



ARKANSAS
ENERGY & ENVIRONMENT

Arkansas

Weatherization Assistance Program

Infrastructure

State Plan

July 1, 2022 – June 30, 2027

Arkansas Energy Office
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

Mission Statement

The mission of the Arkansas Energy Office (AEO) is to promote energy efficiency, clean technology, and sustainable strategies that encourage economic development, energy security and the environmental well-being for all citizens of Arkansas.

The State Goals

The policies contained in this plan will enable Arkansas and its subgrantee network to weatherize homes of low-income Arkansans effectively, based on:

- Following priorities from the U.S. Department of Energy to serve elderly and disabled persons, households with children, and households experiencing a burden from high energy bills as well as households using a high amount of energy;
- Ensuring that only the most cost effective measures are installed on houses;
- Including client education about energy conservation; and
- Addressing health and safety issues affected by weatherization work on the house.

Executive Summary

The Arkansas Weatherization Assistance Program (WAP) State Plan for the Infrastructure program is derived from the state's application to the U.S. Department of Energy (U.S. DOE) for July 1, 2022 – June 30, 2027. These funds will provide assistance to approximately 2,160 households across the State.

The purpose of WAP is to install energy conservation measures in the homes of income-eligible households (up to 200% of federal poverty level). Funds are directed toward the most cost-effective energy efficiency measures, as determined by an on-site assessment energy audit of the eligible building. The program helps to:

- Reduce energy consumption in Arkansas,
- Reduce the cost of energy for low-income families, and
- Address health and safety issues in the home affected by weatherization work.

Currently, five (5) non-profit subgrantees provide Weatherization services in all 75 counties. These entities provide energy efficiency weatherization services by subcontracting work to qualified contractors. Energy efficiency measures funded through the program include air sealing, duct sealing, insulation, heating systems evaluation, and repairs or replacement. The program assists all types of single family housing, a category which includes duplexes, triplexes and quadplexes and manufactured housing (mobile homes).

The state will spend DOE Infrastructure funds in accordance with this plan.

Disclaimer

NOTE: The Department of Energy (DOE), after a final review of Arkansas's application, may require changes be made to the information contained in this state plan.

Acronyms

ADEQ	Arkansas Division of Environmental Quality
ADMIN	Administrative
AEO	Arkansas Energy Office
AWAP	Arkansas Weatherization Assistance Program
BCD	Better Community Development, Inc.
BPI	Building Performance Institute
BRAD	Black River Area Development Corporation
CAA	Community Action Agency
CADC	Central Arkansas Development Council
CEUs	Continuing Education Units
CFR	Code of Federal Regulations
CRDC	Crowley's Ridge Development Council, Inc.
C-SCDC	Crawford-Sebastian Community Development Council, Inc.
DHHS	U.S. Department of Health and Human Services
DOE	U.S. Department of Energy
E & E	Arkansas Department of Energy and Environment
ECOS	Energy Conservation Online System
H&S	Health & Safety
HEP	Home Energy Performance
HUD	U.S. Department of Housing & Urban Development
HVAC	Heating, Ventilation & Air Conditioning
IREC	Interstate Renewable Energy Council
JTA	Job Task Analysis
KSA	Knowledge, Skills & Abilities
LIHEAP	Low Income Home Energy Assistance Program
NASCSP	National Association for State Community Services Programs
Network	Community Action Agencies/Other Non-profits providing Weatherization services in Arkansas
NHPA	National Historic Preservation Act
NREL	National Renewable Energy Laboratory
PAC	Policy Advisory Council

Acronyms, Continued

PO	DOE Project Officer
PY	Program Year
QA	Quality Assurance
QCI	Quality Control Inspector
SEP	State Energy Program
SIR	Savings-to-Investment Ratio
SWS	Standard Work Specifications
T&TA	Training and Technical Assistance
TBD	To be Determined
USDA	United States Department of Agriculture
WAP	Weatherization Assistance Program for Low-Income Persons
WPN	Weatherization Program Notice

Subgrantees Budget

Better Community Development, Inc. (Little Rock)	\$3,065,448
Black River Area Development Corporation (Pocahontas)	\$2,819,833
Central Arkansas Development Council, Inc. (Benton)	\$8,832,737
Crawford-Sebastian Community Development Council, Inc. (Ft. Smith)	\$7,563,325
Crowley's Ridge Development Council, Inc. (Jonesboro)	<u>\$5,693,742</u>
Total	27,975,085

WAP Production Schedule

Better Community Development, Inc. (Little Rock)	237
Black River Area Development Corporation (Pocahontas)	218
Central Arkansas Development Council, Inc. (Benton)	682
Crawford-Sebastian Community Development Council, Inc. (Ft. Smith)	584
Crowley's Ridge Development Council, Inc. (Jonesboro)	<u>436</u>
Total Units (excluding reweatherized)	2,160
Rewetherized Units	0

VEHICLE & EQUIPMENT AVERAGE COST PER DWELLING UNIT (DOE RULES)

A Total Vehicles & Equipment (\$5,000 or more) Budget	\$ 750,000
B Total Units Weatherized	2,160
C Total Units Reweatherized	0
D Total Dwelling Units to be Weatherized and Reweatherized (B + C)	2,160
E Average Vehicles & Equipment Acquisition Cost per Unit (A divided by D)	347.22

AVERAGE COST PER DWELLING UNIT (DOE RULES)

F Total Funds for Program Operations	\$17,602,906
G Total Dwelling Units to be Weatherized and Reweatherized (from line D)	2,160
H Average Program Operations Costs per Unit (F divided by G)	8,148.49
I Average Vehicles & Equipment Acquisition Cost per unit (from line E)	347.22
J Total Average Cost per Dwelling (H plus I)	8,496.71

Energy Savings

Method used to calculate savings (new):

WAP algorithm:

	<u>Units</u>	<u>Savings Calculator (MBtus)</u>	<u>Energy Savings</u>
This Year Estimate	2160	29.3	63,288
Prior Year Estimate	268	29.3	7,852
Prior Year Actual	255	29.3	7,472

Policy Advisory Council Members

As required by federal regulations, a Policy Advisory Council (PAC) assists in the development and implementation of the WAP and advises the state on a range of issues relating to the WAP. The PAC is broadly representative of organizations that provide services to low-income persons in Arkansas.

