplexes and up to four-unit buildings, 50% of the units must be occupied by eligible households.
- For complexes with five or more units, 66% of the units must be occupied by eligible households.

This also means that an application and eligibility determination are not necessary for the other, non-eligible, or empty units.

See 10 CFR 440.22(b) for additional information.

### **203.3 Rental Units**

Subgrantees may not refuse to weatherize an otherwise eligible rental property. Weatherization services are to be provided to owner-occupied and rental units alike with no priority given to either. Applications from households who are renting should be ranked and verified in the same manner as used with households who own the home in which they live.

### **203.4 Ineligible Dwellings**

The weatherization of non-stationary campers, R.V.s or trailers is not allowed even if the owner (tenant) has a post office box address. A manufactured "mobile" home that is in a fixed location is eligible.

Dwelling units are ineligible to be weatherized if they are currently for sale or will be for sale within 180 days of the date of the Weatherization Agreement. Sale or loan status can be accessed electronically by the Subgrantee.

Dwelling units are ineligible to be weatherized if they are in foreclosure or in a process of mortgage mediation.

Dwelling units are ineligible to be weatherized if, in the opinion of Subgrantee, they are in need of major rehabilitation. In some instances, depending on the extent and time needed, the weatherization of a dilapidated property may be deferred until the needed rehabilitation is completed.

### **203.5 Re-Weatherization of Units**

Pursuant to 42 U.S.C. § 6865(c)(2), weatherization program funds may not be used to re-weatherize a unit until the date that is 15 years after the date such previous weatherization was completed, and the re-weatherization is approved by DEEP. This applies regardless of who resided in the unit at the time, or since. It is the responsibility of Subgrantees to determine whether a unit has already received weatherization services and the date on which those services occurred.

Funding Note: The re-weatherization of an unqualified, previously weatherized unit will result in questioned or disallowed costs to Subgrantees. Since many other households have never received services, preference shall be given to such households. Units are usually recommended for re-weatherization when there is a no heat request. An energy audit must be completed to determine any additional measures.

Reporting note: All dwellings previously weatherized under a federally funded program have already been counted and reported as a weatherized dwelling. Re-weatherized units shall be reported separately as a re-weatherized unit.

### **203.6 Proof of Ownership**

Only the owner of the property or an authorized representative may authorize weatherization work on the eligible unit. Homeownership must be verified through contact by the CAA staff with the local assessor's office. If the client is not listed on the deed; or additional individuals (such as a spouse) listed on the deed are not on the energy application, further review is required to verify permission authority (and household makeup). This additional review may take the form of a client interview, followed up by documentation verifying what was said by the client (e.g., in a matter of divorce, the Subgrantee would get verification to that effect).

This step is critical, as weatherization work may not begin until home ownership is verified, proper permission is obtained, and all household information is deemed accurate. If it is discovered that an ineligible client is weatherized, costs will be disallowed by DEEP.

While the term "landlord" may be used, do not take for granted that the individual with whom the tenant is dealing is the actual owner of the property or has written authorization to sign for the owner. Ownership of the property must be verified in all cases, regardless of who is occupying it.

The owner or an authorized representative must approve all weatherization work.

### **203.7 Proof of Tenancy**

If the unit to be weatherized is a rental, proof of the applicant's tenancy must be obtained. The preferable documentation to prove tenancy is a lease, rent receipt or a written statement. Such documents must include the applicant's name; the address of the unit to be weatherized; and the name, date and signature of the owner, landlord or other authorized representative.

### **203.8 No Un-Due Enhancements**

The goal of weatherization is to reduce energy costs for the client. When determining the work plan on a rental unit, Subgrantees should ensure that the benefits of the weatherization assistance accrue primarily to the low-income tenants in the unit.

Such measures as window replacement and door replacement should be used sparingly in rental units, and only as clearly warranted by the energy audit. Furnace and water heater replacement are not allowable measures in a rental unit. No undue enhancement to the value of the property should occur beyond the scope of the energy conservation work.

### **203.9 Weatherization Agreement**

Subgrantees must have procedures in place to ensure that written permission is obtained from the actual owner of the property prior to the commencement of any weatherization work.

Procedure: The consent to proceed must be obtained using the current version of the Weatherization Agreement.

The Weatherization Agreement memorializes the owner's permission for weatherization personnel to conduct the energy audit and install appropriate weatherization measures. The owner shall agree that such services will be performed within available funding, as cost-justified by the energy auditor or as required for H&S reasons; and within other determinations and limitations defined by agency policies and procedures.

The owner shall accept responsibility to store and dispose of any construction waste leftover from the weatherization work in an appropriate and safe manner.

The owner shall affirm that the property is not under foreclosure, or for sale, nor will be for sale within six months of the date of the agreement.

The Weatherization Agreement must be signed by the owner of the unit and, where applicable, the tenant. If the unit is a rental, additional stipulations apply, as follows.

#### **203.9.1 Renter Eviction Limitations**

The owner shall agree that once the weatherization work is completed, there will be no eviction or removal of tenants, as long as the tenant complies with every ongoing obligation and responsibility owed to the owner.

If such eviction or removal occurs, the owner will be asked by Subgrantees to justify the reason for the action. If no adequate justification for the eviction is forthcoming, the Subgrantee may initiate action against the owner in a demand letter to recover within a defined period, the full cost of the weatherization work completed on the unit. Follow-up action against the owner may include necessary legal action for the breach of the signed agreement. Appropriate justification for eviction of a tenant may include factors such as recurring non-payment of rent, destruction of the property, or any legally valid reason for eviction as defined in state or local laws.

If the eviction does not appear to be justified, Subgrantees should also refer the tenant to legal services available in the area for possible action.

### **203.9.2 Subsidized Units**

The weatherization of a unit does not affect the status of a tenant who is in a low-income, federally subsidized unit. No change in the recipient's eligibility or the terms or status of the rental contract or agreement may be made under such programs because of the weatherization benefit. This includes the Housing Choice Voucher Program (Section 8) administered by HUD.

### **203.9.3 Rent Increase Prohibition**

For a period of two (2) years from the date the work is completed, there may be no increase in the rent charged for the weatherized unit solely as a result of the weatherization work.

The owner will be asked by Subgrantees to justify any increase in the rent that occurs in the period. Unless increases can be shown to be related to specific matters other than the weatherization improvements, Subgrantees may initiate action against the owner to recover the full cost of the weatherization work completed on the unit. Follow-up action against the owner may include necessary legal action for the breach of the signed Weatherization Agreement.

Possible justifications for an increase include factors that are beyond the value of the weatherization. An increase in the owner's property taxes may be an example.

Any dispute of the circumstances for a rent increase will be reviewed by the Subgrantee's weatherization management to determine whether the increase is justified. The determination may also be reviewed by DEEP, if requested by the parties involved.

## **204. Unit Deferral**

There are circumstances under which weatherization for an individual unit may have to be deferred, especially when the performance of services may present an H&S issue to the occupants or workers. Subgrantees are required to have a deferral process in place that informs the owner and applicant as to the status of the application whenever it changes.

Procedure: If weatherization services are to be deferred, notification is to be made on the form, *Notice of Postponement of Services*. The form is directed to the owner of the unit who is responsible for the alleviation of the deferral problem. Where applicable, a copy of the notice is also sent to the tenant (applicant). The notice must identify the specific reason(s) for the deferral and include an adequate timeframe for the correction of the problem(s) by the owner. The form must be signed by the owner and the auditor, and a copy left with the owner, the other copy placed in the client's file. If there are concerns, the form can be completed by an agency representative and sent to the property owner by certified mail.

Subgrantees should be prepared to suggest solutions including alternative resources which may be available to help alleviate each deferral problem.

Deferrals may take place during any phase of the weatherization process. The energy auditor, Subgrantees or the weatherization crew may recommend the deferral of work on a unit at any point where an H&S risk to the occupants, or to the workers, is identified.

The decision to defer weatherization work is to be requested from, and approved by, Subgrantees' weatherization management. These requests and approvals must be fully documented in the case file.

For more information, see CT WAP Operations Manual, § 424, "Health and Safety Deferral."

### **204.1 Deferral of Services**

Some of the circumstances under which a unit is to be deferred include, but are not limited to:

- Any existing condition that could endanger the health and/or safety of the work crew and/or contractor and cannot be safely remediated within the scope of weatherization program funds.
- Problems with the building structure or the condition of its mechanical systems including electrical and plumbing systems that are in such a state of disrepair that failure is imminent.
- Extent and condition of lead-based paint in the house that would potentially create H&S hazards for the occupants or workers.
- Extent and condition of asbestos in the house would potentially create further H&S hazards for the occupants or workers.
- Elevated carbon monoxide levels where abatement is not possible using weatherization funds.

- Existing moisture and resulting problems such as mold that cannot be resolved.
- House with sewage or other sanitary problems that not only endanger the occupants, but the workers who would perform weatherization work.
- A contagious or otherwise dangerous health condition of an occupant.
- Occupant who is uncooperative, abusive, or threatening to crew, Sub-Contractors, auditors, inspectors, or others who must work on or visit the unit.
- Evident illegal or dangerous activities that may be taking place in or about the property.

### **204.2 Referral Resources**

Deferrals should be referred to case work staff within Subgrantees' organization, where appropriate referrals may be made to alternative resources to alleviate the condition causing the deferral. Subgrantees should establish lines of communication with other funding sources so that referrals can occur in an effective manner. The following is a list of potential funding sources to help remedy situations in a home:

- U.S. Department of Housing and Urban Development (HUD) - HOME Program
- HUD - Community Development Block Grant
- U.S. Department of Health and Human Services - Community Services Block Grant
- U.S. Department of Agriculture - Rural Economic Community Development
- State-funded housing and rehabilitation programs
- Low-income program funds provided by local utilities
- City-funded housing and rehabilitation programs
- Donations or financial participation from landlords
- Donations from local churches or community groups
- Local Department of Health or Social Services Department

### **204.3 Deferral Resolution**

If the issues specified on the *Notice of Postponement of Services* are not addressed by the property owner within the allowed timeframe, Subgrantees may deny further weatherization services. In this instance, a written denial notice must be issued to the applicant by certified mail. Time extensions may be granted, if in the judgment of the Subgrantee's weatherization program management, the owner is making progress on the underlying issues and may be expected to resolve the problem within a reasonably extended time. Because such extensions tie up Subgrantee resources and prevent the use of funds on other eligible units, it is recommended that no more than two (2) extensions be granted. Once the specified deferral issues are adequately addressed, the process may continue as authorized by Subgrantees.

## **205. Notifications and Appeals**

Since the initial eligibility determination is made by the CEAP agency, that agency's eligibility notifications are used initially with the application for energy assistance. The CEAP appeal process would also apply if assistance were denied. However, once the applicant has been placed on the CT WAP waiting list, the receiving Subgrantee is required to notify the applicant of any subsequent actions on the case.

### **205.1 Eligibility for Services**

Subgrantees must notify the applicant when the name is selected from the waiting list for weatherization services. A written notification should include an explanation of the subsequent weatherization program process, with particular attention to any additional requirements of the applicant for CT WAP.

### **205.2 Denial of Services**

If at any point after the applicant has been selected from the waiting list the case is denied, Subgrantees must provide a written denial notice to the applicant. The denial notice must clearly state:

- The reason for the denial.
- A citation of all applicable policy manual sections and/or federal regulations on which the decision is based.
- That the applicant has a right to appeal the decision.
- That the applicant has fifteen (15) business days from the date of the notice to appeal; and,
- The procedure for sending an appeal to Subgrantees.

### **205.3 Appeal**

Appeals received after the fifteen-day period should be returned with a notice stating that it will not be considered as it was submitted beyond the deadline.

Subgrantees may use their own official procedure for hearing and appeals decisions. Appealed decisions are to be decided by an Subgrantee staff person, at least one level higher than the person who made the decision on the case eligibility. That person's decision should be communicated to the appellant in writing, no later than ten (10) business days following the receipt of the appeal. If the Subgrantee fails to meet this deadline, the appeal must be automatically forwarded by the Subgrantee to DEEP for action. The appeal decision notice must clearly state the acceptance or denial of the appeal. If accepted, the weatherization process continues where it was left off.

If the appeal is denied, the notice must state:

- That the appeal has been reviewed and denied.
- That the appellant has a right to a final appeal to DEEP.
- That the appellant has an additional ten (10) business days from the date of the second letter to appeal to DEEP; and,



- The procedure for further appeal to DEEP. When the appeal is received at DEEP, DEEP will review the case. DEEP may request case file materials and speak personally to Subgrantee staff or the appellant. The appellant and Subgrantees will be notified of DEEP's decision within ten (10) business days of its receipt of the appeal. After DEEP decision is issued, no other administrative appeal steps will be available to the denied applicant. Nothing in this process is to be construed as limiting an applicant's right to seek additional legal and judicial remedy.

## **206. Client File Maintenance**

Subgrantees are responsible for maintaining a complete and unique file on each household whose application is moved off the Waiting list for weatherization services. All paperwork relative to the individual case must be labeled with a unique case number assigned by Subgrantees.

Weatherization case files should include all notifications, referrals, forms, notes, correspondence and other documentation explaining the eligibility of the unit, the client's eligibility for services and the types of services to be delivered.

**Note:** Client file maintenance for all work performed and reported as DOE completed CT WAP sites must follow WPN 22-4, the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the CT WAP State Plan.

### **206.1 Computerized Records**

DEEP encourages the use of computerized case file records. So long as the required information is accessible to DEEP in a clear and complete format there is no need to duplicate information in a database with printed copies in a hard copy case file.

If, for example, an accessible database has the capability of storing and retrieving documentation of the household's CEAP information, there would be no need to have additional copies in the file. In another example, the energy audit software may store data regarding the unit's weatherization audit possibly making a printout of documents from that database unnecessary. Any forms that require an original signature from the applicant, the owner of the unit, Subgrantees or other persons, must be in hard copy in the case file. Such forms may include permissions and agreements regarding weatherization services, for example.

DEEP will monitor Subgrantee program compliance using case file documentation as required. Whether in hard copy or a digital format, whether located in the CT WAP or the CEAP files, whether required for local, state or federal monitoring; all information must be readily available to establish the eligibility of a recipient, describe and justify the services rendered, and account for expenditures on each unit.

**Note:** Failure to properly document weatherization eligibility and services may result in disallowed or questioned costs and recovery by DEEP of expenditures in the case.

## **206.2 Case Eligibility Documentation**

As the first step involves a determination by the CEAP agency, much of the original documentation will reside there.

A typical case file will include:

- A completed, consolidated application for the CEAP/ CT WAP (both agency files should have a copy)
- Copies of documents used to verify the income of the household (CEAP agency file)
- Copies of all correspondence related to the case, including a copy of the notice of eligibility (both, according to which agency generates)
- Copies of all documents used to verify ownership of the unit (CT WAP agency)
- Copies of all documents used to verify tenancy of the unit (CT WAP agency)
- Utility consumption data, as applicable (CEAP/ CT WAP)
- A Signed Weatherization Agreement (CT WAP)

Since the eligibility for CT WAP is determined by the household's eligibility for CEAP, the CT WAP case file only needs to contain documentation of the CEAP eligibility, including the most recent date that the family was certified.

## **206.3 Weatherization Services Documentation**

All information related to the weatherization services must also be documented in the CT WAP case files. A typical file will include:

- Energy audit on the unit with pre weatherization readings and prioritized measures
- Building Weatherization Report(s), all versions
- Blower Door Data Input Sheet/Work Order
- Job specifications and the work order sheet with Subgrantee's authorization to proceed
- Contractor's supplemental bid sheet(s), as applicable
- Modifications to the work order
- Sub-Contractor's documentation such as ongoing pressure diagnostic readings
- Contractor invoices showing all material and labor charges
- Agency summary of charges for labor and material, if a crew is used
- Receipts from client verifying the issuance of required pamphlets such as the information on lead-based paint
- A signed Completion Certificate

## **206.4 Denied Case File**

Cases where the file is closed and weatherization work has not been completed are to be maintained also but kept separate from eligible cases. The case file will include:

- The completed application for the CEAP/ CT WAP
- Notice of denial
- All correspondence related to the case

- Documentation of reason(s) used to determine ineligibility
- Written case notes as applicable
- Documentation related to a denied applicant's appeal, as applicable
- Notice to appellant regarding all appeal decisions
- Copy of further appeal to DEEP, as applicable
- Copy of the DEEP decision on the appeal, as applicable

**207. – 299. Client Services Reserved**

# **Section 300**

## **Weatherization Services**

## **300. Introduction**

CT WAP approaches the unit as a whole, using advanced diagnostic tools and techniques to determine the measures that will deliver optimum efficiency for the most reasonable cost. In Connecticut, the program weatherizes:

- Single family units and small multifamily buildings (less than 10,000 square feet, and less than 5 units (NEAT)
- Manufactured Housing/Mobile Homes (MHEA)
- Large multifamily complexes (larger than 10,000 square feet or buildings comprised of 5 or more units) (MultTEA)
- Homeless and Domestic Violence Shelters.(MultTEA)

Section 300 of the CT WAP Operations Manual provides state operational policies and procedures covering the determination and implementation of the weatherization services provided by Subgrantees.

It is the responsibility of Subgrantees, under contract with the State to install the most cost-effective weatherization measures in a unit based on a proficient, detailed analysis of the unit's needs attained through a quality energy audit.

**Note:** All Work performed and reported as DOE completed CT WAP sites must follow WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current CT WAP State Plan.

## **301. General Weatherization Requirements**

Subgrantees have responsibility to implement weatherization services under the CT WAP in compliance with all applicable federal, state and local regulations, laws and codes which apply to the types and quality of materials, the standards of workmanship, installation procedures and qualifications of persons performing the work.

Weatherization program requirements and standards are further detailed in the following references:

- 2 C.F.R. 200
- 10 C.F.R. Part 440
- DOE Weatherization Program Notices
- Connecticut Weatherization Guidance Notices
- State and Local Housing Codes
- State Licensing and Certification requirements for weatherization workers
- CT WAP State Plan, and Health & Safety (H&S) Plan
- Connecticut Weatherization Field Guide (083021)
- Applicable provisions of the National Historic Preservation Act (NHPA), 54 U.S.C. § 300101 *et seq.*

### **301.1 Subgrantee and Contractor Staff Expectations**

Subgrantee and contractor staff must behave in a professional manner at all times, as they function as CT WAP representatives. Subgrantee and contractor staff must use all required Protective Personal Equipment (PPE) to comply with Federal, State or Agency Having Jurisdiction (AHJ) Codes or Program Policies, including, but not limited to Occupational Safety and Health Act (OSHA) and Lead Safe Weatherization.

### **Prohibited Activities**

- Use of alcoholic beverages, illegal drugs, or the inappropriate use of prescription drugs while on the job or in interactions with the client;
- Harassment, including but not limited to, sexual harassment;
- Engaging in any discussion of work, or the performance of work, with the client either at no-cost or at-cost of the client outside of the scope of work with the client;
- Violence against self, other staff, or the client;
- Presence of weapons or firearms at the job site; and
- All other illegal activities not specified above.

### **301.2 Workmanship**

Weatherization work, whether conducted by the Subgrantee's own crews or by subcontracted personnel, must meet the standards of workmanship established by the program. Standard work practices are detailed in the Connecticut Weatherization Field Guide (083021) and the CT WAP Quality Work Plan as the primary source for protocols and technical definitions of the work that is required. Program standards and protocols in the Field Guide must be adhered to and may only be altered by subsequent revisions of the guide, or by Connecticut Program Guidance Notices. Workmanship standards include the following four basic requirements:

- Use of qualified and trained personnel to conduct weatherization work.
- Use of generally accepted weatherization protocols, methods, techniques and tools.
- Installation of prescribed materials, parts and equipment; and
- Weatherization work conducted in a safe and healthy work environment.

Subgrantees must contractually require its contractors to comply with these standards as well as detailed regulations such as those above. Jobs and job sites should be monitored to ensure that agency crews and contractors abide by these general workmanship standards.

### **301.3 DOE Materials Standards**

Weatherization contractors are required to install equipment, materials and parts which meet the standards set forth by 10 C.F.R. Part 440, Appendix A: "Standards for Weatherization Services." This section of the federal regulations details standards for materials and technologies conformance in fourteen specific areas of weatherization, for the most part referring the contractor to industry standards for each measure.

For example, insulation installers must meet the guidelines set forth by the American Society for Testing and Materials (ASTM) in the areas of thermal insulating materials for building elements. Similarly, standards for doors and windows are set by the American National Standards Institute (ANSI). The

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) sets the standards for work on heating, cooling, and ventilating systems. These examples and standards of conformance are addressed in the DOE regulation cited above, as listed here:

- Fire Safety Requirements for Insulating Materials According to Insulation Use Thermal Insulating Materials for Building Elements
- Doors and Storm Window-Caulks and Sealants
- Weather-strips
- Heat Exchangers
- Boiler/Furnace Control Systems
- Water Heater Modifications
- Waste Heat Recovery Devices
- Boiler Repair and Modifications/Efficiency Improvements
- Heating and Cooling System Repairs and Tune-ups/Efficiency Improvements
- Replacement Furnaces, and Boilers
- Chimneys and combustion gases venting systems
- Air Conditioners and Cooling Equipment
- Screens, Window Films, and Reflective Materials

Subgrantees must institute policies to ensure compliance with these standards in its direct delivery of weatherization services and in any subcontracts, it has for such services. Compliance by contractors must be contractually required and monitored by Subgrantees.

Funding: Compliance with standards will be monitored DEEP. Weatherization measures installed that do not comply with CT WAP standards shall result in questioned and/or disallowed costs for the weatherization work completed on a unit.

**Note**: All Work performed and reported as DOE completed CT WAP sites must be in compliance with WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the CT WAP State Plan.

### **301.4 Weatherization Contractors**

When contracting work, Subgrantees must contractually require that the weatherization work is completed by contractor employees. This includes stipulation that the contractor may not further subcontract work without the specific, express permission by Subgrantees. The contractor must also employ an adequate number of properly trained and supervised workers to accomplish the work. Those contractors completing the shell work must have a qualified Crew Chief/Supervisor at the work site at all times.

In conducting weatherization work the contractors must comply with all state and local licensing requirements. Skilled workers such as electricians, plumbers, and heating professionals must currently hold all required licenses and credentials. Compliance with other federal regulations regarding employee qualifications is also a requirement. For example, under certain circumstances lead safe work must be completed under the supervision of an EPA Certified Renovator.

Contracted energy auditors are required to maintain a current certification from the Building Performance Institute, Inc. (BPI). These auditors are also required to attend additional training as required by DEEP.

Subgrantees must contractually ensure that its weatherization contractors comply with these requirements. The compliance should be verified and monitored by Subgrantees.

Funding: Compliance with these qualifications will be monitored by DEEP. Weatherization measures installed by unqualified personnel, whether employed by Subgrantees, or by its Contractors, shall result in questioned and/or disallowed costs for the weatherization work completed on a unit.

### **301.5 Training**

Since training is the key to a vital program, the CT WAP maintains an aggressive training regimen which places specific training requirements on Subgrantees and its contractors.

Subgrantees must ensure that its weatherization staff and contractors maintain the required level of training and certifications required for conducting the work.

The volume of work assigned to a contractor will, in part, depend on the level of expertise developed in its workforce. A company with better trained employees will be given more job assignments. contractors whose work fails to meet the program standards because of the lack of required training will be at risk of less work volume, and even contract termination.

Subgrantees must ensure compliance with training though its contract with the companies providing its weatherization services. Subgrantees are responsible for periodically reviewing the training compliance of individual company personnel.

Funding: Compliance with training requirements will be monitored by DEEP. Weatherization measures installed by untrained personnel, whether employed by Subgrantees or by its Contractors, shall result in questioned and/or disallowed costs for the weatherization work completed on a unit.

For additional information, see CT WAP Operations Manual, §500 "Training."

**Note**: All training related to work performed and reported as DOE completed CT WAP sites must be in compliance with WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current CT WAP State Plan.

### **301.6 Weatherization Tools**

Weatherization work requires the expert use of a number of specialized tools. Proper attic insulation cannot be conducted without the skillful use of an insulation blowing machine, for example. Or ongoing pressure diagnostics with use of the blower door and related tools are essential to effective air sealing. Underpinning the more sophisticated equipment are more basic tools such as those used in basic carpentry, plumbing and electrical work.

It is up to the contractor to provide the necessary tools for the job. Subgrantees must require this contractually and periodically monitor the use of proper tools and equipment at the job site.

Some typical weatherization tools include:



Auditing Tools: Blower Door (with frame, shroud, digital manometer, tubing, probes, smoke bottle), duct leakage performance tester (Duct Blaster), gas leak detector (Leakator), combustion analyzer (Bacharach), CO detector, draft gauge, moisture meter, exhaust vent flow hood, air flow meter, bore scope visual inspection equipment, infrared camera, digital camera, tape measure, flashlight, pocket thermometer, non-contact voltage detector, circuit tester, volt/amp meter, vacuum cleaner, fire extinguisher, first aid kit, step ladder, calculator, clipboard, paperwork, and audit & notice forms.

- Pressure Diagnostic Tools: Blower Door (with frame, shroud, digital manometer, tubing, probes, smoke bottle), probe (for zonal tests), hose kit, smoke bottle/ stick; duct leakage performance tester (Duct Blaster), exhaust flow hood, air flow meter, duct mask sheets, flex duct, pressure/flow gauge (DG 700).
- Insulation Tools: Insulation blower machine, insulation foam sprayer (including 2-part foam equipment).
- Combustion Appliance Tools: combustion analyzer (Bacharach or similar, with printer), gas leak detector, draft gauge, lighter (w/long handle), mirrors (clear flame), soap bubbles, bleed jug and hose, copper tubing for analyzers, jumper wires, lag bolts or plugs
- Personal Protective Equipment (PPE): safety glasses, polyethylene- coated suit (Tyvek), safety-toed footwear, work gloves, respirator, hard hat, full face shield.
- Other: tape measures, flashlights, multiple screwdrivers, large pry bar, small pry bar, hammer, cordless drill and various bits, drill bit for sidewall inspection, pen and paper, digital pocket thermometer, high temp silicone, duct tape, tinsnips (right, left, center), 14" roll flashing material, crimper snips, extension cord, trouble lights, coveralls, gloves, dust masks, hard hat, full face shield, respirators, personal protection equipment (PPE), wrenches – open ended (assorted sizes), rags/hand cleaner, nut drivers – ¼", 5/16" 3/8", crescent wrench, self-tapping screws, small paneling nails, trash bags, extra batteries, recharging equipment, cleaning equipment, calibration equipment, drop clothes, traps and, small plastic garden rake

See Connecticut Weatherization Field Guide (083021) regarding the effective use of weatherization tools.

### **301.7 Job-Site Health and Safety**

Subgrantees must have written policies and procedures in place which require all standard precautions to ensure a hazard free jobsite for the protection of its own crews, the crews of its contractors and the occupants at the unit. The H&S of the household must be addressed throughout the weatherization process.

See CT WAP Operations Manual Manual, § 400 "Health & Safety" and Connecticut Weatherization Field Guide (083021), which also addresses workplace safety and client protection.

**Note:** CT WAP has implemented special policy, procedures and protocols designed to address Job-Site health and safety during the COVID-19 crisis. Please refer to §§ 406, 406.3, 406.4, 406.5, 407, 417.7, 423.3 and 424.1, 425, 425.1 & 425.2.

### **301.8 Health and Safety Measures**

Subgrantees are required to address H&S measures necessary to ensure standard weatherization measures do not worsen H&S issues in the unit. H&S issues must be addressed prior to installing weatherization measures including running a blower door.

See CT WAP Operations Manual§ Section 400 “Health & Safety.”

### **301.9 Other Legal Compliance**

Subgrantees must contractually ensure that its contractors conduct all weatherization activities in compliance with legal and regulatory requirements, including:

- Weatherization employees must maintain all certifications and licenses required by DEEP, the locality, and Subgrantees.
- Weatherization work will be properly permitted and completed in conformance to applicable building and other codes.
- Companies must conform zoning codes in the performance of weatherization work.
- Weatherization work must be conducted in compliance with State Historic Preservation Office (SHPO) requirements.

**Note:** All contracts for work performed and reported as DOE completed CT WAP sites must be in compliance with DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current Year State Plan/Master File.

### **301.10 Savings to Investment Ratio (SIR)**

Each weatherization material and package of weatherization materials installed in an eligible dwelling unit must be proven cost-effective in order to qualify for DOE funding.

Subgrantees must ensure that weatherization funding is spent on energy efficiency measures which will result in a Savings to Investment Ratio (SIR) of one to one (1:1) or more. This ratio is the number that results from dividing the energy cost savings of a measure over its expected lifetime, by the total cost of the materials and the installation of the measure.

As an example: The cost of insulating an attic is \$1,000; and the projected energy savings is \$150 per year (present value); and the insulation is expected to be effective for a life of ten years. The SIR equation would be  $(\$150 \times 10 \text{ years}) / \$1,000$  which equals 1.5. This means that for every \$1.00 spent on this measure, the savings would be \$1.50. So, the SIR number is a ratio of 1.5:1.00 (read: “1.5 to 1”). Since the result (1.5) is more than the threshold SIR of 1:1, the measure is deemed cost-effective and allowed.

Procedure: As the auditor makes weatherization recommendations for the unit, information on each proposed measure, including cost information, is inputted in the Weatherization Assistant 8.9 (NEAT, MHEA) audit software. The software will then determine the SIR number for each measure. Only those measures with an acceptable SIR (one or more) will be added to the initial output of measures from the software.

Not only does the SIR prove the cost-effectiveness of the individual measure, but it also directs the auditor in ranking measures, in the order in which they are to be installed. For example, perhaps sealing a large bypass gap into the attic costs \$1.00 for every \$3.00 saved (because it costs so little for the job compared to the effect on heat loss). So, the SIR calculates a 3:1 ratio. The air sealing measure in this case will be listed before the insulation work above, since the comparative ratings indicate a higher cost-effectiveness ratio for the air sealing. The auditor's recommended measures when run through the program's software will be accepted and ranked by priority, in this way, based on the comparative SIR ratings.

In addition to the SIR rating for individual measures, a cumulative SIR rating will be calculated on the entire package of measures for each unit. The package of measures must also prove out at an overall rating of 1:1, or better.

The cumulative SIR rating for the package of measures must include the total, additional Incidental Repair costs in the unit.

Neither exempt H&S measures nor DOE pre-approved General Heat Waste (GHW) measures are included in meeting the SIR threshold. In some instances, H&S measures must first be evaluated and, if found to be cost effective, categorized as energy efficiency measures.

Funding: A Subgrantee's payment for an energy efficiency measure that has not been shown to be cost-effective, by both the individual and the overall SIR calculations, is not an allowable cost. Such costs will be disallowed in a weatherization monitoring or fiscal audit.

### **301.11 Historic Preservation**

Services provided under CT WAP must comply with the laws governing alterations of historically significant properties. For any structure with federal historic significance or homes built fifty (50) or more years ago, Subgrantees must submit certain information to the SHPO for review. That office will conduct a review of the unit to ensure compliance with the requirements of the NHPA.

With the understanding that much of Connecticut's housing stock is aging, state agencies and SHPO have entered into a programmatic agreement that specifically provides exemptions to the review requirement. Exemptions include:

- Homes built less than 50 years ago.
- Mobile homes or trailers, regardless of date of construction.
- Homes that require exempt weatherization measures only.

The exemption for weatherization includes many of the common measures used in the program, but only as long as they are installed in a certain way. Subgrantees must consult the Weatherization Program Guidance No. 6 regarding these specific measure exemptions. Note that these measures exempt the property if they are the only measures being installed.

Based on a survey of submittals to SHPO, the Section 106 review is most often triggered by the replacement or installation of windows or doors.

DEEP recommends that audits be performed on all homes prior to submittal to SHPO to determine the scope of work and see whether or not it is subject to further inquiry.

### **301.11.1 SHPO Submission**

The following information will be needed for the Section 106 historic preservation review by the SHPO.

- At least one recent, clear, digital photograph showing the full front of the property. This photo should be taken recently and may not be a photograph from a website like Vision Appraisal
- The full address of the property including street number, street name, city, and zip code;
- A completed Section 106 Submittal Form; and
- The date of the unit's construction;

The information may be submitted by email attachment to: [shpo@ct.gov](mailto:shpo@ct.gov). A copy of the email must also be sent to your State Weatherization Program Monitor. The subject line of the emails should be in the following format:

- (State agency) (Community Action Agency) – Program Acronym (e.g., DEEP– CAA – WAP)
- Additionally, you must send the State SHPO coordinator a completed excel spreadsheet that details date of submission, property address and agency.
- Hardcopy requests may be sent to the attention of: SHPO Coordinator, State Historic Preservation Office, 1 Constitution Plaza, Second Floor, Hartford, CT 06103. Again, copies must be mailed to your State Program Monitor and the State SHPO coordinator.

After submittal, SHPO will review the property to determine if weatherization will affect the state's cultural resources. SHPO has up to 30 days from the date of receipt to conduct this review. Please do not contact them during this time. Subgrantees will receive a response from the SHPO stating their findings, which must be kept in the client file along with copies of all documentation submitted to the SHPO for review.

Should the non-excluded property be deemed historic by SHPO, Subgrantees must work with DEEP to come to an appropriate weatherization plan for the unit that is both compliant with SHPO and aligned with the policies of the CT WAP.

A Subgrantee's failure to comply with federal historical preservation laws in the weatherization of properties may result in questioned or disallowed costs to its program.

See Weatherization Program Guidance No. 6, "Compliance with SHPO-DSS-OPM Historic Preservation Agreement" for additional information regarding the exemption of properties where only certain measures are to undertake and NHPA, 54 U.S.C. 300101 *et seq.*, and WPN 10-12 "Historic Preservation Implementation."

### **301.12 Waiver and Standard Quote Form**

For certain weatherization circumstances, CT WAP requires that Subgrantees submit a "waiver" of the normal measures, a request for prior approval of the additional work from DEEP. Waiver requests must be used in the following situations:

- When more than five (5) primary windows are to be replaced, provided they each achieve an individual SIR of 1 or more;

- When more than twelve (12) storm windows are to be installed, provided they each achieve an individual SIR of 1 or more;
- When more than one (1) primary door is to be replaced, provided the doors achieve an individual SIR of 1 or more;
- When a heating appliance, including oil tank (Provided specific funding is available) is to be replaced; or
- When a domestic water heater appliance is to be replaced.

General Procedure: A completed waiver packet is to be assembled and sent to the Subgrantee's assigned field monitor for the initial review. The monitor will contact the Subgrantee if additional information is needed to complete the packet. The completed packet will then be forwarded with the monitor's recommendations to the appropriate State manager, for a final determination. State management staff will process waivers expeditiously to ensure prompt weatherization service delivery. The determination will be communicated verbally and in writing to Subgrantees Weatherization Director by the State field monitor. DEEP's goal is to produce the final determination of approval or denial within ten (10) business days of the receipt of the request, provided no additional information is necessary. DEEP's determination can only be made if the packet is completely and accurately submitted. For example, the Recommended Measures Report (RMR) submitted with a waiver packet must be prepared with "actual" pricing displayed, to ensure that the installation of the heating system or domestic water heater does not cause the unit to exceed the established maximum H&S, or Energy Conservation Measures (ECM) expenditure limits and all weatherization measures achieve an individual SIR of 1 or more.

Documentation, including waiver packet materials, digital photographs, and approval/denial notices must be kept in the client file for each unit.

Procurement/SQF Form: With heating system, domestic water heater, and incidental fuel oil storage tanks replacements, it is required that all local and state CT WAP procurement procedures be strictly followed. Under the waiver process, a minimum of three written price quotes are required. To the extent possible, each quote should be for items meeting the same specifications which should be clearly stated by Subgrantees when requesting quotes from vendors.

To standardize the process, DEEP has developed the Standard Quote Form (SQF). The SQF will ensure uniform proposals across vendors and reduce follow-up questions which delay approval of the waivers. Use of the SQF is mandatory. The SQF must be completed by each vendor, in full.

Completion of the SQF by Subgrantee staff is strictly prohibited. In completing and signing the SQF, the vendor is agreeing to all costs of purchase and installation of the item as described on the SQF. This form becomes the legal binding document of the minimum requirements the contractor agrees to perform for the stated dollar amount.

Funding: A measure that is installed without the prior approval of DEEP shall result in questioned or disallowed costs for the entire measure.

### **301.12.1 Window or Door Waivers**

A waiver is required for windows or doors when:

- More than five (5) primary windows are being replaced;
- When more than twelve (12) storm windows are to be installed;
- More than one (1) primary door is to be replaced; or
- Up to twelve (12) storm windows may be installed per dwelling unit without prior approval from DEEP provided they each achieve an individual SIR of 1 or more.

The waiver packet must contain the following:

- A written waiver request, signed by the weatherization manager, listing the reasons for each replacement;
- Clear, digital photos of each component (window or door) to be replaced (sent to the monitor via e-mail);
- The contracted RMR for the item, with “actual” price(s); and
- Verification that the home was submitted to SHPO, if required (e.g., if the home was constructed 50+ years ago).
- **Note:** Clear digital photos must be taken of every window or door that is to be replaced, whether or not a waiver is required. These pictures must be kept in the client’s file.

### **301.12.2 Heating Systems/Domestic Hot Water Heaters/Fuel Oil Storage Tanks Waiver**

A heating systems waiver is required for heating system replacements when:

- When a heating unit is being replaced;
- When a domestic water heater is to be replaced; or
- When a fuel oil storage tank is to be replaced (Provide specific funding is available).

The waiver packet must contain the following:

- A written waiver request, signed by the Subgrantees’ weatherization manager/coordinator, listing the reasons for each replacement;
- A contracted RMR, with “actual” price(s);
- All heating system evaluation and testing results; including the Clean, Tune and Test (CTT) efficiency reports;
- Verification of the ownership of the dwelling unit;
- Standard Quote Form (SQF) for quotes from each of three vendors;
- Detailed digital photos (at least 3) of the current heating system, domestic water heater, or fuel oil storage tank clearing showing the cause for replacement to be electronically sent to the monitor;
- Verification of Energy Star ratings compliance on the proposed replacement heating system;
- For any proposed new vendor;
- Contractor’s license;
- Contractor’s liability insurance; and
- A copy of the contract.

### **301.13 Home Energy Solutions – Income Eligible**

Major Connecticut regulated utilities operate the ratepayer-funded Home Energy Solutions–Income Eligible (HES-IE) program to assist certain income eligible electric, natural gas and oil heat customers both renters and owners - to reduce their energy bills by making their homes more energy efficient. Weatherization clients are eligible for HES-IE services where they are available.

The HES-IE program provides certain general heat waste measures that are coordinated with other measures by the local Subgrantee, operating under a separate agreement with the utility companies. The following measures may be provided under the utility HES-IE program:

- Faucet aerators
- Low-flow showerheads
- Weather-strip(s)
- Caulking (interior)
- Duct sealing (if applicable)

Municipal Utilities: In some Connecticut municipalities the local utility company does not operate a HES-IE program. In those areas, CT WAP will provide the above GHW measures, to the extent that they have been pre-approved under the CT WAP State plan.

Refrigerator Replacement: Under certain criteria and where available, the HES-IE program may provide replacement refrigerators to CT WAP clients. After testing the present appliance, the energy auditor makes a recommendation to the utility company, where the final determination is made regarding replacement.

Insulation (attic, sidewall): The cost of insulation measure by a CT WAP Subgrantee is reimbursed on a calculated incentive rate basis by the HES-IE program, where available.

## **302. Home Energy Audit**

The energy audit is the most critical process in weatherizing a unit. The audit determines the planned measures, in priority, which will lead to successful reduction in energy costs for the client. A complete energy audit must be performed by Subgrantees on each unit prior to the commencement of any weatherization work to the unit.

This section defines the requirements for the home energy audit for single dwellings, mobile homes, and small multi-family housing units. Small multi-units are defined as “dwellings that have less than 5 apartments and/or have a square footage of 10,000 square feet or less” and three (3) stories or less.

Using advanced diagnostic techniques in a whole-house approach, the auditor will produce a list of cost-effective weatherization measures to improve the functionality of the home’s living environment by, aligning the unit’s thermal boundary and pressure boundary, and optimize the exchange of fresh air through the unit, while reducing heat loss.

Procedure: Connecticut home audits are conducted using the NEAT or MHEA, data collection forms. This form, the auditor’s notes, unit diagrams, and digital photos will all be assembled by the auditor to make recommendations for the weatherization measures. Audit results are entered by the energy auditor that performed the audit into the DOE approved Weatherization Assistant 8.9 computerized audit software, to perform the SIR analysis and assist in the formulation of a work orders for the unit.

The completed audit recommendations must always be submitted for further review by a second party. Generally, this would be the Weatherization Coordinator, supervisor or other knowledgeable staff person assigned to the review. After the plans are approved, the actual assignment of measures to individual installers should be made by someone other than the energy auditor.

Once the installer has been determined by Subgrantees the audit information is entered in the software using that installer's specific price information.

Subgrantees must have procedures in place that ensure that all energy auditors, are properly qualified and that they complete the energy audit using the required technology according to testing protocols established by DOE and CT WAP.

Technical Note: These operational policies are not intended to provide the correct technical protocols or techniques to be used by the auditor or the weatherization installers. They are not intended to define the use of weatherization tools and equipment, including the proper use of personal protective equipment. Such information is only found in obtaining required certifications, participating in ongoing weatherization training and in reading the Connecticut Weatherization Field Guide (083021).

Health & Safety Note: In certain circumstances, an auditor may encounter H&S issues that must be addressed prior to any weatherization measures. The health and safety of both the family and the weatherization worker is of prime importance. These issues must be addressed before any weatherization measures are installed.

For more information, see CT WAP Operations Manual, § 400, "Health and Safety."

Funding: Although a portion of the cost for CT WAP Energy Audits is paid from ratepayer funds administered by participating utilities, all energy audits conducted by Subgrantees under contract with DEEP must comply with all CT WAP policies and protocols. Audits performed that are not in compliance with all program policies and protocols shall result in disallowed costs, both for the amount expended by CT WAP for the energy audit and for the CT WAP expenditures for the installation of subsequent measures based on that audit.

**Note:** Large multi-units consisting of more than 5 apartments and/or have a square footage greater than 10,000 are addressed in CT WAP Operations Manual, § 800 "Large Multi-Family Units."

### **302.1 Audit Timeline**

All applicants eligible for weatherization assistance must have an energy audit completed on their unit within twelve (12) months of the certification of their eligibility. There will be no extensions of certification given for audits that are unable to be performed within this timeframe.

If more than twelve months have passed, the client must be re-certified by the original, certifying CAA under the guidelines established for that application period, in order to determine if the energy audit can be performed.

### **302.2 Energy auditor**

Energy auditors are on the front line of the weatherization program and often the main point of contact with the program for weatherization clients. Their interaction with a client sets the tone for all



subsequent contact. It is expected that auditor, who is a representative of both the Subgrantee and CT WAP, maintains a courteous, informative and professional manner at all times.

### **302.2.1 Auditor Qualification**

Subgrantees has the responsibility to use only energy auditors with the qualifications to conduct an effective audit. When hiring or subcontracting for the job, Subgrantees must take into consideration the individual's training and experience in areas such as energy conservation, building science, home construction, or other appropriate fields.

All individual energy auditors employed by Subgrantees, or its contractor, after September 1, 2010, are required to hold a certification from the Building Performance Institute as a Building Analyst. Energy auditors used by the program must maintain this certification while employed or subcontracted by CT WAP.

