

State of Washington
2018
Low-Income Home Energy Assistance Program
Weatherization Waiver Request

The State of Washington Department of Commerce (Commerce) is petitioning the United States Department of Health and Human Services (HHS) to waive the maximum percentage limits placed on funds used for weatherization within the Low-Income Home Energy Assistance Program (LIHEAP). Authority to request a waiver appears in the July 6, 1982 Federal Register 47 FR 29472 Part 96 of Title 45 of the Code of Federal Regulations as amended, with final rules published May 1, 1995 in 60 FR 21322.

The statute provides that, after reviewing a grantee's waiver request, HHS may grant a Good Cause Waiver request if it determines that the grantee (Commerce):

1. Demonstrates good cause why a waiver should be granted;
2. Provides all required information;
3. Shows adequate concern for timely and meaningful public review and comment; and
4. Proposes weatherization that meets all relevant requirements.

The State of Washington's Good Cause Waiver request addresses all four of these criteria. We begin by asking HHS for a transfer of up to 25 percent of available LIHEAP Energy Assistance Program funds to the Weatherization Assistance Program. Next, we report the number of households served and benefit dollars disbursed during Federal Fiscal Years 2017 and anticipated 2018, as well as provide documentation in support of a Good Cause Waiver. We then report on weatherization services provided and summarize measureable savings in energy expenditures directly attributable to weatherization services in Washington State. We conclude the waiver summarizing additional factors that support our request.

Percent of Allocation Transferred to Weatherization

45 CFR 96.83(c)(1)

Commerce is requesting a waiver to transfer up to 25 percent of available LIHEAP Energy Assistance Program funds to the Weatherization Assistance Program. Approval of this waiver request will increase available weatherization funding by \$4.2 million and increase the waiver transfer from 15 percent to 25 percent.

HHS approval of the full 25 percent brings all potential LIHEAP dollars to Washington State, providing an opportunity for agencies to enhance their programs and existing funding. Commerce is committed to maintaining a local option for use of transfer amounts.

Comparison of Households Served and Benefits Received

FY 2017 LIHEAP Regular + Contingency Grant Award

Total Grant Award	\$56.9 million
Energy Assistance	\$47.4 million
Households Served	70,398 (actual)

FY 2018 LIHEAP Regular + Anticipated Contingency Grant Award

Total Grant Award	\$50.8
Energy Assistance	\$42.3 million
Households Served	64,035 (estimate)*

In addition it considers impact of reported trend of no shows and impact of qualified alien policy.

45 CFR 96.83(c)(2)(i)

45 CFR 96.83(c)(3)

As a result of the loss of 6.1 million in funding the anticipated number of households receiving Energy Assistance will be approximately 6,363 fewer households during FFY 2018 than those served during FFY 2017.

45 CFR 96.83(c)(2)(ii)

45 CFR 96.83(c)(4)

The aggregate amount of benefits our service population received during FFY 2018 is approximately \$6.1 million less than FFY 2017.

Support Documentation for Good Cause Waiver

45 CFR 96.83(e)(1)

The State of Washington does not meet all the criteria set forth in 45 CFR 96.83(c)(2)(i) and (c)(2)(ii) therefore is requesting a Good Cause Waiver instead of the Standard Waiver.

45 CFR 96.83(e)(1)(i)

In reference to 96.83(c)(2)(i) and 96.83(c)(3), Number of Households Served

Commerce does not meet the criteria for 96.83(c)(2)(i) and does require a good cause waiver.

In reference to 96.83(c)(2)(ii) and 96.83(c)(4), Aggregate Benefit Amounts

Commerce does not meet the criteria for 96.83(c)(2)(ii) and does require a good cause waiver.

In regard to **96.83(c)(2)(i) and 96.83(c)(2)(ii)** Commerce has measurable and quantified data that support our weatherization network's ability to provide cost-effective weatherization services that reduce the energy burden of our most vulnerable households.

45 CFR 96.83(e)(1)(ii)

Income levels and eligibility criteria based of the Federal Poverty Levels for LIHEAP heating and crisis assistance applications have not changed from FFY 2017 to FFY 2018. Applicants must be at or below 125 percent of the federal poverty level. LIHEAP benefits range from a \$25 minimum to a \$1,000 maximum.

45 CFR 96.83(e)(1)(iii)

FFY 2017 and FFY 2018 have identical opening and closing dates for LIHEAP heating and crisis assistance applications (October 1st thru June 30th).