Cheryl Ivy, Rural Development, United States Department of Agriculture

Darryl Swinton, Better Community Development

George Burson, Historic Preservation Program

Heather Hendrickson, Entergy Arkansas

Iris Pennington, Arkansas Energy Office

Kirk Pierce, Summit Utilities

Mitch Ross, Electric Cooperatives of Arkansas

Quinyatta Mumford, Mumford and Associates

T. Denise Jeter, Entergy Arkansas,

Wally Nixon, Public Service Commission

Mitchell Simpson, Ex Officio, Arkansas Energy Office

Eligibility

Approach to Determining Client Eligibility

AEO understands that every dwelling weatherized must meet both the client eligibility and the building eligibility requirements.

The dwelling unit is eligible for weatherization if the family unit occupying it:

1. has income in relation to household size which is at or below 200 percent of the poverty level determined in accordance with criteria established by OMB, and published in WPN __-3, for the most recent year; or
 2. has a member who has received cash assistance payments at any time during the preceding twelve months under Titles IV or XVI of the Social Security Act, or applicable state or local law, or
 3. is eligible for assistance under the Low Income Home Energy Assistance Act of 1981 (LIHEAP); Arkansas WAP, in addition, grants eligibility to anyone who does not qualify for LIHEAP but whose income is at or below 200% of poverty level.
- AEO acknowledges that all subgrantees must have on file proof of income eligibility for each household served or proof of cash assistance received by a household member under Titles IV or XVI of the Social Security Act or proof of receipt of LIHEAP benefits. For each client waiting for services, subgrantees must re-certify eligibility every twelve (12) months after initial determination of eligibility until selected for weatherization. The application eligibility expires twelve (12) months from certification date if work on dwelling unit (energy audit) has not been initiated.

Basis for household eligibility is WPN __-3 containing current poverty income guidelines and definition of income. Arkansas will use 200% of poverty level and will update annually when new guidance is issued.

U.S. Department of Energy (DOE) directs grantees to guidance provided by U.S. Department of Health and Human Services (DHHS) at <http://www.acf.hhs.gov/ocs/resource/liheap-im-hhs-guidance-on-the-use-of-social-security-numbers-ssns-and-citizenship-status-verification>. Subgrantees will:

- allow ineligible persons who reside in the family unit to apply for weatherization services on behalf of eligible minor children;
- consider the income of all persons residing in the dwelling unit when determining income eligibility for weatherization services, regardless of eligibility status of each individual person.

Approach to Determining Building Eligibility

Dwelling units are eligible for weatherization if occupied by an income eligible family unit.

The Arkansas WAP application form (WAP04) asks if the dwelling unit is owned or rented.

If owned by the applicant/family unit, proof of ownership is required in the form of a deed, quick claim deed, will, or documentation from the county assessor's office. Subgrantees are often able to view county assessor's files online and obtain a printout showing ownership to ease the burden on the applicant of supplying proof of ownership.

If the applicant/family unit lives in rental property, the landlord's name and contact information is required on the application. Then the Subgrantee obtains written permission from the landlord to perform weatherization work on the property; this permission becomes part of the client file.

In buildings with more than one dwelling unit, at least fifty percent (50%) of households must be income eligible for weatherization services. For multi-family rental property, any vacant units that are weatherized must have the expectation of being occupied within 180 days of weatherization services being performed. Not more than fifty percent (50%) of units may be vacant and, in the case of fifty percent (50%) occupancy, all occupied units must have income eligible households residing therein.

Describe Reweatherization compliance

In Arkansas, a dwelling unit may not receive weatherization services if it was previously weatherized less than fifteen (15) years prior to the start of the current program years, if the previous weatherization was completed using DOE funds.

In order to ensure that re-weatherization does not occur within the fifteen (15) year prohibited time period, Arkansas requires that Subgrantees:

1. Search weatherization records by address as well as applicant/family name.
2. Search the older data base used from approximately 2004 to the implementation of ECOS in 2015, even though legacy data was entered in ECOS.
3. Search any existing paper records, if access is not available to the older data base.

4. Visually inspect the house, prior to completing an energy audit, for signs that previous weatherization could have occurred, such as the presence of new windows and doors, new HVAC, extensive interior caulking, existing insulation (check date on attic insulation tag). Signs of previous weatherization will be discussed with the applicant/household members.
5. Ask the applicant, with this requirement expecting to yield the most unreliable results. The weatherization application asks if the dwelling unit was previously weatherized, and previous weatherization is discussed with the applicant at the time s/he applies.

Arkansas does not expect to have re-weatherized units in PY 2022 through PY 2027.

Building Eligibility – Housing Types:

Housing types eligible for weatherization include owner-occupied and renter-occupied single-family, site-built homes, and manufactured (mobile) homes. Single family dwelling units include buildings with 2, 3, or 4 units.

Non-traditional dwelling units, such as apartments over businesses or camping trailers, require AEO approval prior to weatherization. AEO will ensure that requirements for eligibility are met prior to granting approval or reach out to the DOE PO for discussion and approval.

For campers and trailers to be considered stationary and, therefore, eligible for weatherization, the following criteria must be met:

1. Axles have been removed.
2. Residential electric and water utility services have been established.
3. Mail service has been established using street address (PO Box does not qualify).

State Historic Preservation Compliance (SHPO)

Arkansas will use the guidelines in its Historic Preservation Programmatic Agreement (PA) to comply with restrictions concerning weatherization. Dwelling units will either be exempt from restrictions based on age or types of weatherization measures installed, or require SHPO review.

Rental Units/Single-family

Arkansas's rental plan, as follows, protects renters' rights as specified in 10 CFR 440.22 (b)(3), (c)-(e).