It is the responsibility of Subgrantees to maintain records confirming that all certification and training is current. This requirement will be monitored by DEEP. Individual auditors will not be granted use of the Weatherization Assistant 8.9 audit software until proof of this certification is received by DEEP.

Energy auditors are required to attend training as required by DEEP or Subgrantees. Optional, additional training may also be made available. Attendance records for all training must be maintained by Subgrantees for review by DEEP.

**Funding Note:** Use by Subgrantees of an energy auditor without the proper certification shall result in disallowed costs, both for the audit and for subsequent measures based on that audit.

### **302.2.2 Contractor Auditors**

Subgrantees may use contractors to conduct the energy audit. Contractors must meet the same qualifications, including BPI certification, as agency employed auditors. In case the contract is with a company employing several auditors, it is Subgrantees' responsibility to ensure that the company only assigns CT WAP audits to individuals in the company who are currently certified and meet other qualifications.

All CT WAP Contractors, including subcontracted energy auditors, **must be approved** by DEEP prior to contracting with Subgrantees.

Subcontracted auditors are required to attend all training as required by DEEP, or Subgrantees. Optional, additional training may also be made available. Attendance at all training must be recorded and maintained by Subgrantees for review by DEEP.

All subcontracted energy audits must be conducted using the policies, training, protocols, and equipment required by CT WAP. Subgrantees must include these requirements in their agreements with subcontracted energy auditors.

Use of a subcontracted energy auditor by Subgrantees without the proper certification shall result in disallowed costs, both for the audit and for subsequent measures based on that audit.

### **302.2.3 Separation of Duties**

In no instance may the energy auditor be employed by, or in any way represent the company which performs any of the weatherization installations, or any other work, on a given unit. Within Subgrantees' organization, the individual assigning weatherization installation to a given crew or sub-contractor must be different than the individual who conducted the energy audit.

### **302.3 Energy Audit Steps**

The energy audit has been developed in compliance with DOE regulations, as well as best practices identified by DEEP and each Subgrantee. While a given unit will vary in terms of the measures necessary to achieve an energy efficient home, Subgrantees are responsible for ensuring that a comprehensive energy audit is conducted, whether by its own or its subcontracted personnel.

Any questions or problems encountered in the execution of the energy audit on a given unit should be discussed among Subgrantees staff, the DEEP field monitor and technical staff.

#### **302.3.1 Client Refusal of Certain Measures**

As all weatherization measures interact in the overall plan for the unit, the client is not allowed to choose or refuse individual measures. In the instance that a client refuses any measure, an attempt must be made by Subgrantees personnel to explain the need for the measure as well as the advantages to the client in installation of the measure(s).

Walk-away: The client's refusal to allow the installation of measures, except as noted below, is a reason for a walk-away, where no measures will be installed in the unit. By refusing the installation of any measure the client risks losing all State assistance for a two-term period.

Exceptions: Subgrantees may, at their discretion, allow for the refusal of minor measures such as those for base load reduction or general heat waste.

The client may also refuse to allow the installation of sidewall insulation. There is the slight possibility of damage to the structural integrity of a dwelling to which individual clients may not be amenable. In this case, Subgrantees have the responsibility to educate the client on the benefits of sidewall insulation. The client's refusal of sidewall insulation must be documented on the form, Sidewall Insulation Waiver, which must be signed and dated and kept in the client's file.

### **302.4 Audit Preparation**

Preparation time is important so that the auditor arrives with the proper knowledge of the unit, the requisite paperwork and the equipment needed to properly analyze the unit. Subgrantees should have a standard auditor's packet made up of the information and forms needed for the auditor to effectively complete the audit. Some of the common forms in such a packet may include the following:

- Weatherization case file copies: Approved CEAP application, CEAP Award Letter, Request for Weatherization (either a 'yellow card' or similar document), eligibility determination, utility bill summary, other owner verification from the Assessor's Office (typically a Unit Parcel Summary from Vision Appraisal or another website)
- A blank Data Collection Sheet;
- Blower Door Air-Sealing Input Sheet/Work Order;

- Weatherization Agreement;
- Brochure: A Citizen’s Guide to Radon (EPA);
- Brochure: A Brief Guide to Mold, Moisture and Your Home (EPA);
- Brochure: The Lead-Safe Certified Guide to Renovate Right (EPA);
- Brochure: Energy Savings Tips (HES);
- Smoke Detector & Carbon Monoxide Disclaimer Form;
- Mold Disclaimer Form;
- Notice of Postponement/Deferral of Services;
- Sidewall Insulation Waiver;
- Connecticut Led Pre-Renovation Form (Lead paint compliance form, as applicable); and/or
- Subgrantee’s Forms and Brochures

The auditor should arrive at the home with all specialized tools and equipment necessary to effectively evaluate and determine the necessary weatherization measures.

Once the energy auditor has become familiar with the case, a call is made to the client to initiate the audit appointment. This is a good time to clear up any questions about the family’s circumstances or to obtain information about the condition of the unit. The auditor should begin to explain the audit process with this call.

The auditor will make the appointment at a mutually agreed upon date and time. Auditors should also confirm the audit visit on the day before the appointment.

**Note:** During the initial scheduling contacts, it is imperative that any known, client H&S concerns be identified prior to the site visit.

### **302.5 Unit Identification**

The energy auditor must identify the unit and its occupants using DOE definitions under 10 C.F.R. Part 440. The type of unit being audited as well as the unit occupants can make a difference in the auditor’s recommended measures. Unit types and occupant types are also collected for required statistical reporting purposes.

#### **302.5.1 Unit Classification**

The energy auditor must identify the type of unit under 10 C.F.R. Part 440. The following DOE defined unit types are to be identified:

- Owner-occupied, single-family, site-built
- Single-family, rental, site-built
- Multi-family rental
- Owner-occupied mobile home
- Renter-occupied mobile home
- Shelter, group home
- Other (specify)

#### **302.5.2 Unit Occupancy Types**

The occupancy classification of the client is also identified by the Subgrantee for eligibility and reporting purposes. DOE regulations identify the following unit occupancy types under 10 C.F.R. Part 440:

- Elderly household
- Disabled household
- Native American
- Children (household with children under 6 years old)
- High residential energy user (greater than \$2,500 annual energy cost)
- Household with a high energy burden (greater than 10% of household income)
- Other (specify)

### **302.6 Licensure Restriction**

It is the responsibility of Subgrantees to ensure the proper testing is accomplished to ensure the safety and efficiency of all combustion appliances. Because of state licensing restrictions, energy auditors are restricted to conducting passive monitoring. Passive monitoring limits the non-licensed HVAC professional or auditor to evaluation that can be done without invasive testing that may constitute an alteration of the appliance.

Connecticut state law requires licensure by the State Board of Occupational Licensing in several areas relevant to working on combustion appliances and heating systems, including the following:

- Heating, piping and cooling
- Plumbing
- Electrical work
- Duct work (sheet metal)

For example, proper draft testing involves the drilling of a small hole (later patched) in a flue pipe to accommodate the draft probe.

Certain liabilities may result from a non-licensed individual turning on the appliances for monitoring their operation. In some cases, a qualified energy auditor may 'work around' restrictions. For example, the requisite hole may already be drilled.

Another possibility is that a unit may require a Clean, Tune & Test order where a properly licensed HVAC contractor will be able to either conduct needed testing or, at least properly prepare the appliance for later, comprehensive combustion appliance monitoring by the energy auditor.

No measure or activity recommended or required in this operational manual is intended to circumvent or contradict compliance with applicable State licensing requirements.

### **302.7 Audit Software**

The recommended measures by the energy auditor will depend on the issues identified and the solutions available within CT WAP. The auditor must develop a thorough knowledge of the measures that are allowable under the program, which is only learned through certification, training, and studying the written policies and technical protocols. The audit software will also guide the auditor through the process of evaluating the data and recommending measures.

CT WAP uses the software Weatherization Assistant 8.9 (NEAT, MHEA) as a tool for the auditor's final determination of the measures to be taken in the unit. This software, produced by the Oak Ridge National Laboratories is approved by DOE for use in Connecticut

Every authorized energy auditor in Connecticut has been granted access to (NEAT, MHEA), with a personal login to the software that allows for secure operation and effective tracking of the audit for each unit.

To ensure a comprehensive weatherization plan tailored to each unit, Subgrantees must allow adequate time for the Auditor to properly enter job data into NEAT, MHEA.

The energy auditors are required to personally input their own audit details, in order to ensure the accurate entry of the audit details into the NEAT, MHEA system. Logins may not be shared with other local staff. Audits may not be given to other office staff for input. Care must be taken by Subgrantees to institute procedures that ensure this data integrity and security.

### **302.8 Unit Applicability**

The standard Connecticut audit is entered into Weatherization Assistant for all single-family units, mobile homes, small multi-family dwellings and group shelters. A small multi-family dwelling means a building less than 10,000 square feet; and comprised of no more than five (5) individual units.

For more information, *see* CT WAP Operations Manual, § 800 "Large Multi-Family Units."

### **302.9 Recommended Measures Report (RMR)**

The audit results and recommendations are entered into the NEAT, MHEA screens from the energy auditor's Data Collection Form and other audit notes on the unit. The software will then assist the auditor by analyzing the data submitted and determining the acceptable measures, reject others and prioritize them by cost-effectiveness. The NEAT, MHEA program will produce the initial audit report as the Recommended Measures Report (RMR) Also referred to as The NEAT or MHEA Recommended Measures Report the RMR will include:

- Audit data, including key test results;
- Accepted weatherization measures in order of priority, based on cost-effectiveness (including incidental repairs as part of each measure);
- Approved General Heat Waste measures (DOE pre-approved measures not subject to SIR);
- Approved H&S activities (also not subject to the SIR); and
- Client energy education or other steps already taken by the auditor must be documented in order to produce an accurate and thorough RMR audit report.

It is only with the auditor properly following these steps that Subgrantees and DEEP can ensure that SIR calculations are accurately computed in compliance with DOE regulations.

*See* Weatherization Assistant 8.9 (NEAT, MHEA) manual for additional data entry instructions.

NEAT, MHEA screens the auditor's proposed energy reduction measures to determine the SIR for each measure. The individual measures that meet the required ratio of 1:1, or better are then accepted and prioritized according to each projected cost-effectiveness rating. The higher the SIR number, the higher

the priority. Any individual measure that falls short of the SIR standard is not allowed to be performed on the home.

NEAT/MHEA also computes an overall SIR rating for each unit's overall package of measures which also must compute to an SIR of 1:1 or more. If the overall SIR standard is not met, the audit must be completely reviewed, changed according to priority and re-entered.

Anytime the approved measures subsequently change, the entire list of measures must be re- entered in order for the software to properly prioritize individual ratings and compute the new overall rating.

Funding: Failure to accurately obtain an installed measure through Weatherization Assistant that achieves the appropriate SIR will result in disallowed costs to Subgrantees.

### **302.10 Second Party Review**

Once the audit data entry and Recommended Measures Report (RMR) is completed, the energy auditor must submit the measure recommendations for a second party review by a program manager, or another person in authority, designated by Subgrantees. This approval applies to any changes to the RMR.

The reviewer's responsibility is to compare the information on Data Collection Sheet, and all other audit notes, to ensure that it is correctly entered in NEAT, MHEA. The reviewer may also fine-tune the recommendations based on such factors as the budget available for the unit, agency policies, or the weatherization installers available for the work. The reviewer's changes must be coordinated with the auditor, but the reviewer should be a staff person with the final authority (a supervisor, for example). The second party review is a required step in the process, which must be completed with each audit and documented in the client file. Only after the reviewer has approved the measures listed on the BWR, may the weatherization proceed. It is suggested that the reviewer also be the person who actually assigns the weatherization work order to the Subgrantee crew or contracted installers. (In no instance may the individual who assigns the weatherization work be the same individual as the energy auditor.)

Procedure: The reviewer reviews the measures to ensure they were entered correctly, by carefully viewing all of the data on the different screens in NEAT, MHEA. There must not be an error message or blank cell under the description column. If there is an error message/blank description on the Cost and Savings Screen- All Item View, you need to double click into the measure(s) and make the necessary correction(s) before going to the next step. The reviewer must be identified and sign off must be completed on all reviews conducted.

### **302.11 Supply Library Pricing in NEAT and MHEA**

The Weatherization Assistant User's Manual Version 8 will serve as the primary source for NEAT, MHEA use in CT WAP.

All Proposed work screened in the NEAT, MHEA software will utilize the CT WAP PY 2022 Setup library with no exceptions.

As the price of some measures may vary with the assigned installer, once the installer is chosen, the prices must be assigned using the appropriate supply library in the audit software. At this point the RMR

is designated as “contracted”. The reset, actual price(s) on the contracted RMR could make a difference in the acceptability and priority assigned to the measures.

If an individual measure pricing does not achieve the required SIR threshold that measure must be purged from the RMR and cannot be installed.

If the price(s) result in the package of measures not meeting the overall SIR, the entire audit must be reviewed and re-entered, as explained above.

Prices reset for H&S measures or general heat waste measures are not subject to the SIR threshold and will not affect the continuation of the weatherization work. Incidental Repairs are calculated as a part of the cost of the package of measures.

### **302.11.1 Setup Library- Library Measures, Key Parameters, Low-E Windows**

The Weatherization Assistant User’s Manual Version 8.9 will serve as the primary technical reference source for performing electronic energy audits in the NEAT and MHEA software and producing Recommended Measures and Work Orders. CT WAP will adhere to recommendations within the Weatherization Assistant User’s Manual as the source document in establishing statewide window replacement policy and procedures for the CT WAP service area. See Chapters 14, 14.5, “Library Measures” and 14.6, “Key Parameters.”

CT WAP references Section 14.5, “Library Measures” and requires all Subgrantees to maintain the active status for Measure 21 Low E Windows for all window replacement evaluations performed in the NEAT and MHEA Audits.

CT WAP references Section 14.6, “Key Parameters”, for Window Values and defers to the default window name, value and units for all replacement windows.

Please refer to CT WAP Guidance #42 for specific instructions in Section 5 regarding Measures Evaluations- Evaluate All requirements that include Low-E Window Replacement Measures.

Please refer to CT WAP Guidance #47 for specific instruction regarding distribution, implementation, and approval of use of approved Setup libraries that confirm Low-E window compliance by Subgrantees.

### **302.12 Generating the Work Orders**

Once the Contracted RMR is finalized, Subgrantees may distribute the approved work order(s) to the appropriate agency crew or contracted installer. Only those work orders generated by the NEAT, MHEA audit software are to be distributed.

## **303. Subgrantee Production Requirements**

It is crucial that Subgrantees have a process in place to ensure that production numbers are realized. DEEP maintains a strong interest in tracking performance of Subgrantees in the production of weatherized units. DOE continues to closely monitor DEEP’s production through the Quarterly Program Reports, the Quarterly Financial Status Report, and the Annual Training and Technical Assistance, Monitoring and Leveraging Reports.

Production goals are determined yearly based on the funding available for program operations and the average cost-per-home. Subgrantees and DEEP will work together to determine the number of dwellings that will be weatherized yearly. It will be the responsibility of Subgrantees to ensure that those goals are met in its service area.

### **303.1 Weatherization Timeframes**

After an audit is completed, agencies are expected to complete all work on a home within three (3) months. The following circumstances will allow an additional two (2) months added on to the timeline, if a delay is caused by:

- Primary windows being replaced are on back order;
- Unit submitted to the SHPO is still under review; or
- A waiver request submitted to DEEP for approval of a heating system, domestic water heater, or oil tank are still under review.

Failures to complete the unit within the five-month timeline will not prompt an additional extension. Subgrantees must contact its state monitor if it is determined that a unit will need longer than five months for its completion.

All audits, installed measures, and final inspections completed, and reported, for any one completion must be done within the program year. Failure to do so will result in disallowed costs.

A review of client eligibility should be conducted, and recertification completed if the client application was completed more than twelve (12) months from the completion date of the weatherization work.

### **303.2 Production Schedule**

It is up to Subgrantees' program staff to coordinate the weatherization activities in each unit to ensure the job is done properly, in the agreed upon time frame and within the program year timelines.

The scheduling of several jobs at a time, as well as outside work schedules, may affect the availability of any given crew or contractor. Likewise, the family's schedule or the owner's schedule may have an impact on the job timing and duration. Other factors such as time of year, the weather, and work site accessibility may all enter into the difficulties of coordinating the work.

Factors such as Subgrantees' contract and budgetary status may enter into the production schedule.

It is up to Subgrantees' program management to take all of the factors into account in order to maintain an ambitious schedule which will meet the overall production goals of the program.

Subgrantee contractors must be contractually required to complete units within the time frame established for each unit. Any anticipated delays in the completion time frame on the part of the contractor should be communicated to Subgrantees in writing, prior to accepting a job.

Subsequent changes in the schedule must also be requested in writing and addressed as an official modification of the work order.

### **303.3 Work Order**



It is Subgrantees’ responsibility to determine what measures are going to be implemented in a given unit. Subgrantees’ technical experts and administrator, analyzing the audit information and the available unit budget, recommend measures on the work order(s). The ordered measures must be:

- Justified by the results of the audit;
- In conformance to weatherization program protocols, standards and guidelines;
- Ranked in order of the comparative cost-effectiveness ratings;
- Based on costs categories as allowed within program guidelines; and
- Within the available budget, including the limitations of the average cost-per-unit.

When the work order(s) are complete, Subgrantees should assign the job to the most appropriate agency crew or contractor. The contractor may not commence any weatherization work until written authorization is received from Subgrantees in the form of an executed, signed work order.

Funding: Any production ordered by Subgrantees which does not meet the program criteria shall result in questioned or disallowed costs and repayment of funds.

### **304. Weatherization**

The remaining sub-sections establish policies for the core of the weatherization program services which may be called for by the energy audit. All weatherization measures must be installed by qualified personnel employed by Subgrantees or one of its contractors. The list of measures, which will vary in their applicability to a given unit, are applied in priority of their cost-effectiveness and according to a coordinated work plan devised and approved by Subgrantees. The goal of the plan for the unit is to safely and effectively improve efficiency in the unit and save money for the low-income client.

Weatherization measures may require ancillary activities such as allowable H&S measures, or incidental repairs. All weatherization activities, including the occupant’s role, need be fully explained to the client.

All units must pass Certified QCI Final Inspection before they can be claimed. Whether measures are installed by its own employees, or by a contracted installer, Subgrantees has the responsibility for the quality of all measures.

This manual spell out the operational policies that govern the various weatherization measures available to Subgrantees. Written technical protocols, on the other hand, are only contained in the Connecticut Weatherization Field Guide (083021) which is the authoritative resource for how to properly install weatherization measures.

#### **304.1 Measures**

Typical weatherization measures include the following areas:

Section	Measures	Locations
305. Air Sealing*	<ul style="list-style-type: none"> <li>• Stuffing</li> <li>• Sealing</li> <li>• Caulking</li> <li>• Foam Board</li> <li>• Spray Foam</li> <li>• Weatherstripping</li> <li>• ASHRAE Compliant Ventilation</li> </ul>	<ul style="list-style-type: none"> <li>• Windows</li> <li>• Doors</li> <li>• Attic</li> <li>• Basement</li> <li>• Rim Joist</li> <li>• Mud Sills</li> <li>• Rubble Foundations</li> <li>• Penetrations</li> </ul>

		<ul style="list-style-type: none"> <li>• By-Passes</li> <li>• Top Plates</li> </ul>
<b>306. Insulation</b>	<ul style="list-style-type: none"> <li>• Fiberglass</li> <li>• Cellulose</li> <li>• Wrap</li> <li>• Foam Board</li> <li>• Spray Foam</li> </ul>	<ul style="list-style-type: none"> <li>• Attic</li> <li>• Sidewall</li> <li>• Basement</li> <li>• Crawl Space</li> <li>• Knee Wall</li> <li>• Pipes</li> <li>• Ducts</li> </ul>
<b>307. Doors and Windows</b>	<ul style="list-style-type: none"> <li>• Glass Repair and Replace</li> <li>• Caulk</li> <li>• Weatherstripping</li> <li>• Locks</li> <li>• Limited Replacement</li> </ul>	<ul style="list-style-type: none"> <li>• Exterior Doors and Windows</li> </ul>
<b>308. Heating System</b>	<ul style="list-style-type: none"> <li>• Clean, Tune, &amp; Test (CTT)</li> <li>• Parts (Replacement &amp; Retrofit)</li> <li>• Duct Sealing</li> <li>• Repair &amp; Insulation</li> <li>• H&amp;S Concerns</li> </ul>	<ul style="list-style-type: none"> <li>• Combustion Appliance Zone (CAZ)</li> </ul>
<b>309. Domestic Hot Water Systems (DHW)</b>	<ul style="list-style-type: none"> <li>• Clean, Tune, &amp; Test (CTT)</li> <li>• Parts (Replacement &amp; Retrofit)</li> <li>• Vent Repair</li> <li>• Plumbing</li> <li>• Insulation</li> </ul>	<ul style="list-style-type: none"> <li>• Combustion Appliance Zone (CAZ)</li> </ul>
<b>310. Other Measures</b>	<ul style="list-style-type: none"> <li>• Baseload Reduction</li> <li>• GHW Reduction</li> <li>• H&amp;S (No SIR)</li> </ul>	<ul style="list-style-type: none"> <li>• Entire Household</li> </ul>
<b>311. Incidental Repairs</b>	<ul style="list-style-type: none"> <li>• Component Repairs</li> <li>• Limited Replacement</li> <li>• Carpentry</li> <li>• Painting</li> <li>• Cleanup</li> </ul>	<ul style="list-style-type: none"> <li>• Where necessary to protect the integrity and ensure the proper function of the weatherization measure</li> </ul>
<b>312. Manufactured Housing (Mobile Homes)</b>	<ul style="list-style-type: none"> <li>• Air sealing</li> <li>• Insulation</li> <li>• Repair/Sealing</li> <li>• Windows and Doors</li> <li>• Mechanical Systems</li> <li>• Ductwork</li> </ul>	<ul style="list-style-type: none"> <li>• Entire Household</li> </ul>
<b>313. Client Education</b>	<ul style="list-style-type: none"> <li>• Client Education by Worker</li> <li>• Client Education by Auditor</li> <li>• Client Education by Installer</li> <li>• Client Education by Inspector</li> </ul>	<ul style="list-style-type: none"> <li>• Entire Household</li> </ul>
<b>314. Final Inspection</b>	<ul style="list-style-type: none"> <li>• Quality Control</li> <li>• Inspection</li> <li>• Testing</li> <li>• Quality Assurance</li> <li>• Evaluating the installed measures against the Work Order and Audit</li> </ul>	<ul style="list-style-type: none"> <li>• Entire Household</li> </ul>

\*Blower Door Directed

### **304.2 Testing**

Subgrantee Weatherization policies must include the following testing during the weatherization, as applicable in a given unit:

- Zonal pressures attic and crawl space

- House-to-garage wall assembly leakage tests
- Worst Case CAZ Depressurization (Draft Test) must be performed daily after altering the building shell
- Room-to-Room Pressure Balance (on forced air heating plant)
- Gas Pressure Test (done by HVAC Contractor on replacement, tune/repair)
- Combustion Analysis/CO in Flue (done by HVAC Contractor on replacement, tune or repair)
- Natural Draft (done by HVAC Contractor on replacement, tune or repair)
- Duct Static Pressure Test (done by HVAC Contractor on replacement, tune or repair)
- Combustion appliance combustion-air confined space calculation

### **304.3 Pre-Weatherization Steps**

As a review: Before any weatherization work on the unit commences, the following steps must have been taken:

- Subgrantees have determined the household's eligibility for services.
- Subgrantees have a timely and complete, approved signed application on file, as well as all other required documentation.
- Subgrantees have explained the weatherization process to the family. The family and/or the owner have signed necessary permission and release forms.
- A full energy audit has been conducted producing Subgrantees' written work order(s), formulated according to the results of the audit.
- All H&S issues have been ameliorated either by the Subgrantee or by the homeowner prior to any weatherization work.

A work order is assigned by Subgrantees to the appropriate crew or sub-contractor(s) which details:

- the ordered weatherization measures in order of priority
- the time frames for the completion of the work, and
- a signature of the authorized Subgrantee staff person authorizing the work to proceed.

### **305. Air Sealing**

Air leakage can account for 25-40% of the heat loss in a typical unit. The location of major air leakage and air sealing solutions should be given a high priority by the energy auditor, as well as the air sealing installer. Measures are inexpensive and cost-effective. If done correctly, major air sealing has a relatively large savings to investment SIR ratio.

Using air sealing techniques guided by pressure diagnostic methods, air sealing activities, in tandem with proper mechanical ventilation, will ensure that the optimum volume of airflow and good air quality are maintained in the finished, weatherized unit and within the established pressure boundary.

Air sealing must be conducted using techniques, tools and diagnostic protocols prescribed by the CT WAP field guide. Such techniques as zonal pressure diagnostics as well as tools such as the blower door, duct blaster, and infrared camera are mandatory as they are important in proper air sealing. Just as importantly, installers must be thoroughly trained on their use.

Air Sealing in Multifamily Units under 10,000 sq. ft.: For those units that are addressed under the 50% or 66% multi-family unit rules, where an eligible unit may have an adjoining ineligible unit, only the building shell of the adjoining unit may be addressed as part of the whole-house weatherization of the eligible unit(s). Building shell measures may include basement and attic air-sealing.

Exception to Blower Door Use: This requirement can only be waived if there is a justifiable health or building safety concern (e.g., friable asbestos that cannot be encapsulated). In such cases these concerns must be documented on the BWR.

Procedure: All test results are entered into the applicable home check data screens must be documented on the audit data input sheet in the client case file.

Incidental Repairs: Incidental repairs are often needed to ensure that air sealing is effective. Such repairs are allowable within budgetary limits, and so long as their need can be demonstrated in terms of the integrity of the weatherization measure involved.

Health & Safety: H&S issues within the home can be worsened by certain air sealing measures. Air sealing should only be completed after any such issues have been successfully addressed, particularly issues with regard to possible indoor air quality hazards such as carbon monoxide and moisture. Ventilation work done in conjunction with air sealing may be charged to the H&S cost category in accordance with § 400, "Health and Safety."

See Connecticut Weatherization Field Guide (083021) for specific protocols, theories, techniques and tools used in air sealing.

### **305.1 Blower Door**

The CT WAP policy requires that a pre- and post- weatherization, single point blower door test be conducted in all single-family units (including mobile homes) and in all multi-family apartments under 10,000 sq. ft. and less than 3 stories not including the basement. If the basement is used as living space, then it must be counted as a 4<sup>th</sup> story in that case this multifamily unit cannot be weatherized using the NEAT, MHEA audit tools. The testing must document the infiltration rate with a house to outside pressure differential of 50 Pascals negative or equivalent. (Multi-point tests are not necessary.)

Although the energy auditor will identify areas where air sealing is needed, ongoing air sealing using the blower door, the duct blaster, or other tools must be done by the installer, along with standard pressure diagnostics techniques that effectively guide the work.

The installer may need to use more sophisticated techniques such as zonal pressure diagnostics or infrared camera to locate less obvious, though major leaks as the air sealing continues.

The air sealing installer must re-test and record progressive blower door readings after each step of major air sealing. A final installer reading must be taken and recorded at the end of the weatherization job.

The pre-weatherization blower door test infiltration rate represents the beginning point for the air sealing installer. The goal is air sealing as tight as possible and add mechanical ventilation, if necessary, for optimal air quality level. (Use the CT ASHRAE 62.2 – 2016 RED Calc software to calculate the need for mechanical ventilation.)

All readings are to be expressed in cubic feet per minute at a pressure of negative fifty (50) Pascals (cfm 50) or equivalent.

See Connecticut Weatherization Field Guide (083021) for additional methodology.

### **305.2 Air Sealing Measures**

Subgrantees must ensure that a thorough and complete air sealing job is done by its crews and contracted installers. Major air leakage areas, both those pinpointed in the energy audit and ones that appear as air sealing continues, must be addressed within CT WAP funding restrictions. Ineffective, minor air sealing should not be pursued by the installer. Air sealing measures include but are not limited to:

- Sealing attic chases, bypasses, top plates, and gaps
- Sealing large holes, bypasses, and chases leading to outside of the conditioned space.
- Sealing plumbing, electrical, and HVAC penetrations through the ceiling, flooring, and exterior walls, using proper materials for high-temperature surfaces.
- Sealing ducts in unconditioned spaces.
- Installing weatherstripping and thresholds.
- Caulking around windows and doors.
- Re-glazing or replacing broken window glass.
- Repair of doors and windows.
- Adding sufficient mechanical ventilation in accordance with ASHRAE 62.2-2016 requirements

Generally speaking, because of the high exfiltration pressures in the upper areas of the building due to the stack effect, the attic/living space interface is the area that should be addressed first. Many leakage areas in the attic are part of a series leak that may begin in the basement or living area. In most cases, these leaks can be sealed in the attic and there is no need to seal the other areas. If one cubic foot of air cannot leak out of the house then one cubic foot of air cannot leak in. Potential leakage areas include attic access-ways, open top plates in interior partition walls, balloon framed buildings, chimney and plumbing chases, knee-wall/floor junctions in finished attics and drop soffit ceilings.

There are significant opportunities for air-sealing around leakage areas in foundation walls, around interior bulkhead doors, basements including basement windows. Plumbing chase-ways and bathtub cutouts are of particular concern. Leaking ductwork can also significantly affect the overall air leakage of a dwelling.

Opportunities for air-sealing within the living space of a dwelling, besides the obvious, include the following: draft-stopper kits for fireplaces, repairing large holes in walls and ceilings, especially those that may be hidden by a suspended ceiling, openings behind built in counters and cabinets, leaky wall outlets and light fixtures.

Materials used must be appropriate to the area being sealed. For example, chimney chases must be sealed with fire retardant materials such as flashing and high temperature caulk. Large openings should be covered with a solid material such as plywood, sheetrock, or rigid foam board. These materials must be fastened in place and sealed along the edges. Smaller cracks and holes can be filled with expanding or non-expanding urethane foam or caulk.

### **305.2.1 Two-Part Foam**

Spray polyurethane foam used under the appropriate circumstances can be very effective in air sealing. Air sealing using single- or two-part spray foam may only be performed by crew or contractor staff that have received training by the spray foam manufacturer (OEM) and are certified to perform such installations by that OEM.

Funding: Pricing for two-part spray foam has not yet been approved and the final decision will be determined by DEEP.

### **305.3 ASHRAE 62.2 2016 Ventilation Standards**

DOE and the CT WAP have adopted the ventilation standards set by ASHRAE in its handbook section ANSI/ASHRAE Standard 62.2-2016, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings (“ASHRAE 62.2”).

Effective September 1, 2016, Subgrantees are required to use AHSRAE 62.2 – 2016 ventilation standards to determine the amount of mechanical ventilation that may be required in a unit.

To determine the proper level of air flow in the unit, the energy auditor must perform a pre-blower door test before any weatherization measures are installed. The final ventilation need will be calculated using the actual post blower door reading AFTER all weatherization and air sealing measures have been installed to calculate the actual ventilation airflow needed. Air Seal Tight – Ventilate Right. If this calculation is negative then no mechanical ventilation is necessary. If this calculation is positive, then consideration must be given as to how best to provide the required additional ventilation.

There are many ways to address the need for additional ventilation if the ASHRAE 62.2 - 2016 CT RED Calc software indicates more ventilation is required. Below are three examples of providing mechanical ventilation:

- Whole-Building Ventilation – installation of a fan, or a combination of fans, which will provide the minimum ventilation needed for proper air flow as calculated by the standard.
- Local Ventilation Exhaust – installation of local, intermittent exhaust fans in the kitchen and each bathroom, as specified by the standard, to reduce the possible levels of contaminants and moisture in each of those rooms and the living unit.
- Health & Safety: Because particularly air sealing affects the ventilation rates through the unit, any existing or future indoor air quality issues are likely to be made worse by the weatherization work. Thus, the correction of this through mechanical ventilation is considered an H&S activity. The details of utilizing the ASHRAE Standard may be found in § 400, “Health and Safety.”

For more information, see CT WAP Operations Manual, § 413, “Indoor Air Quality (IAQ) / ASHRAE 62.2 – 2016” and Connecticut Weatherization Field Guide (083021).

### **305.4 Air Sealing Funding**

Air sealing is an allowable energy conservation measure which may be charged to the Program Operations cost category. As such, the cost is a part of the average cost per unit.

Air sealing that is conducted by unqualified installers or that does not use required techniques and tools is likely to be ineffective in reducing air infiltration in the unit. Costs may be disallowed for ineffective air sealing, as measured in final or other inspections by State monitors. Subgrantees are allowed to bill up to three (3) hours of air sealing per dwelling without prior approval from DEEP monitor. If more than five hours are necessary, the Subgrantee may contact the monitor for approval, which can take the form of a phone conversation.

Reimbursement for blower door guided air-sealing, unlike other measures that are reimbursed based on actual cost, will be based on an hourly rate of \$126 that will include both material and program support.

Of that amount, \$36 per hour will be allocated to the material cost of the job, and \$90 per hour will be allocated to the support cost of the job. The audit will determine the maximum amount that can be spent on each job.

The following materials will be included in the \$36 hourly rate:

- Urethane foam
- Interior caulking
- Miscellaneous materials for covering large holes such as sheetrock, plywood, flashing, insulation board, cardboard, nails, screws and other hardware.

Subgrantees should be aware, however, that DEEP intends to monitor the CFM reduction and hours billed very closely to ensure that they are acceptable for what a two-man crew is able to do in that time period. Air sealing that produces little to no reduction in a large time period will result in disallowed or reduced costs. Therefore, it is important that agency auditors, crews, and air sealing contractors attend training regularly to improve their skills and that agency staff be available to provide technical assistance on an as-needed basis for those contractors who are unable to produce appropriate CFM reductions.

### **306. Insulation**

Insulation is a critical measure to make a home energy efficient and a major priority for CT WAP in nearly every unit.

Insulation comes in several different types which are used according to the need and location within the unit. The three most common insulation materials are fiberglass, cellulose and foam (sprayed closed cell and rigid board). Fiberglass may be used in a batt form which can be laid in the attic, attached to an open wall or attached under a floor. Cellulose insulation is blown in using an insulation blowing machine, may be used over an attic or in dense packing the space between wall studs. Other applications are available for specific needs and minor insulation measures may also be effective when the budget permits.

CT WAP has adopted the following insulation type preferences and R-value specifications for the most common applications, based on program and industry standards:

Location	R-Value	Insulation Type
Attic	R-49	Cellulose Fiberglass (Blow-In)

Knee Wall	R-11	Fiberglass (Batt/Blow-In) Cellulose (Blow-In)
Attic Hatch	R-19	Fiberglass Foam Board
Attic Door	R-11	Fiberglass (Batt) Foam Board
Sidewall	Minimum 3lb Density	Cellulose (Blow-in/Dense Pack)
Basement (ceiling)	R-19	Fiberglass (Batt)
Crawl Space (ceiling)	R-19	Fiberglass (Batt)
Mobile Home	Various	See MH Manual section

Subgrantees must consider attic, sidewall, and other insulation measures as a part of its overall approach to all single-family units.

Air sealing must be completed in a given location prior to the installation of insulation in that area.

Safety or repair work must also be done first; for example, electrical repair, roof repair, fire safety barriers, air vents, leak repairs, recessed light box covers, and so forth.

Multi-family Units less than 10,000 sq. ft.: Units eligible under the multifamily rules (50% and 66%) must also have insulation considered as a measure. In this instance, insulation choices such as attic, sidewall and other locations will be approached for the entire building shell.

Ineligible side-by-side duplex units may not be eligible to receive sidewall insulation; this will depend upon the location of the eligible unit, within or amongst the ineligible unit. The state monitor must be notified of this condition.

Funding: All insulation measures are considered energy conservation measures, which are charged to Program Operations costs and considered a part of the average cost-per-unit. In some areas, a portion of the insulation costs are reimbursed out of HES-IE funds.

Health & Safety: Because of fire hazards, care must be taken to see that insulation is installed safely. Although addressed elsewhere, two specific areas are important to address here:

- Clearance: Never install insulation against any building component that presents a fire hazard. A three-inch (3”) clearance must be left around all masonry chimneys, metal flues and ceiling recessed light fixtures. If loose-fill insulation is used, metal blocking must be permanently attached around the component, to a height of at least four inches (4”) above the height of the insulation. Mineral fiber blocking may be substituted if it is at least equal in height to the loose fill insulation and it extends at least twenty-four inches (24”) in all directions.
- Wiring: Never install insulation against live knob and tube wiring. Open junction boxes and frayed wiring, present a significant fire hazard. Such wiring may be dammed off, but that only bypasses the root problem, and makes the insulation less effective. Fixing wiring circuitry, including the replacement of live knob and tube wiring, may be conducted as an allowable H&S measure. Only a qualified electrician, currently licensed by the State of Connecticut, may repair or replace electrical wiring.

For more information, see CT WAP Operations Manual, § 400, “Health and Safety.”



## **306.1 Attic**

Installed correctly, at proper depth, evenly, with no voids, gaps, misalignment, or compression issues, attic insulation provides a thermal barrier which effectively prevents loss of valuable heat from the unit. Insulation must be installed to bring the attic to the R-value level prescribed by CT WAP policies in § 306 above. Proper vents or baffles must be installed in each rafter bay at the soffit area to prevent the blocking of the soffit vent and/or to prevent the insulation from touching the underside of the roof sheathing.

Other, specific attic characteristics may exist that will require a different approach to insulation, if called for in the audit. A walled stairway up to the attic will need to be sealed and insulated. A partially finished attic may be formed by the construction of knee walls which will require additional batt insulation on the attic side (as well as additional air sealing); and insulation in the collar beam and the open areas formed by the cathedral ceiling. In the case of cathedral ceilings, the insulation of the smaller cavity between the ceiling and the roof may require other special techniques. These additional insulation measures vary from unit to unit.

See Connecticut Weatherization Field Guide (083021) for detailed protocols regarding the installation of attic and related insulation measures

### **306.1.1 Prior Attic Measures**

Several important measures must be addressed in the attic prior to the insulation. Access to the attic is needed for the effective installation of insulation. An attic door or a hatch is required for access. A structurally sound surrounding dam that is able to support the weight of weatherization workers is required with a hatch, to contain cellulose insulation. Existing or installed attic hatches and doors must also be sealed and insulated. Air sealing of the upper pressure boundary in the attic, usually the attic floor, prior to insulation will ensure its maximum effectiveness. Sealing and insulating duct runs through the attic should be completed before insulation is installed. Attic ventilation is required in the number and configuration called for in CT WAP protocols.

See Connecticut Weatherization Field Guide (083021) for protocols on all attic related measures.

## **306.2 Foundation**

Additional savings may be made by installing insulation at the base of the unit, adjacent to the lower air barrier(s), such as rim joist, mud sills, and 3" of foundation walls. An important step for the energy auditor is to determine the lower level thermal and air boundary, below the first floor. Zonal pressure diagnostics can help identify the current connection between the unit and areas underneath.

### **306.2.1 Basement**

Basements are usually considered a part of the conditioned space of the unit. Basement's ceilings are insulated only if they are outside of the desired thermal boundary, the location of which is determined by the location of heating appliances, water heaters, plumbing and heat ducts. In most instances, the basement is "inside".

In limited circumstances, the auditor may determine that a basement is outside, or should be adjusted to the outside. For example, a basement that does not contain the heating appliances and is not used, perhaps with an outside entrance, may be more appropriately outside. In this case, the basement may be considered “outside”. The ceiling areas of the basement would be air sealed and insulated with fiberglass batt between the joists to the R-value indicated in these program policies (above). In this case it is important that any underneath ducts or pipes that do exist are carefully insulated and sealed.

Rim joists: Air sealing and insulation should also be done in conditioned basement to fill in the sill “box” (formed where each end of the floor joists meets the rim joist, sill plate, and 3” of foundation wall below the sill plate to seal any air gap between the sill plate and the foundation it sits on).

### **306.2.2 Crawl Space**

If there is a crawlspace, the auditor should define the crawlspace walls, or the floor above the crawlspace as the thermal and air boundary and call for air sealing and insulation accordingly.

Where a combination of basement and crawlspace exist, the auditor must decide whether to establish the boundary where the two meet. Again, the extension of heating pipes or ducts through the crawlspace will help to determine the plan to establish the thermal and air boundary.

Vapor Barrier: If insulation is installed above a crawlspace or basement with dirt floors, a moisture barrier must be installed, provided there is no evidence of moisture, water flow canals in the dirt floor, or the use of a sump pump.

See Connecticut Weatherization Field Guide (083021) for detailed protocols regarding the treatment of foundation and lower-level insulation.

### **306.3 Sidewall**

The program requires insulation in most sidewall cavities wherever it can result in significant savings, and when done with the permission of the owner of the unit.

To be effective, sidewall insulation must be uniformly dense packed in the exterior side walls of the unit. Insulation is to be tube-blown in all wall areas, into wall cavities with a depth of at least three and one-half inches (3 ½”) and considering building framing features to ensure uniform coverage. Because of its superior air sealing qualities, cellulose insulation is to be used to the minimum per cubic foot density called for in The Connecticut Weatherization Field Guide (083021)

Sidewall insulation may not be installed if live knob & tube is present. As stated above, it is an allowable measure to disable knob & tube wiring; three quotes must be obtained from electrical contractors currently licensed in the state and with the approval from the State monitor prior to the start of work. If knob & tube wiring is then disabled, sidewall insulation may be installed in the unit.

See Connecticut Weatherization Field Guide (083021) for the sidewall tube-filling instructions.

Batt insulation is to be used where there is an open wall cavity to fill. In this instance, the wall insulated to the R-value called for in program policies (see chart above).

#### **306.3.1 Preparation for Sidewall**

Since the pressure of dense packed sidewall insulation is significant, several procedures must take place before considering this measure. Prior to insulating, the auditor and installer must assess numerous areas including: the structural integrity of the walls, the locations of possible electrical hazards, existing gaps in the interior walls, moisture problems, and hidden areas where insulation will blow through.

All necessary corrections must be made before proceeding to insulate the walls of a unit. Possible leakage areas may be sealed or blocked to prevent the escape of insulation. If there is a danger of an area giving way to the pressure of the insulation, the area should be insulated but not to the dense pack standard. Areas that are not dense packed must be clearly noted by the installer on the work order.

See the Connecticut Weatherization Field Guide (083021) for additional information regarding preparatory steps to sidewall insulation.

### **306.3.2 Sidewall Waiver**

Because there is the slight possibility of damage to the structural integrity of a home, the owner of the unit has the ability to refuse sidewall insulation. The energy auditor is responsible for obtaining this refusal from the owner.

Care must be taken by the energy auditor and other agency staff to educate the owner on the benefits of sidewall insulation, prior to the signing of the refusal form. The signed refusal form must be kept in the client file, and the frequency at which sidewall insulation is refused will be monitored by DEEP if it becomes an issue.

See Connecticut Weatherization Field Guide (083021) and Guidance #7 for insulation protocols and methods.

### **306.4 Water Pipe**

Insulation should be recommended for heating and domestic hot and cold-water pipes in unconditioned basements and crawlspaces. If the ceiling is not to be insulated, pipe insulation is not recommended.

See Connecticut Weatherization Field Guide (083021) for pipe related protocols and methods.

## **307. Windows and Doors**

Traditionally a common weatherization measure, air sealing around doors and windows is no longer considered as effective as other such measures. Still, these measures are another means of limiting the infiltration of air in the unit. Such measures may include air sealing, repair of components, and, on a very limited basis, replacements.