Outreach efforts for heating and crisis assistance are also identical for the 2017 and 2018 program years; both follow the Washington State Plans as submitted to HHS. Particular emphasis is placed on providing information on all programs funded under the LIHEAP Act to households which contain high home energy burdens; the elderly; individuals with disabilities; families with young children (under six years of age); and persons and families who are subject to communication barriers (non-English speaking persons and persons who do not have easy access to common public news media, such as newspapers, radio, or television). The following outreach activities are conducted to assure eligible households are aware of all LIHEAP assistance available:

- Provide intake service through home visits or by telephone for the physically infirm (i.e. elderly or disabled).
- Place posters/flyers in local and county social service offices, offices of aging, Social Security offices, VA, etc.
- Publish articles in local newspapers or broadcast media announcements.
- Include inserts in energy vendor billings to inform individuals of the availability of all types of LIHEAP assistance.
- Mailings to past recipients of LIHEAP.
- Inform low-income applicants of the availability of all types of LIHEAP assistance at application intake for other low-income programs.
- Execute interagency agreements with other low-income program offices to perform outreach to target groups.

45 CFR 96.83(e)(1)(iv)

There are no other actions that led or will lead to a reduction in the number of applications for LIHEAP heating and crisis assistance in FFY 2018 compared to FFY 2017.

Weatherization Measures, Cost Effectiveness, and Program Benefits

45 CFR 96.83(c)(2)(iii)

45 CFR 96.83(c)(5)

Home Energy Audit

To be considered a complete weatherized unit, all homes must receive a comprehensive, on-site, home energy audit prior to receiving weatherization services and a full inspection once work is complete. Trained and qualified auditors and inspectors conduct the audits and inspections. Auditors and inspectors are at minimum certified as Building Analysts 1 by the nationally-recognized Building Performance Institute (BPI).

Commerce's "*house-as-a-system*" approach to comprehensive home energy audits consists of the following elements per home (as applicable):

- If available, review the household energy usage pattern from a 12-month billing history.
- Complete visual assessment of existing conditions and insulation levels – note any health and safety concerns.
- Note fuel types, condition and size of space and water heating equipment – designate primary and secondary heat sources.
- Measure the residence for the volume of the living space and square footage of the building envelope.
- Ask the occupant about building characteristics which may be helpful in developing a work plan (i.e. asking if there are any particularly drafty areas), and assess lifestyle considerations.
- Perform a fan-door test.
- Conduct pressure diagnostic tests of HVAC system and building zones.
- Perform combustion safety tests.
- Conduct client education, noting opportunities to provide low cost base load energy conservation measures. Contractors provide consumer conservation education to all weatherization participants. Curriculum consists of an energy bill review, home energy tour, basic energy conservation tips, and development of a family energy-saving action plan.

Using this information as a basis, a scope of work is developed based on Commerce procedures governing Health and Safety, Air Sealing, Pressure Diagnostics, and Repairs as well as information collected using either a computerized energy audit (TREAT) or a DOE-approved Priority List of Weatherization Measures. Local agencies are required to review a weatherization-specific scope of work with all clients receiving weatherization services.

TREAT Computerized Energy Audit

The Targeted Retrofit Energy Analysis Tool (TREAT) is the Washington State Weatherization Program energy audit tool approved and authorized by the U. S. Department of Energy for single-family houses, mobile homes and multifamily buildings. TREAT energy audits are required for analysis of any buildings beyond the priority list parameters.

Commerce expects local agencies to calculate and maintain current costs for materials, labor, and fuels to be used in the TREAT auditing process. Costs are verified during monitoring reviews. Local agencies are responsible for ensuring that all staff performing computerized energy audits acquire and maintain proficiency using TREAT. Commerce provides introductory and advanced TREAT training through the Building Performance Center, Washington's training and technical assistance provider.

Priority List of Weatherization Measures

Commerce created Priority Lists of Weatherization Measures using the TREAT computerized energy audit on both multi-family and single-family buildings. The appropriate list to apply to each project is determined by a variety of building characteristics and configurations, fuel types, and two climactic regions of the state. The Priority Lists reflect those measures for which an average savings-to-investment ratio (SIR) of greater than 1.0 was established. The recent DOE approval of 20 Priority Lists of Weatherization Measures was implemented July 1, 2015 for use on site built dwellings (single family and small multi-family (four units or less)), and mobile home dwellings (the process for updating the Priority Lists for multi-family dwellings will begin soon). Major Measures will be installed in order as shown on the approved priority list. A notable change is the transfer of our General Heat Waste Reduction List to the Priority Lists and these measures are now prioritized by SIR.

