

# EAPWX Measure Expansion Policy Manual Addendum

EAPWX Measure Expansion is an initiative of the Minnesota Weatherization Assistance Program (WAP) intended to expand the scope and breadth of services provided to income eligible households. The goals of the initiative include the following:

- Increase health and safety, energy efficiency, and renewable energy services to all households served by the Minnesota Weatherization Assistance Program.
- Ensure equitable service to renters, those in manufactured housing, and other homes with structural or other limiting issues.
- Mitigate the cause of household deferrals to allow homes that would otherwise be deferred to be weatherized.
- Improve services to customers with fluctuating fuel heating costs and reduce the likelihood of disconnections, price spikes, and emergency energy repairs and replacements.

## **Scope:**

- This addendum applies only to EAPWX funds. Policy and guidance for all other aspects of the Minnesota Weatherization Assistance Program must adhere to the Minnesota Weatherization Assistance Program Policy Manual (Policy Manual) and its related appendices, including measures paid for with non-EAPWX funds and policy related to measures paid for with EAPWX funds not listed in this document.
- Measures installed under EAPWX Measure Expansion must meet work standards “Retrofitting Minnesota, Standard Work Specification-Aligned Field Guide,” and US DOE’s Standard Work Specifications (SWS), unless otherwise noted. This includes all cases where the SWS calls for Energy Star or equivalent products.
- This addendum applies to single family homes, mobile homes, and multifamily dwelling units unless otherwise noted.
- The \$3,000 limit remains for all standalone work orders, except those related to Deemed Savings, on rental properties as detailed in the Policy Manual Section 5.2.

## **Policy Manual and Guidance References:**

- [Minnesota Weatherization Assistance Program Policy Manual](#)
- Allowable Measures Chart (Standalone Event) (Appendix C)
- Allowable Measures Chart (Audit Event) (Appendix C)
- Weatherization Assistant User’s Manual Addendum (Appendix C)
- Measure and Cumulative Job SIR Verification Guidance (Appendix C)
- [State of Minnesota Technical Reference Manual for Energy Conservation Improvement Programs](#)

## EAPWX Expansion General Guidance

### 1. .75 SIR for EAPWX Funds

**POLICY:** EAPWX funds may be used to install energy conservation measures that meet a savings to investment ratio (SIR) of .75 or greater.

- Those measures with an SIR of 1.0 or greater must be installed.
- Audit events that have measures paid for with US DOE or Propane funds must have a job SIR of 1.0 or greater.
- Audit events that do not have measures paid for with US DOE or Propane funds must have a job SIR of .75 or greater.

**PROCEDURE:** Use Weatherization Assistant Agency Reports to confirm measure SIRs and job SIRs meet program requirements.

- Job SIRs less than .75 EAPWX Funds
- Measure SIRs less than .75 EAPWX Funds
- Job SIRs less than 1.0 with US DOE Funds
- Measure SIRs less than 1.0 US DOE Funds

**REFERENCES:**

- Policy Manual Section 4.2.4 Energy Conservation Measure, 4.2.2 Incidental Repair Measure, 4.4.3.1 Changes to Energy Model
- Measure and Cumulative Job SIR Verification Guidance (Appendix C)

### 2. No Average Cost per Unit Limit for EAPWX Funds

**POLICY:** EAPWX funds will not be subject to the US DOE Average Cost Per Unit (ACPU) limit. Dwellings that have a total EAPWX cost greater than twice the US DOE ACPU will be regularly reviewed by Commerce WAP staff.

**REFERENCES:**

- Policy Manual Section 1.3.1 Unit Averages

### 3. EAPWX Health & Safety Average

**POLICY:** The local health and safety average may be equal to or less than \$3,500/household unit. Health and safety expenditures will be monitored by Commerce WAP staff to ensure the necessity of expenses.