As with all other air sealing, window and door measures must be done in accordance with the work order. They must meet the SIR threshold. And they are conducted using intermittent blower door directed techniques.

Health & Safety: Weatherization work, including the repair or replacement of windows and doors does not qualify as an H&S measure. However secondary work may qualify when it is needed to make the weatherization safe. Specifically, window and door work in areas which are laden with lead-based paint will require extra steps to ensure the H&S of both the crew and the occupants.

See CT WAP Operations Manual, § 400, “Health and Safety.”

Incidental Repairs: Window and door work is one of the more likely areas to require incidental repairs to ensure the integrity of the weatherization measure. Such work may include repair or replacement of window and door components. For example, repairing the framing in areas (including incidental painting) may include such components parts as jambs, sills, wells, etc. Repairs to the existing sash may also be incidental, as with repairing a mounting so that a glass pane seats well.

State Historic Preservation Office (SHPO): Window and door replacement is an area that may have more obvious impact on compliance with the SHPO rules. SHPO information must be submitted with a window/door waiver request.

Funding: Window and door weatherization is considered air sealing and may be charged under the Program Operations cost category. Thus, it is included in the average unit cost calculations. Repairs to make the weatherization work effectively, must be charged as incidental repairs and must fall within limits on those costs. Ancillary activities to make the work safe can be charged as H&S and must fall within limits on such costs.

There are more specific funding procedures and restrictions on charging for all work on windows and doors under the CT WAP.

Disallowed Costs: Failure to comply with procedures for the repair or replacement of windows and doors may result in Subgrantee disallowed costs. Requirements include:

- Meeting SIR, cost-effectiveness thresholds (on reset prices when called for).
- Obtaining prior DEEP approval for replacements,
- Use of required H&S measures when working with lead-based paint,
- Obtaining proper clearance by SHPO; and,
- Charging for window and door measures within specific CT WAP guidelines.

See Connecticut Weatherization Field Guide (083021) for protocols and methods related to windows and doors. See CT WAP Operations Manual, § 700 “Claims and Reports” for additional information on cost categories related to door and window work.

### **307.1 Window and Door Repairs vs. Replacement**

The CT WAP expectation is that the majority of existing windows and doors are in good enough condition that they can be successfully weatherized. Subgrantee protocols must ensure that every effort is made to weatherize existing primary windows, storm windows, primary doors and storm doors, as is, or with only necessary repairs.

Replacement windows and doors may only be installed if they are primary, separating conditioned living space from the exterior.

Except as affects energy efficiency, the replacement component should not be superior in style or quality to that being replaced. All replacements should fit within the cosmetic look of other existing unit components inside and outside; come in white or another harmonizing color; or, be appropriately stained or painted on both interior and exterior sides, including tops, bottoms and jambs.

The replacement of primary windows and doors should only be considered when the item is actually missing, or when the existing window or door is beyond repair. Repairing the item must be demonstrably more costly than replacing it.

Procedure: The replacement of a window or door requires that each of the items achieve an individual SIR ratio of 1:1 (based on prices reset with the assigned Contractor price). Moreover, a waiver is required for windows or doors when:

- More than five (5) primary windows are being replaced and no attic and wall insulation is being installed;
- When more than twelve (12) storm windows are to be installed;
- More than one (1) primary door is to be replaced; or
- More than one (1) storm door is to be replaced.

See CT WAP Operations Manual, § 301.12, "Waiver / Standard Quote Form."

### **307.2 Primary Window Measures**

Exterior window air sealing weatherization includes any work that will reduce the infiltration of outside air into the unit. Such measures include traditional work such as caulking and weatherstripping but may also include other measures to make the window fit tighter.

The energy auditor must use the blower door and visual inspection to locate and diagram window areas to be addressed that will have a major benefit. As with all air sealing, further minor work should only be completed after other weatherization work and considering the continued availability of budgeted funds for the job.

Funding: Window air sealing measures are considered Program Operations costs. They are part of the average cost per unit calculation. Certain measures that have the effect of air sealing may not be charged as such under the current program cost definitions. For example, the replacement of sash locks, while having a tightening affect, are charged as incidental repairs with the justification that they are necessary to enhance the effectiveness of other window air sealing measures and have received an SIR of 1 or more within the package of measures.

#### **307.2.1 Window Sealing Measures**

Exterior Windowpanes: Re-glazing the perimeter of the glass pane is an effective measure to prevent air infiltration and increase comfort inside the unit. Broken or significantly cracked glass should be consistently replaced. Please note that glazing must be done by a licensed professional in the State of Connecticut.

Air Sealing: Air sealing may be needed between the stop and the jamb or around the perimeter casing.

Window Weather-strip: Weatherstripping the windows between the sash and the sill, or the sash and the jamb using nailed or stapled strips, which permit the window to operate. The installation of a permanent weather-stripping product which has a minimum effective life of at least five (5) years is required when doing this measure.

Weatherstripping of windows should not take place until primary windows have already been otherwise sealed, repaired, and properly adjusted.

Sash Repairs and Replacement: The sashes in an exterior window may be repaired or replaced as an air sealing measure. When doing so, the installer should make every effort to ensure the new sash kit or sash repair fits cosmetically with the existing window(s) including paint and stain colors (charged as Incidental Repairs).

Sash Locks: All exterior windows must operate tightly to ensure an airtight fit. Loose sash locks should be tightened or reset in a different location.

Window/Storm Window Replacement: Replacement may be made within the limits discussed previously in § 307.1.

### **307.3 Primary Door Measures**

Air sealing weatherization around exterior doors includes any work that will reduce the infiltration of outside air into the unit. Such measures include traditional work such as replacing sweeps and weatherstripping; but may also include other measures, such as thresholds, to make the door fit tighter. For example, a door that “rattles” may need to be re-hung or may require a new lockset and strike plate to pull it tighter in the frame.

Funding: Door air sealing measures are considered Program Operations costs. They are part of the average cost of the unit. As with windows, some door measures that have the effect of air sealing may not be charged as such under the current program cost definitions. For example, the replacement of door locksets and striker plates, while having a tightening affect, are charged as incidental repairs with the justification that they are necessary to enhance the effectiveness of other door air sealing measures and have received an SIR of 1 or more within the package of measures.

#### **307.3.1 Door Sealing Measures**

Sweeps: Sweeps, made of aluminum and vinyl, must be installed on exterior doors, as needed.

Thresholds: Deteriorated and worn thresholds must be replaced, as needed to ensure a tight fit for the door to the door framing.

Door Window Panes: See windows measures (above).

Air Sealing: Air sealing may be needed between the stop and the jamb or around the perimeter casing.

Locksets: New locksets should be installed on any exterior door where the lockset is loose and not able to securely hold the door closed and tight. A new lockset has the added advantage of increasing the security of the unit (charged as incidental repairs).

Door/Storm Door Replacement: Door replacement may be made within the limits discussed in § 307.1.

## **308. Heating Systems**

A comprehensive evaluation of the heating system is a required part of Subgrantees’ weatherization energy audit. Subgrantees is responsible to have the system fully tested and evaluated, both in terms of

its efficiency and its safe operation. Based on the audit findings, the weatherization program may cover a range of measures related heating systems, including:

- Comprehensive testing to ensure proper operation, venting, and combustion air for all combustion-fired appliances;
- Cleaning and tuning of heating appliances to ensure safe and efficient appliance operation;
- Repair and retrofits of heating appliances and heating system components (ducts, pipes, thermostats, burners, pumps, fire chambers, etc.); and
- Replacement of heating appliances and system components, when justified.

Subgrantees must have procedures in place to determine that the heating system is in safe running order prior to the commencement of all other weatherization work. Weatherization work on the building shell should not be done until H&S issues are corrected, including, gas leaks, high CO readings, venting problems, or moisture issues.

Manufactured Homes- Special Considerations- All fuel burning, heat producing appliances in mobile homes, except ranges and ovens are to be vented to the outside. Clothes dryers, solid fuel fireplaces and solid fuel stoves must be installed to provide for the complete separation of the combustions system from the interior atmosphere of the manufactured home. (i.e., to draw combustion air from outside the unit)

All work on heating appliances and systems must comply with the material and installation standards of the manufacturer, the HVAC industry standards, and DOE regulations. DOE materials standards are detailed in 10 C.F.R. Part 440, Appendix A, "Standards for Weatherization Materials." In addition, per State standards, only energy star-rated combustion appliances are to be used.

Testing Specifications: Unless otherwise called for in the standards, all evaluations and settings are to be completed on heating systems in conformance to the specifications recommended by the Building Performance Institute, Inc.

Licensure: Connecticut state law requires state licensure by the State Boards of Occupational Licensing in several areas relevant to working on combustion appliances systems. These requirements must be maintained in choosing contractors for heating system work.

In most instances heating systems will require tuning, repairs or retrofits to operate efficiently and safely. In fewer instances, replacement of the heating system can be considered where the heating appliance is inoperable or red tagged. Replacement requires a waiver process for prior approval by DEEP.

Funds: Heating system appliance work will frequently have the effect of both improving energy efficiency and making the appliance safer.

All work on a heating system must first be screened for the SIR ratio as an energy efficiency measure. If it fails to meet the SIR threshold it may qualify as a measure conducted as H&S. The cost category for charging heating system work depends on how it is classified by this procedure.

For the technical aspects of testing and servicing heating appliances, see Connecticut Weatherization Field Guide (083021).

### **308.1 Energy Audit**

The work ordered on the heating appliance will depend on inspection and testing. In some instances, the energy auditor's evaluation may be incomplete because of Connecticut licensing restrictions. In such cases, Subgrantees must coordinate with the heating contractor to ensure all required testing is completed.

The complete energy audit will provide information and recommendations based the evaluations of the heating system, in the following areas:

- The condition and operability of the appliance: gas or fuel lines, burners, valves, power supply, other electrical, heat exchanger, fan, thermostat, blower operation, combustion air analysis.
- The condition of combustion gases venting systems: chimney, flue.
- The condition of the air distribution system: ducts, pipes, supply and return
- Safety factors: CO evaluation, draft, heat exchanger, clearance from combustibles, gas leak, oil leak, water leak, other appliance disrepair or deterioration.

Work on the systems will be ordered from a licensed contractor based on the findings of the audit. In some instances, Subgrantees may have to enlist the contractor in detailed testing to fully determine the needs of the appliance(s).

### **308.2 Clean, Tune, and Test (CTT)**

The CT WAP features work on all primary heating appliances including, gas or oil-fired furnaces, boilers, water heaters, and space heaters. The efficient operation of a forced air, gas, or oil-fired system can be affected by the blower operation, duct leakage, duct insulation, the balance between supply and return air, proper flue venting, oil nozzle size, oil pump pressure, and much more.

In conjunction with a CTT, the heating technician must complete a Burner Combustion Efficiency Report documenting the steady state efficiency of the system. The goal of the CT WAP is to achieve 70% steady state efficiency with all heating appliances, unless with oil fired heating systems an improvement of 5% can be achieved with an oil burner replacement Heating system can only be replaced if the system is inoperable or 'red tagged'.

A CTT must be conducted by a licensed contractor on primary gas and propane fired central heating systems if the process has not been done within the past five (5) years. A CTT is required for all oil-fired central heating systems if the process has not been done within the past year. All Heating System "Tune Up" or CTT must first be screened for SIR as an ECM. In the event that SIR cannot be achieved, the CTT may be completed for H&S reason if health and safety concerns are identified.



The CTT contractor will also drill holes at the required distance from the draft hood, in the furnace/boiler and domestic water heater flues, if the hole is not present at the time of the audit, so that the energy auditor can complete draft testing the appliances under the worst-case conditions.

During the CTT process the technician may find certain conditions that make the system unsafe or inoperable. For example, the fuel pump or the circulator may be faulty, or the tank may be leaking. Such problems should be discussed with Subgrantees or state monitor first.

Photographic evidence must be made by the HVAC technician to document the problems found with the heating system to share with the Subgrantee or state monitor before any repairs are made. Additional materials and labor involved must be documented separately on the combustion efficiency report.

### **308.3 Duct Insulation and Sealing**

All duct runs and connections are to be repaired as called for in the energy audit according to CT WAP protocols.

Duct Repair: Duct sealing may be needed at any point on the run, especially where there is a joint. Duct sealing must be done prior to the insulation. Unlike insulation, there may be benefit to sealing ducts in areas within the thermal envelope, as sealing affects the proper ventilation of the heating system. Duct sealing is done on existing duct joints with mastic.

Duct replacement is usually done with flexible ducts, supported with hangers. Duct replacement should not be done through unconditioned areas unless absolutely necessary and approved by the agency or state monitor.

Duct Insulation: Insulation is required on any section of a supply or return duct that runs outside of the thermal barrier. Ducts are insulated with fiberglass sheets with a foil, vinyl or other facing, and to the minimum R-value recommended. The insulation is attached and sealed with a good quality reflective duct tape or other suitable fastener.

**Note:** That in Connecticut sheet metal work requires a licensed contractor.

See Connecticut Weatherization Field Guide (083021) for duct related protocols and methods.

### **308.4 Hydronic Systems**

Hydronic systems that heat with the circulation of hot water or steam may need additional system checks for leaks and service of additional parts that regulate the heat medium circulation. Baseboard fins may need cleaning. Radiators may leak or need adjusting and balancing, steam traps, or air vents may need to be rebuilt or replaced.

### **308.5 Primary Space Heaters**

A vented space heater used as the primary heat source is treated the same as other primary heating system in terms of repair/replacement, funding and safety testing. This policy applies to vented natural

gas fired space heaters, vented propane fired space heaters, and oil fired space heaters (which are always vented). A vented, primary space heater is to be checked for safety (gas lines, CO). Repairs may be made as needed.

Replacement: A vented, primary space heater that is inoperable and cannot be repaired must be replaced. Replacements of primary space heaters may be made with existing equivalent or direct vented, sealed combustion space heater with prior approval from the monitor via the waiver process.

Unvented Gas- and Liquid-Fueled Space Heaters: The following policy applies to unvented space heaters fueled by natural gas, propane and kerosene and is consistent with International Residential Code (IRC) and International Fuel Gas Code (IFGC). This descriptive is divided to address primary and secondary heat sources.

Deferral: Weatherization work may not be conducted to the dwelling unit where the primary heat source is an unvented space heater; including, an unvented natural gas-fired space heater, unvented propane-fired space heater or unvented kerosene space heater, and the space heater cannot be replaced under CT WAP.

**Note:** Building Permits shall be secured in accordance with the authority having jurisdiction. This cost must be considered a Program Operations Cost.

All Manufacturer's recommended initial start-up procedures must be followed and documented before any replacement unit is put into operation.

All space heater replacements must be fully reviewed and inspected by local agency program staff to include, but limited adequate floor protection, combustible materials clearances and worst-case combustion zone depressurization testing on all vented units.

Treat all vented gas- and liquid-fueled space heaters the same as all other combustion appliances in terms of safety testing, repair and replacement. This policy applies to vented appliances fueled by natural gas, propane or fuel oils, such as a heating unit in a rental dwelling. Under this circumstance the unit should be deferred until the appliance can be replaced.

See WPN 08-4 which is consistent with the IRC and IFGC codes on how to best address eligible dwelling units containing space heaters.

### **308.6 Electric Space Heaters**

CT WAP and DOE do not permit DOE-funded weatherization work on primary source, electric space heaters, except for limited expenditures as an incidental repair. In the unlikely event that an electric space heater is the primary heat source in the unit, CT WAP funds may be used to replace the appliance with a direct vented, sealed combustion gas space heater or, another heating system as determined in the waiver request process.

### **308.7 Secondary Heating Systems**

The CT WAP does not repair or replace secondary heating systems.

**Note:** Only secondary units that meet ANSI Z21.11.2 Standards may be allowed to remain as back-up heating sources.

Where vented, secondary heating systems exist, Subgrantees must test the system to ensure that it is properly working and not creating an H&S problem such as high CO or improper drafting. If properly working, no additional consideration is required. If malfunctioning, Subgrantees must inform the client that the system must be repaired or removed prior to weatherization. Walk-away is required if the client refuses to repair or remove the malfunctioning secondary vented heating system. The reason for the walk-away must be documented and signed by the auditor and client and kept in the client file.

Where unvented, secondary heating systems exist, Subgrantees must recommend the system's removal and proper disposal prior to weatherization. If the occupant intends to keep the unvented heating system, weatherization services must be deferred until the unvented heating system is removed. If the client intends to replace the secondary space heater, the recommendation should be to use only a code-compliant unit with an oxygen-depletion sensing safety shut-off system.

### **308.8 Heating Appliance Thermostat Retrofit**

CT WAP protocols call for the replacement of the existing thermostat with a new, more efficient type only if the change would migrate the home from a manual thermostat to a programmable one, the existing thermostat is inoperable, or in conjunction with a new heating system. In appropriate circumstances the replacement should be a programmable, 'set-back' thermostat.

The CT WAP serves a variety of clients, from young children to senior citizens. Care must be taken to ensure that clients receive an energy efficient thermostat that also complies with their lifestyle and understanding of technology.

While, in most cases, programmable thermostats are recommended, there are cases when they would not be energy-efficient (or welcome in a client's home). Successful programmable thermostat replacement will only be possible with proper client education, instruction on the new unit and an evaluation the client's ability to utilize the device.

Training is critical to receive a cost-benefit from the device and to ensure proper use, especially in homes with clients who have never used a programmable device. User error may result in situations where the home is accidentally programmed to be at a higher than desired temperature, which would render the measure inefficient.

Even after education about the device has taken place, some clients, especially those with limited abilities with technology, may still require a traditional, mechanical thermostat.

Funds: Replacement may only be done if it will realize an SIR of 1:1 or better. Then the device can be charged in the Program Operations cost category.

#### **308.8.1 New Thermostat Installation**

A new thermostat is to be a standard part of any new heating system installation. In the case of heating system replacement, thermostat selection and installation are the responsibility of the contractor that is replacing the heating system. In these cases, Subgrantees must ensure that the same training and

product selection standards are met, so as to not create an additional expense. In no case should thermostats be claimed separately from the heating system on units where a heating system is replaced.

### **308.9 Other Heating Appliance Retrofits**

Oil Burner: When replacing an oil boiler/furnace burner the type of burner should be changed from an existing gun burner to a more efficient retention burner, only if it will not damage the existing heating system.

### **308.10 Heating Appliance Replacement**

Replacement of the heating appliance should only be considered when the current appliance is inoperable or red tagged. Inoperable, even red-tagged units may still only require repairs to properly function. When needed, Subgrantees should enlist the assistance of CT WAP technical advisory and monitoring staff, along with an HVAC Contractor to assist in making this determination, if necessary.

Heating appliances may only be replaced in eligible owner-occupied, single-family, two-family or three-family dwelling units. Only the owner's heating system can be replaced and one heating system replacement per owner-occupied dwelling is allowed.

The replacement of a heating appliance may be done as an energy efficiency or H&S measure, as follows:

Health & Safety: A new heating appliance may be installed as a matter of the H&S of the occupants due to high level of heating degree days in the region.

When the heating appliance is inoperable or red tagged it is an allowable H&S cost, provided the unit has at least one resident who is considered vulnerable.

Replacement of the heating source for the purpose of H&S must be fully justified by Subgrantees. The expenditure for a replacement in this case is charged to the H&S cost category.

Energy Efficiency: Because Connecticut's energy costs are some of the highest nationally, the replacement of a heating appliance may be found to be cost-effective. Even if the energy audit calls for replacement of the heating system on the basis of H&S, Subgrantees must first complete the cost-effectiveness analysis for heating appliance replacements where possible, through the NEAT, MHEA audit tool software, to determine if the replacement meets the individual savings to investment ratio (SIR) of 1, or greater. If the system achieves an individual SIR of 1 or greater, the unit may be replaced, and no vulnerable threshold needs to be met.

Funding: If the replacement is justifiable as an energy efficiency measure, it must be completed under the Program Operations cost category. In any instance where the replacement meets the required Savings-to-Investment Ratio (SIR), the measure should be treated as a weatherization energy efficiency measure and the measure would be included as a part of the average cost-per-unit calculation.

Otherwise, if the replacement qualifies as being replaced for H&S reasons, it may be charged accordingly to that cost category.

The cost of an incorrectly sized appliance may be questioned by State monitors and program auditors.

Prior Approval: Heating appliances and systems may only be replaced after the Subgrantee has received prior approval from DEEP using the Connecticut Heating System Waiver Packet.

See CT WAP Operations Manual, § 301.12 “Waiver and/or Standard Quote Form.”

### **308.10.1 Heating Appliance Specifications**

Only Energy Star<sup>®</sup> rated appliances may be used for replacements, with the following efficiency rating:

- Natural Gas/LP Gas Furnaces (direct vent sealed combustion) rated at 90%
- Oil Boiler/Furnaces rated at 85%
- Gas Boilers/Furnaces rates at 82%

The energy auditor’s recommendations and justifications are to be considered when the Subgrantee formulates the work order. If the unit is to be replaced, Subgrantees have the responsibility to see that the correct size unit is used, that duct work is appropriate, and that an overload of the electrical system does not occur.

Proper sizing of the appliance must be performed using a standard method, one approved by DEEP, such as the “Residential Load Calculation.”

**Note:** NEAT, MHEA utilize Manual J calculations

Subgrantees is also encouraged to work with the State Technical Consultants, as well as the HVAC Contractor, to determine the proper procedures and appliance to order.

Warranty: Replacement heating appliances and connected systems must have the following minimum warrantee:

- One (1) year on installer parts and workmanship
- Five (5) year on all OEM parts of the appliance (Original Equipment Manufacturer)
- 20 years or more OEM on the heat exchanger

The cost of a replacement must include the cleaning of any operational integral central air unit which already exists.

The cost of replacement must include the disposal of the existing appliance and the disconnection of any humidification system. Under no circumstances will a humidification system be re-installed into a new heating system.

The owner must be provided with information and education by the HVAC Contractor/installer, including all manufacturer materials for the appliance, the local contractor’s contact information (name, address, phone, email) and verbal instructions on the proper operation of the unit (thermostat, filter replacement).

Subgrantees should refer to the Connecticut Weatherization Field Guide (083021) to ensure that the installation is properly made and that all hazards associated with the installation are considered.

### **308.10.2 Utility Fuel Switching**

As a rule, Subgrantees may not change the type of utility (fuel) used by the appliance when replacing a heating appliance. If Subgrantees feel that the switching of utility types is warranted, a written justification to do so must accompany the Subgrantee's waiver request and be approved by DEEP.

## **309 Domestic Hot Water Systems (DHW)**

It is the responsibility of Subgrantees to ensure that appropriate evaluation is conducted to ensure that the domestic water heater (DWH) is operating in a safe and efficient manner.

See Connecticut Weatherization Field Guide (083021) for the technical aspects of the work on water heating appliances.

### **309.1 Energy Audit**

The work ordered on a DWH will depend on inspection and testing. In some instances, the energy auditor's evaluation may be incomplete because of Connecticut licensing restrictions. In such cases, Subgrantees must coordinate with the DWH Contractor to complete testing.

Connecticut state law requires that most activities associated with the repair and replacement of DWH are conducted by licensed contractors.

The energy audit will provide information and recommendations-based evaluations of the domestic water heating system, in the following areas:

- Determination of fuel type (oil, gas, electric)
- Visible inspection for rust or corrosion
- Inspection and testing of gas lines for leakage inspection of sediment trap, if so equipped
- Check of water temperature for safe level
- Check to see that the temperature pressure relief valve is properly installed, with a safety discharge pipe
- Check tank and water lines for leakage
- Evaluation under worst case configuration for spillage, improper draft, high carbon monoxide levels
- Check of electrical cable for frayed or damaged insulation
- Assessment of the need for pipe insulation and tank wrap

### **309.2 Measures**

Water heaters may require measures ranging from cleaning out obstructions in the vent, to repairs/retrofits and to full replacement.

Clean & Tune: If the water heater has not been serviced in the previous five (5) years a contractor should be called to clean and tune then appliance.

**Note**: DHW Tune Up or CTT must always be screened as an ECM first. In some cases, replacements may be considered for cost effectiveness as well. H&S funding can be used where applicable as well. The clean and tune is also required if the DWH:

- Is failing to operate, but does not meet criteria for replacement

- Is missing a component such as a venting assembly
- Fails to draft within acceptable limits under worst case
- Shows evidence of spillage
- Has a CO level that exceed acceptable limits
- Has evidence of burner malfunction or disrepair

See Connecticut Weatherization Field Guide (083021) for steps in the standard CTT protocol for DWH.

### **309.3 Repair and Retrofit**

Repairs or retrofits, along with further testing may be made by licensed contractors at the same time as a standard clean and tune on the appliance. Measures may include:

- Oil or gas Burner retrofit
- Venting repair or replacement
- Electric heating component replacement
- Repair or replacement of water lines
- Pipe insulation, tank wrap

DWH Insulation (gas, oil, electric): The DWH tank should be wrapped, and the connecting water lines insulated, if they are in an unconditioned area where there is a possibility of freezing, and certainly if the appliance is outside of the thermal boundary. Some newer insulated models should not be wrapped.

See Connecticut Weatherization Field Guide (083021) for additional instructions and restrictions on the installation of DWH insulation measures.

Health & Safety: A malfunctioning water heater is dangerous both from the standpoint of a combustion appliance and from the fact that pressure build up in the appliance. Repair and replacement can be considered an H&S measure.

If the appliance fails the worst-case draft test even after clean and tune measures further investigation must be performed to determine the reason for failure. For example, the contractor should check to see if the flue or chimney are blocked. The contractor should also determine whether the failure is due to a confined space that is lacking combustion air.

If an unvented gas unit is found, it must be vented by a qualified contractor, as an H&S measure before proceeding.

If the water temperature exceeds 120 degrees adjust water to a medium temperature. Always obtain occupant permission before reducing hot water temperature setting to 120 degrees Fahrenheit.

## **309.4 Replacement**

Domestic Hot Water Heaters (DHW) may only be replaced in an owner-occupied unit. The replacement requires prior approval from DEEP. Fuel switching will be considered on a case by case basis if cost-effectiveness can be demonstrated.

If the unit is to be replaced, the Subgrantee has the responsibility to see that the correct tank size unit is ordered. Subgrantees may work with DEEP, as well as the water heater contractor to determine the proper tank to order.

Health & Safety: Hot water heaters may only be replaced on a case-by-case basis if they have failed and are inoperable or if they are red tagged, following the established replacement procedure listed below.

Funding: The cost of a replacement DWH may be disallowed by DEEP if it has not been approved prior to installation, if the appliance is not correctly sized, or if it is installed by an unqualified contractor.

### **309.4.1 Procurement**

The replacement of a water heater appliance requires prior approval from DEEP. The waiver packet submitted to DEEP will include three supplemental bids from among Subgrantees' list of approved contractors. A minimum of 1 year installer parts and labor warranty and a 6-year OEM warranty is required.

See CT WAP Operations Manual, § 301.12 "Waiver and/or Standard Quote Form" for the required steps in prior approval.

## **310. Other Measures**

In addition to the measures discussed so far, the CT WAP program offers several other measures that will improve the efficiency and safety of the household.

See the Connecticut Weatherization Field Guide (083021) for technical guidance on the installation these various measures.

### **310.1 General Heat Waste (GHW) Reduction Measures**

DOE has pre-determined certain GHW measures to be cost-effective. These measures do not require a unit-specific auditor determination of cost-effectiveness. GHW measures are relatively low-cost and quickly installed; they would cost more to evaluate than to just purchase and install.

Those DOE-approved, presumptively cost-effective materials include:

- Water heater wrap (i.e., insulating blanket);
- Water heater pipe insulation (on first six feet of hot water pipe exiting water heater);
- Faucet aerators;
- Low flow showerheads;
- Limited weather-stripping and caulking to increase comfort (do not include regular air sealing work on Audit); and
- Furnace or air conditioner filters.



Funding: Subgrantees may install up to \$100 in GHW materials in eligible dwellings.

### **310.2 Smoke Detectors**

Smoke detectors must be checked by the energy auditor in every unit and addressed on the work order as an H&S issue. Inoperable or non-existent units are to be replaced in appropriate areas according to the Connecticut Weatherization Field Guide (083021). At a minimum one unit is placed on each floor, in a hallway and outside of the bedroom area. The occupants must be educated on proper operation and maintenance of smoke detectors, including battery replacement.

### **310.3 Carbon Monoxide (CO) Detectors**

Carbon Monoxide (CO) detectors must be checked by the energy auditor in every unit and addressed on the work order. Inoperable or non-existent units are to be replaced in appropriate areas according to the Connecticut Weatherization Field Guide (083021).

If the CO detector is inoperable or non-existent it may only be replaced as an H&S measure. CO detectors are an allowable H&S measure, but only when one or more of the following conditions exists, and the client does not already have one in good working order:

- Fireplace or woodstove;
- Vented heat and/or hot water combustion appliance;
- Unvented gas cook stove; or
- Attached or basement garage

The occupants must be educated on proper operation and maintenance of CO detectors, including battery replacement.

### **310.4 Baseload Reduction Measures**

Typically, addressing only the heating and/or cooling costs of a dwelling unit, accounts for only about half of that unit's energy expenditures. The addition of cost-effective electric base-load measures gives Subgrantees greater flexibility to help low-income households reduce their energy costs and to partner with sources of leveraged funds. DEEP, in partnership with the utility companies, addresses base load measures such as CFLs under HES-IE. For those areas of the state serviced by municipal electric companies, CFLs may be addressed, and they achieve an individual SIR under the NEAT, MHEA Audit.

#### **310.4.1 Refrigerators**

WPN 00-5, issued October 6, 2000, added the use of replacement refrigerators to the approved list of measures using DOE WAP funds. Currently, CT WAP does not allow for replacement of refrigerators with federal funding. Refrigerators are replaced by the HES-IE program for those areas that have utility funding.

### **310.4.2 Compact Fluorescent Light Bulbs (CFL)**

WPN 19-4 (Revised Energy Audit Attachments), issued on January 17, 2019, allows for the use of fluorescent light sources in CT WAP. DOE has determined that replacement of indoor, screw-in incandescent light bulbs by compact fluorescent lights (CFL's) is an allowable weatherization measure. Replacement of exterior lighting is not allowed.

## **311. Incidental Repairs**

Weatherization funds may be used for Incidental Repairs (IR) when such repairs are reasonable and necessary to ensure the sustainability and effectiveness of weatherization measures. The category is not meant for all repair costs, just those related to the effectiveness of a measure or the package of measures. It is expected that the cost of IR activities will be reasonable, and the need will be infrequent.

The cost of IR is added to the overall package of measures and must be included in the calculation of the overall SIR test. Incidental repairs can only be considered if the overall package maintains an SIR of 1 or greater, and the repairs do not prevent the installation of weatherization measures that would otherwise have been installed.

As the expenditure of DOE funds on IR is limited, so is the scope of activities that can be done within a given unit. For example, needed roof repairs may qualify, but the size of such repairs will be small. Roof replacement is not possible. Subgrantees must maintain controls over the expenditures in this category. Some examples include:

Example #1: An IR may include the repair of some components of a window needed to ensure the effective installation of weatherstripping. Likewise, the newly installed component on that window may require the application of matching paint.

Example #2: An IR may include minor repairs to the roof of a house made with multiple purposes; the repair may prevent moisture accumulation in the basement while also protecting the integrity of the insulation in the attic.

Funding: IR are charged to the Program Operations cost category. The need for each repair must be fully documented by Subgrantees and maintained in the case file for review by program monitors and auditors. Failure to document and comply with the definition or funding limits on incidental repairs may result in disallowed costs.

Health & Safety: In some cases, the IR may have a coincidental effect on H&S issues. In example #2 above, for instance, the roof repair may prevent moisture and mold issues. In this case the repair could only be charged under the H&S category if so defined by DEEP. DOE has required that the state plan identify any IR activities that will be charged to H&S. Furthermore, these activities must be consistently charged on all jobs, throughout the state.

CT WAP Subgrantee contracts for services with weatherization contractors must also include an acknowledgement of the receipt of communication of links to the CT WAP Field Guide, Standard Work Specifications and Standards as outlined in WPN 22-4 § 1.

### Additional Program Information

During Program Year 2022 spending limits have been established as follows:

- Up to \$10,000 on energy efficiency measures, including ancillary and IR measures and Program Support Costs or submit request for prior Grantee Approval.
- Up to \$1500 for H&S Measures or submit a request for prior Grantee approval.
- Up to \$2500 for IR costs or submit a request for prior Grantee approval.

Major Repairs – Major repairs are those where the cost exceeds \$750. Examples of major repairs include but are not limited to: Repairing roof leaks, repairing unsafe electrical wiring, and removal of knob and tube wiring for the purpose of installing attic and sidewall insulation. Major repairs do not typically fall into the IR category.

Incidental Repairs – Incidental repairs are those that are consistent with WPN 12-09 and are necessary for the effective performance or preservation of weatherization installations. They are allowed when repairing roof leaks, repairing unsafe electrical wiring, and when removing of knob and tube wiring for the purpose of installing attic and sidewall insulation.

Minor Repairs – Minor repairs are those which may be considered IR measures under \$500, and may include cut and finish, access to attics and knee walls, siding repairs, and minor repairs associated with windows, doors, flashing, and masonry moisture infiltration points.

In all cases Subgrantees should seek Grantee review of any proposed measures that exceed the listed spending limits. The client file must provide clear documentation of the need for the repairs and the relationship with the ECM that are enhanced or protected directly related to the repair. Proposed and installed measures documentation must include pictures, and detailed descriptions of the repairs and costs presented by the contractor.

## **312. Manufactured Housing (Mobile Homes)**

Most of the information contained in this Manual, regarding measures, applies to the weatherization of mobile homes. However, mobile homes present variations in approach that are detailed below.

Mobile homes are common in some areas of Connecticut and Subgrantees will find that weatherizing such units presents unique circumstances. Due to their elongated design and frequently loose construction, mobile homes are usually inefficient, relatively high energy users. Thus, mobile homes present many opportunities for air sealing, the installation and improvement of insulation, and improvements in the efficiency of mechanical systems.

Definition: Mobile home refers to a single-wide structure that is transportable as a single unit, is built on a permanent chassis, and is designed to be used as a dwelling without a permanent foundation. The mobile home may or may not actually be placed on a permanent foundation.

See Connecticut Weatherization Field Guide (083021) for instructional and technical information regarding weatherization of mobile homes.

### **312.1 Energy Audit (MHEA)**

The energy auditor will typically address the following areas in the evaluation of the needs in a mobile home:

- H&S issues;
- Client use issues;
- Structure soundness;
- Air infiltration;
- Existing insulation and needs (belly, wall, roof);
- Window and door repair;
- Water heating;
- Heating appliance, ventilation systems; and
- Indoor air quality tests and installation of smoke and CO detectors where applicable.

All standard audit testing is conducted with mobile homes. The following additional testing must be a part of Subgrantees' audit procedures, as applicable.

- Duct test with pressure pan test
- Zonal Pressure tests on belly, water heater room and attic
- Blower door @ 50 Pa

Procedure: The data collection sheet, which is also used for non-mobile units, is to be used by the auditor to document the needs of the unit.

### **312.2 Doors and Windows**

Like all air sealing measures, caulking and weatherstripping around doors and windows can be effective weatherization measures for mobile homes. If necessary to ensure the effectiveness of the air sealing, the repair of doors and windows may be completed within the policy on IR.

Replacement Limitations: The replacement of doors and windows is not cost-effective unless the existing component is deteriorated to the point of being the source of a major heat loss. The energy auditor must justify any recommendation for the replacement of doors and windows with a qualifying computation of the SIR. Prior approval by DEEP is required for replacement.

### **312.3 Reflective Measures**

Reflective roof coatings provide both insulating and air sealing qualities as applied to mobile homes. Use of these coatings is limited to jobs where the auditor has shown it to be cost-effective, with an SIR rating more than 1.0.

### **312.4 Deferral**

The weatherization worker's health and safety are important, especially when the work scope requires the worker to be under the mobile home. Any dangerous or unhealthy conditions in, about or under the mobile home - trash, broken glass, animal feces, sewage, etc. – must be addressed before any work

begins. If working conditions in a specific area cannot be made acceptable, work should be deferred until the situation is ameliorated. Weatherization measures may not be applied to dilapidated mobile homes where extensive repairs are necessary.

### **313. Client Education**

Each of the various agents in the program has a part to play informing and educating the family on its role in energy conservation and in maintaining the improvements brought about by weatherization.

#### **313.1 Subgrantee's Responsibility**

Subgrantees must provide the case work which should initiate client interaction and education during the application process. Some important areas of responsibility in the beginning are:

- Provide an initial overview of the weatherization program, eligibility, rules, and the process;
- Provide written educational information such as "A Brief Guide to Mold, Moisture, and Your Home" as part of the client education process;
- Provide the EPA pamphlet "Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools" to all families in units built before 1978. Obtain a signed receipt from the family;
- Provide a copy of the EPA pamphlet "A Citizen's Guide to Radon" and obtain a signed copy of the Client's informed consent to provide weatherization(Radon Disclaimer);
- Provide clients with all paperwork and manuals associated with any installed equipment;
- Explain in layman's terms the various weatherization services and how they will benefit the occupants of the home through improved comfort, safety, and cost savings;
- Discuss appropriate use and maintenance of all combustion appliances including indications of improper or unsafe operation;
- Discuss and provide information regarding proper procedures to address disposal of bulk fuel storage and resources available to address issues not addressed during weatherization activities;
- Coordinate weatherization job scheduling between the Subgrantee crew, the sub-contractor(s) and the family;
- Be available to answer the family's questions as the weatherization work progresses;
- Officially notify the occupants and/or owners of the unit with any reason for deferral of the work. Explain H&S or other issues which are the obstacle; and
- Be prepared with the knowledge of resources available outside of the weatherization funding to help families ameliorate problems causing a deferral.

#### **313.2 Energy auditor's Responsibility**

The energy auditor can provide more in-depth information about the energy conservation measures which the family can take. Some important areas for the auditor to interact on include:

- Interact with the client regarding any energy problems that they have noticed, temperature discomfort, a non-functioning heating appliance, leakiness & drafts in the unit, high utility costs, and other indicators of weatherization needs;

- Provide brochures or other information not completed in the initial case work contact;
- Provide a simple explanation of the testing to be done in the unit, in terms of energy efficiency and savings results;
- Discuss and explain audit results including recommendations which the auditor may have for the occupants;
- Explain the general heat waste reduction and/or base load measures in terms of energy savings;
- Explain the importance of installing and maintaining smoke detectors and CO detectors. Instruct how to check and replace batteries; and
- Provide basic tips on energy conservation: room temperature set back periods, demonstrate how furnace filter changes out, water heater temperature set back, keeping doors and windows shut, and so forth.

### **313.3 Sub-Contractor's Responsibility**

The subcontractor has an instructive role to play, particularly when new equipment or materials have been installed. The subcontractor role includes:

- Explain the proper care and maintenance of any measures that the subcontractor company has installed;
- Explain and leave any manuals or other written materials for products the company has installed;
- Demonstrate to the family the operation of heating appliances or other newly installed equipment and parts; and
- Inquire and answer any customer questions regarding the company's work.

### **313.4 Final Inspector's Responsibility**

The final inspector has an important role to be sure that the family understands what weatherization was completed or installed. The inspector's responsibilities include:

- Interview the client as to the family's satisfaction with weatherization work, the improved comfort level, and decreased energy costs (if known);
- Inquire and answer any follow-up questions from the family regarding the weatherization work; and
- Assess the family's knowledge of maintaining the weatherization work and re-instruct the client on any weatherization energy conservation techniques as needed.

## **314. Final Inspection**

A final inspection must be completed on each dwelling prior to submittal to the state for payment. It is a crucial part of the weatherization process as it provides Subgrantees with the ability to correct installation errors and call for measures that may have been missed.

Once the weatherization work is reported by the crew/ contractor as complete, Subgrantees will arrange for a final inspection. One hundred percent (100%) of the weatherized units must pass the final inspection.

### **314.1 Final Inspector Qualifications**

Subgrantees are responsible for the final quality of work accepted. CT WAP requires that all inspectors hold a current BPI certification as QCI. Inspectors are expected to maintain their certification as part of their condition of employment with Subgrantees. The final inspector must be an employee of the Subgrantee. The function may not be subcontracted, unless approved by CT WAP. The final inspector may be the same individual who conducted the Energy Audit, on any given unit. The final inspection may not be conducted by any individual who directly worked as part of the installation personnel on the unit.

### **314.2 On-Site Final Inspection Steps**

After all measures are installed, Subgrantees should print two (2) Completion Certificates that will be signed during the final inspection process. See CT WAP Operations Manual, "Appendix 2" for a sample "Completion Certificate."

The inspector should schedule the inspection with the client at a mutually convenient time for both parties and confirm with the client prior to arrival at the dwelling. Prior to the visit, the inspector should compare the data collection sheet to the installed BWR, making note of any measures that were called for but not installed in the dwelling. The inspector should arrive at the home on time, with all appropriate equipment (i.e., blower door, IR camera, digital camera, CO monitor, leakator) and paperwork (i.e. completed data collection sheet, completion certificate, and additional notes on the site). The inspector should introduce themselves to the client and ask them about their experience with the contractor and/or crew that completed the work. The inspector must conduct a walk-through of the dwelling, including the attic, with both data collection sheet and BWR in hand to see if any oversights occurred, and if measures are found in home as called for on data collection sheet. At this time, and before using the blower door, the inspector must ensure that all H&S concerns were addressed by the auditor and installer. The inspector must inspect and evaluate all new heating appliances and water heaters to ensure that they are correctly sized, have been properly installed, and are properly working.

All new and existing combustion appliances must be evaluated for CO and draft to ensure that they are properly working prior to using the blower door. The inspector should set up blower door (unless there is an H&S safety reason not to do so) and conduct blower door readings. With the blower door still on, the inspector should go through the dwelling with the infrared camera, examining cavities that were supposed to be insulated to ensure that they were done to standard.

### **314.3 Final Inspection Process**

The final inspection will include a visual examination of parts and materials used, as well as the workmanship of the installations. The inspector will also conduct technical testing and/or evaluation to assess the effectiveness and safety of the work.

During the final inspection process, the final inspector will assess the range of weatherization work completed on the unit, including whether:

- The auditor considered all energy efficiency measures and H&S issues;
- The energy audit called for comprehensive weatherization measures;
- H&S problems detected by the auditor, or others were remedied or mitigated prior to the weatherization steps, as appropriate;
- All energy efficiency measures called for in the original work order, or as modified with Subgrantees’ approval, were conducted, and done in the order of priority assigned to each;
- Air sealing and other energy efficiency measures were completed correctly using standard program protocols with approved materials and parts;
- The inspection of the insulation work and review of the certificate of insulation show that insulation was properly installed within the manufacturer standards and at the levels, locations and types called for by weatherization program guidelines;
- Based on the inspector’s pressure differential analysis the proper alignment of the unit’s thermal and pressure (air) boundaries were achieved;
- Based on blower door guided pressure testing, air sealing was effectively completed;
- Optimal ventilation rates in the house were achieved in conformance with ASHRAE 62.2- 2016;
- Based on the evaluation under ‘worst case’ configuration of the house the combustion appliances are operating safely in the weatherized unit;
- Based on Combustion Air Zone (CAZ) testing methods adequate combustion air is available for all combustion appliances;
- Based on testing with a gas detector, there are no gas line leaks;
- Based on the inspector’s own testing, and/or the inspector’s review of the test out results from the installer on any heating system or water heater replacements in the unit; such appliances were properly installed, properly sized, and test within acceptable energy efficiency standards;
- Based on testing, heating system energy efficiency levels were improved to at least a 70% level;
- Based on all testing and visual inspection all appropriate measures were considered and reasons were documented when measures were not installed;
- Based on a client interview the occupants have no complaints about the work completed and the occupants understand the actions needed to maintain the efficiency of the unit;
- If all measures were done satisfactorily, the inspector and client should sign the completion certificate; and
- If one or more measures were not installed to standard, the Inspector is required to arrange to fix measures prior to signing of completion certificate by either client or inspector.