Measures not included in the Priority Lists must be justified by using TREAT, the DOE-approved energy audit tool. TREAT energy audits must result in at least an SIR of 1.0 or greater, or through special authorization by Commerce. The most cost-effective measures as determined by TREAT or the Priority Lists will ordinarily be installed, subject to funding availability. Any deviation from this measure selection process must have written justification documented in the client file.

Washington Weatherization Program FY 2017 Cost-Benefit Analysis

The Washington State University Energy Program (WSU) completed an analysis of the benefits and costs for the Washington State Low-Income Weatherization Program for units weatherized from July 2016 through June 2017 (FY2017). This analysis is based on information from the Weatherization Information Data System (WIDS).

Since 2010, the Department of Commerce collects local agency weatherization project data in an online data system. Weatherization agencies use WIDS to report detailed information about all single and multi-family projects weatherized statewide. .

Program Benefits

Washington's Weatherization Program installed weatherization measures in **2,367 units** in FY2017. **Total annual benefits were estimated to be \$655** per household Mid Case Scenario. These installed measures produced **energy savings of 26,759 Million British Thermal Units (MBTUs)** and are estimated to save households **\$599,710 per year in energy costs. The average household saved \$253 per year in energy costs.** This ranged from \$114/unit for large multi-family to \$324 and \$345 unit for site built and manufactured housing. Energy savings will accrue each year during the lifetimes of the energy measures, more than 30 years for insulation measures. Energy benefits accounted for 39% of total benefit.

The Weatherization Program provides "non-energy" benefits as well; these benefits accrue to utilities and ratepayers (due to reductions in delinquent bills, transmission and distribution and avoided supply risk), participants (improved comfort, health, property value, etc.), and society (decreased public and private health insurance expenditures, benefits to the economy and emissions reductions). **Non-energy benefits are conservatively estimated to be \$402 per year per household** - a total of approximately **\$951,834** per year for all weatherized households.

Non-energy benefits comprised 61% of the estimated benefit. Non-energy benefits are estimated very conservatively. For example participant and societal health benefits are valued at \$204 per household. More recent national estimates per unit health benefits of weatherization have ranged from \$600 to over \$10,000 per unit¹. This estimate does not include other high value benefits, such as preservation of low-income housing or aging in place (nursing home costs) which are more difficult to measure. WSU is working with Commerce to update Non-energy benefits estimate methods in 2018.

Program Costs

Direct unit costs² were reported by local agencies in WIDS for the 2,367 projects completed in FY2017. **The average state-wide direct unit cost was \$9,038, of which 22% - \$1,988/unit were for repair and health and safety measures.** Program administration and other operations expenses need to be added to the direct project unit costs. For the purposes of this analysis, administration and other expenses from a 2011 evaluation were used (\$2,600). The estimated total weatherization cost was **\$11,638** per unit.

Cost Effectiveness

The three cost effectiveness analysis scenarios are summarized in Table E.1. They represent a range of economic assumptions and estimates on non-energy benefits. All benefits are expressed as the present value of annual benefits calculated using different assumptions of measure life.

- The Low Scenario uses very conservative estimates of non-energy developed and used by utilities in 2006 to 2012 (\$202/unit/year) and more conservative estimates of average measure life (25 years) and performance decline over time. This scenario is similar to results of utility cost effectiveness tests
- The Mid Scenario includes an additional \$200 per household for social benefits for avoided health care. The lifetime of energy benefits are based on a weighted average of 30 years and modest increase in energy prices (1%/yr). This scenario reflects a conservative state policy view.
- The High Scenario reflects greater non-energy benefits (\$1165/unit/yr) reflecting additional health and housing preservation benefits. It assumes longer average measure life (35 years), no performance decline and increases in energy prices (2%/year). This scenario presents a “best case” view of cost effectiveness.

The Mid benefit-cost ratio for the Weatherization Program was 1.45 for the mid-range scenario for FY2017. Program benefits were 45 percent greater than costs. The benefit-cost ratio ranged from 0.7 to 3.7 for the low and high scenarios. This suggests that Total Program Benefits exceeded Total Program Costs for FY2017 and that non-energy benefits are crucial driver of cost effectiveness.

