

Measure 2: Residential Pre-Weatherization Program

Measure Concept

Provide funding for a Pre-Weatherization Program for low-income residents to cover 100% of the pre-weatherization costs. This program would be an expansion of Nebraska's Weatherization Assistance Program (NeWAP) to address critical home repairs in low-income homes that would cause a home to be deferred from the Weatherization Assistance Program (WAP). The Program will result in enhanced energy efficiency, greenhouse gas reduction, lower utility bills, and improved health for low-income residents.

Description and Background

Energy expenses constitute an economic drain on low-income households. Energy bills for low-income households commonly account for more than 20 percent of a family's gross income. Nebraska's Weatherization Assistance Program (WAP) is an energy efficiency program that helps low-income households reduce their home's energy use, helping them manage the increasingly high cost of energy while protecting their health and safety. This program fully funds upgrades such as adding insulation, sealing air leaks, performing efficiency inspections, and completing tune-ups and replacement of furnaces, boilers, and water heaters. The Nebraska Department of Environment and Energy administers this program using funding from the U.S. Department of Energy (DOE) and the U.S. Department of Health and Human Services. Weatherization services are offered at no cost to eligible households.

Since the inception of the NeWAP, it has evolved from simple air-leak sealing to a program that utilizes highly-trained workers using advanced diagnostic and evaluation tools. Locally-based, professionally-trained weatherization crews and contractors use advanced diagnostic equipment, such as blower doors, monometers, and infrared cameras, to provide data for comprehensive energy assessments of the home. Each home's audit creates a customized work order that guides trained crews in the installation of the specified energy efficiency upgrades along with health and safety measures. A certified Quality Control Inspector ensures all work is completed appropriately.

The first priority of the weatherization program is homeowner health and safety. NeWAP utilizes construction standards from regulatory bodies such as the Occupational Safety and Health Administration (OSHA), the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the Building Performance Institute (BPI). Weatherization standards require checking the house for high levels of harmful gases such as carbon monoxide, running diagnostics to measure the building's leakage and mechanical system airflows, and by helping to prevent or treat problems with mold or radon gas.

However, homes that have significant health and safety issues must be "deferred" from the weatherization program pending rectification of these issues. Examples of issues that trigger deferral are outdated electrical wiring, roof leaks, deteriorating foundations, moisture and mold, mechanical malfunctions, and the presence of asbestos or vermiculite.

Although a small portion of federal weatherization funding is set aside to deal with these pre-weatherization issues, that funding is not adequate to meet the need. Nationally, community action agencies that administer weatherization funds report deferral rates of 15 to 60% of otherwise eligible homes. Many low-income homeowners cannot afford the cost of these pre-weatherization upgrades, so their homes remain ineligible for weatherization.

This measure would provide financial incentives through a Pre-Weatherization Program to address these critical home repairs for low-income residents to remove the deferred status and allow eligibility for the Weatherization Assistance Program. The program will fund 100% of pre-weatherization project costs for selected projects. The program will be available to low-income residents across the state who are eligible for the Weatherization Assistance Program. NDEE will track the locations of projects by address and Zip code to determine the proportion that occur within designated low-income disadvantage communities.

This pre-weatherization program is estimated to allow an additional 75 homes per year to become eligible for weatherization assistance services through NDEE. The weatherization program includes both home energy and health and safety audits. Correcting deficiencies revealed by these audits will result in energy efficiency, lower utility bills, and improved health for low-income residents in addition to overall reduction in greenhouse gas emissions.

Administration

NDEE will manage this pre-weatherization program as an adjunct to the current weatherization program. However, funds from this grant will be used only for pre-weatherization services and not for standard weatherization activities.

Pre-weatherization services will be available to weatherization program applicants who have been deferred due to the health and/or safety issues detailed above. The pre-weatherization services and funds will be directly administered by Nebraska subgrantees that receive federal weatherization funds. These subgrantees are currently responsible for establishing eligibility for weatherization, performing an energy audit on the residence, and scheduling the weatherization work. Under separate subaward agreements with NDEE, they will also be responsible for determining pre-weatherization needs, scheduling the pre-weatherization upgrades, and reimbursing pre-weatherization contractors.

