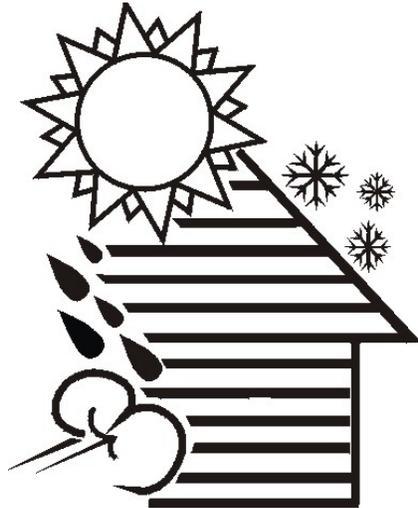


COMMONWEALTH OF MASSACHUSETTS

Charles D. Baker, Governor
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Department of Housing and Community Development
Division of Community Services



Weatherization
Works

FY 2016 HEARTWAP Program Guidance

October 1, 2015 - September 30, 2016



FY 2016 HEARTWAP PROGRAM GUIDANCE

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I. GENERAL RULES, REGULATIONS, AND DEFINITIONS

A. Client Income and Service Eligibility

1. To receive HEARTWAP assistance, a household must be determined eligible for FY 2016 LIHEAP with income not to exceed 60% of the Estimated State Median Income, based on LIHEAP income documentation requirements.
2. Only primary space heating systems are eligible for HEARTWAP services. Secondary or back-up systems are not eligible for HEARTWAP services.
3. Priority for HEARTWAP services must be given to those clients in an emergency no-heat or unsafe heating situation. Non-essential heating system work should be deferred until the end of the heating season or until it is clear that the Subgrantee will have sufficient funds to provide services for all emergencies.
4. Procedure for Tenants in no-heat situations:

The tenant should be instructed to first contact their landlord and inform them of the no-heat situation. If this contact fails to resolve the no-heat situation, then the HEARTWAP Subgrantee must make all reasonable efforts to contact the landlord and inform them of their responsibilities for providing heat under the State Sanitary Code (105 CMR 410).

5. A client may receive HEARTWAP services even if they received similar assistance in previous years. However, Subgrantees should thoroughly evaluate the history of any heating system that requires repairs on a yearly basis and consider if replacing the system is a better option provided funds are available.
6. Heating system work for ineligible or vacant units cannot be paid for with HEARTWAP funds.

B. Service Limitations

To benefit low-income ratepayers, Subgrantees should maximize investor-owned and municipal utility fund contributions for all heating system activities whenever possible. Supplemental federal, state, or Subgrantee funds, donations from charitable organizations or family contributions are strongly encouraged. Low-income client contributions should be the last option and should be limited to those instances when the cost of the HEARTWAP work is in excess of the maximum allowable and no other resources are available. WAP funds cannot be used as an in-kind contribution.

1. Owner Assistance: A maximum of \$2,700 may be spent on the heating system of an eligible owner in any program year for warm air furnaces, \$3,000 for forced hot water boilers and \$3,250 for steam boiler. Additional funds are available for heating system replacements in areas served by municipally-owned utilities; in those cases, agencies may spend up to \$4,700 for forced warm air furnaces, \$5,200 for forced hot water boilers and \$5,700 for steam boilers. The costs associated with fuel tank replacements and asbestos abatement are not included in these maximum expenditures. See Section III. E for additional information.

The maximum HEARTWAP payment for asbestos abatement is \$1,900 for an eligible homeowner.

2. Tenant Assistance: Eligible Tenant/Ineligible Property Owner

A maximum of \$1,000 may be spent in any one (1) program year on the heating system of an eligible tenant when the property owner is ineligible.

If the property owner is ineligible for HEARTWAP but their tenant is eligible and it is determined that a) some form of heating system assistance will be provided to the tenant and b) some degree of asbestos abatement is necessary in order to provide the heating system assistance, and then the property owner and the Subgrantee must at least split by 50%/50% the cost of the necessary asbestos abatement. The Subgrantee should make every effort to have the property owner assume as much of the cost as possible. Under no circumstance may the Subgrantee contribute more than 50% of the cost for the asbestos abatement activity, or up to \$950, whichever amount is less.

The maximum contribution that a Subgrantee can make towards asbestos abatement in situations where both the tenant and property owner are LIHEAP eligible is \$1,900.

If the tenant's heating system needs to be replaced, and the ineligible property owner or other alternative funding is available to contribute the difference between the \$1,000 cap and system replacement cost, then the agency may contribute to the cost of the heating system.

Eligible Tenant /Eligible Property Owner

If both the Property Owner and the Tenant are eligible, any needed heating system services may be provided to the tenant up to the maximum HEARTWAP expenditures.

Ineligible Tenant/Eligible Property Owner

If the property owner is HEARTWAP eligible but his or her tenant is ineligible, and that tenant needs heating system service, **no service** may be provided for that tenant using HEARTWAP funds.

3. Common Heating: Definition: A common heating system that provides heat to more than one household in a building of two or more units.

Policy: A building of up to six (6) units, in which one or more of the households are HEARTWAP eligible, may receive heating system assistance in a sum equal to the maximum amount allowable for the specific heating system activity.

- Examples:
- 1) In communities served by investor-owned utilities: A common heating system replacement in up to a six-family building cannot exceed \$2,700 for a warm air furnace or space heater, \$3,000 for a hot water boiler or \$3,250 for a steam boiler.
 - 2) In communities served by municipality owned utility: A common heating system replacement in up to a six-family building cannot exceed \$4,700 for a warm air furnace or space heater, \$5,200 for a hot water boiler or \$5,700 for a steam boiler.
4. Building Eligibility: Multi-family buildings, of seven (7) or more units, are ineligible for any HEARTWAP assistance.
 5. Vacant Units: Vacant units are ineligible for HEARTWAP assistance.
 6. Special Projects: HEARTWAP assistance, provided in conjunction with the weatherization of Group Homes, Shelters, and Rooming Houses, is limited to those projects in which a non-profit organization owns the dwelling in question. Prior DHCD approval is required in all cases.
 7. Free Standing DHW: Free standing domestic hot water heaters (DHW), including storage tanks, instantaneous tankless and indirect-fired water heaters are not eligible for direct assistance under HEARTWAP. A Subgrantee may become involved in domestic hot water situations only when the problem is directly related to the operation of the primary space heating system.
 8. Oil Tank Replacement: Oil tanks may be replaced when leaking and irreparable or when in an unsafe condition. The maximum expenditure for eligible owners is \$2,000 (or \$2,300 if the oil line is replaced as part of the installation). The cost the permit is included in the maximum. The cost of an oil tank replacement is not included in the maximum allowable expenditure for other heating system measures such as a replacement or repairs.
 9. Oil Line Replacement: Oil lines may be replaced as needed for property owners with a \$300 maximum. The cost of a permit may be an additional charge.

C. Building Permits

All contractors must apply for and pay all applicable inspection permits, certificates of inspection, and license fees related to heating system work. The HEARTWAP Subgrantee must obtain written documentation that all applicable permit applications have been submitted to the appropriate code enforcement office prior to any payment being made to the contractor. Acceptable proof of documentation is as follows:

- Canceled check (both sides photocopied),
- Stamped, signed, or officially designated application to install by the local governing authority,
- Receipt from local governing authority,
- Copy of the actual permit; (if it is posted on-site, document it),
- Letter from governing authority stating permit has been applied for, or

- A telephone confirmation of the permit number from the local governing authority. This confirmation must be documented in the client file; (date of phone call, name of contact person, and date of permit application).
- Digital photo of the permit posted on-site.

All documentation must include the client's name and/or address.

Codes and required permitting which may be associated with the servicing or installation of primary space heating systems in residential buildings are:

- Electrical
- Fuel Gas
- Plumbing
- Fuel Oil
- Building
- Sheet Metal

D. Proof of Ownership

When the cumulative total of HEARTWAP assistance for the entire program year is \$1,000 or greater, proof of ownership of the dwelling unit is required prior to assistance being rendered.

Acceptable forms of documentation demonstrating proof of ownership are as follows:

- Deed to the Property
- Mortgage Statement
- Homeowner's Insurance
- Written Verification from Assessor's Office
- Property Tax Bill
- Verification of a Life Estate

In situations where the ownership of the property is not clear and the eligible occupant is related to the owner of record and the occupant is responsible for maintenance and related housing bills (i.e. utilities, water/sewerage, property taxes) for the property they occupy, Subgrantees may consult DHCD to determine if the occupant should be identified as the person responsible for maintaining the heating system and treated as an owner for HEARTWAP purposes. Permission to do work from the owner of record is required as long as the listed owner is available.

A copy of the proof of ownership documentation must be maintained in the client's file.

E. Combustion Efficiency Testing

The contractor servicing or installing heating equipment must include the results of a combustion efficiency test for every service that involves altering the combustion characteristics of the heating system as well as for all new boiler and furnace installations. The installation of power vented or direct vented gas heating systems must include a suitable, re-sealable combustion efficiency test hole in the flue pipe installed by the installing contractor unless prohibited by the equipment manufacturer or local code enforcement officials. When present, the test hole of a direct vent system must be sealed to prevent the escape of combustion products in such a manner that allows access for future testing. Methods to accomplish this include a threaded bolt (stainless steel or PVC) with minimal intrusion into the flue and appropriate high temperature sealant on the threads or commercially available plugs. High temperature tape is not an acceptable alternative.

Subgrantee technical staff must complete combustion efficiency and safety testing as part of the Quality Control Inspection. If unable to test a flue gas sample at the breach, testing may be completed at the outlet for sidewall vented appliances. Ambient CO testing must be completed on

all units. All Q.C. Inspectors must have appropriate tools and materials available during their inspection to access, test the unit and reseal the test hole.

F. Contractor Selection

Depending upon the situation, either service dealers of record or contractors hired through the procurement process may be used to perform HEARTWAP heating system work. The choice between the use of the two, except when a primary heating system is being replaced, is largely dependent upon the HEARTWAP activity in question and the contractor's compliance (including the dealer of record) with DHCD requirements.

G. Coordination of DHCD Energy Programs

The purpose of a Memorandum of Understanding/Coordination Plan is to ensure local coordination between HEARTWAP, LIHEAP and DOE Weatherization and to ensure that clients receive the full benefit of all services.

HEARTWAP requires that a Memorandum of Understanding and/or Coordination Plan is completed between Subgrantees that operate separate DHCD energy programs in the same community. Coordination Plans are not required for agencies that run all three programs. The Coordination Plan is a statement of how the Subgrantee will ensure that the WAP Coordinator and/or the HEARTWAP Coordinator and/or the LIHEAP Coordinator will share the activities of each program with the other and how the coordinators will ensure that eligible clients receive the full benefit of all DHCD energy programs.

