

Low-Rise Multifamily Priority List Audit Procedures

For wood-framed buildings with 5 or more units/building, 3 stories or less in height above grade

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Definitions

A/C: Air Conditioner is a system that utilizes a refrigerant cycle to produce cooling and dehumidification for indoor spaces. They are rated in various manners depending on the age and type including EER2, SEER2, and CEER. The higher the number the higher the efficiency.

AFUE: Annualized Fuel Utilization Efficiency is a rating for fossil fuel combustion appliances that accounts for the full combustion cycle over the entire year which may include pilot light and chimney heat loss. The higher the number the higher the efficiency.

Applicable Measure: Any measure included on the regional priority list that can physically be installed as outlined in the priority list and does not already exist (e.g., the attic is accessible and has less than the targeted R-value of insulation existing, then insulating the attic is applicable and must be installed). Any measure deemed not to be “applicable” for the project, must be thoroughly documented including photos and reason for exclusion.

COP: Coefficient of Performance is a rating used for heat pump technology that focuses specifically on the heating capacity of the unit at a given steady state outdoor temperature. The higher the number the higher the efficiency.

CEER: Combined Energy Efficiency Rating is a rating used for packaged or window air conditioners that includes both the operational energy used during the cooling cycle and the standby energy used by the unit when powered on but not operating. The higher the number the higher the efficiency.

EC Motors: Electronically Commutated Motors are motors who utilize DC voltage for operations and are variable speed based on DC voltage input. These motors transform AC voltage to DC voltage internally for the operation of the attached motor.

EER2: Energy Efficiency Rating is a rating used for packaged or window air conditioners that only includes the operational energy used by the unit for cooling but does not include the standby energy as is rated using the CEER method. This method has been replaced with CEER for newer appliance models. The higher the number the higher the efficiency.

HSPF2: Heating Season Performance Factor is a rating used for heat pump technology that factors in the seasonal outdoor operating conditions in the calculation of heating efficiency. The higher the number the higher the efficiency

Low-Rise Multifamily Project: Any single development where all buildings contain 5 or more dwelling units per building, and all buildings are 3 stories or less above grade, regardless of the total number of buildings or dwelling units.

Mandatory Measure: Any measure included on the regional priority list that is labeled as “mandatory” and is applicable to the project. These measures must be implemented if any DOE funds are to be used on the project.

Optional Measure: Any measure included on the regional priority list that is labeled as “optional” and may be installed in the dwelling unit with any funding source, including DOE WAP funds, if all other applicable mandatory measures are also installed.

PTAC: Packaged Terminal Air Conditioners are standalone heating/cooling appliances that are used to condition an individual room or small dwelling unit and are installed on an exterior wall with both the condenser and evaporator as well as the air circulation fans all confined in a single unit. These may feature either electric resistance heat or heat pump technology for heating.

SEER2: Seasonal Energy Efficiency Rating is a rating used for split system air conditioners that factors in the seasonal operating conditions of the unit in the calculation of cooling efficiency. The higher the number the higher the efficiency.

General Administration

Eligibility

Eligibility for all LR MF projects must follow the guidance outlined by DOE WAP for multifamily projects which requires 66% of a project's dwelling units to be income qualified. Follow THDA's current DOE-approved eligibility determination and documentation process for all LRMF projects.

Initial Audit Determination

For each project, the sub-Grantee will determine if the Grantee's approved PL will be utilized or if a site-specific energy audit is required in compliance with DOE guidance and its current written energy audit approval. This determination will be made using *Form A* (LRMF PL Checklist). These PLs apply to any wood-framed Low-Rise Multifamily structure with 5 or more dwelling units per building, no more than 3 stories above grade in height. If the project can use the LRMF PL, then the auditor may proceed with the initial audit as outlined herein.

Allowable Costs

The auditor must follow THDA's DOE-approved Health and Safety (H&S) plan for these projects just as for all other WAP funded projects. No variation from the approved H&S plan is allowed without prior DOE authorization. Incidental Repair Measure (IRM) costs funded by DOE WAP shall not exceed 10% of the project's total Energy Conservation Measure (ECM) package including all funding sources.

