

# STATE FISCAL YEAR 2006 EVALUATION OF THE NRS 702

## ENERGY ASSISTANCE PROGRAM & WEATHERIZATION ASSISTANCE PROGRAM

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## Table of Contents

<b>I.</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>II.</b>	<b>THE LOGIC OF THE PROGRAM .....</b>	<b>3</b>
A.	THE PHYSICAL REALITY OF RESOURCE CONSTRAINTS.....	3
B.	THE ECONOMIC REALITY OF INCREASING PRICES .....	5
C.	THE SOCIOECONOMIC REALITY OF DECREASING FAMILY INCOMES .....	5
D.	PROBLEMS OF BOTH “MARKET” & “COST OF SERVICE” PRICING .....	5
E.	SUMMARY: FOUR SOURCES OF ENERGY PAYMENT PROBLEMS .....	7
F.	TRADITIONAL SOLUTIONS HELP, BUT FAIL TO MEET NEED .....	7
G.	NEVADA’S UNIVERSAL ENERGY CHARGE (UEC) APPROACH .....	8
H.	SUMMARY: A REALISTIC SOLUTION.....	9
I.	LOGIC MODEL .....	10
<b>III.</b>	<b>NEEDS ASSESSMENT .....</b>	<b>12</b>
A.	DEFINING “ENERGY BURDEN” .....	12
1.	<i>Introduction to Energy Burden – A Federal Definition .....</i>	<i>13</i>
2.	<i>Energy Burden – Nevada Energy Burden.....</i>	<i>15</i>
3.	<i>Energy Burden – A Household Perspective.....</i>	<i>17</i>
B.	INCOME ALLOCATION .....	17
C.	FEDERAL FUNDING: VERY HELPFUL, ERRATIC, NOT CALIBRATED TO NEED .....	19
D.	NEVADA FEDERAL ALLOCATION: VERY HELPFUL, BUT ERRATIC .....	21
E.	ENERGY PRICES TREND UPWARDS IN THE WEST .....	23
F.	NEVADA ENERGY PRICES MOVE UPWARDS .....	24
G.	NUMBER OF ELIGIBLE HOUSEHOLDS .....	26
1.	<i>A First Answer (Number of Households at 150% of Poverty).....</i>	<i>27</i>
2.	<i>Problems of the Federal Poverty Metric .....</i>	<i>28</i>
3.	<i>Number of Households at other Levels of Poverty .....</i>	<i>28</i>
H.	A REALISTIC ASSESSMENT OF NEED – INCOME INSUFFICIENCY .....	30
I.	COMPARISON OF ALTERNATIVE ELIGIBILITY LEVELS .....	33
J.	SUMMARY .....	35
K.	RECOMMENDATIONS .....	35
<b>IV.</b>	<b>PROGRAM STORIES.....</b>	<b>37</b>
A.	ENERGY ASSISTANCE PARTICIPANTS .....	37
1.	<i>Ms. W (Silver Springs).....</i>	<i>37</i>
2.	<i>Mr. &amp; Mrs. S (Gardnerville).....</i>	<i>38</i>
B.	WEATHERIZATION ASSISTANCE PARTICIPANTS .....	38
1.	<i>Mr. C (Las Vegas) .....</i>	<i>38</i>
2.	<i>Mrs. R. (Henderson).....</i>	<i>38</i>
3.	<i>Ms. W (Tonopah).....</i>	<i>39</i>
4.	<i>Ms. B (Las Vegas).....</i>	<i>39</i>
5.	<i>Mrs. P (Reno) .....</i>	<i>39</i>
6.	<i>Mr. &amp; Mrs. H (Las Vegas).....</i>	<i>40</i>
C.	SUMMARY .....	40
<b>V.</b>	<b>FISCAL PERFORMANCE.....</b>	<b>41</b>
A.	THE CHARGE (UEC) & THE FUND (FEAC) .....	41
B.	THE FOURTH PROGRAM YEAR (SFY 2006).....	41
C.	UEC COLLECTIONS (PUBLIC UTILITIES COMMISSION OF NEVADA) .....	42
D.	THE FUND FOR ENERGY ASSISTANCE & CONSERVATION.....	44
E.	THE ENERGY PAYMENT ASSISTANCE PROGRAM.....	44
F.	THE WEATHERIZATION ASSISTANCE PROGRAM.....	48

---

G.	DISCUSSION.....	51
H.	SUMMARY .....	52
<b>VI.</b>	<b>AUTOMATION ANALYSIS.....</b>	<b>53</b>
A.	THE COMPUTER SYSTEM.....	53
1.	<i>Housing Division</i> .....	54
2.	<i>Division of Welfare and Supportive Services</i> .....	54
B.	THE APRIL 2006 PROBLEM.....	55
C.	SUMMARY .....	56
<b>VII.</b>	<b>THE WEATHERIZATION ASSISTANCE PROGRAM.....</b>	<b>57</b>
A.	SUBGRANTEE AGENCIES .....	57
1.	<i>HELP of Southern Nevada</i> .....	57
2.	<i>Community Service Agency (CSA)</i> .....	58
3.	<i>City of Henderson Neighborhood Services (NS)</i> .....	59
4.	<i>Rural Nevada Development Corporation (RNDC)</i> .....	60
5.	<i>Citizens for Affordable Homes, Inc. (CAHI)</i> .....	60
B.	NUMBER OF HOMES WEATHERIZED .....	61
C.	INSTALLATION SUMMARY .....	62
D.	COST “CAPS,” AVERAGE COST & COORDINATED FUNDING.....	63
E.	HEALTH & SAFETY .....	64
F.	CONTRACTOR TRAINING .....	65
G.	UTILITY HELP .....	65
H.	FORMAL AND INFORMAL COMPLIANCE.....	66
1.	<i>Specific Provisions</i> .....	66
2.	<i>Review of Client Files</i> .....	70
3.	<i>Informal Compliance</i> .....	73
4.	<i>Housing Division Compliance Summary</i> .....	73
I.	PLAN FOR ANALYSIS OF ENERGY SAVINGS .....	73
1.	<i>Analysis Plan</i> .....	73
2.	<i>Data Arrangements with the Utilities</i> .....	74
3.	<i>Analysis Window, Baseline &amp; Post Year</i> .....	75
4.	<i>Data Cycle for Evaluation</i> .....	75
5.	<i>Plan and Reality</i> .....	75
J.	ESTIMATES OF ENERGY SAVINGS .....	76
1.	<i>Method</i> .....	76
2.	<i>Statistical Analysis: Nevada Power Energy Savings</i> .....	77
3.	<i>Statistical Analysis: Southwest Gas Energy Savings</i> .....	79
4.	<i>Statistical Analysis: Sierra Pacific Power Company Energy Savings</i> .....	79
5.	<i>Engineering Analysis: Sierra Pacific Power Energy Savings</i> .....	80
K.	IMPROVEMENTS AND PLANS.....	97
L.	STAFFING ANALYSIS .....	98
M.	RECOMMENDATIONS .....	98
<b>VIII.</b>	<b>RESPONSES TO WEATHERIZATION CLIENT SURVEY .....</b>	<b>100</b>
A.	WHAT HAPPENS AFTER WEATHERIZATION? .....	100
B.	PROBLEMS WITH THE WEATHERIZATION PROGRAM.....	114
1.	<i>General Housing problems</i> .....	114
2.	<i>Air Leakage -- Windows &amp; Doors</i> .....	115
3.	<i>Heat Loss – Insulation</i> .....	118
4.	<i>Solar Screens</i> .....	118
5.	<i>Appearance Problems</i> .....	119
6.	<i>The Wait for Service</i> .....	119
7.	<i>Other Process Problems</i> .....	119
8.	<i>Q/C Problems</i> .....	122
9.	<i>Other Problems</i> .....	123

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C.	WHAT COULD BE DONE TO MAKE THE PROGRAM BETTER .....	124
D.	LINGERING CONCERNS .....	127
E.	ADDITIONAL COMMENTS .....	129
F.	SUMMARY .....	136
<b>IX.</b>	<b>ENERGY ASSISTANCE PROGRAM.....</b>	<b>137</b>
A.	FAST-TRACK COMPONENT .....	139
B.	CRISIS-INTERVENTION COMPONENT .....	140
C.	YEAR-AROUND SERVICE.....	140
D.	ARREARAGE COMPONENT.....	140
E.	ENERGY ASSISTANCE PROGRAM (FORMAL COMPLIANCE).....	141
1.	<i>Specific Provisions</i> .....	142
2.	<i>Review of Client Files</i> .....	145
F.	INFORMAL COMPLIANCE.....	148
G.	CALCULATION OF MEDIAN ENERGY BURDEN .....	148
H.	STAFFING ANALYSIS .....	150
I.	PAYMENT BEHAVIOR .....	153
J.	EFFECTIVENESS AND EFFICIENCY.....	155
K.	IMPROVEMENTS AND PLANS.....	157
<b>X.</b>	<b>RESPONSES TO THE ENERGY ASSISTANCE CLIENT SURVEY .....</b>	<b>161</b>
A.	SURVEY MEASURES OF PROGRAM EFFECTIVENESS.....	161
B.	PROBLEMS WITH THE ENERGY ASSISTANCE PROGRAM .....	161
1.	<i>Timing of Assistance</i> .....	162
2.	<i>Processing Applications</i> .....	163
3.	<i>Rising Utility Bills vs. the Assistance Amount</i> .....	165
4.	<i>Income Eligibility</i> .....	167
5.	<i>Other Problems</i> .....	168
C.	ADDITIONAL COMMENTS .....	168
D.	SUMMARY .....	170
E.	RECOMMENDATIONS .....	170
<b>XI.</b>	<b>BEST PRACTICES.....</b>	<b>171</b>
<b>XII.</b>	<b>APPENDIX 1. SFY 2006 RECOMMENDATIONS .....</b>	<b>179</b>
A.	DIVISION OF WELFARE AND SUPPORTIVE SERVICES (ENERGY ASSISTANCE PROGRAM).....	179
B.	HOUSING DIVISION (WEATHERIZATION ASSISTANCE PROGRAM) .....	181
<b>XIII.</b>	<b>APPENDIX 2. MINI-SURVEY FORMS.....</b>	<b>182</b>

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## TABLE OF FIGURES

FIGURE 1: OVERALL LOGIC MODEL.....	11
FIGURE 2: ENERGY BURDEN IN THE US (USDOE). .....	14
FIGURE 3: THE RANGE OF ENERGY BURDENS. ....	15
FIGURE 4: INCOME DONUT – INCOME ALLOCATION IN NEVADA. ....	18
FIGURE 5: LIHEAP FUNDING HISTORY.....	19
FIGURE 6: AVERAGE GAS & ELECTRICITY PRICE INDEXES: WEST, URBAN.....	23
FIGURE 7: SIERRA PACIFIC AVERAGE MONTHLY BILLS (\$2004).....	25
FIGURE 8: NEVADA POWER AVERAGE MONTHLY BILLS (\$2004).....	25
FIGURE 9: SOUTHWEST GAS AVERAGE MONTHLY BILLS (\$2004).....	26
FIGURE 10: EVALUATION WINDOW. ....	42
FIGURE 11: DIVISION OF WELFARE & SUPPORTIVE SERVICES, TREND LINES. ....	47
FIGURE 12: TIMING FOR QUANTITATIVE ANALYSIS OF UTILITY DATA. ....	74
FIGURE 13: NATURAL GAS SAVINGS (CASE 1). ....	81
FIGURE 14: ELECTRICITY SAVINGS (CASE 1).....	82
FIGURE 15: NATURAL GAS SAVINGS (CASE 2). ....	83
FIGURE 16: ELECTRICITY SAVINGS (CASE 2).....	83
FIGURE 17: NATURAL GAS SAVINGS (CASE 3). ....	84
FIGURE 18: ELECTRICITY USE (CASE 3).....	85
FIGURE 19: NATURAL GAS SAVINGS (CASE 4). ....	86
FIGURE 20: ELECTRICITY USE (CASE 4).....	86
FIGURE 21: NATURAL GAS USE (CASE 5). ....	87
FIGURE 22: ELECTRICITY SAVINGS (CASE 5). ....	88
FIGURE 23: NATURAL GAS SAVINGS (CASE 6). ....	89
FIGURE 24: ELECTRICITY SAVINGS (CASE 6).....	89
FIGURE 25: NATURAL GAS ENERGY USE (CASE 7).....	90
FIGURE 26: ELECTRICITY SAVINGS (CASE 7).....	91
FIGURE 27: NATURAL GAS SAVINGS (CASE 8). ....	92
FIGURE 28: NATURAL GAS SAVINGS (CASE 9). ....	93
FIGURE 29: ELECTRICITY USE (CASE 9). ....	93
FIGURE 30: NATURAL GAS SAVINGS (CASE 10). ....	94
FIGURE 31: ELECTRICITY USE (CASE 10). ....	95
FIGURE 32: GAS USE (CASE 11).....	96
FIGURE 33: ELECTRICITY USE (CASE 11). ....	96
FIGURE 34: HEAT PUMP OR FURNACE.....	101
FIGURE 35: AIR CONDITIONER.....	102
FIGURE 36: OTHER MAJOR APPLIANCE. ....	103
FIGURE 37: WATERBED. ....	104
FIGURE 38: ADDING AREA.....	105
FIGURE 39: HEATING OR COOLING NEW AREAS. ....	106
FIGURE 40: WINTER TEMPERATURE. ....	107
FIGURE 41: SUMMER TEMPERATURE. ....	108
FIGURE 42: NUMBER OF PEOPLE.....	109
FIGURE 43: DAILY HEATING TIME: WINTER.....	110
FIGURE 44: DAILY COOLING TIME: SUMMER.....	111
FIGURE 45: CHANGES TO INSTALLED MEASURES. ....	112
FIGURE 46: CARSON CITY (ROUNDING PROBLEM). ....	147
FIGURE 47: LAS VEGAS (ROUNDING PROBLEM). ....	148
FIGURE 48: STAFFING STRUCTURE. ....	151
FIGURE 49: PAYMENT REMINDER. ....	159
FIGURE 50: CLIENT SURVEY - DIVISION OF WELFARE AND SUPPORTIVE SERVICES.....	182
FIGURE 51: CLIENT SURVEY -- HOUSING DIVISION (PAGE 1). ....	183
FIGURE 52: CLIENT SURVEY - HOUSING DIVISION (PAGE 2).....	184

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## TABLE OF TABLES

TABLE 1: YEAR BY YEAR INCREASE IN APPLICATIONS.....	1
TABLE 2: FEDERAL FUNDING (NOMINAL DOLLARS).....	20
TABLE 3: FEDERAL FUNDING (REAL DOLLARS).....	21
TABLE 4: NEVADA LIHEA FEDERAL FUNDING HISTORY.....	22
TABLE 5: UTILITY BILLS IN NEVADA, 1978 TO 2004 (\$2004).....	24
TABLE 6: CALCULATION OF NUMBER OF INCOME-ELIGIBLE HOUSEHOLDS.....	27
TABLE 7: HOUSEHOLDS AT 175% AND 200% OF FEDERAL POVERTY LEVEL.....	29
TABLE 8: EXAMPLE OF COST CATEGORIES IN THE FAMILY BUDGET APPROACH.....	30
TABLE 9: SIXTY PERCENT OF STATE MEDIAN INCOME.....	33
TABLE 10: APPROXIMATE INCOME SUFFICIENCY STANDARD.....	34
TABLE 11: UNIVERSAL ENERGY CHARGE – TOP LEVEL FISCAL PERSPECTIVE.....	43
TABLE 12: TOP LEVEL FISCAL PERSPECTIVE – FUND FOR ENERGY ASSISTANCE AND CONSERVATION.....	44
TABLE 13: ENERGY PAYMENT ASSISTANCE REVENUE & EXPENDITURES.....	45
TABLE 14: ENERGY PAYMENT ASSISTANCE – EXPENDITURE BY MAJOR LINE ITEM.....	46
TABLE 15: REVENUE & EXPENDITURES, HOUSING DIVISION.....	48
TABLE 16: WEATHERIZATION ASSISTANCE – EXPENDITURE BY MAJOR LINE ITEM.....	50
TABLE 17: WEATHERIZED HOMES BY SUBGRANTEE.....	62
TABLE 18: TYPES OF HOMES WEATHERIZED (BY SUBGRANTEE).....	62
TABLE 19: WEATHERIZATION BY COUNTY.....	63
TABLE 20: WEATHERIZED HOMES AND SAMPLE SIZE BY SUBGRANTEE AGENCY.....	71
TABLE 21: DOCUMENTATION COMPLIANCE FOR WEATHERIZED HOMES.....	72
TABLE 22: GROSS COOLING LOAD REDUCTIONS (NEVADA POWER).....	77
TABLE 23: OVERALL CHANGES IN LOAD (NEVADA POWER).....	79
TABLE 24: SIERRA PACIFIC POWER - ELECTRICITY RESULTS.....	79
TABLE 25: SIERRA PACIFIC POWER – NATURAL GAS RESULTS.....	80
TABLE 26: HAVE YOU REPLACED A HEAT PUMP OR FURNACE?.....	101
TABLE 27: HAVE YOU REPLACED AN AIR CONDITIONER?.....	102
TABLE 28: HAVE YOU REPLACED ANY OTHER MAJOR APPLIANCES?.....	103
TABLE 29: HAVE YOU ADDED A WATERBED?.....	104
TABLE 30: HAVE YOU INCREASED THE SQUARE FOOTAGE OF YOUR HOME?.....	105
TABLE 31: ARE YOU HEATING OR COOLING ANY NEW AREAS OF THE HOUSE?.....	106
TABLE 32: CHANGED WINTER TEMPERATURE SETTING?.....	107
TABLE 33: CHANGED SUMMER TEMPERATURE SETTING?.....	108
TABLE 34 : HAS THE NUMBER OF PEOPLE LIVING IN YOUR HOUSE CHANGED?.....	109
TABLE 35: IN WINTER, THE AMOUNT OF TIME YOU HEAT EACH DAY.....	110
TABLE 36: IN SUMMER, THE AMOUNT OF TIME YOU COOL EACH DAY.....	111
TABLE 37: DID YOU MAKE CHANGES TO THE MEASURES INSTALLED?.....	112
TABLE 38: PHYSICAL CHANGES AFFECTING ENERGY USE.....	113
TABLE 39: INCOME GUIDELINES.....	139
TABLE 40: REVIEW SAMPLE: ENERGY ASSISTANCE PROGRAM.....	145
TABLE 41: ENERGY BURDEN CALCULATION.....	149
TABLE 42: PATTERN OF BILL PAYMENT.....	155
TABLE 43: FISCAL YEAR 2006 PROGRAM STATISTICS.....	156
TABLE 44: BILL CALCULATION TABLE.....	174
TABLE 45: PERCENTAGE OF ANNUAL ENERGY BILL.....	174
TABLE 46: SIERRA PACIFIC POWER ELECTRIC & NATURAL GAS SERVICE.....	176
TABLE 47: NEVADA POWER ELECTRIC SERVICE & SOUTHWEST GAS.....	177
TABLE 48: NEVADA POWER -- ALL ELECTRIC HOMES.....	178

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## I. EXECUTIVE SUMMARY

This is the SFY 2006 Evaluation Report for the Nevada Energy Assistance Program (NRS 702.260) and of the Nevada Weatherization Assistance Program (NRS 702.270).<sup>1</sup> The report describes the objectives of each program, analyzes the effectiveness and efficiency of each program in meeting its objectives, reports on the distribution of money from the Universal Energy Charge (UEC) and the Fund for Energy Assistance and Conservation (FEAC), reports on the coordination between the Housing Division and the Welfare Division in the conduct of the programs, and looks at planned program changes.

<b>ENERGY ASSISTANCE PROGRAM APPLICATIONS PER YEAR</b>		
<b>State Fiscal Year</b>	<b>Number of Applications Received</b>	<b>Percentage Change From Prior Year</b>
SFY 2003	17,925	
SFY 2004	19,197	7.10%
SFY 2005	24,349	26.84%
SFY 2006	24,977	2.58%

**Table 1: Year by Year Increase in Applications.**

Previous evaluations focused on development of necessary infrastructure tools such as computer support, and the development of program capabilities, including staffing.<sup>2</sup> In 2005, a communications campaign was implemented to help ensure that that eligible Nevadans are aware of the programs and learn how to apply. Participation in the Energy Assistance Program increased each year (Table 1). Although the campaign did not continue into SFY 2006, the application level from SFY 2005 was maintained and increased slightly in SFY 2006. Also in SFY 2005, the Arrearage Payment Program component was started, and this component continued successfully into SFY 2006.

With the legislatively enacted programs basically in place at the end of SFY 2004 and the last major high-level implementation problems solved in SFY 2005, and with both Housing Division and Division of Welfare and Supportive Services working smoothly, for the most part, through SFY 2006, this evaluation looks at possible adjustments for

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<sup>1</sup> The evaluation is conducted pursuant to NRS 702.280(2-3).

<sup>2</sup> See the SFY 2003 evaluation, the first full evaluation conducted pursuant to NRS 702.280(2-3), and the SFY 2004 evaluation.

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making the payment assistance and weatherization assistance programs more effective and efficient.<sup>3</sup>

The context is also changing with increasing energy prices and less real income for low-income households (See Section II, The Logic of the Program, P. 3). Due to these trends in prices and in jobs the need for the program goes considerably beyond the current eligibility level of 150% of the federal poverty metric (see Section III, Needs Assessment, P. 12).

Because of the success of the Nevada model, this report will have a wide readership outside of Nevada as well as by responsible leaders, staff, and advocates within the state. For this reason, it is appropriate to note that in developing the Housing and Welfare Division programs, Nevada has developed a “best practice” model for the Western states. Certain features of the Nevada approach should also be studied and copied by other states, particularly in the West but also in the rest of the country (See Section XI, Best Practices, P. 170).

Recommendations to make the programs more effective and efficient are developed throughout the study, and are collected in Appendix I (P. 178).

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<sup>3</sup> From a seasoned evaluation perspective it takes about five years for a new statewide program to be fully developed. Problems of implementation must be encountered and overcome, staffing levels adjusted, necessary computer programming infrastructure developed, modified, and in place, and communications working well. This evaluation is just past the mid-point of what the evaluation team sees as a five year implementation period, covering the fourth program year..

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## II. THE LOGIC OF THE PROGRAM

The Nevada program was enacted by the legislature as NRS 702. It is important to understand why a program that helps low-income households lower energy use and establish more regular payment of energy bills is necessary. This section of the study and the following section (Needs Analysis) discuss the underlying factors that make the program useful and essential to the people of Nevada. The program is an intelligent response to the constraints of a changing physical environment and to large-scale socioeconomic changes that have affected all of the states. We first look at physical constraints.

### ***A. The Physical Reality of Resource Constraints***

At the most basic level, the need for the program is based in physical realities and particularly in material natural resource constraints. At least five factors are currently interacting to produce gradually increasing energy costs:

- 1) **Increasing marginal cost of production:** For the United States, each year it takes more energy per unit of energy extracted to develop the remaining natural gas supply.<sup>4</sup> This is a classic problem of physical limits.
- 2) **Increased competition for gas supply:** Over time, the gas and electric supply systems have become increasingly interdependent. Natural gas is used as a fuel to produce electricity in some central generating stations, recently favored in part because it is a clean fuel from an environmental perspective, and use of clean fuels helps mitigate global warming. However, nationally, an increase in the number of electric generating stations fueled by natural gas creates a market situation in which households and electric generation stations are in competition for limited gas supply. During times of shortage, prices are driven upwards by this interaction.
- 3) **Defacto heating changes:** In the past few years there has also been an interaction of gas and electric uncollectibles at the household level. If a household cannot pay the gas bill, something must be done in order to cope and it may be possible to obtain low-cost portable electric heaters. This provides a temporary means to cope.<sup>5</sup> However, this results in a rapid rise in

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<sup>4</sup> There is a possibility that the shortage could be remedied through the development of LNG stations along the California coast. However, new LNG tankers and stations raise problems of security and it is unlikely that any coastal community would permit new stations if included in planning consultations and permitted to choose whether they would like a new LNG terminal next door.

<sup>5</sup> Think of the film, *Dr. Zhivago*. When, in the depths of winter, there no heat or fuel, Zhivago steals part of a wooden fence to burn for heat, even though this is now outlawed as a crime against the state. The point is that if a family is cold in winter, they have to do something, and people will do what they can.

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the household electric bill. The net effect at the household level is that energy bills become difficult and then impossible to pay. Many US utilities are experiencing payment problems.

- 4) **Global warming, loss of snow pack:** Global warming is creating several changes in the natural environment. Among these is a projected loss of snow pack. Current climate research is reporting a decline in Sierra Nevada snow pack and Cascade snow pack. Loss of free water storage in the form of snow pack will require greatly increased attention to problems water supply in Nevada's neighboring regions of California and the Northwest.<sup>6</sup> Yet the rebuilding of the hydro systems supporting electric generation to accommodate this change has not begun. The primary effect of loss of snow pack on electricity is in the projected changes in hydro-generation resources in regions connected to Nevada over transmission interties. Electricity deficits in nearby regions will induce scarcity and a long-term series of price increases.
- 5) **Population growth:** Nevada continues to experience population increase, as Nevada continues to be desired as a place to live by people in other areas, including California and the Northeast. Population growth brings opportunities in many forms but it also increases pressure on natural resources to produce electricity and to provide increased natural gas service. Since neither electricity generation nor provision of natural gas is experiencing decreasing cost or lower cost with increased scale, this underlying trend tends to pull energy prices upwards.

This is the classic problem of physical limits. The climate studies show the problem is occurring on the electric side due to global warming. It occurs on the gas side due to depleting gas supply. "Limits situations" require strong state regulatory protections, strong state and utility planning capabilities, and enforcement for the common welfare.<sup>7</sup> These underlying factors work separately and together to make supply more difficult and to increase prices.

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<sup>6</sup> Welch, Craig, "Global Warming Hitting Northwest Hard, Researchers Warn," *Seattle Times*, Saturday, February 14, 2004; Luers, Amy Lind, "A Tale of Two Futures, California Feels the Heat," Pp. 8-9, *Catalyst*, Fall 2004.

<sup>7</sup> This is a special area of economics, well researched, but somewhat obscure, a sub-case mentioned but not well developed in standard economic texts, such as Samuelson (Samuelson, Paul A, & William D. Nordhaus, *Economics*, Sixteenth Edition, International Edition. New York: McGraw-Hill, 1998). The classic study of what happens when resource constraints and laws of physics dominate an economic market is Georgesçu-Roegen, Nicholas, *The Entropy Law and the Economic Process*. Cambridge, Massachusetts; Harvard University Press, 1971. A more easily readable treatment is given by Beard, T. Randolph and Gabel A. Lozada, *Economics, Entropy and the Environment, The Extraordinary Economics of Georgesçu-Roegen*. Cheltenham, UK & Northampton, MA, USA: Edward Elgar Publishing, 1999. Also see: Odum, Howard T. & Elisabeth C. Odum, *A Prosperous Way Down, Principles & Policies*. Boulder, Colorado: University Press of Colorado, 2001. For economics of demand and supply administration under conditions of shortage, see Galbraith, John Kenneth. *A Theory of Price Control*. Cambridge: Harvard University Press 1952.

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## **B. The Economic Reality of Increasing Prices**

A major consequence of resource constraint is the long-term increase in energy prices. This price trend is expected to continue over the next fifty years for both natural gas and electricity. The trend in energy cost is a matter of basic economics in the classic situation of resource constraint, a market situation with little resemblance to the traditional markets of economic textbooks, or even to a traditional regulated monopoly. Resource constraint situations involve the second law of thermodynamics,<sup>8</sup> material limits, and rising costs per unit.<sup>9</sup>

## **C. The Socioeconomic Reality of Decreasing Family Incomes**

Along with the long-term increase in energy prices, the United States is experiencing increasing tension along lines of income and wealth. Poor and moderate income families are becoming increasingly poor as the status of jobs changes due to globalization and related political economic trends. At the same time, as a result of these trends, the very rich are becoming extremely rich while families in between are experiencing more economic fear than has happened since perhaps the 1930s. For the last thirty five years, low-income to moderate income families and particularly low-income families with children have been *losing real income* from year to year as the nature of available employment changes.<sup>10</sup>

## **D. Problems of both “Market” & “Cost of Service” Pricing**

With the exception of the deregulation experiments in some states in which pricing was envisioned to become a purely market function,<sup>11</sup> in the US, utility rates are traditionally regulated to reflect actual cost of utility service.

There is an inherent sense of fairness in the “cost of service” regulatory principle. This is one of the core principles of ratemaking – that rates should be related to the cost of providing electricity or gas service to particular classes of customers. The

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<sup>8</sup> The second law can be expressed in many ways: hot frying pans tend to cool down; water tends to flow downhill; time’s arrow tends to point in one direction; if two systems are in contact with each other, their energy differences tend to even out; the total entropy of an isolated thermodynamic system tends to increase over time. Under resource constraint, it tends to take ever more energy to extract energy, so prices for energy tend to increase over time.

<sup>9</sup> See references in footnote No. 7, above.