Table E.1. Preliminary Estimated Weatherization Program Benefits and Costs (FY2017)

Present Value/Unit	Mid	Low	High
Emissions Benefit	\$728	\$551	.*

¹ E4The Future. Occupant Health Benefits of Residential Energy Efficiency (2016) and Tonn, B.; Rose, E.; Hawkins, B.; Conlon, B. (September 2014). Health and Household-Related Benefits Attributable to the Weatherization Assistance Program. Oak Ridge National Laboratory, ORNL/TM-2014/345.

² Direct unit costs are the labor and materials costs associated with installing weatherization measures for a project. They do not include Program administration costs or other Program operation costs not directly associated with installation.

Economic Benefit	\$1,313	\$995	\$1,967
Utility Benefit	\$378	\$286	\$839
Participant Benefit	\$2,498	\$1,892	\$5,713
Social Benefit (LI Health Spending and Housing Preservation)	\$4,865	\$0	\$23,014
Total Non-Energy	\$9,872	\$3,725	\$31,534
Energy Benefit	\$7,148	\$4,688	\$9,717
Total Benefit/Unit	\$16,930	\$8,393	\$41,251
Total Cost/Unit	\$11,638	\$12,138	\$11,138
Benefit-Cost Ratio	1.5	0.7	3.7

*The emissions and economic benefit are combined in the high scenario

Additional Factors Supporting the Waiver Request

The goal of the State’s request is to reduce the long-term energy and heating bills of low-income families. LIHEAP heating, cooling, and crisis assistance are important and necessary, but the long-term benefits of LIHEAP weatherization assistance reduces the number of delinquent utility payments and the need for energy assistance applications, resulting in fewer service shut-offs and freeing up household income for other needs.

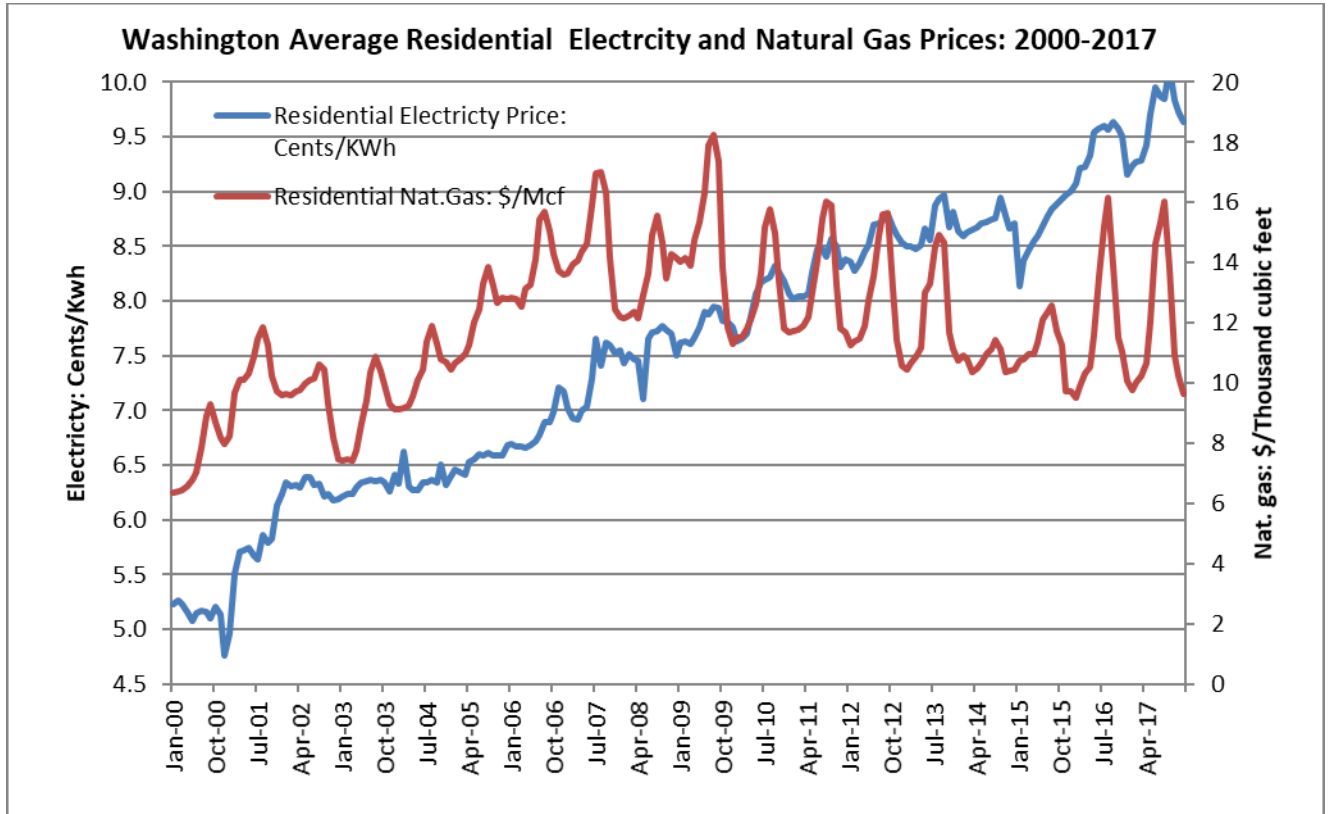
Weatherization measures, including energy-related health and safety measures and repairs, weatherization-related repairs, and the installation of low-cost/no-cost materials, as well as the delivery of consumer conservation education, are preventative and long-term in nature. Weatherization measures reduce energy burden through energy retrofits, eliminate structural hazards (thereby protecting building occupants), and preserve the efficacy of weatherization materials. Installation of low-cost/no-cost materials (for example, compact fluorescent light bulbs, low-flow showerheads, and faucet aerators) and delivery of consumer conservation education provide opportunities for weatherization recipients to take a direct role in learning and implementing energy-efficiency measures and long-term behavior change.