Subgrantees

NDEE, as a federal weatherization program grantee, is mandated to ensure that each subgrantee is a Community Action Agency or other public or nonprofit entity. If additional subgrantees are deemed necessary, interested organizations will be solicited through a competitive Request for Proposals (RFP) issued by the Department. Subgrantees are required to abide by the Nebraska Department of Environment and Energy Financial Assistance Subaward agreement, the latest [Retrofitting Nebraska Field Guide and Installation Standards](#), and the [NeWAP Policies and Procedures Manual](#) in administering the program.

The existing Nebraska weatherization subgrantee network consists of eight organizations, each of which covers a different geographic area:

- Blue Valley Community Action Partnership
- Central Nebraska Community Action Partnership
- Community Action Partnership of Lancaster and Saunders Counties
- Community Action Partnership of Mid-Nebraska
- Northeast Nebraska Community Action Partnership
- Northwest Nebraska Community Action Partnership
- Southeast Nebraska Community Action Partnership
- United Way of the Midlands (Douglas County)

Pre-weatherization funds under this grant will be allocated to the subgrantees using the same formula that the NDEE Weatherization Program uses for DOE weatherization funds. This formula is based on census data from each subgrantee's geographic area, including total population, number of elderly, and proportion of the population in poverty.

Subgrantee Program Management: All subgrantees are required to administer and manage their programs to ensure that weatherization work is completed for all properties accurately and in a timely fashion, and that all funding allocations are spent within the designated program year. Subgrantees are required to maintain staffing sufficient to meet all production and client service goals. Subgrantees will be responsible for determining if costs for pre-weatherization upgrades are reasonable before authorizing pre-weatherization work.

Subgrantees provide oversight of all work while it is in progress. Oversight can include review of information provided by auditors to ensure accuracy, completeness, sufficient detail is provided in all work orders, timeliness of scheduling and conducting assigned audits, and customer service and satisfaction. Subgrantees are encouraged to have staff, as possible, to perform unannounced visits to job sites where work is in process. This allows the Subgrantee to determine that contractors and staff or crews are completing work appropriately, and to also verify compliance with OSHA, RRP, LSW and employee compliance with program requirements.

For pre-weatherization work, each subgrantee will be required to perform a Final Inspection on the work performed with this grant funding to ensure that the completed work is satisfactory, allows for the completion of weatherization work, and meets state, local, and agency code and contractual requirements. Documentation is required to be kept in each client file as evidence that a final inspection has been performed.

NDEE monitors will also complete inspections on a minimum of 10% of pre-weatherization units after submission of subgrantee inspection reports as part of the onsite in-progress and Quality Control Inspection program.

Historic Preservation: Structures will be assessed for compliance with the State Historic Preservation Office (SHPO) Programmatic Agreement. Weatherization and pre-weatherization services or select measures may not be eligible on certain homes as identified by a Section 106 review.

On November 6, 2020, the NDEE extended the Programmatic Agreement (PA) with the Nebraska State Historical Preservation Office (NSHPO) and the USDOE until December 31, 2030. Properties funded under the WAP are considered "undertakings" subject to review under Section 106 of the National Historic Preservation Act, 16 U.S.C. 470f (NHPA) and its implementing regulations at 36 CFR 800, and include rehabilitation, energy efficiency, retrofits, renewables, and weatherization (undertakings). Subgrantees and their contractors shall avoid taking any action that results in an adverse effect to historic properties pending compliance with Section 106.

Subgrantee Procurement and Contracting: Subgrantees are required to comply with federal standards, as set forth in 2 CFR 200.317-327, in the purchase of supplies, equipment, and services. All subgrantees must establish written procurement procedures to govern local procurement and contracting activities.

Subgrantees must follow detailed guidelines on procurement and contracting provided in the [NeWAP Policies and Procedures Manual](#).

Subgrantee Case Tracking and Reporting: Subgrantee staff have internet access to the NeWAP database. All approved applications are entered into this database by the subgrantee, and case information is updated as each project progresses. The database provides data for case management by the subgrantee and by NDEE, and it serves as the data source for federal reports on the NeWAP. Each pre-weatherization project will be reported to the NeWAP database when completed. Reporting will include client demographics, income, required pre-weatherization forms, and a breakdown of measure costs. Reporting successful completion of pre-weatherization will remove the project from Deferral status and enter it into the queue for weatherization. Subgrantees will ensure that projects that successfully complete pre-weatherization projects are moved to weatherization actions in a timely fashion.

