Oregon Housing and Community Services

Low Income Weatherization Program Manual

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EQUAL HOUSING OPPORTUNITY

LOW INCOME WEATHERIZATION PROGRAM (LIWP)

Introduction

LIWP Funds support energy conservation measures in affordable housing projects. Applicants may apply to LIWP Funds to upgrade existing eligible areas of rehabilitation projects or to exceed energy codes on new construction.

The purpose of the LIWP funds is to reduce energy use and heating costs for low and lower-income (60 percent of area median income and below) Oregonians through energy conservation measures. Energy-efficient appliances and Energy Star Compact Fluorescent Light fixtures are eligible conservation measures for these funds.

Restricted Availability of Low Income Weatherization Program Funds

Projects located in PGE and PPL service areas will be eligible. Other restrictions apply depending on the type of fuel used for heating and the weatherization activities planned.

"Will Serve" Letter

All applications for LIWP funds must include a "will serve" letter from the electric utility showing that the proposed site is in PGE or PPL territory. The letter must be on PGE or PPL letterhead, identify the project address and clearly state the utility will provide electrical service to that site/project.

Applications missing the "will serve" letter in the LIWP section of the application will not be eligible for LIW funds.

Terms

Applicants may request one dollar of LIWP funds for every projected kilowatt-hour saved during the first year. OHCS will award the LIWP funds as grants unless the applicant requests a loan.

The maximum award is the lesser of the cost to complete eligible weatherization work or the total first year energy savings. OHCS may award grants or loans in excess of $100,000 on an as-needed basis and when the applicant can demonstrate maximum energy savings. All awards are subject to funds availability and approval of the State Housing Council.

The LIWP program targets households with low- or very-low incomes. At least half of the units in the project must serve households with incomes at or below 60 percent of the area median income (adjusted by family size) as defined by HUD. Applicants must keep the units affordable to the target households for a minimum of 10 years, or the proposed affordability term at time of application. OHCS will disburse funds only after the county records an executed Project Use Agreement.

Eligible Applicants

Eligible applicants include for-profit businesses, local government entities and nonprofit organizations including, but not limited to, cities, counties, housing authorities, nonprofit community organizations, regional or statewide nonprofit entities and private individuals or corporations.

Eligible Projects

Projects must meet all of the following requirements as well as the requirements of the NOFA process.

OHCS will consider the following kinds of applications

New construction projects that exceed energy code minimums for insulation, lighting and windows and/or that include new energy efficient appliances and fixtures.

Acquisition/rehabilitation projects specifying upgrades from original levels of insulation, windows, and lighting, and/or that include new energy efficient appliances and fixtures. Measures must meet all current codes.

Ineligible Projects

OHCS will not award LIWP Funds when the only planned rehabilitation activities are weatherization measures. Applicants of such projects should instead contact the local community action agency for weatherization assistance.

Demonstrated Energy Savings

Eligible activities for these funds must demonstrate measurable cost-effective energy conservation. Energy-efficient applications must show first-year savings of equal to or greater than one kilowatt-hour saved for each LIWP dollar spent on the measure. The cost-effective calculation will be determined for each project. Measures within a project can be considered individually or as a total project package.

Eligible Activities for Rehabilitation and Construction

Rehabilitation Projects: Funds may pay for labor and materials on all or part of the following activities for existing projects that involve rehabilitation and repair work:

- Only if the development is electrically heated can LIW funds pay for:
  - installation of attic, floor and wall insulation on existing structures (shell measures).
  - repair of air leakage or air flow through the dwelling (including chase ways) that may cause structural damage.
  - upgrading windows from single pane to double pane. (Windows are generally not sufficiently cost effective to justify their entire expense unless packaged with other weatherization measures on a project.)
- Installation of electric heating systems, including heat pumps.
- Installation of Energy Star-rated Compact Fluorescent Light (CFL) fixtures.

- The cost of energy audits and pre- and post-rehabilitation energy inspections.
- Upgrades, including some appliances (refrigerators, water heaters, washers and common-area lighting) above OHCS minimum base-load measures including some appliances such as. To determine energy savings, use the OHCS Wx calculator and the manufacturer's calculations or an U. S. Department of Energy approved energy savings calculation tool.
- Cost of new energy-efficient appliances. To determine energy savings, use the OHCS Wx calculator and the manufacturer's calculations or an U.S. Department of Energy approved energy savings calculation tool. **Please keep all Energy Guide information and/or appliance stickers, as these documents will be requested for verification of energy savings.**
- Installation of electric heating systems.
- Green building technology such as solar additions and heat recovery systems with verifiable energy savings.

Ineligible activities

OHCS does not allow the use of LIW for the purchase and installation of oil or gas-fired devices (or for work related to those devices).