<sup>10</sup> The relevant parts of this change are discussed in the Needs Analysis section of the study. For a basic reference on this shift in the distribution of income to the very rich and away from the poor and middle income households, see the set of “Pulling Apart” studies conducted by the Center for Budget and Policy Priorities (<http://cbpp.org>).

<sup>11</sup> For example: New Jersey, New York, Illinois, and Texas.

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“cost of service” principle is retained today for electricity and gas distribution in all states. However, the “commodity cost” of natural gas is generally now treated as a “pass through” under contractual arrangements through which gas utilities try to minimize price, but price is determined by market conditions of supply and demand.<sup>12</sup> Natural gas companies do not make a profit on this part of costs, but are entitled to pass it through in its entirety to customers under the theory that it has been set by “free market” forces. The “generation cost” of electricity is determined by both market forces and regulations as to which customers will share in the cost of traditional integrated utility generation and which will be free to purchase the “generation part” of electric service from other kinds of non-regulated merchant entities.

Merchant entities do not follow a cost of service principle; they look for value in deals. What has been found in deregulation is that these deals disproportionately benefit the major market players at the expense of the residential, small commercial and low-income sectors.<sup>13</sup> When some larger entities are freed to choose a supplier, everyone else has to cover more of the fixed costs of community utility generation, so household energy bills increase due to yet another market factor.

However, neither market (deregulated) rates nor regulated cost of service rates can even possibly work for low-income households and for many moderate income households. For many, changes in jobs, rapidly increasing housing prices, and decreasing real incomes are causing households to gradually lose ability to consistently pay their utility bills in full. Even if full traditional regulation is used, the logic of allocating rates based on cost of service only works if incomes are generally both adequate and do not show substantial extremes.<sup>14</sup>

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<sup>12</sup> In states that required their utilities to sell off all generating plants to other entities, cost of supply is bid up to the cost of the marginal unit, and the lower-cost plants are gradually re-capitalized to operate at higher cost. This increases cost of electricity in neighboring states also, and local cost advantages due to an advantageous (for example, non-gas) generation mix are lost. Similar to the situation with gas utilities, electric utilities from which generating plants have been stripped simply transmit the market price of electricity. And, in some states where utilities were required to divest their generating plants, regulators are no longer permitted to enquire into the cost of generation or order adjustments. Further, in most cases in which supply has been turned over to “the market,” the market is administered to require that all bidders be paid at the highest cost of supply found necessary in a given purchasing round by the utility. That is, prices of all forms of production are, by law, elevated to the highest marginal price.

<sup>13</sup> Deregulation was accompanied by introduction of temporary regulatory control over price increases for a fixed number of years in most states that deregulated. Note that this temporary control was a result of a “deal” for price administration in return for the selling off of utility generation resources and an end to traditional cost of service regulation. That is, it is an example of administered price control for a limited period and is not a result of markets.

<sup>14</sup> It is important to note that there is nothing wrong, in principle, with markets if all members of the community have the income necessary to participate in the markets and meet their energy needs. Also, basing rates on cost of service is technically rational. It is only that if households increasingly lack ability to pay, and real household income declines from year-to-year, cost based rates and traditional payment policies will not permit essential electricity and gas service for an increasingly large number of low-income and moderate income households.

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### **E. Summary: Four Sources of Energy Payment Problems**

To summarize, the basic problem consists at least five pieces. First, the problem of physical constraint which is increasing prices. Second, there is the trend of increasing energy prices. Third, the problem of decreasing real household incomes that decreases ability to cope with existing prices. Fourth, cost of service pricing always must fail when households do not have income to pay the rationally allocated cost. The fifth is that deregulation to create the appearance of market pricing of energy turned out not to be a real answer for low-income, residential, or small commercial utility customers.

### **F. Traditional Solutions Help, but Fail to Meet Need**

Self-help (including family and friends), and help from the community including lodges, civic clubs, unions, religious and community organizations has, in the past, helped individual households to deal with energy affordability problems. In very good economic times, when payment troubles are relatively small, these efforts can have a significant effect. Today, given the underlying physical conditions and pricing effects discussed above, individual and association voluntary efforts *cannot even begin to deal with the scale* of growing affordability problems.

Beyond these helpful but ineffective efforts, utilities typically provide systematic assistance, available to customers experiencing payment trouble. Equal payment plans, adjustment of bill dates to align utility bills with pay days, referral to fuel funds, and low-income rates are examples of useful utility programs that can help mitigate the problem.<sup>15</sup>

Yet, the needs for weatherization assistance and for energy payment assistance have grown far beyond the scope of temporary assistance, voluntary response, and the scope of individual utility programs.<sup>16</sup> Federal LIHEAP funds, also used for these purposes, are *always* far short of need in Nevada, are unreliable in amount, and are “locked in” by an allocation formula that sends these funds primarily to the Winter weather states of the Northeast.<sup>17</sup>

All of these approaches, and especially the utility programmatic approaches, are useful and meet some of the need. However, their effectiveness is very limited.

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<sup>15</sup> For a history through the early 1980's, see Sweet, David C. & Kathryn Wertheim Hexter, *Public Utilities and the Poor, Rights and Responsibilities*. New York: Praeger, 1987.

<sup>16</sup> Similarly, in broad areas of the country, food banks have grown dramatically but hunger has increased. For how voluntary capacity has been overrun, see: Pependieck, Janet, *Sweet Charity?* New York: Viking, 1998

<sup>17</sup> Problems with federal funding are further discussed in the Needs Analysis section of this study.

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## **G. Nevada's Universal Energy Charge (UEC) Approach**

The Nevada UEC is an innovation that goes beyond individual help and previous kinds of program approaches, and also an approach that once implemented makes the earlier approaches much more effective in combination with the UEC. The UEC is the basis for universal service, and a real solution. In this matter, Nevada and a few other states have arrived at a workable solution that benefits the participants, the other customers, the general public, and the energy companies. The fund ensures access to service while permitting Nevada's energy companies to remain solvent.<sup>18</sup>

The Nevada Universal Energy Charge (UEC) funds the Fund for Energy Assistance and Conservation, one of several new state energy assistance funds established over the past fourteen years. Nevada's program works. It remedies a severe problem of many Nevada households – inability to pay for the energy necessary to meet such basic household needs as moderating natural temperature extremes though home cooling and home heating. The Nevada UEC provides a means for the state to respond to the underlying tension between the trend in energy costs and the trend in ability to pay in a manner that is more appropriate for the particular needs of this geographic region.

Five features define the careful and conservative character of the Nevada UEC:

- (1) **Requirement to Pay-In.** *It is necessary to pay into the UEC to be eligible for UEC assistance.* In the legislation, paying in is determined primarily by utility service territory. The paying in provision is a link to the tradition of balance of self-reliance and the community pulling together when necessary.<sup>19</sup>
- (2) **Realistic and Fair.** By setting the Fund for Energy Assistance and Conservation payment assistance at the level of the Nevada median household energy burden, Nevada has established a realistic level of payment assistance. The level is inherently rooted in a principle of fairness – energy assistance is provided at the level of the median percentage of household energy burden for the state. The portion below that level remains the

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<sup>18</sup> Several states are now turning to the UEC model, including Maryland and, most recently, New Jersey. The underlying tension of increasing energy costs and decreasing ability to pay is in play throughout the United States. With a UEC, energy costs can be covered and service provided. In states without a UEC, in the fall and winter of 2005 record numbers of households were excluded from service as companies struggled with the problems of non-payment. (In states with Winter termination prohibitions, the disconnects occurred in the Spring of 2006.) Energy service is essential for normal American life. Terminations are associated with forced moves, loss of habilitation, sickness, stress, and for a small minority of customers who try to "jury-rig" service or try to use candles for light and burner units for heat, with fires and deaths. From a social or family perspective, it is much more sensible to keep families who lose ability to pay connected.

<sup>19</sup> Federal funds and some other state funds are used to the extent available to help households not paying in to the Nevada UEC. In general, Nevada tries to implement a principle of equal service

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household's responsibility. The portion above that level is covered by the Fund.

- (3) **Starting with a Conservative Eligibility Level.** The eligibility level for SFY 2003 was set at 150% of the federal poverty level. Our calculations and the general trend in calculations across the US indicate that the current actual breakpoint for poverty is much higher than official federal or legislative definitions of need. A number of states have adopted the alternative of 60% of state median income. However 150% was a reasonable level to start the program.
- (4) **Understanding of Long-Term Energy Affordability Problem.** Unless there occurs a dramatic turnaround in the provision of "living wage" jobs (defined as a job that can support a family, including some provision for meeting medical needs, a car, education of children beyond high school, and retirement) increasingly large numbers of American households, including households with one or more full-time workers, and a good history of bill payment and work discipline, will be unable to fully pay for their basic energy needs. As globalization advances, there is nothing on the horizon that offers to restore opportunities for "living wage" jobs for households who lose them, or for newer households that are formed. For low and moderate income households, real income is likely to continue to decline. The Nevada UEC payment assistance is therefore essential – picking up the part of the energy burden that is higher than that of the median Nevada household. While households must reapply each year and there will always be some turnover for some households where conditions improve, the affordability problem is built-in as an integral effect of the current national economy.
- (5) **Investment and Cost-Effective Approach to Weatherization.** Weatherization fixes a home so that it can require substantially less energy to achieve the same (or sometimes better) levels of cooling, heating, and other energy services. The one-time investment of weatherization, combined with occasional minor maintenance is designed to provide an economically cost-effective return on investment over many years. The investment nature and the cost-effective return for the "weatherization package" as a whole define the essential characteristics of the Housing Division portion of the Nevada Fund.

#### ***H. Summary: A Realistic Solution***

The Nevada UEC payment assistance program is a realistic solution to this ongoing and growing problem. It meets increasing cost based rates with payment assistance set at the median household energy burden. As rates increase and bills change, the Nevada UEC will likewise adjust. "Each program's main objective is to expend UEC monies on as many Nevada households needing energy and weatherization

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assistance as possible within the amounts of UEC funds collected, and administer those funds in an effective and efficient manner.”<sup>20</sup>

### ***I. Logic Model***

The overall logic model for the programs implemented from UEC funding is shown in Figure 16.

The logic model is actually three interlocking models:

- One for funding;
- One for energy payment assistance;<sup>21</sup>
- One for weatherization assistance

In this model, for each activity there is an objective. Each objective has associated indicators and a means of verification. Together, the elements in this model show the logic of the program. The discussion of the trending of physical constraints and the trending of income and pricing effects portrayed in this section of the study provides the deeper grounding for the program. Together, these realities of resource constraints, price, income, and approaches to costing as well as the logic model frame the overall logic of the program.<sup>22</sup>

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<sup>20</sup> Nevada Fund for Energy Assistance and Conservation State Plan 2006, P. 1.

<sup>21</sup> Note that the Energy Assistance Program includes the Fixed Annual Credit and the Arrearage Payment Program. For emergency situations, there is a Fast Track Program which applies when a household is in danger of having their heating or electric serviced disconnected within forty-eight hours, or needs to be reconnected or needs heating fuel. Households with incomes usually above 150% of poverty experiencing a special circumstance or crisis with a duration of at least three months, and with resultant income at or below 150% of poverty due to medical emergencies, or certain other emergency conditions may be eligible for the Crisis Intervention Program.

<sup>22</sup> Logic models have been a required element in program evaluations since the early 1990's, and are associated with a focus on "program theory." See, for example, Chen, Huey-Tsyh, *Theory-Driven Evaluations*, Newbury Park, London & New Delhi: Sage Publications, 1990. Also, Plantz, Margaret C., Martha Taylor Greenway, and Michael Hendricks, "Outcome Measurement: Showing Results in the Nonprofit Sector," *New Dimensions in Program Evaluation*, No. 75, Fall 1997.

Program Logic Model - FY 2006				
ACTIVITIES	ASSUMPTIONS	OBJECTIVES	INDICATORS	VERIFICATION
Insure Collections and Appropriate Refunds - Public Utility Commission (PUC)				
Administration	The PUC is the collector, since it is granted full authority to regulate, audit, and investigate, and enforce utility compliance.	Collect and Transmit UEC Funds to Welfare Division	Funds collected, appropriate refunds made on request, funds transmitted to Welfare Division	Match of PUC and Welfare Division records.
Low Income Energy Assistance Program - Welfare Division (NWD)				
Administration	The percentage of the UEC assigned to program administration is workable for administration.	Implement, Administer	Implementation in compliance with regulatory intent (NRS 702)	Interviews, Compliance Review, Analysis of Effectiveness
Assistance	Assistance will permit continued service and help with economic viability of households.	Provide targeted assistance	Assistance program components in operation. Internal support systems in place.	Interviews, Document Review
Outreach/Communications Campaign	Outreach and contact is a function that requires special effort	Enroll households	Targets met or approached in SFY 2006	Interviews, Program Records, Document Review
Program Design	Program improvement is a continuing function.	Construct annual Plan	Annual plan completed.	Interviews, Review of Plan
Coordination	Welfare Division should stay in continuing contact with stakeholders to insure continuing input of perspectives and ideas for improvement.	Communicate with and listen to stakeholders	Open Coordinating Meetings	Observe meetings, Interviews with Stakeholders
Annual Evaluation	Annual evaluation will provide useful assessment and feedback for improvement	Complete annual Evaluation	Evaluation for SFY 2006 completed.	Completion of Evaluation
Weatherization Assistance Program - Housing Division (NHD)				
Administration	The percentage of the UEC assigned to program administration is workable for administration.	Implement, Administer	Implementation in compliance with regulatory intent (NRS 702)	Interviews, Compliance Review, Analysis of Effectiveness
Energy Conservation/Efficiency Services	The means to implement the program must be developed and maintained.	Arrange services, including contracts with subgrantees, training, inspection, BWR database and reporting.	Subgrantees engaged, training maintained. Inspection, database and reporting continue.	Interviews, review of Documents
Improvements for Energy Conservation/Efficiency	Physical improvements will lower energy bills	Arrange installations	Improvements installed in homes, reporting system functional, inspections completed	Interviews, Review of Program records, systems, and documents. Analysis of Energy Savings.
Outreach/Communications Campaign	Outreach and contact is a function that requires special effort	Enroll households	Enrollment target met or approached.	Interviews, Program Records, Document Review
Program Design	Program improvement is a continuing function.	Construct annual Plan	Annual plan submitted.	Interviews, Review of Plan
Coordination	Housing Division should stay in continuing contact with stakeholders to insure continuing input of perspectives and ideas for improvement.	Communicate with and listen to stakeholders	Open Coordinating Meetings	Observe meetings, Interviews with Stakeholders
Annual Evaluation	Annual evaluation will provide useful assessment and feedback for improvement	Complete annual Evaluation	Evaluation for SFY 2006 completed.	Completion of Evaluation
<p>Note 1: Energy Assistance Authorization: Nevada Revised Statute (NRS) 702.</p> <p>Note 2: The three logic models included in this table show the interlocking logic of the Nevada Fund for Energy Assistance and Conservation.</p>				

Figure 1: Overall Logic Model.

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### III. NEEDS ASSESSMENT

While the prior section developed the fundamental logic of the program, this section of the study addresses the need for the Universal Energy Charge and the Fund for Energy Assistance and Conservation. The purpose of this needs assessment is to develop useful, policy-relevant information regarding the *size* of need for the Nevada Fund for Energy Assistance and Conservation (FEAC) and how the principal income eligibility requirement (150% of federal poverty level) fits with actual need.

In this section of the report, we discuss:<sup>23</sup>

- **Energy Burden:** The definition of “energy burden.”
- **Income Allocation:** Census data on the allocation of income in Nevada
- **Energy Prices:** The trend in residential energy prices in the West, and specifically for Nevada.
- **Eligible Households:** An estimate of the number of households eligible for UEC funding.
- **A Closer Look at Eligibility:** A brief outline of alternative methods for determining eligibility is given followed by an analysis of how those alternatives would affect eligibility formulas.

#### ***A. Defining “Energy Burden”***

“Energy Burden” is the key concept for understanding both the needs of Nevada households and Nevada’s programs to meet the needs.

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<sup>23</sup> Needs Assessments are a traditional component of program evaluations. They are necessary, in part, because needs may increase or decrease over time. Also, when program eligibility is set using a federal measure, such as the federal poverty metric, the possibility exists that material need is greater or less than is indicated by the metric. The federal poverty metric worked poorly but sufficed in the decade of the 1960s when it was introduced, based on 1950’s data and assumptions. However, over the last half century there is considerable evidence that it has become increasingly mis-calibrated with reality of need. This is the measurement question of degree of validity – how well does the operationalized metric indicate actual material need? A Needs Analysis treats this problem as a scientific question open to empirical analysis, and it can provide a basis for progressively adjusting administrative eligibility requirements to changes in actual need over time.

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## 1. Introduction to Energy Burden – A Federal Definition

The definition of energy burden is given by the US Department of Energy (US DOE), Weatherization Assistance Program as follows:<sup>24</sup>

Low-income households spend much more of their income on energy bills than do families with median incomes..... This percentage of income spent on energy is called the "energy burden," and it is substantial for some weatherization recipients. For example, some elderly recipients who live on fixed incomes pay as much as 35% of their annual incomes for energy bills.

As defined by US DOE, energy burden is *the percentage of income spent on energy*.<sup>25</sup>

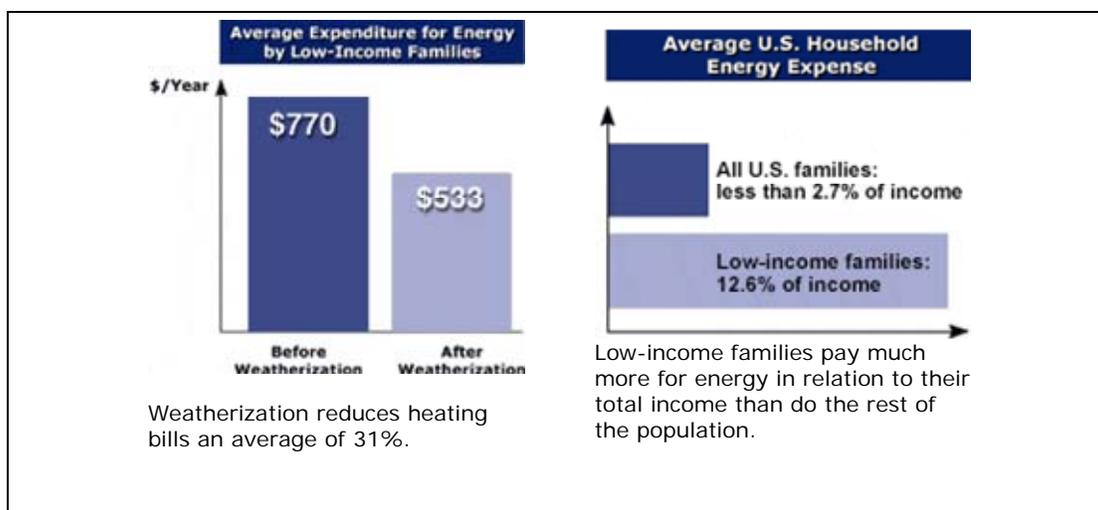
Note, however, that the federal definition is ambiguous in that the “percentage of income spent on energy” may or may not include the ancillary charges (beyond the literal commodity charge per unit of energy) bundled into the energy bills received by households.

In the above example, US DOE uses “energy cost” interchangeably with “energy bills.” While these two concepts are parts of the energy metric, they are different in amount, and this difference may be highly relevant to households. Fixed costs, fees, and penalties can be a sizable “add-on” to the commodity cost component of energy bills.

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<sup>24</sup> This definition and Figure 2 are provided for the US DOE Weatherization Assistance Program at <http://www.eere.energy.gov/weatherization/reducing.html>.

<sup>25</sup> The term "energy burden" means the expenditures of the household for home energy divided by the income of the household." [Section 2603(2), Low Income Home Energy Assistance Act (46 U.S.C. 8622)]. According to the LIHEAP Clearinghouse, Congressional committee notes further provide the recommendation to use actual bills: "...In addition, the committee urges states to use actual energy bills in determining energy burdens and designing their benefit structures" (House Report 103-483 on H. R. 4250, Committee on Education and Labor).. The committee notes are cited in "State Strategies Based on Household Income, Energy Burden and Heating Costs," Compiled by the LIHEAP Clearinghouse, February 2002 (<http://www.ncat.org/liheap/pubs/510targ.htm>).



**Figure 2: Energy Burden in the US (USDOE).**

However, the (ambiguous) federal definition of the concept of “energy burden,” is adequate to introduce the concept. Essentially, a household’s energy burden for a year is the percentage of household income that is needed to cover the cost of energy for the year.<sup>26</sup> As the federal example shows, for 2001 the average US family had a mean energy burden of 7.0% in 2001 (Figure 3, Column 4, for All Fuels and All Households).<sup>27</sup>

As is also shown in Figure 3, the *median* household energy burden in 2001 was 4.1% overall, 3% for non-low income households, and 9.1% for low income households (Figure 4, Column 4, All Fuels, by household type). The median (the middle value in a distribution) is generally considered a fairer measure than the arithmetic mean of a distribution.<sup>28</sup>

<sup>26</sup> Energy burden calculated on a seasonal and/or monthly basis may be as important as yearly energy burden in understanding payment patterns. A household may have a reasonable energy burden for “shoulder months” of the spring and fall seasons, yet encounter unworkable energy burdens in summer and winter. Levelized bills are solution developed by utilities to even out bills to eliminate these peaks. With levelized billing (“equal monthly payment plan”) it is only the yearly energy burden that is important. The billing approach solves the problem of seasonal peak bills for the households.

<sup>27</sup> Source: Reprinted from Department of Health and Human Services, *LIHEAP Home Energy Notebook for Fiscal Year 2001*, Table 2.1, Page 4.

<sup>28</sup> The mean is influenced by high values at the positive end of a distribution, the median is not.

**Table 2-1. Residential energy: Average annual household consumption, expenditures, and burden by all, non low income, low income, and LIHEAP recipient households, by main heating fuel type, United States, FY 2001<sup>1/</sup> (See also tables A-2a – A-2c, Appendix A)**

Main heating fuel	Fuel consumption (mmBTUs) <sup>2/</sup>	Fuel expenditures	Mean individual burden <sup>3/</sup>	Median individual burden <sup>4/</sup>	Mean group burden <sup>5/</sup>
<i>All households</i>					
All fuels	103.3	\$1,537	7.0%	4.1%	2.7%
Natural gas	124.5	\$1,654	7.5%	4.2%	2.9%
Electricity	60.1	\$1,227	5.7%	3.4%	2.2%
Fuel oil	137.1	\$1,966	8.1%	5.1%	3.4%
Kerosene	75.7	\$1,331	7.7%	5.4%	2.3%
LPG <sup>6/</sup>	108.3	\$1,688	8.3%	5.4%	3.0%
<i>Non low income households</i>					
All fuels	110.7	\$1,651	3.5%	3.0%	2.2%
Natural gas	131.0	\$1,750	3.6%	3.1%	2.4%
Electricity	64.7	\$1,322	2.9%	2.5%	1.8%
Fuel oil	149.4	\$2,192	4.3%	3.8%	3.0%
Kerosene	82.5	\$1,412	4.0%	3.7%	1.9%
LPG <sup>6/</sup>	112.1	\$1,732	4.2%	3.8%	2.4%
<i>Low income households</i>					
All fuels	88.5	\$1,311	14.0%	9.1%	8.9%
Natural gas	110.2	\$1,443	15.9%	10.0%	9.8%
Electricity	51.5	\$1,052	11.0%	7.1%	7.2%
Fuel oil	113.6	\$1,536	15.3%	11.4%	10.5%
Kerosene	67.9	\$1,236	12.0%	11.3%	8.4%
LPG <sup>6/</sup>	101.3	\$1,607	15.7%	11.3%	10.9%
<i>LIHEAP recipient households</i>					
All fuels	92.6	\$1,301	17.2%	12.2%	11.2%
Natural gas	122.9	\$1,504	19.5%	14.4%	12.9%
Electricity	50.3	\$998	13.8%	10.0%	8.6%
Fuel oil	98.4	\$1,450	13.9%	12.8%	12.4%
Kerosene <sup>7/</sup>	68.1	\$1,195	20.0%	12.1%	10.2%
LPG <sup>6/7/</sup>	96.2	\$1,538	21.9%	16.2%	13.2%

<sup>1/</sup>Data are derived from the 1997 RECS, adjusted to reflect FY 2001 heating degree days, cooling degree days, and fuel prices. Data represent residential energy used from October 2000 through September 2001.

<sup>2/</sup>A British Thermal Unit (BTU) is the amount of energy necessary to raise the temperature of one pound of water one degree Fahrenheit. MmBTUs or mmBTUs refer to values in millions of BTUs.

<sup>3/</sup>Mean individual burden is calculated by taking the mean, or average, of individual energy burdens, as calculated from FY 2001 adjusted RECS data. See Appendix A for information on calculation of energy burden.

<sup>4/</sup>Median individual burden is calculated by taking the median of individual energy burdens, as calculated from FY 2001 adjusted RECS data.

<sup>5/</sup>Mean group energy burden has been calculated by first calculating average residential energy expenditures from the 1997 RECS for each group of households and dividing the adjusted figures for FY 2001 by the average income for each group of households from the March 2001 CPS.

<sup>6/</sup>Liquefied petroleum gas (LPG) refers to any fuel gas supplied to a residence in liquid compressed form, such as propane or butane.

<sup>7/</sup>These figures should be viewed with caution because of the small number of sample cases.

**Figure 3: The Range of Energy Burdens.**

## 2. Energy Burden – Nevada Energy Burden

The Nevada interpretation of energy burden is currently that “energy” means the cost of energy calculated as the sum of the number kilowatt-hours used by a household times the applicable electric rate plus the number of therms used by the household times the applicable gas rate.<sup>29</sup>

<sup>29</sup> The official definition is a “commodity” definition that does not include several other components that go in to making up the energy bill.

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The estimate of median Nevada energy burden for all households computed in SFY 2005 for SFY 2006 is 3.33%.<sup>30</sup> This is the definition in use for the SFY 2006 program year.

As in prior evaluations,<sup>31</sup> we recommend that this definition be expanded by a revision to NRS 702.010 (Definitions) to include the fixed monthly charge in addition to the (current definition) variable charge.<sup>32</sup>

Nevada has set the required payment at the median household energy burden for the state (NRS 702.260.6.a). This is a significant advance over other states in two regards:

- 1) Other states have generally adopted percentages or dollar amounts, and have in some cases placed them in their state codes without a provision for updating.
- 2) The median energy burden is inherently fair and this quality of being fair will continue over time while a negotiated percentage or dollar amount might be seen as reasonable or fair at one point in time but not another.

In Nevada the median energy burden is updated each year using information on incomes provided by the State Demographer and energy usage data provided by the major electric and gas utilities.<sup>33</sup> This provides automatic adjustment for changes in costs and keeps the required payment at a fair level.

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<sup>30</sup> Nevada Fund for Energy Assistance and Conservation State Plan 2006, P. 19. For earlier years, the Nevada energy burdens were the previous estimates were 3.06% for SFY 2005, 2.90% for SFY 2004 and 4.27% for SFY 2003.

<sup>31</sup> Peach, H. Gil, Anne West, Ryan Miller, Ayala Cnaan & Luisa Freeman, *State Fiscal Year 2003 Evaluation of the NRS 702 Energy Assistance Program & Weatherization Assistance Program*, Pp. I-3 to I-4. Peach, H. Gil, Ryan Miller, Luisa Freeman & Anne West, *State Fiscal Year 2004 Evaluation of the NRS 702 Energy Assistance Program & Weatherization Assistance Program*, P. II-4, Peach, H. Gil, Mark Thompson, Luisa Freeman, Ryan Miller, Anne West, & Marcia Lehman, *State Fiscal Year 2005 Evaluation of the NRS 702 Energy Assistance Program & Weatherization Assistance Program*, P. 22 .

<sup>32</sup> However, penalties would not be included.

<sup>33</sup> This updating is an important feature of the Nevada legislation. In some states this was not as well thought through and fixed numbers were set by statutes without a provision for keeping the numbers current with the economy.

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### 3. Energy Burden – A Household Perspective

From the perspective of the person in the household who pays the bills, energy burden is a matter of the size of the total of each energy bill, pure and simple. As any household struggling with bills can tell you, the relevant feature of the bill is the “please pay” amount. If you try to talk with people about the different portions of a bill, people will be polite and let you talk about something you are interested in, but put it in the same category as if you were talking about growing apples from strawberry plants.

Of course, from an analytic perspective the different portions of a bill have different meanings and may have different causes (“cost causation”).<sup>34</sup> But, for a household struggling to pay bills it is the total “please pay” amount on the bill that matters – it is this total bill that they will pay and often skip some meals or forgo medicine to pay, or that they will not pay, or underpay in order to get winter boots for the kids, or take a child for a doctor visit, or fill a necessary prescription.

Sometimes, if a household falls behind in bill payment, the combination of late fees, penalty fees, and possibly a reconnect fee or an additional deposit can be a substantial sum beyond the energy portion of the “please pay” bill.