Average Cost Per Unit (ACPU) expenditure of financial assistance provided under WAP for labor, weatherization materials, and related matters may not exceed the (ACPU) limits as defined in DOE's annual Weatherization Program Notice (WPN) 2X-1, Program Year 202x Weatherization Grant Application. This average includes units completed in a multifamily building of 5 units or greater. Individual measure cost caps, if applicable, are detailed in the applicable Priority List.

Leveraged Funding

Sub-Grantees who utilize alternative funding sources (non-DOE WAP) may use those funds for any measure on the PL, including splitting of costs between funding sources (co-funding) as permitted by the alternative funding source, if the project documentation clearly records which measures DOE WAP paid for and their associated cost. No DOE funds may be utilized on the project unless all applicable mandatory measures are installed. If another funding source is used for a mandatory measure, it must meet the requirements of the DOE WAP as outlined in the PL. Additional measures not included in the PL may be installed with non-DOE WAP funds as allowable by the funding source without need for additional DOE approval.

For each project, the file must contain documentation of the final invoiced costs, including a specific breakdown of costs paid by each funding source (i.e., DOE WAP, LIHEAP, Utility, etc.) and category (i.e., Program Operations, Health & Safety, Incidental Repairs, etc.).

Measure Skipping

A measure contained on the DOE-approved PL may only be skipped if it is not applicable to the specific project (e.g., ducts do not exist outside the thermal boundary so duct sealing may be skipped or there is no attic or the wall is brick with no opportunity to provide attic or wall insulation) or is expensive to install (e.g., the attic insulation will require remediation of the asbestos in the ceiling, or essentially replacement of the ceiling via a asbestos remediation effort that would also require tenant relocation, and then provide attic insulation – this measure would require a lot of effort and would cost a lot and make the SIR well over two (2) and thus may be skipped). If access can be obtained by work classified as a DOE minor repair, work would be completed. However, if accessing the area exceeded cost cap of minor repair the measure would be skipped. This applies regardless of the funding source used for any single measure.

Common Areas

Only items labeled as “Mandatory” in the PL may be installed in common areas physically connected to the weatherized dwelling structure regardless of who pays the utility costs for these spaces. Common areas not physically connected to the qualified building, even if existing only for the use of the tenants of the qualified building, may not receive services paid for with WAP funding, (e.g., exterior lighting not physically attached to the qualified building). Items labeled as “Optional” measures in the PL may only be installed using DOE WAP funds in dwelling units, not in common areas, and may only be installed if all other applicable mandatory measures are installed as well.

Initial Audit Procedures

Project & Building Diagrams

Each project that includes more than one building must have a diagram or a satellite photo (e.g., Google Maps, Bing, etc.) to show all buildings on the property with a unique code for each. Clarify in this documentation which buildings are identical to each other, if any.

Each unique building type in the project must have an overhead building diagram (footprint) included in the data collection. If there are multiple buildings on the property, this process must be followed for each building or each set of identical buildings. Only orientation can be different if buildings are to be deemed identical

Each footprint shall include the relevant and required DOE details collected in Forms A and H.

Initial Inspections

1. Every representative building in the project must have a full shell inspection using *Form A (LRMF PL Checklist)*.
 - a. If there are multiple building that are identical in general age and construction, then a minimum of 50% of buildings must receive a full shell inspection
2. Every dwelling unit included in the project must receive a visual health and safety inspection using *Form H (LRMF Dwelling Unit H&S Checklist)*.
3. A minimum of 50% of each combustion appliance type included within the project must be tested and documented using *Form C (LRMF Combustion Safety Checklist)*. If different units have different sized combustion units and/or combustion units of different ages, then all non-typical units must also be tested and documented.

Building Shell Inspection

1. Utilize the appropriate *Form A (LRMF PL Checklist)*, for region 2.
2. One complete shell inspection is required for each building on the property or 50% of identical building types.
3. *Form A* and all notes and complete photographs must be retained in the client file and must clearly indicate the building to which they relate.

