Social Development Commission

REQUEST FOR BID

Residential Services Department

Community Relations-Social Development Commission in Milwaukee County
1730 West North Avenue,
Milwaukee, WI 53205

Residential Services Department

August 19, 2022

Bid# 08-1922

Specifications for:

HE+ Program Services - Emergency Furnace Services

sdc
Social Development Commission
Pathways from poverty to success

REQUEST FOR BID # 08-1922

HE+ Program Services - Emergency Furnace Services

THIS IS NOT AN ORDER REV. 11/15/2020

CR – Social Development Commission
Weatherization Program
1730 West North Avenue
Milwaukee, WI 53205

Bid Due Date

Tuesday, September 6, 2022, 2:00 p.m. CT

All questions relating to this Request For Bid shall be submitted in writing to:

Scott Scherer, Procurement Coordinator
1730 W. North Avenue, Milwaukee, WI 53205
Fax #414-906-2719, Email sscherer@cr-sdc.org

Quote Price and Delivery FOB

FOB Destination (also see Appendix A, 5.0.)

Note – Email and Fax bids not accepted.

Calendar of Events

Friday, August 19, 2022, 10:00 a.m. CT	RFB Issuance
Thursday, August 25, 2022, 2:00 p.m. CT	Deadline for Submitting Written Questions
Thursday, September 1, 2022, 8:00 a.m. CT	**Mandatory Bidders' Meeting**
Tuesday, September 6, 2022, 2:00 p.m. CT	**Bid Due Date**
Tuesday, September 6, 2022, 2:01 p.m. CT	Bid Opening

Bidder Name and Address (must be completed)

☐ We claim Wisconsin certified minority business or Wisconsin certified disabled veteran-owned business preference. Under Wisconsin Statutes, a 5% preference may be granted to a **CERTIFIED Minority Business Enterprise (MBE)** or a **CERTIFIED Disabled Veteran-owned Business (DVB)**. Bidder must be certified by the Wisconsin Department of Administration. If you have questions concerning the certification process, contact the Wisconsin Department of Administration, 101 E. Wilson St., 6th Floor, Madison, WI 53703, (608) 261-2510. **Does Not Apply to Printing Bids**.

ACKNOWLEDGEMENT OF ANY ADDENDA and/or REVISIONS and AGREEMENT TO ALL TERMS: In signing this Bid, Bidder acknowledges and affirms that its Bid complies with all terms, conditions and specifications of this RFB and any addenda, appendices or revisions thereto. If awarded a contract, Bidder shall comply with all terms of its Bid and all terms, conditions and specifications of this RFB and any addenda or revisions thereto.

DEBARMENT AND SUSPENSION: In signing this Bid, Bidder acknowledges it has not been suspended, debarred, declared ineligible or voluntarily excluded from eligibility by any Federal department or agency.

NON-COLLUSION: In signing this Bid, Bidder certifies it has not, either directly or indirectly, entered into any agreement or participated in any collusion or otherwise taken any action in restraint of free competition; that no attempt has been made to induce any other person or firm to submit or not to submit a Bid; that this Bid has been independently arrived at without collusion with any other Bidder, competitor or potential competitor; that this Bid has not been knowingly disclosed prior to the opening of Bids to any other Bidder or competitor; that the above statement is accurate under penalty of perjury.

Name of Authorized Company Representative (Type or Print)	**Title**		**Date**
Signature of Authorized Company Representative Named Above	**Phone**	**Fax**	**Email**

CHECKLIST FOR SUBMITTING A BID

Understanding the Request for Bid (RFB)

- ☐ Thoroughly read and review this Request for Bids and all attachments, appendices, addenda, and/or revisions.
- ☐ Submit any written questions to the Procurement Coordinator by the deadline provided in the Calendar of Events.
- ☐ Determine if the agency will hold a Bidders' meeting (see Section 3.7) and check the date provided in the Calendar of Events (see cover page).
- ☐ Know when and where the Bid is to be delivered.

Completing Your Bid

- ☐ Complete the Cost Sheet(s) provided with the RFB. Make sure your prices and calculations are accurate. If required, provide a written statement of what volume of work or quantity or products your company can handle under the Bid requirements. Do not alter the format of the Cost Sheet.
- ☐ Complete the Vendor Information Form provided with the RFB.
- ☐ Complete the two (2) Vendor Reference Forms provided with the RFB.
- ☐ Assemble required data specification sheets for each appliance or product on which you are bidding.
- ☐ Complete and sign the Request for Bid sheet provided as the cover of this RFB package.
- ☐ This checklist is provided for the Bidder's convenience only and is not required to be submitted with the Bid package.

Submitting Your Bid

- ☐ Prepare one set of original documents marked "Original" in the following order:
  1. **Signed Request for Bid Sheet** (RFB cover page)
  2. **Vendor Information Form** (Attachment 1)
  3. **Vendor Reference Form (Client)** (Attachment 2A)
  4. **Vendor Reference Form (Financial)** (Attachment 2B)
  5. **Cost Sheet(s)** (Attachment 3)
  6. **Additional Information** See Section 8. for details
- ☐ Make one photocopy of the complete set of original documents. Mark the photocopied set "Copy."
- ☐ Place the original and copied set of documents in a sealed package (envelope or box). Make sure the following information is clearly marked on the outside of the envelope or box:
  1. Bidder's Name and Address
  2. Request for Bid Title (See upper left hand box of RFB cover page)
  3. Request for Bid Number (See upper left hand box of RFB cover page)
  4. Bid Due Date (See upper left hand box of RFB cover page and Calendar of Events)
- ☐ Ensure the sealed package is delivered to the correct address before the Bid Due Date and time in the Calendar of Events. **No emailed or faxed Bids are allowed**.

If You are Chosen for a Contract Award:

- ☐ Be prepared to provide any documents required by the agency — such as certificates of insurance, licenses, contractor credentials, training certificates, IRS Form W-9 (Request for Taxpayer Identification Number) or Affirmative Action plan/exemption (see Appendix A for more information).

1. INTRODUCTION

1.1 Scope

The purpose of this Request for Bids (RFB) is to provide interested parties with information needed to prepare and submit a Bid for the following:

> Provide emergency furnace services as identified in this RFB. The bulk of services will occur primarily during the Heating Season (October 1 – May 15) but some emergency furnace services may be required outside of this time period (e.g., from May 16 through September 30.)

CR-Social Development Commission (Agency) intends to use the results of this process to award a contract(s) to provide the goods or services described in this RFB, <u>except for items identified as Informational Pricing</u>. A detailed description of the commodities and/or services to be provided by the Lowest Responsible Bidder(s) is contained in the Technical Requirements section, Attachment 4, and other parts of this RFB.

The SERVICE TERRITORY in which these services will be provided includes: City of Milwaukee

The Agency may bid out specialized jobs, or procure specialized commodities, on an as-needed basis when deemed in the best interest of the Agency.

1.2 Procuring Agency

CR-Social Development Commission is a local administrative and executive weatherization service agency that works in conjunction with the State of Wisconsin Weatherization Assistance Program to provide residential weatherization services to eligible households. The State of Wisconsin Weatherization Assistance Program helps low-income residents reduce energy costs by decreasing home energy consumption through the installation of energy-saving measures and equipment.

1.3 Definitions

Words and terms in this RFB shall be given their ordinary and usual meanings, and all meanings shall be applicable to the singular and plural forms of the words and terms. For the purposes of this RFB, the following words and terms shall have the meanings indicated:

"Agency" means CR-Social Development Commission.
"Appeal" means a process whereby an aggrieved Bidder may appeal the denial of a Protest to the Administrator of the Division.
"Authorized agent" means an entity authorized by the Agency to notify or direct the Contractor to initiate the service process.
"Bid" or "Bid Document" means the complete response of a Bidder, including all required documentation, submitted on the approved forms and setting forth the Bidder's prices for providing the commodities and/or services described in the RFB.
"Bidder" means any individual, company, corporation or other entity that responds to this RFB.
"Calendar of Events" means the official schedule of events, deadlines and dates shown on the cover of this RFB.
"Callback" means work required as a result of a final inspection or complaint/concern and occurs prior to a dwelling unit being reported as completed within the WisWAP System.
"Commodity" means the products, materials, supplies or equipment described in this RFB.
"Contract" means a written agreement between the Agency and Contractor that covers the delivery of work and/or commodities to be performed subsequent to this RFB.
"Contractor" or "Vendor" means a Bidder that is awarded a Contract under this RFB.
"Department" means the Wisconsin Department of Administration.

"Division" means the Division of Energy, Housing and Community Resources (DEHCR), Wisconsin Department of Administration.
"DVB" means a disabled veteran-owned business certified by the Wisconsin Department of Administration under Wis. Stats. s. 16.75(3m).
"Emergency Furnace Services" means providing furnace services subject to emergency response time requirements as part of the HE+ Furnace Program.
"**FOB"** (Free on board) – means the vendor owns and is responsible for products until they are delivered and accepted at the Agency's address or identified location.
"Good Faith Dispute" means a contention by an Agency that goods delivered or services rendered were of a lessor quantity or quality than ordered or specified by contract, were faulty or were installed improperly; or any other reason giving cause for the withholding of payment by the agency until the dispute is settled.
"Heating Season" means October 1 through May 15.
"Home Energy Plus (HE+) Furnace Program - Emergency Furnace Services" means the emergency furnace services that may assist a low-income homeowner when their furnace, boiler or other primary heating system breaks down and provides no heat, is inoperable or is unsafe. This program operates primarily during the heating season.
"Informational Pricing" means prices provided for informational purposes in Attachment 3. Informational Pricing is not used to calculate the Grand Total or determine the Lowest Responsible Bidder. Items with informational pricing are outside the Scope of the resulting contract, and may or may not be ordered by Agency. The Agency reserves the right to negotiate prices and/or obtain the item from another Bidder.
"Interested Bidder" means any individual, company, corporation or other entity that is included on a solicitation list, requested a Bid package or attended a Bidders' meeting (if a Bidders' meeting is scheduled as part of this RFB).
"Local WHEAP Agency" means a county or its subcontractor that is the primary administering entity responsible for determining eligibility of the household prior to the provision of services identified in this RFB.
"Lowest Responsible Bidder" means the Bidder that submits the lowest dollar total appearing in combination with other elements of the RFB that best meets the requirements of the solicitation, and demonstrates their Bid is responsive to technical and administrative requirements as requested.
"MBE" means a minority business certified by the Department of Administration under §560.036 (2), Wis. Stats.
"Notification" means the time at which the Agency or Authorized Agent contacts the Contractor to initiate the service process.
"Prime Contractor" means the Contractor when it has engaged subcontractors to perform work under the Contract.
"Procurement Coordinator" means the person identified on the cover of this RFB who has been designated by the Agency to manage this RFB.
"Protest" means a process whereby an aggrieved Bidder may protest this RFB or the resulting Notice of Intent to Award to the Chief Executive Officer of the Agency.
"Request for Bid (RFB)" means this document including appendices, addenda, revisions and/or attachments.
"State" means the State of Wisconsin.
"WHEAP" means the Wisconsin Home Energy Assistance Program managed by the Division.
"Working Days" means each calendar day except Saturday, Sunday, and official Federal holidays. All other references to 'days' means calendar days. If 'working' is not included in the reference to number of days, the days are calendar days.

2. CONTRACT INFORMATION

2.1 Contract Term

The Contract will be in effect for a period of one (1) year from 10/01/2022. The Contract may be renewed for one (1), one (1) year period by mutual written consent.

2.2 Terms and Conditions

In addition to the terms, conditions and specifications contained in this RFB, the following documents govern this RFB and any resulting contracts:

- **Appendix A – Wisconsin Weatherization Assistance Program Terms and Conditions**

Bidders shall accept the terms and conditions referenced above in their entirety or submit point-by-point exceptions along with proposed alternative or additional language for each exception. The Agency may reject a Bid if it deems the proposed alternative or additional language to be unacceptable. Submission of the Bidder's standard terms and conditions as a substitute for language in the terms and conditions is not a sufficient response to this requirement and may result in rejection of the Bid. Failure of the successful Bidder to accept the Agency's terms and conditions for a contract shall result in cancellation of the award.

2.3 Contract Modifications

Any alterations made to the Contract shall be rendered in writing and signed by both parties; no changes without such signed documentation shall be valid. No alterations outside of the general scope and intent of the original RFB or in excess of allowable and accepted price changes shall be made.

2.4 Entire Agreement

The Standard Terms and Conditions (Appendix A) shall apply to any Contract or order awarded as a result of this request except where special requirements are stated elsewhere in the request; in such cases, the special requirements shall apply. Further, the written Contract and/or order with referenced parts and attachments shall constitute the entire agreement and no other terms and conditions in any document, acceptance, or acknowledgment shall be effective or binding unless expressly agreed to in writing by the contracting authority.

3. BID PROCEDURES AND INSTRUCTIONS

3.1 Reasonable Accommodations

The Agency shall provide reasonable accommodations, including the provision of informational material in an alternative format, for individuals with disabilities upon request. If you need information in an alternative format or accommodations at a Bid opening or at a Bidder meeting, contact the Procurement Coordinator.

3.2 Bid Contents and Delivery Requirements

Bidders shall submit an original Bid document and one copy of the Bid document by the Bid Due Date in the Calendar of Events to:

USPS/Mailing Address		**Address for Hand-Delivery**
Scott Scherer, Procurement Coordinator		Scot Scherer, Procurement Coordinator
CR-Social Development Commission	**OR**	CR-Social Development Commission
1730 West North Avenue		1730 West North Avenue
Milwaukee, Wisconsin 53205		Milwaukee, Wisconsin 53205

All Bids shall be packaged (envelope or box), sealed and show the following information on the outside

of the package:

1. Bidder's Name and Address
2. Request for Bid Title (See upper left hand box of RFB cover page)
3. Request for Bid Number (See upper left hand box of RFB cover page)
4. Bid Due Date (See upper left hand box of RFB cover page and Calendar of Events)

Bids shall be date and time stamped at the office indicated above on or before the date and time Bids are due. Late Bids shall be rejected. Bids dated and time stamped in another office may be rejected. Bids that are not properly sealed may be rejected. Receipt of a Bid by the mail system does not constitute receipt of a Bid by the Agency. Any Bid that is inadvertently opened as a result of not being properly and/or clearly marked may be rejected. Bids shall be submitted separately and may not be included with sample packages or other Bids. Emailed or faxed Bids are not allowed.

3.3 Calendar of Events

The Calendar of Events provides important dates and times by which actions related to this RFB shall be completed. In the event that the Agency finds it necessary to change any of these dates and times, it shall provide written notification of such changes per Section 3.4, Communication with Bidders.

3.4 Communication with Bidders

In the event it becomes necessary to make changes to the Calendar of Events, provide additional clarifying data or information, revise any part of this RFB, or provide a record of questions and answers, the Procurement Coordinator shall send written notification, electronically or in hard copy, to all Interested Bidders.

3.5 Format of Bid

Bidders responding to this RFB shall submit the following materials:

a) Signed Request for Bid Sheet: The Bid shall include the signed Request for Bid sheet provided as the cover of this RFB package. A Bid submitted in response to this RFB shall be signed by the person in the Bidder's organization who is responsible for decisions regarding prices offered in the Bid or by a person who has been authorized in writing to act as agent for the person responsible for the decision on prices.

b) Vendor Information Form (Attachment 1)

c) Vendor Reference Form (Client) (Attachment 2A)

d) Vendor Reference Form (Financial) (Attachment 2B)

e) Cost Sheet (Attachment 3): Provide cost information on the Cost Sheet(s) included in this RFB. All costs for furnishing the commodities and/or services, as set forth in the terms and conditions of this RFB, shall be included in the Bid. Please refer to Section 7. Cost Information, for information on Bid pricing, capacity and price adjustments.

f) Additional Information: Please refer to Section 8. Additional Information Requirements, for a listing of required additional documents.

The checklist included with this RFB is provided for the convenience of the Bidder. The Bidder is not required to submit the checklist with its Bid package.