Subgrantees will continue to work with NDEE to develop a Deferral Tracking System as part of the NeWAP database. This system will provide consistent tracking across the NeWAP program and be used in the development of an Avoided Deferrals Summary as part of the annual reporting system.

Subgrantee Financial Management: NDEE enters into a Financial Assistance Agreement with each subgrantee for each different weatherization funding source. NDEE will develop a Financial Assistance Agreement for each subgrantee for pre-weatherization work under this grant. Subgrantees will be responsible for using grant funds to pay contractors at the completion pre-weatherization upgrades and a successful final inspection. Subgrantees can request a cash advance of up to 10% of the annual subaward at the beginning of the agreement to begin making these payments. After the initial cash advance, subgrantees will be reimbursed by NDEE through submission of monthly fiscal reports.

Greenhouse gas reductions benefits under this grant are dependent on pre-weatherization clients also completing full weatherization projects. Subgrantees will work to ensure that each pre-weatherization project funded by this grant is successfully moved to completion of weatherization upgrades in order to achieve the energy efficiency and greenhouse gas reduction goals. Subgrantees may pursue legal action if pre-weatherization clients violate their agreement with the subgrantee by refusing to consent to completion of weatherization upgrades after having pre-weatherization work completed. If for any reason the weatherization phase is not completed, the subgrantee will move pre-weatherization project costs to Department of Energy pre-weatherization funding. Greenhouse gas reductions reported by NDEE under this grant will be based only on pre-weatherization projects that have completed weatherization.

Application

Potential clients apply for the Weatherization Assistance Program directly to the Subgrantee Service Provider that serves their location. Each subgrantee has a written procedure in place to process applications and ensure eligibility, including these key steps:

- Enter the client into the NDEE weatherization database.
- Ensure application completion.
- Ensure client income eligibility.
- Confirm building/structure eligibility.
- Notify applicant of receipt and status.

Applicants are required to provide the residence address as well as information needed to assess building and income eligibility. NDEE and the subgrantees are required to protect the privacy interests of

individuals who participate in these assistance programs, per CFR 200.338. Personally identifying client information is kept confidential and not made available to the public.

Eligible Housing Types

Eligible housing types for weatherization include owner-occupied and renter-occupied single-family homes, manufactured (mobile) homes, and multifamily buildings. However, only owner-occupied units are eligible for pre-weatherization.

Income Eligibility

A dwelling unit is eligible for weatherization assistance if it is occupied by an income-eligible family unit and the structure is eligible. Eligibility is limited to households with incomes at or below 200 percent of the federal poverty level. Eligibility income levels rise based on the number of persons living in the home. Households receiving Aid to Dependent Children, Supplemental Security Income, or LIHEAP Utility Assistance from the Nebraska Department of Health and Human Services are automatically eligible for weatherization. Preference is also given to persons over age 60, persons with disabilities, and families with children under age six.

The applicant must provide evidence or income documentation satisfactory to the outreach worker that the household meets the eligibility requirements. Applicant income must be verified or calculated for the one-year period prior to the certification month. Income documentation for a minimum of three months must be provided. Applications on file for one year or more must be recertified for the year prior to the pre-inspection. The income of all household members, regardless of eligibility, must be documented, verified, and included in the calculation of the benefit amount.

Building/Structure Eligibility and Deferral

A pre-audit Health & Safety Inspection is conducted by an Energy Auditor at each dwelling unit prior to completing an Energy Audit. The purpose of this inspection is to identify any actions that need to be taken to maintain the physical well-being of the occupants, to allow weatherization workers to effectively perform weatherization work, and to assess if any health and safety actions will become necessary as a result of weatherization work.

Weatherization program funds may be used to remediate a limited number of health and safety issues identified by the inspection:

- Problems posing an immediate threat to the occupants and/or weatherization personnel
- Problems resulting from or exacerbated by the weatherization work
- Problems with heating/cooling/ventilation equipment or water heaters.

Identified health and safety issues beyond the approved scope of the weatherization program result in the deferral of the dwelling unit. Eligible dwelling units deferred from the weatherization program will be eligible for pre-weatherization services under this grant.