H. Cost Maximums

DHCD has established the following cumulative maximum costs for HEARTWAP heating system activities that occur during the course of the HEARTWAP FY 2016 (October 1, 2015 - September 30, 2016):

Clean, Tune and Evaluate (CTE)	\$125 LP and Natural gas; \$150 for Oil; \$300 Condensing Gas Boilers
Burner Replacement	\$400
Gas on Gas Stoves	No more than 50% (maximum of \$300)
Heating System Repairs	\$1,000 without a waiver (see Section III.B.)
Oil Line Replacement	\$300 (plus cost of permit)
Oil Tank Replacement	\$2,000 (\$2,300 including Oil Line Replacement)

<u>Heating System Replacement</u>		<u>Municipal Utility Client</u>
Owner Warm Air Heating System Replacement	\$2,700	\$4,700
Owner Hot Water System Replacement	\$3,000	\$5,200
Owner Steam System Replacement	\$3,250	\$5,700
Tenant Heating System Replacement (Ineligible Property Owner)	\$1,000	
Allowable Retrofit Measures (Waiver available w/DHCD approval)	\$1,000	
Asbestos Abatement <u>Owner:</u>	\$1,900	

Tenant: \$950 or 50%, whichever is less, when the landlord is not LIHEAP eligible.

NOTE: Limits on each of the costs may be different from what is stated above depending upon a specific requirement within an activity. See Part III of this Guidance for specific cost limitations on each activity.

I. Service Dealer of Record

The Service Dealer of Record is the company that performs primary heating system activities for the HEARTWAP client. HEARTWAP Subgrantees must assign all primary heating system activities, except primary heating system replacements, to the client's Service Dealer of Record except when: a) the Service Dealer of Record does not meet DHCD's minimum insurance, license, or contractual requirements, or b) the Service Dealer of Record has an unacceptable history as documented by the Subgrantee, or c) the Service Dealer of Record's price for a given measure is excessive based on competitive proposals.

In those instances when the Service Dealer of Record cannot or will not perform the needed heating system activity, the Subgrantee can assign work on an equitable or rotational basis to contractors chosen as the result of the HEARTWAP Contractor Procurement process.

Service Dealers of Record may participate in HEARTWAP at any time as long as they meet the minimum DHCD requirements for participation (i.e. licensing, insurance, contract for services).

J. Client Education

Subgrantees are required to provide HEARTWAP clients with information regarding the specific heating system activity they are receiving, including recommended maintenance and product and labor warranties.

K. Emergency Situations

An emergency situation in terms of heating system activities is defined as follows: no heat can be produced by the primary heating system and the no-heat situation could endanger the life, health, or safety of the household members. The Subgrantee bears the responsibility of documenting an emergency situation, if it is not readily apparent on the contractor's invoice. Due to procurement regulations and the need to obtain prior DHCD approval, heating system replacements cannot be performed on an emergency basis until all program requirements are met.

L. Fuel Type Conversions

The cost of converting from one primary fuel source to another may be an allowable HEARTWAP expense under some circumstances. Consultation with DHCD and prior approval is required for all fuel conversions.

M. Fuel Type Eligibility

The following fuel types are eligible under the HEARTWAP for heating system assistance: oil, gas (propane, natural), kerosene, coal, wood, (cordwood and pellet), and electric.

N. Licensing, Insurance, and Contractual Requirements

All Contractors working in the HEARTWAP must sign a Contract for Services with the HEARTWAP Subgrantee. This contract must meet the minimum requirements outlined in the HEARTWAP Procurement Guidance. This requirement includes Service Dealers of Record.

The following are the licensing requirements for service technicians working in the HEARTWAP:

- A servicing technician completing any work on oil-fired equipment must possess a current Certificate of Competency as an Oil Burner Technician from the Commonwealth of Massachusetts.
- A servicing technician completing any work on gas-fired heating equipment, must be a Gas Utility Technician or possess a current Plumbers or Gasfitters license from the Commonwealth of Massachusetts.
- A servicing technician completing any work on solid fuel heating equipment must possess a current Solid Fuel-Burning Appliance Installer Construction Supervisor License (SFCSL) from the Commonwealth of Massachusetts.
- A servicing technician completing work on any electric heating equipment must be an electrician licensed by the Commonwealth of Massachusetts.
- A servicing technician completing work on duct work or appliance venting system must possess a Sheet Metal Workers license from the Commonwealth of Massachusetts.

Contractor’s General Liability:

All Contractors and Service Dealers of Record involved with the HEARTWAP shall maintain insurance coverage as listed below with respect to the operations of the Program. This insurance shall be provided at the Contractor’s expense and shall be in full force and effect for the full term of the Contract. All policies shall be issued by companies authorized to write that type of insurance under the laws of the Commonwealth of Massachusetts.

Contractors shall provide the following minimum coverage with respect to the operations performed by any employee, subcontractor or supplier:

Bodily Injury and Property Damage	\$1,000,000 each occurrence \$1,000,000 general aggregate
Products and Completed Operations	\$1,000,000 aggregate
Personal and Advertising Injury	\$1,000,000 each occurrence

The policy shall include coverage relating to explosion, collapse, and underground property damage and shall include contractual liability coverage.

Workers’ Compensation:

Provide the following coverage in accordance with M.G.L. c.149 34A and c. 152 as amended:

Workers’ Compensation Coverage A	Provide Statutory Minimum
Workers’ Compensation Coverage B	\$500,000 each accident \$500,000 disease per employee \$500,000 disease policy

If a company claims exemption from the Workers' Compensation requirement the owner must provide a notarized statement detailing the reasons for exemption.

Contractors must provide the Subgrantee with valid Certificates of Insurance detailing the coverage listed above.

In addition to the provisions listed above, all Asbestos Abatement contractors shall provide evidence of specific coverage under its Commercial General Liability policy. The policy shall:

1. be written on a "true occurrence" basis without any "sunset" clause;
2. have pollution exclusion amended to add back coverage for all pollution claims;
3. Include separate products and completed operations coverage which shall be maintained for two (2) years after Substantial Completion of the project.
4. provide the following limits of insurance:

Bodily Injury and Property Damage	\$1,000,000 each occurrence
	\$1,000,000 general aggregate
Products and Completed Operations	\$1,000,000 aggregate
Personal and Advertising Injury	\$1,000,000
Fire Damage	\$ 50,000
Medical Expense	\$ 5,000

O. Parameters of a Primary Heating System

A primary heating system is the space heating system in an eligible dwelling unit that provides for the majority of the space heating needs of the residents. The primary heating system for HEARTWAP is defined as any component of a residential space heating system which:

- Distributes heat (ductwork, baseboard, pipes or radiators, etc.),
- Provides for, or controls combustion (furnace, boiler, burner or safety controls),
- Ventilates products of combustion (flue pipe or chimney, etc.),
- Addresses code compliance measures that relate directly to the heating system (electrical, fire, plumbing or gas), and
- Stores or supplies fuel directly to the heating system (tank or fuel line).

P. Property Owner/Tenant Agreements

Attachment A, "HEARTWAP Costs, Activities & Requirements," outlines DHCD's regulations regarding when a Property Owner/Tenant Agreement is required. When an Agreement is required, it must be completed in its entirety, including authorized signatures and dates.

If a property owner refuses to sign a Property Owner/Tenant Agreement when it is required for heating system activities, then the tenant cannot receive HEARTWAP assistance. If an unsafe or inoperable condition exists, the Subgrantee's recourse is to inform the local Board of Health.

Q. Quality Control

Subgrantees are required to perform Quality Control (Q.C.) inspections on HEARTWAP activities as stated in Attachment A and in Part II of this Guidance. Inspections must be documented, signed, dated, and filed in client folders. All Q.C Inspections must include a combustion efficiency test, a

carbon monoxide (CO) test of the flue gas and ambient air, and gas leak detection results. If there were any problems identified during the first Q.C. visit, the resolution of those problems must be documented in the follow-up Q.C. visit. Inspections must be completed by DHCD trained agency staff members.

No payments may be made to contractors before an acceptable Q.C. has been completed on a burner or system replacement, tank replacement, asbestos abatement, or any CTEs, repairs or retrofit measures with a cumulative cost of \$600 or more.

R. Repairs vs. Replacements

If the replacement cost of a heating system component is equal to or less expensive than the repair cost, then the replacement rather than the repair should be considered. (For example, if it costs less to replace an entire oil burner than to replace the motor and transformer, a Subgrantee must replace the burner rather than the individual components.) If the cost of repairs to the heating system are determined not to be cost-effective, that is, the aggregate cost of all work necessary to restore the system to acceptable levels of efficiency, safety and durability is excessive, then the Subgrantee should consider requesting DHCD's permission to replace the heating system prior to authorizing repair work.

S. Retroactive Service Policy

There are occasions when a client may arrange to receive their own heating system assistance either before being determined LIHEAP eligible or when a heating system emergency occurs and the Subgrantee is not available (weekends, evenings) or cannot arrange for service. Such occasions should be rare and monitored closely.

The Subgrantee, when informed that emergency heating system work has already been completed, and when satisfied that the client had no other recourse but to arrange for the service themselves, may seek to determine the income eligibility of the client at the time of the service. If it is determined that the client was eligible at the time of the emergency service, the Subgrantee may pay for the activity, provided that the contractor's work meets all DHCD's requirements. Additionally, the contractor must fulfill all HEARTWAP Contractor Procurement requirements.

In those situations where the client has arranged for their own emergency work, the work permit requirement becomes moot, as the work has already happened. However, the Subgrantee must seek the property owner's signature on a Property Owner/Tenant Agreement, if applicable, though DHCD recognizes many property owners may be reluctant to agree to the requirements of the agreement "after the fact".

All Subgrantee payments associated with the "Retroactive Service" policy must be made directly to the contractor who provided the service, not to the client. A HEARTWAP or WAP client may never receive a direct payment from a Subgrantee.

In those instances where the client has made payment to the contractor, the Subgrantee must ensure that the client will be appropriately reimbursed before the Subgrantee may authorize payment to the contractor.

At no time will the Subgrantee assume an obligation for heating system work, whether it is a tenant or landlord who initiated the work, due to an emergency no-heat situation in a rental unit.

According to the State Sanitary Code, the landlord is legally obligated to provide and maintain in good operating condition the facilities for heating the dwelling unit. However, if the landlord is HEARTWAP eligible, the eligible tenant is entitled to all allowable service.

T. Service Policies

Service policies are **not** an allowable HEARTWAP expense. Any heating system related work which is a measure covered by a client's Service Policy Agreement is not an allowable HEARTWAP expenditure.

U. Permanent vs. Temporary Space Heater

A permanent space heater is a vented primary heating system for a dwelling unit that is typically situated in the living space and does not have a distribution system. A solid fuel stove (wood, coal, or pellet) or an electrical appliance is not to be considered a space heater under this provision of the HEARTWAP Guidance. Only properly vented permanent space heaters that meet Massachusetts State code, or can be brought to code, may receive HEARTWAP assistance.