New Construction Projects: Fewer activities are eligible for LIW funds in electrically heated new construction projects. Funds may pay only for the cost involved in energy conservation measures that exceed those required under building and energy codes for new construction. Based on first-year kilowatt-hour savings, a new construction project can use LIW funds to pay for all or part of the difference in cost between energy conservation measures required by the Oregon Residential Energy Code and the cost of the above-code upgrade.

- Cost difference for upgraded attic, floor and wall insulation.
- Cost difference for upgraded electric heating systems.
- Cost difference for upgraded windows.
- Cost of new energy-efficient appliances. To determine energy savings, use the OHCS Wx calculator and the manufacturer's calculations or an U.S. Department of Energy approved energy savings calculation tool. **Please keep all Energy Guide information and/or appliance stickers, as OHCS will require these documents to verify energy savings.**
- Green building technology such as solar additions and heat recovery systems may be eligible if savings can be verified.
- Installation of Energy Star Compact Fluorescent Light fixtures.

Application Submittal, Energy Analysis and Inspection Requirements

Applicants **must** submit the following with the CFC application:

- A copy of the new construction or rehabilitation Energy Efficiency Plan Worksheet.
- A copy of the OHCS Wx Calculator demonstrating energy savings if the proposed weatherization work includes envelope measurements and appliances.
- Use an approved DOE evaluation tool to evaluate weatherization measures not listed on the OHCS Wx Calculator. **Applications must include the energy analysis with the NOFA**

application to be eligible for the funding. The energy analysis must identify each planned energy conservation measure and the annual energy savings that it will generate measures. An independent third party trained to use the evaluation tool must complete the energy analysis. This may include energy consultants, engineers, architects, HVAC specialists or a weatherization representative of the local community action agency. Include the name and organization of the individual who completed the analysis.

- For rehabilitation projects, analyze a representative number of units to develop the proposed scope of weatherization work and conducting the energy analysis.

OHCS requires a post-rehabilitation or new construction inspection and certification by an independent third party to verify satisfactory completion of the proposed energy measures. (The independent third party can be an energy consultant, or a weatherization representative of the local community action agency, or architect not associated with the project. The person or organization that performed the work cannot conduct this inspection/certification). OHCS will only disburse full LIW funds after it receives the inspection report and certification.

- Low Income Weatherization funds may pay the cost of obtaining an energy analysis and inspections as long as adequate energy savings are demonstrated.

A grant or loan award may be reduced if the amount of LIW funds requested exceeds the actual energy savings identified by the energy savings analysis.

Energy Analysts

OHCS keeps a list of qualified Energy Analysts who can help applicant's complete LIWP worksheets and calculators. Please check with the agency on the most updated qualified Energy Analysts.

The compilation of this list does not imply that the State of Oregon or OHCS endorses or recommends any particular contractor, nor does it imply the selection of any contractor is any guarantee of project feasibility or receipt of funding. This list is NOT an all-inclusive list of qualified energy analysts or energy technicians.

OHCS can review any analysis in the LIWP application as well as the qualifications of the preparer.

Recommended Inspections

OHCS suggests applicants conduct an infiltration / air leakage test before and after rehabilitation. This test identifies areas of air infiltration / leakage to correct during the rehabilitation to maximize energy savings of conservation measures performed. A post-rehabilitation infiltration test would measure the reduction in air leakage.

OHCS Contact

For more information or technical assistance with the OHCS WX Calculator or the LIWP Program, contact the RAD for the area in which the project is located.

Energy Efficiency Plans

LIW Program funds are available for energy efficiency improvements on projects submitted for funding through the NOFA. For new construction projects, all work must exceed the minimum required by the local or Oregon Residential Energy Code. For existing housing, funds may be used to bring current conditions up to code. Energy efficient appliances and energy saving lighting may also be eligible uses of the funds. The current energy code in Oregon is the 2010 edition of the Oregon Energy Efficiency Specialty Code (OEESC), which is based on the 2009 International Energy Efficiency Code (IEEC) with Oregon amendments.

These codes can be found here: http://www.cbs.state.or.us/bcd/programs/energy.html

It is also highly recommended all applicants refer to the Oregon DOE website for accurate code requirements and qualifying appliances and applications: http://www.oregon.gov/ENERGY/CONS/pages/index.aspx

Calculating Energy Savings

To assist in completing the Energy Efficiency Plan worksheets, OHCS has developed two spreadsheets (calculators) for calculating energy savings for new construction and rehabilitation. These calculators are located at: or

Applicants may choose to use this tool or any other U.S. Department of Energy (DOE) approved tool. The calculator in this application is designed for most weatherization activities. It reflects general estimated kWh savings for the first year.

It is recommended applicants contact an energy consultant if they are unsure of weatherization measures that need to take place in the proposed project construction or rehabilitation.

The State of Oregon or OHCS does not endorse or recommends any particular contractor, nor does it imply the selection of any contractor is any guarantee of project feasibility or receipt of funding. OHCS reserves the right to review any analysis submitted with the Weatherization application as well as the qualifications of the preparer, when application forms have been completed by an outside independent third party.