- At the time of application, the Subgrantee must obtain written permission from the owner/agent of the rental unit agreeing to weatherization of the property; this permission must be retained in the client file.
- The benefits of weatherization assistance are expected to accrue primarily to low-income tenants.
- No undue or excessive enhancement will occur to the value of dwelling units as a result of weatherization. Each energy audit of a rental unit will be reviewed by the Subgrantee Weatherization Director to ensure that all measures authorized by the DOE approved energy audit software, and all Health & Safety measures are provided in compliance with DOE requirements. Any questions in this regard will be discussed with AEO prior to the start of weatherization.

- Not less than sixty-six percent (66%) (50 percent for duplexes and four-unit buildings) of the households in a building must be income-eligible for weatherization services.
 - The Subgrantee will obtain and place in the client file an agreement signed by the landlord (or authorized agent of the landlord) stating that, for a minimum of twelve (12) months after weatherization work has been completed, the rent will not be increased based on the increased value of dwelling units due solely to weatherization.
 - Subgrantees will provide copies of the signed Landlord Agreements to the tenants to ensure their understanding and provide an avenue for tenant complaints.
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- Other Considerations:
 - In the event of a dispute between the tenant and property owner regarding a rent increase, the subgrantee will attempt to resolve the dispute; if that fails, the tenant will be referred to legal aid by the subgrantee.
 - Units being weatherized must be occupied by a qualified household; the only exceptions that an applicant household may temporarily move out while work is ongoing, if the temporary nature of the move is documented and re-occupation of the house is expected once work is completed.
 - Arkansas does not seek property owner agreements for placement of liens nor does it use other contractual restrictions.
 - Subgrantees do not accept financial participation of the owner in weatherization costs.

There are conditions and situations under which a subgrantee must not or may choose not to weatherize an otherwise eligible dwelling unit. Information for making this determination may become evident during the application process, during the initial inspection process, during the energy audit, or after weatherization work has begun.

The Arkansas WAP Deferral policy is uploaded as part of this application.

The Deferral form (WAP 35) ensures that all information is discussed with the client and provided in writing with both parties' signatures. This form is placed in the client hard file. In addition, both the deferral form and the deferral tracking form are uploaded as part of this application.

AEO will track deferrals on a monthly basis using an Excel spreadsheet completed by each subgrantee.

Definition of Children

Definition of children (below age):19

Approach to Tribal Organizations

Arkansas has no identified Native American tribes. Low-income Native Americans will receive the same weatherization services provided to other low-income persons in Arkansas.

Selection of Areas to Be Served

Arkansas has consistently served the entire state, with the current configuration being five (5) Subgrantees with service areas ranging from the largest of twenty-one (21) counties to the smallest of fourteen (14). Since the ARRA period, selection of subgrantees has been through a competitive process, advertising for Requests for Qualifications (RFQ) from non-profit CBOs and local governments.

The subgrantee, Community Action Program for Central Arkansas, Inc. (CAPCA), which has historically served Cleburne, Faulkner, and White counties, communicated to AEO in September 2022 its intention to stop providing Weatherization services at the end of the month. Crowley's Ridge Development Council agreed to serve the Cleburne, Faulkner, and White counties on a temporary basis. AEO plans to issue a RFQ in 2024. Arkansas allocates funds at the county level and aggregates amounts allocated to the counties for each service area.

Priorities

Each applicant is assigned priority points at the time of eligibility determination, as follows:

- At least one member in the household is elderly (age 60 or older). (1 point)
- At least one member in the household is a person with disabilities (receives disability benefits). (1 point)
- At least one member in the household is a child (under the age of 19). (1 point)
- The household has a high energy burden (spending more than 6% of total income on heating and cooling costs*). (1 point)
- The household is a high energy user (spending 10 cents or more per square foot on electricity**). (1 point)

*from DOE Better Buildings/Clean Energy for Low-Income Communities Accelerator fact sheet

**from Entergy Solutions "You have the power to lower your Entergy bill" brochure

Subgrantees have a priority in waiting list for each county in their service area. AEO has approved the use of separate priority lists by county to give subgrantees flexibility when scheduling work crews and assigning contractors. This policy minimizes travel distances and maximizes available work hours and worker efficiency. However, a subgrantee serving two or more counties may not work exclusively in one county for more than one month. The Subgrantee is required to serve each county in proportion to the number of units planned for that county and to prioritize counties based on the number of priority points assigned to top applicants on each county list. The selection of a county in which to provide weatherization work exclusively for a coming month should be primarily based on where the client resides who has the highest number of points among all counties. Priority points being equal, the age of the application comes into play when selecting the next house for weatherization.

Subgrantees print and keep priority lists each month to document that these policies were followed. Each county list should contain explanatory notes, e.g., attempts to contact clients and other information pertinent to selection.

Climatic Conditions

Total heating degree-days in Arkansas range from a high of 5,477 in the northcentral part of the state to a low of 4,987 in southeastern Arkansas. The average heating degree-days are 30 year averages that have been supplied by the National Oceanic and Atmospheric Administration (NOAA). In counties without reporting stations and in counties without complete data for 30 years, data from nearby stations was utilized.

Black River Area Development Council (NE)	5,477
Central Arkansas Development Council (SW)	4,999
Community Action Program for Central Arkansas (central)	5,276
Crowley's Ridge Development Council (NE)	5,294
Crawford-Sebastian Community Development Council (NW)	5,298
Better Community Development (SE)	5,198

Following is a description of how weather data is used in Arkansas's energy audit software, Energy Conservation Online System (ECOS):

Methodology for calculating heat loss -- ECOS uses a balance point temperature when calculating energy usage/loss for building segments. DOE requires that when using this methodology, you utilize 68 degrees for heating and 78 degrees for cooling NOAA weather data is imported into ECOS from each weather station in Arkansas. The weather data is a 20-year average which is standard practice for DOE protocol and includes all eight (8) compass points and horizontal surfaces (future solar panel modeling potential).