Project Tracking

The NeWAP database system is currently used by subawardees and NDEE to monitor and track weatherization projects. The NeWAP database system will also be used to monitor and track the pre-weatherization projects, which will be included in an annual Avoided Deferrals Summary report. The summary will include the number of dwelling units made weatherization ready with these funds and for each building or unit the following information will be provided:

- Year of construction,
- Housing Type (site-built single family, manufactured housing),
- Nature of repairs needed which prohibit weatherization (where applicable, identify multiple repairs or remediation reasons for a single building). Including but not limited to:
 - Roof repair/replacement
 - Wall repair (interior or exterior)
 - Ceiling repair
 - Floor repair
 - Foundation or subspace repair
 - Exterior drainage repairs (e.g., landscaping or gutters)
 - Plumbing repairs
 - Electrical repair
 - Removal of asbestos and vermiculite
 - DOE WRF or EPA expenditure per unit and building; and,
 - Leveraged fund expenditure per unit and building (i.e., funds such as LIHEAP, HUD, nonfederal, etc. braided with DOE WRF or EPA funds to make building weatherization ready)

Program Timeline and Targets

NDEE expects to undertake pre-weatherization of 75 homes annually from FFY 2025 through 2029, making them eligible for weatherization upgrades. In previous years the eight subawardees have had sufficient numbers of potential clients on waiting list to participate in weatherization and sufficient numbers of clients in deferred status to justify that annual target.

Tasks and Milestones		
Task Description	Anticipated Milestone Dates	Assumptions
EPA to make awards	October 2024	
NDEE subawards to existing Weatherization Network	October 2024	NDEE will distribute the Pre-Weatherization funds among the state’s existing subgrantees utilizing the formula allocation for the Annual Weatherization Funding, which is a weighted average based on population. Evaluation and development of QAPP if needed.
Recipients carry out projects and submit requests for reimbursement with documentation of activities and expenses.	December 2024 -October 2029	Reimbursements issued by NDEE after proper documentation received. NDEE will conduct onsite monitoring on a percentage of the projects.
Semi-Annual Reports	Semi-Annual 2025-2029	NDEE submit to EPA
LIDAC report	October 2025	NDEE submit to EPA
Final Report	January 2030	NDEE submit to EPA

Expected Outputs and Outcomes

Outputs/ Performance Measures	Outcomes / Projected Environmental or Programmatic Improvement
# of homes pre-weatherized Energy savings (MMBTU or MWh) per project # of new jobs created Semi-annual progress reports and final report	Energy Savings for LIDAC individuals Electric cost savings for LIDAC individuals Natural Gas cost savings for LIDAC individuals Reduction in metric tons CO ₂ e for LIDAC individuals Reduction in CAP for LIDAC individuals Semi-annual progress reports and final report

Greenhouse Gas Emissions Reductions

Greenhouse gas emissions reductions for this measure were calculated using software developed by a research team at the University of Nebraska for Nebraska’s Weatherization Assistance Program. The software model estimates the energy, economic, and environmental benefits associated with weatherization improvements. Energy savings for electricity and natural gas were calculated using statistical analysis of a large number of previous projects. This model is used by the NDEE Weatherization program to calculate annual energy savings for electricity and natural gas from weatherization projects. The modeled energy savings for electricity and natural gas from weatherization projects over the five year period 2019-2023 were used to calculate average energy savings per home. These average savings for both energy types were used with appropriate emission factors to calculate emission reductions.

The calculations assume that the implementation grant will fully fund pre-weatherization of 75 homes annually from FFY 2025 through 2029, making them eligible for weatherization upgrades that otherwise would not occur. The emissions reductions are those resulting from those weatherization upgrades. The average cost for pre-weatherization upgrades is estimated to be from \$10,500 to \$11,000 based previous pre-weatherization projects.

For emission reductions from reduced natural gas consumption, GHG emission rates from the EPA Greenhouse Gas Emission Factor Hub (<https://www.epa.gov/climateleadership/ghg-emission-factors-hub>) were used. For emission reductions from reduced electricity consumption, emission reductions were computed using emission rates estimated from two NREL 2023 Standard Scenarios. Details are provided on the *Elec Grid Methodology* sheet in the GHGcalcs.xlsx spreadsheet.