Rehabilitation Worksheet Instructions

Proposed R/U Value: Refer to the Manufacturer's Info Tag

Increased R/U Value: Difference between existing and proposed R/U Values

Square Feet: Square footage (footprint) of the total conditioned area to be weatherized.

Cost: Labor and materials for weatherization activities only.

For appliances, the cost of the appliance only

For CFLs, cost of installed Energy Star approved pin-based fixtures and lamps.

Energy saved: From Excel "OHCS WX Calculator Spreadsheet" provided on the website or U.S DOE approved energy analysis tool

Analysis: The OHCS goal is to allow Weatherization funding of one dollar for every kilowatt hour (kWh) saved the first year or the cost of installation, whichever is less.

Appliances

REFRIGERATORS 1) must be metered (10 percent sample required of each type in a multi-family complex). OR 2) supply usage value from refrigerator usage reference available in the OHCS WX spreadsheet of each type of refrigerator within the units

CLOTHES WASHERS: Supply annual usage of the model in kWh and use the calculator. See instructions.
DISHWASHERS: Supply annual usage of the existing and proposed model in kWh and use the calculator. See instructions

New Construction Worksheet Instructions

Code or Minimum Standard: On windows, insulation, etc., self-explanatory. On appliances and Energy Star Compact Fluorescent Lighting fixtures (CFLs), applicants should use normal rating from the yellow tag (energy guide) on the appliance or manufacturer's information and subtract the baseline KWh usage to determine savings.

Proposed R or U-Value On anything rated in U-values, a lower number is better. R-values must exceed code to increase energy savings. U / R values are the reciprocal of each other.

Square Footage Total only the conditioned area that is improved. Square footage is not applicable for appliance calculations.

Increased Cost: Includes the labor and materials for weatherization activities only.

For appliances, it is the cost of the appliance only.

For CFLs, it is the cost of installed Energy Star approved pin-based fixtures and lamps.

Kilowatts Saved: Applicants should use the OHCS WX spreadsheet or any DOE approved tool to forecast the energy savings.

Appliances(use federal standards as the baseline)	REFRIGERATORS must be Energy Star Qualified. The kWh can be found on the energy guide for the appliance CLOTHES WASHERS must Energy Star qualified. The kWh can be found on the energy guide for the appliance. <u>All ENERGY STAR qualified clothes washers with a Modified Energy Factor, or MEF, of 2.4 to 2.59 are eligible.</u> DISHWASHERS must be Energy Star Qualified. The kWh can be found on the energy guide for the appliance. Note: Baseline= federal minimum standard for energy consumption <u>and</u> replacing a dishwasher manufactured before 1994

WX Worksheet Instructions (Excel spreadsheet)

For electrically heated units, shell measures must be calculated in kWh savings.

Insert information into the BLUE cells only, when entering data into the OHCS WX calculator.

OHCS WX Calculator:

Project Name: Insert name of project

Location: Insert street address and city

Degree Days/Design Temp: These are the heating degree days for the climate location of the project. By selecting the geographic region from the drop down box, the degree days and design temperature will automatically change to coincide with that area.

Salem area = 4740 degree days/design temp 22

Redmond area = 6746 degree days/design temp 6

Portland area = 4693 degree days/design temp 22

North Bend area = 4664 degree days/design temp 32

Medford = 4803 degree days/design temp 23

Astoria = 5250 degree days/design temp 29

Pick an area closest to your located project and apply.

Air Heat Capacity: Leave as is. Worksheet will not allow changes

Project Volume: Remember, volume is square foot time's height. Applicants can do the entire complex or one unit of each type depending on design differences, as long as each unit is represented and modeled.

If the entire complex has units that are all the same, then applicants can do one unit in the calculator and multiply the savings by the amount of total units OR do the whole facility as one unit. If there are multiple buildings and each one is different design the applicant will need to run the calculations on each building.

Heat Pump: Please insert "1" if a heat pump exists (rehab) or is being proposed. "0" is the default.

Component: These are the measures this tool can consider. If there are other measures, i.e. GFX systems, solar systems or heating recovery systems, etc., another DOE approved tool will need to be used.

Area: Total square footage of project.

U-Values: Existing and Proposed values must be indicated in U-values. U-values and R-values are related in that they are a reciprocal of one another. R-Values can be added together. U-values are numbers needed for the calculator. Applicants can convert R-values to U-values by 1/R (1 divided by R). Example: The R-value of the batt of insulation is R-19. The U-value of this would be 1 divided by 19=.052. Therefore the U-value is .052. When entering the U-values, only round to the thousandth position.

Table of Values:	Worksheet will not allow the numbers or formulas to be altered.
Totals:	Will be displayed via category and total in KWH's at the bottom.

For more information or technical assistance with the NOFA WX workbook spreadsheet or the Low Income Weatherization Program, contact the RAD for the area in which the project is located.