Calculating demand -- When the model is run, for every hour of the day ECOS knows what the exterior temperature is based on the weather data. The demand is calculated on how much energy is needed to maintain a 68 degree heating and 78 degree cooling internal temperature. So, the hotter it is outside, the more demand is needed to meet the cooling balance point temperature. For example, if it is 98 degrees outside, this equates to a 20 degree delta T that must be met to reduce the cooling temperature to 78 degrees resulting in more loss of BTUs or usage and more energy (fuel) needed to meet the demand.

Calculating energy loss -- Segments or condition codes are assigned an R-value which was reviewed by DOE. When a user selects to "model" a building segment they enter the orientation (N/E/S/W etc.) and select a condition code. ECOS will calculate the energy usage in BTUs based on the condition code and orientation to determine how much energy is needed to meet the demand for that segment over a period of time (one year). If the user selects to insulate that building segment (increase the R-value), ECOS will run the same calculation over the same wall segment and orientation. The result is how much energy will be needed to meet the demand for that wall segment.

This results in the following formula: Pre Energy Usage (in BTUs) – Post Energy Usage (in BTUs) = Estimated Savings (in BTUs) annually. Then the savings in BTUs is converted to units based on the

primary fuel type. So, if it is natural gas, it is converted to therms, electricity to KWH, etc. This results in annual savings of units. Then it is a simple calculation to get the SIR. Depending on the life expectancy of the task, the annual savings are multiplied by the life expectancy then divided by the cost to get the SIR.

$(\text{Annual Savings} \times \text{Life expectancy} / \text{Task Cost}) = \text{Task SIR}.$

Type of Weatherization Work to Be Done

Technical Guides and Materials

Arkansas uses the following: "Retrofitting Arkansas Single Family Standard Work Specifications - Aligned Field Guide, and Subgrantee Operations Manual.

The Subgrantee Operations Manual is a living document which codifies all program requirements, procedures and standards. On an annual basis, AEO will update the manual incorporating new language from DOE's WPNs and/or new state policies. When updates are made, the manual will reflect the appropriate effective dates of changed policies.

The Subgrantee Operations Manual is maintained on the AEO website.

Electronic Link <https://www.adeq.state.ar.us/energy/incentives/wap.aspx>

Scroll to bottom of page and click on “WAP Forms & Documents”

The Standard Work Specification technical guide for single family is maintained in ECOS under the *Forms, Program Forms* tab.

Documenting the Process for Distribution

Once revised versions of the Subgrantee Operations Manual or technical guides are issued, AEO will send a copy to each subgrantee via certified mail. Each subgrantee must sign for delivery. The US Postal Service will return the signature cards to AEO, providing written verification that each subgrantee received a copy.

Subgrantees require Weatherization contractors to sign an acknowledgement form, verifying that they have received a copy of the ASFSWS and the AMHSWS at the time of their procurement to do weatherization work. Subgrantees must have written documentation showing each contractor has received both SWSs. During monitoring visits, AEO program monitors will check for compliance.

Statements of Assurances

AEO ensures that all subgrantee agreements and subgrantee vendor contracts, will contain language which clearly specifies that all work performed will be of a quality outlined in WPN 15-4, Section 2.

The language clearly requires and documents the following:

- (1) that subgrantees and their contractors understand that work quality standards must align with the SWS,
- (2) that each subgrantee's direct hire is aware of these standards, and
- (3) that they all must sign off that they have received a copy of both SWS technical guides.

AEO ensures that all work will be performed in accordance with our DOE-approved Energy Audit procedures and all materials will be approved materials specified in 10 CFR 440, Appendix A.

- **Language in Subgrantee Agreement**

The following language will be inserted into subgrantee and contractor agreements:

It is the signatory's responsibility to perform all weatherization and health & safety work to the specifications outlined in WPN 15-4 using DOE Standard Work Specifications (SWS) as found in Arkansas Single Family Standard Work Specifications and the Arkansas Manufactured Housing Standard Work Specifications (ASFSWS and AMHSWS)." Work quality standards that align with the SWS must be followed for all work performed on client homes. The signatory acknowledges receipt of the above referenced documents. All contractors of subgrantees must be assigned the same contractual responsibility and acknowledge receipt of the referenced documents.

The signatory must ensure that every completed home is inspected for compliance with these standards and require reworks when the work is judged not satisfactory by the SWS standards.

Describe Mechanism Used

The mechanisms AEO uses to verify that subgrantees understand and agree to expectations of weatherization work is the subgrantee's signature on the grant agreement. In addition, third party QCI inspections review weatherization work vis-a-vis the SWS technical guides.

Arkansas will follow the restrictions for the listed allowable activities and historic preservation in the NEPA determination. Subgrantees will adhere to the Historic Preservation Programmatic Agreement (PA).

Field guide types approval dates

Single-Family	06/25/2021
Manufactured Housing	06/25/2021
Multi-Family	

Energy Audit Procedures

Audit Procedures and Dates Most Recently Approved by DOE

Audit Procedure	Single-Family
Audit Name	N/A
Approval Date	03/29/2022
Audit Procedure	Manufactured Housing
Audit Name	N/A
Approval Date	
Audit Procedure	Multi-Family
Audit Name	N/A
Approval Date	

Arkansas is committed to submitting energy audit approval requests to DOE every five (5) years, with the understanding that sufficient lead time (minimum 6 months) is required for the approval process. Most recent approval date for ECOS is 03/29/2022. Arkansas will begin the re-approval process during the last quarter of PY 2026.

Final Inspection

AEO's Final Inspection & Assurance Statement

AEO requires that every DOE WAP unit reported as a “completed unit” undergo a final inspection by a certified Quality Control Inspector (QCI), ensuring that all work meets the minimum specifications outlined in the Standard Work Specifications developed by DOE/NREL.