Procedure: If measures were not called for that should have been, the inspector must make note of them and re-run the software audit with all appropriate measures called for in the software audit. If these measures are matters of H&S or screen at an individual SIR of one (1) or more, Subgrantees will arrange for the further installation by Subgrantees’ crew or by the appropriate contractor. Once additional work is completed, the inspector must conduct another compete final inspection, following procedures outlined above.

### **314.4 Final Inspection Tests**

Subgrantee Final Inspection procedures must include the performance of the following tests, as applicable:



General Tests:

- Blower Door @ 50 Pa or Equivalent;
- Attic and Crawl Space Zonal Pressures;
- House-to-garage wall assembly leakage tests on attached garages (garage door open and closed);
- Test Smoke & CO Detectors;
- Pressure Pan Test (if work was done on ducts outside the thermal envelope); and
- Exhaust Fan Flow Test (CFM) (on units that have been repaired or replaced).

Heating Appliance:

- Combustion Analysis/CO in Flue (on units that have been repaired or replaced)
- Combustion Spillage Test
- Natural Draft Test
- Clocking the Gas Meter (Natural Gas on clean and tune)
- Test for Fuel Leaks
- Heat Rise Test on Furnace (on units that have been repaired or replaced or if ducts have been sealed or filters have been added)
- Ambient CO Test in Mechanical Room and Living Space
- Smoke Test on Oil Furnace/Oil Water Heater (on units that have been repaired or replaced)
- Worst Case Draft Test
- Test heating system emergency Shutoff Switch
- Test for proper function of thermostat
- Recheck Room Balancing (on forced air heating plant)
- Space Heater (includes gas fireplaces) Combustion Analysis/CO in Flue
- Space Heater (includes gas fireplaces) Combustion Spillage Test
- Space Heater (includes gas fireplaces) Natural Draft Test
- Space Heater (includes gas fireplaces) Worst Case Draft Test
- Solid Fuel Fired Appliances-(Includes Wood, Coal, Pellet Stoves) Per NFPA 211 or in accordance with agency having jurisdiction. (Pre-and Post- Weatherization)
- Fireplaces- Conduct (Pre- and Post- Weatherization)

Water Heater:

- Worst Case Draft Test
- Natural Draft Test
- Combustion Analysis/CO in Flue (on units that have been repaired or replaced)
- Combustion Spillage Test

See recommended procedures as per WPN 22-7.

## **315. Re-Work and Warrantee**

Subgrantees are responsible to ensure that all weatherization work is completed to the level of quality that will pass the final inspection. This responsibility applies to work conducted by agency's own crews as well as that performed by agency contractors.

**Note:** Any measures that do not pass final inspection must be addressed immediately. If problems are discovered after the unit has been reported as passing final inspection, additional work may not be conducted, and DEEP should be notified for instructions.

### **315.1 Final Inspector Ordered Re-Works**

It is the responsibility of Subgrantees to have procedures in place to effectively and promptly address problems found in the final inspection.

At any point when the work does not pass the final inspection, or discrepancies between what was ordered and what was delivered cannot be reconciled, Subgrantees' final inspector should fail the unit and order necessary re-work.

At this point any payments invoiced by the contractor involved are to be withheld and Subgrantees should immediately notify the contractor of the need and reason for a re-work. The return to the unit for the rework of weatherization measure may be given a reasonable amount of time to accomplish.

If the contractor submitted the work to Subgrantees as "complete", the cost of any subsequent rework needed to pass inspection is to be the responsibility of the contractor. An additional final inspection of a unit required from a rework will be charged to the subcontractor by Subgrantees as a re-inspection fee of \$150.00 to \$300.00 depending on the extent of the re-inspection. The fee will be deducted from the subcontractor's invoice. If the re-work is the responsibility of Subgrantees' crew, it should be re-scheduled immediately.

**Rework Dispute:** If the subcontractor refuses to rework a rejected measure, Subgrantees should re-order the specific work by another subcontractor. The original company's invoice for that measure should be rejected. Other acceptable work would be paid for, but the company should then be disqualified from subsequent work in the program.

**Note:** In the instance that a technical dispute over passing a measure cannot be resolved, Subgrantees should call for a third-party inspection by DEEP QCI, monitor and technical expert. In that case DEEP's opinion will be binding on the resolution of the dispute.

Re-works or additional measures may require a modification in the work order and resets in the NEAT, MHEA Audit Software.

### **315.2 Go-Backs on Reported Complete Units**

Subgrantees no longer may not "go-back" to a unit that has been closed out and submitted to DEEP for payment. As a result of this change, the ability for Subgrantee to do additional work on a dwelling that was already submitted to DEEP, and reported to DOE as a completed unit, is significantly limited. This regulation pertains to all measures, including heating system and water heater replacements.

If a unit that has been reported as complete is found to need additional work or corrective action, it must be brought to the attention of the State program monitor. The monitor will work with Subgrantees to correct the situation.

In any instance where a contractor failed to conduct work in conformance with program policies, the contractor should be contractually required by Subgrantees to re-work the measure at the contractor's expense.

The limits on go-back re-works do not necessarily apply to measures that were not charged to DOE.

### **315.3 Warranty**

Subgrantees must contractually require all contractors to provide a warranty against defects in materials, manufacture, design, or installation of work performed under contract for the period of one (1) year from the date the unit passes the final inspection. Any warranty made by a manufacturer must be passed along to the owner of the unit.

## **316. Subgrantee Final Responsibilities**

With the receipt of the Final QCI Inspection, it is an ideal time for Subgrantees to review the entire case for its quality, compliance and accuracy. Subgrantees are responsible for the quality of every aspect of the weatherization work completed on each unit, including:

- Processing the application & accurately determining eligibility;
- Arranging for an effective energy audit of the unit;
- Devising an effective work order within program priorities and fiscal bounds;
- Obtaining DEEP approval where required;
- Performing an analysis and writing a corrective action should the process fail to fulfill the requirements of the CT WAP; and
- Overseeing the actual weatherization work; and conducting a final QCI inspection that ensures the work is complete and correct and submitting it to DEEP for approval.

### **316.1 Completion Process**

Subgrantees may not report the unit as completed until it has passed the Final QCI Inspection. Before submitting the unit for claim Subgrantees must reconcile the work completed by matching the following information:

- The weatherization measures called for in the work order (based on the audit and including subsequently approved modifications), with
- DEEP approval of waivers submitted where required, with
- The weatherization measures conducted by Subgrantees, and the weatherization measures invoiced by each subcontractor, with
- The weatherization measures reviewed and passed in the Final QCI Inspection.

Likewise, Subgrantees must match each cost which the subcontractor invoices for each measure to the agreed upon price, as applicable; from the subcontractor's approved proposal, from a weatherization program price list or as a specific price negotiated between Subgrantees and the subcontractor.

Subgrantees may not claim the dwelling as completed until any discrepancies in the measures or their costs have been reconciled. After all discrepancies have been addressed, the unit is closed out in the software audit and submitted to DEEP for payment.

After the final inspection, no more work can be done on the home as it is considered closed. At this point, a dwelling is subject to monitoring by DEEP (in-progress monitoring by DEEP may also occur); therefore, it is crucial that Subgrantees consider all eligible energy efficiency and H&S measures available and within funding resources. Once closed out in the system, Subgrantees will be unable to complete additional work on the dwelling. When the dwelling is completed and ready for close-out the following steps should be taken:

- After work is inspected by the final inspector, each measure must be flagged as installed, in the NEAT, MHEA system;
- When entering installed dates into the NEAT, MHEA software the dates must be the specific date that the individual measures were installed by that particular crew/subcontractor;
- Log the event by entering the final QCI inspection date; and
- Flag the unit completed by entering the date and then print the installed BWR.

**317. – 399. Weatherization Services Reserved**

**Section 400**  
**Health and Safety**

## **400. Introduction**

While the primary goal of CT WAP is to improve the energy efficiency of dwellings owned or occupied by low-income persons, this must be accomplished in a way that is not detrimental to the Health and Safety (H&S) of occupants and weatherization workers. Accordingly, Department of Energy (DOE) regulations allow for energy-related H&S expenditures.

\*Be advised that in the event any Federal, State or Local Authority Having Jurisdiction, releases any new regulatory restrictions or guidance, CT WAP will continue to adapt and update program compliance requirements

However, further qualifying factors of H&S activities include:

Costs must be reasonable as determined by DOE in accordance with Connecticut’s approved State Plan.

And

The actions must be taken to effectively perform a Site-Specific Energy and H&S Assessments in accordance with Special Guidelines associated with the COVID-19 standards and approved weatherization work.

And/or

The actions must be necessary as a result of weatherization work.

CT WAP cannot provide solutions for all H&S issues that a household may have. To qualify, the activity must be necessary to ensure that weatherization activities do not cause or exacerbate H&S problems for workers and/or occupants. Only H&S activities related to a weatherization measure are eligible. This means H&S activities will generally be conducted in specific areas where energy efficiency measures are identified for installation.

Moreover, only those activities specifically defined in the approved Connecticut H&S Plan, which are also listed in this CT WAP Operations Manual, will qualify as H&S activities. Many activities are limited in scope and there are budgetary restrictions on the H&S cost category.

A complete H&S evaluation by the energy auditor is required for each dwelling unit. The energy auditor’s H&S recommendations are to be made in conformance with the Connecticut H&S State Plan, utilizing the forms and protocols developed for that purpose. H&S issues must be addressed prior to the start of any weatherization work. The H&S inspection typically begins with a detailed visual inspection in several key areas of the unit, represented in the following chart:

Outside	Attic	Wall	Unconditioned Space
<ul style="list-style-type: none"> <li>• Ground slopes away from foundation</li> <li>• Gutter present and functioning</li> <li>• Down spouts discharge away from foundation</li> <li>• Foundation cracks</li> <li>• Roof, windows, doors provide weather tight protection</li> <li>• Chimney in good shape</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Recessed/Canned lighting</li> <li>• Chimney/Flue Shielding</li> <li>• Wiring Problems</li> <li>• Adequate Ventilation</li> <li>• Water leaks</li> <li>• Moisture Problems</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Wiring</li> <li>• Water Leaks</li> <li>• Moisture Problems</li> <li>• Lead Paint</li> <li>• Knob and Tube</li> <li>• Asbestos Siding</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Vapor Barrier</li> <li>• Wiring/Electrical</li> <li>• Water leaks</li> <li>• Plumbing leaks</li> <li>• Moisture Problems</li> <li>• VOC Materials</li> <li>• Other</li> </ul>

Discovery and mitigation of potential environmental hazards in the unit are insurance against danger to occupants and weatherization workers. The energy auditor and work crew should note unsafe and unsanitary conditions in or about the unit including, but not limited to, mold and mildew, drainage problems, plumbing leaks, lead-based paint, Asbestos like Material (ALM), structural damage, and wood rot.

Where H&S issues cannot be addressed by the program, Subgrantees may have to defer weatherization work until the issue is remedied. In this instance, Subgrantees should have alternative solutions available to the client and casework personnel to assist in locating other resources.

See § 204, “Unit Deferral” for additional information. H&S issues and solutions are discussed in detail in that section. See also DOE WPN 22-7.

**Note:** No H&S measures can be performed in any home unless Energy Conservation Measures are also included in the completed scope of work for that specific site.

All Work performed and reported as DOE completed CT WAP sites must follow the Building Performance Institute (BPI) 1100T-2014 Home Energy Auditing Standards, ANSI/BPI-1200-S-2015 Standards, DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the DOE approved current year State Plan/Master File.

### **401. Energy Efficiency vs. Health and Safety**

H&S measures, in particular heating units, will frequently have the effect of improving energy efficiency and making the appliance safer. So, Subgrantees usually has a decision to make as to where to categorize the measure and how to charge it to the unit costs.

The initial decision is made based on the potential energy efficiency of the measure being considered. Any measure that is recommended, from repair of the appliance to replacement, must first be tested by the audit software as to its cost-effectiveness. This uses the process of computing the Savings to Investment Ratio (SIR) rating of the measure. If the rating meets the minimum threshold of one (1.0 SIR), the decision is simple: It must be charged as an energy efficiency measure on the unit.



If the measure does not have the required SIR of 1.0 or more, the only way to install it is as an H&S measure. This can only be done if the measure qualifies in the H&S category and to the extent that funding is available.

Otherwise, the unit may need to be deferred until a way can be found to accomplish the measure outside of CT WAP funding.

See § 301.10 “Saving to Investment Ratio (SIR)” and Section 204, ‘Unit Deferral’

## **402. Regulatory References**

All Work performed and reported as DOE completed CT WAP sites must be in compliance with the Building Performance Institute (BPI) 1100T-2014 Home Energy Auditing Standard, ANSI/BPI-1200-S-2015 Standards, BPI Healthy Home Evaluator Certification, DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Operations and Training Manual, Connecticut Weatherization Field Guide (083021), and the DOE approved current year State Plan/Master File.

The primary reference for H&S policies is the current Connecticut Health & Safety Plan. Regulatory references underpinning the H&S plan are:

- Federal regulations at 10 C.F.R. § 440.16(h) and 10 C.F.R. § 440.18(d);
- 29 C.F.R. §§ 1910 and 1926;
- Weatherization Program Notices: WPN No. 22-7, DOE Memorandums 060, 062, 067; and
- United States Environmental Protection Agency (EPA) Healthy Indoor Environment Protocols for Home Energy Upgrades.

See Connecticut Weatherization Field Guide (083021) for additional technical clarification and guidance on H&S measures.

## **403. Health and Safety Training**

H&S measures must always be properly considered and addressed for each unit. Subgrantee staff and weatherization workers must be trained and knowledgeable about how their work can affect the H&S of the unit occupants.

### **403.1 Training**

DEEP has established H&S training requirements for key weatherization program workers, including energy auditors, inspectors, weatherization installers, program management, and others. Training includes identification of the range of H&S issues, and requirements for Subgrantee responses under the program guidelines and possible resources outside of the program boundaries.

Worker safety is an important training component. Training will include DOE & State of Connecticut regulations, along with EPA requirements for addressing environmental hazards and OSHA requirements in areas such as proper use of personal protective equipment (PPE).

DEEP will maintain continuous monitoring of all related programs and methodologies used in CT WAP delivery and provide Subgrantees with training resource references and opportunities including, but not limited to, CT WAP-funded providers.

**Note:** All Work performed and reported as DOE completed CT WAP sites must be in compliance with the Building Performance Institute (BPI) 1100T-2014 Home Energy Auditing Standard, ANSI/BPI-1200-S-2015 Standards, DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Operations and Training Manual, Connecticut Weatherization Field Guide (083021) and the DOE approved current year State Plan/Master File.

### **403.2 Certification**

In some instances, Subgrantee weatherization staff, weatherization contractor personnel, and all weatherization workers must possess the proper H&S related certifications to perform weatherization work.

These certifications include but are not limited to: Lead Safe Weatherization related certifications, OSHA 10, BPI Healthy Home Evaluator Certification, proper state licensure for certain trades, and EPA Certified Renovator. Proper certification is required prior to any crew or contractor performing work in the Connecticut Weatherization Program.

**Note:** Verification of credentials on at least an annual basis is a Subgrantee requirement.

### **403.3 Tracking**

Subgrantees must track training for employees and sub-Contractors. Mandatory training and certification for any weatherization position within the Subgrantee should be part of the Subgrantee’s personnel policies and individual position requirements. Personnel records must be maintained for each weatherization position detailing compliance to these requirements.

Likewise, Subgrantees must contractually ensure that Sub-Contractors adhere to all mandatory training and certification requirements. Subgrantees is required to monitor and track Sub-Contractor training and maintain Sub-Contractor records readily available for State monitoring reviews.

DEEP holds trainings on H&S issues, including courses on Lead Safe Work Practices, on an as-needed basis. It is an allowable expenditure of Training and Technical Assistance funds for Subgrantees and/or Contractors to attend additional training in the area of H&S measures.

See § 500, “Training and Technical Assistance” for additional training information and requirements.

## **404. Health and Safety Monitoring**

During the Annual Administrative Review (AAR), State staff will review training and certification records as a part of its annual administrative review process.

In addition, DEEP will review weatherization client files to ensure files contain copies of all signed H&S disclaimers. Failure to meet H&S training and certification requirements, maintain complete H&S training records, and fully document client files will result in a non-compliance finding by DEEP at the time observed.

State staff will monitor Subgrantees for compliance with training and certification requirements, including Subgrantee records for training and certifications. Monitoring will include verifications that these requirements are followed.

DEEP also reserves the right to perform random assessments at work sites to determine if crews and Contractors are utilizing safe work practices. Should State monitors notice failure to comply with State policy, OSHA standards, or H&S requirements, it will be a finding against Subgrantees. DEEP will monitor the use of the H&S cost categories very closely. Failure to properly allocate funds to the appropriate cost category will result in disallowed costs. Subgrantees must be well informed of allowable H&S cost categories.

See § 600, “Monitoring & Quality Assurance”

## **405. Health and Safety Funds**

Weatherization program regulations allow for a separate cost category for H&S activities that meet defined criteria related to the weatherization work and are within the dollar limits defined in DEEP’s approved H&S plan. Activities assigned to H&S costs are not subject to an SIR analysis. H&S activities are not included as program operations costs and are not a part of the average cost per unit calculation.

### **405.1 Health and Safety Cost Category**

The State has implemented a separate Subgrantee cost category for H&S. When determining what costs can be charged to H&S, Subgrantees must be aware of the following restrictions:

Only specific activities in the approved Connecticut WAP H&S Plan qualify as H&S activities.

- To qualify, it must be ensured that weatherization activities do not cause or exacerbate H&S problems for the unit occupants and do not present an H&S issue to weatherization workers.

H&S costs must be:

- reasonable, as determined by DOE
- in accordance with the CT WAP current approved Annual Plan

The actions must be:

- taken to effectively perform weatherization work
- necessary as a result of weatherization work.

H&S activities will be needed in specific areas where related energy efficiency measures are identified for installation.

**Note:** No H&S measures can be performed in a home unless Energy Conservation Measures (ECM) are also part of the scope of work for the completed site.

If the proposed H&S measure qualifies as an energy efficiency measure (i.e., has the effect of energy conservation and meets a minimum SIR rating of one (1), the measure must be installed and charged under that energy efficiency measure. A primary example of this would be a heating system replacement that meets an SIR of one (1) or more.

Finally, some activities that have an H&S effect may be specified in the State Plan as Incidental Repairs (IR). In such instances, IR measures will always be charged to the energy efficiency measure, provided

that the measure meets an SIR of one (1) or more. If not, then the IR may be charged to the overall package of measures of the unit if that overall package of measures meets an SIR of one or more.

See § 311, “Incidental Repairs” for the further definition of that cost category and DOE Weatherization Program Note 19-5, Frequently Asked Questions.

### **405.2 Health and Safety Budget Caps**

Connecticut budgets H&S as a separate program operations category and excludes these costs from the average cost per-home. When addressing H&S issues, Subgrantees must take into consideration budget limitations including:

- Subgrantees must stay within the percentage allocated for H&S; and
- Subgrantees must maintain an average H&S cost-per-unit based on a percentage established using Program Operations average cost per-unit.

DEEP will closely monitor use of H&S funds to ensure compliance with budget limits. Exceeding budget limits, including the H&S Average cost-per-home will result in disallowed costs.

See Section 702.9, “Health and Safety” as a cost category.

### **405.3 State Waiver Requirement**

There are several situations referred to in this section in which H & S measures require prior State approval. These include, but are not limited to, heating appliance repair and replacement, domestic water heater replacement, and related fuel and venting systems.

See § 301.12 “Waiver and Standard Quote Form” for further instructions on submitting a waiver request.

## **406. Weatherization Work Safety**

Weatherization work crews have a right to work in an environment that does not jeopardize their H&S. Occupants of the unit also expect that work be performed in a manner that will not endanger them and other household members.

Subgrantees must have written policies and protocols in place which require all standard precautions to ensure a hazard-free workplace. These precautions apply to Subgrantees’ crews and its subcontractors. Such safety policies, as well as the Subgrantee’s subcontracts, must explicitly cite the requirement for compliance with federal regulations on worker H&S, including DOE and OSHA requirements, applicable state law, and local codes.

To maintain a safe work environment, Subgrantees must enforce CT WAP deferral policies that require work postponement until H&S hazards are mitigated. Procedures must be in place to authorize program staff, energy auditors, and weatherization workers to call for possible deferral whenever potential hazards are identified.

Subgrantees are responsible for weatherization workers' H&S throughout the implementation of weatherization services at offices, warehouses, and jobsites.

It is expected and required that crews, directly employed or subcontracted, are adequately trained and possess valid state licensure to perform all work associated with their contract. Other requirements include, but are not limited to, the use of proper protective gear, safe and well-maintained machinery, tools and equipment, safety data sheets (SDS) for all hazardous items, and worker safety training.

See § 424 “Health and Safety Deferral.”

### **406.1 Regulations and Training**

Subgrantees must comply with all applicable H&S safe worksite regulations. Subgrantee employees, and subcontracted personnel, must be fully trained on H&S rules and regulations from applicable agencies including but not limited to DOE, EPA, HUD and OSHA. Training is required prior to weatherization personnel working at the job site. The following regulations/procedures are applicable:

- OSHA regulations relating to labor (29 C.F.R. § 1926, Safety and Health Regulations for Construction).
- OSHA regulations relating to toxic substances (29 C.F.R. § 1910(Z), Occupation Safety and Health Standards).
- OSHA 3990 PPE Standards, OSHA Guidance on Preparing Workplaces for COVID-19
- FEMA use of PPE by non-healthcare workers
- CDC protocols on how to clean and disinfect
- DOE Weatherization Program Notice 22-7
- CT Program Operations and Training Manual Section 500, Training

Connecticut Weatherization Field Guide (SWS Aligned Edition 083021) can be used for additional technical clarification on crew and Contractor safety in the workplace.

Training requirements include periodic refresher sessions on various safety topics for all employees. A Subgrantee training log must be maintained by Subgrantees that includes individual names, dates, and training topics for its own employees as well as contractor personnel.

The State will monitor qualifications of crew and Contractor personnel. Subgrantee charges for work performed by unqualified personnel on a weatherization job will result in questioned or disallowed costs under State fiscal/program monitoring or a Subgrantee fiscal audit.

Through internal and contract technical/monitoring compliance staff, the State's evaluation of workforce training needs and development of comprehensive training strategies is ongoing.

### **406.2 Training Funds**

The State will, through Training and Technical Assistance (T&TA) funding, provide ongoing training on various H&S related topics. Such training is made available for program staff, contractors, and their staff at no additional cost.

Furthermore, Subgrantees are allocated T&TA funds that allow for additional staff and contractor training as needed. The cost of these H&S trainings will be paid with T&TA funding. Subgrantee-sponsored trainings require prior State approval.

Purchasing equipment necessary to comply with H&S requirements is allowable under the Program Operations cost category.

Sub-contractors are expected to provide all of the equipment and supplies required for the job, as they bid at their own expense.

H&S requirements and costs that go above and beyond the parameters of the contracted procurement may be considered for review at Subgrantees and contracted resource levels.

See § 117 “Procurement” for more information on procuring equipment. See § 501 “Training” and § 703.3 “Training and Technical Assistance” for additional information on how to charge for time of staff and contractors to attend training

### **406.3 Occupant Safety**

Subgrantees are responsible for ensuring that occupant H&S is considered and documented prior to and throughout installation of weatherization measures. This is especially important if one or more of the occupants has an identified sensitivity or medical condition.

If it is determined that any of the work activities would constitute an H&S hazard, the occupant at risk will be required to leave the home during these work activities. If that is not possible, then the work must be deferred until an alternative solution can be determined.

To ensure household safety, the ideal worksite will be set up so that occupants are not in any danger of injury while work is underway. Children in particular should be shielded, either by the family removing them from the area or by an arrangement that keeps them away from work areas.

Weatherization activities that can present an H&S issue for occupants include, but are not limited to:

- Blower door, duct, and combustion appliance zone testing.
- Air sealing using foam spray
- Insulation blowing and installation
- Sanding, planning, or removing lead-painted building components
- Working with solvents, paints, caulks, and sealants containing VOCs
- Using EPA approved cleaning and disinfecting materials.
- Using power tools, staple guns, other tools that could present an H&S Issue
- Installing certain potentially hazardous materials, such as glass, fiberglass, and plywood
- Operating the blower door under hazardous configurations
- Leaving ladders unattended
- Monitoring activities around combustion appliance(s) which may cause CO spillage
- Using caution tape, cones, and signage to demarcate where work is being performed in potentially hazardous areas, such as where lead safety is required. Workers must be cognizant of the presence of occupants and appropriately warn them of hazards.

**Note:** The State reminds Subgrantees that careful review of auditors' data collection sheets, field notes, and proposed reassurance installations must be conducted by trained Reviewers, prior to issuing all work orders. All reviewers must be identified and signoff as per § 302.10.

All Work performed and reported as DOE completed CT WAP sites must be in compliance with the Building Performance Institute (BPI) 1100T-2014 Home Energy Auditing Standard, DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the DOE approved current year State Plan/Master File.

#### **406.4 Worksite Guidelines**

**Jobsite H&S:** On-the-job safety begins with a well-organized worksite where tools and materials are neatly and handily arranged. Refuse/debris should be packed up and discarded at regular intervals during the job. Workers should be responsible for safety in their work areas. Supervisory personnel should be aware of the overall operation, watching for potential hazards to workers and occupants. In areas where lead safety is applicable, the work must be isolated and conducted according to EPA lead-safe weatherization practices.

A supply of potable water must be kept in all work areas and job sites. Portable water containers must have taps and each worker must have his own drinking cup.

**Tool Safety:** The safe use of powered and manual tools is an important component of crew worker safety practices. Crews must be trained in the proper use of tools. Crews are required to don appropriate PPE when using tools or exposed to certain hazards where wearing appropriate PPE affords them personal protection. Power tools and equipment must be protected with Ground Fault Circuit Interrupter (GFCI) circuit breakers. Damaged or worn electrical cords must be discarded. All workers must be trained on the safe use of ladders.

**Vehicle Safety:** All weatherization vehicles must be properly maintained and inspected regularly to insure safe operation. A maintenance log documenting all service and repairs must be kept for each vehicle. The vehicle used for weatherization and/or insulation equipment should be well-organized, clean, and packed so that equipment and materials are secure and not likely to fall on the weatherization worker(s) or occupants. Trucks should have an ample supply of potable water, a first-aid kit, and a fire extinguisher.

**On-site Documentation:** Subgrantee and sub-contractor crews must comply with OSHA HAZCOM training and requirements. Containers of hazardous materials must be labeled with appropriate warnings. SDS for all materials being used at the job site must be available at all job sites in case of an emergency.

It is the responsibility of all Subgrantees to ensure that worksite guidelines are enforced for all personnel and Sub-contractors performing CT WAP service delivery and or inspection services.

#### **406.5 Personal Protective Equipment (PPE)**

Subgrantees shall ensure that all worksite personnel have available and use PPE appropriate to the task undertaken. All Subgrantee personnel policies and sub-contracts with weatherization auditors, installers and inspectors must explicitly require the use of PPE.

Specific PPE required at a typical jobsite includes, but is not limited to:

- Safety glasses or protective eyewear
- Noise reduction ear plugs
- Polyethylene- coated suit (Tyvek)
- Safety-toed footwear
- Work gloves
- Respirator, properly NIOSH rated for the job
- Hard hats as necessary

See 29 C.F.R. § 1910.132, ANSI Z-87.1-2003, and 29 C.F.R. § 1926.102.

### **406.6 Spray Polyurethane Foam (Two-Part)**

In the past, CT WAP held trainings on the use of low-pressure two-part polyurethane spray foam (in certain situations) for air sealing purposes only. Due to the properties of this material, Subgrantees and Sub-Contractors must first receive certification training from the original product manufacturer and strictly comply with CT WAP protocols for its use and application. Subgrantees must assure that crews and contractors obtain this certification in the proper care and use of this product.

Also, EPA has issued guidelines which must be followed when working within the conditioned space. Care must also be taken when working outside the conditioned space, near windows, doors or other openings to prevent fumes from entering the conditioned space.

Prior to the start of work, the client must be notified of plans to use two-part polyurethane spray foam and about necessary precautions. When this material is being applied, all occupants must leave and not return for at least one hour after all spray foam applications have been completed. Continuous fresh-air ventilation must be provided to the space(s) where spray foam is being applied and not allowed to mix with indoor conditioned air for the duration and the one hour after all spray foam activities have been completed. Subgrantee and contractor crews that install two-part spray foam must wear appropriate PPE during the application process.

DEEP reminds Subgrantees to always utilize appropriate client notification and document notice for departure and re-entry. Sub-contractors are reminded to comply with all applicable state and local codes, with respect to ignition barrier installation in exposed areas.

Two-part spray polyurethane foam is not currently procured for use as an insulation material in CT WAP and is not an approved measure listed in CT WAP Guidance for Certifications, Procurement, and Energy Audit Policy and Procedures.

The State continuously monitors the US DOE and EPA guidelines in respect to the use of this material in residential applications and will provide guidance and develop ongoing training strategies.

Requests for permission to install any materials not listed in DOE WPN 19-4 Attachment-6 must be approved by DOE prior to installation.

**Note:** The State neither mandates nor restricts the use of spray polyurethane foam for air sealing.



All material costs related to work performed and reported as DOE completed CT WAP sites must be in compliance with DOE WPN 19-4, the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (SWS Aligned Edition 083021), and the current year State Plan/Master File.

See Connecticut Weatherization Field Guide (083021) for further information on the use of this material in weatherization applications

### **406.7 Lead-Safe Weatherization**

Subgrantee protocols must designate that any house built before 1978 that has not been cleared by an official lead inspection contains lead paint hazards. The personnel on-site and the work practices must reflect this designation.

See the CT WAP Operations Manual § 419, “Lead Safe Weatherization”, and Connecticut Weatherization Field Guide (083021).

### **407. Client Health and Safety Education**

The client must be advised that, at the time of completion of the Request for Weatherization document, they will be contacted by the weatherization provider for additional information regarding the site and occupants. The client will be contacted by telephone and surveyed via a scripted “New Client, Job Information” intake form which requires the occupants to reveal any known or suspected health concerns.

A secondary review of this information shall be performed by the local weatherization coordinator and additional screening will be done at the time of the site-specific audit. Prior to the start of work, Subgrantees must provide clients with forms that identify all hazards potentially identified by the audit.

There are several forms, hazard specific for all other potential hazards (Mold/Moisture and Carbon Monoxide, Radon and generic, H&S Disclaimer), that must be completed prior to the start of work. In addition, clients will receive the following publications/documents when applicable:

- EPA Renovate Right (occupants of all pre-1978 buildings)
- EPA A Brief Guide to Mold, Moisture and Your Home
- EPA Asbestos in the Home: A Homeowner’s Guide
- EPA Renovation, Demolition & Asbestos-NHDES 2007
- EPA pamphlet “A Citizen’s Guide to Radon” and obtain a signed copy of the Client’s informed consent to provide weatherization (Radon Disclaimer)
- All paperwork and manuals associated with any installed equipment
- Deferral of Services Notice

When applicable, clients will also be informed concerning:

- The various weatherization services and how they will benefit the occupants of the home through improved comfort, safety, and cost savings.
- Appropriate use and maintenance of all combustion appliances including indications of improper or unsafe operation.

- Proper procedure(s) to address disposal of bulk fuel storage and resources available to address issues not addressed during weatherization activities.
- Deferral of Services Notice

The above documents must be signed by the client and Subgrantees' representative (e.g., energy auditor) and kept in the client file.

Whenever H&S measures (e.g., carbon monoxide detectors, smoke detectors, thermostats, heating systems and/or water heaters) are installed in a home, the energy auditor, the inspector, and the installer must provide comprehensive instructions relative to the operation and maintenance of the device or appliance.

**Deferral:** If the client refuses to sign any required document, no work may be done to the home, and the unit must be deferred until such time as the client agrees to sign the appropriate paperwork.

See § 424, "Deferral"

### **408. Combustion Appliances**

Appliances that combust materials have the potential to cause H&S issues if not operating properly. It is important that Subgrantees perform analyses of each appliance for operational efficiency and safety. It is vital that the weatherization work itself does not cause or worsen the possible dangers posed by malfunctioning combustion appliances. Combustion appliances that require analysis include but are not limited to:

- furnaces
- boilers
- water heaters
- vented space heaters
- gas ovens/stovetops/ranges
- gas dryers

Combustible fuels used by these appliances include:

- natural gas
- propane
- oil
- kerosene
- wood

All of these materials, when burned, produce byproducts which are dangerous if not properly vented to the outside. Subgrantees has the responsibility to ensure that combustion appliances are operating safely and are properly vented.

In instances where secondary heating sources, such as unvented kerosene space heaters, exist, the energy auditor must inform the occupants that they must be removed prior to weatherization.

## **408.1 Comprehensive Combustion Appliance Analysis**

Combustion appliances must be individually assessed by the energy auditor to determine the condition, operability, and efficiency of each one. At the same time, the appliances must also go through comprehensive technical analysis to ensure that they all operate safely together, even under “worst case” conditions.

Worst case conditions are established by establishing the maximum depressurization of the zone in which the combustion appliances operate, known as the combustion appliance zone (CAZ).

Comprehensive technical analysis is conducted with all of the appliances in operation, along with any other devices, such as exhaust fans, which may exert a negative pressure, and the most negative pressure configuration of the unit. In terms of H&S, the comprehensive combustion appliance analysis must include:

- **CAZ Testing**: to establish that an adequate supply of combustion air is available in the CAZ for the safe operation of each appliance, performed under the “worst case” conditions.
- **Worst Case Draft Testing**: to ascertain that all appliances are properly venting combustion gasses under the “worst case” conditions that includes analysis draft pressure in the appliance over fire draft and the smoke pipe connected to the chimney flue draft.
- **Carbon Monoxide Level Measuring**: to ensure that combustion appliances are within acceptable levels. Procedures are performed to measure CO at ambient, “worst case” and natural conditions.
- **Fuel Leakage Test**: Testing for gas (natural or LP) leaks in the pipes that deliver fuel to the appliances or look for signs of fuel oil leaks in pipes that connect oil storage tank to the oil burner.
- **Fire Hazard Inspection**: Inspecting for clutter, frayed wiring, and location of flammable materials and chemicals.
- **Emergency Shut-Off Switch Function**: Test Emergency Shut-Off Switch(s) for combustion appliances.
- **Electrical Hazard Inspection**: Including observation of grounding connector in face of power outlets, observation of ground wire connected to grounding rod outside, correct polarity of power outlets, use of extension cords, overloading of power outlets, observation of wiring junction boxes missing covers and observe connections inside (do not remove any junction box covers), fuse types and sizes, element amperage [electric furnace], disconnect requirements and conduit requirements.

**Note:** Gas Ovens/Stovetops/Ranges must be tested for CO levels as well as burner and oven operability and flame quality.

### **408.1.1 Licensure Restrictions**

Connecticut state law requires state licensing by the State Boards of Occupational Licensing in the several areas relevant to working on combustion appliances, including the following:

- Heating, piping and cooling
- Plumbing
- Electrical work

- Duct work (sheet metal)
- Combustion appliance repairs

Since some analysis of combustion appliances may be considered to involve “alteration,” the energy auditor may be restricted in the types of testing techniques that can be conducted on combustion appliances due to licensing requirements. For example, proper draft analysis involves the drilling of a small hole in the smoke pipe to accommodate the draft probe.

It is the responsibility of Subgrantees to ensure the proper analysis is conducted to ensure the H&S of the occupants with regard to the proper function of the combustion appliances. Subgrantees are reminded that when situations require that a licensed contractor be utilized to conduct efficiency testing, a standard CT Combustion Efficiency Report must be provided and filed with the energy auditor's data collection calculations.

See Conn. Agencies Reg. § 20-332-1, et seq.

### **408.2 Combustion Appliance Issues**

The danger with a combustion appliance may be attributed to numerous causes which justify H&S work under this category. Causes may include, but are not limited to:

- Non-existent or inoperable heating system or water heating appliance
- Fuel (gas, oil) leak in the delivery pipes leading to the appliance
- Gas oven/stovetop/ranges producing excessive CO due to compromised operating conditions. (See Action/Allowability below)
- Leaking oil tank
- Serious structural damage to the combustion appliance; cracked heat exchanger, missing appliance sections (e.g., plenum, flue)
- Poorly adjusted boiler/furnace parts that cause high levels of dangerous flue gasses
- Non-existent, deteriorated, disconnected, improperly installed flue gas exhaust vents, including chimney and chimney liners.
- Excessive flue gas spillage
- Inadequate combustion air as tested in the CAZ
- Inadequate drafting of flue gasses as tested under the “worst case” scenario
- Unacceptable CAZ depressurization limits

If actionable CO levels are found, the client must be informed of the potential danger and asked to sign a CO Disclaimer Form, which the energy auditor must also sign and date. A copy is to be given to the client and the original placed in the client file.

If high CO levels are found the energy auditor **must** take immediate action including evacuation of any people in the building and notifying an HVAC tech or the gas company of the situation needing immediate attention, as well as notifying Subgrantees’ management. Subgrantees must not continue with weatherization work until all combustion appliances are functioning properly.

**Action/Allowability:** Standard maintenance on or repair of gas ovens/stovetops/ranges is an allowable H&S cost. All proposed costs must be pre-approved by the Grantee prior to service delivery.

**Deferral:** Repairs or replacement of H&S issues with combustion appliances may be beyond CT WAP's scope, because of budget limitations or the scope of work required. In such case, the CT WAP work must be deferred.

See the CT WAP Operations Manual §Program Operations and Training Manual, Section 424, "Health and Safety Deferral"

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

Replacement of gas ovens/stovetops/ranges is not an allowable weatherization cost.

### **408.3 Ambient CO Danger – Immediate Response**

#### **Technical Reference- ANSI/BPI 1200 S 2015 Standard**

Upon first arriving at the unit, the energy auditor must take initial readings for the ambient level of carbon monoxide in the unit. If the ambient air reading is nine parts per million (9 PPM) or more, the following procedures must be followed:

- **9PPM – 35 PPM:** Contact the client's fuel vendor immediately to alert him to the problem. If the appliance uses oil or propane, and the client does not have a vendor or if the vendor does not do service work, the energy auditor must immediately contact Subgrantees' program manager to apprise that individual of the situation. Subgrantees program manager must contact a qualified vendor to make repairs as soon as possible.
- **36 PPM – 69 PPM:** This will be considered a serious situation. Energy auditor will advise all occupants to vacate the building immediately. The steps above should be initiated.
- **Above 70 PPM:** This will be considered an emergency situation. Notify the fire department immediately, then follow the above steps. The DEEP program monitor for that Subgrantee should also be notified of any such instances.

**Procedure:** The client must be notified immediately by the energy auditor of any potential or present danger. This notification must be acknowledged by having the client sign the "Carbon Monoxide Disclaimer" form. The energy auditor must also sign and date the form which is placed in the client file with a copy going to the client.

As testing of combustion appliances continue, additional ambient air testing should be conducted. If during the testing ambient CO air reading is nine parts per million (9PPM) or more, the above procedures must be followed.

As testing continues, the cause of the high CO levels will be discovered and should usually be alleviated as an H&S issue.

Additional restrictions may apply for secondary heat sources; however, Connecticut WAP does not allow for repairs or replacement of any secondary heat sources. If any secondary heat source is generating actionable CO levels, this condition must be addressed by the owner at his expense before weatherization work may begin. A deferral of up to 60 days must be issued; the energy audit may

complete the energy audit, provided it does not endanger the H & S of the energy auditor or occupants of the unit.

**Note:** Subgrantees are strongly encouraged to advise Field staff to document initial ambient CO readings and all subsequent readings in detail in field notes. Readings should be documented to include date, times, locations, devices used, and calibration dates.

### **408.4 Combustion Appliance Safety Action Limits**

The Connecticut WAP requires that Subgrantees use Building Performance Institute (BPI) action limits to determine acceptable levels when testing of combustion appliances. Weatherization limits can be found in the BPI tables and in the Connecticut Weatherization Field Guide (SWS Aligned Edition 083021). These limits include:

- Combustion passive analysis for CO action levels
- CAZ depressurization limits
- Acceptable appliance spillage limits
- Acceptable draft test ranges

**Note:** If combustion appliances exceed the action limits repairs must be ordered to correct the hazards. Weatherization work must not commence until such repairs are made.

### **408.5 Daily Checkout – Testing Out**

Because weatherization work can affect operation of combustion appliances, a “worst case” draft test must be completed at the end of each day’s work: this is known as “testing out.” Any appliance that fails a “worst case” test before or after all weatherization work is completed should be made non-operational until the hazardous condition is corrected.

DEEP recognizes that this requirement was not mandated under previous CT WAP protocols. In addition, DEEP recognizes that some sub-contractor weatherization installers may not have the training and equipment necessary to conduct “worst case” CAZ testing in accordance with BPI standards.

DEEP reminds Subgrantees of the responsibility to assure that any required testing is conducted and documented in all cases with no exceptions. In cases where on-site installers do not have the capacity to conduct the required testing, Subgrantees must be prepared to dispatch appropriate personnel to the site on demand.

See Connecticut Weatherization Field Guide (SWS Aligned Edition 083021) for additional information.

## **409. Heating Degree Days**

In accordance with WPN 22-07, heating system repair or replacement is required when there is a documentable imminent threat to the occupant’s H&S for those costs to be allowable as H&S expenses. Heating degree days were calculated through BizEE Degree Days software tool [www.degreedays.net](http://www.degreedays.net) for a period of 24 months from the beginning of 2020 to the end of 2021. Based on this information:

- Weatherization Region 1 (Harford) averaged 5513 heating degree days.
- Weatherization Region 4 (Bridgeport) averaged 4754 heating degree days.

- Weatherization Region 2 (Windham) averaged 5686 heating degree days.
- Weatherization Region 5 (Waterbury) averaged 5747 heating degree days.
- Weatherization Region 3 (New Haven) averaged 4691 heating degree days.

Connecticut’s heating degree days average (5278) justifies heating system repairs or replacement as an H&S measure

## **410. Heating Systems and Cooling Systems**

Connecticut’s climate (with over 5278 heating degree days) may contribute to dangerous situations for families when heating systems are non-existent or inoperable. Additionally, gas, propane, oil, kerosene, and solid fuel heating systems, if not working properly, can create dangerous air quality issues.

Therefore, Connecticut allows for the repair or replacement of primary heating appliances as an H&S measure if the primary heating appliance is unsafe, not functioning, or inoperable. Repairs or replacement of secondary heating systems are not allowable weatherization measures unless special conditions exist and prior CT approval is granted.

**Note:** Per DOE guidance, all CT WAP site-specific home energy assessments conducted utilizing the Weatherization Assistant Energy Audit Tool and all heating and cooling systems must be evaluated as potential Energy Conservation measures including secondary units.