3.6 Questions

Questions concerning this RFB shall be submitted in writing to the Procurement Coordinator on or before the Deadline for Submitting Written Questions provided in the Calendar of Events. Bidders are expected to raise any questions, exceptions or additions concerning the RFB document prior to this deadline. If a Bidder discovers any significant ambiguity, error, conflict, discrepancy, omission or other deficiency in this RFB, the Bidder shall immediately notify the Procurement Coordinator and request modification or clarification of the RFB document. All questions shall be recorded by the Agency. All questions and answers shall be provided per Section 3.4, Communication with Bidders.

3.7 Bidders' Meeting

The Agency will hold a public informational meeting for Bidders at the date and time provided in the Calendar of Events. The Bidders' meeting will be held at the following location:

CR-Social Development Commission
1730 West North Avenue
Milwaukee, WI 53205

The Bidder's meeting is mandatory. Bidders shall be required to register when attending the mandatory Bidders' meeting. Notwithstanding Section 3.4, a written record of questions asked and answered at the mandatory Bidder's meeting shall be created and sent electronically or in hard copy to only those Bidders that attend the mandatory Bidders' meeting. Only Bidders that attend the mandatory Bidders' meeting are permitted to submit a Bid; failure to attend the mandatory Bidders' meeting shall result in rejection of a Bid.

3.8 Multiple Bids

Multiple Bids from a Bidder are permitted. Each Bid shall conform fully to the requirements of this RFB. Each Bid shall be separately submitted and labeled as Bid #1, Bid #2, etc., on each page included in the response.

Each Bid shall offer different manufacturers and/or models of products for items identified in the RFB. Multiple Bids identifying the same manufacturers and/or models of products shall be deemed non-responsive, and only the lowest Bid price by the Bidder shall be deemed the Lowest Responsible Bid.

If the Agency awards multiple contracts, a Bidder may receive only one award based upon its Lowest Responsible Bid. A Bidder's succeeding responsible Bids shall be rejected for the purposes of awarding to multiple vendors.

3.9 Incurring Costs

Neither the Agency nor the State of Wisconsin is liable for any cost incurred by a Bidder for responding to this RFB.

3.10 Contact with the Agency

From the date of issuance of this RFB until a Letter of Intent to Award a Contract is issued, all contacts with the Agency regarding this RFB shall be made only through the Procurement Coordinator. Any information provided by a source other than the Procurement Coordinator shall be deemed unofficial and nonbinding. Violation of this condition may be considered sufficient cause for rejection of a Bid, irrespective of any other considerations.

3.11 News Releases

News releases pertaining to the RFB or to the acceptance, rejection or evaluation of Bids shall not be

made without the prior written approval of the Agency and the State of Wisconsin.

4. BID ACCEPTANCE, VERIFICATION AND AWARD

4.1 Bid Opening

Bids shall be opened on the Bid Opening date and time specified in the Calendar of Events. Names of the Bidders may be read aloud at the Bid opening. The Bid opening will be held at the following location:

CR-Social Development Commission
1730 West North Avenue
Milwaukee, WI 53205

4.2 Bid Review and Verification

The Agency shall review each Bid to verify that it meets all specified requirements in this RFB. This verification may include requesting reports on the Bidder's financial stability, conducting demonstrations of the Bidder's proposed products and/or service, and reviewing results of past awards to the Bidder by the Agency.

a) **Capability and Performance History:** Before the award of any contract(s), the Agency shall be satisfied that the Bidder has sufficient capability and performance history to perform the work described in the RFB. It is the Bidder's responsibility to provide information to the RFB Procurement Coordinator that demonstrates these qualifications by submitting clear, concise and complete documentation and thorough references.

b) **References:** Bidders shall provide the information required in the vendor reference forms by supplying with their Bid:

1. A client list of no less than three (3) and no more than six (6) references for which similar products and/or services have been provided during the past three (3) years. See Attachment 2A.
2. Contact information for no less than one (1) and no more than four (4) credit reference(s). See Attachment 2B.

The provision of references constitutes permission for the references to provide, and the Procurement Coordinator to receive, any information the Program Manager deems to be necessary to assess whether the bidder meets the requirements of this RFB. If contacted, information received from such references may be used to determine whether the Bidder meets the Agency's requirements. Information provided that is deemed to be confidential shall be identified as such when provided, and the Procurement Coordinator shall maintain the confidentiality of all information so designated.

4.3 Bid Acceptance

Bids that do not comply with instructions contained in this RFB may be rejected by the Agency. The Agency reserves the right to waive a particular specification if no Bidder meets that specification. The Agency may request reports on a Bidder's financial stability. The Agency may reject a Bid if the Bidder is determined to have inadequate financial means to provide the product or service being Bid. The Agency retains the right to accept or reject any or all Bids, or accept or reject any part of a Bid, deemed to be in the best interest of the Agency and the State of Wisconsin. The Agency shall be the sole judge as to compliance with the instructions contained in this RFB. Bids shall be firm for acceptance for ninety (90) days from date of Bid opening unless otherwise noted. A Bidder may withdraw its Bid at any time prior to the issuance of an Intent to Award.

4.4 Minority Business Enterprises and Disabled Veteran Businesses

The Agency, in its sole discretion, may provide up to a five percent (5%) Bid preference to certified Minority Business Enterprises and Disabled Veteran Businesses in accordance with §16.75(3m), Wis. Stats. See https://wisdp.wi.gov/ for information on these certifications.

4.5 Method of Award

The award shall be made in the best interest of the Agency, as determined by the Agency, to the Lowest Responsible Bidder(s) that meet(s) the requirements listed in this RFB. In the interest of promoting small business economic development, the agency intends to make multiple awards based on the capacity of each Vendor beginning with the lowest responsible bidder(s). In such case, the next-lowest bidder(s) will also be given the opportunity to be an awardee at their bid price, until the needs of the Agency are met. Vendors must provide a written statement of the Volume (quantity) of work they can successfully complete to meet contract conditions (see cost sheet). **Bid's will be placed into two (2) separate rankings based on Attachment 3 Cost Sheets, grand total(s) for both forced air heating systems and boilers, certified MBE's/DBE's are given a five percent (5%) bid preference to their grand totals. The award(s) will be granted based on the Lowest Responsible Bidder(s) grand total(s) for forced air heating systems and/or boilers with subsequent awards based on the ranking until the needs of the Agency are met. Work scopes for individual projects under the contract award will be distributed based on the capacity and on-going performance of each Vendor.**

4.6 Intent to Award a Contract

Any Bidders that submit a Bid shall be notified in writing of the Agency's Intent to Award a Contract as a result of this RFB. After the notice of intent to award is issued, the public may inspect and copy RFB records during the Agency's normal business hours. Please contact the Agency in advance of Bid inspections to ensure the availability of space and staff.

4.7 Protest and Appeal Procedures

A written notice of a party's intent to protest an Award(s) (Intent to Protest) shall be received by the Agency's Chief Executive Officer no later than five (5) working days after issuance of the Intent to Award. A written protest shall be received by the Agency no later than ten (10) working days after issuance of the Intent to Award. Notices of an Intent to Protest and Protests shall be made in writing. Protests shall be as specific as possible and identify statutes, Wisconsin Administrative Code provisions, Wisconsin Weatherization Assistance Program policies and/or Department of Energy regulations that are alleged to have been violated. An Intent to Protest or Protest shall be submitted in writing to:

USPS Address
George Hinton, CEO
CR-Social Development Commission
1730 W. North Avenue
Milwaukee, Wisconsin 53205

Address for Hand-Delivery
George Hinton, CEO
CR-Social Development Commission
1730 W. North Avenue
Milwaukee, Wisconsin 53205

5. TECHNICAL PERFORMANCE REQUIREMENTS

5.1. All commodities and services purchased through this RFB shall meet standards and specifications set forth in the Wisconsin Weatherization Field Guide and/or Wisconsin Weatherization Program Manual. Relevant portions of the Guide and/or Manual are identified in this RFB as Attachment 4.

5.2. All proposed commodities shall be capable of performing all operations in accordance with manufacturer's advertised data sheets and technical publications. Please refer to Section 8.

Additional Information Requirements, for a listing of required data sheets and technical publications that shall be submitted with this Bid.

5.3. When a commodity is required to meet the current Energy Star® standard it shall be labeled and listed on the Energy Star® website (http://www.energystar.gov/), and the following requirements apply:

- **a)** It shall conform to the set of criteria used by ENERGY STAR® to rate products.
- **b)** Products listed on the Energy Star® website are considered to meet current Energy Star® standards.
- **c)** Products shall conform to the standards scheduled to be in effect on October 1, 2022.
- **d)** If the RFB requires a product that is not readily available, a bidder shall notify the Procurement Coordinator immediately (see section 3.6).
- **e)** If a standard changes during the life of the contract and a product change is required, section 7 shall apply and a price adjustment may be negotiated.

5.4. All items Bid shall be the manufacturer's current production products and materials shall be first quality. Items that are used, floor models or demonstrators, obsolete or discontinued are unacceptable.

5.5. All debris related to installation including appliances and major mechanicals shall be removed and properly disposed of following applicable federal, state and local regulations.

5.6. The Contractor shall have available the following minimum heating system analysis equipment for performance of this contract:

- **a)** Combustion analyzer
- **b)** CO analyzer
- **c)** Draft gauge or manometer
- **d)** Heat exchanger leakage testing equipment
- **e)** Ammeter (shall be sensitive enough to measure thermostat anticipators)
- **f)** Gas leak detector <u>and non-corrosive gas leak detection fluid</u>
- **g)** Digital camera

5.7. The Contractor is required to have available a digital camera capable of meeting the following requirement for photographs: Photographs shall be provided (electronically or a digital scan of hard copy) to the Agency that document furnace conditions existing prior to the provision of services. For a heating system replacement, photos should include manufacturer's nameplate, furnace conditions and any problem(s). If photographs are required for repair services, it will be indicated in Attachment 5. The Agency may direct the Contractor to provide photographs for a repair on a case-by-case basis.

5.8. A completed **Heating System Checklist** (by heating system type) shall be provided to the Agency <u>for a heating system replacement</u>. The checklist is available at: <u>http://homeenergyplus.wi.gov/docview.asp?docid=2466</u> (under Field Forms). <u>Note that Emergency Furnace repair services do not require the "Heating System Repair or Clean and Tune Check List", unless directed otherwise by the Agency.</u>

5.9. A copy of **sizing calculation documentation** for each replacement shall be provided to the Agency. To meet the requirements, the sizing calculations need to include a list of building

components and the R-value (or u-value) used for each. In addition, the calculations need to include design temperatures, exposure, air changes per hour and other factors required in a Manual J calculation.

6. CONTRACTOR PERFORMANCE REQUIREMENTS

6.1. Prime Contractor

The Prime Contractor shall be responsible for contract performance when subcontractors are used. When subcontractors are used, they shall abide by the terms and conditions of the contract. If subcontractors are used, the Contractor shall clearly explain their participation. The Agency shall reserve the right to approve the use of subcontractors in the fulfillment of the contract. (See Appendix A, Part A, Assignment).

6.2. Work Order, Work Flow and Job Completion

a) Heating system assessments will be completed according to the provisions of Attachment 6. Purchase orders/work orders regarding system repair or replacement and collateral activities will be approved by the Agency before beginning work, according to the provisions of Attachment 6.

b) The Contractor is required to have a communication system (e.g., telephone, email, text messaging) that will accept notification of a work order under this RFB seven days a week, 24 hours per day during the heating season.

c) The Contractor is responsible for contacting and arranging with the customer to provide any services that are part of performance under this contract.

d) The Contractor shall complete the required work with the time-frames specified in Section 6.10 Response Time, unless otherwise agreed to in writing by the agency.

e) The Contractor shall notify the Agency of job completion within (8) hours by email, fax, telephone or personal delivery to the Agency.

f) Work Flow. During an Agency's normal business hours, the Contractor shall provide cost estimates and request approval to proceed with repairs or replacement as specified by the Agency. Outside of normal business hours, the Contractor shall contact by telephone the primary approver for approval to proceed with repair/replacement, if unavailable the contractor shall seek out additional back-up approvers as provided by the Agency.

g) Repairs. A repair may be appropriate depending on the repair estimate and the age, condition and efficiency of the furnace/heating unit. A repair shall be completed no later than within the initial 72 hours from notification. If the time to complete the repair is anticipated to exceed this time limit, the Contractor shall notify the Agency immediately.

h) Replacement. If the furnace/heating unit is non-repairable based on program standards, the contractor shall provide the Agency with an estimated total cost for replacement. The estimate shall identify any collateral work necessary and include the itemized cost for any collateral work not covered in the RFB. A replacement shall be completed within the initial 72 hours from notification. If the time to complete the replacement is anticipated to exceed this time limit, the Contractor shall notify the Agency immediately.

i) For each replacement, a signed, completed **Home Energy Plus Program Services Agreement** form shall be provided to the Agency prior to Agency approval for replacement. (Also see 6.8).

j) If the repair or replacement involves work that will require a Department of Health Services (DHS) certified renovator and/or involves asbestos abatement, see section 6.9.

6.3. Invoices, Required Documentation and Payment

a) The Contractor shall ensure that a valid invoice is received by the Agency within (5) days of job completion. A valid invoice shall include all required forms and other required information, provide cost information as required and shall be submitted after job completion. Failure to provide all required information creates an exception to prompt payment (good faith dispute).

b) Invoices presented for payment shall be submitted in accordance with Agency instructions. See Attachment 5.

c) The Agency shall make payment to the Contractor within thirty (30) days of receipt of a valid invoice providing goods and/or services have been delivered, installed (if required), and accepted as specified.

d) Any callback work shall be satisfactorily addressed before issuance of payment.

e) A good faith dispute creates an exception to prompt payment. The Agency shall provide written notification to the Contractor.

f) The Contractor shall provide the Agency with a copy of any and all documentation regarding problems or issues regarding job site performance, commodity performance and/or client issues.

g) The Contractor shall not, under any circumstances, seek payment from the owner or occupant of the premises improved under the Contract. The only recourse for payment for the work performed under the Contract is through the Agency.

6.4. Lien Waivers, Lien Notice Action and Recourse for Payment

By agreeing to perform weatherization work the Vendor agrees to the following terms and agrees to pass along the following requirements to their suppliers and any subcontractors:

a) The Vendor agrees that they will not, under any circumstances, seek payment from the owner or occupant of the premises improved.

b) The Vendor shall not file, suffer or permit any lien or other encumbrance of record as a claim against any site of a weatherization project in recognition that the only recourse for payment is from the weatherization agency.

c) Any lien notice action by a Vendor, and/or any of their subcontractors and/or material suppliers, against a property owner shall be considered non-performance by the terms and conditions of this contract, and the Vendor may be removed from the statewide weatherization agency bidder's list for a period of 2 to 5 years, as may any subcontractors and suppliers that take such action.

d) **PAYMENTS OWED BY VENDOR:** By engaging in a contract with the weatherization agency, the Vendor agrees that if they do not pay for materials and labor taking place through this weatherization contract, the weatherization agency has the option to use payments owed to the Vendor to pay such subcontractors and suppliers.

e) The Agency reserves the right to cancel this Contract in whole or in part without penalty, upon written notice to the Contractor if any lien notice action is taken by the Contractor,

and/or any of their subcontractors and/or material suppliers, against a property owner.

f) Signed lien waivers for each individual work location/property are required (when the property to receive the improvement is identified) from all parties providing any labor and materials, including the Vendor. When lien waivers are required, the Vendor agrees to inform any party supplying labor and/or material to an identified property, prior to engaging such parties in providing weatherization services, that lien waivers are required in order for the Vendor to invoice the weatherization agency for the job. This applies whenever a specific property or properties to be improved is identified to the Vendor and any of their suppliers and/or subcontractors.

6.5. Warranties and Repairs

a) The Contractor shall provide the manufacturer's standard warranties on all items. In addition, a one (1) year service contract on commodities and labor is required for all work performed under this RFB. The one (1) year service contract shall commence on the date of installation completion or completion of any work required as a result of the installation inspection.

b) The Contractor shall furnish all warranty repairs or provide alternate source of local warranty repair at no extra cost to the Agency, the State of Wisconsin or the owner or occupant of the premises. Warranty repairs shall be performed within (3) days of notification.

c) The Contractor shall, at the direction of the Agency, correct or have corrected any work determined by the Agency or the State of Wisconsin to be substandard. Such corrective work shall be at no extra cost to the Agency, the State of Wisconsin or the owner or occupant of the premises. Corrective work shall be performed within (3) days of notification.