In accordance with WPN 22-4, Section 2:

- Every client file will have a WAP 08 form that certifies that the unit had a final inspection and that all work met the required standards. The form will be signed by a certified QCI. Signatures will be accepted to demonstrate compliance. If a unit is also inspected by the state, two (2) WAP 08 forms will be in the client file - one for each inspection.
- The WAP 08 have been updated to include the QCIs 1) printed name, 2) signature, 3) certification number, and 4) date.
- Final inspection information is entered in ECOS and reviewed as part of desk monitoring.
- The QCI includes an assessment of the original audit to confirm that the measures called for on the work order are appropriate and compliant with the state audit procedures and protocols approved by DOE and that there are no “missed measures” which should have been considered.
- WAP subgrantees all employ QCIs who work separately and independently from Energy Auditors on all homes weatherized in Arkansas.
- The QCI's are also work separately and independently from crew installing the measures; crews are employed by contractors and work only with Energy Auditors during installation.
- WAP subgrantees all use contractors as crew to install measures on homes being weatherized; crew members are separate from subgrantee Energy Auditors and QCIs.

The Use of Quality Control Inspectors by AEO

- AEO will monitor at least five percent (5%) of all units reported as complete.
- If a subgrantee does not have a completely independent QCI process from its energy auditing function or the agency is on probation or at-risk, AEO will monitor at least ten percent (10%) of all units reported as complete.
- AEO will not use any subgrantee QCI staff for its inspections.
- AEO will acquire a third-party QCI in order to increase the capacity of AEO to inspect with the increase in Infrastructure production. Procurement through RFP will be done during PY 24.

Policy & Procedures for Inadequate Inspection Practices

- Subgrantee QCI accompanies state/third party QCI to learn first-hand of any deficiencies in its own inspection and audit.
- State/third party QCI provides feedback during the inspection.
- State/third party QCI addresses incomplete and poor workmanship as well as missed opportunities on site and in reports. Needed specific and/or comprehensive training will be delivered in the field by the state/third-party QCI at the time of the inspection or arranged later.
- State/third-party QCI identifies call backs and missed opportunities and identifies required corrective actions at subgrantee's expense.

Improvements are expected or AEO will meet with agency administration to review expectations and discuss disciplinary actions.

Inspection and Monitoring of Work Using Guidelines and Standards

Arkansas will continue to ensure that Quality Control Inspector (QCI) competency is demonstrated by mandating certification as a BPI Home Energy Professional (HEP) QCI. AEO requires that each subgrantee employ or contract with a HEP QCI. Subgrantees must submit to AEO the credentials of all staff employed as a QCI and of any third parties engaged to conduct quality control inspections.

QCI Mentorship Option

Arkansas has a mentorship program approved by DOE. This program supports recruitment, efficient onboarding, and career advancement at the Grantee and Subgrantee levels and will enable subgrantees to ramp up to weatherize a greatly increased number of units with BIL funding. Individuals working toward QCI certification (mentee) under the mentorship of a certified QCI may perform work aligned with the QCI Job Task Analysis, including Final Inspections, monitoring, and the collection of field site data and/or conducting reviews of energy models, but all work must be reviewed and approved by a certified QCI.

The mentorship program includes:

- 1) Mentee is a contractor, subgrantee, or grantee employee pursuing QCI certification.
- 2) A timeline and number of units completed will be established for the mentee to complete training and obtain QCI certification.

- 3) Each mentee will be assigned to one mentor as approved by AEO.
- 4) All work performed by the mentee will be reviewed and attested to by the mentor/certified QCI on the WAP 08.

Weatherization Analysis of Effectiveness

AEO is concerned that all entities that participate in the program be qualified and have sufficient ability to effectively deliver a quality product to the citizens of Arkansas. The following evaluation system has been developed to analyze current subgrantee performance and to assess viability for continued participation in the weatherization program.

- **Realized Energy Savings:** ECOS software has the capacity to capture pre and post energy usage which allows actual energy savings to be calculated.
- **On-site Inspections of Weatherized Units:** State/Third Party QCI will inspect a minimum of five percent (5%) of completed units for each subgrantee, unless AEO verifies that the subgrantee has not completely separated the audit and inspection functions, in which case a minimum of ten percent (10%) of completed units will be inspected (see previous Final Inspection section).
- **Monitoring:** Visits will focus on technical, fiscal, and administrative compliance with all applicable federal and state WAP rules and regulations. Findings will be tracked through a corrective action plan. Any patterns will be noted and addressed.
- **Single Agency Audits:** Each subgrantee must submit a financial audit within nine (9) months of the conclusion of the fiscal year. Audits will be reviewed and be used as part of a financial risk assessment.
- **Productivity:** AEO will track expenditures and average cost per unit of each subgrantee to monitor utilization of grant funds.
- **Analyses using ECOS:** With the implementation of ECOS, AEO has expanded capability to track subgrantee progress. These capabilities include:
 1. Information dashboard: findings by subgrantee, measure, contractor reworks and disallowances; training needs including comprehensive and specific training is based on findings, results and priorities
 2. Comparison charts that show productivity levels, spending and energy savings between subgrantees.
- AEO requires self assessments based on Knowledge, Skills, and Abilities (KSAs), for each subgrantee staff employed in a WAP position. Weatherization directors use these self-assessments, and other information specific to staff, to develop a training plan.

AEO utilizes its Risk Assessment reports to document the outcomes and effectiveness of subgrantee weatherization programs. The Risk Assessment tool records administrative/programmatic, technical and fiscal effectiveness. Improvements will be tracked by programmatic monitoring, comparing federal/state/third party QCI findings with findings from the previous QCI report, and fiscal reviews.

Health and Safety

Arkansas' approved Health and Safety Plan is uploaded in the application attached to the SF-424. Radon is included in the plan. Minor repairs are capped at \$600.00.

Budgeted Health & Safety funds are 24.43% of total Program Operations for the BIL program. 24.99% has previously been approved for Health & Safety expenditures and 24.99% will not be exceeded for the BIL program.

The average maximum cost per unit of Health & Safety expenditures will be \$1,991 (24.4% of Program Operations costs).

Program Management

A. Overview and Organization

The Arkansas Energy Office (AEO) has been a part of the Arkansas Department of Energy and Environment (formerly the Arkansas Department of Environmental Quality) since 2017.

AEO organizationally includes the following programs:

- State Energy Program (SEP);
- Clean Cities, which works collaboratively on Volkswagen Settlement programs;
- Energy Efficiency Arkansas (EEA), which is utility-funded;
- Low-Income Home Energy Assistance Program (LIHEAP); and
- Low-Income Home Water Assistance Program (LIHWAP).