While this directive is intended to assess Energy Conservation opportunities, it does not, in itself, justify or constitute the use of H&S funding for the purpose of repair or replacement of cooling equipment in CT WAP. Cooling equipment repair and replacement with H&S funds will be reviewed on a case-by-case basis.

### **410.1. Primary Heating Systems**

The Connecticut WAP allows for replacement of heating systems used as the primary heating source as an H&S measure only if it is unsafe, not functioning, inoperable or where remediation is necessary to perform weatherization and cannot be remedied by repair or tuning, unless these replacements produce an SIR of one or more. In which case they can be replaced as an Energy Conservation Measure following the waiver process. H&S funding may be used to repair or replace the following primary heating systems, following the waiver process for replacement:

- natural gas and propane heating appliances
- oil fired heating appliances
- solid fuel heating
- primary space heaters, vented combustion
- unvented combustion primary space heaters (replacement only)
- electric heating systems

Heating appliances may be replaced as an H&S expense if:

The primary heating system is non-existent.

- The primary heat source is an unvented combustion appliance; or

- The heating system is inoperable; and
- The repairs cannot be made to correct the H&S issue.
- The household has at least one (1) vulnerable person residing in it, and
- The replacement does not produce an SIR of one (1) or more.

Care should be taken to ascertain whether a heating appliance can be repaired. State approval is required prior to replacing heating systems, including obtaining a minimum of Three (3) bids.

**Deferral:** Subgrantees must ensure that expected cost of repairing or replacing a heating system can be done within the H&S per unit average. If the cost of repairs or replacement affects Subgrantees' ability to stay within available funding limits, the job may have to be deferred until those issues are resolved by the owner or other funding source.

**Note:** If during the Audit or the Clean, Tune, and Test (CTT) process, the technician finds certain conditions that make the system unsafe or inoperable, such problems should be repaired, if possible, under the H&S cost category unless they can produce an acceptable SIR of one (1) or more.

The waiver review process must include documentation used to support cost comparison between replacement and repair and be kept in the client file.

DEEP has retained technical staff specific to Technical and Monitoring Compliance Support and can assist Subgrantees on a case-by-case basis in evaluating heating system repair and replacement options.

See § 424, "Health and Safety Deferral" and § 301.12.2, "Heating Systems/Domestic Hot Water Heaters/Fuel Oil Storage Tanks Waiver" and § 408 in this manual and the Connecticut Weatherization Field Guide (083021) for additional details.

### **410.2. Secondary Heating Systems**

The Connecticut WAP does not allow for the repair or replacement of heating systems used as secondary heating source unless special conditions exist, and prior CT approval is granted.

While this directive is intended to assess Energy Conservation opportunities it does not, in itself, justify or constitute the use of H&S funding for the purpose of repair or replacement of secondary heating or cooling equipment in CT WAP. Equipment repair and replacement with H&S funds will be reviewed on a case-by-case basis

**Note:** Per DOE guidance all secondary heating and cooling equipment must be entered into the energy audit tool and all repairs and replacements must be evaluated as Energy Conservation opportunities.

### **411. Gas and Oil Fired Domestic Hot Water (DHW) Systems**

The energy auditor or licensed plumbing and heating contractor must follow program protocols to determine that the unit's gas or oil-fired domestic water heater system is operating safely by performing technical analysis.

All gas and oil-fired water heaters must be monitored for draft and CO levels as well as checked for gas leaks or oil leaks. Requirements for evaluating gas and oil-fired water heaters can be found in the Connecticut Weatherization Field Guide (083021).



Gas and oil-fired water heaters must be repaired if not properly drafting, have high CO levels, gas leaks, non-functioning venting systems, or are rusted and leaking water. The energy auditor should first consider the possibility of repairing and replacing parts on a malfunctioning water heater before recommending replacement of the water heater.

**Restrictions:** Replacement of gas or oil-fired water heaters is an allowable H&S expense. Prior State approval is required.

See § 312.12.2 for DEEP approval procedure.

**Deferral:** Subgrantees must ensure that the expected cost of repairing or replacing a water heater can be performed within available per unit H&S average cost. If the cost of repairs or replacement is “unreasonable”, as determined by DEEP, and will affect the ability of the Subgrantees to stay within available funding limits, then the job may be deferred until those issues are resolved by the owner or other funding source.

**Note:** DEEP recognizes that replacement costs associated with repair and replacement of DHW appliances are directly related to site conditions. Subgrantees are reminded to provide documentation of all contributing factors when requesting prior DEEP approvals.

## **412. Gas Cook Range and Stove**

Gas-fired cook ranges can be a CO source if not in proper working order. Interference from food dropping into burners, or from aluminum foil placed over air vents in the oven, can produce alleviated CO in gas cook ranges. Gas lines can become leaky over time, in particular for ranges that are moved periodically for cleaning. Additionally, gas cook ranges that have electric igniters may have frayed wiring or other electrical problems.

The energy auditor must check gas fired cook ranges for gas leaks, electrical issues, and excessive carbon monoxide in the oven and top burners.

**Technical Reference:** Connecticut Weatherization Field Guide (083021) recommends limits and action level “standards” currently used by the CT WAP, with the following CO limits for gas ovens:

- CO limits of 225ppm (as measured), (800 ppm air-free) or ambient-air readings above 35 ppm: Discontinue testing, install a carbon monoxide detector and written notification/recommendation for service must be made to the client. Standard maintenance and or repair maybe paid for as an H&S cost.
- Greater than 225ppm (as measured), (800 ppm air-free) or ambient-air readings above 35 ppm: the unit must be serviced prior to other weatherization work can continue.
- If greater than 225ppm (as measured) after servicing: defer all Weatherization work until this condition has been addressed by the client permanently.
- If gas leaks are found: The client must be informed of gas leaks, improper gas lines, and/or frayed wiring. Gas leaks must also be reported to the gas company by the client for follow-up.

**Restrictions:** It is not an allowable expense to replace non-functioning or malfunctioning cook stoves and/or ovens using DOE funding.

**Deferral:** Should a cook stove or oven require repair or replacement due to H&S concerns; weatherization work must be deferred until the issue is resolved.

See § 424 “Health and Safety Deferral”

### **413. Gas Clothes Dryer**

If the dwelling has a gas dryer that is not vented to the outside, it is an allowable H&S measure to install proper venting.

#### **413.1 Carbon Monoxide (CO) Generation**

Ambient CO must be checked in the space or room occupied by the gas dryer while in operation. This may be done by the energy auditor using his/her personal CO monitoring device while in the area of the dryer during its operation. If actionable CO levels are detected, shut off the dryer and evacuate the area until CO falls below any actionable levels, notify the client in writing of the condition the gas dryer is generating CO, and alert the client to call for service on the gas dryer at the client’s expense or other funding. The dryer must not be used until appropriate action has been taken to preclude this generation of CO by the gas dryer.

#### **413.2 Gas Leaks**

Check all gas piping for leaks connecting the gas meter to the dryer. If any leaks are found, notify the client to call the gas utility for repair at the client’s expense or other funding.

### **414. Carbon Monoxide (CO) Detectors**

For dwellings with combustion appliances or attached garages, the assigned weatherization installer must ensure operable CO detectors are in the unit in the number and locations throughout the home as specified in the Connecticut Weatherization Field Guide (SWS Aligned Edition 083021).

CO and Smoke alarms must always be installed in the combustion zone and the clients must be educated as to the hazard, danger signs, and what to do in case of an alarm.

Clients are to be educated as to the proper installation of batteries. Installation or replacement of inoperable CO detectors and/or batteries is an allowable H&S expense.

**Restrictions:** Replacing an existing operable alarm with a new alarm is not an acceptable H&S expense. If batteries are required for the alarm to function and the batteries need replacing, replace the batteries.

**Deferral:** Carbon monoxide detectors are to be addressed immediately and are not a reason for unit deferral.

**Note:** Fireplaces present special hazards that are affected by weatherization. If fireplace draft is poor or insufficient under certain conditions, downdraft may result in smoke or CO entering the living space.

### **415. Smoke Alarms**

The assigned weatherization installer must ensure the unit has operable smoke alarms in a number and in locations as specified in the Connecticut Weatherization Field Guide (SWS Aligned Edition 083021).

Clients are to be educated on proper installation of batteries. Replacement of inoperable smoke alarms and/or batteries is an acceptable H&S expense.

**Restrictions:** Replacing existing operable smoke alarms is not an acceptable H&S expense. If batteries are required for the alarm to function and the batteries need replacing, replace the batteries.

**Deferral:** Smoke detector issues are to be addressed immediately and are not a reason for unit deferral.

## **416. Water and Moisture**

Water and excessive moisture in a unit can cause H&S issues ranging from structural deterioration to formation of dangerous mold and mildew. To the extent that water problems will interfere with effective weatherization, or will be worsened by a measure, the underlying problems must be addressed prior to any weatherization work.

High levels of indoor relative humidity (over 60% for an extended period of time) encourage increased growth of molds and germs. The deleterious health effects of mold spores can be exacerbated by weatherization because of the reduction in air flow throughout the unit resulting from air sealing activities.

The sources of water and moisture problems vary greatly. They can be caused by excessive ground-water penetration, poor drainage, poorly graded grounds, roof leaks, deteriorated guttering, leaky plumbing, and inadequate ventilation.

Evidence of H&S issues resulting from these problems is determined by the energy auditor conducting a moisture assessment on all units. This assessment will check for the following conditions:

- Water stains or mold in the attic, especially on the underside of roof sheathing
- Evidence of excessive condensation on windows
- Water stains or mold on exterior wall surfaces and roofs
- Standing water in basements or stains indicating periodic flooding
- Damp basements or crawl spaces with dirt floors
- The use of sump pumps in basements or crawl spaces
- Inadequately vented clothes dryers
- Inoperable or inadequately vented bathroom fans
- Inoperable or inadequately vented kitchens exhaust fans

**Action:** A copy of the EPA publication “A Brief Guide to Mold, Moisture and your Home” must always be given to the family by the energy auditor for the purposes of client education.

In less serious moisture-caused situations, the owner/client must be alerted to the situation. The areas of concern must be documented. The client, and the landlord, if applicable, should sign the form before weatherization work can be started. This form will be kept in the client file.

See Connecticut WAP form “Mold Disclaimer Form”

In more extensive situations, Subgrantees should take actions to alleviate the cause of water or moisture damages (Source Control). Such actions are to be taken only as they relate to the weatherization work and can be accomplished at a reasonable cost within the available H&S funding for

the unit. The following actions are allowable H&S measures related to water and moisture under Connecticut WAP:

- Drainage
- Gutters
- down spouts and extensions
- flashing
- sump pumps
- dehumidifiers
- landscaping
- leaking roofs
- vapor retarders
- moisture barriers
- Other bulk moisture control

**Limited Water Damage:** when necessary, work that can be addressed by weatherization workers is allowed in order to weatherize the home and ensure long-term stability and durability of the installed measures.

**Source Control:** when necessary, correction of moisture and mold-creating conditions when necessary in order to ensure the long-term stability and durability of the installed measures.

**Surface Preparation:** where weatherization measures are being installed and must be charged as part of the installed ECM.

**Drainage:** Minor re-grading of the perimeter grounds to correct improper drainage and reduce the excessive accumulation of water.

The maximum allowable action is limited to work that can be addressed with hand tools and limited material costs, within a four-hour labor cost limit.

Minor gutter system measures may be taken to correct water accumulation around the home perimeter. "Minor" is defined by the program as the repair or replacement of existing gutters and downspouts, or the installation of non-existent gutters and downspouts.

The maximum allowable replacement under this policy is a length of twenty-five feet of gutter and fifty feet of down spout.

**Plumbing:** Minor plumbing by a licensed Contractor to fix leaks that are causing water problems.

All actions, including the installation of a sump pump, that are to alleviate moisture problems and plumbing issues require Subgrantees to obtain prior approval from DEEP. Such approval will require a waiver request by Subgrantees. The request includes a description of the work, a justification connecting the plumbing work to the weatherization and three quotes from licensed plumbers for the job. The request is submitted to Subgrantees' program monitor with a copy to the technical project manager. Subgrantees must have written approval from DEEP before commencing plumbing work.

**Clothes Dryer Ventilation:** The correction or installation of proper clothes dryer ventilation may alleviate moisture issues in the unit. Venting for clothes dryers to the outside of the dwelling, or the correction of existing dryer vents, including ventilation flex ducts installed to the outside are required H&S activities.

**Bathroom Ventilation:** Excessive moisture may also be remedied by the correction of bathroom exhaust fans. Fans should always be checked for cleanliness and operability. Fans must be vented to the outside to avoid moisture build-up in the house or attic. Repair or replacement of bathroom vents, including ventilation flex ducts, are required as an H&S measure. Bathroom replacement fans must provide a minimum of 50 CFM spot ventilation at a noise level of 1 sone.

**Kitchen Exhaust Fans:** To mitigate excessive moisture, kitchen exhaust fans must always be checked for cleanliness and operability. Fans must be vented to the outside to avoid moisture build-up in the house or attic. Repair or replacement of kitchen ventilation, including ventilation flex ducts to the outside, are required as an H&S measure. Kitchen replacement fans must provide a minimum of 100 CFM of spot ventilation at 2 sones.

**Vapor Retarders:** Install a ground moisture barrier, which is a piece of heavy plastic sheeting (6 Mil) laid on the ground. Black heavy plastic film works well, but tough cross-linked polyethylene is even more durable. The edges should be sealed to the foundation walls with urethane adhesive and/or mechanical fasteners. The seams should be sealed as well.

**Roof Repairs:** Reasonable and limited repairs of roof conditions that effectively control the source of water damage and moisture problems are allowable.

Actions to repair a roof for H&S reasons require Subgrantees to obtain prior DEEP approval. Such approval will require a waiver request by the Subgrantees. The request must include a description of the roof work, a justification connecting the roof work to weatherization, and three quotes from roofing contractors for the job. The request is to be submitted to the DEEP monitor with a copy to the technical program manager. Subgrantees must have written prior approval from State before commencing with any and all roofing work.

Roof repair may also be justified as an IR needed to ensure the effectiveness of the measure being installed, such as installation of insulation. Determining whether to charge roof work depends on the reason for the repairs. If the leaking roof was causing moisture and mold, the work would most likely be considered an H&S activity. If the roof work was necessary to ensure the integrity of insulation work, the job would better be charged as an Incidental Repair.

**Funding:** H&S funds may be used to mitigate the cause of water or moisture conditions (Source Control) where weatherization will further impact H&S risk to occupants or will threaten workers. To the extent that the specific moisture is related to the weatherization work, reasonable mitigation of the causes of the problem may be considered H&S work by the weatherization installer.

Subgrantees must keep in mind that it can be difficult to estimate the scope of work for some of the work under this category due to conditions which can only be identified during the course of the repair, which can result in high costs. That is why roof work and plumbing work, for example, require coordination with and approval by DEEP. In determining whether to approve such

work, DEEP will consider factors such as the connection with weatherization work, as well as Subgrantees' current average cost of H&S in comparison with established limits.

In some cases, the moisture and water fixes may be necessary to ensure the long-term stability and durability of weatherization measures. In that case the activities could also be considered and charged as an Incidental Repair (e.g., replacement of a dry-rotted windowsill, replacement of gutter or downspouts, roof repair).

Where additional funding is needed to alleviate the effects of moisture damage, the Subgrantees should inform clients of other community resources for the work. For example, mold remediation is NOT an allowable H&S cost. In instances where mold is significant in the living unit and abatement is critical, the client should be referred to other partners such as the local office of the CT Department of Public Health (DPH).

**Restrictions:** Areas of active mold, mildew, or water damage should be addressed but, in most instances, cannot be paid for with CT WAP funds.

**Deferral:** Weatherization work will be deferred until evidence of serious water, drainage or moisture problems can be documented. Such evidence would include excessive mold, mildew, strong odors, standing water, or other unsanitary conditions present such as raw sewage. Weatherization services must be postponed until the problems are corrected. These problems will be documented on the "Notice of Postponement of Services Form" and a copy will be provided to the client. In the meantime, every effort will be made to refer clients to other programs that can assist in eliminating these problems. Weatherization services will be deferred if the repairs to mitigate hazards are beyond the scope of the Connecticut WAP either because the cost is too high or the correction is not allowed, such as major drainage issues or mold abatement.

**Note:**

- See § 311 "Incidental Repairs"
- Mold cleanup is not an allowable H&S measure
- CT WAP will review special requests for gutter and downspout repairs on a case-by-case basis provided sufficient documentation of need is provided and costs are within program limits for "minor" repair or replacement.
- All CT WAP completed site must be in full compliance with ASHRAE 62.2-2016 standards
- All Work performed and reported as DOE completed CT WAP sites must follow the Building Performance Institute (BPI) 1100T-2014 Home Energy Auditing Standard, ANSI/BPI-1200-S-2015 Standards, BPI Healthy Home Evaluator Certification, DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021), and the DOE approved current year State Plan/Master File.
- All roof repair requests must provide photo documentation of the exterior drainage plane and related flashing, interior roof decking and flashing and any interior finished surfaces or insulation materials damaged as a result on existing roof leaks.
- The State reminds all Subgrantees to document all equipment and methodology utilized to conduct analysis of water and moisture conditions including the evaluation of ventilation devices. Field notes should document all subject conditions photographically and indicate date, time, and location of analyses.

## **417. Other Pollutants**

The energy auditor must check for the presence of asbestos, vermiculite, radon, and volatile organic compounds (VOCs) which can be disturbed during the weatherization process and increase health hazards to the weatherization workers and the occupants. For instance, tightening a dwelling which has high levels of VOCs can exacerbate an already unhealthy condition. Disturbing friable asbestos when running the blower door may cause asbestos particles to become airborne causing potential health concerns for both the weatherization worker and the household.

### **417.1 Asbestos**

Many homes contain asbestos, which was widely used into the late 1970's because of its fireproof quality and excellent insulation properties. In products such as pipe wrap, the material can become friable, meaning it destabilizes into microscopic particles when damaged, which, when inhaled, can cause serious health problems such as pulmonary fibrosis and mesothelioma.

**Action:** The energy auditor may come across asbestos in such components as asbestos siding, ceiling tiles, and insulation wrap on pipes coming from a steam or water boiler, or as insulation on ductwork of a forced hot air furnace heating system. As with other potentially hazardous materials, if asbestos is in stable condition and will not be disturbed by the work, weatherization work can continue in areas away from the asbestos components. In some instances, certain weatherization measures may have to be bypassed or modified to accommodate the presence of the material. Any presence of asbestos in or about the home is to be noted in the energy audit.

**Testing:** In addition to visually inspecting the interior and exterior of the site, asbestos testing may be conducted in accordance with the Asbestos Hazard Emergency Response Act of 1986 (AHERA), 15 U.S.C § 2641, et seq. All testing must have prior approval from the Grantee. Asbestos should not be disturbed during weatherization work under any circumstance, except asbestos shingles on exterior siding, which may be removed and/or replaced as necessary to properly install insulation. Asbestos siding should never be cut or drilled through.

In cases where conditions prohibit installing side-wall insulation without disturbing asbestos materials, it is recommended that consideration be given, and costs proposals be prepared for insulation being installed through the interior of the home.

Whenever asbestos siding is suspected, the energy auditor must inform the client and discuss all precautions that will be taken prior to the start of work.

If asbestos insulation covering pipes and boilers is in good condition (not friable) and, in the energy auditor's opinion, the fibers will not become air-borne, it will be safe to work in the immediate area.

DEEP recognizes that the term "good condition" is subjective and requires Subgrantees to photo document all conditions found prior to conducting blower door testing in all cases and file accordingly.

When the heating piping distribution system, or boiler/furnace wrapping, or ductwork insulation is suspected to contain asbestos, limited removal or limited encapsulation of the heating system by a licensed asbestos professional is an allowable measure under H&S if the heating system is

to be replaced. The energy auditor must educate the client about asbestos and the dangers of airborne asbestos fibers. In these instances, clients should be instructed not to disturb suspected asbestos-containing material.

**State of Connecticut:**

**Funding:** CT WAP funding, including H&S funds, may be used for limited removal or encapsulation of asbestos on a case-by-case basis. H&S funds can be used for an appropriately trained AHERA asbestos control professional to perform limited encapsulation and/or limited removal only with prior DEEP approval. Testing for asbestos by an AHERA Certified Tester is an allowable CT WAP expense.

**Blower Door Testing Restrictions:** If friable asbestos is identified in a home, would be exposed to the direct flow of air and become disturbed during blower door testing, then the blower door depressurization testing cannot be performed, unless that room or space where such materials are present can be isolated from the rest of the building, by closing a door, or other means. If the space where the suspected friable asbestos can be isolated, the blower door test can be performed but at a reduced pressure of CFM 25. In addition, if concerns still remain regarding performing the blower door test at reduced pressure, then a blower door pressurization test must not be performed.

**Deferral:** In some cases, the presence of asbestos may mean the weatherization work is deferred. If the condition of the asbestos is such that it presents a potential health risk to the worker, or if the weatherization work will worsen the situation for the occupants, the work on the dwelling should be deferred.

The occupant and/or owner must be notified of the conditions that are the deferral reason. To properly identify where asbestos should be addressed, the homeowner should be urged to have an inspection performed, and to have the asbestos removed, by a licensed asbestos abatement contractor. This determination should be left to the homeowner and not entered into by Subgrantees or contractors. However, if a heating system is to be replaced as a CT WAP H&S measure, some limited removal of asbestos pipe insulation may be allowable, but just enough to enable the disconnection of the old boiler from the heating pipe distribution system and to reconnect the new boiler. The air testing required after abatement and before re-entry can be made in the space where the abatement took place, but cannot be paid for as a separate cost using DOE WAP funding and must only be included within the entire cost of the limited removal associated with the heating system cost as a H&S measure. No CT WAP H&S funding can be expended to verify safe re-entry post homeowner abatement efforts.

See the Department of Public Health website:[http://www.ct.gov/dphStatutes and Regulations \(ct.gov\)](http://www.ct.gov/dphStatutes and Regulations (ct.gov)) for state regulations regarding the treatment of asbestos

**Note:**

- Costs related to exterior sidewall insulation procedures where asbestos siding is present must be charged as part of the ECM.
- General abatement of asbestos siding materials or related replacement materials is not an allowable H&S cost.



- DEEP has developed no specific guidance in respect to installing insulation via penetrations to interior finished surface areas. Subgrantees are advised to examine all potential limitations to interior installation options including, but not limited to, interior hazardous materials testing and excessive installation costs prior to considering this option.

### **417.2 Vermiculite**

Although not all vermiculite contains asbestos, some vermiculite products that contain asbestos were made until the early 1990s. Vermiculite is a naturally occurring mineral composed of shiny flakes, resembling mica. When heated to a high temperature, flakes of vermiculite expand as much as 8-30 times their original size. The expanded vermiculite is a lightweight, fire-resistant, and odorless material and has been used in numerous products, including insulation for attics and walls. Sizes of vermiculite products range from very fine particles to large (coarse) pieces nearly an inch long.

**Action:** Assume vermiculite contains asbestos unless testing determines otherwise.

Weatherization workers are required to take the same precautionary measures as when other suspected materials may contain asbestos is present.

Do not insulate directly over vermiculite.

Do not perform blower door testing when vermiculite is present.

Clients must be instructed not to disturb suspected asbestos-containing material as part of the energy auditor’s client education module about asbestos safety.

**Funding:** CT WAP funding, including H&S funds may be used to address encapsulation of vermiculite by appropriately trained asbestos control professionals, provided testing performed by AHERA Certified sampling confirms the presence of asbestos.

**Restrictions:** Removal of vermiculite is not allowed under the CT WAP program.

**Deferral:** When deferral becomes necessary due to asbestos, the occupant must provide documentation that a certified professional performed the remediation before work can continue.

**Note:** Baseline environmental testing is an allowable cost and must be conducted by an AHERA certified professional. Prior approval is required from the Grantee in all cases.

CT WAP will review all encapsulation proposals on a case-by-case basis.

### **417.3 Radon and Soil Gases**

Radon and other dangerous soil gases generally enter homes by seeping up through the ground. Radon is an inert gas, which means that it does not react or combine with the elements in the ground. Because of this, radon gas can move up through the soil into the atmosphere, where it is easily diluted. However, when it enters a building constructed on top of this soil, it can build up and become a health concern.

Studies have shown a link between breathing high concentrations of radon and incidence of lung cancer. Thus, radon is considered a significant contaminant that affects indoor air quality worldwide. According to the U.S. EPA, radon is the second most frequent cause of lung cancer, after cigarette smoking.

**Action:** When site conditions permit, a moisture/vapor barrier over dirt spaces aids in reducing radon infiltration into a home as well as in reducing moisture evaporation is required to be installed.

Clients should be provided with EPA Consumer’s Guide to radon.

**Funding:** CT WAP funding including H&S funding cannot be used to mitigate radon. Energy auditors may identify the presence of radon via client inquiry or visual identification of abatement measures or mitigation equipment. Auditors must refer to WPN 22-7 and conduct blower door testing only after thorough evaluation of existing conditions and equipment operation has been completed. Subgrantees are advised to document all site conditions and file accordingly.

**Restrictions:** Radon testing is not an allowable activity under CT WAP. WPN 22-7 indicates that Radon testing may be considered in locations with high radon potential. Current EPA documentation provides a map of Radon Zones in CT in accordance with the Indoor Radon Abatement Act of 1988 (IRAA), 15 U.S.C. § 2661, et seq. The CT map displays 3 color-coded zones of radon potential.

- **Zone 1:** (Red) is listed as the highest potential area to encounter residential radon exposure. (Fairfield, New Haven, Middlesex and New London Counties).
- **Zone 2:** (Orange) is listed as moderate potential.
- **Zone 3:** (Yellow) is listed as low potential.

Based on EPA reporting, radon testing should be recommended in any home weatherized in CT Zones 1 and 2. Testing may be recommended in Zone 3 homes if the energy auditor determines that site conditions warrant further examination.

As always, document all existing conditions and testing results and provide the client with appropriate education and reference materials.

Do not run a blower door test if radon is identified, unless a radon mitigation system is already in place and verified to be fully to be operational. Radon gases are driven by air pressure differentials, so work should never be done that creates or increases negative pressures in basements and crawlspaces.

**Deferral:** When a job becomes deferred due to Radon the Radon risk must be mitigated before weatherization work can commence

For state regulations regarding radon treatment, see the Department of Public Health website [www.ct.gov/dph](http://www.ct.gov/dph).

**Note:** Other precautions may include, but are not limited to, sealing any observed penetrations, including open sump pump pits, isolating the basement from the conditioned space, and ensuring crawl space ventilation, where applicable.

### **417.4 Formaldehyde and Volatile Organic Compounds (VOCs)**

VOCs are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. VOCs are emitted by a wide array of products. Examples include paints and lacquers, paint strippers,

cleaning supplies, pesticides, building materials such as plywood, furnishings, new carpets, and craft materials, including glues and adhesives.

The ability of organic chemicals to cause health effects varies. As with other pollutants, the extent and nature of the health effect will depend on many factors, including level of exposure and length of time exposed. Eye and respiratory tract irritation, headaches, dizziness, visual disorders, and memory impairment are among the immediate symptoms that some people have experienced soon after exposure to some organics.

**Action:** The client must be informed and receive documentation on safety and proper disposal of household pollutants, including household chemicals, paints, and other suspected pollutants.

**Testing:** In the event that sensory testing indicates that a hazard exists, action to remove the hazard must include proposals to remove the hazard as well as any required testing to ensure that any latent or subsurface contamination has been quantified, addressed and cleared via required documentation as per agency having jurisdiction.

**Funding:** H&S funds can be used to remove pollutants if they pose a risk to workers and the cost is not prohibitive. Prior DEEP approval is necessary before removal of VOCs may take place.

**Restrictions:** If there is evidence of excessive VOC fumes, no blower door testing can be conducted, and no air sealing work is to be done.

**Deferral:** If the removal of such pollutants is cost prohibitive, a 60-day deferral may be necessary in order for the owner to abate this condition.

**Note:** Common fuels used in residential heating (#2 Fuel Oil, Kerosene, and Liquid Propane (LPG)) and recreational fuels such as gasoline and Diesel Fuel, also contain VOCs and must be treated as such.

See §§ 314.2 (“On-Site Final Inspection Steps”), 408.1 (“Comprehensive Combustion Appliance Analysis”), and 422 (“Fire Hazards and Fuel Leaks”), all of which concern fuel leak hazards.

### **417.5 Dust**

Inhaling any kind of dust can be harmful. During weatherization work, especially when blowing insulation, precautions should be taken to minimize exposure to dust. Workers should wear NIOSH N100 rated respirators, and clients should be isolated from work areas. If this is not possible, or the client has a history of respiratory problems, they should be removed from the dwelling until work is complete.

### **417.6 Unsanitary Conditions**

Unsanitary conditions may pose a risk to weatherization workers. Unsanitary conditions include but are not limited to odors, mustiness, raw sewage, and rotting wood.

**Deferral:** In these cases, work must be deferred until the client can address these hazards. If unsanitary conditions are present, clients should be informed and be provided with information about maintaining a sanitary home.

### **417.7 Biologicals, Odors, Bacteria, Viruses, Raw Sewage, Rotting Wood, etc.**

It is not an allowable H&S expenditure to address harmful bacteria not normally present in a dwelling unit. In all circumstances where harmful bacteria are present, work must be deferred. If harmful bacteria are suspected to be present, clients should be informed and be provided with information about maintaining a sanitary home.

**Funding:** Remediation of conditions that may lead to or promote biological concerns is allowed and must be proposed and pre-approved on a case-by-case basis by DEEP.

**Testing:** Limited to on-site sensory only.

**Note:** Weatherization assessments and service delivery may be postponed due to indications that any virus or illness is suspected at the site.

### **417.8 Pests**

Pests, such as cockroaches, mice, rats, mites, and others, can be detrimental to the health of the weatherization workers and the client.

**Funding:** Pest removal is allowed as an H&S cost only where infestation would pose a health hazard to the worker and prevent weatherization. Screening of windows and points of access and incorporating pest exclusion into air sealing practices to prevent intrusion is an allowable H&S cost.

Prior State approval is necessary before funding may be expended to address pest removal.

**Deferral:** Infestation of pests may be cause for deferral where it cannot be reasonably removed or poses risk for weatherization workers. Clients should be informed in writing of observed condition and associated risks.

**Note:** refer to the National Center for Healthy Housing and BPI Healthy Homes Evaluator credentialing for testing and training protocols.

### **417.9 Refrigerant and Hazardous Materials Disposal**

Hazardous materials such as asbestos, lead, mercury, including CFL/fluorescent lighting elements, generated in the course of weatherization work, shall be disposed of according to all local laws, regulations and/or federal guidelines as applicable. Clients must be informed in writing of hazards associated with waste materials being generated/handled on any weatherization site. Refer to lead and asbestos sections for more information.

Refrigerant should be reclaimed per Clean Air Act of 1990, National Recycling and Emission Reduction Program, 42 U.S.C. § 7671g. The EPA requires that removal of refrigerants be conducted by an appropriately licensed party. Subgrantees should remind clients not to disturb refrigerant if it is located in a dwelling unit. A deferral must be issued until the client has had the refrigerant issues addressed. CT WAP dollars cannot be used to address such issues.

Documentation of all disposal requirements must be articulated in all contract language with responsible parties.

### **418. Building Code Compliance Issues**

All installed weatherization measures and weatherization-related work must comply with applicable State of Connecticut Building and Fire Codes, as well as any other applicable codes.

**Restrictions:** Correction of preexisting code compliance issues is not an allowable cost unless it pertains directly to the weatherization measures to be installed. Prior DEEP approval is required on a case-by-case basis to expend H&S funds to address code compliance issues and all proposed measures must include reference to specific code and jurisdiction.

**Testing:** Limited to visual inspection during on-site audit. Specific measures related to occupant H&S must immediately be referred to appropriate licensed contractor and or agency having jurisdiction.

**Deferral:** Condemned properties and properties where severe H&S conditions due to code non-compliance exist must be deferred until repaired by the owner or another funding source, for up to 60 days. If issues are not addressed within the 60-day period, the client must be notified in writing that weatherization work will not be performed, the job will be a “walk away”, the client file will be closed, and the client may jeopardize any DEEP assistance for up two years.

**Note:** Identification of some code compliance issues may exceed the limits of training provided within standard weatherization training curriculum. Auditors and inspectors should refer to grantee level training and technical resources for further guidance and state and regional training resources.

### **419. Lead Safe Weatherization**

Lead exposure can lead to poisoning, especially in young children and pregnant women. Household paints used before 1978 are presumed to contain lead. Paint chips or dust from lead-containing paints can be inhaled or ingested, which can lead to lead poisoning. Studies have found quantities of lead dust around windows and doors because of the friction created from constant opening and closing. Once this dust is airborne it can settle anywhere. Crews working within these areas of pre-1978 dwellings must assume that lead paint is present and take precautions to prevent contamination of themselves and clients.

**The US DOE Minimum Standards:** Must follow EPA Lead, Renovation, Repair and Painting Program (RRP) when working in pre-1978 dwellings, unless approved, certified testing confirms the work area to be lead-free.

Per EPA rule (40 C.F.R. § 745.80 to 745.92), all window replacements where lead paint exists require RRP practices regardless of the area disturbed.

**Deferral:** required when the extent of the condition of lead-based paint in the house would potentially create further H&S hazards.

**Funding:** Only costs directly related with the testing and lead safe practices for surfaces directly disturbed during weatherization activities are allowable H&S costs. Testing methods must be certified, approved, and economically feasible and justified in all cases.

In some cases, RRP costs may be included as incidental repair costs as is in the case of window and door installations when approved via CT WAP waiver procedures.

Documentation in the client file must include certified renovator certifications, on-site training provided, descriptions of actions taken, testing and assessment documents and site photos including containments.

Best practices for on-site work may include:

- Residents, especially young children and pregnant women are to be kept away from the work area.
- HEPA vacuum or wet-clean the immediate work area, before and after work, to remove potentially dangerous lead paint particles and prevent dust from becoming airborne.
- Remove household items within the immediate work area, if possible, or cover them with plastic. Cover the floor in this area with plastic (6 ml minimum thickness) and secure the plastic with masking tape. Keep photo documentation of containment setup in client file.
- When working on exterior surfaces, cover the ground and all landscaping underneath the vertical surface. The area to be covered should extend out to 5 feet for every 10 feet of wall height. Use 6 mil plastic and secure the plastic to the foundation with duct tape. Keep photo documentation of containment setup in client file.
- Thoroughly mist all painted surfaces that are to be disturbed before disturbing them (sanding, drilling, cutting, etc.).
- Workers must remove or clean footwear and remove gloves or clean hands before leaving the work area so as not to contaminate other areas. Disposable coveralls and footwear are recommended.
- At the end of each workday, roll or fold all plastic coverings inward to trap dust and debris, remove them from the job site, and disposed of them along with all other construction waste. Bag and seal all debris before removal from the job site.
- As a client education service, all weatherization clients living in pre-1978 housing that may contain lead paint will be alerted to the dangers of lead paint as part of the client education process during the energy audit. Prior to any weatherization work being done on pre-1978 housing, owners and occupants will be provided with the EPA Pamphlet "Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools." An adult tenant or homeowner must sign an acknowledgement after receiving this pamphlet. This documentation must be kept in the client file.

- All weatherization workers and Contractors who might come into contact with or disturb lead-painted surfaces must be EPA certified. To comply with the rule, all CT WAP Subgrantees and contractors must be certified firms as defined by EPA. Certified renovators are required to be onboard with all Subgrantee crews and shall supervise and inspect weatherization work to ensure that procedures pertaining to the weatherization of buildings built prior to 1978 are met. Firms are responsible for ensuring that a certified renovator is assigned to each job for the purpose of supervising and inspecting weatherization work. Firms are responsible for ensuring that a dust sampling is also performed on each unit to ensure the work area has been cleaned.

**Note:**

- CT WAP recognizes that EPA RRP safety rules are triggered when there are more than six square feet of interior painted surface or more than twenty square feet of exterior paint disturbed in the course of installing weatherization measures. These square footage thresholds are based on single area surface disturbances or an aggregate number of disturbances, such as in the case of sidewall insulation penetrations.
- The Subgrantee will verify that crews are using lead safe practices via on-site and file review monitoring activities.
- Per WPN 22-7, Subgrantees are reminded that testing for lead-containing substances is an allowable cost. All testing and post completion verification results must be documented and placed in the client file.

## **420. Structural Issues**

DEEP does not allow for structural or roofing repairs that do not directly affect weatherization measures. In some instances, minor structural repairs may be made to accommodate weatherization measures. Minor repairs are funded under Incidental Repairs and included in the overall SIR of the package of measures.

Homes that require more than minor repairs must be deferred.

When deferral is necessary, provide detailed documentation of all conditions that must be met in order for weatherization to commence.

See section 417 of Connecticut Weatherization Assistance Program Operations Manual for more information.

### **420.1 Injury Prevention**

#### **420.1.1 Repairing Stairs and Replacing Handrails, etc.**

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

The visual inspection of a home must ensure that access to the portions of the site where weatherization activities will occur are safe for entry and performance of assessment, work and inspection.

**Note:** If such conditions are observed, the client should be informed of observed hazards and associated risks, and these potential hazards should be documented and placed in the client file.

### **420.2 Building Structure**

Building rehabilitation is beyond CT WAP’s scope. When homes in poor structural condition are encountered, weatherization services should be delayed until the dwelling can be made safe for crews and occupants. Clients should be referred to DEEP Department of Housing and Urban Development or other programs for assistance with rehabilitation services. Incidental Repairs necessary for the effective performance or preservation of weatherization materials are allowed provided they yield an individual SIR of one (1) or more.

See § 311, “Incidental Repairs”

### **420.3 Window and Door Replacement and Window Guards**

Window, door, and window guard replacements are not an allowable H&S cost. Provide written information on lead risks whenever issues are identified.

Only those costs associated with lead-safe practices can be considered. Subgrantees are required to provide photo documentation and written information on lead risks whenever issues are identified and proposed as Incidental Repairs or H&S costs.

## **421. Electrical Safety**

**Issue:** A range of electrical issues may arise in the process of weatherizing a house when installing insulation in an attic or in sidewalls where outdated, overloaded, or deteriorated electrical circuits may pose a hazard. Typical issues to look out for include:

- Uncapped junction boxes
- Frayed or exposed electrical wiring
- Live knob & tube style wiring
- Overloaded circuits
- Improper use of extension cords
- Recessed can light – always consider to be non-insulation contact canned lights
- Other exposed wiring at lighting fixtures, switches and outlets, fans
- Electrical problems with fans, blowers, thermostats on combustion appliances

The owner of the property must be notified immediately of any observed electrical issue that may pose a danger. A licensed electrician is required for any further electrical inspections or repairs.

Weatherization measures such as insulation must be undertaken in such a way as to avoid any contact with electrical systems.

When the H&S of the occupant(s) or worker(s) is at risk, minor repairs, as defined by and approved by DEEP, are allowable H&S costs.



Evaluation and detailed work scope proposals necessary to provide over-current protection and damming (when required) prior to insulating building components containing knob and tube wiring as required by the local agency having jurisdiction must be completed and provided to DEEP.

A CT licensed electrician’s report, where required, must document that all circuits have over-current protection, either by circuit breakers or type “S” fuses. A copy of the electrician’s report must be kept in the Client file. Electrical inspections and minor electrical repairs are allowable H&S measures. Allowable measures can include repairs to prevent circuit overloading, and replacement or elimination of live knob and tube wiring to allow for insulation. If knob & tube wiring is addressed, the client must be provided with information on over-current protection. Anytime electrical issues are addressed, the client should be provided with information (client education) on the dangers of overloading circuits and basic electrical safety.

**Funding:** H&S funding may be used for CT licensed electrical inspection and repair of electrical hazards if such hazards might be made worse with the installation of weatherization measures, would prevent the effectiveness of the work, or present a danger to weatherization crews. Such costs must be reasonable and are limited by the funds available for each unit and require prior DEEP approval in all cases.

**Restrictions:** Only licensed electricians may conduct electrical inspections or make repairs or alterations to the electrical systems.

**Deferral:** Electrical hazards must be repaired such that weatherization activities can safely be undertaken. Otherwise, the unit should be deferred until the issues have been resolved.

**Note:**

- Electrical testing and evaluation beyond the most basic visual inspections must in all cases, be conducted by a licensed contractor and documented.
- Identification of some electrical hazards and electrical code compliance issues may exceed the limits of training provided within standard weatherization training curriculum. Energy auditors and inspectors should refer to Grantee level training and technical resources for further guidance and state and regional training resources.
- Subgrantees are advised to refer to WPN 22-7 for additional information.

## **422. Fire Hazards and Fuel Leaks**

Checking for fire hazards should be ongoing when the audit is conducted and while weatherization work is underway.

All combustion appliance areas must be checked for fuel/gas leaks. Testing of exposed gas lines should include leak testing from utility coupling into and throughout the home. Sensory inspection of bulk fuel storage and supply lines must be conducted as well.

When a gas leak is found on the utility side of the service, the utility must be contacted before work can proceed.

Fuel leaks that are the responsibility of the client (as opposed to the utility) must be repaired before weatherization can commence.

Notify utilities and temporarily suspend all weatherization work when leaks are discovered that are the responsibility the utility to address.

Other fire hazards that must be considered during the audit are as follows:

- Adequate clearance between combustion appliances, flue pipes, and any combustible materials
- Frayed electrical wiring
- Overloaded or misused electrical wiring
- Excess creosote and or soot built-up in flues and chimneys connected to primary heating appliances

**Action:** Education is crucial. Clients must be informed in writing of any fuel leaks that are detected.

**Funding:** Costs related to fire hazard and detection are directly included in the initial energy audit fees.

See § 418“Building Code Compliance”, § 421, “Electrical Safety”, and § 410.1 “Primary Heating Systems” and 410.2 “Secondary Heating System” Sections

**422.1 Smoke and Carbon Monoxide Alarms, Fire Extinguishers**

During the course of the initial audit, technicians are reminded to:

- Check existing alarm for operation.
- Verify operation of any devices installed during the audit.

Provide the client with written and verbal instruction on the use of any installed devices.

Allowable H&S Measures:

- Smoke Alarms may be installed when not present or inoperable.
- CO Alarms must be installed where alarms are not present or are inoperable.
- Where solid fuel burning equipment is present, fire extinguishers may be provided as needed, in accordance with manufacturer’s instructions.

Fire extinguisher installation is not an allowable CT WAP expenditure in homes where solid fuel equipment is not present.

**Note:** CT will provide specific guidance in respect to fire extinguisher specifications in the course of prior approval of all fire extinguisher measures.

**423. Indoor Air Quality (IAQ), Ventilation, and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 62.2 2016**

Because weatherization activities, particularly air sealing, affect ventilation rates through the unit, IAQ can be worsened by weatherization work. IAQ issues may range from noticeable sources such as discarded VOCs to less detectable dangers such as CO. The decision to adjust the unit’s ventilation systems cannot be based solely on visible and obvious issues: it must take into consideration all possible issues. Thus, a CT WAP ventilation standard has been established.

DOE has adopted for CT WAP ventilation standards set by ASHRAE in its handbook section ANSI/ASHRAE Standard 62.2-2016, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings (“ASHRAE 62.2”). ASHRAE 62.2 applies to single family and multi-family up to three stories above grade, including manufactured or modular units.

See Connecticut Weatherization Program Guidance 18, “Air Sealing”; Connecticut Weatherization Field Guide (083021), and the DOE Weatherization Program Notice 22-7, DOE H&S Guidance.