6.6. Failure to Perform

The Contract may be terminated for the Contractor's failure to comply with any of the specifications or conditions of the RFB or the Contract.

If the Contractor fails to provide commodities or services at a level of capacity (either volume or quantity) or quality acceptable to the Agency, the Agency may, at its discretion, (1) direct a corrective action plan, (2) suspend the Contract pending resolution of quality problems or (3) terminate the Contract for cause. If the Contract is terminated for cause, the Contractor may be removed from the statewide weatherization agency Bidder's list for a period of two to five years.

Failure to comply with Affirmative Action/Non-Discrimination conditions (Appendix A) may result in the Contractor becoming declared an "ineligible" contractor with the State (§16.765, Wis. Stats.), termination of the contract, or withholding of payment.

In the event a Contractor is (1) not able to meet the capacity (either volume or quantity) requirements of the Agency, (2) suspended or (3) terminated, the Agency may award a Contract under this RFB to the next Lowest Responsible Bidder or complete an alternate procurement.

6.7. Permits, Insurance and Other Requirements

a) The Contractor shall meet the insurance requirements specified in the terms and conditions. In addition, the Contractor shall provide a certificate of insurance listing CR-Social Development Commission as additional insured. Certificates of insurance shall be provided to the Agency within ten (10) working days of Notice of Intent to Award.

b) For all services contracts with the potential to exceed $149,999 annually and where wholesaler or subcontractor partnerships will be utilized to deliver weatherization services, a

payment bond is required on the part of the contractor in the amount of $150,000 or the anticipated amount of the contract, whichever is greater. The anticipated amount of the contract shall be based upon the historical spend of the Agency, adjusted for any conditions in the best judgment of the Agency. The contractor shall provide proof of payment bond within thirty (30) business days of the receipt of the award letter. No work shall be awarded to a contractor until this proof is provided and verified by the local agency. A payment bond is one executed in connection with a contract to ensure payment to all wholesalers and subcontractors performing work under the contract.

c) The Contractor shall complete all required forms and return same to the Agency attached to the invoice, or as directed by the Agency. (See attachment 5 Valid Invoice Requirements)

d) Following the Intent to Award notification, the Contractor shall provide to the Agency its IRS Form W-9 (Request for Taxpayer Identification Number and Certification) and Affirmative Action plan/exemption Vendor Application Form (if not already an established Vendor), MBE and/or DBE certificates (if applicable), City of Milwaukee Contractor License, Asbestos O/M Certification for Field Staff, Lead Safe Company Certificate, Lead Safe Renovator Certifications for Field Staff, Safety Data Sheets (SDS), copy of written safety plan, Certificate of Insurance (see Appendix A for more information).

e) Any change in material of equal or superior quality or installation standards shall be specifically approved in writing by the Agency. Any deviation or exceptions to the terms, conditions and/or specifications shall be submitted in writing and approved by the Agency with a signed change order. No minimum fee is allowed on change orders.

f) Unless otherwise directed by the Agency, the Contractor is responsible for obtaining required state or local licenses and permits to perform work identified in this RFB. The Contractor shall be reimbursed for the actual cost of the permit only (no processing fee is allowed to be added on to the invoice). Therefore, do not include estimated permit costs when calculating bid price for each replacement.

g) The Contractor shall participate in any training required by the Agency. Depending upon the cost of such training, a retention agreement may be required.

h) If performance of the work provided through this RFB requires training and/or certification, the Contractor shall be required to demonstrate compliance as directed by the Agency within (60) days of a signed contract award. Performance of work under this contract requires the following training and/or certifications:

- Asbestos O&M Certificate for Field Staff
- Lead Safe Company Certificate
- Lead Safe Renovator Certificates for Field Staff

6.8. Customer Education and Other Contractor Requirements

a) The Contractor shall review proper operation and maintenance of all appliances (including filter replacement on forced air units) with the customer upon completion of the installation.

b) The Contractor shall place all installation and warranty information packets and material with the installed appliance.

c) The Contractor shall affix a clearly visible sticker identifying the Contractor's name, phone number and date of installation on each new mechanical appliance (e.g., furnace, boiler).

d) When a replacement is required, it is the Contractor's responsibility to provide the **Home**

Energy Plus Program Services Agreement form to the customer and to obtain a completed, signed form at the time of the assessment or estimate. Forms are available in English, Spanish and Hmong and the Contractor shall have all types available during an assessment. Forms are available at this link (under Furnace Program Documents): http://homeenergyplus.wi.gov/category.asp?linkcatid=566&linkid=122&locid=25

6.9. Health and Safety

a) The Contractor shall comply with all applicable federal, state and local regulations affecting worker and customer safety.

b) If asbestos will be disturbed when replacing a heating unit, the Contractor shall ensure that required protocols are followed (Appendix A, Part B applies as follows: Weatherization Work –15; Emergency Furnace Services– 16). When such work is required, the Contractor shall follow the Agency Asbestos Operations and Maintenance Subcontractor Protocol. See Attachment 13.

c) If the work is performed in a pre-1978 dwelling and more than six square feet of interior paint per room will be disturbed, more than twenty square feet of exterior paint will be disturbed, and any time that windows are replaced or demolished, the contractor shall contact the Agency to receive direction. Such work shall comply with DHS Chapter 163 requirements. Appendix A – Part B, 14.0 and 14.2 apply; 14.1 does not apply.

6.10. Response Time

a) The parameters for response time are very specific and shall be adhered to because of the emergency nature of the program. Unless arrangements are made in advance for unusual situations and approved by the Agency, the Contractor risks suspension or termination if response times are not met.

b) The start time for response time begins with notification by the Agency or authorized agent.

c) Assessments shall be completed within 24 hours of notification. There is no exception to this requirement. If the Contractor cannot complete an assessment within 24 hours, the Agency shall be notified immediately. The Agency may choose to utilize another Contractor in such situations. If the inability to complete an assessment within 24 hours is deemed a contract performance issue, the contract may be terminated.

d) All required work – assessment, and repair or replacement – shall be completed within a total of 72 hours from notification, unless an exception is granted to extend the time for repair or replacement. If the Contractor determines that the repair or replacement will require an exception, it shall notify the Agency immediately. The Agency may choose to utilize another Contractor in such situations.

e) If an exception is granted, the total number of days for completion of the required work shall not exceed seven (7) days from notification unless other arrangements have been made for unusual situations.

f) The exception for unusual situations will apply only in situations in which there is no threat to the health or safety of the household or the household has been provided with temporary heat, or has been relocated. All exceptions shall be approved by the Agency. In such a case, the Agency may direct the Contractor to provide temporary heat.

6.11. Assessments

a) The Contractor shall complete an assessment within 24 hours of notification by the Agency or authorized agent. Heating system assessments will be completed according to the provisions of Attachment 6.

b) The cost for assessment shall be included in the Bid price for repair/replacement. In cases where the assessment results in no recommended repair or replacement, the Contractor may invoice for the cost of a trip charge only at a rate submitted by the Contractor in the Attachment 3 Cost Sheet.

c) If the Contractor observes the dwelling unit is ineligible for emergency furnace services, the Contractor shall cease the provision of services and immediately contact the Agency or authorized agent for additional instruction.

7. COST INFORMATION

7.1. Bid Pricing

a) The Bidder shall complete the Cost Sheets (Attachment 3) following the instructions provided on the Cost Sheets. Failure to submit unit pricing as instructed for any item listed in the Cost Sheets shall result in rejection of the Bid. Failure to submit required capacity information (volume or quantity) as instructed may result in rejection of the Bid. Do not alter the format of the Cost Sheets or it may result in rejection of the Bid.

b) The Bidder shall submit one fixed price per unit for the entire Contract period. If the Contract is renewed, the Contractor shall hold the fixed price per unit during the renewal period. Unit prices shown on the Bid or Contract shall be the price per unit of sale (e.g., gal., doz., ea.) as stated in the RFB or Contract. Price adjustments may be authorized by the Agency under limited circumstances (see Paragraph 7.3 Price Adjustments).

c) Bidders may not impose a markup or service charge on licenses or permits. Do not include the price of permits or payment bonds in the unit bid price. The Contractor is reimbursed for the actual cost of permits through the invoice process.

d) Bid prices include delivery of any installed products, installation, clean-up and removal of replaced product(s), and labor/material cost for any other tasks/items identified in the RFB or Attachments, unless specifically excluded.

7.2. Capacity

If required in the RFB cost sheet(s), the Bidder shall identify in writing as part of its Bid the volume of work and/or quantity of products it is able to handle in accordance with the Bid requirements.

7.3. Price Adjustments

The Contractor may lower a price at any time due to general market conditions or other considerations. Prices shall not be subject to any increase for ninety (90) calendar days from the date of the award. Any price increase proposed shall be submitted in writing to the Agency thirty (30) calendar days before the proposed effective date of the price increase, and shall be limited to fully documented cost increases to the contractor which are demonstrated to be industry wide. The Agency shall be the sole judge of whether a price increase shall be permitted, and shall either grant or reject the proposed increase in writing. The Agency reserves the right to reject any price increase that is deemed to be excessive.

8. ADDITIONAL INFORMATION REQUIREMENTS

8.1. Per Section 3.5 (f), the Bidder shall include the following additional documents as part of its Bid package:

- Product data specification sheets are required to be submitted.
- A written list of subcontractors and suppliers, if any, providing materials and/or labor for weatherization services. The list shall include the company name, address, contact information, and a description of the materials and/or services that will be provided.

Attachment 1 - Vendor Information Form

AGENCY NAME Community Relation Social Development Commission

Bid # *08-1922*
HE+ Furnace Program

Bidder/Vendor Company Name:			
Provide information for person authorized to complete and sign binding contracts			
Name of Owner/President/CEO			
Address (include Zip + 4)			
E-mail		Office Phone#	
Job title/position		Cell Phone#	
Provide information for person authorized to answer questions or clarify bid/proposal			
Name			
Address (include Zip + 4)			
E-mail		Office Phone#	
Job title/position		Cell Phone#	
Company Transactions – Provide information for person the Agency is to contact concerning orders and billings, and to receive Agency purchase orders			
Name			
Address (include Zip + 4)			
E-mail		Office Phone#	
Job title/position		Cell Phone#	
Company HR - Services/installation contracts only: Any Vendor/Contractor awarded over $50,000 on this contract must submit Affirmative Action information to the Agency. Provide information for the Personnel/Human Resource manager or other person responsible for company Affirmative Action plans.			
Name			
Address (include Zip + 4)			
E-mail		Office Phone#	
Job title/position		Cell Phone#	

Attachment 2A - Vendor Reference Form (Client)

AGENCY NAME Community Relations Social Development Commission

Bid # *08-1922*
HE+ Furnace Program

References for Bidder/Vendor:	

Provide company or client information for customers purchasing three (3) or more installations or contracts for product(s) and/or service(s) similar to those included in this RFB, within the past three (3) years. If any third party/sub-contractor(s) will be used to fulfill the terms of a contract awarded in accordance with this bid, duplicate this page to provide required information for any and all subcontractor parties.

By providing these references, Bidder/vendor authorizes any person/company named as a reference to provide to the Agency all reasonable and customary business reference information regarding the bidder. The provision of references constitutes permission for the companies/persons to provide, and the Procurement Manager to receive, any information deemed to be necessary to assess whether the bidder can meet the requirements of this RFB. Information provided that is deemed to be confidential shall be identified as such when provided, and the Procurement Manager shall maintain the confidentiality of all information so designated.

#1 Company Name			
Address (include Zip + 4)			
Contact Person		Phone No.	
Product(s)/Service(s) (describe)			
#2 Company Name			
Address (include Zip + 4)			
Contact Person		Phone No.	
Product(s)/Service(s) (describe)			
#**3 Company Name**			
Address (include Zip + 4)			
Contact Person		Phone No	
Product(s)/Service(s) (describe)			
#**4 Company Name**			
Address (include Zip + 4)			
Contact Person		Phone No	
Product(s)/Service(s) (describe)			
#**5 Company Name**			
Address (include Zip + 4)			
Contact Person		Phone No	
Product(s)/Service(s) (describe)			

Attachment 2B - Vendor Reference Form (Financial)

AGENCY NAME Community Relations Social Development Commission

Bid # *08-1922*
HE+ Furnace Program

References for Bidder/Vendor:	

Financial information: Provide contact information for credit references, (financial institutions, equipment wholesalers, etc.) that may be contacted to verify financial stability.

By providing these references, Bidder/vendor authorizes all persons/companies named as a reference to provide to the Agency all reasonable and customary business reference information regarding the bidder.

#1 Company Name			
Address (include Zip + 4)			
Contact Person		Phone No.	
Description of work			
#2 Company Name			
Address (include Zip + 4)			
Contact Person		Phone No.	
Description of work			
#**3 Company Name**			
Address (include Zip + 4)			
Contact Person		Phone No	
Description of work			
#4 Company Name			
Address (include Zip + 4)			
Contact Person		Phone No	
Description of work			

<u>Attachment 4</u> – RFB# 08-1922 HE+ Furnace Program

Technical Specifications for Heating System Work for the Wisconsin Weatherization and Home Energy Plus (HE+) Furnace Programs

This document contains the standards for heating system work performed as part of the Wisconsin Weatherization Program and the HE+ Furnace Program (including Emergency Furnace services). It is based, in part, on the Wisconsin Weatherization Field Guide, chapters 3 and 7, and applicable requirements from the Wisconsin Weatherization Program Manual.

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Tables

1. INTRODUCTION

The primary emphasis of the following sections is on the repair or replacement of heating systems and general technical specifications. The decision to repair versus replace the system is based on other policies and is not included in this document.

Some standards differ between heating-system work completed as part of a weatherization job and work completed within the HE+ Furnace Program (HE+FP) Non-Emergency and Emergency Furnace services (in which the primary emphasis is to address a "no-heat" or unsafe heat situation). Where standards differ, they are identified as "**HE+FP EXCEPTION(S)**" at the end of each section. All of the Exceptions apply only to the HE+ Furnace Program – Non-Emergency and Emergency Furnace services. *For purposes of this document, all references to HE+ Furnace Program – Non-Emergency and Emergency Furnace services will be referred to as **HE+ Furnace Program services.***

References to Chapter 3 refer to the Weatherization Field Guide, which is available at: http://homeenergyplus.wi.gov/category.asp?linkcatid=494&linkid=122&locid=25

The **heating system replacement check lists** referred to in this document are available at: http://homeenergyplus.wi.gov/category.asp?linkcatid=494&linkid=122&locid=25 (under Field Forms, Required Forms). The most current copy is required. Suppliers and installers should check the site at the beginning of each heating season, and regularly during the heating season to check for updates. Note that the "Heating System Repair or Clean and Tune Check List" is required for weatherization jobs that do not involved a system replacement, but not for HE+ Furnace Program work.

A. As part of every assessment that results in repair or replacement:

1. Assess all heating systems for safety. Leak-testing of all gas piping is required.
2. A qualified professional shall complete all mechanical-systems work. Contractors providing services shall be licensed and/or registered to provide those services as required by the authority having jurisdiction at the address where work is completed.

B. Leak-Testing Gas Piping

Natural gas and propane piping systems may leak at their joints and valves. Find gas leaks with an electronic combustible-gas detector, often called a "gas sniffer". A gas sniffer will find all significant gas leaks if used carefully. Remember that natural gas rises from a leak and propane falls, so position the sensor accordingly.

1. Check all valves and joints with the gas sniffer.
2. If the sniffer detects a leak, verify the leak with a non-corrosive bubbling liquid designed for finding gas leaks.
3. Repair all gas leaks verified with bubbling liquid.
4. Replace kinked or corroded flexible gas connectors.
5. Replace spring style gas valves with ball style gas valves, if a valve leak is detected and verified with test fluid.

C. Heating-System Sizing Requirements

Install properly sized units following REScheck®, ACCA Manual J or equivalent industry-accepted sizing procedures. Base the heat load calculations on planned post-weatherization conditions. The Agency shall provide the post-weatherization condition information to the Contractor.

Document the heat-load calculations, and provide a copy of the sizing calculations to the Agency.