During a no heat emergency situation, a HEARTWAP Subgrantee may loan a portable space heater to an eligible household as a temporary measure until the no heat emergency is rectified. A portable space heater is not permanently vented to the outside or fixed to any surface. DHCD recommends that the safest most effective temporary source of heat be used. Portable oil-filled electric radiators are a safe relatively inexpensive source of temporary heat.

Under no circumstance can unvented combustion space heaters be loaned to HEARTWAP eligible clients.

A portable space heater is an inventory item, and is an allowable purchase through the Non-Expendable Equipment HEARTWAP budget line item. Under no circumstance can a Subgrantee charge the cost of a portable space heater to the heating system allocation line item.

The only type of space heater that may be charged to the heating system allocation line item of the HEARTWAP budget are those space heaters that are permanently installed in a client's home.

V. Warranties for Heating Equipment and Installation

A one (1) year warranty for materials and installation must be provided to the Subgrantee in writing by the contractor for all burner or heating system replacements. The warranty for the materials would be the manufacturer's warranty and would be secured by the contractor when they secure the materials. At the time of the quality control inspection performed by the Subgrantee, the Subgrantee bears the responsibility to pass on to the client a copy of the warranties that the contractor has already made available to the Subgrantee. The warranties can be a useful education tool. A Subgrantee may pay the labor costs associated with the replacement of a warranted heating system component when the manufacturer does not warranty labor. This payment is conditional upon the fact that neither the installing contractor nor client is responsible for the system component defect. Funds should be obligated only after consultation with a member of the DHCD Staff.

W. Work Permits

A signed work permit must be obtained from the property owner or their agent prior to beginning most heating system activities in HEARTWAP. Attachment A describes those situations requiring a work permit and Attachment B is the work permit form. Without a signed work permit, when required, the Subgrantee may not begin any non-emergency work on the heating system.

NOTE: Heating system emergencies must be documented as such. In these situations, the necessity of obtaining a signed work permit would be waived. Heating system activities that are documented as an emergency must be substantiated by the contractor's invoice.

X. Gas on Gas Stoves

The Subgrantee may contribute no more than 50%, or \$300, whichever is less, towards the replacement of a gas on gas stove (a.k.a. gas log stove) when that stove is the primary source of heat and is found to be unsafe or inoperable. Such replacement, purchase, and installation may only occur when completed in accordance with the policy for space heater replacements. DHCD recommends evaluating alternatives to replacing a gas log when appropriate.

Y. Domestic Hot Water Supply:

A Subgrantee may not become involved in domestic hot water situations when it is not directly related to the operation of the primary space heating system. Tankless coils can be replaced when their malfunction directly affects boiler operation, such as the over-pressurizing of the boiler.

Z. Work Estimates

Payment to a contractor for costs associated with providing a job estimate is not an allowable HEARTWAP expense.

AA. Firomatics

All Firomatic switches must indicate that they are UL approved. Firomatic switches must be upgraded to code whenever a permit is required. Source: Mass. Electrical Code.

BB. Extended Manufacturer's Warranties

Extended manufacturer's warranties are **not** an allowable HEARTWAP expense.

CC. Contractor Travel Time / Tolls

A contractor's travel time and/or travel expenses are **not** allowable HEARTWAP expenses.

DD. Chimney Liners

The National Fire Prevention Association (NFPA) 54 Revised Edition, as adopted by the Massachusetts Fuel Gas Code, requires that all gas fired heating system installations be vented into chimneys that are properly lined. Subgrantee staff and contractors must ensure compliance with NFPA 54 whenever a permit is required on a gas appliance installation. Liners may be required in oil installations. **Exception:** Where permitted by the authority having jurisdiction, existing

chimneys shall be permitted to have their use continued when an appliance is replaced by an appliance of similar type, input rating, and efficiency.

EE. Duct Cleaning

The cleaning of the distribution ducts of a forced warm air heating system is not an allowable HEARTWAP expenditure unless there are documented health and safety concerns and only then with prior DHCD approval. If the duct cleaning is necessary due to cracked heat exchanger of the previous furnace, the Subgrantee should first consult with the homeowner about the possibility of using the homeowner's property insurance as a resource.

FF. Carbon Monoxide Detectors

Carbon Monoxide Detectors are an allowable HEARTWAP measure and expenditure for the purpose of complying with 248 CMR 5.00 in conjunction with the installation of new sidewall vented appliances (see WAP-IM-2005-023).

II. CLIENT FILE DOCUMENTATION

The following is a listing of forms and information which, when applicable, must be in all HEARTWAP client files.

1. Certification of Eligibility
 - a. Copy of certified LIHEAP application for the current LIHEAP year, or
 - b. LIHEAP application number supported by an available computer printout that verifies the client's eligibility and necessary household characteristics.
2. Work Permits: signed by property owner. (See Attachment B "Work Permit" and Attachment F "Asbestos Abatement Work Permit").
3. Tenant/Landlord Agreement: filled out in its entirety, signed and dated by the property owner or their agent, the eligible tenant, and the Subgrantee.
4. Work Justification
 - a. WAP referral along with the WAP auditor's combustion efficiency and combustion safety test results.
 - b. Justification for no-heat calls and repair work must be documented in writing by the heating contractor completing the work and/or HEARTWAP staff person authorizing the work.
 - c. Justification for heating system replacements requires that the reason for the replacement is clearly documented in writing by a heating system contractor and/or a HEARTWAP technically trained staff person. Additional documentation must include a copy of the Heating System Request Form that was sent to DHCD and a copy of the email approval from DHCD. Digital photo of the existing system whenever possible.
 - d. When an oil tank or fuel line is replaced, written justification for replacing it must be included in the client file.
5. Contractor Invoice
 - a. Itemized list of all parts installed and the work that was performed.
 - b. Statement explaining why the work was required, if not previously authorized by the Subgrantee.
 - c. Combustion efficiency test results for all CTEs, burner replacements, system replacements and retrofits. Whenever possible, contractors should perform combustion efficiency tests on all repairs.
6. Quality Control Form
 - a. Must be signed and dated by the Quality Control Inspector.
 - b. Combustion efficiency test results for all quality control visits are required.
 - c. Carbon monoxide test results of flue gases and ambient air.
 - d. Gas leak test results for all natural gas and propane systems.
 - e. Observations regarding code issues and the overall condition of the heating system.
 - f. Notation assessing whether the work was acceptable or not, and if not, follow-up documentation that the problem was resolved.
 - g. Digital photo of the heating system.

7. Proof of Ownership
Written documentation that confirms ownership is required when the total program assistance for the program year exceeds \$1,000. See Part 1, Section D of this Guidance for acceptable documentation options.

8. Building Permits
Verification that all applicable permit applications were submitted to the local authority having jurisdiction.

9. Asbestos Abatement
 - a. Mass Department of Environmental Protection DEP Asbestos Notification Form (ANF).
 - b. Air Sample results (not applicable if glove bag method used as indicated on ANF)
 - c. Disposal Manifest

See Section IV. Asbestos Abatement Procedures and Regulations for additional information

III. ALLOWABLE HEATING SYSTEM ACTIVITIES AND SPECIFIC RULES AND REGULATIONS

A. Clean/Tune/Evaluate (CTE) of a Primary Heating System

1. Definitions:

- a. The cleaning of heat exchanger surfaces, tuning to maximize efficiency of the unit and providing an evaluation of the condition and additional recommended work (if any) of a primary space heating system.
- b. The cleaning of a chimney that ventilates products of combustion from a primary space heating system.

2. Policy and Cost Limitation:

a. Policy on Oil-Fired Heating Systems:

For an oil-fired system, a CTE is allowable for LIHEAP eligible clients if that household has not had a CTE within the current heating season. A complete CTE is required and not just a tune-up of the system.

Cost Limitation: \$150

b. Policy on Gas-Fired Heating Systems:

The HEARTWAP policy on CTEs for a gas-fired system is that a clean/tune/evaluation is allowable once every three (3) heating seasons for LIHEAP eligible clients unless problems exist which may justify a CTE. Exception: A CTE for a high efficiency modulating condensing gas boiler is allowable annually.

Cost Limitation: \$125 (\$300 for modulating condensing gas boilers)

c. Policy on Solid Fuel Heating Systems:

The HEARTWAP policy on cleaning a wood, pellet, or coal stove is that the stove and the chimney should be cleaned annually.

Cost Limitation: \$150

3. General Rules Applicable to CTE Policy:

- a. Prior to undertaking a CTE, the Subgrantee is required to obtain a Work Permit on those occasions when the client's Service Dealer of Record is not doing the work.
- b. Post-efficiency test results are required following all CTEs. (See Attachment C for the suggested "Heating System Efficiency Report".)
- c. "Soot sticks" are an **unacceptable** alternative to brushing and vacuuming a furnace or boiler.

NOTE: The authorization of CTEs, during limited funding periods, is at the discretion of individual Subgrantee providers. If the client is receiving services through the DOE WAP and a cleaning is needed as determined by the WAP energy audit, then as long as HEARTWAP funds are available, the necessary work must be done. Extensive Subgrantee CTE programs require the prior approval of DHCD.

4. Specific Procedures for CTEs in Relation to Fuel Source:

a. Oil Heat CTE Procedures

- Check for oil leaks
- Check chimney base and flue pipe
- Check fan belts and blowers
- Check operation of all safety controls
- Check pump pressure
- Check barometric damper operation
- Check thermostat operation and location
- Flush and test low water cut-off
- Lubricate all motors
- Inspect and replace all filters as necessary
- Clean or change water glass
- Clean pump strainer and inner housing
- Replace nozzle
- Clean or replace electrodes
- Clean, brush and vacuum boiler and furnace thoroughly
- Adjust fuel/air for proper combustion
- OPTIMIZE THE FIRING RATE. Fire the boiler or furnace at the lowest possible rate to provide adequate heat and, if applicable, hot water
- Complete a post-combustion efficiency test and smoke and draft readings
- Complete ambient and flue gas carbon monoxide tests
- Document major code violations
- Provide the Subgrantee with a written evaluation of the client's heating system

b. Gas Heat CTE Procedures

- Complete Service consistent with manufacturer's recommendations
- Check operation of all safety controls
- Check operation of all electronics and controls
- Check thermostat operation and location
- Check thermocouple if applicable
- Check chimney base and flue pipe
- Adjust pilot and burner if applicable
- Inspect and replace all filters as necessary
- Lubricate all motors as needed
- Flush and test low water cut-off
- Clean or change water glass
- Clean burner, combustion chamber and heat exchange surfaces
- Complete a post-combustion efficiency test
- Complete ambient and flue gas carbon monoxide tests
- Document major code violations

- Check for gas leaks
- Provide the Subgrantee with written evaluation of the system

c. Solid Fuel Heat Cleaning and Service Procedures:

- Check to be certain that the stove and chimney were thoroughly cleaned.
- Check to ensure that the stove's installation meets the manufacturer's instructions.
- Check to ensure that the stove and chimney and their installation comply with the Massachusetts State Building Code.