**Note:** All Work performed and reported as DOE completed CT WAP sites must be in compliance with the Building Performance Institute (BPI) 1100T-2014 Home Energy Auditing Standard, ANSI/BPI-1200-S-2015 Standards, BPI Healthy Home Evaluator Certification, DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021), and the DOE approved current year state Plan/Master File.

### **423.1 Ventilation and Air Sealing**

Major air sealing should be done and then ventilation should be installed to meet the calculated ventilation requirement per the standard. CT WAP has adopted the ASHRAE normative Appendix A and when an existing fan is being replaced or upgraded to meet whole house ventilation requirements, actions must be taken to prevent zonal pressure differentials greater than 3 Pascal across a closed door, if one exists within the ventilated space.

CT WAP recognizes the Addendum to ASHRAE 62.2-2016 as approved on 1/24/2018.

CT WAP recognizes the revised definition of floor area as defined in ANSI Standard Z765 1 that includes below grade unfinished spaces in the calculation of floor area if they are within the pressure boundary of the home.

Post weatherization installation inspection, including the scientific assessment of ventilation requirements, must be conducted.

If needed, the two system requirements of ASHRAE 62.2 2016 standards are:

- Whole-Building Ventilation – installation of a fan, or a combination of fans, which will provide the minimum ventilation needed for proper air flow as calculated by the standards.
- Local Ventilation Exhaust – installation of local, intermittent exhaust fans in each kitchen and bathroom, as specified by the standards, to reduce the possible levels of contaminants and moisture in each of unit.

**Note:** Subgrantees are advised that on the initial site visit, energy auditors must conduct indoor air quality analysis consistent with ASHRAE 62.2 2016 standards to develop projected H&S cost estimates to determine feasibility to comply or defer the unit. Based on those findings, weatherization may proceed.

CT WAP technical personnel will closely monitor and adapt to any changes to the standard and training requirements to remain in compliance with US DOE ventilation standards.

See Connecticut Weatherization Field Guide (083021) for more information.

### **423.2 IAQ Funding**

When installed to comply with ASHRAE 62.2 2016 standards, the materials, supplies, and labor needed for systems including electrical circuits, devices and ducts to the outside - for whole house ventilation, kitchen exhaust, and bathroom exhaust installations qualify as H&S measures.

### **423.3 Blower Door Restrictions**

Here are recommended blower door safety protocols:

- Do not conduct a depressurization test with a wood stove or fireplace burning. Close flue dampers and cover loose ash in the fireplace.
- Do not conduct a depressurization test when any other combustion appliance is operating. Shutoff power or gas before the test is conducted, and make sure appliances are turned back on when testing is completed.
- Do not conduct a blower door test if friable asbestos or suspected asbestos like material is present in the dwelling unit.
- Do not conduct blower door testing when mold, moisture or other potential health risk conditions prohibit creating conditions that may disturb harmful substances that may impact occupant pre- existing or potential health conditions as a result of air movement within the home.

**Note:**

- Determination of risk levels and workers and occupant vulnerability is defined within the Special COVID-19 Guidelines.
- CT WAP has implemented special policy, procedures and protocols designed to address jobsite H&S during the COVID-19 crisis. Please refer to the CT WAP Operations Manual §§ 406, 406.3, 406.4, 406.5, 407, 417.7, 423.3, 425, 425.1 and 425.2 for additional information.

### **424. Health and Safety Deferral**

The goal of the weatherization assistance program is to weatherize homes and save energy. However, in certain circumstances, H&S hazards must be addressed before the weatherization work can be completed. Some of these repairs may be beyond the scope of the program because they are too expensive or not allowed under DOE WAP funding. In these cases, Subgrantees should work with the client and other funding sources to coordinate the completion of the required repairs.

Ultimately, the decision to defer work is the responsibility of the Subgrantees that must ensure the safety of the client, as well as the integrity of the weatherization work being done. In most cases, deferral of weatherization services means that work will be postponed until the problems can be resolved. Subgrantees are expected to assist clients when possible, helping to find alternative sources of funding. Good judgment must always be used in dealing with these difficult situations.

#### **424.1 Deferral Guidelines**

- Subgrantees must document all serious H&S problems encountered that will either prevent or delay the delivery of weatherization services on the Notice of Postponement of Services along

with possible solutions. The form must be signed and dated by the client and Subgrantees' representative. If the client is a renter, a copy must also be sent to the landlord.

- Subgrantees must monitor timelines for client eligibility and completion of work.
- Work must be completed within 12 months of the original eligibility determination date of the client.
- If all H&S concerns that triggered deferral are addressed within sixty (60) days of receipt of the Notice of Postponement, re- verification of eligibility is not required.
- Should remediation take longer than the sixty (60) day grace period, eligibility must be re-verified in accordance with state and federal policy. If the client is still eligible, work can begin.
- If the client's circumstances have changed and they are no longer eligible, work cannot be done on the dwelling unit.
- All weatherization work must be completed within 12 months from the original eligibility date of the client.

Where conditions cannot be corrected through H&S funds, deferral may include some of the following situations:

- The client has known health conditions that would be impacted by the installation of insulation or other measures.
- The building structure or its mechanical systems, including electrical and plumbing, are in such a state of disrepair that failure is imminent, and the conditions cannot be resolved cost-effectively.
- The building has sewage or other sanitary problems that would further endanger the client and weatherization installers if weatherization work were performed.
- The building has been condemned or electrical, heating, plumbing or other equipment has been red tagged by local or state building officials or utilities.
- Moisture and drainage problems are so severe they cannot be resolved under existing guidelines.
- Dangerous conditions exist due to high carbon monoxide levels in combustion appliances, high levels of formaldehyde, an unsafe level of other pollutants or VOCs, and these conditions cannot be resolved under existing guidelines.
- The extent and condition of lead-based paint in the building would potentially create further H&S problems.
- The client is uncooperative, abusive, or threatening to the energy auditor, crew, sub-contractors or others who must work in or visit the dwelling.
- In the judgment of the energy auditor, any condition exists which may endanger the health or safety of the work crew or sub-contractor (e.g., illness or identified potential exposure to infectious disease, or extremely unsanitary conditions).
- The energy auditor suspects that illegal activities are taking place on the property.
- Infestation of pests cannot be reasonably removed or creates an H&S concern for weatherization workers.

- The client exhibits signs of hoarding behavior that prevent the installation of weatherization measures that are necessary to improve the efficiency of the home.
- **Note:**
- US DOE WAP Memorandum 060, 062, and 067 provide special deferral instructions regarding client refusal of services due to COVID-19 and illness due to COVID-19. Tracking and proper prioritization of deferred sites is required in all cases.

**424.2 Deferral Forms**

**(See attached examples in Appendix B)**

## **425. COVID-19**

Please refer to DOE WAP Memorandums 60, 62, and 67 regarding deferral policy and procedure as long as COVID-19 workplace safety protocols are in place in CT

CT WAP has implemented special Policy, Procedures and Protocols designed to address Job-Site health and safety H&S during the COVID-19 crisis. Please refer to updated Operations and Training Manual Sections 425, 425.1 and 425.2 as well as updated Sections 406, 406.3, 406.4, 406.5, 407, 417.7, 423.3 and 424.1 for additional information. CT WAP has implemented special policy, procedures and protocols designed to address jobsite H&S during the COVID-19 crisis. Please refer to the CT WAP Operations Manual §§ 406, 406.3, 406.4, 406.5, 407, 417.7, 423.3, 425, 425.1 and 425.2 for additional information.

Be advised that in the event of any new Federal, State or Local agency having jurisdiction regulatory restrictions and Guidance is adapted, CT WAP will continue to update program compliance requirements.

### **425.1 Service Delivery**

CT WAP anticipates a range of potential costs associated with service delivery in the COVID-19 era workplace. As federal and state policies are in the developed, CT WAP proposes to categorize and track any costs related to steps necessary to respond to this requirement in a separate H&S category. These may include, but are not limited to, testing, tracking, site preparation, and specific PPE for all WAP personnel and clients, while conducting field services.

The 2022 H&S budget has been prepared to include allowances for these costs. The updated 2022 H&S Plan also contains language to address these conditions.

### **425.2 Quality Assurance (QA) and Quality Control Inspections (QCI)**

CT WAP recognizes that doing site-specific assessments, QA and quality control services will present a range of hazards not previously encountered in the CT WAP. As federal and state policy and procedures are implemented, CT WAP will continuously update the H&S Plan, Connecticut Weatherization Assistance Program Operations Manual, Connecticut Weatherization Field Guide (083021), and related Guidance and forms to address how these aspects are managed and tracked from client intake and prioritization of services through unit completion.



**426. – 499. Health and Safety Reserved**

**Section 500**  
**Training and Technical Assistance**

## **500. Introduction**

The Department of Energy (DOE) allocates T&TA funding to DEEPs. T&TA funds support state program operations, such as analysis, measurement and documentation of program performance, skill development, and local monitoring, to improve program effectiveness.

To ensure the consistent delivery of high-quality weatherization services nationwide, the DOE, through a network of weatherization professionals, identified and developed a set of core competencies for the various staff positions that implement the weatherization program including the types of training required to increase levels of core competencies for these job categories. The goal is to increase the levels of competencies and expertise in the workforce so that every house that is weatherized receives appropriate, properly installed, cost-effective measures.

Although many of the core competencies and job classifications identified are universal, not all the core competencies will be appropriate for the job classifications identified in every state. For instance, testing, repairing or replacing heating and cooling systems in Connecticut requires certification or licensing from DEEP. Therefore, the energy auditor or Weatherization Installer may not be able to conduct this work. In Connecticut, work on heating and cooling systems must be subcontracted to a licensed contractor outside CT WAP. However, just because an HVAC contractor is licensed by DEEP does not mean he/she possesses the competencies required by the Weatherization Program. Additional training of these contractors may be required, or someone at the local agency must be competent to specify what work the contractor is to do and to verify that the completed work complies with the technical standards of the CT WAP.

The DOE also places certain requirements for training and certification including general hazardous materials awareness and specialized curriculum as follows:

- Lead Safe Weatherization (LSW) training for all workers (Optional)
- At least one onsite worker must be an EPA Certified Renovator (RRP)
- EPA RRP training for all state monitors (Optional)

The state of Connecticut is committed to increase the Connecticut weatherization network's expertise. Numerous program training opportunities and hands-on workshops have been conducted with the goal to maximize energy savings, minimize production costs, improve quality of work, and foster management expertise. In Connecticut, T&TA funds are primarily used to train state and local weatherization staff on program operations, management, and technical topics. Staff members receive training at national and regional conferences, regional and state training centers, state and Subgrantee provided workshops, and in the field.

QCI personnel must complete DOE approved comprehensive training and possess knowledge, skills and abilities as listed in the National Renewable Energy Laboratories Job Task Analysis and become certified by BPI as a Home Energy Professional Quality Control Inspector.

CT WAP recognizes DOE WPN 22-4 and will implement enhanced training, planning, and tracking that defines training and certification intervals for new hires and the incumbent workforce that are aligned

with current NREL Home Energy Professional (HEP) certifications and the position for which the worker is employed.

**Note:**

- All training related to work performed and reported as DOE completed CT WAP sites must be in compliance with DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021), and the current year State Plan/Master File.
- All certified Grantee and Subgrantee staff are required to participate in trainings specific to the NREL HEP recertification on a regular 3-year basis and within 6 months of the HEP recertification dates.
- CT WAP is implementing policy that requires all Grantee and Subgrantee technical staff to attain all certifications necessary to perform the duties of the position for which they have been hired prior to or within 6 months of employment, given all pre-requisites are met.

### **501. Training Plan**

Subgrantees are required to have a qualified weatherization staff fully trained in the performance of their individual functions; including staff employed by Subgrantees as well as contracted personnel. In the belief that training is the key to a vital program, the Connecticut WAP maintains an aggressive training regimen which places specific training requirements on Subgrantees and its contractors.

Through monitoring review and assessments from DOE and Grantee monitoring activities, DEEP will coordinate with the local Subgrantees to deliver the types of training needed to strengthen weatherization services. Based on the identified needs of the weatherization network, DEEP will continue to periodically provide both comprehensive and specific training and workshops such as statewide lead-safe training, management training, fiscal training, air sealing, use of two-part foam, pressure diagnostics, proper insulation of attics and walls, and so forth. DEEP will contract with weatherization experts to present on this range of training activities required to foster individual competencies with the various classifications of weatherization services. The curriculum will be presented by training experts in a combination of classroom, hands-on activities, and field training to continuously increase the skill levels of each type of weatherization worker.

DEEP allocates funding directly to Subgrantees for local staff, and sometimes contractor personnel, to attend program-related training.

To facilitate contractor training, Subgrantees are allowed to pay a per-diem, on a case-by-case basis, for contractor personnel to attend training when it is designated as mandatory and has the prior approval of DEEP.

Subgrantees must ensure that its weatherization staff and contractors maintain the required level of training and certifications required for conducting the work. CT WAP requires that Subgrantees evaluate their weatherization workforce to determine the types of training needed. Subgrantees' policy should be to encourage its staff, and that of its contractors, to attend training to strengthen worker competencies and skills.

Funding: See § 703.3, “Training and Technical Assistance” for information regarding T&TA expenditures, including the process for prior approval.

T&TA funds may be used for almost any training activity which will clearly improve the quality of Subgrantees’ weatherization work.

Such training would include, but not necessarily be limited to, the following areas, below.

**Note**: All Subgrantee training related to work performed and reported as DOE completed CT WAP sites must follow DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current year State Plan/Master File.

### **501.1 Program Administration Training**

Training is important in all aspects of the weatherization program, including the non-technical and administrative functions. Some examples include training topics such as:

- Program management and weatherization program supervision
- Financial management, including budgets, claims, and weatherization financial rules
- CT WAP client services, including program application and eligibility policies and procedures
- Client energy education, case work, and delivery of weatherization information
- Procedural training for all staff on program forms, including those contained in the software, used in the effective administration of the program
- Comprehensive program training with the CT Program Operations and Training Manual and other policy sources

See § 100, “Administration” and § 200, “Client Services” for detailed information, including areas to cover in training.

### **501.2 Weatherization Services Training**

Of course, detailed training related to specific weatherization functions is vital in the effective delivery of services. Such areas of expertise will include comprehensive and specific training in:

- Energy Audit and Final Inspection: techniques, tools, testing used in all of the technical aspects of weatherization, evaluation skills, building science, Energy Audit Modelling software and forms training.
- Weatherization Installation: tools, techniques, and materials used in various areas of the installation of weatherization measures, carpentry, spray foam techniques, ventilation, plumbing and electrical safety.
- Crew Supervision: technical training on every aspect of weatherization, supervisory skills & human relations, specialized site safety training such as OSHA and LSW, proper use of protective equipment (PPEs) and MSDS.
- Mechanical Systems: tools, techniques, parts and materials used in various areas of the installation of weatherization mechanical measures, “worst case” draft testing (CAZ), combustion appliances, plumbing and electrical, other specific mechanical work, state certification.

- Mobile Home Training for Auditors, Inspectors and Installers: tools, techniques, and materials used in auditing, inspecting, and installations, including special aspects to weatherizing mobile homes.
- Specific training on the Connecticut Weatherization Field Guide (083021): overall training on protocols and technical information needed for weatherization work.

See § 300, “Weatherization Services” for detailed information on weatherization measures, including areas to cover in training.

**Note:** All certified Grantee and Subgrantee staff are required to participate in trainings specific to the NREL HEP recertification on a regular 3-year basis and within 6 months of the HEP recertification dates.

QCI personnel must complete DOE approved Tier-1 Training and possess knowledge, skills and abilities as listed in the National Renewable Energy Laboratories Job Task Analysis and become certified by BPI as a Home Energy Professional Quality Control Inspector.

### **501.3 Health and Safety Training**

Weatherization work must be conducted in such a way as to avoid current and future harm to the client and other residents, as well as the weatherization worker. H&S training is vital and will be addressed in various forms on an annual basis, including some of the following areas:

- Indoor Air Quality: all training on the recognition and mitigation of IAQ issues, including mold, moisture, volatile compounds, and so forth.
- Combustion Appliance Safety: annual CT training provided
- OSHA: worker safety training for new Subgrantee staff and Contractor staff
- General Hazardous Materials Awareness Training: asbestos, vermiculite, VOCs, radon
- Lead Safety: EPA lead safety regulations and EPA Certified Renovator course; Connecticut regulations (DEEP); DOE Lead Safe Weatherization (LSW) regulations

#### **501.3.1 Lead Safety Training Requirement**

Unless there is existing evidence that the home has been certified as being lead-free, or the work is below the lead threshold limits, LSW protocols must be applied to all pre-1978 target housing. The EPA LRRP rule requires that such work must be conducted under the supervision of a Certified Renovator.

**Note:** EPA rules apply to all work, not just weatherization.

DOE requires all individuals working on pre-1978 housing projects complete the 8-hour LSW course prior to performing work on any pre-1978 sites. A Certified Renovator is required to attend an additional EPA Certified Renovator course sponsored by an EPA-approved training center.

If the Certified Renovator has previously attended the 8-hour LSW Course, the renovator must attend a 4- hour LRRP Refresher Course. If the Certified Renovator has not attended the 8-hour LSW course, they must attend both an 8-hour LSW course and an 8-hour EPA Certified Renovator course.

See § 400, “Health and Safety”, for detailed H&S information, including areas to cover in training.

## **501.4 COVID-19**

CT WAP has begun to develop and implement specific training and technical assistance plans to address the COVID-19 era workplace challenges. As federal and state policy is implemented, CT WAP will respond as needed to remain in compliance with all authority governing CT WAP service delivery. The current T&TA budgets have been reviewed and allowances have been made for H&S training specific to this demand and will be tracked accordingly. Currently In-effect CT WAP Training Requirements include:

- Environmental Health and Engineering Inc.
- Self-serve Training Module <https://newenglandprograms.cleareresult.com/>

### **Note:**

- CT WAP has implemented special policy, procedures and protocols designed to address jobsite H&S during the COVID-19 crisis. Please refer to the CT WAP Operations Manual §§ 406, 406.3, 406.4, 406.5, 407, 417.7, 423.3, 425, 425.1 and 425.2 for additional information.
- \*Be advised that in the event of any new Federal, State or Local agency having jurisdiction regulatory restrictions and guidance is adapted, CT WAP will continue to update program compliance requirements.
- Completion Certification required for all field service personnel and contracted resources. Energy Smart Academy's COVID-19 Workplace Safety Training <https://waplitmos.com>
- Completion Certification required for all local agency CT WAP personnel.

## **502. Training Resources**

The State will continue to coordinate and contract comprehensive and specific training, utilizing both in-state and out-of-state resources as needed to respond to identified needs within the CT WAP workforce on an annual and as needed basis.

### **502.1 Sample Curricula**

Weatherization Crew Worker I: This training is intended for workers new to weatherization, or who wish to improve their technical knowledge of weatherization concepts. The trainings include weatherization theory as well as hands-on activities and skills assessments. This training may include:

- BPI Building Science Principals Certificate
- BPI HEP Retrofit Installer Technician
- BPI Site Supervisor Certificate
- EPA RRP
- OSHA 10
- OSHA Confined Space

Weatherization Crew Leader: This training is intended for incumbent workers who have previously completed the Weatherization Crew Worker Level I training or have at least one year experience

working in the field. The trainings include weatherization theory as well as hands-on activities measured through skills assessments. This training may include:

- BPI Healthy Homes Principles
- BPI Site Supervisor Certificate
- BPI HEP Crew Leader
- BPI Building Analyst
- BPI Envelope Professional
- EPA RRP
- OSHA 10
- OSHA Confined Space

Building Analyst Training: This training is intended for participants who wish to obtain the BPI Building Analyst Professional certification. The course includes weatherization theory as well as hands-on activities using the diagnostic equipment. This training includes:

- BPI Building Analyst
- BPI Envelope Professional
- BPI Healthy Home Evaluator
- BPI Heating Professional
- BPI Manufactured Housing
- BPI A/C and Heat Pump
- BPI Multifamily Building Analyst
- EPA RRP
- OSHA 10
- OSHA Confined Space

### **503. Job Classifications Training**

The type of training appropriate to each job classification varies in its scope and complexity. The energy auditor and inspector needs to have a whole house understanding of weatherization while a Weatherization Installer may only require specified knowledge of a specific task.

#### **503.1 Energy Auditor/Inspector**

The energy auditor and inspector conduct two of the most important functions in the weatherization process: (1) evaluating recommended measures for H&S and cost-effectiveness and (2) making the post-weatherization determination of the actual success of those installed measures and the overall home performance.

The knowledge of the energy auditor and inspector in performing energy auditor and inspector duties is crucial for an effective weatherization program. Virtually all weatherization training is applicable to these positions, but several areas are required.

BPI Certification: CT WAP requires that all individual energy auditor and inspectors employed by Subgrantees, or its contractor, after September 1, 2011, hold a certification from the BPI, as a Building Analyst. Energy auditor and inspectors used by the program must



obtain this certification within six (6) months of hire and must maintain this certification while employed or subcontracted by CT WAP or its Subgrantee. Energy auditor and inspectors are also required to successfully complete the following training:

- BPI HEP energy auditor
- BPI HEP QCI Micro-credential
- EPA RRP
- OSHA 10
- OSHA Confined Space

Additionally, DEEP and/or Subgrantees may provide training in the different areas relating to the responsibility of the energy auditor and inspector particularly, in areas such as pressure diagnostics, air sealing opportunities, mechanical systems, CAZ testing, insulation, client education, LSW, mold, asbestos, and general health & safety requirements and may require mandatory attendance. In these instances, energy auditors and inspectors must attend training as mandated by DEEP or Subgrantees.

Funding: Use by Subgrantees of an energy auditor without the proper certification may result in disallowed costs, both for the audit and for subsequent measures based on that audit.

Attendance records for all training must be maintained by Subgrantees for review by DEEP during monitoring.

**Note:**

- See § 302, “Home Energy Audit”, for additional information about the job of the energy auditor. Also see § 314, “Final Inspection”, for additional information regarding the inspector’s job.
- All certified Grantee and Subgrantee staff are required to participate in trainings specific to the NREL HEP recertification on a regular 3-year basis and within 6 months of the HEP recertification dates.
- Quality Control personnel must complete DOE approved “Comprehensive” Training and possess knowledge, skills and abilities as listed in the National Renewable Energy Laboratories Job Task Analysis and become certified by the Building Performance Institute as a Home Energy Professional Quality Control Inspector.

**503.2 Crew Chief/Supervisor**

No matter the actual job title all weatherization jobsites must have a supervisor, foreman or crew chief who is the person directly responsible for the on-site management of the weatherization installers and their work. As the person responsible for a range of jobs at the worksite, the crew chief must not only have a breadth of technical knowledge but must also have supervisory and human resource skills needed to organize an effective crew. Therefore, it is recommended that supervisory training be made available to crew chiefs/supervisors.

All certified Grantee and Subgrantee staff are required to participate in trainings specific to the NREL HEP recertification on a regular 3-year basis and within 6 months of the HEP recertification dates.

Personnel that supervise workers such as Weatherization Installers must also successfully complete the following training:

- ASHRAE 62.2 2016
- Hazardous Materials Awareness
- Residential Radon Awareness

In instances where lead safe work-practices are called for, a Certified Renovator is required for the job. In many cases the crew chief will fill the required role of the Certified Renovator. That role requires specialized EPA authorized training. Crew chiefs fulfilling the role of the Certified Renovator must successfully pass the specialized EPA Certified Renovator training. Furthermore, the crew chief must be able to manage the crew and the job to ensure that all work is being done safely, in a quality and workmanship-like manner in accordance with the generally accepted standard of care in the industry, using appropriate materials, completed in a timely manner, and that the work completed meets all standards. The individual in this position should possess a working knowledge of building science principles including conducting diagnostic tests, understanding airflow, combustion appliance safety, and installation techniques as may pertain to the work being done. DEEP and/or Subgrantees may provide training in the different areas relating to the responsibility of the crew chief and may require mandatory attendance. Attendance records for all training must be maintained by Subgrantees for review by DEEP during monitoring.

**Note:** During Program Year 2022 CT WAP will implement training in alignment the DOE approved job task analysis for retrofit installer and crew leader positions. (See § 502.1)

### **503.3 Weatherization Installers**

All certified Grantee and Subgrantee staff are required to participate in trainings specific to the NREL HEP recertification on a regular 3-year basis and within 6 months of the HEP recertification dates.

Installers include all workers that install weatherization measures such as air sealing, duct sealing, base-load measures, and insulation.

As with other job classifications, additional training should be considered covering other aspects of their individual jobs. Additional training may range from basic weatherization areas such as the use of the blower door and infrared camera, air sealing techniques, insulation techniques, and installation of base-load measures, to the more sophisticated use of pressure diagnostics to locate and prioritize unit leaks. The State and/or Subgrantees may provide additional training in the different areas relating to the responsibility of the Weatherization Installer and may require mandatory attendance.

Attendance records for all training must be maintained by Subgrantees for review by the State during monitoring.

**Note:** During Program Year 2022 CT WAP will implement training in alignment the DOE approved Job Task Analysis for Retrofit Installer and Crew Leader positions. (See § 502.1)

See § 300, “Weatherization Services” for information regarding the wide range of weatherization measures where Installers need expertise.

### **503.4 Mechanical Systems Contractor**

Connecticut law requires licensure by the State Board of Occupational Licensing in several areas relevant to working on combustion appliances and heating systems. Skilled workers such as, electricians, plumbers, heating professionals, and home improvement contractors; must currently hold all required state or local licenses and credentials. Applicable licenses include:

- Heating, piping and cooling
- Plumbing
- Electrical work
- Duct work (sheet metal)

See Connecticut General Statutes § 20-330 et. Seq., and Professional Licenses Department of Consumer Protection (4) Occupational Licensing for additional information.

In addition to State licensure, Subgrantees have a responsibility to ensure that technicians doing mechanical systems work also possess the knowledge and competencies required specifically by CT WAP. This means that contractors must participate in training on weatherization program protocols and that program methods are followed in the installation and repair of mechanical systems. DEEP and/or Subgrantees may provide mandatory training in the different areas relating to the responsibilities of the mechanical systems contractor. Attendance records for all training must be maintained by Subgrantees for review by DEEP during monitoring.

### **503.5 Program Administration**

Training of Weatherization Program Administrators including DEEP staff, Subgrantee program Coordinators/Managers, and fiscal staff is essential to the success of the CT WAP. Specific trainings aligned with DOE and Grantee monitoring activities are planned on an as-needed basis. To continue to improve the knowledge and skills of Program Administrators, DEEP provides periodic training on topics relating to areas such as: fiscal management, program management, human resources, program policies and procedures, and other topics. Additionally, staff may be encouraged to attend various national and regional meetings. Program administrative training may sometimes be mandated.

### **503.6 Weatherization Program Coordinator/Manager**

The Weatherization Program Coordinator/Manager is responsible for the day-to-day administration of the CT WAP at Subgrantees level. The list of Coordinator/Manager needed areas of knowledge includes program administration, policies and procedures, applicable laws, rules and regulations, and technical protocols and methods. They also include the business of weatherization: budgetary and other fiscal requirements, procurement rules, inventory control, human resources and training needs. The Program Coordinator/Manager must be able to manage the weatherization staff, contractors, and manage a small construction/production-focused operation. Program Coordinators/Managers must attend the following trainings:

- BPI Building Science Principles
- BPI Healthy Housing Principles
- BPI Building Analyst

- EPA RRP
- ASHRAE 62.2 2016
- OSHA 10

Training designed to improve the management of the program may also be required. Training may include workshops at conferences featuring all aspects of program operations from quality assurance to financial management.

DEEP encourages Weatherization Coordinators/Managers to attend the various national and regional meetings and to attain BPI certification.

Attendance records for all training must be maintained by Subgrantees for review by DEEP during monitoring.

### **503.7 Weatherization Directors**

The meetings among the Weatherization Directors who manage local programs across Connecticut and DEEP staff will be held on a regular basis. These meetings are a vital forum for the formulation of policy; the interchange of ideas related to weatherization provides effective training among the various state and local program grant partners. The meetings are also held in partnership with the utility company partners in the program who administer ratepayer-funded programs in coordination with the weatherization grant, including the Home Energy Solutions – Income Eligible (HES-IE) program.

## **504. Training Responsibilities**

A meaningful training curriculum works when all of the stakeholders participate fully in both the training and in suggesting ways in which the curriculum may be designed and improved.

### **504.1 Subgrantee Responsibilities**

Subgrantees is responsible for tracking compliance to training requirements for all individuals at the local level, and for reporting on training participation in the State monitoring process.

Subgrantees should also provide information and suggestions regarding the training curriculum as local needs are identified.

#### **504.1.1 Training Plan and Budget**

Prior to the development of the State Plan, DEEP works with Subgrantees to determine training needs and plan for that program year’s state-sponsored training activities. Subgrantees may submit additional request to DEEP for training activities not outlined in the State Plan.

Subgrantees may also obtain training for their staff and/or contractors through their T&TA funding. Subgrantee sponsored training requires a training request and DEEP approval.

See the § 703.3, “Training and Technical Assistance (T&TA)”, for information regarding T&TA expenditures, including the process for prior approval.

### **504.1.2 Training Compliance Monitoring**

It is the responsibility of Subgrantees to maintain records confirming that all certification, licensing, and training are current. Subgrantees must maintain an inventory of all training attended by individuals working on the weatherization program, whether it is with Subgrantees themselves or their contractors.

Subgrantees must also track all contractors' licenses for all contractors working in areas that require licensing.

DEEP will monitor the participation by Subgrantees and Subgrantee contractors to ensure compliance with certification, licensing, and training requirements. Weatherization measures installed by untrained personnel, whether employed by Subgrantees or by its contractors, may result in questioned and/or disallowed costs for the entirety of weatherization work completed on a unit.

See § 600 "Monitoring & Quality Assurance"

### **504.1.3 Retention Agreement**

Pursuant to DOE's Weatherization Program Notice 21-1, T&TA funds may also be used to train contractors at Subgrantees level participating in the Program. In making the determination to pay for contractors' training, Subgrantees must secure a retention agreement in exchange for the training. The retention agreement should require that contractors will work in the Program for a specific amount of time and must align with the cost of the T&TA provided. Examples of contractor/agency retention agreements can be found at: [www.waptac.org](http://www.waptac.org).

### **504.2 Contractor Responsibilities**

Given the continuous evolution of residential weatherization practices and ongoing DOE and Grantee level monitoring activities, it is important for all contracted resources management and staff to maintain a strong knowledge of current standards and best practices in the industry. Connecticut's contractors agree in contractual assurances that their weatherization employees will participate fully in training appropriate to their work, as required by Subgrantees and the State.

Contractors are also required to maintain current and proper licenses and certifications, as required by law for their particular work.

**Note:** All Subgrantee contractor training related to work performed and reported as DOE completed CT WAP sites must be in compliance with DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021), and the current year State Plan/Master File.

**505 – 599. Training and Technical Assistance**

**(See CT WAP PY 2022 Training and Technical Assistance Plan Template and Training and Assistance Planning and Reporting Template)**

**Section 600**  
**Monitoring and Quality Assurance**

## **600. Introduction**

To ensure that the weatherization services are designed and delivered in accordance with best practices, agency policies, program rules, applicable regulations and laws, CT WAP. CT WAP maintains an aggressive program of periodic monitoring and ongoing quality assurance, featuring roles for DEEP and Subgrantees throughout the implementation of the weatherization program. DEEP monitors the local agency's administration implementation of the program in accordance with policies set forth by the State of Connecticut and the U.S. Department of Energy.

DEEP's monitoring process is designed to produce written reports directed to Subgrantees which detail all findings, providing recommendations or corrective action. The Subgrantee is required to respond to these reports, in writing, detailing the actions that it has taken to correct problems and issues.

The monitoring process has been implemented to increase oversight throughout the program, identify and address problems on a continuous basis and to result in the improvement of weatherization services. DEEP will also provide technical assistance and training as indicated by the observations and findings of the monitoring.

**Note:** All Subgrantee monitoring activity related to Work performed and reported as DOE completed CT WAP sites must follow DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current year State Plan/Master File.

## **601. State Monitoring Program**

DEEP will evaluate Subgrantee performance in its monitoring program extending over each contract period. Components include:

- **Annual Administrative Review (AAR)**: an onsite review of each agency's overall administration of its weatherization program conducted by State program monitors; individual case reviews; and site visits.
- **Annual Financial Management Review**: on-site monitoring of the Subgrantee's fiscal operation and utilization of weatherization funds, conducted simultaneously with the AAR by DEEP fiscal staff.
- **Compliance Monitoring**: reviews conducted by State program and technical staff on a percentage of individual cases; includes both case file reviews and site visits.
- **Desk Review**: ongoing review by State program staff of production reports, agency claims, and other regular Subgrantee submissions as required.

Additional quality assurance visits by program monitoring and technical staff may be considered when DEEP identifies a need for additional evaluation, training or technical assistance.

### **601.1 Monitoring Topics**

Since the program monitoring may include any of the topics covered in the CT WAP Operations Manual, what follows is a chart showing topics that could be reviewed, arranged by section. A discussion of the current monitoring topics follows.



Policy Section and Topics	Monitoring
<b>100. Administration</b> <ul style="list-style-type: none"> <li>• Federal, State and Local Administrative Roles</li> <li>• Planning &amp; Budgeting</li> <li>• Funds Management</li> <li>• Competitive Procurement</li> <li>• Contracting</li> <li>• Request For Weatherization Proposal Process</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate Subgrantees’ organization and staffing. This should reflect adequate staffing in the areas of agency administration, program supervision, case work service delivery, fiscal management &amp; reporting, quality management, subcontracting, and training.</li> <li>• Review areas such as accounting systems, grantee’s policies &amp; procedures, funds management, plans &amp; budgets, procurement of equipment, materials, supplies, and contractors, contracts, insurance, and inventory schedules for required information.</li> <li>• Examine independent audits.</li> </ul>
<b>200. Client Services</b> <ul style="list-style-type: none"> <li>• Application Process</li> <li>• Eligibility Determination</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate Subgrantees in the areas of application processing and eligibility determination</li> <li>• Review individual case files.</li> </ul>
<b>300. Weatherization Services</b> <ul style="list-style-type: none"> <li>• Program Requirements</li> <li>• Energy Audit</li> <li>• Weatherization Services</li> <li>• Waivers</li> <li>• Client Education</li> <li>• Incidental Repairs</li> <li>• Final Inspection</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate Subgrantees’ delivery of weatherization services.</li> <li>• Some of the areas are based on DEEP’s ongoing case reviews process, both with regard to eligibility and technical aspects of the program. Also considered is DEEP’s review of 100% of the BWRs.</li> <li>• Review of the audit compared to the work order, measures called for and measures installed, SIR’s and costs within limits.</li> </ul>
<b>400. Health and Safety</b> <ul style="list-style-type: none"> <li>• Program Requirement</li> <li>• Health &amp; Safety Training</li> <li>• Worker and Client Safety</li> <li>• Client Education</li> <li>• Combustion Appliance Requirements</li> <li>• Expenditure Limits</li> <li>• Incidental Repairs</li> <li>• Waivers</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate Subgrantees’ assessment of Health &amp; Safety (H&amp;S) issues in units.</li> <li>• Based partly on the ongoing case file reviews DEEP will check on the Subgrantee’s responses to H&amp;S problems including the deferral of units when needed.</li> <li>• Check to see that any H&amp;S work paid for by weatherization is definitively related to weatherization as required.</li> </ul>
<b>500. Training</b> <ul style="list-style-type: none"> <li>• Training Requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate Subgrantees’ compliance with State training, licensing, and certification requirements both for direct staff, as well as the compliance of individuals working for the Sub-Contractor(s).</li> </ul>
<b>600. Quality Assurance</b> <ul style="list-style-type: none"> <li>• State and Subgrantee Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate Subgrantees’ implementation of previous corrective actions. Evaluate Subgrantees’ process for ensuring that its Contractors comply with program requirements.</li> </ul>
<b>700. Claims and Reports</b> <ul style="list-style-type: none"> <li>• Cost categories &amp; Limitations</li> <li>• Claims</li> <li>• Leveraging (State and Subgrantee)</li> <li>• Contractor Reporting Requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate Subgrantees’ accounting systems, review expenditures, claims and documentation, compliance with expenditure limits, production results, and overall funds utilization</li> <li>• Evaluate Subgrantees’ compliance with reporting requirements including accuracy and timeliness of reports. Evaluate the status of Subgrantees’ production rates.</li> </ul>
<b>800. Large Multi-Unit Households (HUD)</b>	<ul style="list-style-type: none"> <li>• CT WAP will expand as new policies are developed for the weatherization of large multi-family units</li> </ul>
<b>900. Appendix</b> <ul style="list-style-type: none"> <li>• Documents and Forms</li> </ul>	<ul style="list-style-type: none"> <li>• Review documents and forms from Subgrantees to ensure that the current versions are on hand.</li> <li>• Ensure that all brochures, manuals, memorandums, and technical information is current.</li> </ul>

### **601.2 Annual Administrative Review (AAR)**

The Annual Administrative Review (AAR) is the major monitoring conducted by DEEP during each contract year. The AAR, conducted by the State’s program and fiscal monitors, will include a comprehensive program management review of Subgrantees’ overall administration and

implementation of the weatherization program. Case file reviews and on-site visits conducted over the year, or as part of the AAR, may be incorporated into the AAR findings.

The primary tool used by DEEP's program monitor is the Connecticut Weatherization Assistance Program Monitoring Tool. The Tool is designed to obtain a comprehensive picture of the organization and its weatherization implementation, as indicated by the following general areas from the current form:

- Agency Profile
- Program Operating Procedures
- Client Files/Compliance Monitoring
- Training and Technical Assistance
- Inventory Control/Vehicles/Equipment

The time required for on-site visits and the AAR will normally be two to four days and will follow a standard four-step process:

- Notification and Scheduling
- The Actual Program Reviews, including field work
- The State's Report with Findings
- Subgrantees' Response

The sources of information for the AAR may include documentation of Subgrantee policies, case file materials, as well as interviews with the day-to-day program manager, upper level Subgrantee management, and the fiscal officer(s).

Subgrantees are expected to make available for review all weatherization files and paperwork as requested, including program case files, administrative files and fiscal files. Other required Subgrantee documents that may be requested for the monitor's review include, but are not limited to:

- Current Subgrantee agreement with DEEP
- Current Subgrantee contracts or other documents related to its contractors
- Inventory records for materials and equipment
- Subgrantee policies and procedures (e.g., fiscal, personnel, safety, vehicle maintenance records)
- Procurement policies, procurement records, and public notice records
- Insurance certificates and other evidence of current coverage
- Subgrantee's copy of the currently approved DOE State Plan
- Subgrantee's copy of the current CT WAP Operations Manual
- Subgrantee's copy of the current Connecticut Weatherization Field Guide (083021)
- Other relevant documentation as requested by the Program Monitor

### **601.3 Fiscal Management Review**

In addition to the program aspects of the AAR, EEP fiscal staff will conduct a review of Subgrantees' fiscal administration of weatherization funds. While all efforts will be made to conduct the AAR program and fiscal reviews simultaneously, different DEEP staff is used, so the visits may not exactly coincide. Both components will occur later in the contract period.

The financial management review will involve all areas of the fiscal management of the weatherization program such as program budgets & expenditures, invoices for weatherization materials, Subgrantee payroll records, Subgrantee purchases, and paid Contractor invoices. The fiscal monitor may review Subgrantees' current fiscal policy manual and track the system for paying and claiming weatherization expenditures.

State staff will track jobs from start to finish ensuring that proper timelines were met in paying contractors. Fiscal staff will also perform a verification of payroll to ensure that all staff was paid appropriate wages, when applicable. Procurement records and procedures will also be checked to ensure that materials are reasonable, spent in the most cost-effective manner, and meet program specifications. Inventory controls and records will also be a focus if the financial monitoring.

The primary monitoring tool used by DEEP, the Connecticut Weatherization Assistance Program Monitoring Tool: Fiscal Monitoring, has the following general divisions:

- General Fiscal Management
- Cash Receipts
- Program Receipts from State and Federal Government
- Procurement
- Cash Disbursements
- Payroll
- Property and Equipment
- Inventory Control
- Contracting

DEEP also requires the local Subgrantee to submit the results of its annual fiscal audit of weatherization funds to the fiscal monitor.

Funding: DEEP State may disallow and require the return or deduction of any expenditure that is made that does not comply with CT WAP policies, regulations and laws.

See § 700, "Claims and Reports" for definitive information regarding allowable program cost categories, expenditure limitations and eligible program activities.

### **601.4 Case Reviews**

At least ten percent (10%) of the individual client files are to be reviewed and at least five percent (5%) on site visits must be conducted for compliance. The units reviewed may include ones that have been completed and submitted for payment, as well as jobs that are still in process. At its discretion, DEEP may also monitor more than the targeted percentage.

The case review is completed using the Connecticut Monitoring Tool: File Review, which identifies the monitor, the unit's name, unit number and address of the unit. The form also includes these two sections:

- File Review
- Site Visit

**Note:** All Subgrantee Case Review related to work performed and reported as DOE completed CT WAP sites must be in compliance with DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current year State Plan/Master File.

#### **601.4.1 File Reviews**

Subgrantees are responsible for maintaining a complete and unique file on each household whose application is moved off the Waiting list for weatherization services. All paperwork relative to the individual unit must be labeled with a unique unit number assigned by Subgrantees and kept in the file.

Weatherization unit files should include all notifications, referrals, forms, notes, correspondence, and other documentation explaining the eligibility of the unit, the client's eligibility for services, and the weatherization services approved and delivered.

State monitors will review the individual case files for accuracy and completeness. The current file review form lists the following specific items, but any documentation that supports the actions taken in the unit must be available for the program monitor's review.

The Monitoring Report Form covers the following items:

- CEAP-approved application
- BWR for the unit (all versions)
- CEAP award letter
- QCI compliant Completion Certificate
- Data Collection Sheet (NEAT, MHEA)
- ASHRAE 62.2.2016 Worksheet
- Work Orders
- Invoices, Receipts and other Cost documents
- Blower Door Air-Sealing Work Order/Input Sheet
- Smoke & CO Detector forms (if applicable)
- Weatherization Agreement
- Heating System Waiver (if applicable)
- Permit Copies (if applicable)
- Window/Door Waiver (if applicable)
- HES-IE Form (if applicable)
- SHPO approval (if applicable)
- LRRP documents and photographs (if applicable)
- Landlord contribution documentation (if applicable)
- Other appropriate documents

The forms must be used and completed in compliance with weatherization program polices. The monitoring of the items involves a check of unit documents regarding client and unit eligibility, as well as the weatherization services received. The cost of the weatherization will be verified against the measures called for on the BWR and the amounts claimed for the unit.

DEEP will also review Subgrantees' adherence to the weatherization program's service priorities in pulling the client from the Waiting list.

Funding: The cost of weatherization for an ineligible unit, including one that has been served out of the program priority order, may be disallowed by DEEP.

See § 206, "Client File Maintenance" for a list of typical unit file documents.

#### **601.4.2 Field File Review**

Units will be checked to see that weatherization measures have been completed on the unit as they were authorized. The monitor will check each measure: The Data Collection Sheet, BWR forms, work order, inspection reports should all coincide with regard to measures that are installed. To be counted as completed, all measures must have passed inspection.