**References:**

- Policy Manual Section 1.3.1 Unit Averages, 4.2.3 Health & Safety Measure
- [State of Minnesota Technical Reference Manual for Energy Conservation Improvement Programs](#)

## 4. EAPWX Non-Emergency Standalone Site Visits

**POLICY:** Non-emergency standalone site visits shall include the following diagnostic tests:

- Ambient carbon monoxide testing in the living space and combustion appliance zone.
- Combustion appliance fuel leak testing (BPI 1200- 2017, 7.5).
- Diagnostic testing required to evaluate or justify the scope of work.

**REFERENCE:** This modifies Appendix D, Standalone Event Site Visit Diagnostic Tests

## 5. EAPWX Standalone Contractor Requirements

**POLICY:** Mechanical contractors must conduct and document the following diagnostic tests:

- Ambient carbon monoxide testing in the living space and combustion appliance zone.
- In flue CO test on appliance(s) being repaired or replaced (full combustion analysis is suggested but not required).
- Combustion appliance fuel leak testing for any fuel pipes affected by completed work.
- Gas pressure tests for fuel gas system replacements.

**REFERENCE:** This modifies Policy Manual Section 5.9.

**PROCEDURE:**

- Contractor testing data is now on the “Service Agreement and Completion Certificate - Standalone Event.”
- The “Mechanical Testing Form – Standalone,” form is no longer required.

## 6. EAPWX Standalone Inspection Requirements

**POLICY:** Standalone inspections must be conducted by personnel with the BPI Building Analyst, BPI HEP Energy Auditor, or BPI HEP Quality Control Inspector (QCI) certification.

**REFERENCE:** This modifies Policy Manual Section 5.10.

## 7. EAPWX Standalone Funding Level Requirements

**POLICY:** In addition to all procurement requirements found in the MN WAP Policy Manual:

- Individual standalone mechanical system replacements over \$10,000 must receive pre-approval from Commerce.
  - Mechanical systems replacements are defined as a mechanical appliance and all associated component improvements, for example a heating plant, distribution system, asbestos abatement, condensate removal, electrical circuitry, exhaust venting, and chimney systems etc.

- The intent of this policy is to ensure that a variety of replacement options are considered, particularly in projects that involve elements of system redesign.

Individual standalone mechanical system replacements over \$10,000 must solicit no less than three bids (per MN WAP Policy Section 7.1). Jobs with costs of \$9,999 and under must have a minimum of two (2) solicitations for bids. **REFERENCE:** Policy Manual Chapter 7.

## **8. Lien Waivers Not Required for EAPWX Standalone**

**POLICY:** While not required for EAPWX Standalone events, lien waivers are encouraged. A local policy regarding lien waivers for EAPWX Standalone events must be developed and applied.

**REFERENCE:** This modifies Policy Manual Section 5.7.3.

## **9. EAPWX Standalone Measure Paperwork**

**POLICY:** If EAPWX Standalone Measures are concurrent with an Audit event, no standalone documentation (Service Agreement and Completion Certificate) is required beyond that gathered for the audit.

# EAPWX Expansion Measure Specific Guidance

## Audit Event Measures

### 1. Mold and Moisture Remediation with EAPWX Funds

**POLICY:** Up to \$2,000/unit of EAPWX funds can be used to mitigate bulk mold/moisture. Funds can be used for cleaning/painting of building assemblies that have become moldy due to moisture intrusion and measures found in the Allowable Measures Chart such as grading, minor roof repairs, minor plumbing repairs, adding roof venting, and gutter installation/repair. These measures will not be included in the EAPWX health and safety average but will be included in the total audit event cost.

- Measures to address mold or moisture must be completed in conjunction with an audit event.
- Roof replacement is not allowed.
- Justification for mold and moisture remediation measures, including pictures must be kept in the client file.

**PROCEDURES:** Weatherization Assistant Instructions

*Work Order Type: Audit Event*

*Measure Type: Health and Safety*

*Sub Measure Type: EXP Mold and Moisture Remediation*

*Cost Center: EAPWX*

Measure Type	Health and Safety	EXP Mold and Moisture Remediation
Measure Name	Comment	
Components		
Cost Center	EAPWX	

#### REFERENCES:

- Safety Assessment - Mold and Moisture Form (Appendix F)
- Allowable Measures Chart (Audit Event)

### 2. Energy Modeling of LED Lightbulbs Not Required When Using EAPWX Funds

**POLICY:** Incandescent and CFL bulbs may be replaced with equivalent lumen LED light bulbs without energy modeling of each bulb. Replacement bulbs must be *ENERGY STAR® qualified, equivalent, or better, and UL approved.* (SWS 7.0103.1)

The number of bulbs per bulb type must be included in a work order measure(s). If WAP staff install bulbs, a Weatherization Assistant Work Order should be created with the service provider as the contractor.