HE+FP EXCEPTION: For an HE+ Furnace Program job, the Contractor shall size the new heating system based upon existing conditions, unless directed otherwise by the Agency.

D. Specifications

The specifications in Table 1 apply to all replacement heating systems except wood-burning units. The minimum efficiency standards as listed in the AHRI Directory of Certified Product Performance (https://www.ahridirectory.org/) apply as listed below.

Table 1 Required Annual Fuel-Utilization Efficiency

Replacement heating unit	Required AFUE	AHRI Certification Required	Comments
Natural Gas/LP Furnaces, FER-compliant	≥ 95%	Yes	Non-weatherized, condensing, sealed combustion, FER-compliant air handler with ECM constant-torque motor.
Oil Furnaces, FER-compliant	≥ 83%	Yes	FER-compliant air handler (ECM or PSC air handler motor)
Oil Boilers	≥ 83%	Yes	
Gas Boilers - **High Efficiency**	≥ 90%	Yes	Condensing, sealed combustion, modulating boiler.
Gas Boilers - **Standard Efficiency**	≥ 84%	Yes	Allowed only when a high-efficiency boiler installation is not possible.
Manufactured housing – Natural Gas/LP Furnaces, FER-compliant	≥ 95%	Yes	Condensing, direct vent; shall fit footprint of existing system; furnace closet door shall close fully. FER-compliant air handler with ECM constant-torque motor.
Manufactured housing – Oil Furnaces, FER-compliant	≥ 79%	Yes	Shall fit footprint of existing system, and existing furnace closet door shall close fully. FER-compliant air handler with ECM constant-torque motor.
Direct Vent Gas Space Heaters	≥ 80%	Yes	Air circulating fan required. Electronic Intermittent Pilot or Electric Ignition required; no standing pilot lights. No vent-free units
"B" Vent/Inside Wall Gas Space Heaters	≥ 75%	Yes	Air circulating fan required. Electronic Intermittent Pilot or Electric Ignition required; no standing pilot lights. No vent-free units
Condensing Gas Space Heaters	≥ 90%	Yes	Installer shall implement a means to drain condensate (or deliver condensate to an approved drain). An evaporator pan is not an acceptable condensate management system. Air circulating fan required. Electronic Intermittent Pilot or Electric Ignition required. No standing pilot lights. No vent free units
Oil Space Heaters	NA	No	Air circulating fan required.

- All replacement heating systems for manufactured housing shall be rated for manufactured housing.
- Gas-Fired Furnaces shall conform to ANSI Z21.47–1990 with Addendum Z21.47a–1990 and Z21.47b–1992. Oil Fired Furnaces shall conform to UL4 727, Eighth Edition, 1994 and NFPA 31-2001.

2. GENERAL HEATING SYSTEM REPLACEMENT

A. General Heating System Replacement — All Types

1. Replace heating systems for health and safety reasons when the heating unit is totally disabled or is in a life-threatening condition.
2. Provide photographs to the Agency to document the furnace conditions that existed prior to the provision of services. The photographs shall include manufacturer's nameplate, furnace conditions, and any problem(s).
3. Install new heating appliances to manufacturer's specifications (per manufacturer's instructions; PMI) following all applicable local, state and national codes.
4. Assess all heating systems for safety. Monitor ambient CO levels during combustion and draft testing. An ambient CO level above 35 ppm is a safety hazard – cease testing immediately. The combustion appliance zone (CAZ) should be ventilated before the resumption of testing and diagnosis of CO problems.
5. Test the gas-piping system for leaks, following the protocol in Section 1(B).
6. Use existing distribution system and fuel supply line to the greatest extent possible, except where they present a hazard.
7. Properly remove and dispose of existing unit.
8. Install the replacement furnace to a dedicated electrical circuit rated or fused to match the amperage of the new system's requirements for overcurrent protection.
9. Install condensate tubing or piping, or a condensate pump, where needed to reach an appropriate drain (not a sump). Condensate pipes generally may drain to 1) The laundry stand pipe; 2) A new standpipe, indirect or local waste pipe; or 3) A floor drain, when the condensate line can be properly secured to the drain grate and does not pose a tripping hazard to the occupants. Installing a "trip strip", with the customer's approval, may be useful to prevent occupants from tripping over the piping. All installations require an air break. Condensate lines cannot be drilled directly into any drain pipe. For more information, see Wisconsin Safety and Professional Standards (SPS), 382.33. Local jurisdictions may vary on acceptable options.
10. Condensate pumps may be installed using an existing (non-GFCI) receptacle accessible without an extension cord, a new GFCI receptacle installed as part of the work, or directly wired per manufacturer's recommendations.
11. Seal openings in chimneys where natural-draft appliances are eliminated. Seal shall be air tight. Indicate with a written notice on the chimney, where sealed, that the chimney is no longer in use.
12. If asbestos abatement is necessary when replacing a heating unit, required protocols shall be followed by appropriately trained and/or certified persons (see OSHA requirements and Department of Health Services regulations in DHS 159, http://www.dhs.wisconsin.gov/asbestos/).
13. If the work is performed in a pre-1978 dwelling and more than six square feet of interior paint per room will be disturbed, or more than 20 square feet of exterior paint will be disturbed, or any windows are to be replaced or demolished, such work shall comply with DHS Chapter 163 requirements.
14. Provide an owner's manual with heating-system replacements. Attach the manual to or near the heating system for repeated access.
15. Provide customers with in-home operation and maintenance instructions and a review of safety precautions.
16. Affix to the heating unit a tag, displayed prominently, that identifies who the customer should call for service. The tag information shall have the name, address and telephone number of the service organization.

HE+ FP EXCEPTIONS: For an HE+ Furnace Program job, the Contractor shall assess all heating systems for safety as identified in 2.A.4, above. However, monitoring ambient CO levels during combustion and draft testing is not required.

Forced-Air Furnace Replacement Standards — General

Replacement furnaces shall meet the minimum efficiency shown in Table 1. Observe the following standards in furnace installation and document on the appropriate heating system replacement check list.

1. Add ductwork to address client comfort or airflow issues only with Agency approval. Add return or supply ductwork as part of furnace replacement to improve airflow to an acceptable level or to establish an acceptable value for temperature rise (measured supply temperature minus return temperature).
2. Mechanically fasten installed ductwork with screws. Seal the ductwork to the furnace cabinet with mastic and fabric mesh tape, or other UL 181-approved material, to form an airtight connection on all sides.
3. Provide the occupant with one of the following filter packages, rated at MERV 6 or higher:
   a. One deep-pleated (3” depth or more) disposable furnace filter; or
   b. Six 1”-2” disposable filters (one installed, five replacements); or
   c. One permanent cleanable filter.
4. All forced-air systems shall have a sealing filter cover. The filter shall be easy to access and replace. Magnetic filter covers are allowable only if they provide an adequate seal to the ductwork to prevent air leakage.
5. Confirm that temperature rise meets manufacturer’s specifications as indicated on the furnace label, at highest and lowest firing rates.
6. Set fan control for optimal efficiency without negatively impacting customer comfort.
7. Measure and document draft on non-condensing furnaces.
8. Test for and document carbon monoxide levels in exhaust gas.
9. Seal holes in the furnace jacket of the air handler with mastic or foil tape. Filters shall be held firmly in place and provide complete coverage of blower intake or return register. Filters shall be easy to replace.
10. Set existing thermostat’s heat anticipator to the amperage measured in the control circuit, or follow thermostat manufacturer’s instructions for adjusting cycle length. Replace thermostat only if necessary.

HE+FP EXCEPTIONS: None.

B. Boiler Replacement Standards — General

Replacement boilers shall meet the minimum efficiency shown in Table 1. Follow other applicable requirements when replacing boilers. Replacement boilers shall meet the installation requirements shown on the “Hot Water Boiler Replacement Check List”. *A completed copy of the Hot Water Boiler Replacement Check List is required prior to payment of any invoice.*

Boiler piping and controls present many options for zoning, boiler staging, and energy-saving controls. Dividing homes into zones, with separate thermostats, can significantly improve energy efficiency over operating as a single zone. Modern hydronic controls can provide different water temperatures to different zones with varying heating loads.

Follow these specifications when replacing boilers:

1. Size boilers using REScheck®, ACCA Manual J or equivalent calculation. Boiler seasonal efficiency is more sensitive to proper sizing than is furnace efficiency. Also see Section 1(C), “New-Heating-System Sizing Requirements”.
2. Inspect radiators. Repair or replace as necessary.
3. Flush the distribution system per manufacturer’s instructions or until the water runs clean and is free of sediment.
   a. Modify the distribution system as necessary to work properly with the replacement boiler.
   b. Confirm that the distribution system *has no leaks.* Repair water leaks in the system.
   c. Stop valves shall be located at accessible points in the supply and return pipe connections and as near to the boiler as is convenient and practical, to permit draining the boiler without emptying the system.
4. With a zoned system, flush each zone separately.
5. Locate new zone valves by the boiler. Each zone shall have its own shut-off valves.
6. The boiler shall have a pressure-relief valve (PRV) rated and sized correctly for the boiler BTU input and maximum operating pressure and installed according to the manufacturer’s specifications.
7. Install a pressure-reducing, automatic fill valve if none is present. The automatic fill valve shall have a purge valve or bypass piping with a shut-off valve.
8. The feed-water (inlet) side of the pressure-reducing, automatic fill valve shall have a backflow preventer with a shut-off valve installed upstream from the backflow preventer. The boiler (outlet) side of the pressure-reducing feed valve shall have a shut-off valve to allow for maintenance or replacement of the fill valve without draining the boiler system.
9. The backflow preventer shall have a drain facing below horizontal.
10. The system shall have automatic or manual air-bleed valves to eliminate air at all high points in the distribution-piping system.
11. The system shall have an expansion tank sized for the volume of water in the heating system.
12. Install the circulating pump near the downstream side of the expansion tank.
13. Extend new piping and radiators to conditioned areas, like additions and finished basements that are heated by space heaters, as directed by Agency.
14. Install thermostatically controlled radiator valves on the major radiators or zone controls.
15. Bleed or purge air from radiators and from the entire system.
16. FOR HIGH-EFFICIENCY BOILERS:
    a. Equip the boiler with an outdoor reset installed on a north-facing exterior wall.
    b. Program the boiler’s heating curve (outdoor reset) in line with the dwelling’s heat loss and radiation capacity.
    c. Per manufacturer’s instructions, install condensation-resistant venting with condensate drains.
    d. Treat the boiler distribution water pH level PMI.
17. FOR STANDARD-EFFICIENCY BOILERS:
    a. Confirm that the stack temperature is at least 300°F, to minimize condensation in the chimney.
    b. Verify that return-water temperature is above 130°F, to prevent acidic condensation within the boiler.
    c. Install piping bypasses, mixing valves, primary-secondary piping, or other strategies as necessary to prevent condensation.
    d. Consider installing a two-stage thermostat, outdoor reset and/or warm-weather shutdown to improve efficiency.

18. Insulate all supply piping outside conditioned spaces. For hot-water systems, install 1½- inch fiberglass insulation on all pipes less than or equal to 1½ inches in diameter, and 2-inch fiberglass insulation on all pipes greater than 1½ inches in diameter. For steam systems, install 1½-inch fiberglass insulation on all pipes less than or equal to 1½ inches in diameter, and 3-inch fiberglass insulation on all pipes greater than 1½ inches in diameter.
19. On a floor below grade, install the new boiler above known flood levels and as high as practical, to avoid damage in case of flooding.
20. Inspect chimney for deterioration and correct sizing. If this is a health and safety issue, provide to the Agency a separate cost estimate to repair and/or reline the chimney as necessary.
21. Install a full-closure electric vent damper where feasible for standard-efficiency boilers.
22. Also see Section 8 of this document, "Hot-Water Space Heating Distribution".

HE+FP EXCEPTIONS: None.

C. Gas-Fired Heating Installation

Replacement heating systems shall meet the minimum efficiency shown in Table 1. Follow other applicable requirements when replacing a gas furnace. Replacement natural-gas and propane furnaces shall meet the installation requirements shown on the "Replacement Gas Furnace Check List". *A completed copy of the Replacement Gas Furnace Check List is required prior to payment of any invoice.*

1. Check clearances of heating unit and its vent connector to nearby combustible materials, according to the International Fuel Gas Code (IFGC).
2. Verify and make adjustments, if necessary, so that flue-gas oxygen, stack temperature, draft, and carbon-monoxide levels are within manufacturer's specifications.
3. If manufacturer's specifications are not available, adjust to meet specifications in Table 2.

Table 2 – Typical Ranges for Gas Burning Appliances

Performance Indicator	**SSE 80+**	**SSE 90+**
Carbon Monoxide - parts per million (ppm) as-measured specifications, or within documented manufacturer specifications	≤ 100	≤ 100
Stack temperature (°F)	325 - 450°	90 - 120°
Temperature heat rise (°F)	40 - 70°	30 - 70°
Oxygen (O_2)	4 – 9%	4 – 9%
Gas pressure output at manifold – inches of water column (IWC)	3.2 – 3.9	3.2 – 3.9
Propane pressure output at manifold (IWC)	10 – 11	10 – 11
Steady state efficiency (SSE)	82 – 86%	92 – 97%
Supply temperature	120 - 140°	95 - 140°

4. Clock gas meter to troubleshoot oxygen, temperature, or carbon monoxide problems. Adjust gas input if necessary to correct the fuel-air mixture.
5. Test and set the gas manifold pressure to meet the manufacturer's specifications.
6. Follow manufacturer's venting instructions (and the International Fuel Gas Code) to establish a proper venting system.
7. Follow manufacturer's instructions for proper removal of condensate.

8. Check input gas pressure on furnace when all gas-fired appliances are operating in the house, to assure there is no drop-off in required gas pressure at full load.
9. Ensure proper sediment trap on gas line.
10. When required, an approved gas-pipe type will be installed, supported, and electrically bonded in accordance with National Fire Protection Association (NFPA) 54 or the Wisconsin Uniform Dwelling Code. Follow the manufacturer's specifications for installation. For more information see NFPA 54.

HE+FP EXCEPTIONS: None.

D. Oil-Fired Heating Installation

Replacement heating systems shall meet the minimum efficiency shown in Table 1. Follow all other applicable requirements when replacing an oil furnace. Replacement oil furnaces shall meet the installation requirements shown on the Oil Replacement Furnace Check List. *A completed copy of the Oil Replacement Furnace Check List is required prior to payment of any invoice.*

1. Properly size the nozzle using REScheck®, Manual J, or an equivalent industry-accepted sizing formula. Also see above Section 1(C), "Heating-System Sizing Requirements."
2. Examine existing chimney and vent connector for suitability as venting for new appliance. The vent connector may need to be re-sized or the chimney may need to be re-lined. Provide to the Agency a separate cost estimate to repair and/or reline the chimney or vent connector as needed.
3. Provide clearances of heating unit and its vent connector to nearby combustibles in accordance with NFPA 31.
4. Measure draft, adjust flue damper PMI, and test for carbon monoxide.
5. Test oil pressure to verify compliance with manufacturer's specifications.
6. Test thermostat amperage and adjust thermostat heat anticipator to meet manufacturer's specifications.
7. Adjust unit as needed so that oxygen, flue-gas temperature, and smoke number meet or exceed manufacturer's specifications. If manufacturer's specifications are not available, refer to table 3.
8. Install new fuel filter and purge fuel lines as part of new installation.
9. Visually inspect chimney for safe operation in accordance with NFPA 211.
10. Repair tank and oil lines for safe operation in accordance with NFPA 31.

Table 3 – Typical Ranges for Oil Burning Appliances

Performance Indicator	**SSE 80+**	**SSE 90+**
Carbon Monoxide - parts per million (ppm) as-measured specifications, or within documented manufacturer specifications	≤ 100	≤ 100
Stack temperature (°F)	325 - 550°	300 - 450°
Oxygen (O_2)	6 – 9%	5 – 9%
Smoke number (1-9)	≤ 2	≤ 1
Excess air	≥ 80%	≥ 35%
Oil pressure – pounds per square inch (psi)	≥ 100	100 - 150
Over-fire draft – inches of water column (IWC) negative	.02 IWC or 5 Pa	.02 IWC or 5 Pa
Flue draft (IWC negative)	.04 - .05 IWC or 10 – 15 Pa	.04 - .05 IWC or 10 – 15 Pa
Steady state efficiency (SSE)	≥ 75%	≥ 80%

HE+FP EXCEPTIONS: None.