The Weatherization Program Manager and staff work with AEO administrative and fiscal staff. The organizational chart shows WAP is a unit under the Senior Programs Manager. Connection to the Arkansas Energy Office offers support and an exchange of ideas beneficial to WAP.

B. Administrative Expenditure Limits

For the BIL program, AEO budgeted 7.5% of the total allocation for Administration.

Subgrantee administration is 7.5% of the total allocation.

All subgrantees are allocated more than \$350,000 from Arkansas BIL funds.

Monitoring Activities

Arkansas Weatherization Practices & Procedures for Monitoring

Arkansas has been approved for a mentoring program to develop certified Energy Auditors and Quality Control Inspectors for non-traditional hires.

Budget for Monitoring

- There are two (2) vacant positions for full time administrative monitor whose time will be split between the annual program and BIL.
- The WAP coordinator will train the new technical staff member. Monitoring time will be split between BIL and the annual program and this position will be a technical monitor with Energy Auditor and QCI credentials.
- There is a currently vacant position (but pending hire) for a full time technical monitor whose time will be split between the annual program and BIL.
- Program Manager position is currently vacant but pending hire. The manager will supervise the monitors as well as function peripherally as a monitor.
- There is one (1) financial monitor for WAP.

QCI documentation for Subgrantee inspectors

AEO documents the credentials of all subgrantee certified staff and maintains a spreadsheet with names of staff, certification numbers, and expiration dates. AEO also ensures that certified staff receive required training CEUs annually. All Arkansas subgrantees have certified energy auditors and certified QCIs so that these functions are performed by separate, qualified staff.

Technical Monitoring of work performed

AEO uses the following processes to ensure that work performed is effective and being performed by qualified staff:

On-site Technical Monitoring Inspections:

AEO will use a third-party QCI procured by RFP. AEO does not have sufficient, qualified staff to complete the number of BIL inspections required. The RFP will be issued in Q2 of PY 2022. All BIL inspections will be performed by the third-party QCI. A minimum of ten percent (10%) of units reported as complete will be selected for field inspection as it is anticipated that all subgrantees will be using the mentorship option.

File Review

1. AEO staff and/or subgrantee will choose jobs to review monthly from a list of completed jobs in the ECOS software. They will conduct desktop audits by reviewing client e-files.
2. AEO staff will note any questions or concerns.
3. Units selected for inspection will have ECOS files placed in a site visit folder with follow up areas noted.

The frequency of technical monitoring

Quarterly, AEO will select the number of units (with or without the subgrantee's assistance) to be inspected which meet the percentage of inspections required. The QCI inspections will begin in the

quarter following the quarter the units were completed and will continue during successive weeks until completed, with a maximum of one (1) week spent inspecting each subgrantee's weatherization work.

Inspection includes a file review and in-home inspection. The third-party QCI will be accompanied by the subgrantee QCI or other staff. Expectations for the inspection are:

A typical on-site inspection averages two hours (2) hours. Other activities include:

1. 1 hour - review client file (energy audit, work orders, and agency QCI inspection report) prior to being on-site;
2. 1 hour - follow-up discussion of findings among QCI and subgrantee staff (may be in the field after the inspection or back at the subgrantee office);
3. 2 hours - complete required written report; and
4. 1 hour - review and discuss documentation of corrective actions, if any; approve or deny.

Technical Desk Monitoring

Every month, technical monitors will conduct sample desk audits in the ECOS software after jobs have been submitted to AEO as complete. A desk audit includes reviewing: energy audit, work orders/SWS, health & safety, final inspection by QCI, separation of audit and final inspection (different staff, certified QCI); required forms present, complete, signed and dated;

Subgrantee auditors/inspectors can see the AEO monitor's notes on the Billing Review tab in ECOS. If AEO identifies any issues with the weatherization of the unit, feedback and discussion with subgrantee staff to consider alternative procedures in what might be a complex weatherization situation and to offer the opportunity to rerun final calculations or make other changes to the unit.

Corrective Actions required

Each inspection by AEO's third-party QCI will include required corrective actions, sent to the subgrantee, if deficiencies are found; these are sent with the AEO QCI monitoring report to be included in the client file. Corrective actions are requested within fifteen (15) working days with the notation that they must be completed with non-federal funds. The QCI who noted the finding(s) will review and approve the corrective actions submitted in writing with photographic documentation.

If Grantee third-party QCIs detect trends or deficiency patterns and significant deficiencies in the subgrantee's QCI monitoring of completed units, the following steps will be taken:

- Monitoring of the subgrantee will increase so that an additional visit will be made prior to the next regularly scheduled visit;
- Additional units completed since the last regularly scheduled monitoring visit will be inspected; the number will be two (2) or 100% if less than two (2);
- One (1) in-progress unit will be inspected during this extra visit;
- AEO's third-party QCI and subgrantee staff, with AEO virtual participation, will discuss: 1) contractor deficiencies, 2) quality of auditor assessments, and 3) subgrantee QCI giving a pass to substandard work and missed opportunities, as applicable;
- Training needs relative to findings will be discussed and provided to subgrantee staff and contractors.

Note: Significant deficiencies are defined as: health & safety violations, poor quality installation of materials, and major measures missed.

Subgrantee noncompliance or repeated unresolved findings (based on a minimum of two [2] monitoring visits to a subgrantee without improvement) will be reported promptly to the DOE project officer.

An annual analysis will be performed to establish an overview/risk assessment - review status will be based on performance during the previous year.

Inspection of work-in-progress:

AEO will perform inspection of a unit in progress of weatherization whenever possible or required.

