MiHER Calibrated Energy Assessment Checklist

The Calibrated Homes Assessment shall include, at a minimum, the following elements:

- ☐ **Customer Interview:** At some point before, during, or after the physical inspection of the property, the Energy Assessor shall interview one of the primary occupants of the home to identify any specific issues the customer is seeking to address and typical occupant behavioral patterns as they relate to the performance of the home.
- ☐ **Review of Energy Bills:** The Energy Assessor shall access 12 months of historical energy bill data provided by the Program or otherwise request data from the customer. When historical fuel use data is available, the Energy Assessor shall review that data to identify patterns that will inform the prioritization of recommended measures and confirm that projected energy savings estimates are realistic. At a minimum, the Energy Assessor shall review customer-reported annual or monthly energy costs and use it as a benchmark against estimated cost-savings predictions.
- ☐ **Combustion Appliance Safety Evaluation:** When combustion appliances and/or space heating equipment are present in the home, a combustion appliance safety evaluation shall be completed following industry-accepted protocols. At a minimum, this evaluation shall include a check for fuel leaks, carbon monoxide, and confirmation that flue gases are exiting the building as required by the equipment manufacturer's specifications. If original manufacturer performance data is unavailable, industry-accepted standards such as DOE's Guidelines for Home Energy Professionals: Standard Work Specifications for Single-Family Home Energy Upgrades (Section 2.02) shall be used. All Combustion Safety Tests shall comply with the guidelines laid out in ANSI BPI-1200 Sec 7.

  Portable CO detectors should always be worn during the assessment to monitor ambient CO levels.
- ☐ **Visual Home Inspection:** A visual inspection shall be completed of the home's exterior, interior, thermal envelope and enclosure, health and safety conditions, and all mechanical systems (including equipment, distribution systems, ventilation, and controls). A visual health and safety inspection shall include, but is not limited to, investigating structural issues, standing water, mold/mildew, asbestos, physical hazards, chemical hazards, pests, etc.
- ☐ **Data Collection:** Observed and measured data shall be recorded during the Energy Assessment, including documentation of the home's physical geometry, features, and measurements; identification and performance data for space heating, cooling, ventilation, and domestic hot water equipment and systems; existing type, quantity, and condition of thermal elements of the building enclosure; information about existing major household appliances, which may be used to inform customers of opportunities for improvements.
- ☐ **BPI-2400 Calibrated Energy Model:** BPI-2400 outlines a process to build a pre-retrofit energy model that is calibrated to historical energy use. A detailed calibration of an operational model shall be used for homes with available utility bills that meet data quality requirements outlined in Section 3.2.2. DOE-approved modeling software: Optimiser, Snugg Pro, and the Clarity Heat Pump Toolkit.

The Calibrated Assessment shall include collection of, at a minimum, the following data:

- ☐ **12 months of utility usage and cost data**
- ☐ **Building envelope air leakage evaluation**
  - Results of the visual inspection shall be recorded, including a preliminary identification of leakage paths to be sealed or the general scope of air sealing work to be completed as a recommended improvement measure.

- ☐ **Prioritization of envelope improvements**
  - Contractors and building owners shall be educated on the advantages of prioritizing and investing in envelope improvements. Materials and communications may reference the DOE Better Buildings Solution Center and will be included as content and activities within the HER program's Education Outreach Plan.
- ☐ **Thermal barrier condition assessment**
  - Includes all walls, floors, ceilings, and other enclosure elements comprising the envelope of the building. The report shall document the general conditions and estimated existing R-value (or U-value) for each unique surface.
- ☐ **Mechanical systems inventory and condition assessment**
  - Includes identification of all heating, cooling, domestic hot water, and ventilation systems in the home by system and distribution type; fuel type; make and model numbers; rated and/or measured operating efficiencies; and condition evaluation.
- ☐ **Heating and cooling distribution system condition assessment**
  - Includes a description of the existing heating and/or cooling distribution system by location, insulation condition, leakage assessment, and general condition evaluation including potential design flaws to be considered for improvement.
- ☐ **Appliance assessment**
  - Includes a general description of the overall condition, age, and efficiency (if available) of major household appliances in the home.
- ☐ **Combustion appliance evaluation**
  - General condition assessment of combustion appliances based on visual inspection and results of diagnostic tests used to evaluate fuel leaks, carbon monoxide, and drafting of flue gases.
- ☐ **Roof and drainage system assessments and documentation of moisture-related problems**
  - Includes signs of water intrusion, condensation, mold, and water stains; suspected sources and causes; and recommended repairs.
- ☐ **Identification of hazardous conditions and recommended mitigation measures**
  - Includes repairs that must be completed prior to or concurrent with energy-related improvements (e.g., electrical repairs, roof replacements, asbestos removal, etc.).
- ☐ **Energy modeling**
  - Includes calculating standardized predicted savings using a DOE-approved modeling software.