3. REPLACING SPACE HEATERS

1. The program does not allow or fund replacement of portable space heaters.
2. Follow all applicable requirements when replacing space heaters.
3. Follow manufacturer's venting instructions carefully. Don't vent sealed-combustion, power-vented space heaters into chimneys serving atmospheric-draft appliances.
4. Verify that flue-gas oxygen and stack temperature are within manufacturer's specifications. If manufacturer's specifications are not available, refer to the ranges in Table 2.
5. If manufacturer's specifications require a fire-rated floor protector, size it to the width and length of the space heater, as required.
6. Replacement space heaters shall have an air-circulating blower.
7. Replacement space heaters shall have an Electronic Intermittent Pilot or Electronic Ignition.
8. Replacement space heaters shall not have a standing pilot light.
9. Replacement space heaters shall not be vent-free.
10. Space heater shall be provided with a properly grounded duplex receptacle for electrical service.
11. Provide customers with in-home operation and maintenance instructions and a review of safety precautions.

HE+FP EXCEPTIONS: The following applies only to an HE+ Furnace Program job where full weatherization will not occur:

When there are two or more existing space heaters that are each greater than 15 years old, consider replacing those units with a forced-air heating system. This installation requires prior approval. To obtain prior approval, the Agency shall submit a request to the Home Energy Plus Help Desk. The following information shall be included in the request, and the Contractor shall provide this information to the Agency:

1. The measured steady-state efficiency of the existing space heaters (or estimated efficiency, for units that are non-functional.)
2. The cost of replacing both space heaters.
3. The AFUE rating (per AHRI) of the replacement space heaters.
4. The total cost of installing a forced-air heating system.
5. The AFUE rating (per AHRI) of the replacement forced-air heating system.

4. REPLACING WOOD HEATERS

All replacement wood space heaters shall be listed appliances. All wood heaters shall meet applicable local codes and EPA requirements. Mobile-home wood space heaters shall be listed and HUD-approved appliances. All other applicable requirements shall be followed when replacing a wood stove.

Follow these guidelines for replacing wood heaters:

1. All installations shall meet manufacturer's specifications and conform to NFPA 211.
2. All wood heating units shall be certified to meet the EPA emission standards or local standards, whichever are most restrictive.
3. Installed units shall be certified and labeled by:
   a. NFPA 211; or
   c. Other equivalent listing organization.

4. Visually inspect chimney for safe operation, in accordance with NFPA 211.
5. Install a stack thermometer where appropriate on all wood-space-heater installations. Follow the manufacturer's recommendation for proper installation.
6. Follow the manufacturer's recommendations for providing outdoor combustion air.
7. Provide customers with in-home operation instructions, to include proper wood-burning practices and proper maintenance and safety recommendations, including the need for fire extinguishers.
8. It is important that customers understand the potential impact of exhaust ventilation on wood-heater operation.

HE+FP EXCEPTIONS: Prior approval from DEHCR is required before installing outdoor wood boilers using HE+ Furnace Program funds.

5. VENTING COMBUSTION GASES

Proper venting is essential to the operation, efficiency, safety and durability of combustion heaters. NFPA standards and the International Fuel Gas Code (IFGC) are the authoritative information sources on material choice, sizing, and clearances for chimneys and vent connectors, as well as for combustion air. Applicable codes from the following NFPA and ICC documents shall apply (see Table 4):

- The International Fuel Gas Code (IFGC) (ICC)
- NFPA 31: Standard for the Installation of Oil-Burning Equipment
- NFPA 211: Standard for Chimneys, Fireplaces, Vents, and Solid-Fuel-Burning Appliances

Table 4 – Guide to Venting Standards

Topic	Code Reference
Vent Sizing	IFGC, Section 504
Clearances	IFGC, Section 308 and Tables 308.2I NFPA 31, Section 4-4.1.1 and Tables 4-4.1.1 and 4-4.1.2 NFPA 211, Sections 6.5, 4.3, 5
Combustion Air	IFGC, Section 304 NFPA 31, Section 1-9; NFPA 211, Section 8.5 and 9.3

A. Improving Inadequate Draft

If measured draft is below minimum draft pressures, investigate the reason for the weak draft. Open a window, exterior door, or interior door to observe whether the addition of combustion air will improve draft. If this added air strengthens draft, the problem usually is depressurization. If opening a window has no effect, inspect the chimney. The chimney could be blocked or excessively leaky. Also see Table 5, Draft Problems and Solutions.

i. Duct improvements to solve draft problems

a. Seal all return-duct leaks near furnace.
b. Unless it is a finished living area, seal or remove all return-air registers in the combustion appliance zone.

c. Improve balance between supply and return air by installing new return ducts, transfer grills, or jumper ducts, with Agency approval and the homeowner's consent.
d. All remaining natural-draft appliances in the combustion appliance zone shall be properly drafting after the replacement heating system is installed.

ii. Chimney improvements to solve draft problems

a. Remove chimney obstructions.
b. Repair disconnections or leaks at joints and where the vent connector joins a masonry chimney.
c. Measure the size of the vent connector and chimney and compare with vent-sizing information listed in Section 504 of the International Fuel Gas Code. A vent connector or chimney liner that is either too large or too small can result in poor draft.
d. If wind is causing erratic draft, consider installing a wind-damping chimney cap, with Agency approval.
e. If the masonry chimney is deteriorated, consider installing a new chimney liner, with Agency approval.
f. Increase the pitch of horizontal sections of vent.

Table 5 – Draft Problems and Solutions

Draft Problems and Solutions

Problem	Possible Solutions
Adequate draft never established	Remove chimney blockage, seal chimney air leaks, or provide additional combustion air as necessary.
Blower activation weakens draft	Seal leaks in the furnace and in nearby return ducts. Isolate the furnace from nearby return registers.
Exhaust fans weaken draft	Provide make-up or combustion air if opening a door or window to outdoors strengthens draft during testing.
Closing interior doors during blower operation weakens draft	Add return ducts, grills between rooms, or jumper ducts.

HE+FP EXCEPTIONS: None.

6. ELECTRIC FURNACES AND ELECTRIC BASEBOARD HEAT

Note: ***Replacement of an electric heating unit with an electric system is not allowed as part of HE+ Furnace Program services.***

If an electric furnace will remain in the building, follow the requirements regarding forced-air distribution work, temperature rise, and other applicable requirements. In addition:

1. Check and clean thermostat.
2. Clean and lubricate blower, if present.
3. Clean or replace all filters.

4. Vacuum and clean blower and housing around electric elements, if dirty.
5. Clean fins on electric-baseboard systems, if applicable.
6. Take extra care in duct sealing and duct airflow improvements for electric furnaces because of the high cost of electricity.
7. Verify that safety limits, temperature rise, and static pressure conform to manufacturer's specifications.

Caution: Disconnect power from electric furnaces before performing any maintenance.

HE+FP EXCEPTIONS: Replacement of an electric heating unit with an electric system is not allowed as part of the HE+ Furnace Program services.

7. FORCED-AIR DISTRIBUTION WORK — GENERAL

1. Inspect and test ductwork for acceptable temperature rise, and for health and safety concerns.
2. Seal all major return and supply leaks. Remove (patch openings) all grilles installed in plenums.
3. Install dampers where supply ductwork is added, and adjust as necessary to balance the system.
4. Perform ductwork modifications as necessary, as approved by Agency, to ensure client comfort and to ensure that temperature rise meets manufacturer's specifications.
5. As directed by the Agency and with the owner's permission, in rooms other than kitchens and bathrooms with limited or no return air, add a return duct, undercut the door, or install a transfer grille or jumper duct to improve the return airflow
6. Note: Return grills are not allowed in the combustion appliance zone (CAZ), unless the CAZ is a finished living area. Do not install return grills in unconditioned areas or unintentionally conditioned areas.
7. Do not add supply registers to the CAZ unless it is an intentionally heated part of the home. Consult with customers about the removal of existing supply grilles in the CAZ. To replace supply plenum grilles, a new supply register may be installed at a location where conditioning is needed (e.g., a laundry area or work bench).

   When applicable, for additional information regarding forced-air distribution work, see the Weatherization Field Guide, Chapter 3.

HE+FP EXCEPTIONS: None.

8. HOT-WATER SPACE-HEATING DISTRIBUTION — GENERAL

Hydronic distribution systems consist of the supply and return piping, the circulator, expansion tank, air separator, air vents, and heat emitters. A properly designed and installed hydronic distribution system can operate for decades without service. However, many systems have installation flaws or need service.

A. Hot-Water Space-Heating Distribution – Safety Checks and Improvements

1. Confirm the existence of a 30-psi-rated pressure-relief valve. Replace a malfunctioning valve or add one if none exists. Note signs of leakage or PRV discharges, and correct conditions causing the relief valve to discharge.
2. Make sure that the expansion tank isn't waterlogged or too small for the system. This could cause the pressure-relief valve to discharge when the water is heated. Test expansion tank for acceptable air pressure — usually 12 to 22 psi.
3. If rust is observed in venting, verify that return water temperature is above 130° F for non-condensing gas boilers and above 150° F for oil boilers, to prevent acidic condensation.
4. The high-limit control shall deactivate burner at a water temperature of 180° F or less.
5. Lubricate circulator pump(s) if necessary.

B. Hot-Water Space-Heating Distribution – General

1. Remove corrosion, dust, and dirt on the fire side of the heat exchanger.
2. Check for excess air during combustion from air leaks and incorrect fuel-air mixture.
3. Boiler shall not have a low-limit control for maintaining a minimum boiler-water temperature, unless the boiler is heating domestic water in addition to space heating.
4. Most systems have an automatic fill valve. If there is a manual fill valve for refilling system with water, it shall be open during air purging, to push water in and air out.
5. Consider installing a two-stage thermostat or timer control to increase circulator on-time compared to burner on-time.
6. Consider installing outdoor reset controls on boilers, to regulate supply water temperature according to outdoor temperature.
7. After control improvements like two-stage thermostats or reset controllers, verify that return-water temperature is high enough to prevent condensation and corrosion in the chimney, as noted previously.
8. Vacuum and clean fins of fin-tube convectors to remove visible dust and dirt there.
9. Insulate all supply piping that passes through unheated areas, using pipe insulation at least 1½-inch thick and rated for temperatures up to 200° F.
10. Consider installing electric vent dampers on natural-draft gas- and oil-fired high-mass boilers.

HE+FP EXCEPTIONS: None.

9. HEATING-UNIT REPLACEMENT IN MANUFACTURED HOUSING

Replacement gas furnaces shall be sealed-combustion, downflow, condensing furnaces, approved for use in mobile homes. Unit shall fit footprint of existing space and furnace closet door should close fully. Replacement oil furnaces shall have a minimum AFUE rating of 79% and be approved for use in a mobile home. Follow all other applicable requirements when replacing a furnace.

Follow these procedures when installing new mobile-home furnaces:

1. Install properly sized units according to REScheck®, Manual J or an equivalent industry-accepted sizing formula.
2. Size the heating unit so that the existing compartment can accommodate it without major retrofitting, and ensure that the fit and finish is appropriate for the compartment. An installation that involves compartment retrofitting requires prior approval from the Agency.

3. Order and install a new furnace base, unless you are sure that the existing base matches the new furnace.
4. Support the main duct underneath the furnace with additional strapping if necessary to hold it firmly in place.
5. Attach the furnace base firmly to the duct connector. Seal all seams between the base, the duct connector, and main duct with mastic and fabric mesh tape.
6. Before installing the furnace, carefully seal the base plate to the floor prevent air leakage through the belly and floor.
7. Convert a belly-return system to a living-space-return system by rerouting returns to furnace-cabinet door.
8. Ensure that there is adequate return air.
9. Provide a complete air seal and weather seal around the new chimney and combustion-air pipe where it penetrates the roof, ceiling, wall, or floor.
10. Provide a completely watertight weather seal at the roof penetration. Reinforce the area underneath the roofing with plywood or other strong material if necessary to create a strong patch and to prevent a low spot in the roof at the penetration. It is best for any roof patch to be slightly elevated from the surrounding roof, to prevent water collection at the patch.
11. Conduct a combustion test and compare test results with the specifications in Table 2 or Table 3. Take action to correct non-conforming specifications.
12. Install a condensate pump if necessary to convey the furnace's condensate to a suitable drain. Install condensate lines in a manner that guards against freezing.
13. Use existing distribution system and gas-supply line.
14. Properly remove and dispose of existing unit.
15. Provide an owner's manual with heating-system replacements.
16. Provide all clients with in-home operation and maintenance instructions and a review of safety precautions.

HE+FP EXCEPTION: When full weatherization work will not be performed, disregard Item 7 above.

10. PROGRAMMABLE THERMOSTATS

Install a programmable thermostat with a forced-air system when the existing thermostat must be replaced and the occupant is willing and able to program the replacement thermostat. Relocate thermostats to interior walls and instruct occupants regarding the operation of setback thermostat. Properly recycle any thermostat that has been replaced.

Setback thermostats are not recommended for some boiler systems — this is because following the setback period, the boiler may take too long to reheat the dwelling.

HE+FP EXCEPTIONS: None.

11. DUCT INSULATION AND DUCT SEALING

Refer to the Wx Field Guide, Chapter 3.4, "Forced-Air Furnace Distribution", for specifications and guidance regarding duct insulation and duct sealing.

HE+FP EXCEPTION: When full weatherization work will not be performed, there is no requirement to insulate ducts. For duct-sealing requirements, see Section 7, "Forced-Air Distribution Work – General", of this document.

12. CLEANING & TUNING GAS AND OIL FURNACES

Refer to the Wx Field Guide, Chapter 3.8.3, “Testing and Servicing Gas Combustion Systems”, for specifications and guidance regarding the cleaning and tuning of gas combustion appliances. Refer to the Wx Field Guide, Chapter 3.9.2, “Testing and Servicing Oil-Fired Systems”, for specifications and guidance regarding the cleaning and tuning of oil furnaces.

HE+FP EXCEPTION: When full weatherization will not be completed, a full clean and tune is not required. Perform only those services necessary to have the system running properly or to extend the expected useful life of the system.

13. WORST-CASE DRAFT PROTOCOL

Refer to the Wx Field Guide, Chapter 5.5, “Worst-Case Draft Protocol”.

HE+FP EXCEPTION: Test remaining natural-draft appliances for draft under natural conditions, not under worst-case (depressurization) conditions.

14. COMBUSTION AIR

Refer to the Wx Field Guide, Chapter 3.14, “Combustion Air”, for specifications and guidance regarding combustion air. The Agency shall determine whether the combustion-appliance zone requires additional combustion air.

HE+FP EXCEPTION: When full weatherization will not be performed, the Contractor shall determine whether the combustion-appliance zone has sufficient combustion air. Only add combustion air with Agency approval.

Attachment 5 – RFB# 08-1922 HE+ Furnace Program

Valid Invoice Requirements for Heating System Work for the Home Energy Plus (HE+) Furnace Programs (Emergency & Non-emergency Services) (rev. 11/2020)

The purpose of this document is to provide bidders with a list of items required for a valid invoice as identified in the RFB, Section 6, **Invoices, Required Documentation and Payment.** Also see the RFB, Section 6, and/or Attachment 4 for other specific requirements related to a valid invoice and required documents. Invoices presented for payment shall be submitted in accordance with the RFB requirements and the following Agency instructions. Some documentation (Items #1 through #5) may be required prior to contractor invoice submittal.