When selecting a job for an in-progress on-site visit, the following will be considered:

The job has multiple measures being installed, thus giving the monitor an opportunity to gain a wider understanding of the agency's overall field practices. The Subgrantee must provide AEO the following:

1. Pertinent Client Information (name and address);
2. Energy Audit (Monitor can download from ECOS software);
3. Retrofitting Date;
4. Work Order (Monitor can download from ECOS software);
5. Once the subgrantee contractors/ crew have unloaded their equipment and materials and started work, subgrantee representative will contact the AEO monitoring team from the vehicle with a street view of the home for a group video call.
6. The video operator should be familiar with the home's scope of work and know what areas of the home to view. The monitoring team must observe:
 - Contractor staff working from the street view;
 - Contractor staff working on-site; and
 - Subgrantee staff walk-thru tour (inside and outside).
7. The AEO monitor may request the video operator to slow his/her walk pace, zoom in on areas, and/or change directions and emphasis in order to see with more detail.
8. Each worker starting with the crew leader will be asked what he/she is working on and what procedures he/she is using. The video operator will not hand the device to the worker and will maintain a 6-foot distance.
9. Work in-progress installations will be assessed to ensure Standard Work Specifications have been met according to Arkansas field guides.
10. General OSHA compliance and safety practices will be assessed.
11. The AEO monitor may ask to see certifications, PPE and safety equipment, and SWS field guides.
12. The AEO monitor may view the condition of the vehicles, tools, and insulation trailer, if applicable.

Training & Technical Assistance Review

Annual reviews of each subgrantee will be conducted on-site by a technical monitor. The following will be reviewed:

1. AEO's technical quarterly/annual report for each agency prior to on-site visit;
2. Each subgrantee employee's self-assessment prior to on-site visit;
3. Subgrantee certifications prior to on-site visit. Inform subgrantee staff of renewal dates;
4. Each subgrantee employee's training plan prior to on-site visit and determine if training plans are being followed for persons employed by weatherization. Do plans support renewal of staff certifications; Are their plans for additional staff certifications;
5. Verify if each contractor certifications are valid. Check to see if SWSs were issued with work order;
6. Subgrantee plan for evaluating contractor work;
7. Subgrantee contractor training plan (if applicable) and determine if any required improvements have been achieved;
8. Subgrantee plan for dismissing contractors for poor performance;
9. Check inventory of equipment (including vehicles) and materials, including purchases and dispositions since previous monitoring visit. Update inventory in AEO records.
10. Inspect PPE and safety equipment;
11. Check to see if SWS field guides are in subgrantee and contractor vehicles;

In addition, the following must be verified on an annual basis.

12. Update fuel prices. This must be done by checking subgrantee entered fuel prices in ECOS, per vendor. Match entered fuel cost against vendor document (either letter or matrix from vendor);
13. Review sample jobs to check to see if procured prices match job costs in ECOS.

Year-End Reporting

AEO will submit in PAGE a "T&TA, Monitoring, and Leveraging Report" thirty days (30) after the end of the grant year, as required by DOE.

Subgrantee Administrative/Compliance Monitoring:

On a monthly basis, a sample of desk reviews are conducted. A monthly desk review includes:

1. Client files – sample files from most recent quarter (minimum 5% with increased numbers reviewed if deficiencies are found) with review of eligibility, rental agreement;
2. Contractors' agreements - agreements signed and citing SWS standards and work required to these standards;
3. Priority lists – confirm how clients are pulled from list; how priorities are entered in ECOS, are all five (5) priorities being calculated, is subgrantee re-determining client eligibility every twelve (12) months;
4. Program forms – ensures all relevant forms are accurate and complete and signed by both the subgrantee and the client (whenever applicable).

Annually, each subgrantee will be visited by an administrative/compliance monitor after an overview/risk assessment has been completed, during Q1, based on performance during the previous year. The following will be reviewed:

1. Management system relating to production;
2. Policies and procedures, including records retention;
3. Corrective action responses.

Subgrantee Fiscal Monitoring

On a monthly basis desk reviews are conducted. A monthly desk review includes:

1. Subgrantee Monthly Billing Groups/Invoices are compared to submitted support documents (per line item category); this monthly procedure will also inform the on-site fiscal review.

Annually, each subgrantee will be visited by a fiscal monitor. An analysis will be performed to determine an overview/risk assessment- review status will be based on performance during previous year, including:

2. Sample month of general ledger compared to invoices, client files, and weatherization payroll;
3. Personnel and other expenses charged to weatherization administration;
4. Policies and procedures for financial management and separation of duties;
5. Procurement - process and documentation;
6. Follow-up on any findings from last single agency audit.
7. Records retention.

Resolution Strategies & Corrective Action Plans

Results of on-site Visits

After an on-site visit, an exit conference will include a discussion of findings with executive director, financial director, and weatherization director. AEO will send subgrantee a written report within thirty (30) calendar days of the monitoring visit. A combined report for the program, including administrative and fiscal reviews, will be provided when the Administrative monitor and Fiscal monitor visit at the same time, which is preferred. Each report will require a response from the subgrantee with a corrective action plan which AEO will accept or reject, in whole or in part, in a written response. The monitor(s) will followup on completion of required corrective actions.

Process for discipline and/or removal of a subgrantee from the program

The “AEO General Terms and Conditions” and “Scope of Services” in the “Administrative Grant Agreement” specify the criteria necessary for a Subgrantee to be considered in compliance. Failure to maintain fiscal control, comply with federal regulations, or fulfill contract obligations will lead to probation.

The terms of probation will begin with monthly on-site monitoring to review problematic areas of the program with a frequency designed to assess training needs and improvements or non-improvement. Probation will be initiated for six (6) months, with the option to extend for another six (6) months, if sufficient progress is not deemed to have occurred but some improvement has been shown. Areas of required improvement will be specified in a written probation document and be under continual review during monthly monitoring visits. At the end of the probation period, AEO will either release the subgrantee from probation or terminate the subgrantee.

Monitoring schedule

Risk assessment of all subgrantees: PY2023, Q1; PY2024, Q1; PY2025, Q1; PY2026, Q1

On-site monitoring visit: scheduling is based on once annually, with central Arkansas subgrantees scheduled during the winter months when travel may be limited by weather.