B. Repairing a Primary Heating System

1. Definition

- a. The repair or replacement of a component or an individual part of a burner in an existing primary heating system must be considered a heating system repair.
- b. Measures defined as "Heating System Retrofits" and "Burner Replacements" are not to be considered repairs. See Part III, Section F of this Guidance for a list of allowable retrofit measures.

2. Policy and Cost Limitation

- a. Policy: The HEARTWAP policy on primary heating system repairs is that repairs are an allowable expense when an unsafe or inoperable condition exists; an emergency situation need not be present, though it can be.
- b. Restrictions on Tenant Services Where the Landlord is Ineligible

During the heating season (October 1 - April 30), Subgrantees may do the work necessary to restart systems in an emergency after following the procedure outlined in Section I.A.4. Subgrantees may authorize such emergency repairs up to a maximum of \$1,000. (Other repairs and code requirements that are not necessary to restart the system are to be considered an unallowable expense).

During the non-heating season (May 1 - September 30), repairs and other code requirement work for tenants with ineligible landlords is generally not allowed.

- c. Cost Limitation

The cumulative cost of heating system repairs may not exceed \$1,000 during the grant period without requesting a waiver from DHCD. This waiver is intended to allow Subgrantees to repair or replace expensive components or controls of an efficient heating system that is in good condition. Subgrantees must carefully evaluate the overall condition of heating systems before authorizing repairs in excess of \$600-\$700 or requesting a waiver of the \$1,000 maximum.

3. Rules and Regulations Applicable to Heating System Repair Policy

- a. Non-Emergency Repairs under \$400

Prior to beginning any repair in this cost category, the Subgrantee is required to obtain a Work Permit.

b. Non-Emergency Repairs greater than \$400

Prior to beginning any repair in this cost category for an eligible owner-occupied dwelling, the Subgrantee is required to obtain a Work Permit.

Prior to beginning any repair in this cost category in a rental unit occupied by eligible tenants, the Subgrantee is required to obtain a Work Permit, and should make every effort to secure a Standardized Property Owner/Tenant Agreement.

c. All Emergency Repairs

Prior to beginning any emergency repair on either owner-occupied or a rental unit occupied by eligible tenants, the Subgrantee is required to obtain a Work Permit.

d. Exception to Policy

If the Subgrantee is unable to obtain a Work Permit due to the emergency nature of the situation, the Subgrantee may rely on the DHCD policy on Retroactive Service. DHCD recognizes that in emergency situations, it is not always easy or possible to secure the signature of a property owner when the emergency is in a tenant's dwelling unit. When these situations arise, the Subgrantee must encourage the tenant to arrange for the heating system repair.

e. Eligible Repair Items

The following primary heating system components are eligible for repair as part of the HEARTWAP:

NOTE: This list does not include every possible heating system component.

- Air Filter
- Aquastat
- Limit Control
- Low Water Cut-Off
- Nozzle
- Oil Burner
- Burner Motor
- Cad Cell
- Chimney
- Circulator
- Coal Stove
- Combustion Chamber
- Compressor (Heat Pump)
- Condenser Coil (Heat Pump)
- Damper
- Electric Junction
- Heat Pump
- High Tension Lead
- Barometric Damper
- Blast Tube
- Blower
- Boiler
- Orifice
- Pressure Control
- Pressure Regulator
- Primary Control
- Pump
- Radiant Panel
- Radiators
- Relief Valve
- Resistance Element
- Safety Controls

- Electric Service
- Electric Wiring
- Space Heating Pipes
- Flue Pipe
- Fuel Filter
- Fuel Line
- Furnace
- Gas Burner
- Heat Exchanger
- End Cone
- Clean Out Kit (low mass condensing boilers)
- Sidearm
- Space Heater
- Electrode
- Thermostat
- Transformer
- Warm Air Ducts
- Warm Air Filter
- Wood Stoves
- Zone Valves
- Spiro Vent

The repair of steam and space heating pipes, radiators, and warm air ductwork is an allowable expense when the repair is necessary to ensure the operation of the primary heating system.

- f. All air leaks into the combustion chamber, especially joints between sections of cast iron boilers or around fire doors and blast tubes, must be sealed.
- g. All invoices associated with heating system repair must be retained in client files for DHCD monitoring and audits.

5. Quality Control When a Heating System Has Been Repaired

a. Repairs and other measures under \$600

Five percent (5%) of all homes which receive cumulative heating system services under \$600 must receive a quality control inspection.

b. Repairs of greater \$600

All homes (100%) that receive cumulative heating system repairs or other HEARTWAP Services of \$600 or more must receive a quality control inspection.

NOTE: Combustion efficiency and CO tests must be performed on all heating systems receiving a quality control inspection.

- c. See Attachment D for the “Oil-Fired Heating System Quality Control Procedures”.
- d. See Attachment E for the “Gas-Fired Heating System Quality Control Procedures”.

C. Replacing a Fuel Tank that is Leaking, Irreparable or Unsafe

1. Definition

- a. The replacement of an existing fuel oil or kerosene tank used for the storage of the primary heat source fuel which is leaking, irreparable or unsafe.

2. Policy and Cost Limitation

- a. Subgrantees may replace a primary heat source fuel oil or kerosene tank if the existing tank is leaking and irreparable or unsafe.

- b. The cost of the tank replacement is limited to \$2,000 (\$2,300 inclusive of costs associated with the oil line replacement). The cost of the tank replacement is not included in the maximum allowable cost for a household in a grant period. (i.e. the household could receive a primary heating system replacement up to the allowable maximum for the fuel type and a tank replacement up to the allowable maximum in the same program year.) Additional repairs such as fill and vent pipes or cement pads are allowable. Other associated repair costs are included in the maximum allowable annual cost limitations for a client in any program year.

3. Rules and Regulations Applicable to Oil Tank Replacement Policy

- a. Prior to undertaking an oil tank replacement, the Subgrantee must obtain a Work Permit signed by the Property Owner.
- b. Written verification that the tank needs to be replaced must be included in the client file.
- c. Subgrantees must obtain and include in the client file verification that required permit(s) have been obtained.
- d. Fuel tanks in Manufactured Housing Communities are the responsibility of the community owner/operator consistent with the Attorney General's Guide to Manufactured Housing Community Law that can be found here:

<http://www.mass.gov/ago/docs/consumer/manufactured-housing-guide-2009-1.pdf>

Section II.8.h of this guide States:

Oil storage tanks. In recent years, community owner/operators have become concerned about their potential legal liability stemming from the environmental risks posed by leaking underground oil storage tanks. The Regulations require that the cost of removing or replacing an oil storage tank should be initially incurred by the community owner/operator, who is usually better able to pay for or finance these costs upfront. Thus, you may not be charged directly for the removal or replacement of oil storage tanks, but your community owner/operator may eventually recover such costs as capital improvements, in the manner allowed by law. 940 C.M.R. 10.03(2)(n). This general rule applies whether the tank is above or below-ground. There is one exception to the general rule: where your negligence has caused the environmental concern or risk posed by the oil tank, you may be held directly responsible for removing or replacing it. 940 C.M.R. 10.03(2)(n).

Tank replacements in Manufactured Housing Communities must be done consistent with the requirements of the Attorney General's Guide.

4. Specific Standards for Oil Tank Replacements

- a. The tank and the installation of the tank must be in compliance with the regulations outlined in 527 CMR 4.0, the Massachusetts Oil Burner Code.

5. Quality Control of a Tank Replacement

- a. All tank replacements must receive a fully documented quality control visit including combustion efficiency and carbon monoxide testing of the primary heating system.

D. Replacing a Fuel Line that is Leaking, Unsafe or Out of Compliance with Code Requirements

1. Definition

- a. The replacement of an existing fuel oil or kerosene line that is leaking, unsafe or out of compliance with current code requirements and which is used to provide fuel from the fuel storage tank to the primary heat source unit.

2. Policy and Cost Limitation

- a. Subgrantees may replace a primary fuel line if the existing line is leaking or out of compliance with current code requirements.
- b. The cost of the fuel line replacement is limited to \$300. Fuel line replacement costs are not included in the client's repair maximum but are included in the maximum total allowable annual cost limitations for a client. The cost of the permit can be in addition to the replacement cost.

3. Rules and Regulations Applicable to Fuel Line Replacement Policy

- a. Prior to undertaking a fuel line replacement, the Subgrantee must obtain a Work Permit signed by the Property Owner.
- b. Written verification that the fuel line needs to be replaced must be included in the client file.
- c. Subgrantees must obtain and include in the client file verification that required permit(s) have been obtained. The permit fee is in addition to the cost of the fuel line replacement.
- d. Subgrantees may authorize a contractor to replace a fuel line during their performance of a CTE of the client's heating system. The Subgrantee must insure that all permits are applied for and submitted by the servicing contractor.

4. Specific Standards for Fuel Line Replacements

- a. The fuel line and the installation of the line must be in compliance with the regulations outlined in 527 CMR 4.0, the Massachusetts Oil Burner Code.

5. Quality Control of a Fuel Line Replacement

- a. All fuel line replacements must receive a quality control visit including combustion efficiency and carbon monoxide testing of the primary heating system.

E. Replacing a Burner in a Primary Heating System

1. Definition

- a. The replacement of an inefficient, inoperable or unsafe oil or gas burner that is installed in an existing primary heating system.

2. Policy and Cost Limitation

- a. Policy: A primary heating system burner replacement is an allowable activity in a situation where a burner is unsafe or inoperable or the burner has a combustion efficiency of 72% or less after a CTE has been performed.
- b. The cost of replacing a burner is limited to \$400 (not inclusive of required repairs or retrofits).

3. Rules and Regulations Applicable to Burner Replacement Policy

- a. Prior to undertaking any non-emergency burner replacement on an owner-occupied home, the Subgrantee is required to obtain a Work Permit signed by the property owner.
- b. Prior to undertaking a non-emergency burner replacement on behalf of an eligible tenant's heating system, the Subgrantee is required to obtain both a Work Permit and Standardized Property Owner/Tenant Agreement.
- c. Prior to undertaking any emergency burner replacement on an owner occupied home, the Subgrantee is required to obtain a Work Permit signed by the property owner. If this does not or cannot happen due to the emergency situation, the Subgrantee may rely on the DHCD policy on Retroactive Service.
- d. Prior to undertaking an emergency burner replacement on behalf of an eligible renter's heating system, the Subgrantee is required to obtain a Work Permit signed by the property owner. DHCD recognizes that in emergency situations, it is not always easy or possible to secure the signature of a property owner when the emergency is in a tenant's dwelling unit. When these situations arise, the Subgrantee must encourage the tenant to arrange for the burner replacement themselves, the tenant thus accepting the responsibility for allowing a contractor into the property owner's home. The Subgrantee may rely on the DHCD policy on Retroactive Service in such instances.