**PROCEDURES:** Weatherization Assistant Instructions

*Work Order Type: Audit Event*
*Measure Type: Baseload*
*Sub Measure Name: EXP LED Bulb Replacement*
*Cost Center: EAPWX*
*Comments must include number of bulbs replaced for each bulb type*

Measure Type	Baseloads	▼	EXP LED Bulb Replacement	▼
<b>Measure Name</b>	<input type="text"/>			<b>Comment</b> <input type="text"/>
Components				
Cost Center	EAPWX	▼		

**Policy Manual and Guidance References:**

SWS 7.0103.1 [Lighting Replacement | Standard Work Specifications \(nrel.gov\)](#)

### 3. Energy Conservation Cooling Measures Using EAPWX Funds

**POLICY:** EAPWX funds may be used to tune or replace existing cooling systems when an SIR of .75 or greater is met. "Select system that is ENERGY STAR® certified or equivalent," (SWS 5.0108).

- The SIR shall be based on the cost of a system that includes replacement of the compressor, condenser coil, and evaporator coil. A new air handler need not be included in the cost when determining the SIR.
- Any components replaced must result in a SEER2 15 or greater if all components were replaced.
  - Exception: If SEER2 15 cannot be achieved in a manufactured home, then a minimum of ENERGY STAR® certification is allowed.
- Cooling system repairs and replacements are limited to existing systems.
- Cooling system must be replaced with a similar make/model or an equivalent-cost, more efficient model.
  - For example, window units must be replaced with window units and central systems replaced with central systems.

**PROCEDURES:** Weatherization Assistant Instructions

*Work Order Type: Audit Event*
*Measure Type: HVAC Systems*
*Sub Measure Name: EXP Air Conditioner Repair, EXP Air Conditioner Replacement*
*Cost Center: EAPWX*
*Setup Library: Under library measures for both NEAT and MHEA click the box in the "active" column and add a reasonable cost.*

40 HVAC Systems	Evaporative cooling	▼	15	Costs
41 HVAC Systems	Tune cooling system	▼	3	Costs
Measure Type	HVAC Systems	▼	EXP Air Conditioner Repair	▼
<b>Measure Name</b>	<input type="text"/>			<b>Comment</b> <input type="text"/>
Components				
Cost Center	EAPWX	▼		

Measure Type	HVAC Systems	EXP Air Conditioner Replacement	Comment
<b>Measure Name</b>			
Components			
Cost Center	EAP/WX		

**REFERENCES:**

- SWS 5.0108 and 5.0301 [Equipment Installation | Standard Work Specifications \(nrel.gov\)](#)

## Audit Event Preferred Measures (Standalone Event Allowable)

### 1. Health and Safety Cookstove Replacement Using EAPWX Funds

**POLICY:** EAPWX funds can be used to replace primary gas cookstoves that pose a threat to client safety and are cost prohibitive to repair. The cookstove must be replaced with a similar make/model or an equivalent-cost, more efficient model. Fuel switching under these conditions is allowed. Only repairs are allowed to secondary units.