	Required documentation –following information or items shall be provided to the Agency (with, or prior to, the invoice) when applicable:	***HE+ Furnace*** Assessment	***HE+ Furnace*** repair or replacement
1	A description of the problem with the furnace/heating unit, age of the unit, nature of the repair or replacement to be performed.	Yes	Yes
2	Explanation of any deviations from normal procedure, and reasons for the exception.	Yes	Yes
3	A copy of all documentation regarding problems or issues regarding job site performance, commodity performance and/or client issues.	Yes	Yes
4	Photographs as specified in RFB section 5. (Photos for repair work may be required by the Agency.)		Yes
5	Heating system sizing calculation documentation as specified in RFB section 5.		Replacements only
6	Lien Waiver(s) – contractor, appliance supplier, subcontractors (section 6).		Replacements only
7	A signed, completed **HE+ Furnace Program Customer Agreement** form (located under **Furnace Program Documents** at: http://homeenergyplus.wi.gov/category.asp?linkcatid=566&linkid=122&locid=25).		Replacements only
8	A completed **Heating System Checklist** (available under **Required forms** at: http://homeenergyplus.wi.gov/category.asp?linkcatid=494&linkid=122&locid=25).		Replacements only
9	Copy of invoice(s) for any subcontracted asbestos and/or lead safe work.		Yes
10	Copy of Permit(s) – see RFB section 6 (unless directed otherwise)[1].		Yes
11	Copy of receipt demonstrating payment of permit fees and amount paid (unless permit verifies that information).		Replacements only
12	Copy of Payment Bond only if premium is included in invoice – see RFB sections 6.7 and 7.1.		Yes
13	Provide total cost of replacement/repair and identify individual costs for any collateral and/or items with separate costs (e.g., permits). (This should match cost sheet price, if item was bid.)		Yes

[1] Except when a permit is not issued by the local jurisdiction, copy of building permit is required. Supply a copy of the receipt of payment to be reimbursed for permit fee.

Attachment 6: RFB# 08-1922 HE+ Furnace Program

Administrative Requirements for Home Energy Plus (HE+) Furnace Program

This section reflects the program requirements for Contractor work performed under the HE+ Furnace Program – Emergency and Non-emergency Services. Rigid time constraints apply during the Heating Season (per the RFB sections 6.2 and 6.10). The job may include both an Assessment and Repair or Replacement, or the Assessment only.

A. Ineligibility for Program Services Due to Structural/Other Reasons

When the following conditions are observed, the Contractor shall cease the provision of services and notify the Weatherization Agency (**Agency**) immediately:

1. There is no existing furnace/heating unit installed in the dwelling.
2. Building contains a residential and a commercial unit where the residential and commercial units share a furnace.
3. New construction or units under major remodeling.
4. Recreational vehicles and other ineligible structures/vehicles that have been modified with permanent additions, or made immobile by putting onto blocks or otherwise attaching them to a site.
5. The heating system is working and there is no safety concern. A 'no heat' situation does not exist when there is a secondary heating system capable of providing the required heat to the dwelling.
6. Service cannot be provided to the dwelling because of the condition of the dwelling, housekeeping or sanitation issues, or perceived threats to worker safety.
7. Applicant has altered the operation of the furnace, or has mistreated the furnace.
8. Situations where a unit meeting the efficiency guidelines is not safe for the size of the space/dwelling.
9. The heating system is not associated with the eligible unit identified by the Agency.
10. The applicant was not living in the home at the time the heating system failed or became unsafe (e.g., the heating system was inoperable, unsafe, in need of repairs when the home was purchased).
11. Other reasons specific to the dwelling or household.

B. Repairs & Replacements

The following requirements apply to the provision of services (repairs or replacements):

1. Every heating system shall be assessed to determine structural eligibility and identify any safety concerns (RFB Attachment 4).
2. The determination to repair or replace a heating system shall be a reasonable and appropriate solution to the situation.
3. Provide services only for the primary fuel heating system in the dwelling, except when the fuel type is being changed.
4. Only one heating unit may be replaced in a dwelling, except when the heating units are space/room heaters.
5. Replacement of an electric heating unit with an electric heating unit is not allowed, unless no other fuel options are feasible and prior approval has been obtained from the Agency.
6. Replacement/heating units shall meet or exceed the minimum efficiency guidelines (except wood stoves/furnaces) in Table 1 (RFB Attachment 4), unless prior approval has been obtained from the Agency.
7. For all heating unit replacements, the Contractor shall satisfy the Technical Specifications (RFB Attachment 4) and shall ensure that installation procedures and units meet appropriate codes, ordinances and standards.

C. Collateral Activities

Collateral Activity is work performed to meet Technical Specifications (RFB Attachment 4) or other RFB requirements and is in addition to work required to install the basic heating system. Collateral work associated with a heating unit replacement shall be approved by the Agency and is included as part of the calculation of the total cost for replacement.

When invoiced, the Contractor shall identify all collateral work performed. Follow Agency directions for reporting cost (see RFB Attachment 5). Examples of collateral activities include:

1. Building permits (see RFB for requirements).
2. Duct work necessary to achieve the required air flow for the furnace.
3. Electrical work necessary to run a dedicated line from the main service box to the furnace/boiler.
4. Pipe work and valves necessary to get the hot water/steam from the boiler into the distribution system.
5. Chimney repairs when part of a furnace repair/replacement. This may include chimney liners, and may be required to meet building codes. The repairs must be necessary to meet health and safety standards or code.
6. If asbestos abatement is necessary when replacing a heating unit, it shall be addressed and the abatement shall be performed by individuals that are trained, and certified (if required), for asbestos related work (see RFB and Appendix A).
7. A ‘clean and tune’ may be incorporated into a repair job only as needed (RFB Attachment 4).

D. Assessment & Decision to Repair or Replace

It is expected there will be an assessment of the furnace on every referral even if there is no resulting repair or replacement work (e.g., when the heating system is found to be working properly or the dwelling is ineligible). When there is no replacement or repair needed, the cost of the assessment shall be identified on the invoice.

The Agency is responsible for authorizing the installation of repairs and/or replacements. This is addressed in RFB Section 6.2. The Contractor shall follow the direction provided by the Agency regarding this decision-making authority, and the authorization to proceed with such work.

E. Invoice and Documentation

See Attachment 5 for specific instructions for invoice requirements and necessary documentation. Documentation requirements identified in the RFB and in RFB-Attachment 4 apply to work performed under this contract.

Wisconsin Weatherization

Replacement Gas Furnace Checklist

Customer: _____ Contractor: _____

Brand: _____ Model #: _____

Date Installed: _____ Serial #: _____

WisWAP BID: _____ **OR** WHEAP App#: _____

Check box, enter test results or requested number as item is inspected or completed. Indicate "N/A" if not applicable.

PMI = Per Manufacturer's Instructions. **Fuel Type:** ☐ **Natural Gas or** ☐ **Propane**

INSPECTION & ADJUSTMENTS

Documents:	☐ Photos documenting furnace conditions and manufacturer nameplate provided to Agency			
	☐ Installation information sticker (installer name, phone number, date)			
	☐ Warranty and manual in envelope attached to furnace		☐ Agency given copy of sizing calculation	
	☐ Design temperature heat loss: _____ BTU per hour @ _____ degrees F. design temp			
Electrical:	☐ Service disconnect is present and operational		☐ Dedicated circuit and breaker properly rated	
	☐ Set thermostat heat anticipator (thermostat) PMI		☐ Not applicable	
Gas Piping:	☐ Sized for BTUs of all appliances	☐ No leaks	☐ Shut off present	
	☐ Sediment trap present	☐ CSST bonded		
Air Filter:	☐ Filter opening covered/sealed	☐ Filter removes easily with no obstructions		
	Filter Size: _____ x _____			
General:	☐ Furnace elevated off basement floor. Note: If not in basement, can be on floor if approved PMI			
	☐ Combustion air and exhaust piping properly installed, terminated and supported			
	☐ Distribution plenums sealed and all major duct leaks properly sealed per specifications			
	☐ Condensate properly drained per local code and PMI		☐ Test holes sealed	
	☐ Orphaned water heater flue gasses are not spilling		☐ Permit required	

Installed and Measured BTUs of New Furnace:

BTUs (high input): _____ Measured Input (2 cu. ft. of gas): _____ Minutes: _____ Seconds: _____

BTUs (low input): _____ (if applicable) Measured Input (2 cu. ft. of gas): _____ Minutes: _____ Seconds: _____

Measured Gas Pressure in Inches of Water Column(IWC):

Input (High): _____ Input (Low) – if applicable: _____ Manifold (High): _____ Manifold (Low): _____

Enter test result. Indicate "N/A" if installation is a space heater.

PERFORMANCE TESTING

Steady State Efficiency Test

Adjust to Achieve Typical Ranges for Gas Burning Appliances (see page 2)

SSE %	O2%	CO PPM	Intake Air °F	Flue °F	PMI AFUE%

Distribution Static Pressure

☐ IWC or ☐ Pa	Return	Supply	Total Pressure
High Input			
Low Input			

Temperature Rise

Supply °F	Return °F	(Supply – Return)	PMI Min	PMI Max

Variable Speed Furnaces	Heating CFM*	Fan Speed Setting
High Input		
Low Input (if applicable)		

*CFM Measurement Method: ☐ Plate Method ☐ Fan Tables ☐ Other: _____

I certify the visual inspection and performance tests were completed as indicated.

Installer Signature: _____

Printed Name: _____

Date: _____

I certify the heating system was installed to my satisfaction on the date indicated.

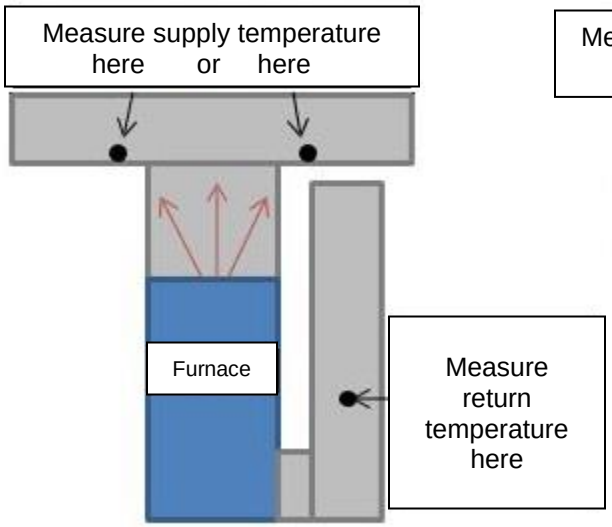
Customer Signature: _____

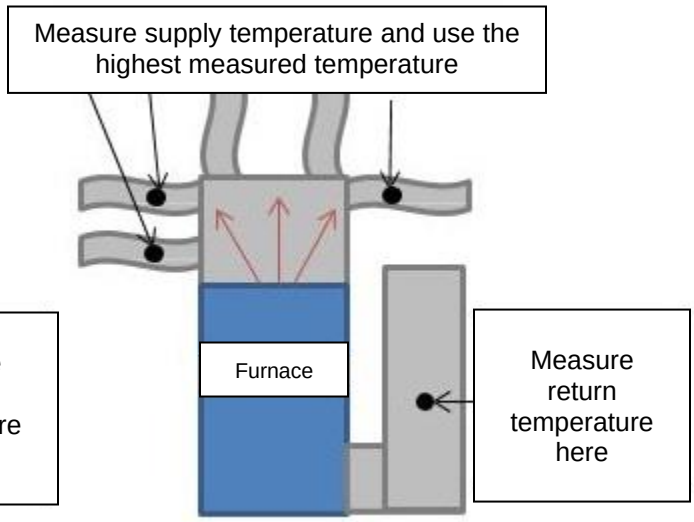
Printed Name: _____

Date: _____

Natural Gas and Propane Specifications

Generally accepted ranges, excerpted from the Weatherization Field Guide. Always follow manufacturer's instructions if they differ from listed typical specifications. Examples of temperature rise testing procedures below.





Performance Indicator	SSE 80+	SSE 95+
Carbon monoxide (CO) ppm air-free	≤ 400	≤ 400 or PMI
Stack temperature °F	325°- 450°	90°- 120°
Temperature Heat Rise °F	40° - 70°	45° - 70° or PMI
Oxygen (O_2) %	4 - 9%	4 - 9%
Natural gas pressure output at manifold - Inches of Water Column (IWC)	3.2 - 3.9 IWC	3.2 - 3.9 IWC
Propane pressure output at manifold (IWC)	10 - 11 IWC	10 – 11 IWC
Steady-state efficiency (SSE)	82 - 86%	95 - 97%
Supply temperature °F	120° - 140°	95° - 140°

Comments:

Wisconsin Weatherization
Replacement Oil Furnace Checklist

Customer: _____ Contractor: _____

Brand: _____ Model #: _____

Date Installed: _____ Serial #: _____

WisWAP BID: _____ **OR** WHEAP App#: _____

Check box, enter test results or requested number as item is inspected or completed. Indicate "N/A" if not applicable.
PMI = Per Manufacturer's Instructions.

INSPECTION & ADJUSTMENTS

Documents:	☐ Photos documenting furnace conditions and manufacturer nameplate provided to Agency	
	☐ Installation information sticker (installer name, phone number, date)	
	☐ Warranty and manual in envelope attached to furnace	☐ Agency given copy of sizing calculation
	☐ Design temperature heat loss calculation: _____ BTU per hour	
Electrical:	☐ Service disconnect is present and operational	☐ Dedicated circuit and breaker properly rated
	☐ Set thermostat heat anticipator (thermostat) PMI	☐ Not applicable
Fuel Supply:	☐ New fuel filter	☐ Tank and lines comply with NFPA 31
	☐ No leaks	☐ Purged fuel lines
Air Filter:	☐ Filter opening covered/sealed	☐ Filter removes easily with no obstructions
	Filter Size: _____ x _____	
General:	☐ Furnace elevated off basement floor	
	☐ Acceptable clearances of heating unit and vent connector to nearby combustibles per NFPA 31	
	☐ Distribution plenums sealed; all major duct leaks properly sealed per specifications	
	☐ Chimney inspected for compliance with NFPA 211	☐ Test holes sealed
	☐ Barometric damper control operates properly	☐ Permit required

Measured BTUs of New Furnace:

BTUs (input): _____ Nozzle GPH: _____ Nozzle Angle: _____° Nozzle Spray Type: _____

Note: The oil nozzle information is required to be posted on the furnace with the date of installation.

Measured Oil Pressure:

PMI _____ PSI Measured _____ PSI

PERFORMANCE TESTING

Overfire Draft Measurements		
Overfire Draft		Must be a minimum of 5 Pa. or 0.02 IWC or PMI

Measured Smoke Number	

Steady State Efficiency Test
Adjust to Achieve Typical Ranges for Oil Burning Appliances (see page 2)

SSE %	O2%	CO PPM	Intake Air °F	Flue °F	PMI AFUE%

Distribution Static Pressure

☐ IWC ☐ Pa	Return	Supply	Total Pressure

Temperature Rise

Supply °F	Return °F	(Supply – Return)	PMI Min	PMI Max

Air Flow Rate Testing	Heating CFM*	Fan Speed Setting
High Input		

*CFM Measurement Method: ☐ Plate Method ☐ Fan Tables ☐ Other: _____

I certify the visual inspection and performance tests were completed as indicated.

Installer Signature: _____

Printed Name: _____

Date: _____

I certify the heating system was installed to my satisfaction on the date indicated.

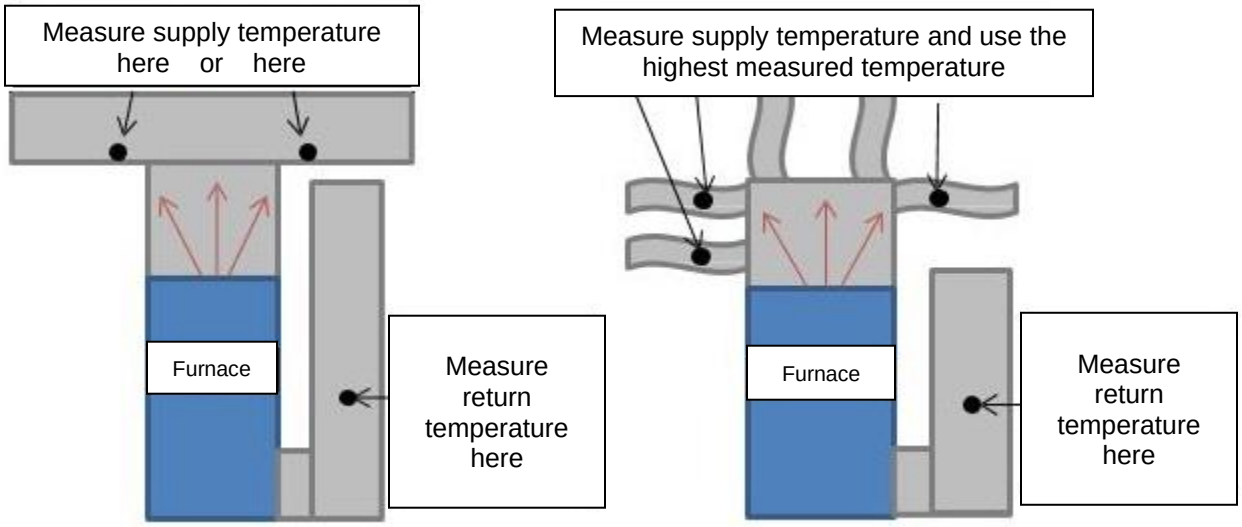
Customer Signature: _____

Printed Name: _____

Date: _____

Fuel Oil Heating System Specifications

Generally accepted ranges, excerpted from the Weatherization Field Guide. Always follow manufacturer's instructions if they differ from listed typical specifications. Examples of temperature rise testing procedures below.