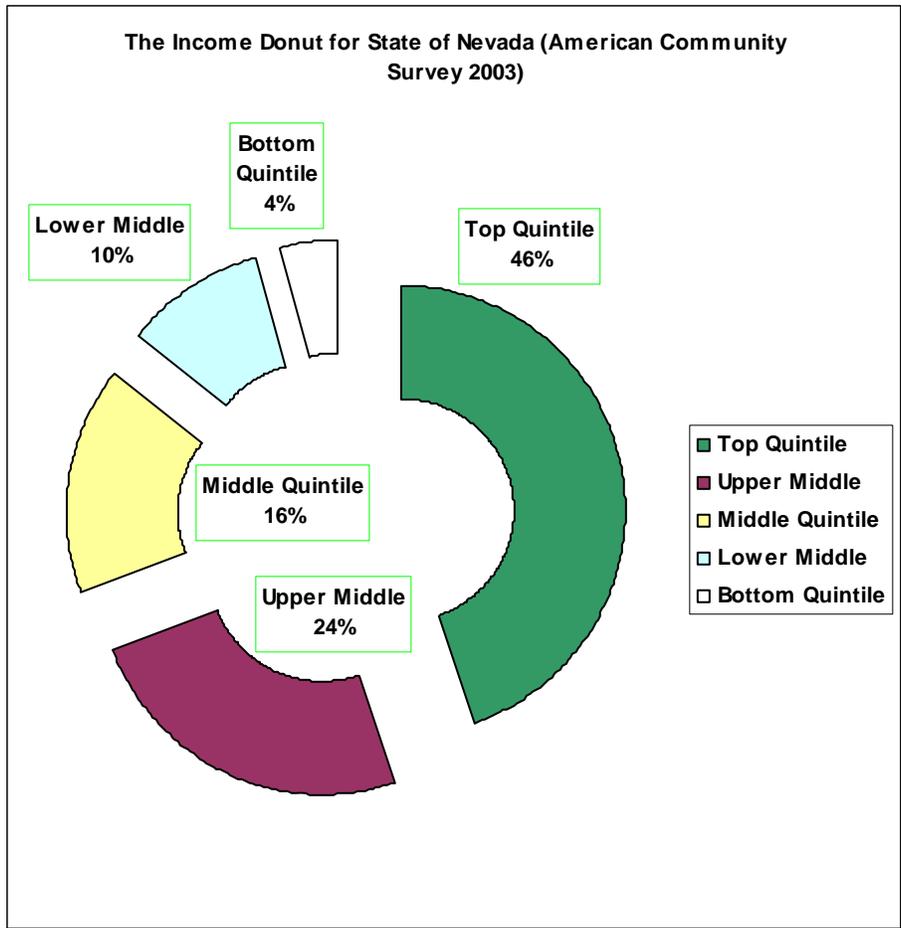
#### **B. Income Allocation**

The income donut for Nevada (Figure 10) shows why traditional cost-based determination of utility bills cannot work in the absence of transfer income to make the difference between what families are billed and the income needed to pay utility bills.<sup>35</sup>

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<sup>34</sup> But this appearance is not quite correct. At a deeper level than the “facts” as printed on a utility bill, the other location where this kind of “total bill” perspective is acknowledged to govern is in a utility Rate Department. A utility is primarily interested in “revenue recovery” and “cost of service” recovery. Discussions in utility rate departments begin and end with a focus on total recovery. In between, there is a “cost of service” study that allocates costs according to “cost causation.” The primary division of customer bills is a division of the billing arrangement into fixed and variable portions of the customer bill. These primary divisions and other bill components (along with state or national policies which may cause additional components to be broken out) sum to the total “please pay” amount. However, the rational components of bills that then become the factual focus for collections or regulatory treatment are also essentially *strategies* (or functional arguments of different kinds). In a span of years over which customer energy bills are rising it is generally a utility strategy to shift costs to the fixed portion of the bill. A higher allocation of costs to the fixed portion of the bill, which is charged uniformly across residential customers regardless of energy use, provides for more stable recovery of costs when energy prices are increasing.

<sup>35</sup> Household income is derived as payment for work (for example, wages, salary), and small amounts of interest or dividends) or as transfer income through social programs. If the job structure does not provide income necessary to meet ordinary social costs of living, there is no alternative but to provide it through transfer income. Transfer income can take many forms, including direct assistance and, for example, public funding of community facilities such as parks, police departments, and fire departments which provide public services for all households, regardless of income



**Figure 4: Income Donut – Income Allocation in Nevada.**

Each part of the donut represents twenty-percent of Nevada households. Clearly, households in the bottom quintiles by income cannot be expected to pay cost-based bills without a transfer mechanism such as the Nevada Energy Assistance Program to make payment possible.

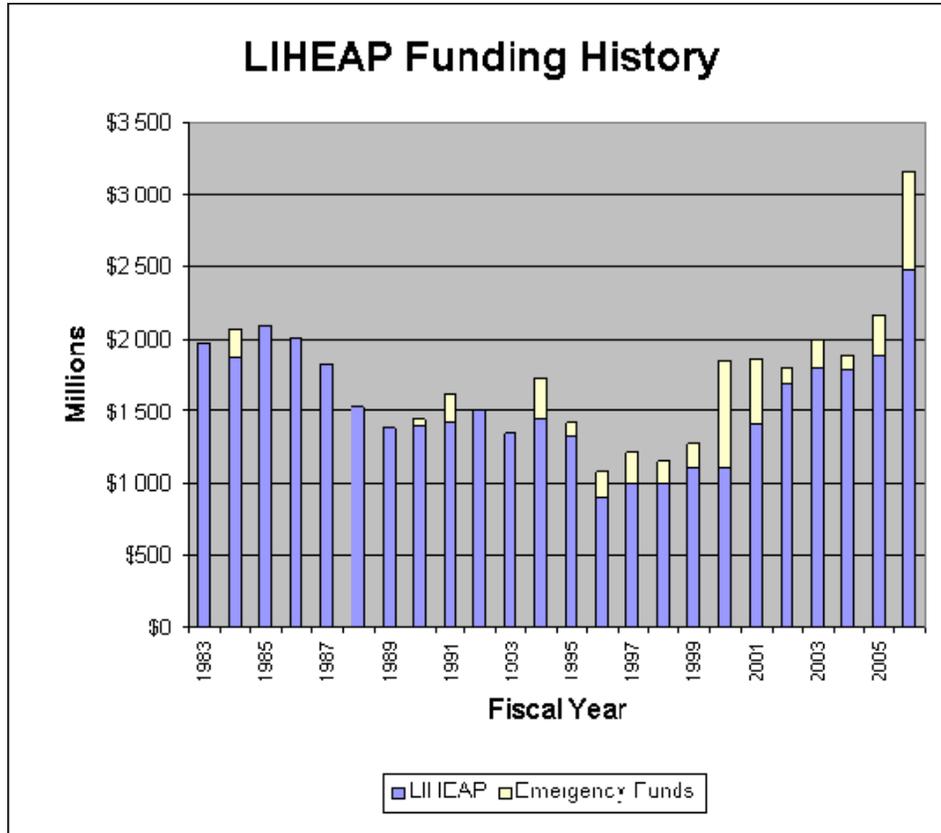
In particular, households in the bottom quintile simply are not allocated the resources through the system of employment and income that, in the past, was a hallmark of American life. With only four percent of household income, there is no way to deal with continually rising energy prices without the Universal Energy Charge programs.<sup>36</sup> For the upper quintiles utility bills should be little or no problem, and traditional cost of service pricing continues to be functional.

<sup>36</sup> See Section F, “Traditional Solutions Help, But Fail to Meet Need” in Section II of this report.

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**C. Federal Funding: Very Helpful, Erratic, not Calibrated to Need**

Federal funding of the Low Income Home Energy Assistance Program is shown in nominal dollars in Figure 5.<sup>37</sup>



**Figure 5: LIHEAP Funding History.**

Beyond LIHEAP, the full picture of federal low-income energy program funding (LIHEAP plus the Weatherization Assistance Program) is shown in Table 2.

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<sup>37</sup> Source: National Center for Appropriate Technology, LIHEAP Clearinghouse, LIHEAP Funding History, updated September 12, 2006 (<http://www.liheap.ncat.org/Funding/lhemhist.htm>). The LIHEAP Clearinghouse is a project of the US Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance.

**NATIONAL LOW-INCOME ENERGY PROGRAMS FUNDING HISTORY  
HISTORY OF FUNDING FOR THE UNITED STATES**

FEDERAL FISCAL YEAR	NOMINAL DOLLARS									
	LIHEAP	EMERG	PVE/LH	LH LEV	WAP	PVE/WAP	WX LEV	OTHER	Total	
	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 9	Col. 10	Col. 11
1985	2,100		6		191	38				2,335
1986	2,010		27		200	62				2,299
1987	1,825		185		160	145				2,315
1988	1,532		160		160	205				2,057
1989	1,383		174		160	199				1,916
1990	1,393	50	111	126	162	158	554			2,554
1991	1,415	195	98	404	199	80				2,391
1992	1,500		79	493	194	57				2,323
1993	1,346		57	567	185	48				2,203
1994	1,439	298	19	623	207	29				2,615
1995	1,319	100	13	638	215	20				2,305
1996	900	180	11	575	112	22		600		2,400
1997	1,000	215		587	121	22				1,945
1998	1,000	160		535	129					1,824
1999	1,100	180		623	133					2,036
2000	1,100	744		684	135					2,663
2001	1,400	456		1,140	153					3,149
2002	1,700	100		1,322	230					3,352
2003	1,800	200		1,638	223					3,861
2004	1,789	99		1,888	227					4,003
2005	1,885	298			228					2,411
2006	2,480	680			240					3,400

Note: Entries in this table are in U.S. billions of dollars (in the U.S., "billion" is a "short scale" measure, equivalent to 10<sup>9</sup> or "one thousand million" dollars). Data shown in this table is provided by the National Center for Appropriate Technology (NCAT), in the table, "Low-Income Energy Programs Funding History 1977-2006 (<http://liheap.ncat.org/Funding/lhist.htm>).

**Table 2: Federal Funding (Nominal Dollars).**

Both Figure 5 and Table 2 give the appearance of growing federal funding levels. However, the appearance is deceptive. Federal LIHEAP funding has declined since 1985, even as the intensity of need has increased and the incidence of need has grown with increasing US population. Federal funding in real (2006) dollars is shown in Table 3.

National Funding History (REAL DOLLARS)			
FEDERAL FISCAL YEAR	REAL DOLLARS		
	\$	%Change From Prior Year	%Change From 1985
	(2006 \$)	(2006 \$)	(2006 \$)
Col. 1	Col. 9	Col. 10	Col. 11
1985	4,373		
1986	4,227	-3.3%	-3.3%
1987	4,106	-2.9%	-6.1%
1988	3,507	-14.6%	-19.8%
1989	3,114	-11.2%	-28.8%
1990	3,938	26.5%	-9.9%
1991	3,537	-10.2%	-19.1%
1992	3,336	-5.7%	-23.7%
1993	3,072	-7.9%	-29.8%
1994	3,555	15.7%	-18.7%
1995	3,048	-14.3%	-30.3%
1996	3,082	1.1%	-29.5%
1997	2,442	-20.8%	-44.2%
1998	2,255	-7.7%	-48.4%
1999	2,463	9.2%	-43.7%
2000	3,116	26.5%	-28.7%
2001	3,583	15.0%	-18.1%
2002	3,352	-6.4%	-23.3%
2003	4,228	26.1%	-3.3%
2004	4,270	1.0%	-2.4%
2005	2,488	-41.7%	-43.1%
2006	3,400	36.7%	-22.3%

Note: Entries in this table are in U.S. billions of dollars (10<sup>9</sup> dollars). The US Department of Labor, Bureau of Labor Statistics Inflation Calculator was used to convert nominal dollars to constant 2006 dollars (<http://www.bls.gov/home.htm>).

**Table 3: Federal Funding (Real Dollars).**

Table 3 shows that even with the emergency funding following the hurricanes of 2005, the overall federal funding for 2006 was twenty-two percent less than in 1985.

Table 3 also shows the erratic allocation of federal funds from year to year. This erratic funding pattern has occurred against a context in which intensity of need is increasing and population size is also increasing.

#### ***D. Nevada Federal Allocation: Very Helpful, but Erratic***

Table 4 shows the value of the total Nevada LIHEA allocation from 1983 through 2006.<sup>38</sup> Note that the increase for 2006, which represents the federal effort to

<sup>38</sup> The LIHEA table (Table 3) was provided by the Division of Welfare and Supportive Services.

address the dramatic run up in natural gas prices following the hurricanes of 2005, provided a one-time restoration of LIHEA funds to just beyond Nevada's 1985 funding level for the federal program for Nevada in real dollars (Column 9).<sup>39</sup> Yet in other years, federal funding dropped as much as 69% from the 1985 funding level (Column 11) and the year to year change in the Nevada allocation is erratic, while both population and need has continued to increase over this span of years.

LOW INCOME HOME ENERGY ASSISTANCE (LIHEA) PROGRAM HISTORY OF FEDERAL FUNDING FOR NEVADA										
FEDERAL FISCAL YEAR	NOMINAL DOLLARS							REAL DOLLARS (2006\$)		
	LIHEA BLOCK GRANT AWARD	LEVERAGING FUNDS	CONTINGENCY FUNDS	PVE FUNDS (OIL OVERCHARGE)	REALLOTMENT OF FUNDS	TOTAL FUNDS AWARDED	% Change From Prior Year	\$	% Change (2006 \$)	% Change from 1985 Total
Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9	Col. 10	Col. 11
1985	4,150,000					4,150,000		7,771,608		
1986	4,010,000					4,010,000	-3.4%	7,372,400	-5.1%	-5.1%
1987	3,540,000			500,000		4,040,000	0.7%	7,166,021	-2.8%	-7.8%
1988	2,980,000			2,041,859		5,021,859	24.3%	8,553,716	19.4%	10.1%
1989	2,690,000			1,336,195		4,026,195	-19.8%	6,542,587	-23.5%	-15.8%
1990	2,711,280			1,530,000		4,241,280	5.3%	6,538,775	-0.1%	-15.9%
1991	2,754,004		453,452	1,816,700		5,024,156	18.5%	7,429,549	13.6%	-4.4%
1992	2,870,660	242,217		700,000		3,812,877	-24.1%	5,476,085	-26.3%	-29.5%
1993	2,576,577	229,102		700,000		3,505,679	-8.1%	4,888,542	-10.7%	-37.1%
1994	2,754,413	176,024				2,930,437	-16.4%	3,984,366	-18.5%	-48.7%
1995	2,512,907	97,672				2,610,579	-10.9%	3,451,651	-13.4%	-55.6%
1996	1,710,491	156,931	351,152			2,218,574	-15.0%	2,849,220	-17.5%	-63.3%
1997	1,901,586	60,611	355,425			2,317,622	4.5%	2,909,663	2.1%	-62.6%
1998	1,901,586	60,906				1,962,492	-15.3%	2,426,025	-16.6%	-68.8%
1999	2,091,007	122,121				2,213,128	12.8%	2,676,742	10.3%	-65.6%
2000	2,091,695	90,447	816,470		969	2,999,581	35.5%	3,509,963	31.1%	-54.8%
2001	2,676,949	64,581	741,169			3,482,699	16.1%	3,962,529	12.9%	-49.0%
2002	3,262,202	168,143	1,312,645			4,742,990	36.2%	5,312,465	34.1%	-31.6%
2003	3,434,814	182,704	263,451			3,880,969	-18.2%	4,250,083	-20.0%	-45.3%
2004	3,436,889	559,849	77,573			4,074,311	5.0%	4,346,076	2.3%	-44.1%
2005	3,623,152	431,791	348,337			4,403,280	8.1%	4,543,067	4.5%	-41.5%
2006	7,111,698	972,107	134,993			8,218,798	86.7%	8,218,798	80.9%	5.8%

Note: Grant table (Columns 1-8) provided by Division of Welfare and Supportive Services. Real values, based on 2006 dollars were developed for the evaluation using the US Department of Labor, Bureau of Labor Statistics Inflation Calculator (<http://www.bls.gov/home.htm>).

**Table 4: Nevada LIHEA Federal Funding History.**

In addition to the erratic nature of the federal LIHEAP allocation from year to year, the federal funding formula is tilted towards the needs of the Northeastern states.<sup>40</sup>

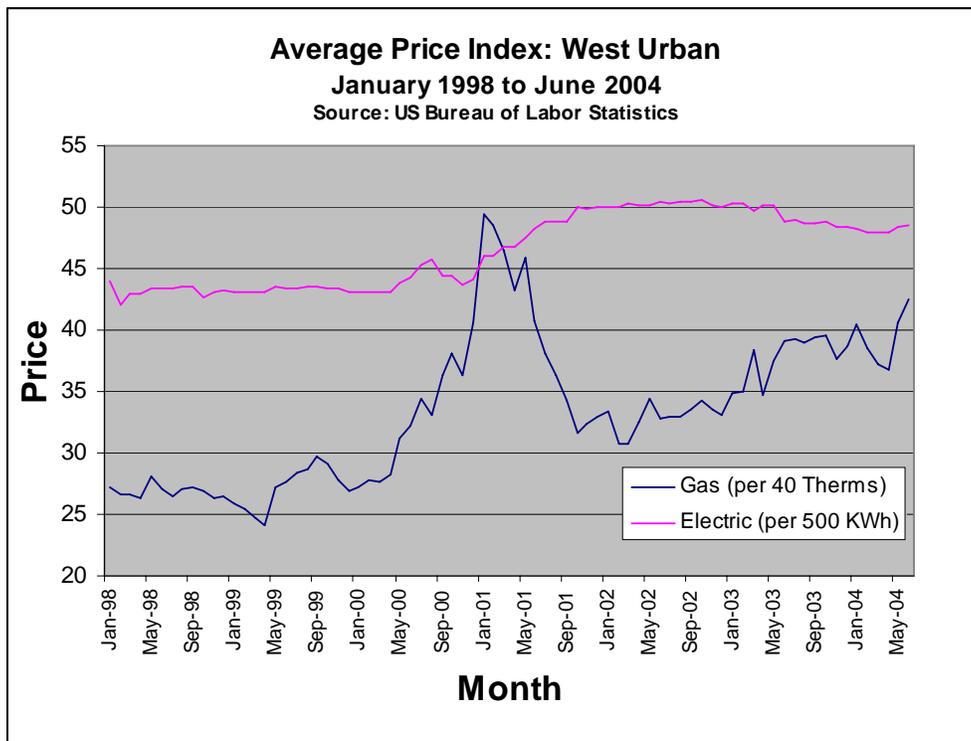
<sup>39</sup> Due to a federal funding formula that favors cold weather states; in most years Nevada does not receive what might be considered a fair allocation of funds. Hot weather states and states that combine hot and cold climate zones do receive a better proportion of funds in years in which the federal allocation is large, in that funds above a certain cap amount are distributed according to a different funding formula that better serves the Western and Southern states (see Footnote 38).

<sup>40</sup> The federal program was championed by legislators from the Northeastern and Midwestern states in the early 1980's, and the funding formula does not take into account subsequent population shifts to the Western states. The funding is targeted toward dealing with the problem of cold weather, even though deaths from heat waves in the hot weather states exceed deaths from energy shutoffs in the cold weather states. There is a supplemental funding formula that balances more towards the

More fundamentally, even at its peak, federal LIHEA funding could only meet a small fraction of the actual need. In summary, the federal program is very valuable and useful to Nevada; it's funding, however, is variable and undependable from year to year. The emergency federal allocation for 2006 only returned the program to slightly above its original funding level for one year, a level that is far below the level of need that already existed prior to the current ramp-up in energy prices.

**E. Energy Prices Trend Upwards in the West**

According to the US Bureau of Labor Statistics, natural gas prices have increased substantially since January of 2000 in urban areas in the West. Figure 6 shows the average electric and gas utility price from January 1998 to June 2004. Even with the decline from the peak indicated at the beginning of 2001 the graph indicates a tendency for an overall, steady increase in price. While there will be fluctuations about this trend, both up and down, prices are likely to continue to move upwards.



**Figure 6: Average Gas & Electricity Price Indexes: West, Urban.**

Southern and Western states but it does not become active except in years in which funding exceeds \$1.975 billion, which is usually not exceeded. See, Smith, Rebecca, "Policy Disconnect, In Aid for the Poor, Hotter States Get the Cold Shoulder," *The Wall Street Journal*, Thursday, August 18, 2005, Vol. CCXLVI, No. 34, P. A-1, continued on P. A-7.

## F. Nevada Energy Prices Move Upwards

Table 5 contains data specific to the Nevada energy market collected by the Consumer Protection Bureau of the State of Nevada Attorney General's Office.<sup>41</sup>

Average Monthly Bills by Utility (2004 Constant Dollars)					
	SWG South	SWG North	NVP	SPPC Gas	SPPC Electric
1978	*	\$74.92	*	*	*
1979	\$97.02	\$78.43	\$66.09	*	*
1980	\$78.36	\$99.77	\$70.42	*	\$118.53
1981	\$76.14	\$112.54	\$66.14	\$100.92	\$111.31
1982	\$95.33	\$119.46	\$75.54	\$136.43	\$110.96
1983	\$99.83	\$128.23	\$70.56	\$135.38	\$119.92
1984	\$109.02	\$122.90	\$74.19	\$131.39	\$116.60
1985	\$97.81	\$110.33	\$77.88	\$117.33	\$115.25
1986	\$79.73	\$92.06	\$73.24	\$101.46	\$114.11
1987	\$77.84	\$86.24	\$67.10	\$96.66	\$102.59
1988	\$80.80	\$85.55	\$62.65	\$98.26	\$99.91
1989	*	*	\$60.48	*	\$94.05
1990	\$70.42	*	\$55.23	\$82.15	\$88.28
1991	\$67.58	\$72.08	\$57.78	\$70.85	\$81.78
1992	\$64.75	\$69.94	\$59.05	\$64.32	\$83.19
1993	\$69.65	\$78.23	\$63.45	\$70.07	\$85.97
1994	\$75.46	*	\$65.47	\$75.66	*
1995	\$68.32	\$73.78	\$62.59	*	\$82.38
1996	\$60.51	\$65.72	*	*	*
1997	\$66.67	\$77.32	\$57.10	*	\$76.95
1998	\$72.63	\$79.42	\$59.15	*	*
1999	\$66.37	\$72.25	\$59.23	*	*
2000	\$65.67	\$77.72	\$61.16	*	\$74.74
2001	\$92.10	\$122.70	\$65.22	\$93.84	\$81.67
2002	\$66.93	\$113.70	\$77.74	\$103.62	\$77.68
2003	\$73.46	\$99.24	\$68.82	\$99.82	\$76.16
2004	\$85.17	\$110.21	\$75.83	\$100.56	\$85.70

**Table 5: Utility Bills in Nevada, 1978 to 2004 (\$2004)**

This table shows the annual change of the average monthly bill seen by energy consumers in the five major energy markets in Nevada from 1978 to 2004 *in constant 2004 adjusted dollars*. The figures show that bills reached a peak in the early 1980's

<sup>41</sup> The evaluation team would like to thank Bob Cooper of the Attorney General's Office for providing the information for Table 4.

then dropped to a relatively constant level through the 1990's only to rise again in the early 2000's.

Figures 7 through 9 chart the data presented in Table 3. Some data in the late 1980's and 1990's is missing from the CPB data; however, the general trend is evident.

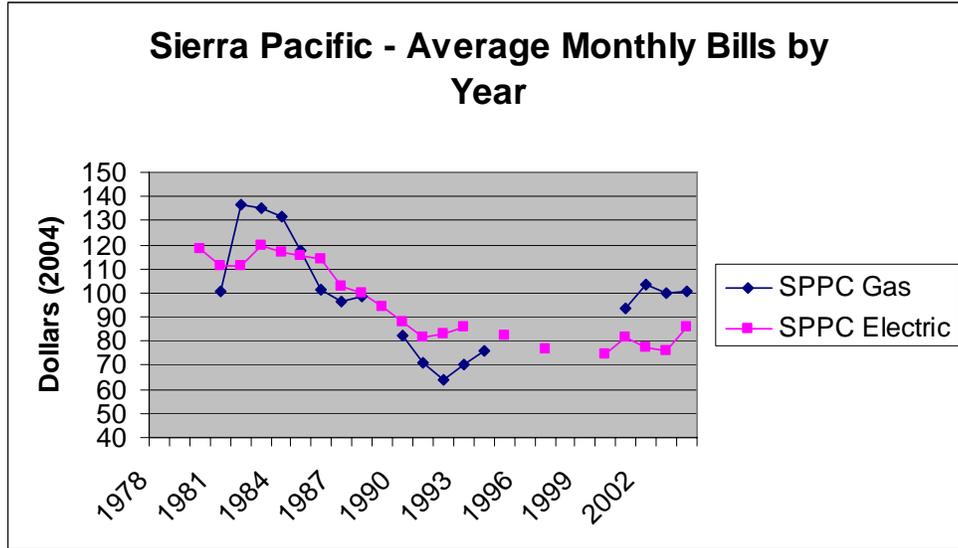


Figure 7: Sierra Pacific Average Monthly Bills (\$2004)

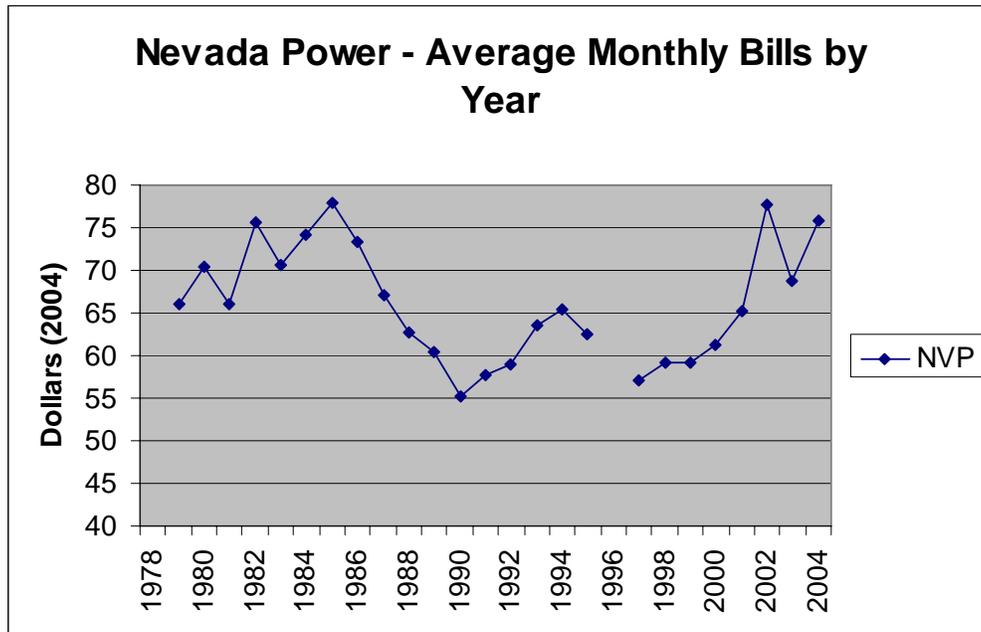
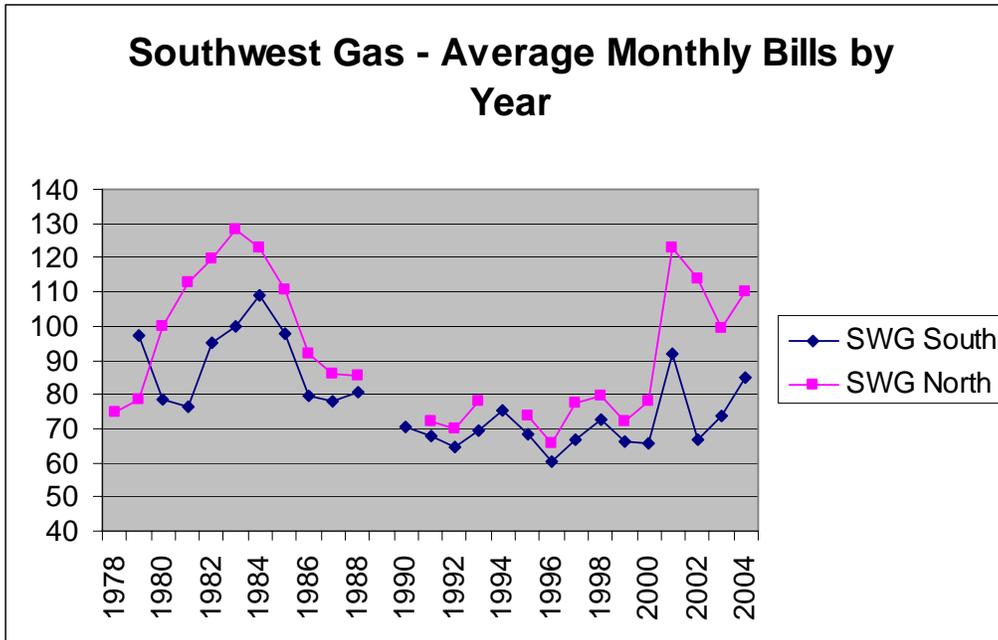


Figure 8: Nevada Power Average Monthly Bills (\$2004)



**Figure 9: Southwest Gas Average Monthly Bills (\$2004)**

Given the market adjustments in the fall of 2005 in reaction to hurricanes Katrina and Rita and the increase in the cost of home heating across the US in the winter of 2006, the upward trend in cost of energy to households appears set to continue. Over the summer and fall of 2006, gas reserves increased and the surge in gas pricing subsided on a year over year basis. It is likely that this supply situation will last into the early months of 2007. However, the long-term projection is for increased demand, tighter supply, and gradually increasing prices.