The monitor will review the energy auditor's documents for justification and prioritization of the recommended measures, including recorded test readings and conformance to program cost.

The monitor will proceed to look at Subgrantees' records of the measures actually conducted in the unit. The report from the Quality Control Inspector will be used to assess that all work was completed in a satisfactory manner. Some of the weatherization documents that will be reviewed and should be in files are:

- Weatherization Agreement Form
- Photos of the front of the house
- A Completed Data Collection Sheet
- Blower Door Air-Sealing Input Sheet/Work Order
- ASHRAE 62.2-2016 - RED Calc Printout
- The Work Order duly approved by Subgrantees
- A record of any measures negotiated for the specific unit, including the supplemental quotes from contractors, as required
- Modifications to the Work Order, approved by Subgrantees
- A completed H&S checklist with documentation
- Smoke and Carbon Monoxide Forms
- A Burner Combustion Efficiency Report if a Clean and Tune is performed
- Signed agreement from client verifying the receipt of required pamphlets such as the information on lead-based paint, as required
- Photos of set-up and containment of lead in compliance with EPA guidelines if window doors and/or sidewall insulation is installed in a building built prior to 1978.
- Historic Preservation Determination Letter for units built more than 50 years ago
- Approved waivers for heating systems oil tanks and/or hot water heaters
- Approved waivers for installing new windows and doors

- Photos of windows or doors before and after being replaced
- Contractor's documentation of work conducted and completed, such as ongoing pressure diagnostic test readings, the completed Work Order form
- Contractor invoice(s) for work completed, on the form and with the details required for all material and labor charges
- Installed Building Weatherization Report (Completion Report)
- The completed QCI compliant Final Inspection report including documentation of post weatherization blower door readings
- Completion Certificate signed by Subgrantees' inspector and the client
- The technical review of the unit file will be complemented by an on-site visit by DEEP's technical representatives to the unit to conduct an inspection of the work completed.

Funding: Weatherization expenditures on measures that are not appropriately documented may be disallowed by the DEEP.

See § 206, "Client File Maintenance" for a list of typical unit file documentation of the weatherization services.

**Note**: All Subgrantee field file review related to work performed and reported as DOE completed CT WAP sites must be in compliance with DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current year State Plan/Master File.

#### **601.4.3 Unit File Review-Denied**

DEEP will monitor a random sample of denied applications in order to determine that applicants were rightfully denied and given the right to appeal.

See § 206, "Client File Maintenance" for a list of typical case file documents for denials.

#### **601.5 Compliance Monitoring**

Compliance monitoring will be conducted over the contract year but prior to the major administrative review. The compliance monitoring concentrates on individual units, reviewing both file content and weatherization services provided. DEEP's program monitoring and/ or technical staff visit Subgrantees to assess the ongoing quality of work as Subgrantees' contract is actually in process. This allows problems to be caught and corrected to avoid disallowances and provides an opportunity for training to be conducted on those specific issues.

In addition to the review of unit files and paperwork, DEEP may choose to look at weatherization work in process: audits, installations and final inspections.

A brief monitoring report will be completed at the end of the compliance monitoring visit that addresses areas of concern and recommendations for improvement. Ongoing issues or trends may also be followed up later in the AAR.

## **601.6 Technical On-Site Review**

In the course of reviewing units, whether in the compliance monitoring or the annual review, the program monitoring staff may conduct more in-depth technical testing, observation and evaluation at the weatherization worksite. These evaluations, when they are a part of any monitoring event must be followed with a report to Subgrantees. The report made either at the time of the visit or as part of the AAR will contain the results and DEEP recommendations from the visit.

Procedure: DEEP will coordinate the on-site visits with Subgrantees and its contractors so that any work interruption is kept to a minimum. DEEP reserves the right to inspect any work- site without notice. Most of the time however, Subgrantees will be asked to coordinate the on- site reviews according to the needs of DEEP to observe all, or part of the weatherization work. The local Subgrantee must also make the appropriate weatherization staff available, as well as specialized equipment needed for the technical monitoring. The appointment time and place of arranged monitoring will be verified by DEEP prior to the visit.

The monitor may also observe an installation in progress, in such areas as blower door guided air sealing, the installation of insulation, work on the combustion appliances, or any other part of the job which is occurring and meaningful to the review. In some instances, the monitor may repeat testing that has already been completed. In other instances, the testing may be observed as it is conducted by Subgrantees' worker or contractor.

Monitors will further investigate the weatherization work by comparing the measures installed against those called for on the work order and, if completed, those paid for on the invoices.

Attention will be paid to work quality, checking to see that all weatherization measures have been installed within program workmanship protocols and material standards.

Health and Safety (H&S) concerns observed by the State monitor must be addressed immediately with the worksite supervisor and also reported to Subgrantees' weatherization program management for follow-up.

Client satisfaction is important in weatherization. While onsite, the monitor may interview the client to determine if the client is satisfied with the work. The monitor may inquire as to the professionalism of the auditors, crews, and Contractors on the job. Clients may also be questioned to determine the level of educational interaction that they had with Subgrantees or contractor staff during the weatherization process.

The following chart summarizes areas that may be examined during a technical, on-site review:

Topic	Monitoring Procedure
<b>Energy Audit</b>	<ul style="list-style-type: none"> <li>• Observation of an energy audit in process for correct and complete procedures.</li> <li>• Review of an audit report for measures called for in a unit and other factors.</li> <li>• Specific technical re-testing to verify the audit results for the unit (e.g., pre-weatherization blower door readings, “worst case” CAZ draft testing).</li> </ul>
<b>Final Inspection</b>	<ul style="list-style-type: none"> <li>• Inspection of the quality of work and materials for all measures called for and installed in a unit, as reported.</li> <li>• Specific technical tests may be performed to verify results on the unit (e.g., post- blower door reading, “worst case” CAZ draft test, insulation and/or air sealing verification, proper ventilation per ASHRAE 62.2 2016).</li> </ul>
<b>Health Safety</b>	<ul style="list-style-type: none"> <li>• Inspection of the unit and paperwork to determine if H&amp;S issues were related to &amp; addressed prior to weatherization.</li> <li>• Check smoke detectors and CO alarms are properly installed &amp; working.</li> <li>• Specific technical tests may be performed to verify H&amp;S results on the unit (e.g., “worst case” CAZ draft test, appliance testing, inspection for mold &amp; moisture, proper ventilation, electrical safety).</li> </ul>
<b>Air Sealing</b>	<ul style="list-style-type: none"> <li>• Inspection of quality of measures (e.g., caulking, weatherstripping, incidental repairs).</li> <li>• Overall inspection, including zonal testing of usual locations for missed air sealing opportunities.</li> <li>• Blower door testing and verification of installer or inspector readings.</li> <li>• Verification of optimum air exchange calculations per ASHRAE 62.2 2016.</li> <li>• Inspection of windows &amp; doors repair and replacement for quality of installation and checked against the order specs.</li> </ul>
<b>Insulation</b>	<ul style="list-style-type: none"> <li>• Inspection of attic insulation for proper depth, even application, proper baffling, materials used around chimneys, and hatch door insulation and knob &amp; tube wiring de-energized.</li> <li>• Visual inspection of sidewall insulation areas, including use of infrared technology to check for coverage.</li> <li>• Visual check of other insulated areas.</li> </ul>
<b>Mechanical</b>	<ul style="list-style-type: none"> <li>• Inspection of repaired or replaced furnaces, water heaters, oil tanks, knob &amp; tube wiring, and electrical systems.</li> <li>• Comparison of appliance specifications with work as ordered. Verification of calculations (e.g., manual J).</li> <li>• Follow-up appliance testing, if needed.</li> </ul>
<b>Energy Education</b>	<ul style="list-style-type: none"> <li>• Observation of efforts to inform and educate clients throughout the course of the weatherization services.</li> <li>• Client Interview</li> </ul>

Follow-up: Observations from DEEP’s technical visits will be recorded in Subgrantees’ quality assurance file. Prevalent issues and trends as noted over time will be addressed in the AAR Report. At that time, DEEP will address technical areas where Subgrantees or its contractor is out of compliance with prescribed field protocols.

Funding: Expenditures on measures that are not authorized or installed within program protocols shall be disallowed by DEEP.

See CT Program Operations and Training Manual, Section § 300, “Weatherization Services”, for comprehensive information regarding measures that may be installed and § 400, “Health and Safety” and Connecticut Weatherization Field Guide (083021) for approved technical protocols.



### **601.7 Technical Assistance**

On-site visits may also be carried out in the context of technical assistance by DEEP, where the local Subgrantee has requested such assistance, or DEEP has other reasons for observing the work of a particular Subgrantee or contractor.

Technical assistance visits may not be as formal as monitoring. Test results, observations and recommendations may be discussed with Subgrantees' weatherization technicians or managers at the job site, or, depending on the significance of the issues, in subsequent meetings with Subgrantees.

Whether or not such visits result in a written monitoring report, DEEP must keep records of the technical assistance, as any issues may eventually become part of the AAR.

### **601.8 Desk Review of Monthly Claims and Reports**

DEEP will conduct desk reviews of Subgrantee claims and reports as they are submitted each month throughout the year. Any discrepancies will be communicated directly to Subgrantees for resolution. It is expected that such issues may be resolved immediately but no longer than fifteen business days from the notification.

A record of the desk review is kept so that persistent issues may then be addressed again in the AAR. Ongoing DEEP desk checks of Subgrantee submissions will include reviews of the:

- monthly and quarterly production in comparison to DEEP and Subgrantee production goals
- monthly expenditure reports against Subgrantee budgets and line-item limitations
- all Completion Reports submitted for claims and reporting purposes
- annual independent audit of weatherization funds for each local Subgrantee
- all closeouts, final claims, and advance repayment balances
- other reports, as required

DEEP reviews 100% of the BWRs submitted for the units claimed for the month. The BWRs must balance against the monthly statistical reports which are submitted for the month and grant to date. Each measure reported for the unit must meet the individual Savings to Investment Ratio (SIR) test or the overall SIR as appropriate, unless the measure is addressed under H&S or GHW. Approved waivers obtained on the unit must be on file, as applicable. The staff will also compare the invoiced charges against the program maximum prices or other amounts negotiated by Subgrantees for the specific job. Through the review of the BWRs, DEEP the State will also maintain a close check on the repayment of any outstanding advance and will monitor closeouts and final claims.

Fiscal and monitoring staff will also review incoming monthly and quarterly Subgrantee reports to see that Subgrantees are on target to meet goals for production and funds utilization meaning that Subgrantees have committed to a projected number of units based on the allocation of weatherization funds. DEEP will review reports to see that Subgrantees remain on track to use their funds and reach the target number of units.

Any shortfalls projected in production and expenditure rates will be addressed with Subgrantees on an ongoing basis and as part of the AAR. Significantly low production will require corrective action on the part of Subgrantees, which will be closely monitored by DEEP.

Persistent problems in meeting production goals may affect Subgrantees' continued contractual arrangement with DEEP.

Unresolved issues and trends found during the desk reviews will be maintained in the program file and will also be addressed in the AAR monitoring visit and in that monitoring report along with recommendations or requirements for a corrective action plan to address the issues.

Funding: DEEP will disallow and require the return or deduction of any expenditure that does not comply with weatherization program policies, regulations, and laws.

See § 700, 'Claims and Reports' for definitive information regarding allowable program cost categories, expenditure limitations and eligible program activities

## **602. Monitoring Reports**

All monitoring reviews will result in the issuance of a written report from DEEP to Subgrantees. The time frame for such reports and required responses will vary according to these circumstances:

- Desk Reviews: Desk reviews of Subgrantees' monthly reports and claims may only require communication with Subgrantees if there are discrepancies or questioned costs.
- Client File Review: Comprehensive monitoring of individual units during the year will be more extensive and will include a more time-consuming action and response, such as a Subgrantee re-work and additional inspection.
- Major Monitoring: The major monitoring report resulting from the AAR may involve more organizational or procedural issues that require prolonged changes and an in-depth response.
- Monitoring Results: Monitoring results will be used by DEEP administrators to identify ways that the weatherization plan can be improved each year. Similarly, monitoring results will be shared with weatherization training entities to ensure that training can be scheduled to address concerns that have been identified during the monitoring. DEEP's report to the local Subgrantee will usually start with a verbal communication of the results. This may vary, from an initial call to the weatherization manager about a specific issue, to a formal exit interview following the AAR.

### **602.1 Exit Interview**

A formal exit interview will be conducted on the final day of the AAR. The interview will be conducted between DEEP monitoring staff and Subgrantees' weatherization program managers. Additional personnel as designated by each Subgrantee may also participate.

Ideally, Subgrantees' executive staff and a fiscal representative will be present for pertinent parts of the AAR exit interview. During the meeting, DEEP will briefly go over the preliminary findings, discussing proposed recommendations and requirements. This will give Subgrantees a head starts on

the issues. Particular emphasis will be placed on any corrective actions that must be promptly attended to in order to prevent compounding significant errors in program implementation.

All findings and recommendations, even if they seem to be resolved in the exit interview, will still appear in DEEP’s written report and must be responded to by Subgrantees. The written documents are the official record of the monitoring process and results.

**602.2 Final Report**

The State’s AAR monitoring will result in the issuance of the AAR Report to Subgrantees within thirty (30) calendar days of the exit interview date. This annual monitoring report will be based on success, best practices, issues, problems or tendencies from the following sources:

- annual administrative review
- unit reviews (file and field)
- technical visit reports
- desk reviews
- review of Subgrantee production reports
- review of Subgrantee claims and expenditure reports
- outstanding issues from previous monitoring
- findings and requirements from Department of Energy (DOE) & other federal agencies
- Other reports or documents with issues noted by DEEP.

The AAR monitoring report, addressed to the Executive Director of Subgrantees, will include the DEEP’s recommendations and requirements for Subgrantees and its contractors. The structure of the written report will provide a clear, specific and concise list of areas for Subgrantees to address. All of the areas reviewed will be listed with a statement of any issue, followed by the DEEP’s recommendations or requirements. If best practices and/or no issues were found in an area reviewed, that will also be stated. Matters referring to a specific case or unit will be identified by a unit number.

The monitor will address each of the area of the review and state one of three determinations:

Conclusions	Issues and Required Response
<p><b>Best Practices and Success</b></p>	<p><b>Issue:</b> During a monitoring visit, a “Best Practice” is identified in an area which addresses a matter of compliance which is worthy of applying with other Subgrantees is considered a success.  <b>Response:</b> Subgrantees may be asked to write up the process in more detail or prepare a short training document to present to other Subgrantees or to be presented by DEEP staff.</p>
<p><b>Recommendation</b></p>	<p><b>Issue:</b> An issue was identified in this area which is not a matter of regulatory compliance but is based on DEEP’s or monitor’s knowledge of sound program practices. Includes suggestions for program procedures; protocols in the weatherization work; or other recommendations by DEEP for the improvement of the local program.  <b>Response:</b> Subgrantee action on DEEP recommendations is optional but a response to the item is required.</p>
<p><b>Corrective Action</b></p>	<p><b>Issue:</b> A problem was identified which is a matter of compliance with the legal, regulatory or contractual obligations of Subgrantees. A problem was identified which is a matter of unacceptable weatherization workmanship. Here, the <u>report must cite a specific source for the requirement by number and title</u>, which may include Subgrantees’ contract, the approved DOE State Plan, federal or state laws, regulations, program technical protocols, program policies and procedures (manual citation).  <b>Response:</b> Subgrantee must respond with corrective action. The response must be detailed and a time frame for compliance is required. Subsequent monitoring will ensure the requirement has been implemented.</p>

### **602.3 Subgrantee Response**

Subgrantees must provide the written response to the AAR Report. A specific response by Subgrantees is required for every recommendation or requirement listed in the DEEP's report. In many instances, corrective action may be taken immediately, or may have already been taken following the exit interview. The response must still explain all actions taken by Subgrantees, even though already completed.

Procedure: Subgrantees response to the AAR is due within thirty (30) calendar days of the date of receipt of the report. The written response must re-state the issue and the recommendation/ requirement only to the extent that the matters can be identified from the original report. A hard copy of the report must be submitted to the DEEP.

In some instances, Subgrantees may request an extension to respond to the AAR. Such action does not mitigate the timeframe for the response, instead the response should detail the specific steps to be implemented and provide time frames for the ultimate amelioration of each issue.

Where longer terms are required, particularly with solutions that are going to take more than forty- five days, it is up to Subgrantees to periodically report progress on the issue to the DEEP program monitor.

DEEP will follow up on any overdue monitoring report responses with a reminder letter to Subgrantees' Executive Director, with a copy to the weatherization manager. If the response is still not received within an additional ten (10) business days from the date of the letter, further action will ensue, including additional correspondence, delay of payments and, in some situations, suspension or termination of Subgrantees' weatherization contract with the State.

Subgrantees is encouraged to have procedures in place for the review of all AAR documents by its governing board of directors. Communication with DEEP regarding monitoring issues is important as outstanding issues will have a negative affect when the AAR is used to determine any future contracting arrangements with Subgrantees. Department monitors will also follow up on outstanding issues in subsequent monitoring.

### **603. Subgrantee Monitoring**

Subgrantees are responsible for the performance of its own staff as well as that of its contractors in the implementation of weatherization services. There are numerous Subgrantee responsibilities (detailed in this manual) which will require Subgrantees to set up a review program of its own to monitor ongoing performance and compliance by Subgrantees and its contractors. Some key areas which must be addressed include the following:

Subgrantees must implement a process of careful review of all contractor invoices and back- up documentation, including a comparison of (1) the measures ordered on the Work Order, (2) the measures paid by invoice and (3) the measures passed in the Final Inspection.

Subgrantees must have ongoing quality management procedures in which a significant percentage of unit files are reviewed by a weatherization manager for completeness and accuracy. All work orders must be approved by a supervisor prior to issuance.

Subgrantees must have ongoing quality management procedures in which the quality of its weatherization work is monitored. This monitoring should be conducted by a weatherization technical expert who routinely visits the worksites and observes the installation work, along with paperwork, to ensure the job is being done right. Contractors should be issued written reports requiring corrective action on significant issues with their work or workplace, as well as recognized for work that meets or exceeds quality standards.

Subgrantees must maintain and monitor a log of all of the training of its contractors, as well as its own staff. Training must be tracked for each individual employed by the contractor and Subgrantee. Subgrantees must compare the individual training record with the types of training required by the weatherization program according to job function. Contractors should be issued written reports on the requirements for training. Subgrantees are also responsible to see that required certifications and/or state licenses are current for persons working at weatherization sites.

Subgrantees must put in place any other procedures that are necessary to monitor the compliance by Subgrantees' own staff and that of its contractors to its contract agreement with Subgrantees as well as all the policies contained herein.

**Note:** All Subgrantee monitoring related to work performed and reported as DOE completed CT WAP sites must follow DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the Current year State Plan/Master File.

**604. – 699. Monitoring and Quality Assurance Reserved**

# **Section 700**

## **Claims and Reports**

## **700. Introduction**

The CT WAP has developed an integrated process for reporting and claiming that ensures that Subgrantees production results are meeting program goals, through allowable expenditures in correct cost categories and for approved weatherization measures.

Through Subgrantees submission and the DEEP review of the Monthly Weatherization Status Report against the supporting Building Weatherization Report (BWR) on each unit reported, the process ensures that the assignment of claimed costs are made to the correct and allowable categories.

The cost of an individual weatherized unit may not be split between budgets. Claimed amounts will be assigned by Subgrantees to the appropriate line item in the budget, according to the rules set forth in this section.

Weatherization program funds may only be expended for approved activities to accomplish the purposes of the program and are to be charged according to cost categories defined in this section.

Funds available to Subgrantees are limited to the total contract amount. Subgrantees is solely responsible for any expenditure in excess of an approved budget category or the total value of the contract.

**Note:** All claims and reports for work performed and reported as DOE completed CT WAP sites must follow DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021), and the current year State Plan/Master File.

## **701. Overall Cost Limitations**

The expenditures for CT WAP are subject to the limits of the overall allocation of funds to Subgrantees, as well as capped dollar amounts or comparative percentages for each cost category and line item as defined by the CT WAP policies. Subgrantees are responsible for tracking program expenditures to stay within all set limits and terms.

Overall Budget: Subgrantees may not exceed their total allocations of funds for the period of the contract. Any expenditure exceeding the allocation becomes the responsibility of Subgrantees and may not, under any circumstances, be paid out of DOE grant funds.

Average Cost Per Unit: The expenditure of CT WAP funds for labor, weatherization materials, and other program support costs is limited to the set average cost per unit. The average is updated annually by the State and reviewed by the DOE. Subgrantees may not claim any expenditure which exceeds the allowable average cost per unit over the contract period.

Renewable Energy Average Costs Per Unit: The expenditure of CT WAP funds for program support costs for a Renewable Energy system is limited to an average cost per unit. The Renewable Energy average is updated annually by the DOE and communicated to Subgrantees by DEEP. Subgrantees may not claim any expenditure for renewable energy measures which exceeds the allowable average cost per unit over the contract period. DEEP does not have a separate average limit nor is currently addressing renewable energy measures.



Materials Cost Limit on Program Support: For every \$1.00 spent on materials, Subgrantees may expend a maximum of \$2.50 for all other program support costs, including labor. The limit applies on a cumulative basis over the contract period.

DEEP will track the cumulative expenditures for materials by Subgrantees on a monthly basis. Any claimed expenditure for the non-materials, program support costs that exceeds the allowed amount will be reduced on the monthly claim payment. At any point that the cumulative cost returns to the allowed amounts, the program support reimbursements will be restored by DEEP.

Minimum Materials Expenditure: As per CT WAP there is an expenditure minimum of \$50 in materials per unit.

Maximum per Unit Expenditure: The maximum allowable 2022 average per cost per unit is \$7541 for total expenditures for materials and labor. In certain instances, the total cost of a unit may exceed \$7541 the maximum average per unit expenditure. In such instances, the maximum allowable cost is \$10,000 for installed energy conservation measures. However, Subgrantees are responsible for ensuring that the \$7541 average cost per unit is maintained for the program year. Limitations on individual line items and measures are discussed below.

## **702. Weatherization Services Costs**

The entire cost of weatherizing a unit may be claimed as expenditures under the DOE WAP grant. Allowable weatherization costs for materials and labor include the energy audit, the installation of measures, and the final inspection.

To meet the requirement for reimbursement measures must be installed in compliance with the WAP policies and technical protocols. All energy conservation measures are required to achieve an individual SIR of one (1) or better. The overall package of measures must also meet the SIR threshold. Measures must be installed according to the authorized work order and by qualified personnel. Certain replacement measures require prior approval from DEEP. Health & Safety (H&S) measures may only be installed according to the policy definition of such measures and within dollar limits. Incidental Repairs may only be installed according to policy and within dollar limits.

Failure to comply with any of these requirements will result in questioned or disallowed costs when claimed, or in program monitoring and financial auditing procedures.

Materials: Materials are charged according to the actual cost to Subgrantees, subject to certain limitations, explained below. Material costs must be reasonable and meet the material standards of the program.

Material costs charged by contractors must be documented and may not exceed contractual limits, including price lists agreed upon with Subgrantees.

Labor: A Subgrantee employee's time may be charged entirely to the grant except for any time spent on any other program or non-weatherization program function, which must be allocated. The contracted installer expenditures are paid and charged to program support as invoiced. Contractors must also allocate time based on actual time on the specific job.

The following information explains details for categorizing expenditures for the various weatherization measures. CT WAP Subgrantee contracts for services with weatherization contractors must also include an acknowledgement of the receipt of communication of links to the CT WAP Field Guide, Standard Work Specifications and Standards as outlined in DOE WPN 22-4 § 2.

#### Additional Program Information

During Program Year 2022, spending limits have been established as follows:

- Up to \$10,000 on energy efficiency measures, including ancillary and Incidental Repair measures and program support costs or submit request for prior Grantee approval.
- Up to \$1,500 for H&S measures or submit a request for prior Grantee approval.
- Up to \$2,500 for Incidental Repair costs or submit a request for prior Grantee approval.

Major Repairs - Repairs where the cost exceed \$750. Examples of major repairs include but are not limited to: repairing roof leaks, repairing unsafe electrical wiring, and removal of knob and tube wiring for the purpose of installing attic and sidewall insulation

Incidental Repairs - Repairs necessary for the effective performance or preservation of weatherization installations are allowed repairing roof leaks, repairing unsafe electrical wiring, and removal of knob and tube wiring for the purpose of installing attic and sidewall insulation.

Minor Repairs - Repairs which may be considered Incidental Repair measures under \$500 may include cut and finish, access to attics and knee walls, siding repairs, and minor repairs associated with windows, doors, flashing, and masonry moisture infiltration points.

Incidental Repair Measures - Repairs that must be consistent with DOE WPN 12-09.

In all cases the CT WAP client file must provide clear documentation of the need for the repairs and the relationship with the energy conservation measures that are enhanced or protected directly related to the repair. Documentation must include pictures, and detailed descriptions of the repairs and invoiced costs presented by the contractor.

For additional information on measures, see § 300, “Weatherization Measures” and § 400, “Health & Safety”

**Note:** All installed measures and work performed and reported as DOE completed CT WAP sites must follow DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current year State Plan/Master File.

### **702.1 Energy Audit**

Subgrantees may claim the total cost of an energy auditor. Such costs will include:

- Salary
- Fringe
- Other costs attributable to the position

Cost Category: Program Support (Labor and other support costs).

However, an energy auditor who spends time with other programs or on non-audit functions must have the costs allocated and charged to weatherization according to the actual time spent on the Energy Audit functions.

CT WAP Approved Contractor energy auditor costs may be paid as a flat fee or based on actual time, depending on the terms of the contract.

## **702.2 Air Sealing**

Expenditures for labor and material in application of air sealing measures are allowable costs, within limitations. Typical materials include caulk, foam and weather-strips. Typical labor includes personnel time to locate major leakage using the blower door or other equipment, as well as the time to seal areas of infiltration.

Cost Category: Material and Program Support (labor and other support costs), within limitations.

Limitations: CT WAP reimburses blower door guided air sealing at the rate of \$126 per-hour. Of the total hourly rate, \$36 is to be allocated to materials and \$90 is to be allocated to the program support cost of the job, out of which the contractor labor will be paid. These amounts will be computed using the air sealing activity information entered into the NEAT, MHEA software.

Subgrantees are allowed to bill up to five (5) hours of air sealing per unit, provided SIR is achieved for all related costs. The following materials are routinely included in the hourly rate:

- Application of urethane foam
- Interior caulking

Whenever justified, additional hours of air sealing may be charged with the prior approval of Subgrantees' program monitor. The monitor's approval may be obtained by phone by Subgrantees and must be notated in the case file and on the air sealing paperwork.

Health & Safety: Ventilation may be required by the tightening of the unit through air sealing. Material and labor for ventilation installed according to ASHRAE 62.2.2016 standards is to be paid under the H&S cost category.

Incidental Repairs: Air sealing work, particularly with regard to windows and doors are likely to require Incidental Repairs which should be paid from that cost category.

Miscellaneous Materials: Miscellaneous materials for covering large holes such as sheetrock, plywood, flashing, insulation board, cardboard, nails, screws and other hardware.

### **702.2.1 Windows and Doors**

Expenditures for labor and material in sealing or repairing doors and windows to reduce air infiltration are allowable costs.

Cost category: Materials and Program Support (labor and other support costs).

Materials: Caulk, thresholds, sash kits, window components, door components, locksets, latches, and glass. Typical labor includes personnel time to locate window and door leakage using the blower door or

other equipment, as well as the time to install new components, and seal areas of infiltration around windows and doors.

Replacement: In the limited circumstances in which windows and doors may be replaced, materials and labor would include the entire cost of the replacement, including the new door or window. The replacement of doors or windows requires an individual SIR of one (1) or better.

### **702.3 Insulation**

Expenditures for labor and material in the installation of insulation are allowable costs. Typical materials include various types of insulation:

- Cellulose
- Fiberglass
- foam board
- foam spray

Labor includes installer time to properly apply the insulation measures.

Cost Category: Materials and Program Support (labor and other support costs).

Any Subgrantee insulation costs that are reimbursed, such as the payment received from some utility companies for a percentage of the insulation costs, must be deducted from the amount claimed by Subgrantees for the job.

Health & Safety: Insulation of cold-water pipes in areas in jeopardy of freezing, or steam heating piping that may present a danger to occupants, or need replacement related to encapsulation or removal, may be charged to the H&S line item.

### **702.4 Heating Appliance**

Expenditures for labor and material used in the repair, retrofit or installation of heating appliances and connected systems are allowable costs. When these activities are conducted as energy efficiency measures they are allowable. In some instances, heating system costs may qualify under the H&S category.

Typical materials include:

- Replacement parts
- Sealants
- Filters
- Vents
- Pipes
- Appliances and systems
- Oil tanks

Labor includes:

- Cleaning

- Tuning
- Testing
- Installation

Cost Category: Materials (parts) and Program Support (labor and other support costs) or measures may be charged to H&S, as justified.

Health & Safety: Under certain circumstances, heating appliance measures are conducted for reasons of H&S of the unit's occupants. Such measures must first be screened to see if they qualify as cost-effective energy efficiency measures with an SIR of 1.0, or better. If not, they must be charged to the H&S category, provided they qualify otherwise. If such measures do not qualify either way, they may not be installed. In Connecticut, repairs to the heating appliance, including the standard Clean, Tune and Test procedure, along with emergency repairs, are charged to the H&S cost category. Such costs must fall within the definition and dollar limits in that category.

### **702.5 Central Air Conditioning System**

The CT WAP program does not allow the expenditure of CT WAP funds to address any issues with central or window type air conditioning systems. However, if a central air conditioning system's "A" coil shares the supply plenum or supply ductwork with a heating system then the cleaning of the "A" coil of a working central A/C system and repair to the condensate pan/drain is an allowable cost.

### **702.6 Humidification System**

The CT WAP program does not allow the expenditure of CT WAP funds to address any issues with central humidification systems that share the supply plenum or supply ductwork with a heating system. In addition, no humidification system is allowed to be installed into the supply plenum or supply ductwork of a replacement heating system paid for with WAP funds.

### **702.7 Domestic Hot Water (DHW) System**

Expenditures for labor and material used in the repair, retrofit or installation of domestic water heating appliances and connected systems are allowable costs. These activities are allowable as energy efficiency measures. In some instances, water heater costs may qualify in the H&S category.

Typical materials include:

- replacement parts
- sealants
- filters
- flues
- hoods
- diverters
- thermocouples
- burners
- pipes
- insulation

- appliances and systems

Labor includes:

- Cleaning
- Tuning
- Testing
- Installation of parts

Cost Category: Materials and Program Support (labor and other support costs) or measures may be charged as H&S, when justified.

Health & Safety: Under certain circumstances, water heating appliance measures are conducted for reasons of H&S of the unit's occupants. Such measures must first be screened to see if they qualify as cost-effective energy efficiency measures with an SIR of 1.0, or better. If not, they must be charged to the H&S category.

Prior approval: Expenditures for the replacement of a domestic water heater require prior approval by DEEP. Expenditures may not be claimed if this process has not been completed.

### **702.8 General Waste Heat (GWH) Reduction Measures**

The Department allows for up to \$100 in materials to install DOE pre-approved GWH measures for Subgrantees working in municipalities where such measures are not covered by public utility programs. DOE pre-approved GWH measures vary from those GWH measures allowed by the utility programs.

Those DOE-approved, presumptively cost-effective materials include:

- Water heater wrap (i.e., insulating blanket).
- Water heater pipe insulation (on the first six feet of hot water pipe exiting the water heater);
- Faucet aerators;
- Low-flow showerheads;
- Limited weather-stripping and caulking to increase comfort (does not include regular air sealing work on Energy Audit);
- Furnace or air conditioner filters.

Cost Category: Materials and Program Support (labor and other support costs).

### **702.9 Health and Safety Funding**

Weatherization program funds may be used for the separate cost of certain H&S activities that meet the defined criteria related to the weatherization work and are within the dollar limits specified in the State's approved H&S plan. Expenditures for these ancillary activities required to ensure that weatherization measures do not cause or exacerbate H&S problems for workers and occupants are allowable costs only to the extent they are reasonable and specified as permissible in the CT WAP policies.

Cost Category: Health & Safety.

Activities assigned to the H&S costs are not subject to the SIR analysis.

See § 400, “Health & Safety” for allowable activities and costs.

### **702.10 Incidental Repair Funding**

Weatherization funds may be used for the cost of certain Incidental Repairs when such repairs are reasonable and necessary to ensure the sustainability and effectiveness of weatherization measures.

Incidental Repair costs can be treated in two ways, by being considered a component of the energy conservation measure and incorporated into the SIR of the associated measure or incorporated into the SIR for the overall package of measures.

Incidental Repairs can only be considered if the overall package maintains an SIR of 1.0, or greater, and the repairs do not prevent the installation of any weatherization measure that would have otherwise been installed.

Cost Category: Material and Program Support labor and other program support costs. The Incidental Repair is included in the average cost per unit calculation.

Allowable Costs: Subgrantees must refer to the State of Connecticut’s H&S Plan which specifies IR activities and costs that are allowed under the CT WAP.

Incidental Repair Limit: CT WAP allows Subgrantees to include Incidental Repairs as part of the over-all SIR calculation or be added with the individual measure; under either method, the Incidental Repair is allowable as long as its cost screens 1 or more.

**Note:** Incidental Repairs are intended to be ancillary and reasonable. CT WAP is not a rehabilitation or general repairs program and does not allow roof replacement, major structure repairs, or other non-energy related repairs.

### **703. Cost Categories**

DOE regulation at 10 C.F.R. § 440.18 establishes specific cost categories for all CT WAP expenditures, including: administration, training and technical assistance, program operations (material, labor and other program support), H&S, vehicles and equipment, liability and pollution occurrence insurance, and financial audit.

The expenditures under various cost categories are strictly monitored by DEEP during the processing of claims, in program fiscal monitoring and in fiscal audits. Costs that do not conform to program policies and definitions may be rejected, questioned or disallowed. Costs that are beyond established expenditure limits may be denied or disallowed. Disallowed costs become the responsibility of Subgrantees and may not, under any circumstances, be paid from weatherization funds.

Throughout the contract period, Subgrantees shall report monthly on the expenditures for the current month and for the grant-to-date, against the total grant budget. The information is reported on the spreadsheet Analysis of Expenditures against Approved Budget Items. Funds may only be expended for those cost categories defined in the approved Connecticut State Plan and detailed in this CT WAP Operations Manual. The manual sections below and corresponding budget line items are:

Section and Category	Budget Line Items
<b>703.1 Materials</b>	<ul style="list-style-type: none"> <li>• Contractor Materials Installed in Completed Units</li> <li>• Agency Materials Installed in Completed Units</li> <li>• Materials for DOE Heating Systems</li> </ul>
<b>703.2 Program Support</b>	<ul style="list-style-type: none"> <li>• Storage</li> <li>• Contractor Installed Measures - Labor</li> <li>• Contractor- Other (attach itemized sheet)</li> <li>• Maintenance, Repair, Tools, Equipment &amp; Vehicles</li> <li>• Insurance for Tools, Equipment and Vehicles</li> <li>• Purchase of Non-Expendable Tools, Equipment and Vehicles</li> <li>• Purchase of Expendable Tools and Equipment</li> <li>• Annual Lease of Tools and Equipment</li> <li>• Salaries - Crew</li> <li>• Salaries - Supervisory</li> <li>• Salaries - Program Staff</li> <li>• Fringe Benefits</li> <li>• Transportation</li> <li>• Program: Other (attach itemized sheet)</li> <li>• Purchase/Lease of Vehicle(s)</li> </ul>
<b>703.3 Training and Technical Assistance</b>	<ul style="list-style-type: none"> <li>• Attach Itemized Form</li> </ul>
<b>703.4 Insurance Liability</b>	<ul style="list-style-type: none"> <li>• Actual Direct Cost</li> </ul>
<b>703.5 Insurance Pollution</b>	<ul style="list-style-type: none"> <li>• Actual Direct Cost</li> </ul>
<b>703.6 Financial Audit</b>	<ul style="list-style-type: none"> <li>• Actual Direct Cost</li> </ul>
<b>703.7 Health and Safety</b>	<ul style="list-style-type: none"> <li>• Attached Summary Report</li> </ul>
<b>703.7 Administration</b>	<ul style="list-style-type: none"> <li>• Salaries</li> <li>• Fringe</li> <li>• Benefits</li> <li>• Travel</li> <li>• Other (Attach Itemized Sheet)</li> </ul>

Connecticut cost categories mirror the federal regulation except that “Program Operations” is further defined and tracked separately as ‘Materials and Program Support’ (including labor).

DOE defines “Program Operations” costs to typically include materials, program support minus labor, and labor.

**703.1 Materials**

Subgrantees may expend funds for the program operations cost of all necessary materials and parts used by Subgrantee staff, crews, and contractors in the weatherization of a unit. Funds must be expended within the definitions and dollar limits established by the CT WAP policies.

The materials costs are reported and claimed on the monthly expenditure analysis report, Analysis of Expenditures against Approved Budget Items. Reported items include:

- Contractor Materials Installed in Completed Units
- Agency Materials Installed in Completed Units
- Materials for DOE Heating Systems

Materials must be reasonable and materials must be comparable to similar market products. They must be purchased in conformance to CT WAP procurement policies.



Materials costs charged to the grant are limited to the net, documented expenditure by Subgrantees or Subgrantees' Contractor. The actual cost must be discounted by any rebates or other reimbursement of the cost of the material or part.

To be charged to the grant, materials and parts must be properly installed to manufacturers' specifications and meet CT WAP standards. Parts and materials must be covered by standard warranties, which are to be passed along to the owner of the unit.

**Note:** All materials costs related to work performed and reported as DOE completed CT WAP sites must follow DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current year State Plan/Master File.

### **703.1.1 Actual Units Completed/Units In-Progress**

For each monthly report packet, Subgrantees are required to report materials costs for each of the units completed and in process.

The number of completed units reported should equal the total number reported for the current month.

Units are considered to be in process if an Energy Audit has been completed and Work Order(s) have been assigned but the work is not completed, including passing the Final QCI Inspection.

Units are listed for the month and identified by Site ID.

### **703.2 Program Support**

Subgrantee expenditures for the cost of program support are allowable.

The Program Support costs are reported (and claimed) on the monthly expenditure analysis report, Analysis of Expenditures against Approved Budget Items. Items include:

- Storage
- Contractor Installed Measures - Labor
- Contractor-Other (itemized)
- Maintenance, Repair, Operation of Tools, Equipment & Vehicles
- Insurance for Tools, Equipment and Vehicles
- Purchase of Non-Expendable Tools, Equipment and Vehicles
- Purchase of Expendable Tools and Equipment
- Annual Lease of Tools and Equipment
- Salaries - Crew
- Salaries - Supervisory
- Salaries - Program Staff
- Fringe Benefits
- Transportation
- Program: Other (itemized)
- Purchase/Lease of Vehicle(s)
- Minus Landlord Contribution

### **703.2.1 Subgrantee Staff**

As part of Program Support, Subgrantees may expend funds for the cost of all personnel and labor assigned to the weatherization program operation.

Cost Category: Program Support

- Salaries – Crew
- Salaries – Supervisory
- Salaries - Program Staff
- Fringe Benefits

Where employees work on multiple activities, their costs are to be allocated based on a consistently reasonable method and adequate documentation of their activities across programs.

When Subgrantee staff is in training the cost for time spent may be charged to Program Support or to T&TA at Subgrantees' discretion, and in consultation with DEEP.

Subgrantees' expenditures including salaries payroll taxes, group health insurance, and other employee benefits that may include but are not limited to pensions for those employees receiving salaries are allowable expenses paid to:

- Supervisory Staff – including Weatherization Program Coordinators, Program Directors, Program Supervisors, and on-site supervisors.
- Program Support Staff – including staff providing direct support to the Weatherization Program, such as intake, data entry, clerical support, and other services directly associated with the program.
- Auditors & QCI Final Inspectors – including agency staff performing initial Energy Audits and Final QCI Inspections of dwellings receiving Weatherization services.
- Crews - including employees and staff installing energy savings measures and H&S Measures for eligible dwellings.
- Air Sealing Personnel Limitations – Up to \$90 per hour for air sealing for up to three (3) hours of air sealing per dwelling as determined by the Auditor may be claimed. Additional hours require approval.

### **703.2.2 Sub-Contracted Labor**

The total cost of the labor for work completed by a contractor of Subgrantees is an allowable expenditure for the weatherization program support. This includes contractor labor for installing authorized weatherization measures, H&S activities, and Incidental Repairs.

Cost Category: Program Support

- Contractor Installed Measures – Labor
- Contractor-Other (itemized)

The spreadsheet report "DOE Contractor -Other Itemized" must be submitted as a part of the monthly reporting packet detailing contractor expenditures, as follows: Contractor expenditures, as follows:

- Name of Company
- Employee Name(s)
- List Work Performed
- Audit/Inspection Done By
- Site ID#
- Current Month Amount Paid
- Current Month Grant to Date
- Prior Month

This includes all contractor costs for staff and labor, including contractor management staff, supervisory staff and laborers, as well as contractor overhead, including material handling.

Contractors must invoice for one unit at a time, detailing all charges for materials and labor separately.

Contractors may submit request for partial or in progress payments, but must clearly delineate the address of the unit, what this partial or in progress payment covers, i.e. number of labor hours at specified labor rate, with dates, or list of itemized and quantified materials with install or delivery dates, all substantiated by signed delivery slips, or payroll paid time slips as acknowledged by the Subgrantee. An interim inspection of the installed measure is required prior to payment.

### **703.2.3 Rent, Utilities, and Other Direct**

Subgrantee expenditures are allowable for the direct costs to the program for rent and utilities, program advertising, supplies consumed by the program, as well as office equipment, furnishings, and computer equipment used in the program. Program support charges must be made using the actual cost to the program.

Cost Category: Program Support

### **703.2.4 Equipment, Supplies and Operation**

Subgrantee expenditures are allowable for the direct costs to the program for equipment, supplies and tools.

Cost Category: Program Support

Equipment: Equipment is defined by federal regulation as an item of non-expendable, tangible personal property, having a useful life of more than one year and an acquisition cost which equals or exceeds a unit cost of \$5,000. Equipment may be bought outright and charged to the grant in the contract period in which it was purchased. Alternately, the purchase may be amortized over its expected useful life and charged over that period. Finally, equipment may be leased and charged according to the periodic lease payments. In any instance, the cost of the equipment would be prorated to each completed unit to compute the average cost per unit.

Supplies: Supplies, including tools are defined as items valued at less than \$5,000 per unit.

Other acceptable, related expenditures for equipment and tools used in the CT WAP include:

- The costs for maintenance and repair of tools and equipment
- Maintenance agreements, insurance premiums for tools and equipment

- Rental fees for tools and equipment, including the lease cost(s)

### **703.2.5 Vehicle Purchase and Operation**

The cost of a vehicle for the sole use by Subgrantees in the weatherization program is an allowable expense.

Cost Category: Program Support

A vehicle may be bought outright and charged to the grant in the contract period in which it was purchased. Alternately, the purchase may be amortized over its expected life and charged over that period. Finally, equipment may be leased and charged according to the periodic lease payments. In any instance, the cost of the equipment would be prorated to each completed unit to compute the average cost per unit.

Prior Approval: Any purchase or lease of a vehicle requires prior approval by both CT WAP and the DOE. Subgrantees must follow the proper competitive procurement method to obtain a vehicle. The State must be listed as first lean holder.