**PROCEDURES:** Weatherization Assistant Instructions

*Work Order Type: Audit Event (Standalone Event only when an audit event is not feasible)*

*Measure Type: Health and Safety*

*Sub Measure Name: EXP Cookstove Repair, EXP Cookstove Replacement*

*Cost Center: EAPWX*

Measure Type	Health and Safety	EXP Cookstove Repair	Comment
<b>Measure Name</b>			
Components			
Cost Center	EAP/WX		
<b>EXP Cookstove Replacement</b>			
Measure Type	Health and Safety	EXP Cookstove Replacement	Comment
<b>Measure Name</b>			
Components			
Cost Center	EAP/WX		

**REFERENCES:**

- Allowable Measures Chart Audit Event (Appendix C)
- Allowable Measures Chart Standalone Event (Appendix C)

## 2. Health and Safety Cooling Measures Using EAPWX Funds

**POLICY:** Up to \$8,000 in EAPWX funds may be used to repair or replace an existing air conditioning system as a Health & Safety measure, when medically necessary, as identified through a letter from a licensed medical doctor, licensed physician assistant, or nurse practitioner. “Select system that is ENERGY STAR® certified or equivalent,” (SWS 5.0108).

- Cooling system repairs and replacements are limited to existing systems.
- Cooling system may be replaced when it is cost prohibitive to repair.
- Cooling system must be replaced with a similar make/model or an equivalent-cost, more efficient model. For example, window units must be replaced with window units and central systems replaced with central systems.
- Any components replaced must be components that would result in a SEER2 15 or greater if all components were replaced.
  - For example, if the compressor and condenser coil are replaced, those systems need to be components that would result in a SEER2 15 or greater if the evaporator coil and air handler were also replaced.
  - Exception: If SEER2 15 cannot be achieved in a manufactured home, then a minimum of ENERGY STAR® certification is allowed.

**PROCEDURES:** Weatherization Assistant Instructions

*Work Order Type: Audit Event (Standalone Event only when an audit event is not feasible)*

*Measure Type: Health and Safety*

*Sub Measure Name: EXP Air Conditioner Repair, EXP Air Conditioner Replacement*

*Cost Center: EAPWX*

### EXP Air Conditioner Repair

Measure Type	Health and Safety	EXP Air Conditioner Repair
Measure Name	<input type="text"/>	Comment <input type="button" value="Comment"/>
Components	<input type="button" value=""/>	
Cost Center	EAPWX	<input type="button" value=""/>

### EXP Air Conditioner Replacement

Measure Type	Health and Safety	EXP Air Conditioner Replacement
Measure Name	<input type="text"/>	Comment <input type="button" value="Comment"/>
Components	<input type="button" value=""/>	
Cost Center	EAPWX	<input type="button" value=""/>

### REFERENCES:

- SWS 5.0108 and 5.0301 [Equipment Installation | Standard Work Specifications \(nrel.gov\)](http://nrel.gov)

## Standalone or Audit Event Measures

### 1. EAPWX Heating Plant Replacement for Energy Conservation

**POLICY:** For replacement through a deemed savings measure, the following must be met:

- Induced draft furnace of any efficiency **or** a heating system with an AFUE of 80% or lower; **and**
- is 10 years or older; **and**
- the new system must have at least a 10% gain in AFUE.

Replacements will be made for energy conservation reasons based on calculated deemed savings using the Technical Reference Manual instead of site-specific energy modeling. Select Energy Star Certified or equivalent heating plants. (SWS 5.0108.4)

**PROCEDURE:** EAPWX measure expansion heating system replacements for energy conservation can be completed as a Standalone Event or as part of an Audit Event. When part of an audit event service providers must follow the following procedure:

- Select the replacement mandatory option for heating system or water heating system replacements. This will result in WA creating a measure with an SIR less than 1.0 in the Recommended Measures list. Do not upload this measure into the work order.
  - The result will be that the energy savings of the new heating system will still have interacted with the predicted energy savings and SIRs of the energy conservation measures and incidental repair measures and the measure will not show up on the Measures with SIRs Less Than 1.0 report.
- Create an itemized cost for the EAPWX measure expansion heating system or water heating system replacement.
- Upload this itemized cost into a work order.
- Select the measure type as "HVAC".
- Select sub measure type as "EXP Heating System Replacement".
- If completing as only a Standalone Event, the Work Order Type should be "Standalone" and Standalone Type should be "Expansion Measures".