Taken together, the income allocation and the price trends illustrate why cost-based rates for energy services can no longer work for low income and some middle income households.<sup>42</sup>

### ***G. Number of Eligible Households***

The question of the number of eligible households has at least two answers. The first is the number of Nevada households at or below 150% of the federal poverty level (FPL). This is the NRS 702 income eligibility for the Universal Energy Charge programs. The second answer is the result of a “needs analysis” that looks at where eligibility should be set if it is to clearly correspond to need in the way that

<sup>42</sup> The distribution of Income in the United States is moving increased income towards very high income groups in the upper one-percent of households and above and removing income from the bottom income groups, especially from low-income families with children.

households actually experience need. The first answer gives us the current number of potentially eligible households. The second answer indicates how eligibility should be changed under better approaches to assessing need. In the interest of fairness of treatment, Nevada has opted to run its Universal Energy Charge programs in harmony with their federally funded counterparts. The federal program permits states to run their programs at from 110% of the federal poverty level or to either 150% of the federal poverty level or 60% of state median income (adjusted by family size).<sup>43</sup> Nevada has selected the 150% of poverty option in NRS 702, which implements the Universal Energy Charge programs.

*1. A First Answer (Number of Households at 150% of Poverty)*

There are approximately 240,600 households meeting the current income criteria for the programs (Table 6).

<b>Calculation of Eligible Households (150% of Federal Poverty Level)</b>
Nevada Population (Census 2000, P88): 1,962,948 Persons Nevada Households (Census 2000, P93): 751,977 Households Ratio of Persons/Household: 2.61 Persons/Household
2005 Nevada Population Estimate (Nevada State Demographer): 2,518,869 2005 Equivalent Households: $(2,518,869/2.61) = 965,084$ Households
Households under 150% of Poverty (Census 2000, P93): 187,481 Households Ratio to All Nevada Households (based on Census 2000): 0.2493 (or about 25% of Households)  2005 Estimated Households under 150% of Poverty:  $(0.2493 * 965,084) = 240,600$ Households
Data Sources:  (1) P88. Ratio of Income in 1999 to Poverty Level – Universe: Population for whom poverty status is determined. Data Set: Census 2000 Summary File 3 (SF 3) – Sample Data  (2) P93. Ratio of Income in 1999 to Poverty Level by Household Type – Universe: Household Data Set: Census 2000 Summary File 3 (SF 3) – Sample Data  (3) Nevada State Demographer, “2005 Estimates by County” on website: <a href="http://www.nsbdc.org/what/data_statistics/demographer/pubs/pop_increase/">http://www.nsbdc.org/what/data_statistics/demographer/pubs/pop_increase/</a>

**Table 6: Calculation of Number of Income-Eligible Households.**

<sup>43</sup> Section 2605(b)(2)(B) of Public Law 97-35 establishes 60 percent of a state's median income as the maximum income allowed in determining income eligibility for LIHEAP, except in states where 150 percent of the poverty guidelines is higher. LIHEAP grantees may set their income eligibility guidelines anywhere between the maximum and minimum poverty guidelines.

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## 2. *Problems of the Federal Poverty Metric*

However, it is generally understood that the federal poverty metric, developed a half-century ago was poorly constructed. Further, it was based on 1950's data as well as a national economy much more prosperous for most households than the current economy. The mid-20<sup>th</sup> Century poverty metric was an advance in that it was the first fully accepted national metric for poverty. However, it was only a first step towards a valid metric. Many more technical steps need to be taken to tighten the metric so that it can reflect material need as experienced by households today. Also, although the poverty calculation is updated each year, the procedure for updating does not address the basic flaws inherent in its system of measurement. Never an adequate measure to start with, the federal poverty metric has gone increasingly out of calibration to the material reality of need experienced by households.

- The inadequacy of the current federal metric is evident in that federal energy assistance and weatherization programs are targeted at 150% of poverty in some states, rather than at the official poverty level (that is, the federal government itself does not use “100% of poverty” as a true indicator of need). Instead a multiple is used for actual program eligibility purposes. On its face, this is an admission by the federal government that federally defined “poverty” is not what people experience or mean by poverty. At a minimum, real poverty is some multiple of federal poverty.
- Some states run their programs at 200% of the federal poverty level. Massachusetts, for example, uses 200% of poverty for both energy payment assistance and weatherization assistance. Sixty percent of state median income translates to about 200% of the federal poverty level in some states; in other states it translates to 175% or 180% of the federal poverty level.

The basic perspective for an evaluation is that the problem of need is an empirical question that requires new and careful measurement and documentation. The question cannot be resolved simply by application of the federal poverty metric, a metric that is seriously flawed.

At the same time, across the states, regardless of federal definitions, state mandated weatherization programs often run at 175% of poverty or 200% of poverty when state funding or state directed utility funding is applied. When states opt independently to move to the higher option, or when they develop “gap programs,” this is an indicator that the simple federal poverty metric does not work well for indicating actual need.

## 3. *Number of Households at other Levels of Poverty*

For Nevada, if the income level for eligibility were raised to 175% of poverty, approximately 299,000 households would meet the income criteria; if eligibility were raised to 200% of poverty, about 356,000 households would meet the income criteria

(Table 7). These estimates are based on 2000 Census data and 2005 population estimates from the State of Nevada Demographer.<sup>44,45</sup>

### Households at 175% and 200% of Federal Poverty Level

Income Group	Number of Persons (Census 2000)		Number of Persons (2005)		Number of Households (2005)	
	Number	Percentage	Number	Percentage	Number	Percentage
< 150% FPL	367,114	18.70%	471,083	18.70%	240,500	24.90%
< 175% FPL	456,012	23.20%	585,158	23.20%	298,800	31.00%
< 200% FPL	543,135	27.70%	696,955	27.70%	355,000	26.90%
All Nevada	1,962,948	100.00%	2,518,869	100.00%	965,000	100.00%

**Notes:**

- (1) In 2005, Nevada's population for 2005 was 2,518,869 (source: Nevada State Demographer).
- (2) For 2005, Nevada's population is 1.283 times larger than it was in 2000.
- (3) In 2000, Nevada's population was 1,962,248 (source: Census 2000, P88).
- (4) In 2000, Nevada had 751,977 households (Census 2000, P93).
- (5) In 2000, for Nevada (overall) the number of persons per household was 2.61.
- (6) In 2000, the number of persons at 150% of Poverty or less was 367,114 (Census 2000, P88).
- (7) In 2000, 128,763 Nevada households were at 140% of Poverty or less (Census 2000, P93).
- (8) In 2000, for households of 150% of Poverty or less, persons per household was 1.958.

**Table 7: Households at 175% and 200% of Federal Poverty Level.**

This discussion of how loosely the federal poverty metric is tied to the material reality of need suggests the importance of determining need through actual empirical study, rather than simply applying an eligibility criterion established in law. The best current scientific studies of poverty use the “income insufficiency” approach based on actual family budgets.

<sup>44</sup> Census data obtained from <http://www.census.gov>. State of Nevada Demographer data obtained from [http://www.nsbdc.org/demographer/pubs/pop\\_increase.html](http://www.nsbdc.org/demographer/pubs/pop_increase.html). The Census data comes from tables P88 and P93 of Summary File 3. Individual ratio-of-income to poverty data taken from table P88 is divided by the average household size. This table is then normalized to the number of households at 150% poverty taken from table P93 to give a household estimate of ratio-of-income to poverty level.

<sup>45</sup> The number of eligible households will increase as Nevada population grows. Nevada is expected to almost double its population by 2026, adding approximately 1,850,000 persons, according to the Nevada State Demographer ([http://www.nsbdc.org/what/data\\_statistics/demographer/pubs/estimates/](http://www.nsbdc.org/what/data_statistics/demographer/pubs/estimates/)) projection of “Total Increase in Population 2005 to 2026”).

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## **H. A Realistic Assessment of Need – Income Insufficiency**

The current standard used to calculate eligibility for participation in low income programs is the Federal Poverty Level (FPL). A different metric, the *self-sufficiency standard*, allows for an alternative definition of eligibility.<sup>46</sup> The sufficiency standard is relatively new and is not yet reflected in law. However, it is based on one of the earliest measures of poverty used by sociologists and social workers – the family budget. The virtue of “family budget” studies is that they track the actual budgets required to support the currently established level of living in a community or region, taking actual family characteristics (size, composition) and actual institutional relationships (school, work, transportation) into account. Thus, the “family budget” study reflects actual cost of living (transportation to work, child care if two adults in the family are working, actual cost of food, actual housing cost of housing in the area, etc – see Table 8). This method of determining the “self-sufficiency standard,” and, conversely, demonstrating the existence and degree of income insufficiency is both more valid and more accurate as an indicator of poverty than the old federal poverty metric, based as it is on invalid assumptions about the relation of food cost to all other costs, the assumption of two-parent families with one adult at home, and other assumptions that were more accurate in the 1950s but are unrealistic today. The self-sufficiency standard comes much closer to representing the actual needs of households and families than does the federal metric.

<b>Cost Categories</b>
<b>Monthly Housing</b>
<b>Monthly Food</b>
<b>Monthly Child Care</b>
<b>Monthly Transportation</b>
<b>Monthly Health Care</b>
<b>Monthly Other Necessities</b>
<b>Monthly Taxes</b>
<b>Monthly Total</b>
<b>Annual Total</b>

**Table 8: Example of Cost Categories in the Family Budget Approach.**

The development of the self-sufficiency standard was required to take into account many critical problems in the calculation of the Federal Poverty Level (FPL). The FPL is based on the concept that food is one third of the income expenditure of American people. This was not a good estimate in the mid-1960’s when the metric was created using data from the late 1950’s, but it sufficed. Since that time, although

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<sup>46</sup> For an Internet calculator for basic family budgets and downloadable state tables, see the Economic Policy Institute website ([http://www.epinet.org/content.cfm/datazone\\_fambud\\_budget](http://www.epinet.org/content.cfm/datazone_fambud_budget)). For an explanation of methodology see Allegretto, Sylvia A. and Yulia Fungard, Family Budget Technical Documentation ([http://www.epinet.org/datazone/fambud/fam\\_bud\\_calc\\_tech\\_doc.pdf](http://www.epinet.org/datazone/fambud/fam_bud_calc_tech_doc.pdf)).

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the poverty level is updated each year to take into account the change in the real value of the dollar, it has gone out of calibration.<sup>47</sup> *The federal numbers severely under-represent actual poverty.*

As noted above, the existence of federal program guidelines based on 150%, 175%, and, 200% of the Federal Poverty Level indicates practical adjustments to a defective metric. For example, the federal standard for LIHEAP is 150% of poverty or 60% of state median income, rather than the poverty level.<sup>48</sup> These adjustments attempt to take into account the failed calibration of the poverty metric but do so only in part. In general, there is strong consensus that Federal Poverty Levels do not accurately indicate actual need as experienced by households.

The correction offering the least administrative burden is to set program eligibility levels at multiples of the official Federal Poverty Level. For example, in Nevada LIHEA eligibility is currently set at 150% of poverty. Similarly, state mandated energy assistance is set at 150% of poverty and weatherization is set at 200% of poverty in Pennsylvania. In November of 2004, Pennsylvania extended protections against utility shutoffs to 250% of poverty up from the 150% standard that was set in 1992. In the fall of 2006, a draft Pennsylvania order will raise the payment assistance eligibility to 175% of poverty. In Massachusetts, the LIHEAP eligibility level is 200% of poverty. One component of the low-income weatherization program in Massachusetts, the Good Neighbor Program, goes to 275% of poverty to be able to provide services to households in which one or more persons are working full time at less than a living wage. In California, LIHEAP eligibility is set at sixty percent of state median income, which, for California, is slightly higher than 200% of poverty.<sup>49</sup>

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<sup>47</sup> There are many questions regarding even this fundamental adjustment due to changes to and substitutions in the calculation of the Consumer Price Index. There is considerable evidence that several adjustments to the calculation of the CPI (including hedonic adjustments and the treatment of housing costs in the CPI) bias the use of the index in adjusting actual costs of low and moderate income families. There is also a question of whether a single federal CPI makes sense as incomes become more disparate. Currently, the "Consumer Price Index for All Urban Consumers" (CPI-U) is most often used to adjust for price changes. However, the concept that a single adjustment works for families in poverty and families in, say, the upper twenty percent of the distribution of household incomes is not highly credible. It is highly likely that federal CPI adjustments significantly understate loss of real income to low-income households. Note that defects, if any, in the CPI metric are separate from defects in the federal poverty metric. Both combine in method that amplifies the understatement of actual need.

<sup>48</sup> Because evaluations are generally more useful if they recommend conservative steps in most recommendation areas and due to the large problems that would be involved in moving away from some level of the federal metric, a recommendation in the SFY 2003 evaluation was to move from 150% of poverty to 60% of the Nevada median income, an option that is provided for in the federal program. This recommendation was repeated in the SFY 2004 evaluation and the SFY 2005 evaluation. In the current evaluation, we instead recommend 200% of poverty (or as close as can be pragmatically negotiated to maintain parity of federal programs) as a simpler goal. As shown in Table 9, 60% of Nevada median income is roughly equivalent to 200% of the federal poverty metric.

<sup>49</sup> This is coupled with a 20% rate discount for utility customers below 175% of poverty through the California Alternate Rates for Energy (CARES) program. Utilities also offer a Medical Baseline Program (or similar program) that can provide a small allotment of energy (therms or kWh) at the

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Although it takes more work to calculate, the family budget approach used by the Self-Sufficiency Project is more accurate than the federal poverty level metric.

- As a rule of thumb, mathematically recalibrating the FPL to its original relation to median income would lead to a criterion of 200% or more of the current federal poverty level.<sup>50</sup> This, then, is a conservative base required for fairness in order to recapture the coverage of the poverty programs in the 1960s during the War on Poverty and compensate for economic erosion since.
- However, 250% of poverty or somewhat higher is the level at which poverty is no longer experienced if we take into account additional needs such as a car, the ability to deal with more than minor medical needs, to permit a child to attend college, or the ability to put aside some resources for retirement. These are all reasonable needs, and part of normal expectations in our society.

The bottom line is that the federally defined poverty criteria have become seriously mismatched to the actual situation of poverty as experienced by households. Being above 100% of poverty level today means little because the federal system for assessing poverty is out of calibration with lived experience of families and households. By 1992, the 150% of Federal Poverty Level captured a good bit of slippage in the federal indicator system. The 200%+ level is more accurate today, (December 2006). But, to be certain, the 250% of the Federal Poverty Level begins to indicate the rate at which poverty is actually not experienced and a minimal but decent level of family living over the full lifespan is supported.<sup>51</sup>

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lowest tier price and exemption from a surcharge. For households of three or more persons, California investor-owned utilities providing electric service also offer the Family Electric Rate Assistance (FERA) program which provides rate discounts to households up to approximately 250% of poverty when they exceed their baseline usage by 30%-100%.

<sup>50</sup> Calculation performed based on data presented in Figure 2, P. 11 in Pearce, Diana & Jennifer Brooks, "The Self-Sufficiency Standard for Pennsylvania, Summary Report." Swarthmore, Pennsylvania: Women's Association for Women's Alternatives: 1998. See also, Pearce, Diana & Jennifer Brooks, *The Self Sufficiency Standard for Nevada*. Prepared for the Progressive Leadership Alliance of Nevada, 2002. In addition, see, "Working Hard, Living Poor, Part I: Nevada: Basic Needs and a Living Wage," A Report by the Progressive Leadership Alliance of Nevada, Susan Chandler, MSW, Ph.D., Project Research Director & Alicia Smalley, MSW, Research Assistant, August 2001. Progressive Leadership Alliance of Nevada, [www.Planevada.org](http://www.Planevada.org).

<sup>51</sup> The Self-Sufficiency calculation of 200% of the Federal Poverty Level does not allow for purchase of a car or other major items, provision for retirement, college for a child, or the ability to deal with family emergencies. The most recent state Self-Sufficiency studies move need higher than 250% of poverty for some typical family structures.

**I. Comparison of Alternative Eligibility Levels**

Table 9 shows a 60% of Nevada median income eligibility level; table 10 shows an approximate income sufficiency standard eligibility level.

<b>Sixty Percent of Nevada Median Income Standard</b>				
<b>HH Size</b>	<b>Federal Poverty Level</b>		<b>60% NV Median Income</b>	
	<b>100%</b>	<b>150%</b>	<b>(\$)</b>	<b>% FPL</b>
<b>1</b>	\$ 9,570	\$ 14,355	\$ 19,658	205%
<b>2</b>	\$ 12,830	\$ 19,245	\$ 25,706	200%
<b>3</b>	\$ 16,090	\$ 24,135	\$ 31,755	197%
<b>4</b>	\$ 19,350	\$ 29,025	\$ 37,803	195%
<b>5</b>	\$ 22,610	\$ 33,915	\$ 43,851	194%
<b>6</b>	\$ 25,870	\$ 38,805	\$ 49,900	193%
<b>7</b>	\$ 29,130	\$ 43,695	\$ 52,546	180%
<b>8</b>	\$ 33,390	\$ 48,585	\$ 53,680	161%

**Note1:** Nevada 2006 median income for a family of four is \$63,005 for federal fiscal year 2006. [U.S. Census Bureau, Median Income for 4-Person Families, by State; Table used by the Department of Health and Human Services for the Low Income Home Energy Assistance Program]. Sixty percent of this is \$37,803. For the source table, see: <http://www.census.gov/hhes/income/4person/html>.

**Note2:** In accordance with 45 CFR 96.85, state estimated median income for a four-person family is multiplied by the following percentages to adjust for family size: 52% for one person, 68% for two persons, 84% for three persons, 100% for four persons, 116% for five persons, and 132% for six persons. For each additional family member above six persons, an additional 3% is added to the percentage for a six-person family (132%), and the result is multiplied by the state's estimated median income for a four-person family.

**Table 9: Sixty Percent of State Median Income.**

<b>Income Sufficiency Standard</b>				
<b>Location</b>	<b>Family Type</b>			
	<b>One Adult</b>	<b>One Adult +1 Preschool</b>	<b>One Adult +1 Preschool +1 In School</b>	<b>Two Adults +1 Preschool +1 In School</b>
<b>Percentage of 2006 Poverty Level</b>				
<b>Elko</b>	184%	222%	202%	210%
<b>Washoe</b>	199%	252%	227%	227%
<b>Clark</b>	199%	252%	227%	227%
<b>Dollars (\$2006 Dollars)</b>				
<b>Elko</b>	\$ 17,586	\$ 28,450	\$ 32,428	\$ 40,555
<b>Washoe</b>	\$ 19,033	\$ 32,328	\$ 36,536	\$ 43,851
<b>Clark</b>	\$ 20,539	\$ 32,512	\$ 37,327	\$ 44,857
<p>Note: These values were calculated by taking the annual self-sufficiency budgets for four family types (Tables 1, 3, &amp; 5) from Pearce &amp; Brooks, <i>The Self-Sufficiency Standard for Nevada</i> (March 2002), adjusting the 2002 dollars to 2006 dollars using the Bureau of Labor Statistics Inflation Calculator, and dividing by 100% of Federal Poverty Level values for equivalent family size. There are seventy different family types (Pearce &amp; Brooks, P. 5) but these four give a reasonable range of results. Results are approximate but indicate the kind of difference from Federal Poverty Level produced by the family budget methodology.</p>				

**Table 10: Approximate Income Sufficiency Standard.**

As discussed in this section of the report, a nearly full solution would be provided by a move to above the 250% of poverty eligibility level, a level that is likely to replace the current 150% of poverty eligibility level in coming years. That is where the United States has to go if these problems are actually to be solved to the level that they are solved in the European Union. For better precision, the income sufficiency studies should be used. To be truthful about need, the income insufficiency method should replace the federal poverty metric.

However, currently, this evaluation recommends moving eligibility for both the Energy Assistance Program and the Weatherization Assistance Program to 200% of the Federal Poverty Level now, a more conservative step.<sup>52</sup>

<sup>52</sup> For one and two person family sizes, this is within 60% of Nevada median income, and so a step permitted within current federal guidelines. For other family sizes, this would require negotiation to determine if a blanket standard of 200% could be implemented. If not, the standard could be set as near 200% as permitted.

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## ***J. Summary***

- Energy costs are rising and real incomes are falling for low-income and moderate income families, especially for families with children.
- Federal support, though very helpful, is not calibrated to actual need. Against a background of increasing need linked to changes in the income distribution and job structure, federal support is erratic and often declines as need increases. Nevada's allocation of federal support increases in years in which a general increase in federal LIHEAP exceeds a certain level. Below this level, funds flow disproportionately to the states of the Northeast and the LIHEAP program is oriented toward cold weather state energy payment problems. Above this level, the funding formula changes to better serve payment problems in the Western and Southern states.
- The full solution to meet actual need would be to move support levels to self-sufficiency levels or to approximately 250% of poverty or somewhat above, a target level that is being arrived in different studies around the US (see Table 10).
- An intermediate next step would be to move eligibility to 200% of Nevada median income, or as near 200% can be negotiated with the Department of Health and Human Services (for the Energy Assistance Program) and the Department of Energy (for the Weatherization Assistance Program). This more conservative step would continue to allow UEC and federal funding to be coordinated, to permit equal service to UEC and non-UEC clients.

## ***K. Recommendations***

Three recommendations follow from the needs analysis:

- (1) **Increase Eligibility to 200% of the Federal Poverty Level, or as near that target as can be negotiated.** This recommendation would require study within the Division of Welfare and Supportive Services and within the Housing Division, and consultation with the Advisory Committed and interested parties. It would also require legislative review and action by the legislature.

This will better fit actual need as experienced by households, although it will not fully adjust by using the more valid and more accurate family budget method incorporated in the Income Sufficiency Standard. However, it moves eligibility in the right direction, while maintaining Nevada's commitment to equal service between state and federal program assistance.

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- (2) **Amend the NRS 702 definition of Energy Burden to include the fixed cost portion of utilities bills.** The total “please pay” amount on a customer energy bill is the relevant bill amount for the household. Allocation of costs between the fixed and general portions of energy bills is not simply a rational allocation but also, and sometimes primarily a matter of policy and strategy. As energy bills increase, there will likely be a tendency to increase fixed costs. For these reasons, NRS 702 should define Energy Burden as the combination of variable cost per unit (as at present) plus the fixed cost portion of utility bills.
  - (3) **Institute review and planning to move Program Eligibility to the Income Self-Sufficiency Level in the long run.** In planning for the future, look towards adopting the Self-Sufficiency Standard and integrating the methodology of family budget studies into program needs analysis. Income Self-Sufficiency is inherently a more valid and more accurate indicator of need as experienced by households and families than the federal poverty metric.
  - (4) **Act now to develop collaboration to increase Nevada’s federal LIHEA allocation.** Advocates, the state and the major utilities should coordinate strategy to work towards annually sustaining and increasing federal LIHEA funding, since this is coordinated with UEC funding and more adequate federal funding can increase the joint effects of the Fund for Energy Assistance and Conservation and LIHEA. In particular, the funding target should be sufficiently above the federal allocation point at which the federal funding formula ceases to favor the cold weather states of the Northeast, and more equitably allocates funds above that level to the state of the West and South.

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## IV. PROGRAM STORIES

The Fund for Energy Assistance and Conservation funds two services: payment assistance and weatherization assistance.

Many low income households are overwhelmed with the pressures caused by poor housing, high energy bills and low incomes. Through participation in the UEC/Fund for Energy Assistance and Conservation programs (the Payment Assistance Program and Weatherization Assistance Program), these feelings have been replaced by feelings of hope, increased control over one's situation, and a general sense of empowerment.

There are underlying changes in the American economy that are encountered by households as "given" conditions. These changes are almost entirely outside of personal control or even institutional control in the sense that the changes have become features of the national economy since approximately 1970. They include the changing structure of jobs, the erosion of family wage jobs, reduction or elimination of pensions, and the general erosion of income security. While Nevada's Universal Energy Charge programs cannot change these trends, they are capable of solving energy payment problems, and of helping people keep their homes and their health through home weatherization and through assistance with necessary utility bills.

To document how the programs appear from the perspectives of Nevada households served by the programs, interviews were conducted with eight Nevada families, two from the Energy Assistance Program and six from the Weatherization Assistance Program.

Their stories are summarized below.

### ***A. Energy Assistance Participants***

The two Energy Assistance participants have their individual stories, and these stories are typical of those in previous program years.

#### *1. Ms. W (Silver Springs)*

Ms. W is 61 years old, and after having been married for many years is now in a single person household without enough income. She resides in a mobile home in a lot in the rural community of Silver Springs, east of Carson City and her income is at 75% of the federal poverty level. She learned about the program from her mother, who recently passed away. She says the program was extremely helpful. The people at the program (Welfare Division, Carson City office) were "very nice, polite to me, courteous, and very helpful." The program provided payments to Sierra Pacific Power and to Bi-State Propane. She says, "The program came through for me when I had no resource at all."

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## 2. Mr. & Mrs. S (Gardnerville)

Mr. and Mrs. S live in an apartment in Gardnerville. They had several medical problems this year. He has had a heart attack, and she has had several strokes. Mr. S is 67 years old, and Mrs. S is 78 years old. They receive social security income which puts them at just about 150% of the federal poverty level, but with medical problems and cost of medicines their actual income after medical costs is significantly less. Mr. S says that he is “Scared – making ends meet is very difficult.”

Because his wife did not sign up for Medicare at a certain time, he says they have to pay a continuing federal penalty as the Medicare costs more each year. He is a veteran, but is afraid to cancel his Medicare because it might be needed sometime, though he is very conscious of the loss of each dollar to keep his coverage. With the rent of \$1,456 due next week, they will have only \$87 left for two weeks until their next income, and when that check comes it will go to cover the other bills. He says, “...everyone wants to take gross, not the net, when calculating benefits, eligibility for programs, but you have to live on net income.” He says the governor gave a rebate on license plate fees to senior citizens that he thought was very nice, and they use food stamps, clip coupons, and look for sales.

Last year they turned off their gas furnace in the winter to save money, put towels up in all the windows and heated only the living room and dining area in the apartment. They keep the heat off in the bedroom overnight, but Mr. S gets up early and turns on electric heat in the bedroom before his wife gets up. He says the apartments are cold, and there has been a lot of turnover in managers at the apartment complex (seven in about a year).

Mr. S says he does all he can to keep energy usage low and keep costs down. He appreciates the energy assistance, and says there were no problems with the program. The family received assistance with their bills from Sierra Pacific Power and Southwest Gas.

### ***B. Weatherization Assistance Participants***

The six Weatherization Assistance participants have personal stories that are representative of those interviewed in prior years.

#### 1. Mr. C (Las Vegas)

Mr. C heard about the program from a neighbor. He says he was “in a predicament with my Air Conditioning unit,” that he could not manage. The subgrantee agency (HELP) weatherized his home, sealed the vents, and put in solar screens. Mr. C. has noticed savings in his energy bills, which are now 15% less. He says he feels much more secure. “The weatherization staff knows their business” and “did a fine job.”

#### 2. Mrs. R. (Henderson)

Mrs. R learned about the program from an article in her newspaper. She says the

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subgrantee agency (Neighborhood Services) changed out her showerheads, made sure she had proper insulation, fixed the doors on her home, and installed solar screens. She says she sees a definite difference in her energy bill. She says the reduction in her energy bill is not dramatic, but it is definite. She also says her home is more comfortable. "It is nicer inside now." She remembers the men who did the work were very nice, and the "young woman who checked up on them," did a fine job.

### 3. *Ms. W (Tonopah)*

Ms. W, who lives in a mobile home, applied to the subgrantee agency (RNDC) for assistance. They sent her a letter and followed up and connected her with the program.

She says that her windows were changed, the front and back doors were replaced, and the agency provided an electric heater and energy-efficient light bulbs. She had a problem with her home being cold in the winter but it "holds the heat now." She says her home is much nicer and she is much more comfortable, though she still keeps the thermostat at 60 degrees to save on her energy bill. In addition to her home being able to maintain temperature, she says her energy bill went down by about \$20 a month, "...maybe not a lot to some people, but on SSI it is bread and eggs." "It is much nicer that my trailer holds the heat now."

She says the weatherization crew answered her questions, and was patient. "I was worried (before they came) that they wouldn't know what they were doing; but they were very competent and nice."

### 4. *Ms. B (Las Vegas)*

The Subgrantee Agency (HELP) installed solar screens, checked all vents, replaced the family's 22 year old refrigerator, replaced a heater that failed, and replaced some frequently used light bulbs with energy-efficient bulbs. Ms. B says she has not seen a change in her energy bill, but that she would not see a change right away because she is on an equal payment plan with her heating utility and that the plan changes once a year. She says that in the past she was used to heating bills of \$64 or \$67 a month but recently the bill went up to \$82 a month. She believes when the bill changes the next time (that is, the first bill change following weatherization), it will go down some.