The Subgrantee must make every effort to obtain the signature of the property owner on the Standardized Property Owner/Tenant Agreement before the burner replacement occurs or, if not possible at that time, after the work is completed.

- e. Prior to replacing an oil or gas burner, the Subgrantee must obtain and retain in the client's file written documentation from a licensed heating technician attesting to the burner's unsafe, inoperable, or inefficient condition.
- f. The service technician's combustion efficiency test results, and verification that all required permits were applied for, must be included in the client file prior to invoices being paid.
- g. A CTE should be completed before a Subgrantee proceeds with the replacement of an oil or gas burner unless the unit is inoperable, or the performance of a CTE would only marginally affect the efficiency of the existing unit.

Before replacing an oil burner in an older (15 years or older) forced warm air furnace, or an older boiler that may require significant additional work, (i.e. new combustion chamber and primary control), the Subgrantee technical staff and the installing contractor must evaluate the total cost of installing the package and consider if a new heating system may be a better long term investment.

4. Specific Standards for Burner Replacements in Relation to Fuel Source

a. Oil Heat Burner Replacement Standards:

- The burner and the installation of the burner must be in compliance with the regulations outlined in National Fire Protection Association NFPA-1 Fire Code and 527 CMR 4.0, the Massachusetts Oil Burner Code.

b. Oil Burner Replacement Performance Standards:

- An oil burner replaced in coal converted boiler or furnace must attain a minimum combustion efficiency of **75%** with a **0 to a trace** of smoke or the servicing technician must provide the Subgrantee with written justification detailing the reasons why this minimum level of efficiency could not be attained.
- An oil burner replaced in design boiler or furnace must attain a minimum combustion efficiency of **79%** with a **0 to a trace** of smoke or the servicing technician must provide the Subgrantee with written justification detailing the reasons why this minimum level of efficiency could not be attained.

NOTE: Only DHCD Technical Field staff is authorized to grant a waiver of the above standards and contractors must not be paid until such a waiver is granted.

The material standards for replacement oil burners must comply with the following:

- UL 296
- NFPA 31-2006

c. Gas Heat Burner Replacement Standards

The material standards for replacement gas burners must comply with the following:

- ANSI Z223.1 2002
- Commonwealth of Massachusetts Approved

d. Gas Burner Replacement Performance Standard

A gas burner replaced in oil or coal converted boiler or furnace must attain a minimum combustion efficiency of **75%** or the servicing technician must provide the Subgrantee with written justification detailing the reasons why this minimum level of efficiency could not be attained.

5. Quality Control on a Burner Replacement

- a. All burner replacements must receive a quality control inspection, including a combustion efficiency test and a carbon monoxide test, prior to payment being issued to the contractor.
- b. See Attachment D for the "Oil-Fired Heating System Quality Control Procedure".

- c. See Attachment E for the "Gas-Fired Heating System Quality Control Procedure".

F. Replacing a Primary Heating System

1. Definition

- a. The replacement of a dwelling unit's primary space heating system.
- b. The replacement unit may be a furnace, boiler, electric resistance heater, heat pump, space heater or solid fuel stove.

2. Policy and Cost Limitation

- a. Policy: The replacement of primary heating systems is an allowable activity in a situation where an unsafe, inoperable, grossly inefficient or gravity warm air system is present.
- b. Cost Limitation: A maximum of \$2,700 for a warm air furnace, \$3,000 for a hot water boiler and \$3,250 for a steam boiler may be spent on the replacement of a primary heating system. DOE WAP funds cannot be used to supplement HEARTWAP funds beyond cost maximums for any category.

Subgrantees can also request a waiver of up to \$1,250 for a system replacement if the eligible household lives in a community where there is typically utility funding available for heating system replacements but at the time of the installation no funds are available. If this waiver request is used, Subgrantees must ensure that the average expenditure in HEARTWAP funds over the course of the grant does not exceed the maximum allowable for the type of system.

If the eligible household lives in a community that is served by a Municipal Utility, the Subgrantee may request up to \$4,700 in HEARTWAP Heating System Allocation funds towards the replacement of a warm air furnace, \$5,200 for the replacement of a hot water boiler or \$5,700 toward the replacement of a steam boiler. These additional funds must be pre-approved by DHCD and must be requested when the Subgrantee requests approval for the heating system replacement. *The additional funds apply only if there is no investor-owned utility funds available in the municipality for the fuel source of the replacement unit.*

3. Rules and Regulations Applicable to Primary Heating System Replacement Policy:

- a. Prior to the replacement of the primary heating system a Subgrantee must solicit a minimum of three (3) written estimates for the job. If it is impossible to secure three (3) written estimates, at least three (3) telephone quotes must be documented in the client's file. The contractor that is awarded the system replacement job must provide the Subgrantee with a written bid. A contractor's refusal to bid does not constitute a formal bid. The Subgrantee must make a reasonable effort to obtain additional bids in non-emergency situations.

The Subgrantee must have written documentation from a licensed technician or trained HEARTWAP technical staff member that the primary heating system is unsafe or inoperable or not worth repairing to justify the need for the replacement.

Heating system replacements must be awarded to the lowest-priced or highest-rated bidder when the following are considered:

- Price
- AFUE (Annual Fuel Utilization Efficiency)
- Product Warranty Period
- Product Quality
- Installer's Warranty Period
- Quality of Installer's Work

Subgrantees should procure the most efficient equipment with funding available while maintaining an open, competitive and equitable procurement process. Any and all information given to one contractor must be shared with all contractors.

- b. In those instances when the primary heating system to be replaced is in an owner-occupied dwelling, the Subgrantee is required to obtain a Work Permit prior to undertaking the primary heating system replacement.
- c. In those instances when the primary heating system to be replaced heats a LIHEAP eligible tenant's unit and the owner of the home is also LIHEAP eligible, then the Subgrantee is required to obtain both a Work Permit and Standardized Property Owner/Tenant Agreement prior to undertaking the primary heating system replacement.
- d. In those instances where the heating system to be replaced heats a LIHEAP eligible tenant's unit, but the owner is not LIHEAP eligible the maximum allowable HEARTWAP contribution is \$1,000. If the property owner agrees to this cost limitation, then the Subgrantee is required to obtain both a Work Permit and Standardized Property Owner/Tenant Agreement prior to undertaking the primary heating system replacement. The owner must further agree that no payments will be made to the contractor until an acceptable Q.C. visit has been completed by the Subgrantee.
- e. If all things in the bid responses are equivalent (AFUE, warranty, price, quality of service, product), the Subgrantee may give preference to the Service Dealer of Record in the bid procurement process for a system replacement as outlined below.

If all items in the bids are equivalent, and the Service Dealer of Record's bid is no greater than **\$100** above the next lowest bidder, then the Subgrantee may approach (but does not have to approach) the client and offer them the opportunity to contribute to the bid as much as \$100 to the cost of the system replacement. The client could accept this offer if it were important for them to have the Dealer of Record complete the work. If the client chooses not to contribute the sum of the full difference between the bids so that the Dealer of Record can be employed, then the Subgrantee must award the replacement to the lower bidder.

The Subgrantee is prohibited from asking any contractor to match or otherwise lower their bid for the expressed purpose of being awarded the job as the low bidder.

- f. The furnace or boiler selected to be installed must meet the following minimum AFUE ratings for the type of system to be installed unless existing conditions that cannot be remedied prohibit the installation:

Type	Oil	Gas
FHW	85%	85%
FWA	83%	90%
Steam	82%	82%

The AFUE can be determined by requesting a copy of the manufacturer's fact sheet, or reviewing the Directory of Certified Product Performance, posted by the Air-Conditioning, Heating, and Refrigeration Institute (ACHI) at:

<http://www.ahridirectory.org/ahridirectory/pages/home.aspx>.

- g. **Heat Loss Requirements/Heating System Sizing:**
To ensure that the heating system installation is sized properly consistent with the Massachusetts State Building Code, the Subgrantee must complete a heat load calculation based on industry accepted standards (Manual J) for all forced hot water and warm air systems **or** a documented radiation schedule of the square feet of steam required for steam boilers. The results of the heat load calculations must be included on the request form submitted to DHCD. A copy of the heat load calculations must be included in the client file.
- h. The Hartford Loop piping configuration must be installed on all new steam boiler installations. All boiler manufacturers and the ASME consider the Hartford Loop to be good piping practice. Black iron piping must be used for all steam header configurations. Near boiler piping on steam installations must be completed consistent with the boiler manufacturer's requirements in their Installation Manual.
- i. Whenever possible, uninsulated steam pipes should be insulated on new installations to ensure adequate distribution of steam to the radiators. HEARTWAP funds can be used to insulate steam pipes and can be included in the costs of the of the system replacement request. Steam pipe insulation must be completed using a product designed and rated for use on residential steam pipes. Elbows and Tees must be insulated. HEARTWAP Subgrantees may use WAP contractors to provide the pipe insulation installations.
- j. The Subgrantee must submit a heating system request form to DHCD before awarding a primary heating system replacement to a contractor. The completed request form and DHCD authorization must be included in the Client File.
- k. Upon completion of a heating system replacement and prior to payment being made, the installing technician must provide the results of a combustion efficiency test and verification that the required permit applications were submitted to the appropriate authority.
- l. Each primary heating system replacement must receive an acceptable quality control inspection by a technically competent and DHCD trained Subgrantee staff person prior to payment being made. All Q.C. visits must include a combustion efficiency test and a carbon monoxide test.
- m. All invoices associated with the primary heating system replacement must be retained in the client's file for DHCD monitoring and audit review.

Additional Considerations

- a. Prior to requesting DHCD’s approval to replace an oil or gas-fired warm air furnace, the Subgrantee must evaluate the existing ductwork and determine if the installation of downsized replacement ducts and of installing additional cold air returns is appropriate to ensure a balanced system. To the extent possible, HEARTWAP Subgrantees and installing contractors should minimize the use of flexible ductwork. When it is used, the flex duct runs must be as short and straight as possible and adequately supported to ensure minimal restrictions to the airflow.

4. Specific Standards on Primary Heating System Replacements In Relation To Fuel Source:

a. Oil-Heat Primary Heating System Replacement Standards:

i. Material Standards:

- Installation of oil burning equipment, NFPA 31-2006.
- “ASME Boiler and Pressure Vessel Code 1998 Base with 1999 and 2000 Addenda.”
- Minimum AFUE Rating of 83% for Forced Warm Air, 85% for Forced Hot Water, and 82% for Steam.

ii. Installation Standards:

[Commonwealth of Massachusetts 527 CMR 4.00](#), Board of Fire Prevention Regulations on Oil Burning Equipment.