Emissions reductions were calculated from the estimated energy savings. Emission reductions for actions reducing natural gas consumption were calculated assuming no future change in the proportion of fossil-fuel and renewable natural gas in the supply chain. Emission reductions for actions reducing electricity consumption assumed declining GHG emissions due to grid decarbonization. Details are provided on the Elec Grid Methodology sheet in the GHGcalcs.xlsx spreadsheet.

Cumulative Avoided Emissions for 75 Pre-Weatherization Projects per year 2025-2029 (100% grant funding)						
Year	Avoided GHG Emissions (MT CO ₂ e)	Avoided CO ₂ Emissions (MT)	Avoided CH ₄ Emissions (MT CO ₂ e)	Avoided N ₂ O Emissions (MT CO ₂ e)	Avoided SO ₂ Emissions (MT)	Avoided NO _x Emissions (MT)

2025	732	720	10.5	0.9	0.2	0.5
2026	2,142	2,110	27.9	2.5	0.4	1.4
2027	4,170	4,113	49.0	4.6	0.7	2.7
2028	6,762	6,680	70.4	7.0	1.0	4.4
2029	9,995	9,845	94.2	9.7	1.4	6.5
2030	13,103	12,969	115.3	12.2	1.7	8.5
2050	72,405	73,782	304.6	49.4	4.1	46.8

Longevity of GHG Reductions

Weatherization and Pre-Weatherization are viewed as long-term investments with benefits such as energy savings and increased property value, home health, and safety for the occupants. The pre-weatherization program funded by this grant will provide durable structural and safety upgrades such as repairing foundation and roof problems, bringing electrical wiring up to code by replacing knob-and-tube wiring, and remediating mold. Correcting these problems will make residences eligible for standard weatherization upgrades, including sealing air leaks, checking the efficiency of heating and cooling systems, and add insulation. In addition to increased energy efficiency, these weatherization measures reduce the likelihood of outdoor air pollutants and allergens entering homes. Homes that receive weatherization services may apply for evaluation and upgrades after 15 years. Pre-weatherization and weatherization investments in housing stock aid upkeep and increase the value of housing in these communities.

Cost-Effectiveness

NDEE has budgeted \$4,078,027 for Measure 2 to achieve a cumulative 13,103 metric tons of greenhouse gas reductions (attributed to 100% grant funding). The resulting cost-effectiveness of this measure is therefore \$311.23 per metric ton CO₂e reduced.

Budget

Category	Budget	Narrative
Personnel	\$109,500	Estimated at 0.30 FTE per year. Includes portions of salary of full-time staff to perform tasks.
Fringe Benefits	\$34,776	Includes taxes, medical insurance, retirement, and other non-salary expenses estimated as a percentage of salary. The current rate for Fringe Benefits is 31.75%.
Travel	\$6,887	Includes costs for mileage, vehicle rental, meals, and lodging necessary to implement the program and to oversee projects. Costs are estimated annually for staff travel to project site visits. Costs are estimated for 1000 miles per year of travel to conduct sub-recipient monitoring of activities and project site visits, and 2 overnight stays, 4 travel days for 2 staff per year.

Equipment	\$0	EPA definition of equipment is any item over \$5,000. There is no anticipated additional equipment needed to implement these activities.
Supplies	\$0	Includes usual office and laboratory materials necessary to implement tasks. Office supplies are considered part of this category also and include things such as furniture, staff desk supplies and computers. There are no anticipated additional supplies needed to implement these activities.
Contractual	\$0	There are no contractual costs.
Other	\$3,882,800	NDEE would utilize existing program structure to subaward to Community Action Partnership Agencies in Nebraska and other non-profit programs that have current authority to receive federal weatherization assistance funds through NDEE and would be responsible for the home weatherization improvements. To ensure equal distribution across the State, NDEE will distribute the Pre-Weatherization funds among the state's existing subgrantees utilizing the formula allocation for the Annual Weatherization Funding, which is a weighted average based on several factors including the number of low-income Nebraskans living in the counties served by the local nonprofit organization. Assumes cost share of 100%. Subawards will cover subrecipient personnel, contractual, and indirect costs.
Total Direct Charges	\$4,033,953	
Indirect Charges	\$44,074	40.25% Calculated as a percentage of salary cost (approved FY24 rate)
<u>TOTALS</u>	\$4,078,027	