She says the intake clerk at HELP was very nice and helpful. She now has also received the forms to apply for energy assistance.

### 5. *Mrs. P (Reno)*

Mrs. P and her daughter live in a duplex in Reno. Mrs. P's daughter, applied for the program and the household was approved. The subgrantee agency (CSA) insulated the ceiling, under the house, sealed ducts, installed a carbon monoxide monitor, and replaced lights with energy-efficient bulbs. Mrs. P says that the temperature in the home is much better.

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She says more could be done on the home – the refrigerator is not running right but they did not qualify for a refrigerator replacement because the weatherization team was following an age of refrigerator rule rather than checking performance. Mrs. P says the same kind of rule applied to not fixing the windows where there are drafts, and that they did not weatherstrip the doors. “What they did was excellent, but guidelines kept them from doing everything that could have been done.” She says she would like to see the guidelines more based on performance, to have them do everything possible that needs to be done.

#### 6. *Mr. & Mrs. H (Las Vegas)*

Mr. & Mrs. H live in a mobile home park to which they have moved “to suit the pocketbook.” The mobile home they moved into was built in 1968, with “good bones, but needing lots of work.” While they were working on fixing up the home, someone came by and mentioned the weatherization program (they think someone at Clark County Housing helped them connect to the subgrantee agency). The subgrantee (HELP) came and fixed the roof, added solar screens and a smoke detector.

Mrs. H says, “...the people from HELP were very kind, supportive, and understanding – when you reach a certain age people don’t give you respect, act like you are a part of the human race. These people gave respect, real respect.” She feels this is very important. “Everyone needs a place to live, and you can’t always afford the newest or the best. They made this place feel like a home – livable.”

#### C. Summary

In summary, the families interviewed had a very positive experience with the program. The interviews show that the programs make a real difference in the lives of those in need, and that people are appreciative that the state has real programs.

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## V. FISCAL PERFORMANCE

This analysis is for State Fiscal Year 2006.<sup>53</sup> The Universal Energy Charge (UEC) was established by the 2001 Nevada State Legislature, and became effective during State Fiscal Year 2002.<sup>54</sup> The first full program year was SFY 2003.

This section of the report relies on accounting provided by the Division of Welfare and Supportive Services and the Housing Division. When there are discrepancies, we use the Division accounting numbers.

### A. *The Charge (UEC) & the Fund (FEAC)*

Collection of the Universal Energy Charge (UEC)<sup>55</sup> is an operation completely separated from program administration. It is separately administered by the Public Utilities Commission of Nevada (PUCN). The Public Utilities Commission began to receive Universal Energy Charge payments in the fall of 2001 (early in SFY 2002). Amounts collected are periodically reconciled and then the correct balance is transmitted to the Accounting section of the Division of Welfare and Supportive Services.

The funds transmitted from PUCN are received into the Fund for Energy Assistance and Conservation (FEAC), maintained by the Accounting section of the Division of Welfare and Supportive Services. The FEAC is the UEC minus the administrative expense of collections and oversight of collections by PUCN and any refunds by the Commission. In addition, it includes any corrections or carryover funds from a prior fiscal year and any interest accrued. It is reduced by the amount of any refunds directed by the Commission.<sup>56</sup>

### B. *The Fourth Program Year (SFY 2006)*

Since Nevada Revised Statute 702 anticipated that the Welfare Division program would go into effect beginning with State Fiscal Year 2003, the perspective in the Evaluation is that State Fiscal Year 2003 is the first program year.<sup>57</sup> Thus, SFY 2006, the focus of this report, is the fourth program year.

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<sup>53</sup> State Fiscal Year 2006 began July 1, 2005 and ended June 30, 2006.

<sup>54</sup> The collection of the UEC became fully functional in SFY 2002. However, the programs were starting up in this period. The Universal Energy Charge legislation (Nevada Revised Statutes 702) specified that the new program designs would become effective at the beginning of 2003.

<sup>55</sup> "Universal Energy Charge" (NRS 702.100) means the charge imposed pursuant to NRS 702.170.

<sup>56</sup> "Fund" (NRS 702.040) means the Fund for Energy Assistance and Conservation created by NRS 702.250.

<sup>57</sup> SFY 2003 was the first *full* program year.

Program Years (State Fiscal Years)					
SFY 2003	SFY 2004	SFY 2005	SFY 2006	SFY 2007	SFY 2008
First Full Program Year	Second Year	Third Year	Evaluation Window for this Report	Fifth Year	Sixth Year and Beyond >
1-Jul-02	1-Jul-03	1-Jul-04	1-Jul-05	1-Jul-06	
30-Jun-03	30-Jun-04	30-Jun-05	30-Jun-06	30-Jun-07	

Figure 10: Evaluation Window.

Figure 10 shows that SFY 2006 is just past the midpoint of the first five years of program services. As a general rule, a program of this complexity takes about five years to become fully implemented and to run as a mature program.

- For a statewide program of this complexity, in the first few years there are typically problems in getting the infrastructure in place (computer support, including special computer programs, tracking systems, and management reporting systems; as well as staffing). The UEC programs followed this pattern.
- Also, the potential participants in the program have to be made aware that the program actually exists. This is an obvious problem for the first year, but for low-income households, communications remains a significant problem from year to year. By the end of year five, there will be general knowledge of the program, yet mobility and the demographic of new households means that communications must remain a program emphasis each year.
- Further, the state, the utilities, and Nevada helping agencies have put procedures in place so that qualified participants are not only made aware of the program but learn how to apply, and to bring about appropriate applications. “Word of mouth” from successful participants is one of the best ways for other low-income families to become sure enough of the program to make application. It is important to note that communication with households is not simply a matter of making it known that Nevada has a program, but that the program is real and can actually work to help families solve utility payment and energy use problems.

All of these program areas have been developed for the Welfare Division payment assistance program and the Housing Division weatherization assistance program over the first four program years.

### ***C. UEC Collections (Public Utilities Commission of Nevada)***

The Public Utilities Commission of Nevada (PUCN) is the focus of oversight responsibilities for regulated Nevada utilities. The agency has both investigative and enforcement powers. Commission responsibilities for the UEC include collection, refunds in accordance with

legislative provisions,<sup>58</sup> and investigation of collections matters and enforcement of collections matters to the extent necessary. Collections have proceeded smoothly. There has been no occasion for exercise of the Commission's investigative powers in relation to the UEC through the close of SFY 2006.

The Commission transfers funds to the Fund for Energy Assistance and Conservation (FEAC) which is administered by the Division of Welfare and Supportive Services. The Division of Welfare and Supportive Services then transfers funds to the Housing Division.

<b>Universal Energy Charge (UEC)</b>					
Line	Item	SFY 2003	SFY 2004	SFY 2005	SFY 2006
		(\$)	(\$)	(\$)	(\$)
1	UEC Receipts (Public Utilities Commission)	10,653,628	11,219,024	11,630,353	12,043,756
2	Cost of Administration (Public Utilities Commission)	(105,704)	(102,883)	(106,824)	(42,203)
3	Net UEC for transfer to Division of Welfare and Supportive Services for FEAC	10,547,924	11,116,141	11,523,529	12,001,553

**Table 11: Universal Energy Charge – Top Level Fiscal Perspective**

The lines of Table 11 are explained below:<sup>59</sup>

**Line 1: UEC Receipts.** This is the total collected by the Commission for each fiscal year and is based on energy use (kWh and therms). As the state is growing in population, total energy use tends to increase. According to the Commission staff projections, UEC collections are expected to trend slowly upwards. The increase in UEC receipts from SFY 2003 to SFY 2004 was 5.3%, from SFY 2004 to SFY 2005 the increase was 3.7%, and from SFY 2005 to SFY 2006 the increase was 4.1%. The overall increase from SFY 2003 to SFY 2006 was 13.8%.

**Line 2: Cost of Administration (Public Utility Commission).** The cost of Public Utilities Commission administration of the UEC is capped at 3% of UEC receipts.<sup>60</sup> Monies within this authorization that are not spent for PUCN Administration flow through to the FEAC. Looking forward, the necessary percentage is likely to decrease as energy use in Nevada increases.

<sup>58</sup> Refunds are directed by the Commission and implemented by the Accounting section of the Division of Welfare and Supportive Services.

<sup>59</sup> Data for Table 2 was provided by the Public Utilities Commission.

<sup>60</sup> NRS 702.170(4).

**Line 3: Net UEC for Transfer of FEAC to Division of Welfare and Supportive Services.** This is the yearly net amount transferred to the Fund for Energy Assistance and Conservation (not adjusted to account for UEC Refunds).

***D. The Fund for Energy Assistance & Conservation***

A top level view of the Fund for Energy Assistance & Conservation (FEAC) is shown in Table 12.

<b>Fund for Energy Assistance &amp; Conservation</b>					
<b>[New Funds]</b>					
<b>Line</b>	<b>Item</b>	<b>SFY 2003</b>	<b>SFY 2004</b>	<b>SFY 2005</b>	<b>SFY 2006</b>
		<b>(\$)</b>	<b>(\$)</b>	<b>(\$)</b>	<b>(\$)</b>
<b>4</b>	<b>Net addition from UEC (from line 3)</b>	10,547,924	11,116,141	11,523,529	12,001,332
<b>5</b>	<b>Treasurer's Interest Distribution</b>	159,130	218,826	291,462	327,597
<b>6</b>	<b>Refunds (as directed by PUCN)</b>	0	(2,558)	0	(122,566)*
<b>7</b>	<b>Total UEC Revenue</b>	10,707,054	11,332,409	11,814,991	12,206,363

Note: Line 6 is paid from Welfare 6031 account.  
 \* PUCN records refunds for SFY 2006 as \$122,689, a discrepancy of \$123 from the figure maintained by Division of Welfare and Supportive Services. This is a small difference that does not affect the evaluation. We use the Division of Welfare and Supportive Services figure in the evaluation.

**Table 12: Top Level Fiscal Perspective – Fund for Energy Assistance and Conservation.**

The line items for Table 12 are explained below:

**Line 4: Net Addition from UEC.** The amount is the same as in Line 3, representing the net amount of UEC collections minus Commission administration transferred to the FEAC in each fiscal year.

**Line 5: Treasurer’s Interest Distribution.** This is the new money each year developed as interest on the FEAC account.

**Line 6: Refunds.** Refunds are applied by the Division of Welfare and Supportive Services Accounting Section at the direction of the Commission.

**Line 7: Total UEC Revenue.** This is the sum of the new money from all sources for the fiscal year.

***E. The Energy Payment Assistance Program***

The Division of Welfare and Supportive Services operates the energy assistance (payment assistance) program and the Housing Division operates the weatherization assistance program. The Divisions coordinate efforts in several ways but separately operate the two programs.

Expenditure by the Division of Welfare and Supportive Services is shown in Table 13.

<b>Division of Welfare and Supportive Services (Energy Payment Assistance) Revenue and Expenditures</b>					
Line	Item	SFY 2003	SFY 2004	SFY 2005	SFY 2006
		(\$)	(\$)	(\$)	(\$)
8	Welfare UEC Revenue	8,030,291	8,499,307	8,861,243	8,503,892
9	Reserve (from Prior Year)	4,785,180	9,423,147	14,224,098	10,379,148
10	Total Revenue	12,815,471	17,922,454	23,085,342	18,883,040
11	Expenditures	3,392,324	3,698,365	13,357,064	9,215,312
12	Percentage of UEC Revenue Expended	42%	43.5%	151%	108%
13	Percentage of Total Revenue Expended	26.5%	20.6%	57.9%	48.8%
14	Reserve (to Next Year)	9,423,147	14,224,089	9,728,268	9,667,729
<p>Note: The carry forward from SFY 2005 to SFY 2006 does not match the carry forward in SFY 2006 from SFY 2005 due to an excess draw of \$650,880 of UEC funds in SFY 2005.</p>					

**Table 13: Energy Payment Assistance Revenue & Expenditures.**

Line items for Table 13 are explained below:<sup>61</sup>

**Line 8: Welfare UEC Revenue.** New funds available to the Welfare Division for the payment assistance program each fiscal year (75% share of UEC plus 75% share of interest minus any refunds). Note the UEC figure of \$12,206,363 from Line 7 is multiplied by 75% to get \$9,154,772. Then the excess draw of \$650,880 is subtracted to get \$8,503,892 for Line 8.

**Line 9: Reserve (from Prior Year).** Payment assistance funds carried forward.

**Line 10: Total Revenue.** This line shows the total available for the payment assistance program.

**Line 11: Expenditures.** Energy assistance (payment assistance) program amount.

<sup>61</sup> Data for Table 4 were provided by the Division of Welfare and Supportive Services.

**Line 12: Percentage of UEC Revenue Expended.** Line 11 divided by Line 8, expressed as a percentage.

**Line 13: Percentage of UEC Revenue Expended.** Line 11 divided by Line 10, expressed as a percentage.

**Line 14: Reserve (to Next Year).** Amount unexpended at end of fiscal year and carried over to next fiscal year.

Division of Welfare and Supportive Services expenditure (Line 11) is broken out by major line item in Table 14.

<b>Division of Welfare and Supportive Services (Energy Payment Assistance) Expenditure by Major Line Item</b>					
Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6
Line	Item	SFY 2003	SFY 2004	SFY 2005	SFY 2006
		(\$)	(\$)	(\$)	(\$)
<b>15</b>	<b>Administration</b>	101,475	152,033	400,711	460,500
<b>16</b>	<b>Client Payments</b>	2,967,640	3,350,212	12,553,566	8,373,617
<b>17</b>	<b>Outreach</b>	65,018	154,110	31,636	42,601
<b>18</b>	<b>Program Design (Incl. Computer Re-Programming)</b>	242,156	0	233,054	217,240
<b>19</b>	<b>Evaluation</b>	16,035	42,010	138,098	121,354
<b>20</b>	<b>Total</b>	3,392,324	3,698,365	13,357,064	9,215,312

Note: Information provided by the Division of Welfare and Supportive Services.

**Table 14: Energy Payment Assistance – Expenditure by Major Line Item.**

**Line 15: Administration.** In NRS 702, Division of Welfare and Supportive Services administration for the Fund for Energy Assistance and Conservation energy payment assistance program was initially capped at three percent of the 75% Welfare Division allocation. For SFY 2006, and thereafter, the cap has been amended to five percent of the allocation to the Division of Welfare and Supportive Services.<sup>62</sup>

<sup>62</sup> “Seventy-five percent of the money in the Fund must be distributed to the Division of Welfare and Supportive Services for programs to assist eligible households in paying for natural gas and electricity. The Division may use not more than 5 percent of the money distributed to it pursuant to his section for its administrative expenses” NRS 702.260(1).

**Line 16: Client Payments.** This is the amount applied to direct energy payments.

**Lines 17-19:** Outreach, Program Design (of which the major component is computer support), and Evaluation were not capped.<sup>63</sup>

**Line 20: Total.** This is the sum of Line 15 through Line 19.

Figure 11, below, shows the trend lines for Division of Welfare and Supportive Services UEC Revenue and Expenditures, including projections.<sup>64</sup>

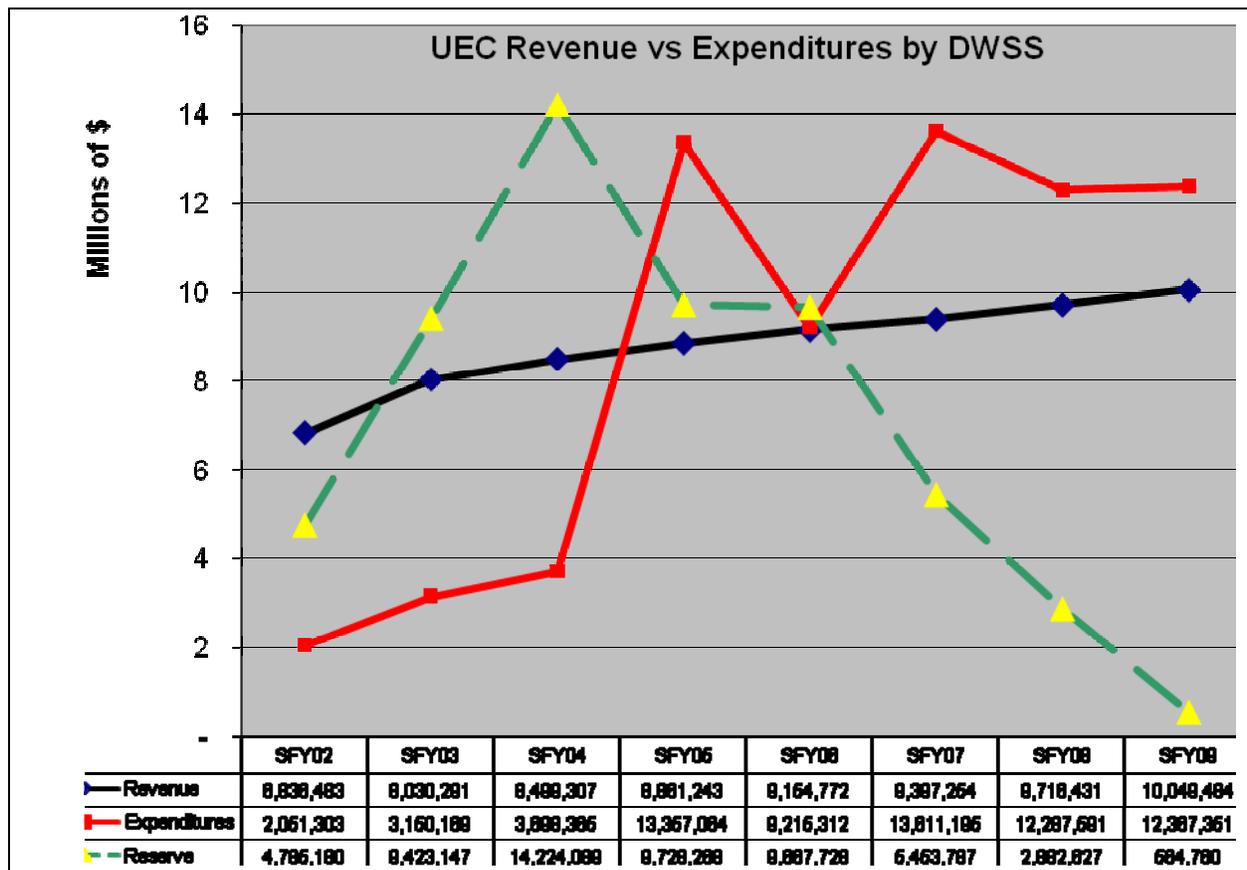


Figure 11: Division of Welfare & Supportive Services, Trend Lines.

<sup>63</sup> Outreach, program design, and evaluation are not capped. Leaving these line items outside the administrative cap is an innovation other states might do well to consider as they move to implement similar Universal Energy Charge programs.

<sup>64</sup> Graph developed by Roger Mowbray of the Division of Welfare and Supportive Services.

## F. The Weatherization Assistance Program

Housing Division UEC Revenue and Expenditure is shown in Table 15.

<b>Housing Division (Weatherization Assistance Program)</b>					
Line	Item	SFY 2003	SFY 2004	SFY 2005	SFY 2006
		(\$)	(\$)	(\$)	(\$)
21	Housing UEC Revenue	2,676,764	2,833,102	2,953,748	3,027,075
22	Carry Forward (from Prior Year)	1,709,947	1,456,464	935,475	1,267,951
23	Total Revenue	4,386,711	4,289,566	3,889,223	4,295,026
24	Expenditures	2,930,247	3,352,637	2,621,272	2,803,420
25	Percentage of UEC Revenue Expended	110%	118%	89%	92.6%
26	Percentage of Total Revenue Expended	67%	78%	67%	65.3%
27	Used Vehicle Sales	0	0	0	40,520
28	Carry Forward (to Next Year– includes 15% Reserve)	1,456,464	936,929	1,267,951	1,532,129
<p>Note 1: For Line 22 and Line 28, not all of the carry forward is applied to the following year's budget. There is a reserve of approximately 15% of revenue (Line 21) included in the Carry Forward.</p> <p>Note 2: A portion of the Housing Division's SFY 2005 funding was received in SFY 2006 (\$634,097).</p> <p>There is an unexplained difference for Line 21. Twenty-five percent of \$12,206,363 in Line 7 is \$3,051,591. This is \$24,516 more than the amount shown by the Housing Division for Line 21.</p>					

**Table 15: Revenue & Expenditures, Housing Division.**

Line items for Table 15 are explained below:

**Line 21: Housing UEC Revenue.** New funds available to the Housing Division for the UEC weatherization assistance program each fiscal year (25% share of UEC plus 25% share of interest minus any refunds).

**Line 22: Carried Forward (from Prior Year).** Weatherization assistance funds carried forward. For this evaluation, we show carry forward as revenue less expenditures. The Housing Division actually uses a more sophisticated treatment which creates an annual budget and assigns a portion of carry over to reserves. The reserve category is essential to the operation of the Weatherization Assistance Program. It permits mitigation against uncertainty in annual overall funding; the federal portion of Weatherization Assistance

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Program funding is subject to erratic timing and to potential year to year variation which could severely impact service delivery capability if annual variations and timing delays were directly transmitted to Subgrantee agencies. Stable UEC funding ensures that service delivery can be kept functioning in the case of delays or fluctuations in parallel federal funding amounts.<sup>65</sup> The reserve in the SFY 2006 carry forward to SFY 2007 (Line 28) is \$450,000.

**Line 23: Total Revenue.** This line shows the total available for the weatherization assistance program.

**Line 24: Expenditures.** Amount expended on UEC weatherization assistance.

**Line 25: Percentage of UEC Revenue Expended.** Line 28 divided by Line 21, expressed as a percentage.

**Line 26: Percentage of UEC Revenue Expended.** Line 28 divided by Line 23, expressed as a percentage.

**Line 27: Used Vehicle Sales.** This is a one-time sale of used vehicles employed in delivery of weatherization services.

**Line 28: Carry Forward (to Following Year).** Amount unexpended at end of fiscal year and carried over to next fiscal year. This includes the necessary reserve, generally estimated at fifteen percent of annual revenue (15% of Line 21).<sup>66</sup>

Housing Division Fund for Energy Assistance and Conservation expenditure (Line 24) is broken out by major line items in Table 16.

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<sup>65</sup> Fluctuations in funding, particularly and reduction in federal funding for a given year would be very difficult to deal with, since it would disrupt the functioning of the subgrantee agencies, and capability is not quickly or easily rebuilt.

<sup>66</sup> For SFY 2006, the full carryover (including proceeds from one-time vehicle sales) is \$1,532,129 (Line 28). Of this amount, \$450,000 is the reserve, \$642,265 is carryover to be expended in the SFY 2007 budget, and \$389,864 is unobligated carryover.

<b>Housing Division (Weatherization Assistance Program) Expenditure by Major Line Item</b>					
Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6
Line	Item	SFY 2003	SFY 2004	SFY 2005	SFY 2006
		(\$)	(\$)	(\$)	(\$)
29	Administration	106,941	112,338	123,996	153,178
30	Housing Improvements, Weatherization, Energy Efficiency (Subgrantees)	2,772,464	3,072,121	2,400,138	2,546,387
31	Outreach	1,112	34,621	4,566	0
32	Program Design (Incl. Computer Re-Programming)	27,456	73,653	20,206	8,612
33	Evaluation	22,274	58,904	62,367	95,243
34	Total	2,930,247	3,352,637	2,621,272	2,803,420

Note: Information provided by the Housing Division.

**Table 16: Weatherization Assistance – Expenditure by Major Line Item.**

**Line 29: Administration.** Housing Division administration is limited to six percent of the 25% Housing Division allocation (or 1.5 percent of overall budget).<sup>67</sup>

**Line 30: Direct Services.** This line shows the amount used for direct installations and closely related services through the subgrantees.

**Lines 32-33:** As with the Division of Welfare and Supportive Services, for the Housing Division an innovation that the legislature placed into the program design is shown Lines 31-33. Outreach, Program Design (of which the major component is computer support), and Evaluation are outside of the administrative cap.

**Line 34: Total (Housing Division):** The total expenditure for each year as provided by the Housing Division.

<sup>67</sup> "Twenty-five percent of the money in the Fund must be distributed to the Housing Division for programs of energy conservation, weatherization and energy efficiency for eligible households. The Housing Division may use not more that 6 percent of the money distributed to it pursuant to this section for its administrative expenses" NRS 702.270(1).

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## **G. Discussion**

There was substantial carry forward from year to year in the initial program years.

- The origin of the carry forward was that the collection of the Universal Energy Charge became fully operational approximately a year prior to the Fund for Energy Assistance and Conservation programs becoming operational.
- For the Housing Division, carry forward amounts incorporate a reserve equal to approximately fifteen percent of annual revenues (fifteen percent of Line 21). This reserve is essential to maintaining program capability.
- For the Division of Welfare and Supportive Services, another source of carryover was the problem of getting the computer programming and support infrastructure in place, tested, and functional. The three large utilities (Sierra Pacific Power Company, Nevada Power Company, and Southwest Gas Corporation) provide energy consumption data for each applicant through an electronic interface with the Division of Welfare and Supportive Services. The utilities encountered their own computer difficulties during the implementation of the interface. It was not until January 2003 that problems with the electric companies' interfaces were completely resolved. Until that time many of the processing steps had to be accomplished through manual or supplementary workarounds, which take additional time and slow approvals. The computer infrastructure for the Division of Welfare and Supportive Services became fully functional during SFY 2005, the third program year, and was running very well through most of SFY 2006.
- However, for the Division of Welfare and Supportive Services, in May of SFY 2006 the computer support for the Energy Assistance Program failed when it was being migrated to a different computer for security reasons. Much of May and June required manual processing, which slowed approvals for those months.<sup>68</sup>

Communications and outreach also become fully functional during SFY 2005. The carry-forward peaked in SFY 2004 and was significantly reduced in SFY 2005, primarily as a result of a marketing campaign developed and implemented by a contracted social marketing firm.

The carry forward is typical of new programs, and it is normal for this problem to take about five years to work through. Planning projections by the Division of Welfare and Supportive Services show the carry forward being reduced to \$797,506 in SFY 2009 estimates, about 6% of that year's projected UEC Revenue.<sup>69</sup>

Looking ahead, as near-full expenditure occurs; control tools will need to be introduced to

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<sup>68</sup> The computer problem has been fixed and computer support is again fully functional.

<sup>69</sup> Source: Division of Welfare and Supportive Services Energy Assistance Program, Universal Energy Charge (UEC) History and Projections, 10/09/06.

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increasingly target funds within the applicant eligible households, or overall UEC funding increased. Control tools have been included in the program legislation (NRS 702.260) which has considered priorities to follow in allocation of funds when applications exceed funding.<sup>70</sup>

As a final note, the evaluation has not been able to resolve a difference of \$123 in the transfer from Public Utility Commission of Nevada to the Division of Welfare and Supportive Services accounting section (Table 12) and a difference of \$24,516 in the transfer of funds from the Division of Welfare and Supportive Services to the Housing Division (Table 15).

### ***H. Summary***

- In SFY 2006, the collection process continued to run smoothly.
- Funds continued to be allocated according to the 75% Welfare Division and 25% Housing Division formula established in NRS 702.260 and NRS 702.270.
- The carry forward has been falling and is projected to reach a low level in SFY 2009.

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<sup>70</sup> According to NRS 702.260(6) , On or after July 1, 2002, if a household is eligible to receive assistance pursuant to this section, the Division: (a) Shall, to the extent practicable, determine the amount of assistance that the household will receive by determining the amount of assistance that is sufficient to reduce the percentage of the household's income that is spent on natural gas and electricity to the median percentage of household income spent on natural gas and electricity statewide. (b) May adjust the amount of assistance that the household will receive based upon such factors as: (1) The income of the household; (2) The size of the household; (3) The type of energy that the household uses; and (4) Any other factor which, in the determination of the Division, may make the household particularly vulnerable to increases in the cost of natural gas or electricity.

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## VI. AUTOMATION ANALYSIS

Computer support for the NRS 702 programs is now mature. Automation was a very critical and substantial effort during program ramp-up (SFY 2003 and SFY 2004), and getting a fully functional computer system in place was one of the reasons why the number of households served was lower than planned in the first few program years for the Division of Welfare and Supportive Services.<sup>71</sup> At the close of SFY 2004, all computer-assisted operations were programmed and in place,<sup>72</sup> with the exception of management reports, and the final programming for the arrearage assistance component. Both were completed in SFY 2005 and were working well through most of SFY 2006.

In the prior evaluation, we noted that “[n]o major computer or programming problems remain to be addressed at the end of SFY 2005. What remains are ongoing maintenance of programs and computer support, including a number of requests for incremental small improvements.” This remains an accurate way to summarize the status of computer support in the transition from SFY 2005 into SFY 2006. For the Housing Division, there were no computer problems during SFY 2006. However, a new problem occurred in computer support for the Division of Welfare and Supportive Services in April 2006.

### ***A. The Computer System***

Both the Division of Welfare and Supportive Services and the Housing Division rely extensively on computer support for essential capabilities required to implement the NRS 702 programs. The Division of Welfare and Supportive Services and the Housing Division are linked and can share information back and forth electronically. The Housing Division is also linked to computers at subgrantee agencies via the Internet.<sup>73</sup> The Division of Welfare and Supportive Services is linked to the major utilities for customer accounting information.