	PY2023	PY2024	PY2025	PY2026
BCD		Q1	Q1	Q1
BRAD	Q4	Q3	Q3	Q3
CADC	Q4	Q4	Q4	Q4
CRDC	Q4	Q3	Q3	Q3
CSCDC		Q1	Q1	Q1

On-site inspections of units:

All subgrantees will have ten percent (10%) of units completed in one quarter inspected in the following quarter. Inspections will start in PY2023, Q4 for production that is projected to start in PY2023, Q3.

Training and Technical Assistance Approach and Activities

Training content will be based on the following:

- (1) aggregating statewide findings/concerns from technical, administrative, and fiscal monitoring;
- (2) Subgrantee staff completing self-assessments for WAP managers who each submit a training plan to AEO for the allocation of T&TA funds, including needed training to maintain required certifications, which will be part of each subgrant agreement;
- (3) DOE findings and concerns; and
- (4) training needs for contractors identified by both AEO and Subgrantees (AEO will develop a specific policy to enable the use of T&TA funds for training contractors).

AEO requires that each subgrantee have at least one (1) certified QCI on staff. This requirement has been met since July 1, 2015. Currently, there are eight (8) certified QCIs employed among the five (5) Subgrantees and one (1) QCI employed by the state.

BPI now requires that all individuals who renew, or pursue a new, QCI certification hold an Energy Auditor certification. In addition, AEO requires that staff identified by a subgrantee as a potential QCI first pursue certification as an Energy Auditor. All QCIs in Arkansas WAP are also certified Energy Auditors. In addition, six (6) certified Energy Auditors who are not QCIs are employed by the Subgrantees. AEO encourages subgrantees to enroll their staff who will be Energy Auditors in training leading to EA certification.

AEO requires that new staff hired by subgrantees complete, at a minimum, Building Science, Building Analyst, and Manufactured Housing training to establish a solid foundation for going on to certification as an Energy Auditor and QCI.

AEO requires that weatherization directors and field staff (auditors and inspectors) as well as contractors have active certification in lead-safe practices through the Environmental Protection Agency's Renovation Right program.

Maintaining workforce credentials: AEO stays abreast of credentials and their renewal requirements by maintaining a spreadsheet tracker based on the staff certifications submitted by subgrantees. AEO provides T&TA funds for Subgrantees to enable certification of QCIs and Energy Auditors based on the subgrantee's approved training plans. Subgrantees are encouraged to have certified Energy Auditors.

Technical training will be provided by trainers affiliated with IREC-accredited training centers to provide CEUs leading to and maintaining QCI and Energy Auditor certifications. AEO will follow procurement procedures to establish a schedule of IREC accredited training.

Training provided by AEO in Arkansas is considered mandatory. Subgrantees have consistently attended available training, and, therefore, AEO has not needed to establish ramifications for non-compliance. In the case of non-attendance at training, AEO would consider requiring absent subgrantee staff to find and attend equivalent training elsewhere.

AEO staff attend the fall and spring NASCSP, Energy Outwest, and National Home Performance conferences. Subgrantee staff also are encouraged to attend these conferences. AEO staff will attend one (1) additional conference, if demonstrated to be specifically applicable to weatherization and job duties.

Support of on-the-job training: AEO requires that weatherization field staff new to the job are supervised by trained and certified staff until such time that skills are demonstrated satisfactorily and any required certifications are completed.

Arkansas has an approved Mentorship program. During this time period, when mentees are not yet producing units for energy audits and final inspections, mentee wages will be charged to T&TA.

Planning for industry-wide initiatives and future program requirements: AEO attends trade conferences each year that are sponsored by DOE and through this and other means strives to keep abreast of industry standards and to include these areas in Arkansas trainings and requirements. AEO reaches out to home industry trainers as needs are identified. AEO is linked to the home performance industry in Arkansas, such as the Arkansas HVAC/R Association.

Use of effectiveness and energy savings evaluations to develop training: ECOS generates energy savings data from each job that provides snapshots of savings by different variables. AEO will work with JAI to generate useful reports, such as the range of energy savings from common energy efficiency measures. AEO will seek consultation on using this data to guide development of specific and comprehensive training.

AEO intends to use as measures of effectiveness (1) job analysis and auditor's judgment/justifications, (2) the timeliness of completion rates for houses audited, (3) an analysis of reasons for deferral, and (4) measurement of energy savings.

Grantee effectiveness: AEO uses the resources of NASCSP for training and information relevant to implementing and administering the grant. AEO budgets for attendance at these and other conferences.

Arkansas Health & Safety (H&S) Plan: In 2019, AEO utilized the DOE Health & Safety template as its guide in developing the Arkansas H&S Plan. The template was pre-populated with DOE and Arkansas H&S guidance and was reviewed by the network's Technical Committee. The technical committee met on three occasions to complete the H&S Plan. It was finalized and approved by DOE in the fall of 2019. The 2022 Health & Safety Plan has been crosswalked with WPN 22-7; most recently, fuel switching for health and safety reasons has been added to the plan which is uploaded with this application.

Client Education: Client education is part of auditing and inspecting and is considered an important part of the weatherization process. There are specific forms to document the information given to and discussions with the client in the home after assessment and at the final inspection.

AEO encourages subgrantees to budget for materials that each agency considers useful in educating clients.

For the past four (4) years at the Arkansas annual WAP conference, AEO has provided a specific training session on communications which is designed for weatherization staff, in the office and in client homes, to learn to communicate more effectively with clients. Subgrantees are encouraged to respond to outreach requests and most participate in the Assurance 16 program which is a LIHEAP program for clients to learn household management skills, including energy efficiency practices that lower utility bills.

The Arkansas BIL training plan is uploaded as an attachment to the SF424.

Percent of overall trainings

Comprehensive Trainings:	52%
Specific Trainings:	48%

Breakdown of T&TA training budget

Percent of Budget allocated to Auditor/QCI trainings:	91%
Percent of budget allocated to Crew/Installer trainings:	65%
Percent of budget allocated to Management/Financial trainings:	25%

Energy Crisis and Disaster Plan

Arkansas will not use any grant funds for energy crisis relief during the 5-year BIL grant Cycle.