All systems must be installed on solid cement blocks unless space limitations prevent the installation.

All installations must include provisions for follow-up combustion efficiency testing by inspectors (accessible test hole for flue gas sample).

iii. Oil Furnace or Boiler Replacement Performance Standards:

Oil-fired furnace or boiler replacements must attain a minimum post-installation combustion efficiency of 80% with a 0 to a trace of smoke or the servicing technician must provide the Subgrantee with written justification detailing the reasons why this minimum level of efficiency could not be attained.

DHCD Technical staff members are the only individuals authorized to grant a waiver of the above standards, and contractors must not be paid until such a waiver is granted.

b. Natural Gas and Propane Heating Primary Heating System Replacement Standards

i. Material Standards:

- Gas-fired, central furnaces, ANSI Z21.47-2003 and ANSI Z223.1-2002, NFPA 54-2002
 - “ASME Boiler and Pressure Vessel Code 1998 Base with 1999 and 2000 Addenda.”
 - Minimum AFUE Rating of 90% FWA, 85% FHW, 82% Steam.
- ii. Installation Standards:
- [Commonwealth of Massachusetts Fuel Gas and Plumbing Codes.](#)
 - All installations must include provisions for follow-up combustion efficiency testing by inspectors (accessible re-sealable test hole for flue gas sample) unless prohibited by the manufacturer or local jurisdiction having authority.
 - All modulating condensing boilers must include near boiler piping configurations and/or buffer tanks consistent with the manufacturer’s recommendations to ensure that the boiler operates as designed.
 - All systems must be installed on solid cement blocks unless space limitations prevent the installation.
- iii. Gas Furnace or Boiler Replacement Performance Standards:
- Gas-fired furnace or boiler replacements with a gas power burner must attain a minimum post-installation combustion efficiency of 80%. Condensing gas-fired furnace or boiler replacements must attain a minimum post-installation combustion efficiency of 90%.
- c. Solid Fuel Heat Primary Heating System Replacement Standards:
- i. For wood or coal stoves, the material standards are as stated in NFPA 211-2006.
- ii. Installation Standards must be in compliance with the Massachusetts State Building Code consistent with the requirements outlined in 780 CMR 3610.6.8, inclusive, and the Appliance Manufacturer’s installation requirements. Venting of the appliance must be consistent with 780 CMR 6007 inclusive, as well as adhering to the Appliance Manufacturer’s installation and labeling requirements.
- d. Specific Standards on Electric Heating System Replacements:
- i. Material Standards:
- Installation of UL approved equipment
- ii. Installation Standards:
- Commonwealth of Massachusetts Electrical Code

5. Quality Control on a Primary Heating System Replacement

- a. All primary heating system replacements must receive a quality control inspection by a technically competent and DHCD trained Subgrantee staff person.
- b. See Attachment D for "Oil-Fired Heating System Quality Control Procedure".
- c. See Attachment E for "Gas-Fired Heating System Quality Control Procedure".

G. Retrofit Measures for a Primary Heating System

1. Definition and List of Allowable Measures

The installation of any of the following to an existing primary heating system where one did not previously exist:

- Clock Thermostat
- Hydronic Boiler Reset Control/Modulating Aquastat
- Combustion Chamber
- Thermostatic Radiator Valves
- Ductwork (Supply or Return)
- Steam and Hot Water Radiation and Piping
- Cad Cell Relay
- Nozzle Line Pre Heater
- Spillage Safety Switch
- Automatic Water Feed for Steam Systems
- Power Vent
- Chimney Liner
- Inline Fluid Filter (Condensing Gas Boilers)
- Steam Pipe Insulation

2. Policy and Cost Limitation

- a. Policy: The HEARTWAP policy on primary heating system retrofit measures is that they are allowable activities to be conducted either in conjunction with, or apart from, the following activities on oil and/or gas-fired primary heating system activities: CTEs, repairs, burner replacements, and heating system replacements.
- b. Cost Limitation: The cost of all retrofit measures must be charged against the client's maximum assistance for the type of heating system with the exception of a replacement oil line. The cost for the individual measures cannot exceed \$1,000 without prior DHCD approval.

3. Rules and Regulations Applicable to Primary Heating System Retrofit Measures

- a. Prior to undertaking a Retrofit Measure on an owner-occupied home, the Subgrantee is required to obtain a Work Permit signed by the property owner.
- b. Prior to undertaking a Retrofit Measure on behalf of an eligible tenant's heating system, the Subgrantee must obtain both a Work Permit and Property Owner/Tenant Agreement.

4. Specific Retrofit Measures and Material Standards for Oil, Gas and Solid Fuel Systems:

- a. Clock Thermostat: A clock thermostat is a device designed to reduce energy consumption by regulating the demand on the heating system in which it is installed. It uses a temperature control device for interior spaces incorporating more than one temperature control level and a clock or other automatic mechanism for switching from one control to another.

Material Standard: Conformance to NEMA DC 3-1989 (R1996) and Listed by Underwriters Laboratories.

- b. Hydronic Boiler Control/Modulating Aquastat: The automatic boiler temperature reset control allows for using a boiler water temperature which more closely matches the amount of heat needed to maintain comfortable room temperature for a given outdoor air temperature. This control automatically raises the circulating boiler water temperature set point as outdoor temperature drops, and reduces the water temperature setting in milder weather. Energy is saved due to reduced cycling of the burner, and less heat is lost out the stack during the off period.

Material Standard: UL Approved

- c. Thermostatic Radiator Valves: Thermostatic radiator valves provide individual control of radiators, convectors, or baseboards in two pipe steam and hot water heating systems. They effectively allow for the balancing of uneven heat distribution systems.

Material Standard: Commercial Availability

- d. Air Ducts (Warm and Cold) Not Installed in Conjunction with a Replacement Heating System: Air ducts are designed to deliver warm air to the desired areas or return room temperature air to the furnace. Sufficient cold air return should be present, equal to 100% of the warm air distribution.

- e. Steam and Hot Water Radiation and Piping (Not Installed in Conjunction with a Replacement Heating System) are an allowable retrofit measure.

Material Standard: I=B=R approved

- f. Cad Cell Relay: A flame detector which results in a safer, more efficient cycling system.

Material Standard: UL Approved

- g. Spillage Safety Switch: A thermal circuit breaker that provides a means for appliance shut-down in the event of flue blockage or down drafts. When concentrated spillage of the products of combustion occurs from the draft hood, diverter or control, the safety spill switch circuit will open preventing burner operation.

Material Standard: UL Listed Components

- h. Nozzle Line Preheater: A heating element that is installed on oil heating systems to warm the oil before it reaches the nozzle. Heating of the fuel and nozzle assembly improves atomization through reduced viscosity and reduces smoke produced during initial start-up. Preheaters are especially effective when utilized in conjunction with an outside oil tank.

Material Standard: UL Listed Components

- i. Automatic Water Feed: A device installed on a steam system which works in conjunction with the low water cut-out (LWCO) to prevent the steam boiler from running low on water. When the LWCO is activated due to a low water level in the boiler, an electrical switch is activated to open a valve allowing water to enter the boiler until the LWCO is deactivated. The automatic water feed should only be installed in the homes of those clients who due to physical disabilities are unable to properly maintain the water level in the steam boiler.

Material Standard: Commercial Availability; UL Listed Components

- j. Power Vent: A device to ventilate the products of combustion from a furnace or boiler through the sidewall of a home rather than using a standard chimney.

Material Standard: Commercial Availability; UL Listed Components

- k. Chimney liner: An integrated system used to line the flue of an existing chimney to safely ventilate the products of combustion.

Material Standard: Commercial Availability; UL Listed Components; Massachusetts Code Compliance for the appliance(s) being vented through the chimney

- l. Inline Fluid Filter: A filtering system designed to remove impurities in boiler water to ensure clean operation of condensing gas boilers

Material Standard: -Commercial Availability

- m. Steam Pipe Insulation: Insulate uninsulated steam pipes to help ensure that pipes in cold basements maintain an adequate temperature to deliver steam to the radiation.

Material Standard: Commercial availability. Use a product designed and rated for insulating steam pipes. All elbows and tees must be insulated. WAP contractors can be used to complete the work.

5. Quality Control on Retrofit Measures:

- a. All Retrofit measures \$600 or more must receive a Quality Control visit, including combustion efficiency, CO test, and when applicable, a gas leak test.

H. Cleaning, Repairing or Replacing a Space Heater

1. Definition

A vented primary heating system that is situated in the living space and does not have a distribution system. A solid fuel stove or any electrically fired appliance is not to be considered a space heater under this category.

2. Policy and Cost Limitation

a. Policy: The purchase of a new or replacement vented space heater is an allowable HEARTWAP expense for LIHEAP eligible households. The maximum expenditure limit is \$2,700 for an owner or a tenant whose landlord is LIHEAP eligible.

b. Cost Maximums:

Space Heater Cleaning:	\$100
Space Heater Repair:	\$1,000
Space Heater Replacement:	\$2,700 (owner occupied and eligible or both tenant and owner eligible)
Space Heater Replacement	\$1,000 (tenant eligible but owner is not eligible)

3. Specific Standards for Space Heater Heating System Activities:

a. Cleaning:

- Clean the pilot light if present
- Check the thermocouple
- Calibrate the thermostat
- Check the high limit switch
- Check the piping
- Check the proper draft
- Check the blower

b. Repairs:

- Space heaters are eligible for repairs as needed.

c. Replacement:

To the greatest degree possible, Subgrantees shall install direct vented space heaters with an AFUE 80% or greater.

- Gas space heaters must be American Gas Association/ Commonwealth of MA approved.

6. Quality Control Inspections of Space Heater Heating System Activities:

a. Repairs:

Cumulative costs >\$600 require a Quality Control inspection

b. Replacements:

All space heater replacements must receive a quality control inspection prior to contractor payments.

c. Quality Control Inspections:

All Quality Control inspections of Space Heaters must include a CO and gas leak test.

IV. ASBESTOS ABATEMENT PROCEDURES AND REGULATIONS

A. Licensure Requirements:

All contractors involved in the removal, containment, or encapsulation of more than three (3) linear feet of asbestos surface on pipes or ducts or more than three (3) square feet of asbestos surface on structures other than pipes or ducts must possess an asbestos contractor license issued by the Massachusetts Executive Office of Labor and Workforce Development, Department of Labor Standards (DLS).

HEARTWAP Subgrantees must have on file a copy of the asbestos abatement contractor's license, an original certificate of insurance, a signed Contract for Services and a signed Debarment Statement prior to payment being made for any asbestos abatement work performed. Subgrantees are not required to maintain copies of any other DLS mandated certifications.