Dwelling Unit Health & Safety Inspection

1. Utilize *Form H (LRMF Dwelling Unit H&S Checklist)* to complete this inspection of 100% of all dwelling units contained in the eligible buildings.
2. Notes and photographs must be retained in the client file and must clearly indicate both the building and apartment number to which they relate.

Combustion Safety Inspections/Testing

1. Utilize *Form C (LRMF Combustion Safety Checklist)* to complete the diagnostic inspections/testing of combustion appliances and their related infrastructure.
2. Combustion safety inspections are required for a representative sample of appliances during the initial audit. A minimum of 50% of each appliance type must be tested and the results recorded using *Form C*.
3. Legible photographs of all diagnostic test results are required, and notes and photographs must be retained in the client file and must clearly indicate both the building and apartment number to which they relate.

Final Inspections

1. After weatherization work has been completed, a Home Energy Professional (HEP) QCI certified inspector must inspect every unit where work was completed with DOE WAP funds.
2. The final inspector shall complete *THDA's Multifamily inspection form* for each building inspected.
3. The final inspector shall complete *Form C (LRMF Combustion Safety Checklist)* for every combustion appliance in the inspected buildings, (i.e., 100% of combustion appliances must receive combustion safety testing during the final inspection).
4. Forms, notes, and photographs of the entire inspection must be retained in the property's project file and must clearly indicate both the building and apartment number to which they relate.
5. The failure of any measure during the final inspection will require remediation and re-inspection. The auditor must document the specific failure and cite the Grantee policy that relates to the failure. Re-inspection is required for corrected measures only. Remediation shall continue until all requirements are satisfied.

Region 2 (Moderate) – LRMF PL

1. **Mandatory:** Install all applicable Health and Safety (H&S) measures per the Grantee's DOE-approved H&S Plan.
2. **Mandatory:** Light Emitting Diode (LED) lighting replacement of all existing screw-based incandescent, halogen, or compact fluorescent lighting used for a minimum of one hour per day.
 - Lighting Replacement SWS
3. **Mandatory:** Air Sealing – seal the primary pressure boundary surfaces at the following locations: attic top-plates; attic ceiling; exterior wall, and floor penetrations, and holes; sill box to floor intersection if on unconditioned crawlspace or basement, or entire sill box area if conditioned foundation.
 - Air sealing SWS
4. **Mandatory:** Duct Sealing – seal all accessible ducts located outside the thermal boundary.
 - Duct sealing SWS
5. **Mandatory:** Duct Insulation – insulate all accessible uninsulated ducts located outside the thermal boundary to R-8 or R12 if exposed to the exterior.
 - General Duct insulation SWS
6. **Mandatory:** Ceiling insulation – insulate all accessible attics to R-49 or to capacity if less.
 - Attic Floors - Unconditioned Attics SWS
7. **Mandatory:** Wall Insulation – where the total gross area of any uninsulated exterior wall is >10%, insulate the missing areas to capacity with dense pack insulation.
 - Dense Pack Insulation SWS
8. **Mandatory:** Floor insulation – insulate all uninsulated floors over unconditioned foundations to R-30 or to full joist capacity if less. Must include complete ground moisture barrier over any exposed dirt.
 - Floors SWS, Ground Vapor Retarders SWS
9. **Optional:** **\$250** per dwelling unit DOE WAP funds cap
 - Faucet aerators (≤ 2.2 GPM) – Low-Flow Devices SWS
 - Showerhead (≤ 2.5 GPM) - Low-Flow Devices SWS
 - Domestic Water Heater (DWH) tank insulation (R-10) – Tank Insulation SWS
 - DWH pipe insulation (6' of both hot and cold-water lines nearest the DWH, and any accessible hot water lines beyond that to R-3) – Pipe Insulation SWS
10. **Optional:** Replace up to (1) refrigerator per dwelling unit, with a label rating of less than 400kWh/yr and maximum installed cost of **\$850** per unit when the existing refrigerator:
 - Was manufactured before 2001, OR
 - Uses >1000 kWh/yr based upon energy use metering or industry accepted resource.
 - Refrigerator and Freezer Replacement SWS
11. **Optional:** LED lighting replacement of fluorescent tube lighting – Lighting Replacement SWS