

ATTACHMENT 8

Affordable Housing Retrofit Accelerator – Performance Testing Services

AHRA Program Overview:

The Affordable Housing Retrofit Accelerator (“AHRA”) Program is designed to provide a comprehensive suite of technical and financial services to help affordable multifamily residential building owners decarbonize their buildings and comply with the District’s Building Energy Performance Standards (BEPS).

Performance Testing Services: The AHRA Performance Testing Program (the “Program”) is designed to provide unit-to-unit compartmentalization performance testing to eligible Affordable Multifamily Residential Buildings or other facilities pre-approved by DOEE. These services may include but is not limited to, infiltration, duct leakage, combustion safety, and ventilation flow rate, analysis and interpretation of the performance testing results, and recommendations based on the test results.

Qualifications:

Service Providers interested in qualifying for AHRA Performance Testing Services will be required to meet the following qualifications:

1. Must possess at least one of the certifications listed in the DOEE Building Energy Performance Standards Guidebook Section 3.3.4.1 (e.g., BPI Certified Building Analyst for Multifamily Buildings or HERS Energy Rater). Comparable certifications may be submitted to the DCSEU for consideration and approval.
2. Must provide at least one (1) work product example demonstrating proficiency in providing the services set forth directly above. The DCSEU reserves the sole discretion to review, evaluate and make the final determination as to whether the work product provided by Service Provider demonstrates proficiency in the requested services.
3. Must receive a minimum score of 55 points under the RFQ (*see VII. Evaluation Criteria*)
4. Provide highly qualified supervision and sufficient, qualified personnel to complete the performance testing services in a timely manner.
5. Ensure all services conform to the standard of care and practice appropriate for the nature of the services, including but not limited to, industry best practices and the requirements set forth below.
6. Ensure all services are performed in compliance with applicable laws, statutes, ordinances, rules, regulations, and orders enacted by or promulgated by federal, state, municipal, or other governmental authorities including but not limited to procuring all necessary permits, licenses, concurrences, other governmental approvals necessary to complete the installation.

AHRA Performance Testing Services:

Service Providers deemed qualified by the DCSEU will be enrolled in the AHRA Performance Testing Program. Service Providers will be provided opportunities to bid on specific performance testing projects. Each bid opportunity will include:

1. The building address and a brief description of the building (e.g., square footage, number of floors, units, etc.).
2. The scope of work for the performance testing (e.g., blower door testing in X units).
3. A proposed timeline for completion of the services.

If Service Provider's bid is selected, the DCSEU will issue one or more Work Orders to Service Provider to complete the performance services according to the DCSEU Program protocols and any other requirements set forth in the Work Order. Service Providers will be expected to serve as the principal point of contact with the customer on the project timeline and will be responsible for scheduling, coordination, and managing the overall completion of the performance testing services per DCSEU program protocols. Upon completion of the services, Services Providers will also be required to submit the results via the DC BEPS Audit Template Online Tool. All fields must be completed in accordance with the reporting requirements of ASHRAE 211, and all supporting documentation included.

Unit Sampling

Sampling of units shall be carried out in accordance with one of the following:

- The methods described in Section 5.3.1.2 of ASHRAE 211
- [BPI Technical Standards for the Multifamily Building Analyst Professional \("BPI MF"\)](#)
- [DC Weatherization Assistance Program Multifamily Energy Audit Process Guide \("DC WAP"\)](#)

Units will be selected based on the following sampling guidelines:

- At least one of each unit type (studio, 1 bedroom, 2 bedroom, etc.)
- At least one unit from each location (bottom floor, top floor, and mid floor, and any other unique locations such as over the garage)
- At least one of each end condition (interior or end/corner unit)

Visual Inspection

Visually inspect the sampled units to identify evidence of air leakage. This will include but not be limited to windows, doors, common walls, exterior walls, utility penetrations, ductwork, window/wall air conditioners, ceiling/wall intersections, floor/wall intersection, slab edge, vents, rim joist, cantilevered floors. In some unique cases the contractor will need to pay additional attention to units that have basements, attic hatches, or crawlspaces or be adjacent to stairwells or elevator shafts.

Performance Testing

Blower door (compartmentalization) testing, duct leakage testing, and mechanical ventilation testing shall be carried out in accordance with the relevant sections of at least one of the following:

- The methods described in Section 5.3.1.2 of ASHRAE 211
- [ANSI/RESNET/ICC 380-2019](#)
- [DC Weatherization Assistance Program Multifamily Energy Audit Process Guide \("DC WAP"\)](#)

Blower Door Unit to Unit Compartmentalization Testing

Compartmentalization testing will be done per the procedures outlined in the standards referenced above.

For the purpose of the compartmentalization test, each apartment unit will be considered a "single zone."