Typical Ranges for Oil Burning Appliances

Performance Indicator	Flame Retention
Carbon Monoxide (CO) ppm air-free	≤ 400
Stack Temperature °F	300°- 450°
Oxygen (O_2) %	5 - 9%
Smoke Number (0-9)	< 1
Oil Pressure Pounds per Square Inch (psi)	PMI or 100 – 150
Over-fire Draft (Inches of Water Column	-0.02 IWC or -5 Pa
Steady-State Efficiency (SSE)	≥ 80%

Comments:

Wisconsin Weatherization
Replacement Boiler Checklist

Customer: _____ Contractor: _____
Brand: _____ Model #: _____
Date Installed: _____ Serial #: _____
WisWAP BID: _____ **OR** WHEAP App#: _____

Check box, enter test results or requested number as item is inspected or completed. Indicate "N/A" if not applicable.
PMI = Per Manufacturer's Instructions. **Fuel Type:** ☐ **Natural Gas** ☐ **Propane** ☐ **Oil**

INSPECTION & ADJUSTMENTS

Documents:
- ☐ Photos documenting boiler conditions and manufacturer nameplate provided to Agency.
- ☐ Installation information sticker (installer name, phone number, date)
- ☐ Warranty and manual in envelope attached to boiler ☐ Agency given copy of sizing calculation
- ☐ Design temperature heat loss: _____ BTU per hour @ _____ degrees F. design temp

Electrical:
- ☐ Service disconnect is present and operational ☐ Dedicated circuit and breaker properly rated
- ☐ Set heat anticipator (thermostat) PMI ☐ Not applicable

Gas Piping:
- ☐ Sized for BTUs of all appliances ☐ No leaks ☐ Shut off present
- ☐ Sediment trap present ☐ CSST bonded

Fuel Oil:
- ☐ New Fuel Filter ☐ No leaks ☐ Tank/Lines comply with NFPA 31 ☐ Purged Fuel Lines

General:
- ☐ Boiler elevated off basement floor. Note: If not in basement, can be on floor if approved PMI.
- ☐ Check clearances of heating unit and vent connector to nearby combustibles (Gas IFGC; Oil NFPA 31)
- ☐ Combustion air and exhaust piping properly installed, terminated and supported
- ☐ Installed Pressure Relief Valve PMI ☐ Test holes sealed
- ☐ Barometric controls operate properly PMI (if applicable) ☐ Permit Required
- ☐ Bled air from entire system ☐ Distribution Flushed PMI
- ☐ Condensate properly drained per code and PMI ☐ Distribution Water Treated PMI
- ☐ Orphaned water heater flue gasses are not spilling

Existing Load Terminals and Capacity:
Radiation Type: ☐ Fin Tube ☐ Radiator ☐ Baseboard ☐ Other: _____
Linear Feet: _____ (Fin Tube or Cast Iron Baseboard) Square Feet: _____ (Radiators)

Measured BTUs of New Boiler:
Modulating Boiler Turndown Ratio (if applicable): _____ :
Rated BTUs (input): _____ Measured Btu Input (2 cu. ft. of gas): _____ Minutes: _____ Seconds: _____
Nozzle GPH: _____ Nozzle Angle: _____ ° Nozzle Spray Type: _____

Measured Gas Pressure in Inches of Water Column (IWC) or Oil PSI:
Input: _____ Manifold (High): _____ Manifold (Low): _____ Oil (PSI): _____

Installed Devices: Indicate what was installed. Steps must be taken to prevent condensation in non-condensing units.
☐ Air Excluding Device ☐ Mixing Valves ☐ Automatic Fill Valve ☐ Backflow Preventer ☐ Other: _____
☐ Wye Strainer ☐ Outdoor Sensor (install on North wall) ☐ Circulator Pump

HP	GPM	W
Size	Speed Setting	Watts

PERFORMANCE TESTING

Combustion Testing
Adjust to achieve typical ranges for applicable appliance (see page 2)

	☐ CO_2 ☐ O_2	CO PPM	Intake Air °F	Flue Temp °F	SSE %	AFUE %
High Input						
High Input PMI						
Low Input						
Low Input PMI						
Oil Boilers Only:	Overfire Draft:		Smoke Test #:			

Outdoor Reset Setup	Warm Weather Shut Down	Design Temp
Outdoor Temp °F		
Boiler Supply °F		

Measured Temps °F	Supply	Return	Outdoor
Primary Loop (High Input)			

I certify the visual inspection and performance tests were completed as indicated.

I certify the heating system was installed to my satisfaction on the date indicated.

Installer Signature _____ Date _____ Customer Signature _____ Date _____

Replacement Boiler Specifications (Natural Gas, Propane (LP) and Fuel Oil)

Generally accepted ranges, excerpted from the Weatherization Field Guide. Always follow manufacturer's instructions if they differ from listed typical specifications. Examples of temperature rise testing procedures below.

Performance Indicator	SSE 80+	SSE 95+
Carbon monoxide (CO) ppm air-free	≤ 400	≤ 400 or PMI
Stack temperature °F	325°- 450°	90°- 120°
Oxygen (O_2%)	4 - 9%	4 - 9%
Natural gas pressure output at manifold - Inches of Water Column (IWC)	3.2 - 3.9 IWC	3.2 - 3.9 IWC
Propane pressure output at manifold (IWC)	10 - 11 IWC	10 – 11 IWC
Steady-State Efficiency (SSE)	82 - 84%	95 - 97%
Supply temperature °F	120° - 140°	95° - 140°
Return Water Temperature-Non-condensing °F	> 120	N/A

Typical Ranges for Oil Burning Appliances

Performance Indicator	Flame Retention
Carbon Monoxide (CO) ppm air-free	≤ 400
Stack Temperature °F	300°- 450°
Oxygen (O_2) %	5 - 9%
Smoke Number (0-9)	< 1
Oil Pressure Pounds per Square Inch (psi)	PMI or 100 – 150
Over-fire Draft (inches of Water Column (IWC))	-0.02 IWC or -5 Pa
Steady State Efficiency (SSE)	≥ 80%
Return Water Temp (Non-condensing boiler) °F	> 120

Oil: Measure draft at over fire

Comments:

Wisconsin Weatherization

Repair or Clean and Tune Checklist

Customer: _____ Contractor: _____

Work Date: _____ Serial #: _____

WisWAP BID: _____ **OR** WHEAP App#: _____

Fuel Type: ☐ Natural Gas ☐ Propane ☐ Oil ☐ Other: _____

System Type: ☐ Forced Air ☐ Boiler ☐ Space Heater ☐ Other: _____

Clean, inspect, test, and repair: Perform the following inspection procedures and maintenance practices on heating systems as necessary. The goal of these measures is to reduce carbon monoxide (CO), adjust fuel-air mixture, improve steady-state efficiency and verify the operation of safety controls. All drilled holes should be properly sealed after completion of testing. Repairs that affect the combustion or the distribution of a gas heating system shall at a minimum have the Performance Testing section completed. If additional items in the other sections are being addressed or noticed during the repair, those sections shall be filled out, and notify the Weatherization Agency. All Oil heating systems require a Clean & Tune.

Check box, enter test results or requested number as item is inspected or completed.

ALL SYSTEMS	Emergency shut off	☐	Service disconnect is present and is operational
	Electrical service	☐	Inspect circuit; Rated for application; Note problems & make recommendations
	Fuel lines/storage tanks	☐	No leaks present; Shut off present; Filter or sediment trap is present and clean
	Blower	☐	Clean
	Air Handler	☐	Clean
	Air Filter	☐	Clean or replace
	Heat Exchanger	☐	Clean surface & inspect for leaks; Inform customer & agency if exchanger is cracked
	Filter Slot/Filters	☐	Filter slot with cover is present; Replacement filters/permanent filter present
	Thermostat	☐	Set heat anticipator to amperage measured in control circuit or PMI
OIL HEATING UNIT	Oil Filter	☐	Replace filter
	Nozzle	☐	Replace nozzle
			Nozzle GHP: _____ Nozzle Angle: _____ ° Spray Type: _____
	Electrodes	☐	Adjust gap and position in burner tube PMI
	Transformer	☐	Clean contacts; Measure voltage & replace if voltage is not within PMI
	Burner/Burner Tube Assembly	☐	Clean; Inspect for over burning; Replace flame retention head if damaged
	Combustion Chamber	☐	Clean; If necessary repair combustion chamber or replace
	CAD/Stack Control Cell	☐	Test; Verify that burner shut off, PMI, when the cad cell is blocked from flame
	Flame Ignition	☐	Test; Ignition must be instantaneous; Pre-purge type unit, blower on prior to ignition
	Barometric Damper	☐	Plumb, level, swings freely
	Over Fire Draft	☐	Measure and adjust as needed (see page 2)
	High Limit Control	☐	Measure shut off temperature & adjust or replace if >250° (furnace) or >180° (boiler)
	Oil Pump Pressure	☐	Measure and adjust to PMI; Measured Pressure: _____ PSI
NG/LP	Burners	☐	Check for dust, debris, misalignment, flame impingement & other flame-interference problems; Clean, vacuum and adjust as needed
	Burner/Manifold	☐	No soot, melted wire insulation or rust in burner and manifold area outside of firebox
	Pilot (if equipped)	☐	Burning, good ignition, check safety control for gas valve shut-off when pilot is out
	Gas Pressure (IWC)	☐	Input: _____ Manifold: _____

PERFORMANCE TESTING

Input on Label:		**Output on Label:**		**Measured Input: (Clock Meter)**	

Steady State Efficiency Test				
Adjust to Achieve Typical Ranges for Gas Burning Appliances (see page 2)				
SSE %	O2%	CO PPM	Smoke #	Flue °F

Distribution Static Pressure			
☐ IWC or ☐ Pa			Total Pressure
Return	Supply	Air Flow	

Temperature Rise		
Supply °F	Return °F	Total Rise

PMI Range	
Minimum	Maximum

I certify the visual inspection and performance tests were completed as indicated.

Installer Signature: _____

Printed Name: _____

Date: _____

I certify the heating system was installed to my satisfaction on the date indicated.

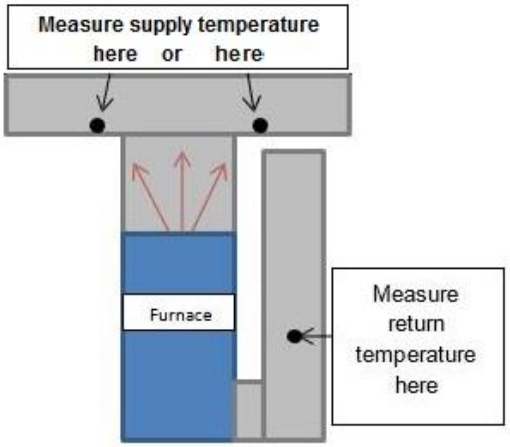
Customer Signature: _____

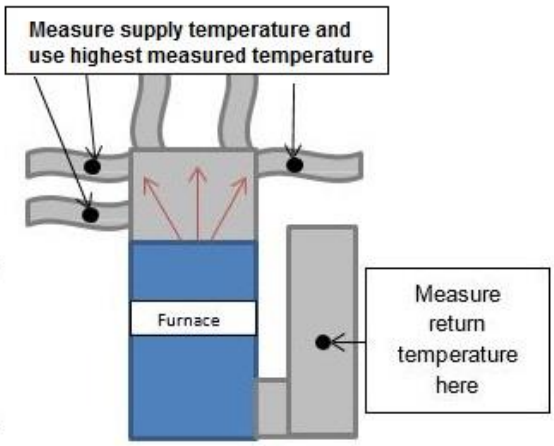
Printed Name: _____

Date: _____

Natural Gas and Propane Specifications

Generally accepted ranges, excerpted from the Weatherization Field Guide. Always follow manufacturer's instructions if they differ from listed typical specifications. Examples of temperature rise testing procedures below.





Typical Ranges for Gas Burning Appliances		
Performance Indicator	**SSE 80+**	**SSE 95+**
Carbon monoxide (CO) ppm air free	≤ 400	≤ 400 or PMI
Stack temperature °F	325°- 450°	90°- 120°
Temperature Heat Rise °F	40° - 70°	45° - 70° or PMI
Oxygen (O_2) %	4 - 9%	4 - 9%
Natural gas pressure output at manifold - Inches of Water Column (IWC)	3.2 - 3.9 IWC	3.2 - 3.9 IWC
Propane pressure output at manifold (IWC)	10 - 11 IWC	10 – 11 IWC
Steady-state efficiency (SSE)	82 - 86%	95 - 97%
Supply temperature °F	120° - 140°	95° - 140°

Typical Ranges for Oil Burning Appliances	
Performance Indicator	**Flame Retention**
Carbon monoxide (CO) ppm air free	≤ 400
Stack temperature °F	300°- 450°
Oxygen (O_2) %	5 - 9%
Smoke Number	< 1
Oil pressure pounds per square inch (psi)	PMI or 100 - 150
Over-fire draft	-0.02 IWC or 5 Pa
Steady State Efficiency (SSE)	≥ 80%

Comments:

Attachment 8 – RFB # 08-1922 HE+ Furnace Program

Wisconsin Weatherization Field Guide – July 2021 – excerpt on **CONDENSATE REMOVAL**

3.8.2 Condensate Removal

Condensate is routed away from the furnace in one of two ways:

1. Running condensate tubing or piping directly from the furnace to an appropriate drain (Preferred Method); or
2. Pumping the condensate from the furnace to an appropriate drain using an electric **condensate pump**.

Whenever feasible, pipe directly from the furnace to the floor drain, without installing a condensate pump. Mechanically fasten the piping, either to the floor-drain strainer or to the floor itself. Ensure the piping will not pose a tripping hazard to the occupants. Installing a "trip strip," with the customer's approval, may be useful to prevent occupants from tripping over the piping.

Sometimes, a direct-piping strategy will not be feasible. There may not be a drain near the furnace, or perhaps the piping would pose a tripping hazard to the occupants. In these situations, installing a condensate pump is likely a better option. See the next section for information about condensate pumps.

Condensate Pumps

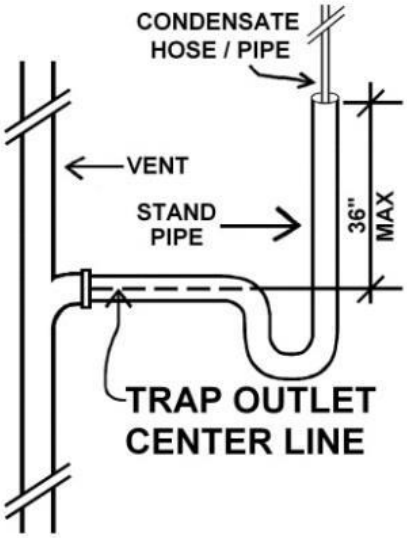
A condensate pump is installed when direct piping to an approved drain is not feasible. Condensate pumps may be installed using existing receptacles, new ground-fault circuit interrupter (GFCI) receptacles, or directly wired in accordance with pump manufacturer's requirements. Inspect the entire condensate system for leaks after installation. Insulate the condensate drain system when it is located in an unconditioned area or has the potential to form condensation. If a condensate pump is installed in a finished area, a secondary drain pan should be installed with a safety feature to disable the heating system if the pump fails.