Work Order Type	Standalone	<input type="button" value="▼"/>
Standalone Type	Expansion Measures	<input type="button" value="▼"/>

**PROCEDURES:** Weatherization Assistant Instructions

*Work Order Type: Standalone or Audit Event*

*Measure Type: HVAC Systems*

*Sub Measure Name: EXP Heating System Replacement*

*Cost Center: EAPWX*

Measure Type	HVAC Systems	<input type="button" value="▼"/>	EXP Heating System Replacement	<input type="button" value="▼"/>
<b>Measure Name</b>	<input type="text"/>			<input type="button" value="Comment"/>
Components		<input type="text"/>		
Cost Center	EAPWX			

**REFERENCES:**

- Policy Manual Section 4.4.2.1 Heating System Replacement, 4.4.2.13 Gas Line Drip T Replacement
- SWS 5.0108.4 [Furnaces | Standard Work Specifications \(nrel.gov\)](#)

## 2. EAPWX Water Heater Replacement for Energy Conservation

**POLICY:** Atmospherically drafting water heaters older than 15 years may be replaced with Energy Star rated power vented water heaters based on deemed savings as established through the Technical Reference Manual. “Select a system that: is ENERGY STAR® certified, equivalent, or better, includes a low nitrogen oxide burner, fits in the installation space with required clearances, provides sufficient hot water for the home and occupants” (SWS 7.0302.2). When water heaters with low nitrogen oxide burners are not readily available due to difficulties accessing these appliances in Minnesota for EAPWX Standalone water heater replacements, the SWS 7.0302.2b requirement for low nitrogen oxide burner is waived.

**PROCEDURE:** EAPWX measure expansion water heating system replacements for energy conservation can be completed as Standalone Events or as part of an Audit Event. When part of an audit event service providers must follow the following procedure:

- Select the replacement mandatory option for heating system or water heating system replacements. This will result in WA creating a measure with an SIR less than 1.0 in the Recommended Measures list. Do not upload this measure into the work order.
  - The result will be that the energy savings of the new heating system will still have interacted with the predicted energy savings and SIRs of the energy conservation measures and incidental repair measures and the measure will not show up on the Measures with SIRs Less Than 1.0 report.
- Create an itemized cost for the EAPWX measure expansion heating system or water heating system replacement.
- Upload this itemized cost into a work order.
- Select the measure type as “Baseloads”.
- Select sub measure type as “EXP Water Heater Replacement”.
- If completing as only a Standalone Event, the Work Order Type should be “Standalone” and Standalone Type should be “Expansion Measures”.

Work Order Type	Standalone	<input type="button" value="▼"/>
Standalone Type	Expansion Measures	<input type="button" value="▼"/>

**PROCEDURES:** Weatherization Assistant Instructions

*Work Order Type: Standalone or Audit Event*

*Measure Type: Baseloads*

*Sub Measure Name: EXP Water Heater Replacement*

*Cost Center: EAPWX*

Measure Type	Baseloads	<input type="button" value="▼"/>	EXP Water Heater Replacement	<input type="button" value="▼"/>
Measure Name	<input type="text"/>			Comment <input type="button" value="▼"/>
Components				
Cost Center	EAPWX <input type="button" value="▼"/>			

**REFERENCES:**

- Policy Manual Section 4.4.2.1 Heating System Replacement, 4.4.2.13 Gas Line Drip T Replacement
- SWS 7.0302.2 [Fuel-Fired Storage Tank Water Heater | Standard Work Specifications \(nrel.gov\)](#)

**3. EAPWX Cold-Climate Air Source Heat Pump Installation for Energy Conservation**

**POLICY:** LIHEAP funds may be used to install Cold-Climate Air Source Heat Pumps (CCASHPs) in the homes of weatherization clients for whom baseboard or ducted electric resistance is the primary heat source and where this heat source will remain as a back-up heat source.

**Equipment Selection:**

- Equipment must be selected from the [Northeast Energy Efficiency Partnership's \(NEEP\) Cold Climate Heat Pump List](#).
- Per SWS 5.0108.1, 5.0108.3, equipment must be EnergyStar rated. Installation Standards:
- [Best practices from the MN ASHP Collaborative](#) and SWS 5.0108.1, 5.0108.3 must be followed.