Excerpts from ASTM E779 state the following:

- All doors inside the apartment should be opened for the test.
 - All doors to the exterior (porch or entrance) shall be closed and locked.
- Windows should be closed and locked including storm windows if they exist.
- Balancing dampers and registers should not be adjusted.
 - Fireplace and other operable dampers should be closed.
- Note the indoor and outdoor temperatures at the time of the test as well as wind speed and direction.
- Depressurize the unit to CFM50 and take readings.
- Readings should be adjusted for air density based on tables provided by blower door equipment company.
- Record all conditions when test was complete (ex. Interior and exterior door positions, window conditions, ventilation, and heating damper positions) such that a repeat test with similar conditions can be done.

Duct Leakage Testing

- Test total duct leakage and duct leakage to the outside in each unit inspected.
- Conduct a visual inspection to note the nature and quality of the duct work in a sampling of units.
 - Primary attention should be paid to leakage at the connection of ductwork to finished surface (e.g. duct boots to drywall) and at accessible equipment in mechanical closet.

The findings will support potential future work to be performed in all dwelling units.

Mechanical Ventilation

- For buildings with unitized ventilation systems, evaluate ventilation air with direct air flow measurements and note ventilation control settings in a sampling of units.

- For buildings with central ventilation systems, measure air flow from multiple locations per the referenced standards and note control settings.
- Note any sign(s) of obvious over- or under-ventilation, if any energy savings opportunities are available while meeting ventilation requirements, or if additional ventilation is recommended or needed even if it may increase the building's energy consumption.

Post-retrofit buildings that include any weatherization and/or air sealing EEMs must comply with ASHRAE 62.1/62.2.

- Check bath exhaust fans, kitchen exhaust ventilation, dryer venting and range hood operation, if applicable.
- If kitchen exhaust or dryer venting are not ducted to outdoors, the auditor must note this condition.

Combustion Safety

Combustion safety testing shall be carried out in accordance with one of the following:

1. [Chapter 8 of the RESNET Mortgage Industry National Home Energy Rating Systems Standards – Continuous Maintenance Version \(“RESNET MINHERS”\)](#)
2. BPI MF
3. DC WAP

Evaluate supply air to mechanical rooms, gas furnaces/hot water heater/appliances, complete CO testing of combustion equipment, and recommend CO detectors as needed.

Documentation/Expected Deliverables

Service Providers will be required to provide a detailed report with pictures and narrative for each building tested that includes the following:

- Existing conditions in which the test was performed (for purpose of testing again post implementation),
- Description of testing protocol followed,
- ACH50 or CFM50 per square foot of enclosure result for each apartment tested,
- Recommendations for how to remediate issues found with air sealing between units and with respect to the exterior envelope, and
- An estimated ACH or CFM50 per square foot of enclosure reduction per DCSEU Program protocols if recommendations are implemented.

Recommendations must be written in a manner such that they can be provided to air sealing and thermal envelope contractors for bidding on a written scope of work, quantify estimated energy savings (MMBtu) and cost savings (\$/year) and include a draft of a line-item bid document for the DCSEU to review for the recommendation(s).

After each report has been completed and submitted to the DCSEU, the DCSEU shall hold a follow-up meeting with the building owner (or its authorized representative) to review and discuss the report findings. If the report does not meet the DCSEU program protocols or specifications in the Work Order, the Service Provide will be required to address, resubmit the report, and obtain DCSEU approval prior to payment.

Post Implementation Testing

If an air sealing package is implemented, then a separate, optional task may be requested for a post- retrofit "test-out." Performance testing will be completed on the same units sampled earlier **plus an additional 10%** that were not tested during the initial sampling to obtain pre and post ACH50 or CFM50 numbers. The post-test should be performed consistent with the pre-retrofit testing setup and should be documented in the same manner.

Pricing:

Payment for the services outlined above will be awarded on a time and material, firm-fixed-fee, or hybrid basis. Service Providers shall include in their response their preferred pricing structure and the following information for each pricing structure acceptable to service:

Time and Materials

Service Providers must include in their response the following:

- Fully loaded hourly rates for:
 - performance testing staff who meet the minimum requirements outlined in the Work Order; and
 - administrative staff who may provide professional or administrative services to meet the requirements outlined above.
- Detailed estimate of the hours, broken down by staff person or title, to:
 - visually inspect and complete a blower door test per the unit using the sampling methodology listed in "Unit Sampling" section above.
 - Complete the report per building as noted in the "Documentation/Expected deliverables" section

Firm-Fixed-Fee (per unit test)

Service Provide shall include in their response the following:

- A list of the performance testing (combustion safety, blower door (compartmentalization), duct leakage, or mechanical ventilation testing) or other services that Service Provider would provide for a Firm-Fixed-Fee and the proposed fee. Service Providers may include in their response variable fixed fees depending on the level of effort involved (e.g. per unit or sliding scale based on the number of performance tests per building or building size). The Firm-Fixed-Fee shall include all costs associated with the services including general and administrative expenses.

Hybrid Pricing

The DCSEU will also consider hybrid pricing (i.e. a combination of the above pricing structures). Service Providers that wish to perform services utilizing a hybrid pricing structure shall include a detailed description of the services, proposed pricing structure for each service and pricing provisions.

Specific payment terms for the above Services will be specified in each Work Order.