Condensate is a slightly acidic byproduct of combustion. Plumbing code requires it to be drained to the sanitary sewer system, and not to the ground or to a sump pump. Code allows condensate to go to a floor drain, a stand pipe, or an indirect or local waste pipe served by a stand pipe or the laundry tray tail piece. An air gap is required where the condensate line enters the receptor. The condensate line cannot go directly into any drainpipe. See SPS 382.33 for Wisconsin code provisions regarding condensate drains.

Floor drain: The floor drain is the most common method for discharging condensate. Condensate lines that run to the drain must be secured to the floor to keep them in place. This method works best when the drain is not in a typical path of foot traffic.

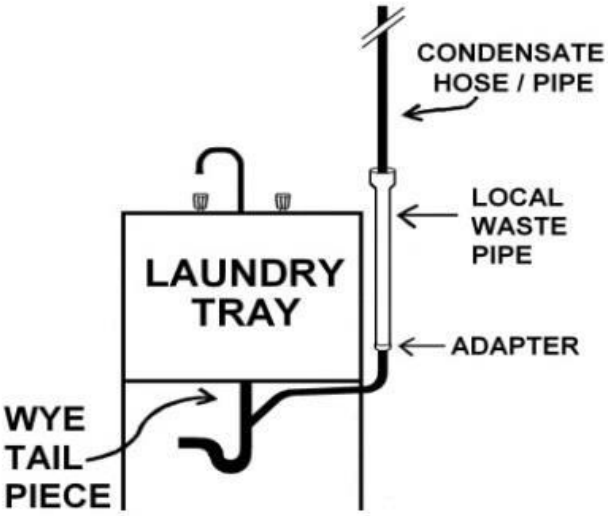
Wisconsin Weatherization Field Guide – July 2021 – excerpt on **CONDENSATE REMOVAL**

Stand pipe: The laundry stand pipe is often the best place to discharge condensate. If the opening is not large enough for the washing machine hose and the condensate line, an adapter can be added to enlarge the top of the pipe. A stand pipe cannot exceed 36 inches in height above the centerline of the horizontal drainpipe. If an existing standpipe is not an option, a new stand pipe, trapped and vented, is acceptable. This option should be the last choice, as the trap can dry out if the heating system does not discharge condensate over an extended time. If a washing machine could be discharged into the stand pipe, extend the standpipe at least 18 inches above the centerline of the horizontal drainpipe.



STAND PIPE

Indirect or local wastepipe: A vertical pipe that uses the trap of a stand pipe or laundry tailpiece is considered an indirect or local wastepipe. It needs to be higher than the flood line of the laundry tray or stand pipe. This method can also be used if the existing standpipe is full of other hoses.



Social Development Commission
Pathways from poverty to success

SDC Home Energy Plus Weatherization & Emergency Furnace Program Gas Leak Test Protocol

Test for gas leaks by following these steps:

1. Gas leak test must be done prior to the start of any repair or replacement work.

2. Inspect all gas piping, CSST and connectors from the meter to all connected combustion appliances using an electronic gas detector. Include connections to all gas appliances and gas stove valves.

3. If the detector identifies a leak, verify the leak with a non-corrosive bubbling liquid designed for confirming gas leaks.

4. Repair all gas leaks verified with bubbling liquid.

5. Replace kinked or corroded flexible gas connectors, prior authorization required if not on original work order.

6. The first 5 leaks must be repaired at NO COST to the agency, each additional leak is repaired at a fixed rate of $50/ea. Additional leaks requiring repair, identified beyond the first 5 included, must be approved for repair by the Project Manager or Field Supervisor prior to their completion.

7. No verified gas leaks are allowed in the building on the customer side of the gas meter, contractor must repair all gas leaks prior to leaving job. The customer is to be notified of any gas leaks identified on the street of the meter so they are able to contact the gas company for repair.

Note:

Gas leaks located by the Final Inspector or during a Quality Control Inspection must be addressed immediately upon notification.

HE+ Program Services Customer Agreement

WX Agency:	
Customer Name:	
Customer PID:	
Program Service:	☐ Furnace Program ☐ Water Conservation Program

Please check the appropriate response(s), sign and date this form.

☐ I consent to a (select one): ☐ Heating System Replacement ☐ Water Heater Replacement

☐ I understand I will be required to surrender my old system and allow a Home Energy Plus Program Services staff member to enter my home for a final safety and performance inspection within 2 weeks of installation, or future HE+ Program Services may be denied. If further work is required to comply with safety standards and performance specifications, I agree to allow the contractor to perform the work and a follow-up inspection to take place.

☐ I understand that randomly selected customers will also receive a Quality Assurance inspection conducted by the State of Wisconsin, Department of Administration and/or its designated subcontractor. If I am randomly selected, I agree to allow a Quality Assurance inspector to enter my home to conduct the inspection. I understand that this is *in addition* to the final safety and performance inspection.

☐ By accepting this system replacement, I further agree to properly maintain the unit as described in the owner's manual. I understand that if maintenance is neglected, future HE+ Program Services may be denied.

☐ I understand the Home Energy Plus Furnace Program does not service air conditioners and is not liable for current or future maintenance and/or operation of air conditioning units.

☐ I decline this Program Service replacement. (Please indicate reason below)

_____

_____

Customer Signature: _____ Date: _____

Printed Name: _____

Contractor Signature: _____ Date: _____

Printed Name: _____

HE + Furnace Program
Contractor On - Site Assessment

Client Information

Date Ref. Email Recv'd: October 1, 2021 **Time Recv'd:** 10:30 AM **Date Of Assessment:** October 2, 2021

Client Name: John Doe **Client Phone #:** (414) 555-2575 **Alt. Client Phone #:** _____

Address: 1730 West North Avenue, Milwaukee

Contractor Information

Contractor Name: _____ **Service Tech's Name:** _____

Heating System Details

Age of Heating System: _____ **Other:** _____

Heating System Issue: _____

Heating System 2nd Issue:

Extra Details (Heating System or Home):

☐ **Repair Details:(include all measures to be considered):**

☐ **Replace Details:(Include all measures to be considered):**

☐ **Verbal Approval Given**

Total Cost for Repair: $

Total Cost for Replacement: $

Trip Charge Only: $

Contractor Signature: **Date:**

******Office Use For Approvals******

☐ _____ **Date:** _____

HE+ Furnace Program Furnace Conversion Work Agreement

Weatherization Agency		Client		Furnace Contractor	
Name		Name		Name	
Phone		Phone		Phone	

Please check the appropriate response, sign and date this form.

☐ I consent to a heating system conversion. I understand that my existing furnace will be modified to use natural gas and I will not receive a new furnace. I agree to allow a Furnace Program staff member to enter my home for a final safety and performance inspection following completion of the conversion. If further furnace work is required to comply with safety standards and performance specifications, I agree to allow the contractor to perform the work and a follow-up inspection to take place. I further agree to allow the State of Wisconsin, Department of Administration and/or its designee to enter my home to conduct a quality assurance inspection of work performed. By accepting this work I agree to properly maintain the heating system or future Furnace Program services may be denied.

I understand that the program will not be responsible for fuel conversions of appliances that are outside the scope of the program (i.e. cook stoves and clothes dryers) and that I am responsible for any cost associated with downsizing the existing fuel tank and converting or replacing these existing appliances as necessary. I understand that if Liquefied Petroleum Gas (LPG) appliances are present in the home and are planned for conversion to natural gas, a trained professional should complete the conversion. It is a significant health and safety risk if the appliances are not converted or not converted properly following the manufacturer's instructions.

☐ I decline the heating system conversion. Please indicate why below.

Client Signature: _____ Date: _____

Printed Name: _____

Contractor Signature: _____ Date: _____

Printed Name: _____

Social Development Commission – Weatherization & HE+

Asbestos Operations and Maintenance Subcontractor Protocol

If your SDC project has a discovery of (PACM) Possible Asbestos Containing Material, (ACBM) Asbestos Containing Building Materials or Vermiculite the following SDC protocol should be put into place. Remember, Asbestos Operations & Maintenance (O&M) protocols are determined per activity (not per home). Multiple O&M level activities can be performed at one jobsite. Just because a measure involves a step that is repetitive does not mean it automatically exceeds O&M.

1. If the suspect material disturbance is less than a 60" X 60" disposable bag, Operations & Maintenance procedures would apply and may be performed by a certified trained O&M card carrying worker.
2. If the suspect material exceeds the 60" X 60" disposable bag, and can NOT be handled by O&M trained personnel, the following would apply:
   - Notify the appropriate SDC Project Manager (PM) at (414) 906-2700 you **must** receive approval **prior** to having any abatement work performed. Pictures should be taken of the condition(s) in question.
   - Bids on the abatement project need to be completed by a Certified Asbestos Company, the cost and work scope must be approved by the Project Manager.
   - If the PM is unable to respond in a timely manner, notify the SDC HAZMAT Coordinator (Greg DiSalvo) at (414) 906-2844, the coordinator will review the project with the PM or decide the next step, a site visit may take place prior to an abatement determination. Site work will be reviewed by the Project Manager & HAZMAT Coordinator to ensure compliance.
   - Do not eliminate blower door diagnostics **without approval by the PM.** The discovery of suspect material requires diagnostics to be completed using the Pressurization of the home using the Blower Door Tool.
   - When approved abatement projects are completed, **you must include:**

     1. An invoice from the abatement company.

     2. Proof of DHS notification.

     3. A copy of the disposal manifest.

     4. Photo's documenting the process of the project, including **Before, During and After Photos, Containment and PPE**. Abatement invoices **will not** be paid by SDC without PROPER DOCUMENTATION and **prior approval by the Project Manager.**

Questions, concerns! **Call the Project Manager prior to proceeding**.

Lead Safe Work Form

Agency: _____ WisWAP BID: _____

Address: _____

PART A or B (or both) must be completed for every unit weatherized. If PART B is completed, one or more Renovation Recordkeeping Checklists must accompany this form in the customer file. Changes to planned work may require completion of a new form; in such cases, retain both completed forms in the customer file.

Any work disturbing painted surfaces will be performed using Lead Safe Work practices. Include photos of safe work practices and containment (if applicable) at each paint disturbance area in the customer file.

PART A

☐	There will be no disturbance of any painted surface during weatherization work.
☐	This property was built in 1978 or later and is not subject to Lead Safe Work requirements.
☐	The following painted surfaces/components that will be disturbed have been tested by a Certified Renovator and results were negative for lead (*owner permission obtained*).
☐	The following work will disturb no more than 6 ft^2 of interior painted surfaces per room, or 20 ft^2 of exterior painted surfaces, and will not involve window or door replacement or any demolition work.
Brief work or tested surfaces description:	

PART B

The following planned work requires an assigned Certified Lead Safe Renovator to complete a Renovation Recordkeeping Checklist and to ensure lead safe renovation practices are followed:

Brief Work Description	Agency/Contractor Name	Checklist Received
		☐
		☐
		☐

Form Completed By (Print): _____

(Energy Auditor Part A / Final Inspector Part A-B)

Signature: _____ Date: _____

WisWAP BID#_____

Wisconsin Weatherization Assistance Program
RENOVATION RECORDKEEPING CHECKLIST

Name of Company/Agency: _____ Date(s) of Renovation: _____

Address of Renovation: _____

Brief Description of Renovation: _____
_____
_____

Name of Assigned Certified Lead Safe Renovator: _____

Name(s) of Trained Lead Safe Workers used:

_____

- ☐ Steps taken to notify occupants of planned work when required: Written notice ☐ or Sign(s) posted ☐
- ☐ Certified renovator provided training to workers on (check all that apply):
  - ☐ Posting warning signs ☐ Setting up plastic containment barriers
  - ☐ Maintaining containment ☐ Avoiding spread of dust to adjacent areas
  - ☐ Waste handling ☐ Post-renovation cleaning
- ☐ Warning signs posted at entrance to work area.
- ☐ Work area contained to prevent spread of dust and debris:
  - ☐ All objects in the work area removed or covered (interiors)
  - ☐ HVAC ducts in the work area closed and covered (interiors)
  - ☐ Windows in the work area closed (interiors)
  - ☐ Windows in and within 20 feet of the work area closed (exteriors)
  - ☐ Doors in the work area closed and sealed (interiors)
  - ☐ Doors in and within 20 feet of the work area closed and sealed (exteriors)
  - ☐ Doors that must be used in the work area covered to allow passage but prevent spread of dust
  - ☐ Floors in the work area covered with taped-down plastic (interiors)
  - ☐ Ground covered by plastic extending 10 feet from work area—plastic anchored to building and weighted down by heavy objects (exteriors)
  - ☐ If necessary, vertical containment installed to prevent migration of dust and debris to adjacent property (exteriors)
- ☐ Waste contained on-site and while being transported off-site
- ☐ Work site properly cleaned after renovation
  - ☐ All chips and debris picked up, protective sheeting misted, folded dirty side inward, and taped for removal
  - ☐ Work area surfaces and objects cleaned using HEPA vacuum and/or wet cloths or mops (interiors)
- ☐ Certified Renovator performed post-renovation cleaning verification (describe results, including the number of wet and dry cloths used):
  _____
  _____

☐ I certify under penalty of law that the above information is true and complete.

_____ _____
Signature of Assigned Certified Lead Safe Renovator Date

Hazardous Material Photograph Checklist
Social Development Commission
Weatherization Program

The following photographs are required when any painted surfaces are disturbed if a building constructed prior to 1978 and/or jobs in which a disturbance may occur with Presumed Asbestos Containing Material or Vermiculite. Return this checklist and photographs along with the invoice for each job.

SDC Job #:_____ Date:_____

Customer Name:_____

Customer Address:_____

Check Appropriate Box/es:

Lead ☐ Asbestos (PACM) ☐

Initial the following boxes showing photographs have been taken & submitted:

- Hazardous Sign Posting (lead & asbestos) ☐
- Complete Containment Setup ☐
- Personal Protective Equipment ☐
- HEPA Vac ☐
- Hazardous cleanup ☐

Printed Name of Certified Personel: _____

Signature of Certified Personel: _____

1730 West North Avenue, Milwaukee, WI 53205 • Phone: 414.906.2700 • Fax: 414.906.2719 • cr-sdc.org

Social Development Commission
Pathways from poverty to success

home energy+

Payment Bond Policy

Effective as stated in the PY2023 Weatherization Program Manual (July 2022); 6.15 Bonding - A payment bond is required for every Weatherization and HE+ Furnace Program services contract exceeding $149,999 annually and where wholesaler or subcontractor partnerships are utilized to deliver services (2 CFR 200.325; PRO-C-19). Each payment bond shall apply to a single contract. The Division may grant a waiver to the payment bond requirement if a potential bidder provides proof of a contractor bond for construction work performed in the State of Wisconsin. The Agency shall submit a waiver request to the HE+ Help Desk, including proof of bonding documentation.

Agencies, at their discretion, may require payment bonds for Weatherization and HE+ Furnace Program services contracts up to $149,999. Program funds may be used to reimburse a contractor for payment bond premium costs as described below. If the Agency chooses not to require a bond for contracts up to $149,999, the Agency shall complete weatherization contract Attachment I prior to entering into an agreement with the contractor.

The anticipated amount of the contract shall be based upon the historical spending of the Agency, adjusted for any conditions in the best judgment of the Agency. At the close of each annual contract term or in the event of a contract termination, any refund of the bond premium that was reimbursed by the Agency shall be returned to the Agency.

The Agency reserves the right to request a payment bond from any company if it is the best interest of the Agency. The decision to require a payment bond by a company not meeting the $150,000 requirement, will be reviewed on an individual basis by the Agencies Weatherization Program management team once the notification of intent to award has been announced to bidders.

Within 30 business days of the contract award or renewal, the contractor shall provide the following to the Agency:

- Proof of payment bond
- A written list of subcontractors and suppliers (if any), providing materials and/or labor for weatherization services

The list shall include the company name, address, contact information, and a description of the materials and/or services that will be provided.

For the remainder of the contract term, the Contractor shall notify the Agency in writing of any changes to the list of subcontractors and suppliers providing materials and/or labor for weatherization services within ten (10) business days of the effective date.

The contractor must provide payment bond to the Agency before any work can be issued. The Agency will then provide a signed receipt. Contractors will be reimbursed within 30 days from the date of the receipt.