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<sup>71</sup> The computer system for the Housing Division was an extension of software and computer arrangements already in place for state administration of the federal Weatherization Assistance Program. Computer support for the Housing Division was fully functional early in program implementation. The Division of Welfare and Supportive Services required development of new computer routines and computer arrangements to implement the Energy Assistance Program. This took approximately two years.

<sup>72</sup> A number of coding changes were requested and completed in SFY 2005 to improve functionality for SFY 2006. These involved minimum payment coding, subsidized housing, ability to handle both Universal Energy Charge and LIHEA, and better ability to handle households with one UEC utility and one non-UEC utility.

<sup>73</sup> Internet communication of data between the subgrantees and the Housing Division makes use of encryption for security.

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## 1. *Housing Division*

The Housing Division computer has access to utility energy usage information and data on specific households that have received weatherization assistance. All essential information on homes provided by Housing Division subgrantees is also maintained in electronic format for analysis and reporting. The Building Weatherization Report (BWR) is the primary tool used by the Housing Division Weatherization Assistance Programs to track weatherization measures installed. It has been used in DOE funded weatherization since 1977 and the current electronic version was developed in-house in SFY 2003 and has been used by the Housing Division and subgrantee agencies since March 2003.

An Energy Savings Tracking Database was developed for the Housing Division by Architectural Energy Corporation (AEC) and is used with the BWR to compute estimates of therms and kWh saved by measures installed. The system uses profiles based on four climate zones, building types, county, fuel type, and historical installed cost data. The system output is a "Savings to Investment Ratio" (SIR). The purpose of the SIR is to rank energy efficiency measures and develop a priority list (rank order) for cost-effective measure installation. This priority list is used in place of auditing each home prior to installation. The tracking system is based on *REM/Design™*, proprietary software developed by AEC and approved by the US Department of Energy for Weatherization Assistance Programs in all states.<sup>74</sup>

## 2. *Division of Welfare and Supportive Services*

The major function of the Division of Welfare and Supportive Services computer system implemented for the program is to document cases and to help ensure qualified clients are included in the program and unqualified clients are not included. The computer system also calculates the "Fixed Annual Credit" (FAC) for each household consistent with NRS 702, and calculates a separate arrearage payment amount, if applicable.

In addition, the Division of Welfare and Supportive Service's computer system electronically transmits agreed upon elements between the Division of Welfare and Housing (name, address, telephone, FAC benefit, and energy usage/burden of all eligible households). The Division of Welfare and Supportive Service's computer system is also capable of accessing energy use and payment information from the Customer Accounting Systems of the three major utilities (Sierra Pacific Power Company, Nevada Power, and Southwest Gas).

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<sup>74</sup> The description of *REM/Design™* on AEC's website (<http://www.archenergy.com/products/rem/>) is as follows: "This user-friendly, yet sophisticated, software calculates heating, cooling, domestic hot water, lighting and appliance loads, consumption, and costs based on a description of the home's design and construction features as well as local climate and energy cost data."

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In communicating the program to households served by the Division, the NOMADS computer system was used in SFY 2005 and SFY 2006 to generate notices to Temporary Assistance to Needy Families (TANF), Food Stamp, and Medicaid lists. The notices alerted households to the existence of the payment assistance program, and where to call for an application, and were incorporated in the "Notice of Decision" letters for these programs.

In SFY 2006, an interface was developed between the NOMADS computer system and the Energy Assistance Program (EAP) computer system. Recipients known to NOMADS are electronically screened to determine if they are income eligible and known to the EAP. If a recipient is income eligible and has not applied for energy assistance in the current or previous program year, both an EAP application, pre-printed with data from NOMADS, and cover letter is generated. The cover letter explains that after a preliminary computer review they may be eligible for energy assistance and requests they review and complete additional information and submit to the EAP. This was planned to begin in early SFY 2006, but a decision was made to hold off processing until the Energy Assistance Program met its target of processing all cases within thirty days at both Carson City and Las Vegas offices. The Carson City office has been able to meet this target, but the Las Vegas office has not.

This capability was implemented in April 2006 for a 4-week period to enable the Division of Welfare to measure the outcome. A total of four thousand two-hundred and twenty three (4,223) applications were generated and five hundred and nineteen (519) applications were received, for a response of about 12.3%. Of the total applications mailed out, 6.3% were returned by the Post Office as "Moved, No Forwarding". Eighty-one and four-tenths (81.4%) of the NOMADS households did not respond to the application and cover letter. The Division of Welfare is looking at ways to improve the responses of NOMADS recipients.

In application processing, the Energy Assistance Program aims for a processing time of thirty-days or less. The Division of Welfare computer system assists with eligibility and benefit determination, processing time frames, and tracks benefits.

### ***B. The April 2006 Problem***

In April 2006, the fully functional Division of Welfare and Supportive Services computer system was moved from its special server and onto a mainframe computer for general policy reasons not related to the program. Following this move, the client functions worked well (as previously); however, the management reporting functions experienced difficulty. This problem was being worked on at the close of SFY 2006.

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### ***C. Summary***

The computer system for Housing Division continues to work well. The computer system for the Division of Welfare and Supportive Services was fully functional and working well. However, the reporting functions (used for management evaluation of the program) experienced problems when the system was moved to a different computer. It can be expected that this problem will be solved in early SFY 2007.

In general, the major computer efforts required in the first two years of the program are now reduced to essential ongoing support and maintenance. Computer support for the NRS 702 programs is now mature.

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## VII. THE WEATHERIZATION ASSISTANCE PROGRAM

The Weatherization Assistance Program (WAP) assists low-income households in reducing their utility costs by providing for various energy conservation, and health and safety improvements to homes.

WAP is administered by the Housing Division of the Nevada Department of Business and Industry. The funding for the program comes primarily from the Fund for Energy Assistance and Conservation which is funded through Nevada's Universal Energy Charge (NRS 702).

The Housing Division coordinates Nevada's funding from Nevada's Fund for Energy Assistance and Conservation with a smaller amount of federal funding received from the from the US Department of Energy (DOE). In addition, the Housing Division continues to work with Sierra Pacific Power Company's and Nevada Power Company's Demand-Side Management Programs in areas of client outreach, client education, quality assurance, ensuring cost effectiveness, technical training, and technical assistance.

For this evaluation, we focus only on Weatherization Assistance Program services provided by the Housing Division through the Fund for Energy Assistance and Conservation (NRS 702).

### ***A. Subgrantee Agencies***

The Weatherization Assistance Program is delivered through five Subgrantee Agencies:

#### *1. HELP of Southern Nevada*

HELP of Southern Nevada  
1640 E. Flamingo #100  
Las Vegas, Nevada 89119  
(702) 795-0575

HELP (not an acronym) of Southern Nevada serves the Las Vegas area (all of Clark County, except the City of Henderson). Their focus is on "HELPIng People HELP Themselves" in the provision of interlinked services to meet the needs of families and households. HELP has been an active community outreach agency since 1970. HELP's mission is "to assist individuals and families to become self sufficient through direct services, training, and referral." It assists about 60,000 people each year. HELP is an umbrella organization that links individuals to support services and

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operates a number of programs. These programs include energy resource services, weatherization, rental assistance, utility assistance, food, referrals to senior programs, legal guardians of grandchildren, and youth summer food program. A displaced homemaker program assists men or women of spouses or significant others about to lose assistance. Assistance is provided with job seeking, resumes, and stabilizing family domestic violence. The common theme among programs is to promote self-sufficiency and to provide short-term assistance.

The need for services in southern Nevada has ballooned. Explosive growth in need has been occurring in an economy that is depressed at the bottom and has characteristics of a depressed economy throughout much of the middle.<sup>75</sup>

In SFY 2006, HELP was using both agency crew and outside installation contractors. The employee crew has been reduced to four technicians. This internal staff continues to conduct the initial home assessment prior to weatherization, and inspections after weatherization. They also do installations. In any given month, there can be up to 65 homes ready for assessment and 50 waiting for applicants to send in missing documentation. HELP continues to improve its operations and delivery procedures.

The Weatherization Program of HELP of Southern Nevada provides services at no cost to qualified applicants to help lower utility bills. Applications are processed on a first come, first served basis with priority given to households which are high energy users (typically single family dwellings), occupied by individuals who are elderly (60 years of age or more), handicapped, or families with children age six (6) and under.

## 2. *Community Service Agency (CSA)*

Community Services Agency  
1094 E. Eighth Street  
Reno, Nevada 89512  
(775) 786-6023

The Community Service Agency Development Corporation (CSA) began service in 1965. It is a private, non-profit community agency with an associated development corporation that has been active in development of affordable housing (over 2,000 units) and economic development. It provides health and social services, and a Head Start program for children at locations in Northern Nevada.

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<sup>75</sup> As in the Dickens novel, *A Tale of Two Cities*, which begins with the sentence, "It was the best of times, it was the worst of times," Nevada is embracing rapid population growth which creates vibrancy, and opportunities; yet as is currently characteristic of the US as a whole, the rate of job growth in Nevada significantly lags the rate of population growth so many families, households, and individuals find themselves in need of assistance. Need greatly exceeds resources across the range of services. HELP attempts to interlink and leverage resources to meet family and individual needs on a temporary basis with the goal of increasing self sufficiency.

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CSA was one of the first two agencies to provide services to State of Nevada Housing Division to weatherize homes with FEAC funds during the SFY 2002 ramp-up year. It has taken responsibility to weatherizes homes with UEC funding within Washoe County.

### 3. *City of Henderson Neighborhood Services (NS)*

City of Henderson  
Neighborhood Services  
240 Water Street  
Henderson, Nevada 89009  
(702) 267-2014

Neighborhood Services serves the City of Henderson in Clark County. The City of Henderson Neighborhood Services Division (NS) is operated under the City Manager's office, with the purpose of developing "unified and healthy" neighborhoods and to enhance citizen self-sufficiency while maintaining their "uniqueness and identity." The Neighborhood Services Division offers outreach services and has four Divisions in addition to Affordable Housing Programs. These are Neighborhood Programs, Neighborhood Enhancement, Grants (such as Community Development Block Grants) and Rebuild America.

Neighborhood Services has a program to help with down payment and closing costs for qualifying applicants to purchase a home in Henderson, and a program of low-interest and deferred loans for home repair.

The Weatherization Assistance Program is available to homeowners and renters and allows low-income families to have their homes weatherized at no cost to them. Applications continue to be completed at the participant's home, where required documentation is copied<sup>76</sup>, client education is delivered in person, and the home is visually assessed.

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<sup>76</sup> The home visit includes taking a lightweight copier to the client's home so that no income eligibility documentation leaves the home. Clients appreciate this, a technical innovation that would not have been possible in prior weatherization programs, and clients appreciate the face-to-face contact.

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#### 4. *Rural Nevada Development Corporation (RNDC)*

Rural Nevada Development Corporation  
1320 E. Aultman Street  
Ely, Nevada 89301  
(775) 289-8519

The Rural Nevada Development Corporation (RNDC) provides services to the largest geographic area with the sparsest population. Its purpose is “To provide economic development assistance and financing opportunities to small businesses and health, safe, affordable housing to people in Nevada.” The RNDC office is located in Ely in White Pine County. RNDC provides services in eleven counties, including Churchill, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Mineral, Nye, Pershing, and White Pine County.

RNDC operates down payment assistance and deferred loan program to first-time homebuyers, a housing rehabilitation/home repair program, a housing acquisition/rehabilitation program for purchasing and repairing HUD foreclosed homes for sale to low-income families, a Native American business venture program, and a general small business technical assistance program.

The Low Income Weatherization Assistance Program is provided free of charge to qualifying families and households, and no liens or financial obligations are placed on individuals receiving assistance. Applications are necessarily taken over the phone rather than through home visits due to the large territory RNDC serves. RNDC has no difficulty identifying potential installation sites, but the problem is in making it possible to do the necessary work for rural homes. The challenge is finding the right mix of funds to leverage since repairs are often necessary before installations can be made. Also, installations are expensive in rural areas in part due to the increased cost of logistics and transportation. In many cases only DOE funding is available. Funding is provided through the State of Nevada Housing Division from the US Department of Energy and the Universal Energy Charge (UEC) funds for the Fund for Energy Assistance and Conservation (FEAC). In addition, Wells Rural Electric and Mount Wheeler Power have contributed weatherization funds for their service territories and Sierra Pacific Power contributes Demand-Side Management (DSM) funds. Low-Income Housing Trust Funds (LIHTF) also provides support.

#### 5. *Citizens for Affordable Homes, Inc. (CAHI)*

Citizens for Affordable Homes, Inc.  
100 Pine Cone Road  
Dayton, Nevada 89403  
(775) 883-7101

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Citizens for Affordable Homes, Inc. (CAHI) is a 501 (c) (3) non-profit housing development organization started in March 1993. CAHI's primary mission is "to provide assistance to families with low and very-low incomes through the development of affordable homes with an emphasis on home ownership." CAHI is the leading builder of self-help homes in Nevada. The self-help concept requires families to contribute sixty-five percent of the labor to construct their home and at least thirty-five hours per week during construction. CAHI organizes the construction process and uses local vendors for construction materials and local subcontractors to complete the building process. CAHI also provides a down-payment assistance program.

CAHI provides both federal and Fund for Energy Assistance and Conservation weatherization services in Carson, Douglas, Lyon, and Storey counties. Assistance is provided to homeowners and renters who reside in mobile homes, single-family, or multi-family buildings. Assistance is provided to qualifying applicants free of charge and no liens or financial obligations are placed on individuals receiving assistance.

### ***B. Number of Homes Weatherized***

The Housing Division administers the Weatherization Assistance Program through the five subgrantee agencies.<sup>77</sup> Each covers a specific area of the state. Subgrantees are the community based organizations (CBOs) or county or municipal public entities that determine eligibility for programs and perform the weatherization work itself.

Four subgrantee agencies have been implementing the Weatherization Assistance Program for some years. These were joined by Citizens for Affordable Housing, Inc. (CAHI) during SFY 2005. The total of homes treated in SFY2006 was 1,139. Of these, the total with Fund for Energy Assistance and Conservation funding was 1,012 (Table 17).

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<sup>77</sup> With regard to the current market situation for weatherization services and skilled personnel, as noted in prior evaluations, Nevada's rapid increase in population is tending to pull contractors and workers with housing knowledge and experience towards new construction where opportunities are currently quite high, and pay scales are higher than in retrofit work. Weatherization is typically a community service specialty and the rewards are in part the intangible rewards of community service. Those with retrofit skills and experience can move between sectors. Also, outside of Las Vegas/Henderson and Reno, it is not easy to provide services in rural areas where travel distance from the subgrantee office to homes that require weatherization services can be long, and with the current run up in gasoline prices, an expense factor that has to be continuously monitored.

<b>Fund for Energy Assistance &amp; Conservation Weatherized Homes (SFY 2006, by Subgrantee)</b>		
<b>Subgrantee Agency</b>	<b>Homes Weatherized</b>	
<b>HELP of Southern Nevada (HELP)</b>	577	57.0%
<b>Community Service Agency (CSA)</b>	132	13.0%
<b>Rural Nevada Development Corporation (RNDC)</b>	118	11.7%
<b>City of Henderson Neighborhood Services (NS)</b>	111	11.0%
<b>Citizens for Affordable Homes, Inc. (CAHI)</b>	74	7.3%
<b>Total</b>	1,012	100%

**Table 17: Weatherized Homes by Subgrantee.**

### ***C. Installation Summary***

Table 18 shows SFY 2006 installations by housing type.

<b>Number of Homes Weatherized by Provider and Housing Type (FEAC Funds) SFY 2006</b>							
	<b>CSA</b>	<b>HELP</b>	<b>NS</b>	<b>RNDC</b>	<b>CAHI</b>	<b>Total</b>	<b>(%)</b>
<b>Single Family</b>	54	159	26	20	24	283	28.0%
<b>Mobile Home</b>	51	236	10	43	46	386	38.1%
<b>2-4 Family</b>	9	13	3	54	3	82	8.1%
<b>5+ Family</b>	18	169	72	1	1	261	25.8%
<b>Total</b>	132	577	111	118	74	1,012	100%

**Table 18: Types of Homes Weatherized (by Subgrantee).**

Most homes weatherized in SFY 2006 were located in Clark County, Washoe, and Carson City, together accounting for 842 homes (about 83% of homes weatherized). The list of completed weatherization jobs by county is shown in Table 19.

### Weatherized Homes by County

County	Single Family	Mobile Home	2-4 Family	5+ Family	Total	(%)
Clark	185	246	16	241	688	68.0%
Washoe	54	51	9	18	132	13.0%
Carson City	6	14	1	1	22	2.2%
Lyon	13	27	1	0	41	4.1%
Douglas	7	2	1	1	11	1.1%
Churchill	5	10	0	0	15	1.5%
Elko	4	11	0	0	15	1.5%
Humboldt	1	8	1	0	10	1.0%
Lander	1	6	0	0	7	0.7%
Pershing	3	1	0	0	4	0.4%
Mineral	1	3	0	0	4	0.4%
Eureka	1	2	0	0	3	0.3%
Lincoln(1)	0	0	0	0	0	0.0%
Nye	1	1	53	0	55	5.4%
Storey	1	3	0	0	4	0.4%
Esmerelda	0	1	0	0	1	0.1%
White Pine(1)	0	0	0	0	0	0.0%
	283	386	82	261	1012	100.0%

(1) Though no homes were completed in Lincoln County under UEC, one was completed using DOE funds. Also three homes were completed in White Pine county using DOE funds. UEC is not available in areas with no UEC participating utility service.

**Table 19: Weatherization by County.**

#### ***D. Cost “Caps,” Average Cost & Coordinated Funding***

During SFY 2006 as in earlier years, there was a \$4,000 cap on Fund for Energy Assistance and Conservation (Universal Energy Charge) funds and no federal cap on the amount of DOE funds that could be expended per home to complete the weatherization work.<sup>78</sup> The average weatherization expenditure was \$2,265.<sup>79</sup>

<sup>78</sup> In SFY 2006 the Nevada Housing Division applied an expenditure cap of \$6,000 for homes using both FEAC and DOE funds. The cap on FEAC funding has been \$4,000 since SFY 2003. DOE funds were also capped at \$4,000 by the Nevada Housing Division when used as a single source. See Nevada Fund for Energy Assistance and Conservation State Plan for SFY 2004, §10.2.6, P. 20.

<sup>79</sup> This number is an average of 100% of program operations expenditures plus one half of health and safety expenditures. This calculation follows the model prescribed by DOE Grant Guidance. Cost to the Subgrantee would be slightly different.

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There were six (6) installations with costs greater than \$6,000, with the most costly at \$6,536. Installations over \$6,000 included a funding source other than FEAC funding. These often included equipment replacement or repair and/or home repair costs necessary before weatherization could take place. There was no change from SFY 2005 to SFY 2006 in the measure installation priority list used by the Subgrantees to determine the order of cost-effective measure installation.

### ***E. Health & Safety***

“Health and safety’ means the health and safety of a household’s occupants. Typical health and safety measures may include but are not limited to, heating and cooling system repairs/replacement, and mechanical measures as approved by the Housing Division, testing for carbon monoxide, adherence to minimum ventilation requirements, and installation of carbon monoxide detectors.”<sup>80</sup> The Housing Division is the only agency in the State of Nevada that provides emergency replacement of failed heating and cooling equipment to the resident. Other agencies would require the resident take out a loan to replace equipment, and *could not act in time to ensure health and safety*. Loans, if available, are typically not taken out by low income households because of the resident’s financial situation. So, without the Housing Division emergency replacement, heating or cooling equipment is not replaced.

In SFY 2006, the program replaced furnaces in one-hundred and nine (109) households. Of these, ninety-nine were owner occupied and ten were rentals. Also, sixty-eight were occupied by senior citizens (over 60 years of age), seventy-two by persons with disabilities, twelve were occupied by families with children under the age of six, and five by Native Americans. In seventy-eight (78) homes air conditioners were replaced. Of these, seventy-three were owner occupied and five were rentals. Also, forty-nine were occupied by senior citizens, fifty-one by persons with disabilities, nine by families with children under six years of age, and five by Native Americans.

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<sup>80</sup> Nevada Fund for Energy Assistance and Conservation State Plan for SFY 2006, definition 2.20, Page 7. Fund for Energy Assistance and Conservation Weatherization Assistance Program work follows the specifications of the federal Weatherization Assistance Program. “Health and safety” is one of three major goals of the federal program. The U.S. Department of Energy’s Weatherization Assistance Program was created by Congress in 1976 under Title IV of the Energy Conservation and Production Act. The purpose and scope of the Program as currently stated in the Code of Federal Regulations 10CFR 440.1 is “to increase the energy efficiency of dwellings owned or occupied by low-income persons, reduce their total residential expenditures, and improve their health and safety, especially low-income persons who are particularly vulnerable such as the elderly, persons with disabilities, families with children, high residential energy users, and households with high energy burden” (Code of Federal Regulations, 2005).

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Furnace replacement and air conditioner replacement have been identified as an area that deserves higher priority, though this may require modification of emphasis at the federal level to support state needs.

The Housing Division is doing good work in the area of health and safety. At the same time, "health and safety" has been raised at the national level as an area that could be further developed and rationalized with the development of simple rules based in medical and health knowledge, and by the development of societal cost benefit analysis.

**Recommendation:** The Housing Division should support this national effort by engaging a program development expert with medical/health knowledge to review and strengthen the program in the "health and safety" area.

#### ***F. Contractor Training***

Beginning in SFY 2005, with the addition of the technical position to the Housing Division weatherization program, training was shifted from California to Nevada and is now conducted (at lower cost) by the Housing Division.

Ten percent (10%) of all installations are inspected in the field and the files are reviewed for completion and accuracy.

#### ***G. Utility Help***

Two major Nevada utilities, Sierra Pacific Power Company and Nevada Power are assisting the Nevada UEC program effort by providing some funds for assisting with training of Subgrantee agencies and developing education materials, in particular, household weatherization kits for distribution by the subgrantees.

These utilities also provide DSM weatherization funding for customers above 150% of poverty (gap DSM funding). During SFY 2006 the Housing Division worked with the two electric companies to support tailoring submission of a set of utility sponsored low-income DSM programs for approval by the Public Utility Commission of Nevada.

The electric utilities are mandated to support program effectiveness and efficiency, and ensure productive coordination with the Housing Division programs with no duplication of services.

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## H. Formal and Informal Compliance

**Finding: The UEC Weatherization Assistance Program (UEC WAP) program is in compliance with subsections 3<sup>81</sup> and 6<sup>82</sup> NRS 702.270, and other sections relevant to formal compliance.**

The Housing Division is mandated to comply with provisions of the weatherization program as stated in NRS 702. Below are the relevant specifications in NRS 702.270 and NRS 702.280 and a description of how Housing implemented these requirements or did not when it was unfeasible.

### 1. Specific Provisions

#### **(1) Twenty-five percent of the money in the Fund must be distributed to the Housing Division; limit of six percent for administration<sup>83</sup>**

This provision has been carried out each year, consistent with provisions of NRS 702.270 (1). For documentation for SFY 2006, please see the "Fiscal" section of the evaluation.

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<sup>81</sup> NRS 702.270 (3): Except as otherwise provided in subsection 4, to be eligible to receive assistance from the Housing Division pursuant to this section, a household must have a household income that is not more than 150 percent of the federally designated level signifying poverty, as determined by the Housing Division.

<sup>82</sup> NRS 702.270 (6): In carrying out the provisions of this section, the Housing Division shall: (a) Solicit advice from the Welfare Division and from other knowledgeable persons; (b) Identify and implement appropriate delivery systems to distribute money from the Fund and to provide other assistance pursuant to this section; (c) Coordinate with other federal, state and local agencies that provide energy assistance or conservation services to low-income persons and, to the extent allowed by federal law and to the extent practicable, use the same simplified application forms as those other agencies; (d) Encourage other persons to provide resources and services, including, to the extent practicable, schools and programs that provide training in the building trades and apprenticeship programs; (e) Establish a process for evaluating the programs conducted pursuant to this section; (f) Develop a process for making changes to such programs; and (g) Engage in annual planning and evaluation processes with the Welfare Division as required by NRS 702.280. (Added to NRS by 2001, 3235)

<sup>83</sup> NRS 702.270 (1): Twenty-five percent of the money in the Fund must be distributed to the Housing Division for programs of energy conservation, weatherization and energy efficiency for eligible households. The Housing division may not use more than 6 percent of the money distributed to it pursuant to this section for its administrative expenses.

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**(2) Funds to be used only for specified purposes.<sup>84</sup>**

Funds have been applied only for purposes specified in NRS 702.270 (2). For documentation, please see the “Fiscal” section of the evaluation.

**(3) Income eligibility limitation for program participants<sup>85</sup>**

The Housing Division has successfully implemented the income requirements for the program as specified in NRS 702.270, § (3) and (4). Please see Table 2 in this section of the evaluation, below.

**(4) Solicit advice from Welfare and other knowledgeable persons**

Consistent with NRS 270.702 (6) (a), ongoing outreach was conducted in SFY 2006, in cooperation with the Division of Welfare and Supportive Services and the Advisory Committee. In addition, Housing Division staff worked with the Governor’s Energy Advisor, and with the utilities to coordinate and strengthen program services. There were a number of formal and informal meetings with stakeholders/advocates to discuss aspects of the program and how the program could be improved. The Housing Division participated with the Welfare Division in the statewide open planning meeting, held in the spring, and worked jointly to implement the SFY 2006 program plan and to develop the SFY 2007 program plan.

**(5) Implement the program**

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<sup>84</sup> NRS 702.270 (2): Except as otherwise provided in NRS 702.150, after deduction of its administrative expenses, the Housing Division may use the money distributed to it pursuant to this section only to: (a) Provide an eligible household with services of basic home energy conservation and home energy efficiency or to assist an eligible household to acquire such services, including, without limitation services of load management. (b) Pay for appropriate improvements associated with energy conservation, weatherization and energy efficiency. (c) Carry out activities related to consumer outreach. (d) Pay for program design. (e) Pay for the annual evaluations conducted pursuant to NRS 702.280.

<sup>85</sup> NRS 702.270 (3): Except as otherwise provided in subsection 4, to be eligible to receive assistance from the Housing Division pursuant to this section, a household must have a household income that is not more than 150 percent of the federally designated level signifying poverty, as determined by the Housing Division. NRS 702.270 (4): The Housing Division is authorized to render emergency assistance to a household if the health or safety of one or more of the members of the household is threatened because of the structural, mechanical or other failure of: (a) The unit of housing in which the household dwells; or (b) A component or system of the unit of housing in which the household dwells. Such emergency assistance may be rendered upon the good faith belief that the household is otherwise eligible to receive assistance pursuant to this section.

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The Housing Division has successfully implemented the Weatherization Assistance Program as specified in NRS 70.270 (b).

**(6) Use the same simplified application form**

No application forms are used in common by the Housing Division and the Division of Welfare and Supportive Services. As reported in the SFY 2003 evaluation, a working group consisting of both Housing and Welfare management tried to streamline the application so that both agencies could use a common form. However, the two agencies have different data collection needs and the joint form became too long. The agencies decided to continue using their own forms.<sup>86</sup>

**(7) Coordinate with other agencies that provide energy assistance**

Consistent with NRS 702.270 (6)(c), the Housing Division Weatherization Assistance Program coordinated Nevada Fund for Energy Assistance and Conservation funding with Department of Energy weatherization assistance funding.<sup>87</sup> Some Housing Trust Fund dollars are also coordinated with the weatherization program.

The Housing Division coordinates with the Division of Welfare and Supportive Services, which downloads records for all recipients receiving energy payment assistance to the Housing Division. Housing can prioritize the list to customize postcards sent to recruit clients, with the intent to capture leads for the subgrantees.<sup>88</sup> The Division of Welfare and Supportive Services sends daily emails of clients with FAC \$2000 to Housing for immediate follow-up.<sup>89</sup>

The Housing Division continues to coordinate with Sierra Pacific Power Company which provides “GAP” funding to treat homes up to 60% of area median income, (equivalent to about 200% of Federal Poverty Level). The Gap funding provides a

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<sup>86</sup> Housing has identified a software program “DirectApps” that could be used by Welfare and Housing for common applications. This would require an initial investment of \$80-100,000 to purchase and modify the application for use, plus the cost to incorporate the application into both Welfare and Housing systems. The initial application would be taken at any point of contact and this system would forward income qualified applications to both agencies. At the current weatherization funding levels Housing can serve roughly 1,500 clients. With 15,000 income qualified LIHEA clients, Housing could be overwhelmed with applications. A joint application system of this type would require careful scrutiny of costs and benefits.

<sup>87</sup> Nevada is not currently exercising the federal option to allocate a small percentage of federal LIHEA dollars to weatherization services. When states choose this option, the Department of Health & Human Services LIHEA dollars are relatively unrestricted in comparison with Department of Energy Weatherization Assistance Program dollars, and may, for example, be used for necessary repairs to permit weatherization work to proceed.

<sup>88</sup> Cards are not sent to counties for which there is a substantial backlog.

<sup>89</sup> This is a change from \$2500 (in prior years) to \$2000.