B. Final Air Monitoring Results:

The collection of air monitoring samples must be performed by a DLS-certified Asbestos Abatement Project Monitor. In no case shall the contractor or an employee of the contractor collect clearance air monitoring samples.

The analyses of all air monitoring samples shall be performed by a DLS-certified Analytical Services Provider. The final air monitoring results must be reported to the HEARTWAP Subgrantee on the letterhead of a DLS-certified Analytical Services Provider prior to the asbestos abatement contractor receiving payment for work performed. The final air monitoring sample must indicate an Asbestos Containing Material (ACM) concentration of less than 0.01 fiber/cc. If the Asbestos Abatement Contractor determines that the abatement will be conducted in the "Glove Bag" removal process, a final air monitoring sample test is not required. The Asbestos Abatement Notification Form must indicate that this abatement technique was utilized.

C. Asbestos Abatement Procedures

HEARTWAP Subgrantees are responsible for the abatement of asbestos material only when there is a potential asbestos hazard to the building's residents due to the proposed weatherization or heating system work.

1. When Asbestos Will Not Be Disturbed and There Is No Abatement:

- a. If the asbestos containing material, most commonly used as boiler, furnace or pipe insulation is in good condition and will not be disturbed by the weatherization or heating system repair or retrofit process, then the asbestos material should remain undisturbed.
- b. If the asbestos containing material is thought to be a hazard to the building's residents but will not be disturbed by the weatherization or heating system repair, or retrofit process, then the building's owner must be notified of the potential hazard.

2. When Asbestos Will Be Disturbed and Abatement Will Be Necessary:

a. If the asbestos containing material will be disturbed by the weatherization, heating system repair, or retrofit process, then the Subgrantee must ensure that the potential hazard is addressed prior to implementing the related weatherization or retrofit measure. The Subgrantee and the homeowner must, in conjunction with the local Board of Health or an asbestos abatement contractor, reach an informed decision regarding the method of abatement to be utilized. The homeowner must sign a Property Owner Asbestos Abatement Work Permit (see Attachment F) prior to work being performed.

b. The potential asbestos hazard must be addressed in accordance with the applicable Department of Public Health Asbestos Abatement Regulation: 105 CMR 410.353:
Asbestos Material Used as Insulation or Covering on Pipes, Boilers or Furnaces.

- i. Encapsulation of the asbestos material in accordance with 105 CMR 410.353 and 310 CMR 715

Encapsulation of asbestos material may only be performed by a licensed, experienced and knowledgeable asbestos abatement contractor; the encapsulation must be performed according to the procedure for encapsulation outlined in "Asbestos Encapsulation in Conjunction with WAP and HEARTWAP Work."

- ii. Repairing the asbestos material in accordance with 105 CMR 410.353 and 310 CMR 715

Repairing of asbestos material may only be performed by a licensed, experienced and knowledgeable asbestos abatement contractor; the repair must be performed according to the procedure for repair outlined in "Asbestos Repair in Conjunction with WAP and HEARTWAP."

- iii. Removing the asbestos material in accordance with 105 CMR 410.353 and 310 CMR 715

Removal of asbestos material may only be performed by a licensed, experienced and knowledgeable asbestos abatement contractor; the removal must be performed according to the procedure for removal outlined in "Asbestos Removal in Conjunction with a HEARTWAP Heating System Replacement."

3. When Payment is Necessary for Asbestos Abatement

- a. Expenditures for heating system related asbestos work performed in conjunction with HEARTWAP is an allowable expense in a Subgrantee's Heating System Allocation budget.
- b. Allowable expenditures for asbestos abatement work related to heating system work that is performed in conjunction with DOE WAP can be charged to the WAP Repair cost category and must be consistent with the specific DOE WAP expenditure maximums. Prior DHCD approval is required.

D. Asbestos Encapsulation in Conjunction with WAP and HEARTWAP Work

1. Subgrantee Responsibilities:

- a. The material in question must be identified as containing asbestos. If a Subgrantee is in doubt as to the composition of the material they should consult with the local Board of Health to reach a determination.
- b. The Subgrantee must obtain a signed "Homeowner/Property Owner Asbestos Abatement Work Permit" (Attachment F) prior to the work beginning.
- c. A competitive procurement process that includes only licensed, experienced and knowledgeable asbestos abatement contractors must be implemented. No less than three (3) written or verbal bids must be procured on a job-by-job basis with the award being made to the lowest acceptable bidder. If a verbal bid is accepted, the Subgrantee bears the responsibility of recording the bid for the file. DHCD will, if requested, waive this requirement for a Subgrantee if a particular region of the state lacks a sufficient number of experienced and knowledgeable asbestos abatement contractors.

Subcontracting of the asbestos abatement work by a heating, insulation, weatherization, or any other contractor is prohibited. A Subgrantee may only contract directly with a licensed asbestos abatement contractor.

- d. Once the contractor is selected, the Subgrantee will ensure execution of an appropriate contract with the contractor. In addition to standard contract provisions, the contract must include: 1) a provision covering the contractor's insurance responsibilities (see Part B Section 2 Paragraph a), and 2) contain "hold harmless" language as follows:

"Contractor agrees to reimburse, indemnify, and hold harmless (the Subgrantee) for any loss, damage, liability, or cause of action arising from the Contractor's activities under this Agreement or Contractor's failure to perform in conformance with the terms of this Agreement or the requirements of any applicable law."

The contract must also include language that the asbestos abatement contractor agrees to comply with the regulations released by the Environmental Protection Agency as stated in 40 CFR Part 763, released, July 12, 1985.

- e. Upon the completion of the asbestos material encapsulation, and only if the asbestos material is disturbed during encapsulation (which it rarely is), the Subgrantee must receive a final air monitoring result that states that all areas did not exceed air sampling levels of 0.01 fiber/cc.

2. Contractor Responsibilities

- a. The contractor must give to the Subgrantee, prior to the commencement of work, an original Certificate of Insurance which indicates that the following insurance coverage is in effect at the time the asbestos abatement work is performed.

Asbestos Abatement contractors shall provide evidence of specific coverage under its Commercial General Liability policy. The policy shall:

1. Be written on a “true occurrence” basis without any “sunset” clause;
2. Have pollution exclusion amended to add back coverage for all pollution claims;
3. Include separate products and completed operations coverage which shall be maintained for two (2) years after Substantial Completion of the project.
4. Provide the following limits of insurance:

<u>Bodily Injury and Property Damage:</u>	\$1,000,000 each occurrence
	\$1,000,000 general aggregate
<u>Products and Completed Operations</u>	\$1,000,000 aggregate
<u>Personal and Advertising Injury</u>	\$1,000,000
<u>Fire Damage</u>	\$ 50,000
<u>Medical Expense</u>	\$ 5,000

Workers’ Compensation

Provide the following coverage in accordance with M.G.L. c.149 34A and c. 152 as amended:

<u>Workers’ Compensation Coverage A</u>	Provide Statutory Minimum
---	---------------------------

<u>Workers’ Compensation Coverage B</u>	\$500,000 each accident
	\$500,000 disease per employee
	\$500,000 disease policy

- b. The contractor must provide verification that the Commonwealth of MA Department of Environmental Protection (MA DEP) has been notified consistent with requirements outlined in 453 CMR.

E. Asbestos Repairs in Conjunction with HEARTWAP Work

When it is necessary for a Subgrantee to repair asbestos material prior to performing HEARTWAP work, the following procedure must be adhered to:

1. Subgrantee Responsibilities

- a. The Subgrantee's responsibilities, when asbestos containing material is being repaired, are identical to those listed under asbestos encapsulation. However, the Subgrantee must also receive the following two (2) items prior to payment:
 - i. A final air monitoring report documenting that the tested area(s) did not exceed 0.01 fiber/cc. (Not required if, see Part III Section I)
 - ii. A dated receipt from a designated sanitary landfill. The landfill site must be approved for use by either the local Board of Health or the MA Department of Environmental Protection (DEP). The client's address must appear on the contractor's disposal manifest. An alternative to the disposal manifest is documentation of an approved interim storage facility, to store the asbestos until it is legally disposed of at an approved landfill with the understanding that the final manifest will be provided when available.

2. Contractor Responsibilities

- a. The contractor's responsibilities, when asbestos containing material is to be repaired, are the same as when the asbestos is being encapsulated. However, in addition to all the provisions previously outlined, the contractor must provide:
 - i. A final air monitoring report documenting that the tested area did not exceed 0.01 fiber/cc. (Not require if, see Part III Section I)
 - ii. A dated receipt from a designated sanitary landfill. The landfill site must be approved by either the local Board of Health or the DEP. The client's address must appear on the disposal manifest. An alternative is documentation of an approved interim storage facility, to store the asbestos until it is legally disposed at an approved landfill.

F. Asbestos Removal in Conjunction with a HEARTWAP Heating System Replacement

When it is necessary for a Subgrantee to remove an asbestos covered boiler, furnace, duct, or heating pipe prior to the replacement of a primary heating system the following procedure must be adhered to:

1. Subgrantee Responsibilities

- a. The Subgrantee's responsibilities when asbestos is being removed are the same as when asbestos is being repaired.
- b. The removal and disposal of asbestos material in conjunction with a HEARTWAP heating system replacement is an allowable expenditure. Prior DHCD approval is

required. Funding for asbestos abatement work is in addition to the allowable maximums for HEARTWAP heating system activities.

2. Contractor Responsibilities

- a. The contractor's responsibilities when asbestos is to be removed are the same as when asbestos is being repaired, except that if the Glove Bag removal technique is used, no air sample is required. If the Glove Bag removal technique is used, it must be clearly stated in the contractor's proposal and invoice.

G. Notification

The contractor must notify the following agencies in writing prior to the commencement of asbestos work.

1. Commonwealth of Massachusetts Department of Environmental Protection (DEP) must be notified by the asbestos abatement contractor, in writing, ten (10) days prior to any asbestos containing material being removed from a building. DEP's information and online notification forms are available here: [MA DEP Asbestos Information](#).

If an emergency asbestos removal project must be undertaken, the DEP must first be notified by telephone regarding the situation, and then the asbestos abatement contractor must immediately follow-up this action with written notification. DEP may grant immediate verbal approval to remove asbestos in an emergency.

2. U.S. EPA ten (10) days in advance when removing more than 160 square feet or 260 linear feet of asbestos material. This is equal to approximately the size of a large boiler or furnace.

H. Subgrantee Staff and Weatherization Contractor Exposure to Asbestos Dust

1. U.S. Department of Labor/Occupational Safety and Health Administration

The following opinion was received from the U.S. Department of Labor/Occupational Safety and Health Administration (OSHA) regarding the possibility of WAP and HEARTWAP Subgrantee staff, or their contractors' employees, being exposed to unhealthy levels of asbestos dust while performing their normal, day-to-day work activities.