Other acceptable, related expenditures for vehicles used in the CT WAP include:

- Maintenance or repair of vehicles
- Cost of gas, oil or other fluids
- Storage or garage rental fees
- Insurance premium payments

### **703.2.6 Storage and Handling**

The expenditure by Subgrantees for warehousing and handling materials is an allowable cost. These include agency staff time and transportation associated with materials handling.

Cost Category: Program Support

### **703.2.7 Transportation**

Subgrantee reimbursement of weatherization program related travel costs incurred by an employee using the employee's own vehicle is allowable, in the form of mileage reimbursement.

Costs must be paid in conformance to approved Subgrantee travel policies, but only up to the maximum rates allowed by the State of Connecticut.

Cost Category: Program Support

## **703.3 Training and Technical Assistance (T&TA)**

T&TA activities are allowable Subgrantee expenditures. A separate award is made to each Subgrantee with weatherization funds specifically allocated for training and technical assistance activities. T&TA expenditures require the prior approval of DEEP, as explained below.

Cost Category: Training and Technical Assistance (separate grant allocation).

The T&TA costs are reported (and claimed) on the monthly expenditure analysis, Analysis of Expenditures against Approved Budget Items.

T&TA funds are budgeted separately for activities to be used according to current program training priorities, for Subgrantee to continue to improve the knowledge and skills of their employees and contractors.

T&TA funds may be used for a variety of training topics, including policy, administration, support functions, technical knowledge and so forth. Training and technical assistance activities must be demonstrably relevant to the weatherization program to be allowed for payment from T&TA funds.

See § 500, "Training" for training requirements.

**Note:** All T&TA costs related to work performed and reported as DOE completed CT WAP sites must be in compliance with DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current year State Plan/Master File.

### **703.3.1 Prior Approval**

Subgrantees' expenditures for T&TA requires the prior approval by DEEP. A request must be submitted to the Subgrantees' assigned program monitors at least ten (10) business days prior to the training date. Any training request should include:

- Training sponsor, title, location, dates
- Training brochure, agenda or other explanation of the content
- Agency attendee(s) name and position
- Costs and details for training registration or fees, travel, lodging, per diem, other
- Training presentation costs, as applicable, including facility, materials, trainers, equipment rental, and other costs
- Proposed cost category (T&TA or Program Support: Labor)
- Brief justification in terms of each attendee's weatherization role; including a justification for more than one attendee from the Subgrantee

DEEP T&TA approval may be requested by Subgrantees in several ways. A local training plan may be submitted at the start of a contract year. T&TA plans thus submitted will require further approval only if there is a significant change, resulting in increased projected costs to the grant. Subgrantees may also submit specific T&TA requests anytime over the course of the contract period.

Training that is paid for and/or required by DEEP as part of its overall training plan shall be considered by Subgrantees as already approved.

Individual training requests and approval may be handled between Subgrantees' staff and the DEEP program monitor and program manager by email.

### **703.3.2 Staff Costs**

Cost Category: Subgrantees cost for time spent in training by Subgrantee personnel, in consultation with the DEEP staff, may be charged to the T&TA category. Alternately, staff time in training may be charged to Program Support: Labor

### **703.3.3 Contractor Costs**

Properly trained and qualified contractor staff is a requirement of the contract with any individual or company. Therefore, the DEEP or Subgrantee may use T&TA funds to provide training and include contractor participation at no additional cost to the contractor. A flat \$150 per diem per person is allowable for contractors attending training to offset cost associated with travel. Prior DEEP approval must be obtained first.

However, those costs associated for contractor staff time to attend training should be included in the contractor's price determination and are not an allowable expense under T&TA.

Under certain circumstances where contractor staff must meet licensing or other certification requirements such as lead safe training, it is generally the contractor's responsibility to pay for further training of its employees. Still, DEEP will consider the approval of training requests for a contractor, on a case-by-case basis.

**Note:** all Subgrantee contractor training related to work performed and reported as DOE completed CT WAP sites must be following DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current year State Plan/Master File.

### **703.3.4 Presentation Costs**

Subgrantee presentation costs are allowable under the T&TA grant in the amount of the actual expenditures for the training.

Specific expenditures under this line item may include:

- presenter fees (including presenter travel costs)
- training materials
- facility rental
- presentation supplies
- equipment rental
- other directly related costs

Training may be directly conducted by Subgrantees or contracted with a qualified individual trainer or training organization.

Training presentations may be directed to Subgrantees staff or to the Subgrantee's weatherization contractor staff.

### **703.3.5 Travel Costs**

Travel cost for approved training is an allowable expenditure under the T&TA grant.

Travel costs must be charged according to Subgrantees' travel policies but only up to the maximum rates allowed by the State of Connecticut and subject to prior approval by DEEP.

Specific expenditures may include:

- mileage
- car rental
- airfare
- lodging
- per diem (federal rate used)

To qualify for reimbursement for lodging or per diem expenses, the traveler must be in travel status according to Connecticut state travel policy. Travel status is indicated by the fact that the person is spending the night more than fifty miles from his/her station.

A flat \$150 per diem is allowable for contractors attending training to offset cost associated with travel to attend State or Subgrantee sponsored training.

#### **703.3.6 Registration Costs**

Conference, workshop or similar fees required for attendance at an approved weatherization training event may be expended under the T&TA cost category.

#### **703.3.7 Documentation**

Subgrantees have a responsibility to fully document T&TA expenditures. Documentation will include travel vouchers, invoices, programs, brochures agenda and so forth.

Subgrantees should request clarification from DEEP on the appropriateness of any questionable training expenditure.

#### **703.4 Insurance Liability**

The premium payment for acquiring liability insurance is an allowable Subgrantee expenditure under the weatherization grant.

Cost Category: Liability Insurance.

The Liability costs reported (and claimed) on the monthly expenditure analysis, Analysis of Expenditures against Approved Budget Items.

The actual direct cost of Subgrantee for liability insurance is allowed as a separate line item. It is not counted as an administrative cost and so is not a part of the limit on that cost category. Neither is it counted as a program operation cost nor considered in any related limitations on those costs.

Subgrantees must carry liability insurance and must require the same of their weatherization contractors. The following requirements must be met:

- Subgrantees agrees to provide comprehensive general liability insurance coverage in the minimum amount of \$1,000,000.00 dollars for bodily injury and property damage.

- Such liability insurance shall cover 'personal injury' and/or 'property damage' related to the provision of on- site program services.
- Such coverage must be at least \$500,000.00 for personal injury and \$500,000.00 for property damage.

Subgrantees and contracted resources are advised to inform their respective Insurance providers of all updated policy and procedures related to workplace safety in the COVID-19 era and evaluate any additional insurance needs and costs.

### **703.5 Insurance Pollution Occurrence (PO)**

The premium payment for acquiring PO insurance is an allowable expense.

Cost Category: Pollution Insurance.

The PO costs reported and claimed on the monthly expenditure analysis, Analysis of Expenditures against Approved Budget Items.

The actual direct cost of Subgrantee for PO insurance is allowed as a separate line item. It is not counted as an administrative cost and is not a part of the limit on that cost category. Neither is it counted as a program operation cost nor considered in any related limitations on those costs.

PO insurance shall include the cost of pollution insurance premiums maintained by Subgrantees for the program. Such pollution occurrence insurance shall cover “personal injury” and/or “property damage” related to the provision of on-site program services. Such coverage must be at least \$500,000.00 per occurrence.

Subgrantees and contracted resources are advised to inform their respective Insurance providers of all updated policy and procedures related to workplace safety in the COVID-19 era and evaluate any additional insurance needs and costs.



### **703.6 Financial Audit**

The cost of the Financial Audit is an allowable Subgrantee expenditure under the weatherization grant.

Cost Category: Financial Audit.

The Financial Audit costs reported and claimed on the monthly expenditure analysis, Analysis of Expenditures against Approved Budget Items.

The actual direct cost of Subgrantee for the Financial Audit is allowed as a separate line item. It is not counted as an administrative cost and is not a part of the limit on that cost category. Neither is it counted as a program operation cost nor considered in any related limitations on those costs.

Subgrantees shall conduct a financial audit of its weatherization program in accordance with 2 C.F.R. § 200, as amended.

If more than one program is being audited, the cost to the weatherization program is to be allocated on a reasonable basis.

### **703.7 Health and Safety**

See § 400, "Health & Safety" for allowable Health & Safety Costs under the CT WAP.

### **703.8 Administration**

Subgrantees costs for the administration of the CT WAP is an allowable expense. Subgrantees must expend and administer funds in accordance with the policies and regulations as defined by DOE in 2 C.F.R. § 200, as amended.

Cost Category: Administration.

The Administration costs reported and claimed on the monthly expenditure analysis report, Analysis of Expenditures against Approved Budget Items.

DEEP provides to Subgrantee funds to cover the cost of administering the program in an amount based on a formula that includes a base allocation and other factors. This amount is determined yearly by DEEP and is provided to Subgrantees through their contractual agreement. The actual amount claimed by Subgrantees for administration costs over the period of the contract cannot exceed this limit. Any expenditure exceeding this limit is the responsibility of Subgrantees and cannot be reimbursed from program funds.

Administration costs are costs associated with those functions of a general nature not clearly specific to one program but applied to a range of Subgrantees' programs salary and fringe costs for individuals such as directors, fiscal staff, and legal staff.

Personnel functions such as agency planning, budgeting, accounting, and activities that establish and direct Subgrantees' policies, goals, and objectives overall, are usually considered administrative costs.

Salaries shall include the salaries of administrative staff including fiscal personnel and the cost of supervisory personnel indirectly providing Program services. Allowable costs include:

- Fringe Benefits: such as, group health insurance, worker's compensation, and other employee benefits that may include, but are not limited to, pensions for those employees receiving salaries.
- Travel: including the cost of mileage reimbursement for those employees identified above for the use of their personal vehicles in the provision of program services.
- Other Costs: include but not limited to the cost of postage, copying fees, office space, machinery rentals and purchases in the provision of CT WAP services.

#### Administration Budget Examples

Some specific examples of costs that, so far as they are not directly chargeable to program operations, may be considered as administrative include:

- Executive functions
- Office management functions
- Accounting, auditing, and budgeting
- Corporate legal services
- Personnel management
- Purchasing and distribution of supplies
- Insurance and bonding
- Receptionist, mail distribution, filing, and other central clerical services
- Data processing and computer services
- Computer equipment used for administrative functions
- General record keeping
- Office space/facilities lease or rental
- Utilities in the office space/facilities
- Postage
- Duplicating/copying.
- Telephone equipment and services
- Administrative staff training
- Applicable state and local taxes

#### **703.8.1 Cost Allocations**

Overall agency costs that cover a range of programs must be assigned using a reasonable and consistent formula to figure how much to charge each program. Most agencies split overall agency administrative costs among programs based on a cost allocation plan, using time studies of the employees involved.

Specific costs may be allocated to the weatherization program if they are treated consistently with other costs incurred for the same purpose in like circumstances and if they:

- Are incurred specifically for the purposes and benefit of the sub-grant
- Can be distributed in reasonable proportion to the benefits received by the program
- Are necessary to the overall operation of the organization, although a direct relationship to any particular cost objective cannot be shown.

- More rarely, an agency applies an indirect cost rate that has been approved by the Subgrantee's cognizant, federal. To use this method, the approved indirect cost rate must be properly documented by Subgrantees.

Subgrantees must be able to demonstrate a valid basis for administrative charges to the weatherization programs, both for fiscal monitoring by DEEP and in an agency-wide audit (e.g. A-133).

## **704. Leveraged Funds**

DEEP has several important resources in the leveraged funds used for various purposes and coordinated at the local level with CT WAP services.

### **704.1 Utility Program (Cost Share)**

The utility run program HES-IE provides cost sharing for general heat waste, prevention measures, insulation, air Sealing, weather-stripping, and replacement of windows, doors, and appliances. HES-IE services are provided by the Energy Efficiency Fund which is funded by ratepayers in the territories of Eversource and Avangrid Utility companies.

Clients situated in the territories of the municipal utility companies may be eligible for services provided by the Connecticut Municipal Electric Energy Cooperative (CMEEC) or Wallingford Electric Department.

### **704.2 Leveraged and DOE Funds**

Leveraged funds are used directly by Subgrantee, at the local level. Subgrantees must account separately for the leveraged funds. Both federal & non-federal, leveraged funds may be used on the same unit, but in no instance may DOE funds be comingled in the same account with leveraged funds. DOE funds may not be used to cover expenditures for which leveraged funds are used, or to be used. Leveraged funds are not considered program income.

## **705. Subgrantee Claims**

Subgrantees must claim for all allowable costs associated with the weatherization program from the Department monthly. Claim is made by submitting a packet of reports, the DOE Monthly Weatherization Status Report detailing Subgrantees statistics, production, and expenditures for the month.

The forms, which are submitted on template spreadsheets provided by the State, include:

- Individual Assisted, Completed Units Statistics
- Actual Costs Units Completed, Units in Progress
- Analysis of Expenditures Against Approved Budget Items
- DOE Contractor – Other Itemized (as applicable)
- DOE Program – Other Itemized (as applicable)

In addition to the Monthly Weatherization Status Report, a Building Weatherization Report (BWR) (Installed version) is to be submitted for each unit being reported and claimed.

Also, the Health & Safety Measures report form is to be submitted listing materials used on such activities for the month.

It is the responsibility of Subgrantees to understand which expenditures are allowable in each weatherization cost category, including the dollar limits on expenditures. Expenditures that are inappropriately claimed, that cannot be legitimately assigned to a weatherization cost category, or that cause the Subgrantee to exceed caps within a limited category, will be disallowed by DEEP.

Subgrantees may not report a unit as completed until the unit has passed the Final QCI Inspection, except in the instance of Progress Inspection stipulations, which are discussed below. No claim may be submitted for weatherization work until such time as Subgrantee has performed the Final QCI Inspection and has issued a written determination that the work has been performed in a satisfactory manner.

No claim may be submitted for weatherization work which is outside of the measures set forth by Subgrantees' work order, without a prior, written modification of that order.

No claim may be submitted for weatherization work performed by personnel who have not fulfilled the weatherization training and certification required for such work.

No claim may be submitted for additional weatherization work conducted on a unit after the unit has been reported as completed.

Following the execution of Subgrantees' contract, an advance payment up to 25% of Subgrantees' contract is sent to Subgrantees. Additional payments are made to Subgrantees based on submittal and review of monthly weatherization reports. Toward the end of the contract, the advance is drawn against reports submitted. DEEP processes payments to Subgrantees using a Purchase Order (P.O.) process.

Certification: The monthly report must include Subgrantees certification form attesting to the accuracy of the claim. The form is signed and dated by the Subgrantee's weatherization coordinator, executive director and finance director.

**Note:** All work performed and reported as DOE completed CT WAP sites must be in compliance with DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current year State Plan/Master File.

### **705.1 Subgrantee Claims and Reporting**

The report is to be submitted by Subgrantees to the DEEP program monitor assigned to the Subgrantee. The monthly report is to be received at the State by the tenth (10<sup>th</sup>) of each following month.

As a minimum, Subgrantees staff will check to see that the correct BWR form is ready for submittal for each unit to be reported on the Monthly Weatherization Status Report forms. The Status Report and each correct Completion Report will be reviewed for accuracy and completeness.

The reviewer will check to ensure that the measures and costs reported on the BWR are those called for on the Work Order(s), the Energy Audit and any modifications made to the work. Each installed measure will be verified to have met the requirement for a SIR of 1.0, or better. Likewise, the overall SIR compliance will be checked on the package of measures.

The reviewer will also match the information on the Completion Report with information on any waiver approvals on the unit.

The review of a Subgrantee monthly report will include a review of:

- The Status Report and each Completion Report for accuracy and completeness
- The measures installed compared to the measures in the Energy Audit and on the Work Order(s)
- The charges for air sealing within dollar limits
- The balance achieved to the calculated MVG based on final blower door readings
- The insulation materials expenditure against quantity of insulation installed
- Agency and contractor materials expenditures against program limits
- Contractor labor expenditures against program limits
- The limits between the cumulative materials cost credits and the other program support cost
- H&S materials expenditures against program limits
- Individual and package SIR ratios
- ASHRAE 62.2.2016 Compliance
- The required demographics for program management and DOE reporting, including the:
  - number and types of dwellings
  - numbers and types of people assisted

When applicable Subgrantees reviewer will adjust for any changes such as landlord contributions and disallowances. Then, claimed amounts will be assigned by the reviewer to the appropriate cost category according to the rules set forth in this section.

Disallowance: If discrepancies are found, the Subgrantee must make the necessary corrections prior to submitting their claim to DEEP.

The preparer and the reviewer will sign the submittal indicating their “due diligence” in performing this review.

Unless requested by DEEP, source documents, including contractor invoices are not to be submitted by Subgrantees. Such documentation must, of course, be available for review and audit.

### **705.1.1 Administrative, Insurance, Audit and T&TA Claims**

A claim for ongoing expenditures in other cost categories is submitted with the monthly report. Claims in these categories, explained above, include the following line items:

- Administration
- Liability Insurance
- Fiscal Audit
- T&TA

Ongoing claims will be paid by DEEP. It is the responsibility of Subgrantees to track its claims to ensure that the allocated amount of funds in each of these cost categories are not exceeded by the cumulative claimed costs. Funds paid to a Subgrantee in excess of its allowable expenditures will be required to be re-paid to DEEP.

## **705.2 State Approval Process**

The State fiscal staff will check to see that the correct Completion Report form has been submitted for each unit reported on the Monthly Weatherization Status Report forms. The Status Report and each correct BWR will be reviewed for accuracy and completeness.

The reviewer will check to ensure that the measures and costs reported on the BWR are those called for on the Work Order(s), the Energy Audit and any modifications made to the work. Each installed measure will be verified to have met the requirement for a SIR of 1.0, or better. Likewise, the overall SIR compliance will be checked on the package of measures.

The reviewer will also match the information on the BWR with information on any waiver approvals on the unit.

The fiscal review of a Subgrantee monthly report will include a review of:

- The status report and each completion report for accuracy and completeness
- The measures installed compared to the measures in the audit and on the work order(s)
- The charges for air sealing within dollar limits
- The balance achieved to the calculated MVG based on final blower door readings
- The insulation materials expenditure against quantity of insulation installed
- Agency and contractor materials expenditures against program limits
- Contractor labor expenditures against program limits
- The limits between the cumulative materials cost credits and the other program support costs
- H&S materials expenditures against program limits
- Individual and package SIR ratios
- ASHRAE 62.2.2016 Compliance
- The required demographics for program management and DOE reporting, including the:
  - Number and types of dwellings
  - Numbers and types of people assisted

When applicable the DEEP reviewer will adjust for any changes such as landlord contributions and disallowances. Then, claimed amounts will be assigned by the reviewer to the appropriate cost category according to the rules set forth in this section.

Disallowance: If discrepancies are found, the Subgrantee will be notified in writing that a unit claimed is being temporarily disallowed. At this point the unit will not be counted as a completion on any reports for the period. The BWR for the disallowed unit will be removed, the amount claimed deducted, and the status reports adjusted.

Subgrantees must respond to all disallowed expenditures taking corrective actions to the satisfaction of DEEP within forty-five (45) days of receipt of the notice. This allows for Subgrantees to return to the dwelling and address measures if required, and to resubmit the completion to the State for reimbursement. Subgrantees are required to request extensions in writing if they cannot meet the forty-five (45) daytime limit.

Approval: Once the information on the Monthly Weatherization Status Report is reconciled with the approved batch of Completion Reports, the claim will be processed for payment by DEEP. The data will also be reported to DOE, as required, in the Performance and Accountability for Grants in Energy (PAGE) Reporting System.

### **705.2.1 Claim Payment Timeframe**

Accurate and complete claims received by the due date will be paid to Subgrantees within thirty days (30) of receipt.

Subgrantee claims are made on a reimbursement basis, except that an advance payment may be made to Subgrantees by DEEP at the beginning of the contract period for expenditures.

### **705.3 Contractor Invoices**

Subgrantee Contractors are required to maintain strict accountability for the costs invoiced to the program. All claimed costs must be linked directly to weatherization activities performed on a specific job and identifiable by the work order number, case name, and address. All labor and materials must be clearly identifiable with each unit weatherized, on each invoice. The work order number is assigned by Subgrantees and must appear on all documents related to the unit.

Contractor books, records, documents, and other evidence must be set up in a way that follows generally accepted accounting principles, using procedures and practices which sufficiently and properly reflect all costs attributed to each service provided.

The contractor is required to retain records for no less than three (3) years after the close of the contract period with Subgrantees. Records must be made available, upon request, to Subgrantees, DEEP, and DOE or to any other duly authorized state or federal entity, for the purpose of a fiscal review or an audit, as required.

**Note:** All invoices for work performed and reported as DOE completed CT WAP sites must follow DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current year State Plan/Master File.

#### **705.3.1 Contractor Invoice Information**

To substantiate Subgrantees' claim each contractor invoice must include:

- Contractor name, address, phone and contact information
- Work order number assigned to the unit by Subgrantees
- Physical address of the Unit
- All dates that the company worked on the Unit
- A copy of the original approved work order and any work order modification approved by Subgrantees.
- Breakdown by weatherization measure of costs for labor on the Unit
- Breakdown by weatherization measure of costs for materials, parts, or other costs on the Unit
- Invoice total

- Original receipts for all materials purchased and being billed by the Company, as required by Subgrantees
- Other Information or documentation required by Subgrantees or State
- Signature of authorized company employee

Contractors shall submit invoices within five (5) days of the completion of their work.

Subgrantees will make payment within thirty (30) days upon the contractor's submission of an acceptable invoice and other required documents; but, only after the completed unit has passed the Final Inspection, or an approved Progress Inspection.

### **705.3.2 Interim Contractor Claims**

In some instances, payments to certain contractors completing their share of the work on a unit may be excessively delayed because other weatherization work is not done. For example, an insulation contractor may be finished, but the Final Inspection is held up because of a delay in installing the heating system. The insulation installer may have submitted an invoice and Subgrantees is under obligation by DOE to pay it within thirty (30) days.

In this situation, rather than delaying payment beyond the thirty-day limit on invoice payments, Subgrantees may choose to conduct a "Progress Inspection" of the contractor's individual work. If the work can be passed, the contractor's invoice may then be submitted to DEEP by Subgrantees for payment. However, no payments may be issued before the work passes the Progress Inspection conducted by Subgrantees' QCI Inspector and the DEEP QCI Inspector and a signed copy of the Progress QCI Inspection Report by the Subgrantee is submitted with the claim for payment to DEEP.

A Subgrantee electing to use a Progress QCI Inspection is required to have a system that ensures that, in the end, all measures are QCI inspected and there is no duplication of invoice payments to its contractors.

Measures which are inspected on a Progress QCI Inspection must be inspected again as a part of the unit's overall Final QCI Inspection. A Final QCI completion certificate may only be signed after the completion of the entire job and passing Final QCI Inspection. Units may not be reported by Subgrantees as completed on the Monthly Weatherization Status Reports until it has entirely passed the Final QCI Inspection.

### **705.4 Withholding of Funds**

DEEP may withhold full or partial payment of claims under several circumstances. Subgrantees will be notified prior to funds being withheld and given an opportunity to ameliorate the underlying issue, during which time the payment will be held.

#### **705.4.1 Errors**

DEEP may withhold payment to a Subgrantee if a report submitted by Subgrantees is inaccurate, incomplete, or unsubstantiated, or if Subgrantees have not otherwise complied with the instructions issued by DEEP.



### **705.4.2 Fiscal Monitoring and Audit Issues**

DEEP may withhold payment to a Subgrantee in instances of incorrect, inappropriate, or unsubstantiated costs that have been discovered through fiscal monitoring. Payment may be withheld for expenditures that have been disallowed in an audit of Subgrantee weatherization funds.

### **705.4.3 Line-Item Over-Expenditure**

If DEEP has advanced funds or overpaid Subgrantees, the funds may be recovered through a reduction in monthly or final claims payments to Subgrantees. This would include, but is not limited to the following situations where Subgrantees exceeds the limits on:

- Administration expenditures
- H&S expenditures
- Maximum or minimum expenditure per unit
- Average Cost per Unit limit
- Renewable Energy Average Costs Per Unit
- Materials cost limit on Program Support

## **706. Subgrantee Reporting Requirements**

DEEP, Subgrantees and the CT WAP installation contractors each have the responsibility for certain levels of reporting for CT WAP activities. Reports at every level must be based on information which accurately reflects their performance in the weatherization program.

Much of the required data come from the elements which are submitted by DEEP to DOE.

Subgrantees and their contractors are prohibited from using client records for any purpose other than that directly related to eligibility, services and reporting for the Weatherization Assistance Program.

Subgrantees must guard against unnecessarily revealing information about individual weatherization clients. Most reports are set up to obtain aggregate, numerical data for which specific, individual information is not needed.

### **706.1 Monthly Reports**

Subgrantees are required to submit periodic reports detailing the Subgrantees' implementation of the weatherization program. Most reports are submitted to DEEP updating the local agency's progress in weatherizing units, assisting clients, and expending program funds.

Reporting requirements are met and Subgrantees' claim is made by submitting a monthly packet of reports, the DOE Monthly Weatherization Status Report which includes several pages detailing Subgrantees' statistics, production, and expenditures for the month.

The pages, which are submitted on template spreadsheets provided by DEEP, include:

- Individual Assisted, Completed Units Statistics
- Actual Costs Units Completed, Units in Progress
- Analysis of Expenditures against Approved Budget Items; and, as applicable

- DOE Contractor – Other Itemized
- DOE Program – Other Itemized

In addition to the Status Report, a complete Completion Report must be submitted in the installed version, for each unit being reported as complete.

The financial status reports are covered in the cost category sections above. The unit/individual reports are covered in this section.

### **706.2 Unit Completion Definition**

A unit may be reported as “complete”, only in the period in which it is certified as passing the Final QCI Inspection.

A completed unit may only be reported under one funding source. Where DOE funds are used along with other funds (e.g., utility funds), the unit is to be reported as a DOE completion.

DOE Definition: A DOE weatherized unit is a dwelling on which a DOE-approved energy audit or priority list has been applied and weatherization work has been completed. DOE funds used on this unit may include, but are not limited to auditing, testing, measure installation, inspection, or use of DOE equipment and/or vehicles, or if DOE provides the training and/or administrative funds.

Therefore, a dwelling unit that meets the definition of a DOE weatherized unit and has DOE funds used directly on it must be counted as a DOE completed unit.

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

**Note:** All units reported as DOE completed CT WAP sites must follow DOE WPN 15- 4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current year State Plan/Master File.

### **706.3 Building Weatherization Report (Completion Report)**

The Building Weatherization Report (Completion Report) is the primary document detailing the work that was ordered, installed and finalized on each unit. The monthly packet of reports must include the correct Completion Report for each completed unit claimed in the report month. The Completion Report is to be submitted in the final, installed version to properly support the reported and claimed units.

The Completion Report is a control document that is produced from the Weatherization Assistant 8.9 (NEAT, MHEA) software at any point during the weatherization process. The measures included on the BWR will only be those that are allowable under CT WAP and that meet the SIR requirement, as applicable. (H&S activities will also be on the Completion Report.)

The initial input by the energy auditor produces a draft Completion Report that may be used to propose measures to be ordered. Proposed measures may need further review by Subgrantees’ supervision and/or prior approval by DEEP before they are actually assigned.

The contracted Recommended Measures Report (RMR) indicates the measures that are authorized to be assigned to one or more work orders and distributed to agency crews or contracted installers as

appropriate. At any time that the work is changed during the installation, a modified RMR must be produced that reflects the approved changes in the work.

The installed RMR must reflect all of the work that was actually completed, inspected, and passed in the unit. This version of the RMR is submitted as the backup to each unit reported in the monthly packet of reports.

The Completion Report includes information as entered in the NEAT, MHEA program, including, but not limited to:

- Unit identification
- Building unit types and details
- Client identification
- Family demographics
- Audit summary, auditor, job #, dates, other
- Heating system type
- Blower door pre- and post-weatherization readings
- Minimum Ventilation Guideline calculation
- Weatherization measures by funding, type, agency, and installer
- Costs broken out by materials and labor
- Other comments and information, as required

**706.4 Individuals Assisted and Unit Completion Statistics**

Subgrantees are required to report monthly totals on the characteristics of the completed units and the individuals occupying them. These details are reported only for units that have been completed. Statistics are reported on both a Monthly and Grant to Date (GTD) basis.

The unit and fuel type categories will total the same as the total number of units completed. The occupant category will total the number of individuals served in the completed units.

Unit	Definition
Single Family - Owner	Owner - Occupied, Single - Family, Site - Built Units
Single Family - Renter	Rented, Single - Family, Site - Built Include each Unit Weatherized Multi – Units - 4 Units or Less
Multi-Unit - Renter	Rented, Multi - Unit Each Unit Weatherized Multi – Units – 5 Units or More
Mobile or Manufactured Home - Owner	Owner - Occupied Manufactured Home
Mobile or Manufactured Home - Renter	Renter - Occupied Manufactured Home
Re-Weatherized Units	Qualified if weatherized on per current DOE Guidance
Elderly – 60 Years of Age and Over	Identified as Elderly (60+) on Eligibility Form
Handicapped or Disabled	Identified as Handicapped or Disabled on Eligibility Form
Native American	Identified as Native American on Eligibility Form
Young Children – 5 Years of Age and Under	Identified as having Young Children on Eligibility Form
Fuel Type	Definition
Gas	Primary heating source only
Fuel Oil	
Electric	

Propane	Primary heating source only
Kerosene	
Solid Fuel (Wood, Coal, Other)	
<b>Other</b>	<b>Definition</b>
Cost Shared or Leveraged Funds	Units completed with DOE and Other Funds
High Energy Users	As identified on Eligibility Form
Heating System Replacement	Pre-Approved heating system replacement
Completed Units by Service Area	Number completed by Service Area

**706.5 Subgrantee Training Report**

Subgrantees are responsible for tracking the certification and training of all personnel used in the weatherization program. This information includes both required and optional training. Training of Subgrantees’ own employees as well as those of its contractors must be tracked on an individual basis and made available to DEEP program monitors upon request.

The utilization of appropriately trained employees is a requirement for payment for work under the program. The inability to document the training of individuals used in weatherization may result in a disallowed or questioned cost for weatherization work conducted by those individuals.

**706.6 Subgrantee Central Contractor Registration (CCR)**

Being “first-tier” recipients of federal funds, Subgrantees must also register and report directly on their activities at the federal website at the Central Contractor Registration (<http://www.ccr.gov>). A Dunne and Bradstreet Data Universal Numbering System (DUNS) Number (<http://www.dnb.com>) is required for registration.

**707. Contractor Reporting**

Subgrantees must put in place procedures and forms that ensure that their Contractors provide statistical and financial information regarding the weatherization work performed. Such overall reporting includes but is not necessarily limited to documentation of the weatherization work performed, material costs, overhead costs, employee time records, and employee pay records.

**707.1 Contractor Production**

Subgrantees must also require the Contractor to report data needed to complete the unit production information detailed in § 706, above.

Contractors must keep detailed records of the measures that have been performed on each unit. All work records must be identified by the Work Order Number assigned by Subgrantees. All labor and materials must be clearly delineated for each unit weatherized.

The contractor is required to retain production records for no less than three (3) years after the close of its contract period. Records must be made available, upon request, to Subgrantees, DEEP, and

DOE or to any other duly authorized state or federal entity, for the purpose of a fiscal review or an audit, as required.

Invoice, claim and other financial information on the work performed must also be cross referenced to the individual unit by work order number.

## **707.2 Contractor Training Reporting**

In order to report properly, Subgrantees must require that their contractors document employee participation in certain training programs. The training must be reported for each individual who works on weatherization under Subgrantees' contracts.

## **708. State Reports**

DOE continues to emphasize that state Grantee performance will be closely monitored through the Quarterly Performance Report, the Quarterly Federal Financial Report, and the Annual Training and Technical Assistance, Monitoring and Leveraging Report. Accurate and complete DEEP reports largely depend on the quality of information aggregated from Subgrantees and its contractors.

### **708.1 State DOE Reports**

Most of the information collected from each Subgrantee is aggregated in reports completed by DEEP and reported to DOE.

#### **708.1.1 Grantee Quarterly Performance Report (QPR)**

DEEP submits a quarterly report to DOE that lists the statewide totals for all metrics reported by Subgrantees on units and individuals, as detailed in § 702, "Subgrantee Reports", above.

#### **708.1.2 Training, Technical Assistance, Monitoring, and Leveraging**

This report is made annually to DOE as a part of DEEP's Weatherization Program State Plan. It describes DEEP's progress in the following three areas:

- Training and Technical Assistance Activities: lists and describes the training and technical assistance activities attended and conducted during the previous program year.
- Monitoring Activities: lists Subgrantees which were monitored during the year. Describes significant findings and corrective actions.
- Leveraging Activities lists and describes the projects executed and the amount and source of funding successfully leveraged during the report year.

#### **708.1.3 Quarterly Financial Status Report**

As with all federal grants, DEEP reports quarterly weatherization budget expenditures on Standard Form 269A, Financial Status Report, as prescribed by OMB Circulars A-102 and A-110.

**708.1.4 Grantee Central Contractor Registration (CCR)**

As a recipient of federal funds, DEEP must register and report directly on its activities at the federal website, the Central Contractor Registration (<http://www.ccr.gov>). A Dunne and Bradstreet Data Universal Numbering System (DUNS) Number (<http://www.dnb.com>) is required for registration.

**709. – 799. Claims and Reports Reserved**

**Section 800**  
**Large Multi-Unit (Multi-Family) Structures**



## **800. Introduction**

While the weatherization of multi-unit properties has always been a part of the program, the infusion of funds renewed the DOE emphasis on this housing stock and increased the volume of large multi-unit buildings, including government subsidized apartments, and shelters that were served as part of the Connecticut program.

Apartment buildings are differentiated by the number of eligible households required for the entire building to be eligible. Buildings ranging from a duplex to four units, with a total of up to 10,000 square feet, require that 50% of the units be occupied by eligible households. Although the approach to weatherizing a building with up to four units may be different than with single unit dwellings, they are audited and recorded using the Weatherization Assistant 8.9 (NEAT) software which is approved for such audits by DOE.

Large multi-unit buildings are defined as having five (5) or more units. These buildings usually require 66% or more of the occupant households to be eligible for weatherization. Weatherization projects involving multi-units require a separate process because they are likely to require different approaches with the energy audit and with the recommended weatherization measures. The NEAT software does not accommodate large multi-family greater than 10,000 square feet or individually heated projects greater than 25 units, so in those circumstances different audit procedures are separately approved by DOE.

There are certain large multi-unit buildings that are eligible under DOE rules when only 50% of the units qualify, if it can be shown that “an investment of DOE funds would result in a significant energy-efficiency improvement because of the upgrades to equipment, energy systems, common space, or the building shell.”

All of the units in the building are served and reported as individual, completed units to DOE.

**Note:** Subgrantees must contact DEEP before embarking on any plan to conduct weatherization services with large multi-unit buildings or shelters.

All multi-unit work performed and reported as DOE completed CT WAP sites must be in compliance with DOE WPN 22-4 and the CT WAP Quality Work Plan requirements, Connecticut Weatherization Field Guide (083021) and the current year State Plan/Master File.

## **801. Pre-Qualified**

To assist Connecticut and other states in identifying assisted eligible multi-family units, DOE entered into a memorandum of understanding with HUD to identify federally subsidized housing projects that meet the eligibility requirement for weatherization services. A subsequent concerted effort has been made by the Connecticut program to weatherize properties based on these lists which identify eligible housing from three sources, including properties that are subsidized by the:

- U.S. Housing and Urban Development (HUD)
- U.S. Department of Agriculture
- Low Income Housing Tax Credit Program (LIHTC) (Connecticut Housing Finance Authority)

## **801.1 Unit Eligibility**

To be eligible for weatherization the buildings must meet all of the program's property eligibility criteria. Inclusion on one of the lists only relieves the program of the need to re-do already verified eligibility factors. Those factors vary by list. The inclusion of a subsidized multi-family unit building or complex of buildings on one of the three lists below does **not** mean that it is in any way categorically eligible to receive weatherization services or that it should be given special priority for services.

The following lists have been developed by DOE.

List #1 Properties identified on this list have been pre-determined to comply with the following program requirements:

A minimum of 66% of the dwelling units in the building are occupied by a family unit that meets the income requirement

For a reasonable period after weatherization work has been completed, the eligible dwelling unit will not be subject to rent increases as a result of the weatherization, and

No undue or excessive enhancement has occurred to the value of the dwelling unit.

List #2 Properties identified on this list have been pre-determined to comply with the following program requirements:

A minimum of 66% of the dwelling units in the building are occupied by a family unit that meets the income requirement

No undue or excessive enhancement has occurred to the value of the dwelling unit.

List #3 Properties identified on this list are USDA Rural Housing Service's Multifamily Housing Properties in which:

100% of residents meet income eligibility requirements for the program.

See the DOE regulations at 10 C.F.R. § 440.22.

See also DOE Weatherization Program Notice documents 22-5, describing where lists of eligible properties are available.

## **802. Stipulations**

To qualify for weatherization, the applicable percentage of occupants (66% or 50%) must be income eligible, rent cannot be increased for a reasonable time, and the financial benefit of the work must primarily accrue to the tenant.

See § 203, "Property Eligibility" for all factors which apply to unit eligibility, including multi-units.

### **802.1 Accrual of Benefits to Low-Income Tenants**

The benefits of weatherization assistance in connection with rental units, including units where the tenants pay for their energy through their rent, must accrue primarily to the low-income tenants residing in such units.

In instances in which tenants of multi-family building pay their energy bills directly, the accrual of benefits requirement may be met by demonstrating a reduction in the tenant's energy bills.

However, the process is more difficult when the tenant does not pay for energy bills directly, and DOE suggests that a combination of several categories of benefits could be used to demonstrate that the weatherization work primarily benefits the tenant.

This list includes, but is not limited to, the following:

- Longer term preservation of the property as affordable housing.
- Continuation of protection against rent increased beyond that required under the CT WAP regulations.
- Investments of the energy savings in facilities or services that offer measurable direct benefits to tenants.
- Investment of the energy savings from the weatherization work in specific H&S improvements with measurable benefits to tenants.
- Improvements to heat and hot water distribution, and ventilation, to improve the comfort of residents
- Establishment of a shared savings program.

See DOE Weatherization Program Notice No. 10-15 A, Guidance Regarding Accrual of Benefits to Low-Income Tenants in Multi-Family Buildings under the Weatherization Assistance Program and CT WAP Operations Manual § 203, "Property Eligibility" for all factors which apply to unit eligibility.

### **802.2 Rent Increases**

For a reasonable period of time after weatherization work has been completed on a dwelling containing a unit occupied by an eligible household, the tenants in that unit (including households paying for their energy through their rent) will not be subjected to rent increases.

See CT WAP Operations Manual § 203, "Property Eligibility" for all factors which apply to unit eligibility.

### **802.3 Un-Due Enhancement**

No undue or excessive enhancement shall occur to the value of the dwelling units.

CT WAP Operations Manual § 203, "Property Eligibility" for all factors which apply to unit eligibility.

### **803. Costs**

Measures conducted in multi-family buildings may not be easily attributable to a particular unit. Since the direct cost of an individual unit may not be readily calculated, a formula is used to determine how much may be spent overall.

When addressing multi-family buildings with DOE funds, multiply the total number of income-eligible units in the multi-family building by the current allowable per dwelling unit average cost to determine the amount of DOE funding available for weatherizing the building. The total number of eligible units will be either the 66% or 50% figure.

While the amount of funding available for weatherizing a building is limited by the number of eligible units, the weatherization work can result in improvements to all units in the building, including ineligible units.

Reporting: All of the units in the building are served and reported as individual, completed units to DOE.

Funding: Owner participation is also required with multi-family unit properties. As with other properties these leveraged funds may also be used to “buy down” certain measures in order to pass the SIR calculation.

### **804. Energy Audit**

Some of the standard energy audits are not approved or applicable to large multi-family buildings where weatherization measures may not be unit specific, instead the benefit will be across all units. For example, insulation may be installed over an entire attic area which has the effect of energy conservation for all of the units under the common roof.

DOE will review the plans for multi-unit audits. Where multi-family dwelling units represent more than 20% of a Grantee’s building type, DOE requires the Grantee (DEEP) to submit the multi-family energy audit procedures for review.

For Grantees that fall below the 20% threshold and do not have a DOE-approved audit and procedures for multi-family buildings, a Grantee must take two actions:

Describe in its Grantee Plan the approach that will be taken to ensure that the eligible occupants of multi-family dwellings receive appropriate, cost-effective weatherization services.

Submit to the DOE Project Officer the necessary material to approve the multi-family project prior to commencing weatherizing the building (e.g., engineering assessment, audit input/output). The Project Officer will review and approve the project(s) on a case-by-case basis in the absence of a multi-family energy audit.

### **805. Shelters**

DOE regulations have, in the past allowed for the weatherization of shelters where the principal purpose is to house, on a temporary basis, individuals who may or not be related to each other. A grantee may count each 800 square feet of the shelter as a dwelling unit, or it may count each floor of the shelter as a dwelling unit. CT WAP will review case by case to determine

if emergency shelters for the homeless will receive weatherization services, pending the availability of funds.

**806. – 899. Large Multi-Unit Structures Reserved**

# **Section 900**

## **Emergency Planning**

## **900. Energy Crisis**

The primary energy-related crisis to face low-income households in CT is an inoperable heating system during the heating season defined as (October 1 – April 30). CT WAP eligible households will receive priority service delivery to conduct comprehensive site-specific health, safety, and energy efficiency assessments and initiate heating system diagnostics and repair or replacement proposals. CT WAP subgrantees will ensure that appropriate actions are taken to address heating related responses in a timely manner and deliver high quality comprehensive weatherization to all sites receiving emergency heating services

**Note:** See § 902 for further information regarding Emergency Repair and Replacement policy and Procedures during the COVID-19 Service Delivery period.

## **901. Disaster Plan**

In the event of a federal or state declared disaster, subgrantees may use DOE WAP funds to the extent that services are in support of typical weatherization work. Re-prioritization of eligible units within a designated area. Allowable expenditures are limited to measures as defined in:

- 10 C.F.R. § 440.16
- 10 C.F.R. § 440.18(d)(15)
- DOE WPN 12-07
- The current year State Plan/Master File

**Note:** Subgrantees must determine that all insurance claims and other forms of compensation related to damage associate with any federal or state disaster designation.

## **902. Public Health Emergency**

CT WAP has provided limited short-term (30-90 day) guidance in respect to use of DOE WAP funds for the purpose of ensuring program integrity and service delivery of work in progress and pre-production activities associated with the completion of CT WAP units. All costs will be directly accrued to Average Unit Cost for the respective program year.

CT WAP also provided long-term (30-120 day) guidance in respect to the use of DOE WAP Training and Technical Assistance funds for the purpose of maintaining the integrity and capacity of the service delivery network at the state and local agency levels and report all cost within the respective program year.

**Note:** CT WAP has implemented special policy, procedures and protocols designed to address jobsite H&S during the COVID-19 crisis. Please refer to the CT WAP Operations Manual §§ 406, 406.3, 406.4, 406.5, 407, 417.7, 423.3, 425, 425.1 and 425.2 for additional information.

\*Be advised that in the event of any new federal, state or local agency having jurisdiction regulatory restrictions and guidance is adapted, CT WAP will continue to update program compliance requirements



**903. – 999. Emergency Planning Reserved**