**Heat Pump Controls:**

- Ducted heat pump thermostatic controls must be tied together with any other heating source supplied through the ductwork.
- Non-ducted heat pumps installed in homes with electric baseboard heat need not be tied into the electric baseboard thermostatic controls.
- All electric baseboard heat should be thermostatically controlled.
- Adding thermostatic controls as part of heat pump installation is allowed. Controls with user friendly features such as digital readouts installed at an accessible height are preferred.

**Off Peak Rate Customers:**

- Customers on off-peak electricity rates will be considered on a case-by-case basis.
- Service providers wishing to pursue the possibility of adding a CCASHP to the home of a weatherization client who has off-peak electric heat should contact [weatherization.commerce@state.mn.us](mailto:weatherization.commerce@state.mn.us).

**PROCEDURE:** EAPWX measure expansion for CCASHP installations for energy conservation can be completed as Standalone Events or as part of an Audit Event must be standalone work orders in Weatherization Assistant. These standalone work orders may be created as standalone events or part of an audit event. When part of an audit event service providers must follow the following procedure:

- Select the replacement mandatory option for heating system or water heating system replacements. This will result in WA creating a measure with an SIR less than 1.0 in the Recommended Measures list. Do not upload this measure into the work order.
  - The result will be that the energy savings of the new heating system will still have interacted with the predicted energy savings and SIRs of the energy conservation measures and incidental repair measures and the measure will not show up on the Measures with SIRs Less Than 1.0 report.
- Create an itemized cost for the EAPWX measure expansion CCASHP system installation.
- Upload this itemized cost into a work order.

- Select the measure type as “HVAC Systems-*other*”.
- Select sub measure type as “EXP CCASHP Installation”.
- If completing as only a Standalone Event, the Work Order Type should be “Standalone” and Standalone Type should be “Expansion Measures.”

Work Order Type	Standalone	<input type="button" value="▼"/>
Standalone Type	Expansion Measures	<input type="button" value="▼"/>

**PROCEDURES:** Weatherization Assistant Instructions

*Work Order Type: Standalone or Audit Event*

*Measure Type: HVAC Systems*

*Sub Measure Name: EXP CCASHP Installation*

*Cost Center: EAPWX*

Measure Type	HVAC Systems	<input type="button" value="▼"/>	EXP CCASHP Installation	<input type="button" value="▼"/>
Measure Name	<input type="text"/>			Comment <input type="button" value="▼"/>
Components				
Cost Center	EAPWX			<input type="button" value="▼"/>

**REFERENCES:**

- “Primary Heating System” is defined in policy in Minnesota Weatherization Assistance Program policy 4.4.2.1 in this way: “The primary system (or system of units) is the heating plant system that is most relied upon to provide heating through-out the season. The secondary system or unit is a system employed only in extreme weather.”
- Center for Energy and the Environment (CEE) CCASHP study: [Cold Climate Air Source Heat Pump \(state.mn.us\)](http://state.mn.us)
  - CEE Field research observed energy usage for a CCASHP displacing electric baseboard heat in homes in the Twin Cities Metro Area and in northern Minnesota.
  - Observed energy and cost savings ranged from 53% to 56% for homes in the northern Minnesota and the metro area, respectively
- Minnesota Air Source Heat Pump Collaborative Website: <https://www.mnashp.org>
- MN Potential Study: <https://www.mncee.org/minnesota-potential-study>
  - 270,000 single family and multifamily homes in MN use electric baseboard heat as a primary heat source, and nearly 90,000 single family and multifamily homes have electric furnaces as a primary heat source.
  - 153,000 electrically heated residential single-family homes in Minnesota that use 3,25 GWh annually to heat their homes. For an approximate average single-family space heating use of 22,000 kWh per year.
- Northeast Energy Efficiency Partnerships
  - [Air Source Heat Pump Installer and Consumer Resources | Northeast Energy Efficiency Partnerships \(neep.org\)](http://neep.org)
- CEE Wisconsin Study [FOCUS ON ENERGY EERD REPORT](http://FOCUS ON ENERGY EERD REPORT)