Washington State Electricity and Natural Gas Prices

According to the Department of Commerce’s Energy Office, and as illustrated in the graph below, residential electricity prices increased during 2017, while residential natural gas prices were largely unchanged. Nationally, the federal Energy Information Administration is forecasting for the winter of 2017-18 an 8% increase in average residential electricity expenditures and a 12% increase in natural gas expenditures. Wholesale natural gas prices increased 20% during the in 2017 relative to 2016 due to higher demand. This wholesale market price increase will eventually be reflected in slightly higher utility rates for residential and commercial natural gas customers during 2018 and 2019.

The graph below illustrates that the average Washington state residential electric rate increased by 2.6% during 2017. During 2018 and 2019 the Bonneville Power Administration (BPA), which primarily serves public utilities, is implementing a rate increase of 5.4 % for wholesale power sales and a 0.7 % rate decrease for transmission services: the percentage impact at the retail level will be

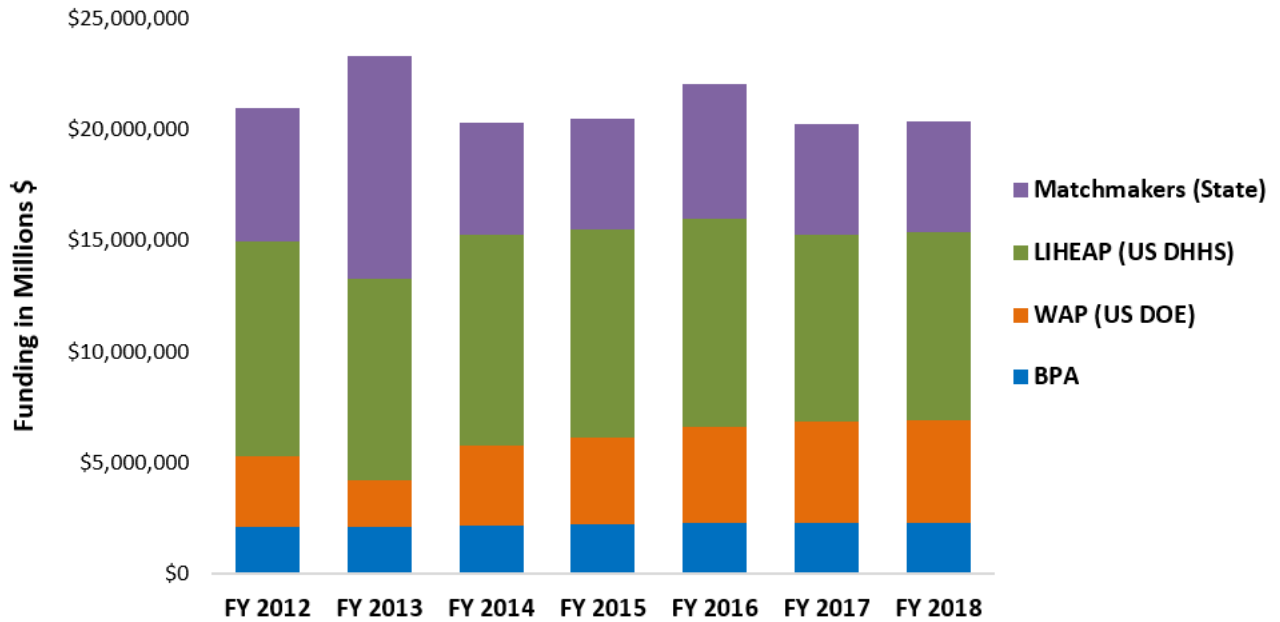
about half the published BPA rate increase. The two largest independently owned Washington utilities, Puget Sound Energy (PSE) and Avista, are enacting electricity rate increases of about 1% and 4% respectively for 2018. For natural gas PSE is planning to decrease natural gas rates by 4%, while Avista is planning a 5% rate increase in 2018.