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'safety net' and is available to weatherize homes between 151%-200% of the federal poverty level which would otherwise go untreated. This work is carried out through the Housing Division's subgrantee agencies. In SFY 2006, Nevada Power also provided coordinated supplementary low-income Demand-Side Management funding to the subgrantee agencies in its service territory. The other UEC utilities are not currently providing this funding, so this coverage is available only in Sierra Pacific and Nevada Power service territory.

The Housing Division also worked through SFY 2006 with Sierra Pacific Power Company and Nevada Power to develop low-income Demand-Side Management program plans for submission to the Public Utility Commission of Nevada. It is anticipated that a much needed air conditioner program will be made available in Southern Nevada in 2007 with the support of Nevada Power.

The Housing Division continues to work towards coordination with the agency administering federal rural home funds to try to develop an ability to better cover home repairs necessary before installing weatherization materials. This is an important objective – substantial repairs are necessary in many rural homes due to the nature of the rural housing stock and overcoming this problem would overcome a substantial barrier to weatherization efforts.<sup>90</sup>

No other local agencies are providing financial assistance to the Housing weatherization program.

### **(8) Establish a process for evaluating the program**

In the first program year, the Housing Division and Division of Welfare and Supportive Services implemented the evaluation provisions of NRS 702. The current evaluation for SFY 2006 is the fourth State Fiscal Year evaluation in this series.

### **(9) Develop a process for making program changes**

The Housing Division and the Division of Welfare and Supportive have each year improved the program. Some of the improvements reflect recommendations from the evaluations and others improvements generated by management and staff, contributions of ideas from the Subgrantee agencies, and by the Advisory Group. The formal structure for these changes is in the annual planning process, though a number of small improvements have progressively been implemented by management and staff below the level of the formal planning process, and on an ongoing basis. Some proposed changes have been above the scope of an operating agency, and in those cases have been transmitted to the governor and legislature for

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<sup>90</sup> The problem of repairs can prevent weatherization work from going forward on a home. Yet houses have a long useful life and with repairs can provide many additional years of "decent, safe, and sanitary" shelter.

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consideration. Progressive modifications in NRS 702, documented by date, mark this process.

### **(10) Engage in annual planning and evaluation with Housing Division**

As enacted in NRS 702, there is an annual planning and evaluation process conducted jointly with the Housing Division, which has been implemented following the provisions of NRS 702.280.<sup>91</sup> Each State Fiscal Year can be viewed as an annual program cycle. For each cycle an evaluation is conducted and there is a structured planning process resulting in the Program Plan for the following year.

#### *2. Review of Client Files*

The Weatherization Assistance Program is administered by the Housing Division and is implemented through five Subgrantee agencies, responsible for different portions of the state. The total of homes treated in SFY 2006 was one-thousand one hundred and thirty-nine (1,139). Of these, the total with Fund for Energy Assistance and Conservation funding was one-thousand and twelve (1,012).

For SFY 2006, files were selected using systematic random sample instructions supplied to each agency. For HELP, Neighborhood Services, and CSA records were

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<sup>91</sup> NRS 702.280: Coordination and evaluation of programs; duties of Division of Welfare and Supportive Services and Housing Division; submission of report to Governor, Legislative Commission and Interim Finance Committee. 1. The Division of Welfare and Supportive Services and the Housing Division jointly shall establish an annual plan to coordinate their activities and programs pursuant to this chapter. In preparing the annual plan, the Divisions shall solicit advice from knowledgeable persons. The annual plan must include, without limitation, a description of: (a) The resources and services being used by each program and the efforts that will be undertaken to increase or improve those resources and services; (b) The efforts that will be undertaken to improve administrative efficiency; (c) The efforts that will be undertaken to coordinate with other federal, state and local agencies, nonprofit organizations and any private business or trade organizations that provide energy assistance or conservation services to low-income persons; (d) The measures concerning program design that will be undertaken to improve program effectiveness; and (e) The efforts that will be taken to address issues identified during the most recently completed annual evaluation conducted pursuant to subsection 2. 2. The Division of Welfare and Supportive Services and the Housing Division jointly shall: (a) Conduct an annual evaluation of the programs that each Division carries out pursuant to NRS 702.260 and 702.270; (b) Solicit advice from the Commission as part of the annual evaluation; and (c) Prepare a report concerning the annual evaluation and submit the report to the Governor, the Legislative Commission and the Interim Finance Committee. 3. The report prepared pursuant to subsection 2 must include, without limitation: (a) A description of the objectives of each program; (b) An analysis of the effectiveness and efficiency of each program in meeting the objectives of the program; (c) The amount of money distributed from the Fund for each program and a detailed description of the use of that money for each program; (d) An analysis of the coordination between the Divisions concerning each program; and (e) Any changes planned for each program. (Added to NRS by 2001, 3236)

reviewed at the agencies. For RNDC and CAHI, records were sent in to the Housing Division. The SFY 2006 jobs completed and the sample by agency are shown in Table 20. The overall sample target was 180 files, and 182 were drawn and reviewed.

<b>Homes Weatherized and Sample Size Fund for Energy Assistance &amp; Conservation Weatherized Homes (SFY 2006, by Subgrantee)</b>			
Subgrantee Agency	Homes Weatherized	Planned Review Sample	Final Review Sample
HELP of Southern Nevada (HELP)	577	60	60
Community Service Agency (CSA)	132	30	30
Rural Nevada Development Corporation (RNDC)	118	30	30
City of Henderson Neighborhood Services (NS)	111	30	30
Citizens for Affordable Homes, Inc. (CAHI)	74	30	32
<b>Total</b>	<b>1,012</b>	<b>180</b>	<b>182</b>

Table 20: Weatherized Homes and Sample Size by Subgrantee Agency.

<b>Compliance of Client Records Fund for Energy Assistance &amp; Conservation Weatherized Homes (SFY 2006)</b>		
Document or Record	Exact Results for Review Sample	
	Number Missing	Percent Missing
BWR or WIF	0	0.00%
Combustion Appliance Safety Inspection Form (where appropriate)	0	0.00%
Blower Door Weatherization Data Sheet (where appropriate)	0	0.00%
Customer Signoff Forms	0	0.00%
Copy of Utility Bill(s)	2	1.10%
Income Requirements Met (Documentation in Case File)	1	0.55%
Utility Account Number(s)	1	0.55%
Weatherization Inspection Report (or equivalent)	0	0.00%

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**Note: Total number of case record files reviewed was 182.**

**Table 21: Documentation Compliance for Weatherized Homes.**

**a) Documentation**

Based on this review, the evaluation team finds that virtually all required documentation is included in the case files (182 files examined – see Tables 20 & 21). This is an excellent result. We looked for the:

(a) BWR or WIF – a 1-2 page form – the full copy should be in the file. All were present.

(b) Combustion Appliance Safety Inspection Form (CAS) – a 6 page form completed in the field during the Combustion Appliance Safety assessment – this should be in certain files. The CAS was in all files for which it was required.

(c) Blower Door Weatherization Data Sheet (a two-page document that records initial and final blower door assessments). All were present.

(d) Customer signoff form(s). All were present.

(e) Copy of a utility bill from each utility that pays the UEC – documenting that the residence qualifies for UEC funded weatherization, and allowing any follow-up that requires knowledge of the utility account number. Only two of the 182 case records did not include a copy of the utility bill.

(f) Income documentation. All files were consistent with program income eligibility requirements, with documentation in each file.

(g) Utility account numbers. Only one file of the 182 reviewed did not have at least one account number from a UEC utility recorded in the file. The job appeared appropriate, but the account number was not recorded.

(h) Weatherization Inspection Report or another form showing the precise items installed at the residence. The report was present in all files, though three were not dated.

**b) General Quality of Records**

The Weatherization Assistance Program files are well kept. Due to the decentralized implementation of the program by the Housing Division through the five subgrantees, the files have an appearance of non-uniformity. However, while forms not required by program policy may differ for each Subgrantee, for the SFY 2006 records required

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by the Housing Division, *all of the required forms are being properly and consistently maintained by the program's Subgrantees.* The required information is present.<sup>92</sup>

### 3. *Informal Compliance*

With regard to informal compliance, which has to do with meeting expectations in addition to formal requirements, the Housing Division has no problems and also, no appearance of any problem.

- The costs for weatherization by housing type are realistic. There is a strong strategic and technical effort to maximize energy savings while minimizing cost, given that a “whole house” approach is most cost-effective in the long-run.
- In SFY 2006 the Housing Division continued to achieve full implementation of housing units completed in relation to budget.

### 4. *Housing Division Compliance Summary*

In summary, the Housing Division met both formal compliance requirements and informal expectations for the conduct of its work in SFY 2006.

#### ***I. Plan for Analysis of Energy Savings***

For the SFY 2006 evaluation, an analysis of energy consumption and energy savings was carried out. However, for this evaluation, as with the SFY 2005 and SFY 2004, there were a number of data problems. The problems encountered are discussed in this section and limited results are reported.

#### *1. Analysis Plan*

The “data years” required for each evaluation will generally lag by one to two years. Figure 12 shows the plan for evaluation analysis of energy savings. Each evaluation study reports on the activity of a designated program year (for example, the SFY 2005 evaluation covers the activity and budget of the SFY 2005 program year). However, the analysis of energy savings and any other analysis dependent on data from utility customer information systems will generally be lagged by from one to two

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92 There are certain forms that should be present in a complete customer file. These are records of the work done on the house and the final signoff. While most of the data exists electronically, it should also be in hard copy in the customer files. The hard copy of the forms also has items that cannot be entered electronically.

years.<sup>93</sup> As shown in Figure 12, the plan for the SFY 2006 evaluation is to analyze and report energy savings for the homes weatherized during SFY 2005.

<b>Plan for SFY 2006 Evaluation</b>		
<b>Report Elements</b>	<b>Fiscal Year</b>	<b>Months Included</b>
<b>Program Analysis</b>		
<b>General</b>	FY 2006	July 1, 2005 through June 30, 2006
<b>Analysis that Requires Utility Customer Information System Data</b>		
<b>Baseline Year</b>	FY 2004	July 1, 2003 through June 30, 2004
<b>Weatherization</b>	FY 2005	July 1, 2004 through June 30, 2005
<b>Post Year</b>	FY 2006	July 1, 2005 through June 30, 2006

**Figure 12: Timing for Quantitative Analysis of Utility Data.**

## *2. Data Arrangements with the Utilities*

Sierra Pacific Power, Nevada Power, and Southwest Gas utilities are providing full support for the necessary data arrangements for the evaluation. Establishing the understandings and relationships to ensure data transfers and then actualizing the first set of data transfers took considerable time. The first data provided required programmers to write data extraction programs at the utilities, and the back and forth interaction between analysts and IT professionals that is involved in setting up new data arrangements.

In addition, as is the case in many other areas, there is a new focus on data security which included data encryption and password protection of files. Security continues to increase the number of steps and overhead involved in preparing data for analysis. In addition, the process of developing arrangements for data transfer revealed some constraints that are due to the ways that different utilities maintain their energy usage and customer information. For the SFY 2006 evaluation, utility responses to the evaluation data requests were particularly quick, reflecting the programming

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<sup>93</sup> The lag is generic to all weatherization analysis designed to produce definitive results. With the end of the program year on June 30<sup>th</sup>, at least one additional year is required to measure the performance of homes in order to take seasonal variation in energy use into account and then to normalize results to a standard weather year. The added time is at least one year and possibly up to two years, depending on how the data flows and evaluation cycles fit together.

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investment made by the utilities in the earlier evaluations, as well as the continuing support by their executives and managers for the program.<sup>94</sup>

### *3. Analysis Window, Baseline & Post Year*

Because the methods needed to analyze energy use and energy savings (in kWh and therms) require a full year of pre-weatherization data and a full year of post-weatherization data to produce fully definitive results, the analysis plan uses at least a thirty-six month window for each analysis. As noted above, the size of the data window requires a lag of at least one and up to two years in reporting.

### *4. Data Cycle for Evaluation*

For organizational purposes, it is important to note that each evaluation cycle should begin at least by February of each year. For Southwest Gas, two data requests are required each year, one in February and the other in September. For Nevada Power and Sierra Pacific Power, one data request each year (in September) is sufficient.

Each utility data request first requires the evaluation team to request and receive Welfare Division and Housing Division service data. Data is then partitioned by utility and split according to the Division of Welfare and Supportive Services and the Housing Division (BWR) data systems. Each request to the utilities is also split into individual fiscal years (State Fiscal Year).

When data files are received back from the utilities, they are inspected, “cleaned,” and checked back against the Division of Welfare and Supportive Services and Housing Division (BWR) source files to coordinate the data records.

### *5. Plan and Reality*

Just as with the program implementation, evaluation plans have to adjust to realities encountered. For SFY 2006 (the analysis of the SFY 2005 weatherization cases), a number of constraints were encountered that limit the analysis of energy savings. However, analysis is improved over the previous evaluations.

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<sup>94</sup> Responses are much more complete than in the past, reflecting the earlier (and now almost completely corrected) problem, of missing utility account numbers in the Housing Division BWR system. In the SFY 2005 evaluation, address standardization software was used by the evaluation team and the utilities attempted to use BWR name and address records to match to utility accounts when the account number was missing from the BWR. However, these methods are labor intensive and result in only small improvements in matching BWR records to utility account numbers.

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## ***J. Estimates of Energy Savings***

This section of the SFY 2006 evaluation presents energy savings estimates.<sup>95</sup> These estimates are a current best estimate and a step on the way to more broadly based and definitive estimates in the next (SFY 2007) evaluation. The savings estimates in this report are based on gross savings rather than net savings. Analysis of energy savings relies on utility energy usage data from the customer information systems of Nevada Power and Sierra Pacific Power Company.<sup>96</sup> Results are presented by utility.

### *1. Method*

With respect to the energy efficiency portion of the housing improvements the question naturally arises: How much energy is actually saved? There are three different approaches to assessing energy savings:

- First, planning estimates referenced to the REM/Design™ program,<sup>97</sup> a DOE-approved method used implicitly in deciding which energy weatherization improvements are appropriate and permitted for each home. These estimates are important for program implementation, but are not used in program evaluations. In practice, planning estimates are generally somewhat high.
- Second, statistical analysis can be used to calculate energy savings relying on actual utility bills for a year before and a year after the weatherization work. This is the primary method used in evaluation; however it does not take into account births, deaths, and other changes in specific household variables. The statistical operations are abstract, and bear no physical relationship to any particular energy savings efforts at a particular site. For example the statistical approach will not answer the question: “Did the roof insulation (or windows, or new furnace etc) achieve the expected physical result?” The statistical analysis approach employs good statistics, real world utility data, but no engineering review.<sup>98</sup>

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<sup>95</sup> As noted above, the analysis is on data from SFY 2005 weatherization work.

<sup>96</sup> We could not get enough cases through the data screens to develop results for SW Gas. SW Gas supplied data. However, due to the nature of the SW Gas customer information system it takes four evaluation data requests over two years to obtain the correct months of data for analysis of the activity of a state fiscal year. When the data is reviewed and merged there is a high attrition of cases. It is expected that a SW Gas analysis will be ready for the SFY 2007 Evaluation.

<sup>97</sup> REM/Design™ is a product of Architectural Energy Corporation. This is a modeling tool that is based on weather patterns and utility energy use, housing stock characterization, and other variables. It is not run separately on each home, but the model runs are used to develop prescriptive lists of appropriate improvements which can be applied based on the specific characteristics of a home. Also see P. 54 and footnote 74.

<sup>98</sup> PRISM™ was used in this section of the analysis (for Sierra Pacific Power Company homes). A very close “PRISM™-like” method was used for Nevada Power homes; this approach was carried out

- Third, both modeling and statistical analysis can be combined. In the third method, applied to individual homes, actual utility bills (from before and after weatherization) are used. However, they are used in both a statistical and in an engineering sense. If, at a particular site, there is an observable change in energy use, it can be examined in terms of the engineering expectations for the particular combination of measures actually applied and in terms other specific site conditions. Here, the program used to execute this third method is EZ SIM™.<sup>99</sup>

## 2. Statistical Analysis: Nevada Power Energy Savings

Out of the eight-hundred forty-seven (847) homes receiving weatherization services through the Fund for Energy Assistance and Conservation in SFY 2005, two hundred and thirteen (213) Nevada Power Company customers with complete billing data were available for analysis. As shown in Table 24 (Cooling Loads) 27 electric heat homes were analyzed as well as 172 homes heated with natural gas.<sup>100</sup>

<b>Nevada Power Customers: Gross Reductions in Cooling Load (Homes Weatherized in SFY 2005)</b>					
<b>Housing Type</b>	<b>Cases (n)</b>	<b>Baseline (kWh)</b>	<b>Post (kWh)</b>	<b>Change (kWh)</b>	<b>Reduction (%)</b>
<b>Electric Heat</b>					
<b>Apartments</b>	8	Not Available – Not enough cases for stable analysis			
<b>Mobile Homes</b>	6	Not Available – Not enough cases for stable analysis			
<b>Single-Family</b>	27	4,408	3,775	633	14%
<b>Heat with Natural Gas</b>					
<b>Apartments</b>	45	3,279	2,827	452	14%
<b>Mobile Homes</b>	52	3,480	2,953	527	15%
<b>Single-Family</b>	75	5,374	4,627	747	14%

**Table 22: Gross Cooling Load Reductions (Nevada Power).**

using Statistical Analysis System (SAS™) and replicates all of the steps of PRISM™ but is not the proprietary package. A pooled regression approach using SAS™ was used for analysis of energy saving for the Southwest Gas homes.

<sup>99</sup> The program was derived from extensive building modeling using the industry standard DOE2, and has been approved for and used extensively in evaluation work in California, Oregon, Washington, and Utah.

<sup>100</sup> For electric heat, only single-family homes were analyzed. With only eight electric heat apartments and six mobile homes with electric heat, there were not enough cases for reliable analysis in these housing types.

A PRISM™- like analysis was run for both the baseline and post periods. The results were weather normalized using model results. The calculations partition effects among baseload, space heat and space cooling. Analysis in Tables 24 & 25 is confined to use of electricity. Also, note that reported energy savings are gross savings (post-year compared to baseline year), rather than net savings.<sup>101</sup>

Gross effects on cooling loads are shown in Table 24. For each analysis, results show a 14% to 15% reduction.

Gross change in overall electric energy use for Nevada Power is shown in Table 25. Since the electricity measures installed in Las Vegas and Henderson are directed primarily towards toward cooling loads, the overall results shown in Table 2 are not unexpected.<sup>102</sup>

<b>Nevada Power Customers: Gross Reductions in Electric Load (Homes Weatherized in SFY 2005)</b>					
<b>Housing Type</b>	<b>Cases (n)</b>	<b>Baseline (kWh)</b>	<b>Post (kWh)</b>	<b>Change (kWh)</b>	<b>Reduction (%)</b>
<b>Electric Heat</b>					
<b>Apartments</b>	8	Not Available – Not enough cases for stable analysis			
<b>Mobile Homes</b>	6	Not Available – Not enough cases for stable analysis			
<b>Single-Family</b>	27	18,132	17,804	328	2%
<b>Heat with Natural Gas</b>					
<b>Apartments</b>	45	6,000	5,515	485	8%
<b>Mobile Homes</b>	52	7,790	7,476	314	4%
<b>Single-Family</b>	75	12,796	12,403	393	3%

<sup>101</sup> For the first evaluation of the Universal Energy Charge/Fund for Energy Assistance and Conservation programs (the SFY 2003 evaluation), energy data was not available. For the SFY 2004 evaluation, only a very few weatherized homes could be analyzed; not enough to provide reliable results. The data constraints are part of the program start-up, which requires coordination of Housing Division, Welfare Division, and utility data. For SFY 2004, too few cases could be linked across the “JOB ID” case identifier used by the subgrantees and the Housing Division Building Weatherization database and the account numbers used as case identifiers by utilities. Available cases are further narrowed by the specifications used in the energy analysis: a fully adequate case must have a full baseline year and a full post-year of data so that change in energy use can be measured. Since data for energy analysis lags by one to two years from the year of each report, it takes two years for improvements in the data systems to be reflected in a report. For this report (SFY 2006) preliminary gross savings are available, although the size of the available samples is still smaller than desired.

<sup>102</sup> Note that these are gross changes without “netting out” the changes in a comparison group. It is expected that a comparison group will be added in the next (SFY 2007) evaluation.

**Table 23: Overall Changes in Load (Nevada Power).**

*3. Statistical Analysis: Southwest Gas Energy Savings*

For Southwest Gas, although data was supplied we were not able to merge results of the different data requests to produce full data for enough cases to provide reliable results. However, last year, using data from SFY 2004 we found a 16.3% reduction in Northern Nevada and 9.2% in Las Vegas/Henderson. These estimates are reported to serve until a more complete analysis in the SFY 2007 evaluation.

*4. Statistical Analysis: Sierra Pacific Power Company Energy Savings*

For Sierra Pacific Power Company, only a small number of cases could meet the criteria for analysis. Of these, only a relative handful could meet the requirement for a full baseline year and a full post year, so the statistical analysis does not have the number of cases that would be desired. Since the heating source for homes in Table 24 is natural gas, the results in the cells at the bottom of the table are in the range expected, except that the results for apartments should be higher.

<b>Sierra Pacific Power Customers: Gross Reductions in Electric Load (Homes Weatherized in SFY 2005)</b>					
<b>Housing Type</b>	<b>Cases (n)</b>	<b>Baseline (kWh)</b>	<b>Post (kWh)</b>	<b>Change (kWh)</b>	<b>Reduction (%)</b>
<b>All Electric Homes</b>					
<b>Apartments</b>	0	Not Available – Not enough cases for stable analysis			
<b>Mobile Homes</b>	0	Not Available – Not enough cases for stable analysis			
<b>Single-Family</b>	0	Not Available – Not enough cases for stable analysis			
<b>Heat with Natural Gas</b>					
<b>Apartments</b>	29	4415	4394	21	0%
<b>Mobile Homes</b>	17	7643	6727	916	12%
<b>Single-Family</b>	21	9356	8751	605	6%

**Table 24: Sierra Pacific Power - Electricity Results.**

For the effect on gas heat, Table 25 shows the effect (in therms) on heating load and for total load. For heating load, the range is from three to thirteen percent reduction, and for total load the range is from six to eleven percent reduction in gas energy use.

These results are based a small number of cases, and more solid results will have to wait for a future analysis in which more cases are available. Results should be considered to be an indicator, but not as firm (reliable) outcomes.

<b>Sierra Pacific Power Customers: Gross Reductions in Gas Load (Homes Weatherized in SFY 2005)</b>					
<b>Housing Type</b>	<b>Cases (n)</b>	<b>Baseline (therms)</b>	<b>Post (therms)</b>	<b>Change (therms)</b>	<b>Reduction (%)</b>
<b>All Electric Homes</b>					
<b>Apartments</b>	5	450	413	37	8%
<b>Mobile Homes</b>	11	725	632	93	13%
<b>Single-Family</b>	16	554	537	17	3%
<b>Heat with Natural Gas</b>					
<b>Apartments</b>	5	4415	4394	21	0%
<b>Mobile Homes</b>	11	7643	6727	916	12%
<b>Single-Family</b>	16	9356	8751	605	6%
Note: Number of cases per cell in this table too small to ensure reliable results. This table is of value as an indicator, but does not provide definitive results.					

**Table 25: Sierra Pacific Power – Natural Gas Results**

### 5. Engineering Analysis: Sierra Pacific Power Energy Savings

To support this analysis, a number of cases have been analyzed in detail.<sup>103</sup>

The types of energy efficiency measures range from smaller actions such as caulking and sealing to much more effective energy savings improvements, such as ceiling insulation, double pane glass, or replacement heating equipment. As is appropriate and necessary, safety, especially with respect to combustion appliances, is a prominent theme of this work. The total cost of such actions is of the order of \$1,000 to \$3,000 per home depending on the extent of installations and related repairs. Some homes fall below, and some are beyond this general range.

Energy savings is examined for a limited number of SFY 2005 weatherized homes in Northern Nevada. Each home analyzed has gas heat, and both electric and gas energy use are assessed.

This analysis requires good engineering and field judgment to interpret the results. We look to see if the patterns observed in the utility data are consistent with specific

<sup>103</sup> The eleven cases are from SFY 2005, for which complete detail was available.

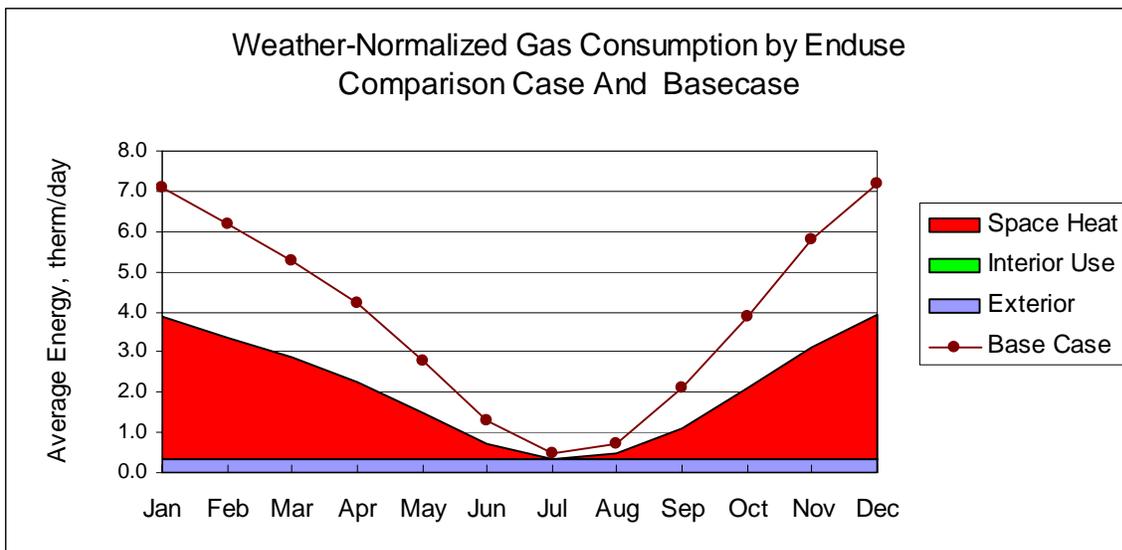
physical and behavioral changes at the site. For example, if energy use at a site increased, the patterns in the data can tell us if the increase was due to a thermostat increase or to faulty insulation.

In these case studies the utility bills, the actual monthly temperatures, and the site records regarding energy savings measures are taken together to reconstruct a coherent explanation for what happened to the use of energy in each home.

a) **Case 1**

This is a mobile home with 990 square feet of floor space and a crawlspace underneath. The home has central gas heat and a gas hot water heater. It also has an evaporative cooler.<sup>104</sup>

The energy saving improvements for this home were sealing the building shell, duct sealing, five compact fluorescent bulbs and a cover for the evaporative cooler. The total cost for this work was \$1,987. Gas use prior to retrofit was 1,422 therms, and after retrofit yearly use 775 therms for a savings of 647 therms (46%). The base case is the top line in the graph (Figure 13). The line at the top of the solid red area in the graph is the use in the post year. Note that both lines move in the same monthly pattern. For this home, the gas savings occur in space heat, while non-heating energy (the blue area at the bottom of the graph) remains constant.

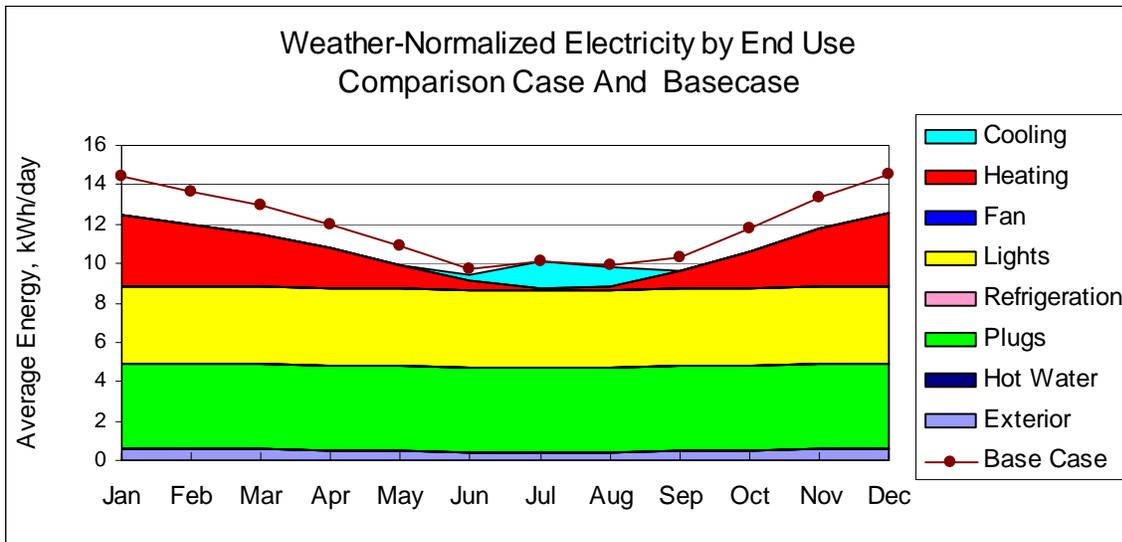


**Figure 13: Natural Gas Savings (Case 1).**

<sup>104</sup> This is Site 193260.