OSHA indicated that those individuals would be subjected to little, if any, asbestos exposure while performing their routine job duties. Typical job duties were defined as: combustion efficiency testing; heating system maintenance, repair, and retrofit; and floor, perimeter, pipe, and water heater insulation.

Further, Subgrantee and contractor personnel, exclusive of asbestos abatement contractors, are not subject to OSHA's personal protective equipment regulations unless they will be exposed to excessive concentrations of asbestos fibers.

2. The Massachusetts "Right-To-Know Law" Chapter IIIF of the Massachusetts General Laws

Subgrantees should consult with the Massachusetts Executive Office of Labor and Workforce Development, Division of Occupational Safety (DOS) concerning

implementation of the Massachusetts "Right-To-Know" Law, Massachusetts General Laws IIIF, with respect to Subgrantee employees.

I. Contacts

The following agencies are available to provide information on the various aspects of asbestos abatement.

MASSACHUSETTS DEPARTMENT OF LABOR STANDARDS

19 Staniford St., 2nd Floor

Boston, MA 02114

Telephone: (617) 626-6975, <http://www.mass.gov/lwd/labor-standards/>

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

1 Winter Street, Boston, MA 02108

Telephone: (617) 292-5500 <http://www.mass.gov/dep/>

U.S. DEPARTMENT OF LABOR

Occupational Safety and Health Administration (OSHA)

25 New Sudbury St.

JFK Federal Building, Room E260

Boston, Massachusetts 02203

Telephone: (617) 565-9860 <http://www.osha.gov/>

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

5 Post Office Square, Suite 100, Boston, MA 02109-3912

Telephone: 888-372-7341 <http://www.epa.gov/>

FY 2016 HEARTWAP Activities, Costs, and Requirements

Activity	Maximum Cost	Q.C Required	Work Permit Required	Tenant/LL Agreement
1. Clean/tune/evaluate				
Owner Occupied	\$125 Nat or LP Gas \$300 Cond. Gas Boiler \$150 Oil		Non Dealer of Record Only	No
Tenant Occupied	\$125 Nat or LP Gas \$300 Cond. Gas Boiler \$150 Oil		Non Dealer of Record Only	No
Chimney Cleaning	\$ 150		Yes	No
2. Heating System Repairs	\$1,000 maximum per program year *	>\$600	Yes	Yes
3. Tank Replacement, including New Oil Line	\$2,000 maximum \$2,300 maximum	100% 100%	Yes Yes	Yes Yes
4. Oil Line Replacement	\$300 maximum		Yes	Yes
5. Burner Replacement	\$400		Yes	Yes
6. System Replacement				
Owner Occupied	\$2,700 Warm Air \$4,700 Warm Air** \$3,000 Hot Water \$5,200 Hot Water* \$3,250 Steam \$5,700 Steam**	100%	Yes	No
Tenant/ Owner Eligible	\$2,700 Warm Air \$4,700 Warm Air** \$3,000 Hot Water \$5,200 Hot Water* \$3,250 Steam \$5,700 Steam**	100%	Yes	Yes
Tenant Eligible/Owner not eligible	\$ 1000	100%	Yes	Yes
7. Retrofit Measures	\$1,000 (waiver possible)	100% over \$600	Yes	Yes

* Waiver available in certain circumstances: see Repair Guidance

** For clients who live in an area serviced by a Municipally-Owned utility.

Activity	Maximum Cost	Q.C Required	Work Permit Required	Tenant/LL Agreement
8. Space Heaters				
Existing unit				
Cleaning	\$100		Yes	No
Repair	\$1,000	>\$600 Cumulative: 100%	Yes	Yes
Replacements				
Owner occupied and eligible	\$2,700	100%	Yes	No
Tenant/Owner eligible	\$2,700	100%	Yes	Yes
Tenant eligible/Owner not;	\$1,000	100%	Yes	Yes
Gas on gas stoves	\$300		Yes	Yes
7. Asbestos Abatement				
Owner Occupied	\$1,900	100%	Yes	No
Tenant and Owner Eligible	\$1,900	100%	Yes	Yes
Tenant Eligible/ Owner Not	50% of total, Maximum \$950	100%	Yes	Yes

NOTE: + please see definition of “Retroactive Service” in Part 1 of this Guidance.

NOTE: All HEARTWAP jobs with cumulative annual expenditures of \$1,000 or greater require Proof of Ownership.

HEARTWAP WORK PERMIT

I, _____
(Property owner's full name)

Certify that **I am the owner/authorized agent** for the property located at:

(Number, street name, apt #)

(City /town)

I further certify that I have **given my permission** to: _____
(Subgrantee name)

To allow work on the property listed above in accordance with the following provisions:

1) _____

2) _____

3) _____

4) _____

5) In the event the primary heating system is replaced by the Subgrantee and that the property owner decides to sell the aforementioned premises, within one (1) year from the date of signature on this work permit, the property owner agrees to reimburse the Subgrantee an amount equal to the total cost of the heating system materials installed and labor performed in the premises, as documented by the Subgrantee, as of the date of sale. Said amount shall be paid to the agency immediately upon sale.

6) And such other particulars as may be attached to this agreement.

Signature: _____ **Date:** _____
(Owner/authorized agent)

HEATING SYSTEM EFFICIENCY REPORT

CLIENT NAME: _____ Job # _____

System type: Oil _____ Gas _____ Design _____ Converted _____ Gravity _____ FHW _____ FWA _____ Steam _____

Final Efficiency Test Results

Initial Efficiency Test Results

Gross Stack Temp. _____
Net Stack Temp. _____
Smoke _____
CO2/O2 _____
Carbon Monoxide _____
Overfire Draft _____
Breech Draft _____
Efficiency _____ %
Comments _____

Signature _____
Date _____

Service Technician's Test Results

Gross Stack Temp. _____
Net Stack Temp. _____
Smoke _____
CO2/O2 _____
Carbon Monoxide _____
Overfire Draft _____
Breech Draft _____
Efficiency _____ %
Nozzle Size _____
Comments: _____

Signature _____
Date _____

Gross Stack Temp. _____
Net Stack Temp. _____
Smoke _____
CO2/O2 _____
Carbon Monoxide _____
Overfire Draft _____
Breech Draft _____
Efficiency _____ %
Comments: _____

Signature _____
Date _____

OIL-FIRED HEATING SYSTEMS:
QUALITY CONTROL PROCEDURE

1. Do a combustion efficiency and carbon monoxide test.
2. Check for unusual noises and vibrations.
3. Check the flame ignition. Flame ignition should be instantaneous. Delayed ignition is indicative of a combustion problem.
4. Check for flame impingement. Flame should fill the combustion chamber without hitting the sides or back of the chamber.
5. Check the flame cut-off time. The flame should cut off in less than three seconds after the burner shuts off.
6. Check for soot deposits in the flue, combustion chamber, and on the heat exchanger.
7. Check the chimney for problems and the accumulation of soot.
8. Check for oil leaks.
9. Check the draft regulator for any improper adjustments or defects.
10. Check the distribution system.
11. Check for the presence of a Hartford Loop (new Steam Systems only)

The acceptable parameters of a combustion efficiency test on oil fired equipment are as follows:

Net stack	300-500° F
Smoke	0-Trace
CO2	8-10%
O2	5-7%
Draft	.02-.04

The maximum allowable concentration of carbon monoxide (CO) in the flue gas is 400 ppm air free consistent with ANSI Z 21.1 and EPA requirements. However any CO above 100 air free after steady state combustion has been achieved indicates that combustion problems exist and should be addressed. The goal is no CO in the flue gas. Ambient CO readings must be no greater than 9 ppm

**GAS-FIRED HEATING SYSTEMS:
QUALITY CONTROL PROCEDURE**

1. Check the start-up sequence of the appliance.
2. Check the color of the flame. The flame should be blue. A small amount of orange indicates impurities in the gas and is acceptable. A yellow or white flame indicates insufficient combustion air and the likelihood of carbon monoxide production.
3. Check the flame for stability. The flame should be stationary on the burners, not “dancing”.
4. Check for unusual noises and vibrations.
5. For gas conversion units, check for a defective or improperly adjusted draft regulator.
6. Complete a combustion efficiency, and carbon monoxide (flue gas and ambient) test.
7. Check the distribution system.

The acceptable parameters of a combustion efficiency test on gas fired equipment are as follows:

Net stack	300-500 ⁰ F
Smoke	0
CO ₂	7-9%
O ₂	4-10%
Draft	.02-.04

The maximum allowable concentration of carbon monoxide (CO) in the flue gas is 400 ppm air free consistent with ANSI Z 21.1, and EPA and American Gas Association (AGA) requirements. However any CO above 100 ppm air free after steady state combustion has been achieved indicates that combustion problems exist and should be addressed. The goal is no CO in the flue gas. Ambient CO readings must be no greater than 9 ppm.

Homeowner / Property Owner
Asbestos Abatement Work Permit

I, _____ certify that
(Print Name)

I am the owner of the property located at: _____
(Street)

in the city/town of: _____

and hereby authorize: _____
(Subgrantee)

to subcontract the following asbestos abatement work at the aforementioned property:

Repair _____ ***Encapsulation*** _____ ***Removal*** _____

All work will be consistent with all applicable Federal, State, and local regulations concerning the handling, removal, and disposal of asbestos containing materials.

Signature _____

Date _____

HEARTWAP 2016

Clean Tune and Evaluate (CTE)	\$150 (Oil)
	\$125 (NG)
	\$300 (Mod con gas)
Burner Replacement	\$400
Heating System Repairs	\$1,000 (waiver available)
Oil Tank Replacement	\$2,000 (without oil line)
	\$2,300 (with oil line)

Municipal Utility Client System Replacement

Owner Warm Air Heating System Replacement	\$2,700	\$4,700
Owner Hot Water System Replacement	\$3,000	\$5,200
Owner Steam System Replacement	\$3,250	\$5,700

Subgrantees can also request a waiver of up to \$1,250 for a system replacement if no utility funds are available at the time of the installation. Subgrantees must ensure that the average expenditure in HEARTWAP funds over the course of the grant does not exceed the maximum allowable for the type of system.

Tenant Heating System Replacement (When landlord is ineligible)	\$1,000
Retrofit Measures (Without prior DHCD approval)	\$1,000
Asbestos Abatement <u>Owner</u>	\$1,900
<u>Tenant</u>	\$950 or 50%, whichever is less, when the landlord is not LIHEAP eligible.

Minimum AFUE

Type	Oil	Gas
FHW	85%	85%
FWA	83%	90%
Steam	82%	82%

Agency required QC inspections on expenditures with a cumulative program year total of \$600.

Agency required QC inspections on all expenditures under \$600 is 5%.