Weatherization Fund Source Reductions

The following graph shows funding trends from 2012 to 2017 for the Washington Low-Income Weatherization Program. In comparison to FFY 2016, FFY 2017 allocations decreased by 11% for LIHEAP Weatherization and we are anticipating Department of Energy Weatherization Assistance Program (DOE WAP) remaining flat.

Washington State weatherization funding is decreasing; fewer families will receive weatherization services than in past years as a direct result of this loss of funding. The LIHEAP waiver funding will allow local agencies to provide weatherization services to more families than otherwise possible. Not only will it serve as a critical stopgap in this time of funding losses but it will also continue to reduce long-term energy costs for low-income families.



LIHEAP, DOE and Matchmakers calculations

LIHEAP

2016 regular award (not including waiver): \$9,414,252

2017 regular award (not including waiver): \$8,416,782

% decrease from FFY 2016 to FFY 2017 = 11%

DOE

2017 award: \$4,588,895

2018 (anticipated) award: \$4,325,258

% change from 2017 to 2018 = -6%

MATCHMAKER

2015-2017 total regular award = \$12,000,000 (\$3,000,000 additional allocation to be used for Washington's new Weatherization Plus Health Initiative)

2017-2019 total regular award = \$10,000,000 (includes funding for rural rehab program)

% decrease of weatherization funding from 2015 to 2017 = 17%

Public Review and Comment

45 CFR 96.83(c)(6)

A public hearing is scheduled to be held at 1:30-3:00pm on Wednesday, April 18, 2018 at the Department of Commerce in Olympia. A news release announcing the waiver application and public hearing will be sent electronically to the Commerce stakeholder list serve. Legal Notices will be published 10 calendar days in advance of the public hearing in three Washington newspapers: Yakima Herald, The Seattle Times and The Spokesman Review. An announcement concerning the public hearing and the LIHEAP Waiver will be placed on the Commerce website. A copy of the waiver and news release will be sent to weatherization coordinators, energy assistance coordinators, utility companies, and other interested parties in Washington.

Waiver Request

The State of Washington Department of Commerce requests approval of this Good Cause Waiver request from the United States Department of Health and Human Services to allow an additional 10 percent of the Washington State LIHEAP allocation to be transferred for weatherization services. We believe this request outlining all the criteria in 45 CFR 96.83(e) for a Good Cause Waiver have been met. Approval of the Waiver will allow Washington State to allocate 25 percent of its LIHEAP funds for weatherizing the homes of its most vulnerable households.

Exhibit A

Sample Priority List (1 of 20 DOE approved Priority Lists)

This Priority List is for an electrically heated, 1-story, site-built home in Washington State climate zone 1.

Priority List	
Z1E1	SIR
Install Low-flow Showerhead	8.24
Attic: Add R-38 (R-0 -> R-38)	8.22
Attic: Add R-49 (R-0 -> R-49)	7.91
Install Low-flow Faucet Aerator	4.55
Duct: Add R-19 (R-0->R-19)	3.60
Wall: No insulation - fill w/R-13	3.19
Attic: Add R-30 (R-8 -> R-38)	1.92
Hot/Cold Water Pipe Insulation (R-0->R-3)	1.72
Water Heater Insulation Wrap (R-0->R-24)	1.63
Floor: Add R-30 (R-0 -> R-30)	1.50
Attic: Add R-38 (R-11 -> R-49)	1.39
Install CFL Bulbs	1.31
Air Sealing	1.27
Wall: 40% gaps and voids- fill w/R-13	1.12
Attic: Add R-19 (R-19 -> R-38)	1.08
Duct Sealing	1.02