

Region 2 (Moderate) – Single-Family Site-Built 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 exterior pressure boundary surfaces at all the following locations: attic top-plates; ceiling, wall, and floor bypasses, penetrations, and holes; sill box to floor intersection if on unconditioned crawlspace or basement, or entire sill box area if conditioned foundation.
 - Target value is 1 cfm/ft² of conditioned floor area.
 - [Air sealing SWS](#)
4. **Mandatory:** Duct Sealing – seal all accessible ducts located outside the thermal boundary.
 - Target value is 1 Pascal per register as measured with a Pressure Pan.
 - [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
 - Unconditioned Attic
 - i. **Mandatory:** insulate all accessible attics to R-49 or to capacity if less.
 - [Attic Floors - Unconditioned Attics SWS](#)
 - ii. **Mandatory:** insulate all uninsulated enclosed attics to capacity (e.g., floored or cathedral).
 - [Attic Floors - Unconditioned Attics SWS](#)
 - Finished Attic / Kneewall Attic / Bonus Room
 - i. **Mandatory:** Insulate all attic flats (collar beam & outer ceiling joists) to R-49 or to capacity if less.
 - [Attic Floors - Unconditioned Attics SWS](#)
 - ii. **Mandatory:** Insulate all uninsulated attic enclosed roof rafter slopes to maximum capacity possible.
 - [Inaccessible Ceilings – Dense Pack SWS](#)
 - iii. **Mandatory:** Insulate all uninsulated knee walls to R-15 or to capacity, whichever is greater.
 - [Attic Knee Walls SWS](#)
7. **Mandatory:** Wall Insulation
 - a. **Mandatory:** Insulate any exterior wall cavity with no existing insulation to full dense-packed capacity.
 - b. **Optional:** Insulate any partially insulated exterior wall cavities (e.g., 3.5” cavity with 2” of existing batt) using 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.
 - [Floors SWS](#), [Ground Vapor Retarders SWS](#)
9. **Optional:** **\$250** per home 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 minimum) – [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 home, 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 Replacement SWS](#)
11. **Optional:** Primary Heating and Air-Conditioning System Replacements
- [Heating & Cooling: Equipment Installation SWS](#)
 - i) Replace existing ducted electric resistance forced air furnace and air conditioning combination with a heat pump of minimum 15.2/SEER2 & 8.1/HSPF2 which must include an EC air handler motor and programmable thermostat ([SWS 5.0108.1](#); [SWS 5.0101.1](#)).
 - ii) Replace existing combination of non-ducted fixed electric resistance heat (e.g., electric baseboard, and PTAC units), and non-ducted air conditioning (i.e., window or room A/C, including PTAC) with a minimum 19/SEER2 & 10/HSPF2 mini-split heat pump system which must include a programmable thermostat ([SWS 5.0108.3](#); [SWS 5.0101.1](#)).
 - iii) Replace existing window A/C manufactured before 2014 with a minimum 12 CEER or higher unit of the same or lesser BTU capacity.
 - iv) If the home has any other existing combination of heating/cooling systems other than as described above, then an energy model may be run that assumes items 1-8 have been completed and determine if an alternative heating/cooling system replacement is cost effective for this specific home.

Region 2 (Moderate) – Manufactured Home 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 (if accessible); all penetrations and holes through the ceiling, exterior walls, and floor.
 - a. Target value is 1 cfm/ft² of conditioned floor area.
 - [Air sealing SWS](#)
4. **Mandatory:** Duct Sealing – seal all accessible ducts. At a minimum, seal all end caps, crossovers, duct boot connections, holes or penetrations, and furnace connections.
 - a. Target value is 1 Pascal per register.
 - [Duct sealing SWS](#)
5. **Mandatory:** Ceiling insulation (both flat and vaulted ceilings) – fill ceiling to R-49 or to capacity, whichever is less, with blown insulation.
 - [Attic Floors – Unconditioned Attics SWS](#)
6. **Mandatory:** Replace all single-paned metal-framed windows with Low-E double-paned windows having a U-value of 0.33 or less. Single pane windows with storm windows are not eligible for replacement using DOE funds.
 - [Window Replacement SWS](#)
7. **Optional:** **\$250** per home DOE WAP funds cap
 - a. Faucet aerators (<2.2 GPM) – [Low-Flow Devices SWS](#)
 - b. Showerhead (<2.5 GPM) - [Low-Flow Devices SWS](#)
 - c. Domestic Water Heater (DWH) tank insulation (R-10) – [Tank Insulation SWS](#)
 - d. 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](#)
8. **Optional:** Replace up to (1) refrigerator per home, with a label rating of less than 400kWh/yr and maximum installed cost of **\$850** per unit when the existing refrigerator:
 - a. Was manufactured before 2001, OR
 - b. Uses >1000 kWh/yr based upon energy use metering or industry accepted resource.
 - [Refrigerator and Freezer Replacement SWS](#)
9. **Optional:** Primary Heating and Air-Conditioning System Replacements
 - [Heating & Cooling: Equipment Installation SWS](#)
 - i) Replace existing window A/C manufactured before 2014 with a 12 CEER or higher unit of the same or lesser BTU capacity.
 - ii) If the home has any other existing combination of heating/cooling systems other than as described above, then an energy model may be run that assumes items 1-6 have been completed and determine if an alternative heating/cooling system replacement is cost effective for this specific home.

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](#)