There are very clear gas winter heating savings of about 3 therms per day and a slight indication of base load (Domestic Hot Water) gas savings. The pre retrofit winter gas use was too high. This is an example in which the duct and shell sealing were very effective and remedied a very significant heat loss.

Electricity savings for this home is small (Figure 14). Base year electricity use for this home was 4,365 kWh and use in the year after weatherization was 3,967 kWh, for a savings of 398 kWh (9%).



**Figure 14: Electricity Savings (Case 1).**

For this home, electricity use decreased by about 2 kWh per day. This is due in part to the installed CFLs, but it is mostly due to reduced winter furnace use caused by the shell and duct repairs.<sup>105</sup> Baseline electricity use was 4,365 kWh and post year electricity use was 3,967 kWh, for a savings of 398 kWh (9%).

**b) Case 2**

This is a mobile home with 1,920 square feet of floor space and a crawlspace underneath. The home has central gas heat and a gas hot water heater. It also has an evaporative cooler.<sup>106</sup>

<sup>105</sup> Gas furnaces use some electricity.

<sup>106</sup> This is Site 179115.

The energy saving improvements for this home were sealing the building shell, duct sealing, five compact fluorescent bulbs and a cover for the evaporative cooler. The total cost for this work was \$1,662. Gas use prior to retrofit was 1,018 therms, and after retrofit yearly use 807 therms for a savings of 221 therms (21%).

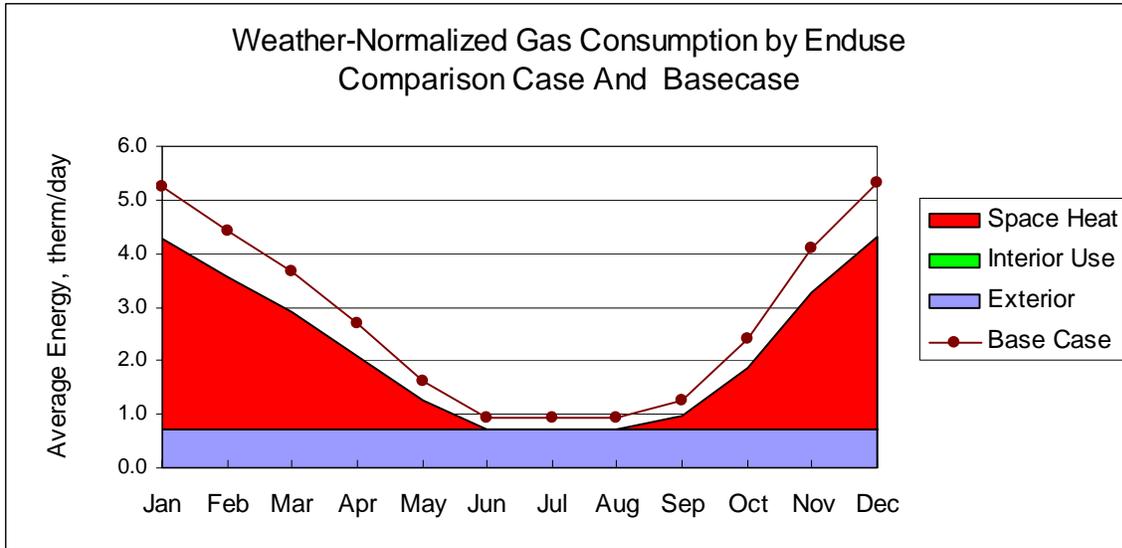


Figure 15: Natural Gas Savings (Case 2).

In Figure 15 there are clear gas savings of about one therm per day and a slight indication of base load (Domestic Hot Water) savings. These savings are due to the duct and shell improvements. No shower heads were installed. Electricity use for this home is shown in Figure 16.

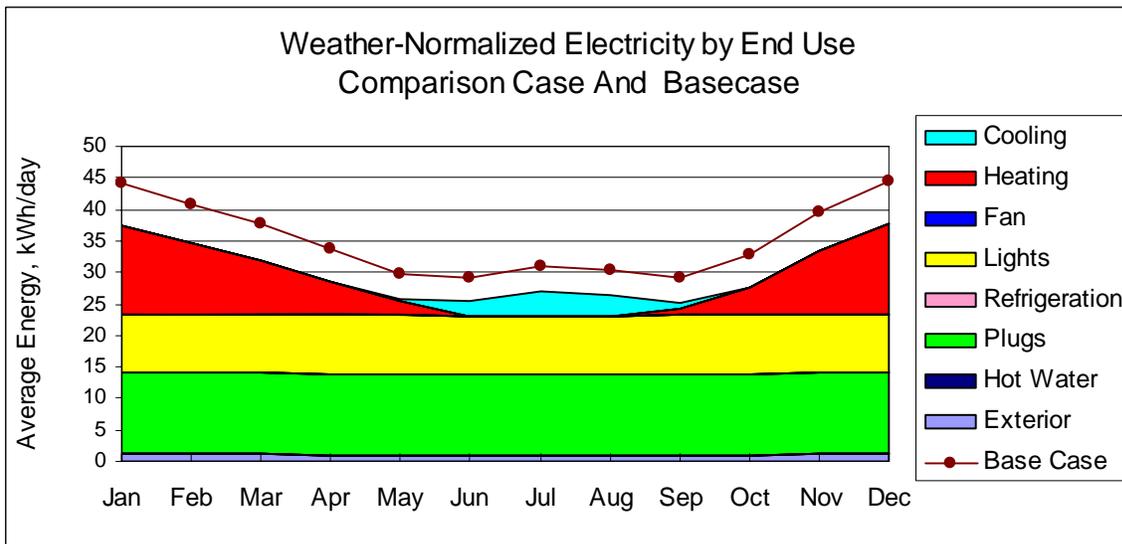


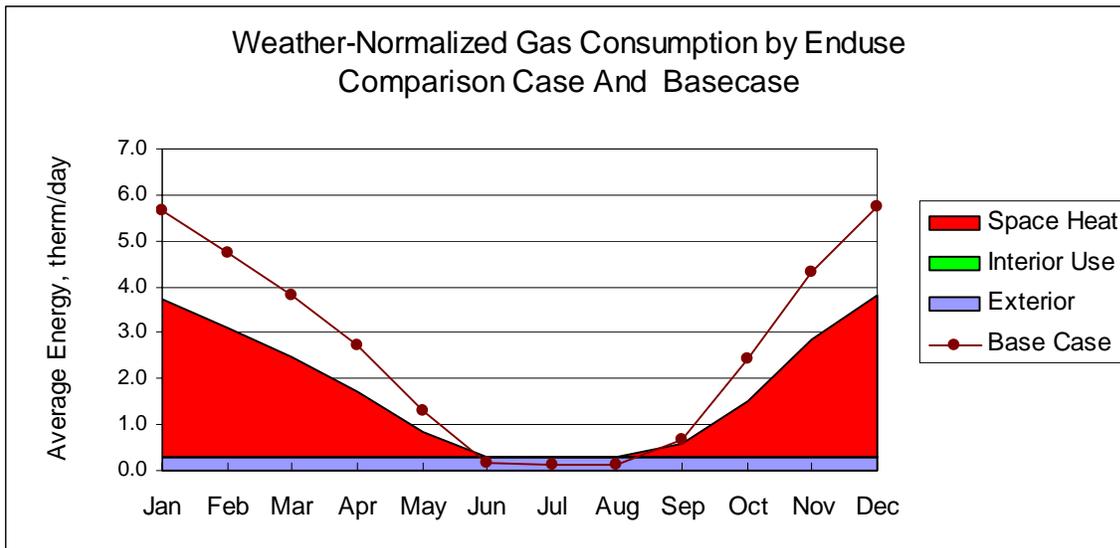
Figure 16: Electricity Savings (Case 2).

Electricity use for this home decreased significantly throughout the year (Figure 16). This is due to the shell and duct improvements plus the CFLs. This site may meet a small portion of its space heat requirement with electric heat, and some of the reduction may be due to reduction in this electric heating use. Baseline electricity use was 12,848 kWh and post year electricity use was 10,996 kWh, for a savings of 1,852 kWh (14%).

a) **Case 3**

This is a mobile home with 1,440 square feet of floor space and a crawlspace underneath. The home has central gas heat and a gas hot water heater.<sup>107</sup>

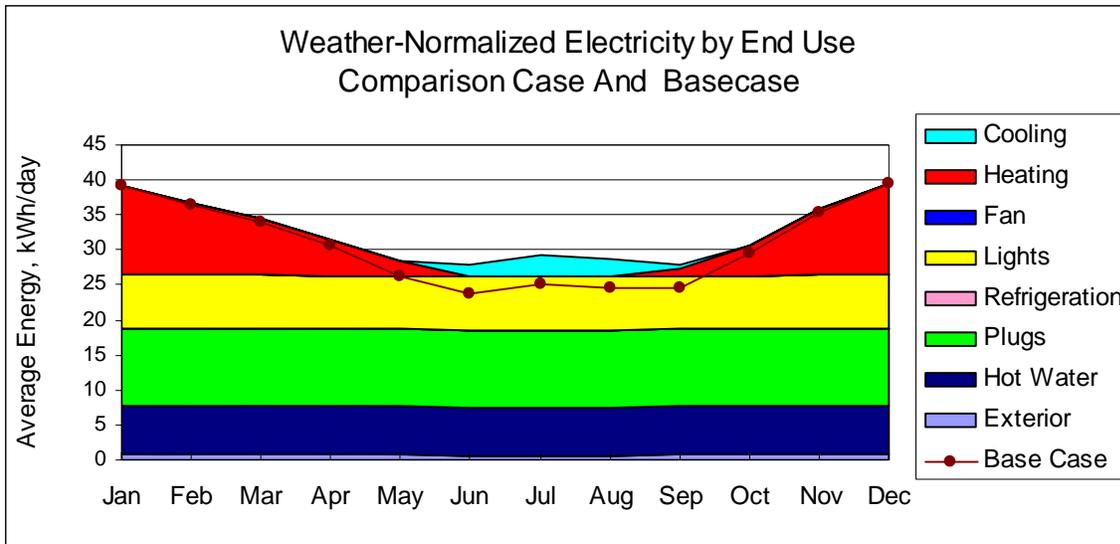
The energy saving improvements for this home were sealing the building shell, duct sealing, ten square feet of double pane glass, and five compact fluorescent bulbs. The total cost for this work was \$1,931. Gas use prior to retrofit was 964 therms, and post-retrofit use was 651 therms for a savings of 313 therms (32%).



**Figure 17: Natural Gas Savings (Case 3).**

As shown in Figure 17, there are clear winter savings in natural gas use of about two therms per day. The baseline condition of this home required unusually high use of natural gas. The duct and shell sealing remedied a significant leakage of heat from the home. Electricity use in this home is shown in Figure 17.

<sup>107</sup> This is Site 179286.



**Figure 18: Electricity Use (Case 3).**

Electricity use in this home increased slightly in the year following retrofit (Figure 18). Baseline electricity use was 11,202 kWh and post use was 11,859 kWh, for an increase of 657 kWh (5.9%). The summer pattern of the increase is consistent with the purchase of an evaporative cooler or air conditioner.

**a) Case 4**

This is a wood frame home with 1,200 square feet of floor space and a crawlspace underneath. The home has central gas heat and a gas hot water heater.<sup>108</sup>

The energy saving improvements for this home were sealing the building shell, duct low flow showerheads, and five compact fluorescent bulbs. The total cost for this work was \$2,255. Gas use prior to retrofit was 651 therms, and post-retrofit was 575 therms, for a savings of 76 therms (11.5%).

As shown in Figure 19, there are clear natural gas savings of about two-tenths of a therm per day throughout the year, and some minor additional winter heating savings. These savings are consistent with strong showerhead/aerator savings plus some shell infiltration savings.

<sup>108</sup> This is Site 256675.

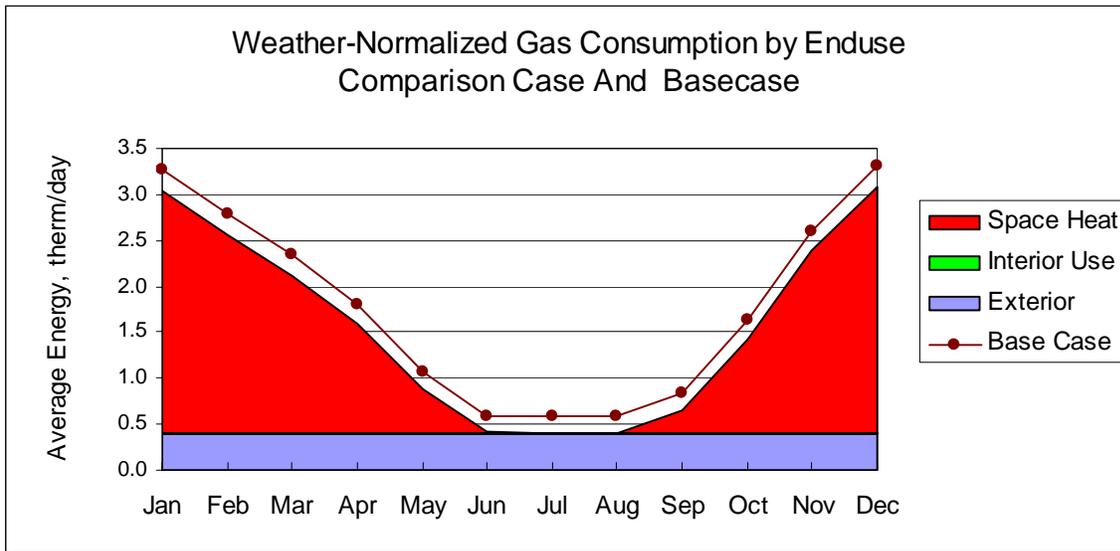


Figure 19: Natural Gas Savings (Case 4).

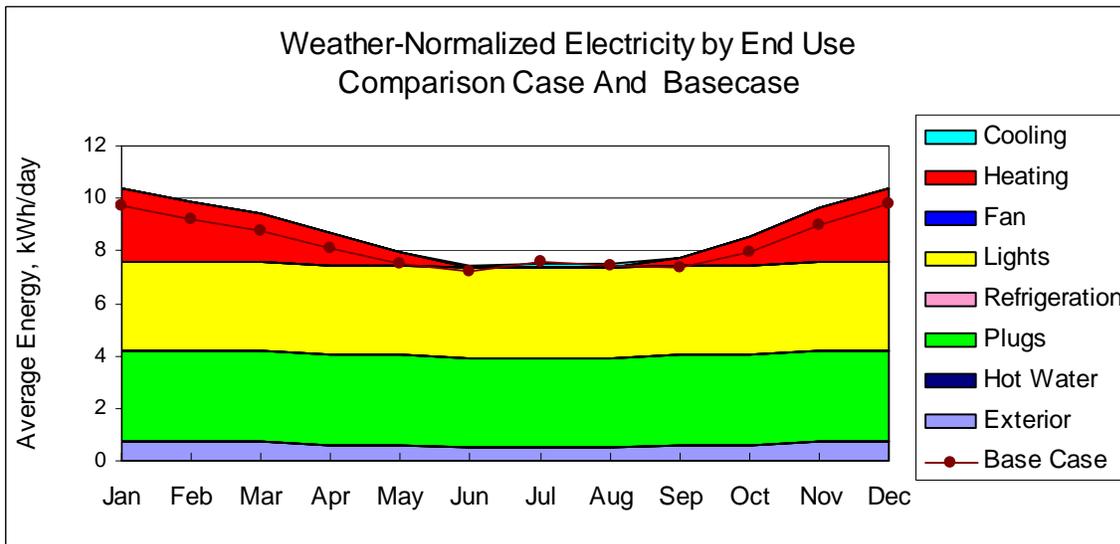


Figure 20: Electricity Use (Case 4).

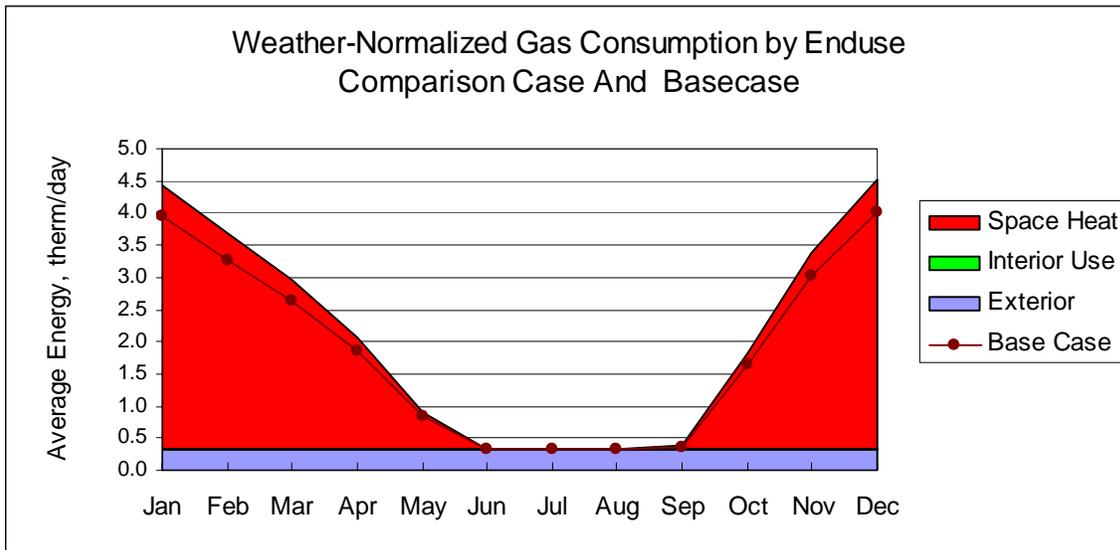
Electricity use in this home increased by about fourth tenths of a kWh per day in January (Figure 20). This is a small increase consistent with changes in appliances or in wintertime lighting. The savings from the CFLs is not evident for this home, so they may have been removed.

a) **Case 5**

This is a wood frame home with 2,750 square feet of floor space and a crawlspace underneath. The home has central gas heat and a gas hot water heater. However, prior to retrofit supplementary space heating was also used.<sup>109</sup>

The energy saving improvements for this home included testing of the building shell and of the ducts, low flow showerheads, and five compact fluorescent bulbs. The total cost for this work was \$810. Gas use prior to retrofit was 686 therms, and after retrofit a yearly use of 763 therms for an increase of 78 therms (11%).

As shown in Figure 21, the slight increase in winter gas use is consistent with a small change in the thermostat check point. There is no evidence of savings from the installed showerhead and aerators, so they may have been removed.



**Figure 21: Natural Gas Use (Case 5).**

The interesting change in Case 5 is shown in Figure 22. As shown in this figure, there is a dramatic decrease in winter electricity use. This pattern means that after retrofit the supplementary electric heat was being used very little. This change is consistent with the retrofit having made the home more comfortable so that electricity was not used for heating post-retrofit and may also have been due in part to the educational component of the retrofit. Baseline electricity use was 19,992 kWh and post year electricity use was 13,777 kWh for a savings of 6,215 kWh (31%).

<sup>109</sup> This is Site 111110.

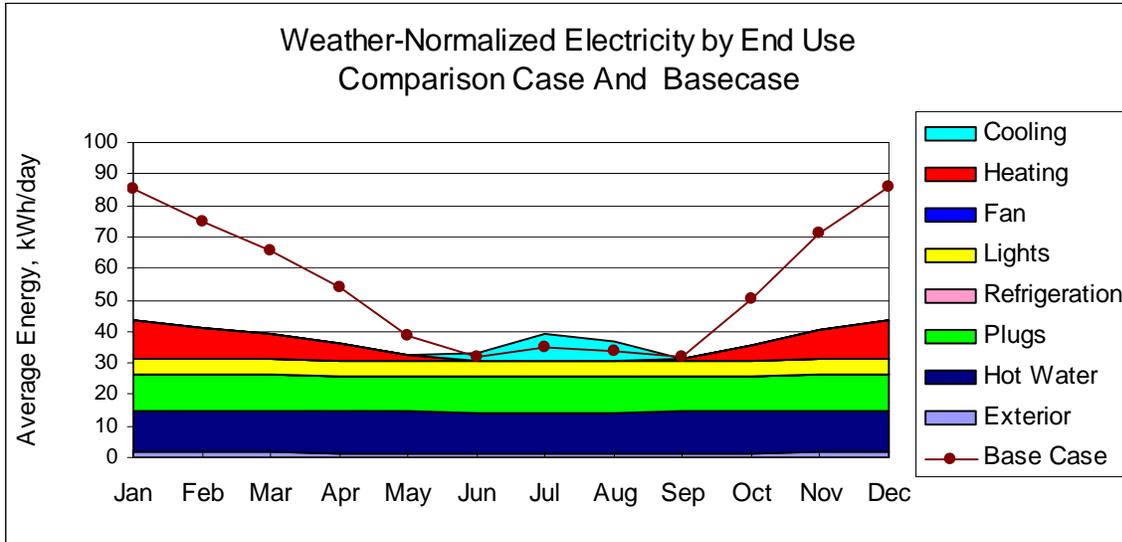


Figure 22: Electricity Savings (Case 5).

a) **Case 6**

This is a wood frame home with 1,550 square feet of floor space and a crawlspace underneath. The home has central gas heat and a gas hot water heater.<sup>110</sup>

The energy saving improvements for this home were sealing the building shell, duct sealing, low flow showerheads, and five compact fluorescent bulbs. The total cost for this work was \$1,024. Gas use prior to retrofit was 654 therms, and after retrofit gas use was 608 therms for a savings of 46 therms (7%).

As shown in Figure 23, there is evidence of consistent energy savings from the showerhead/aerators, but not evidence of winter heating improvement. However, pre-retrofit gas use was not high, so the household may have been conserving prior to retrofit. The house should now be easier and more comfortable to operate at the pre-existing energy use level.

<sup>110</sup> This is Site 105908.

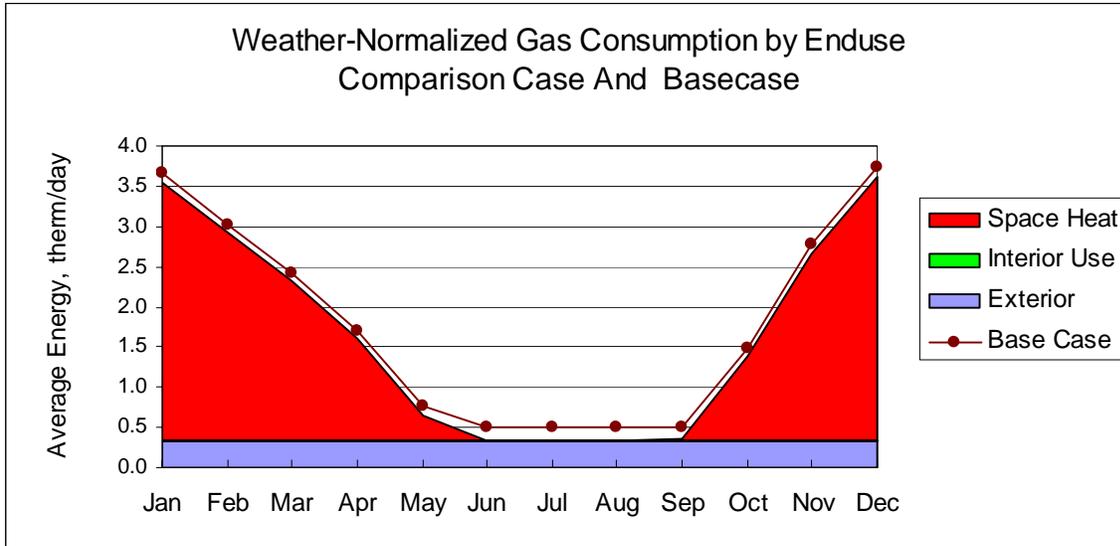


Figure 23: Natural Gas Savings (Case 6).

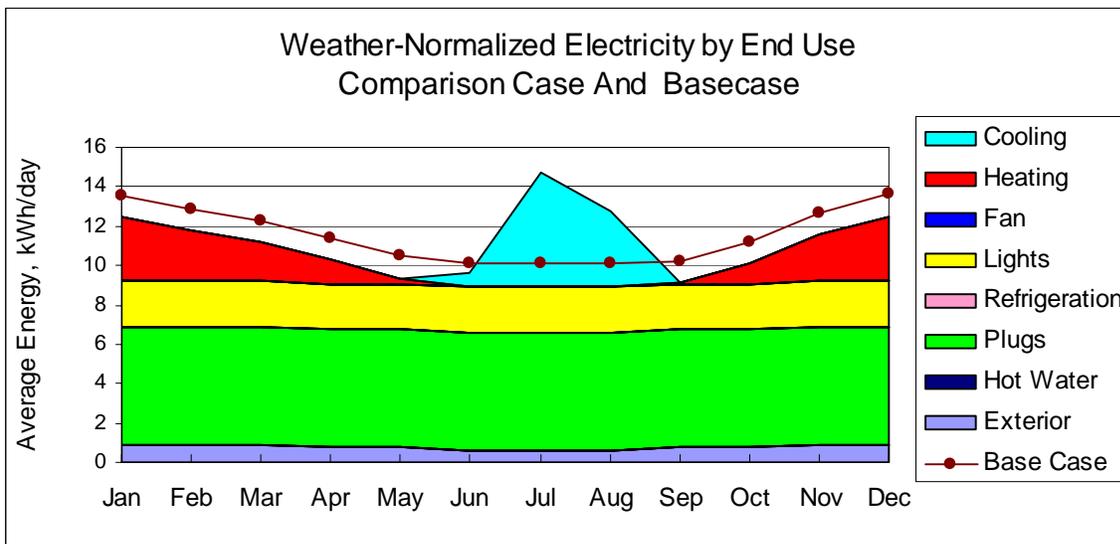


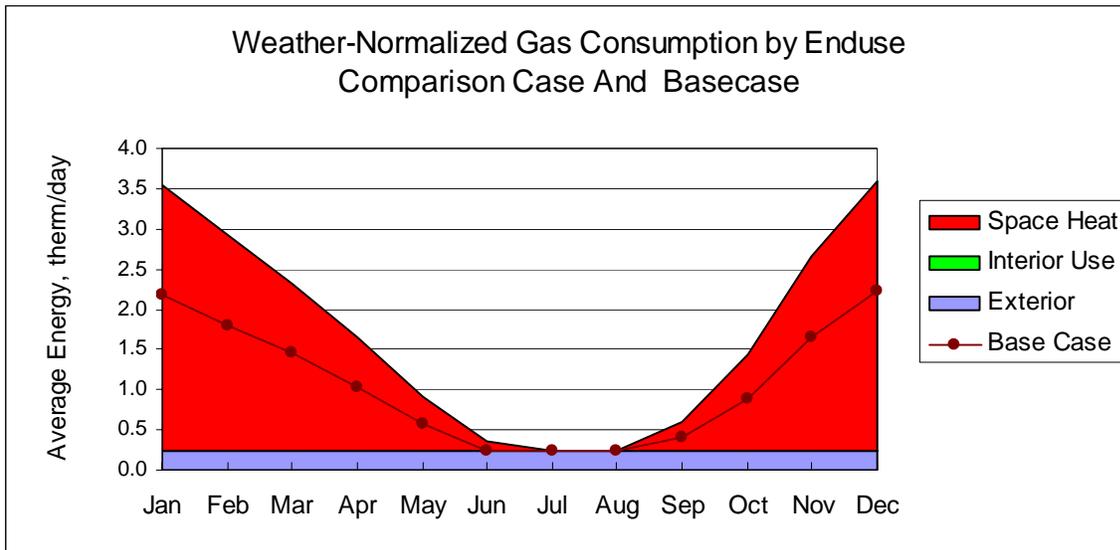
Figure 24: Electricity Savings (Case 6).

As shown in Figure 24, post-retrofit electricity use for this home decreased throughout the year. The blue triangular area in the center of the graph means that cooling was used post-retrofit (but not in the baseline year). Still, the electric savings over the year were enough to cover the increase from post-retrofit summer cooling. The savings pattern is consistent with savings from the installation of the CFLs in high use lighting fixtures.

a) **Case 7**

This is a wood frame home with 1,200 square feet of floor space and a crawlspace underneath. The home has central gas heat and an electric water heater.<sup>111</sup>

The energy saving improvements for this home were sealing the building shell, low flow showerheads, six square feet of double pane glass, and five compact fluorescent bulbs. The total cost for this work was \$1,465. Gas use prior to retrofit was 392 therms, and after retrofit gas use was 622 therms for an increase of 230 therms (59%).



**Figure 25: Natural Gas Energy Use (Case 7).**

As shown in Figure 25, there is significant increase in gas use of about one and two-tenths therms per day in January. Pre-retrofit gas use was unusually low for the size of the house. Still, post-retrofit shows higher gas use than would be expected.

Electricity use for this home shows a dramatic post-retrofit decrease (Figure 26), most likely due to attention to cooling control. Also, this home has a significant supplemental electric heat component, which decreased following retrofit.

<sup>111</sup> This is Site 249756.

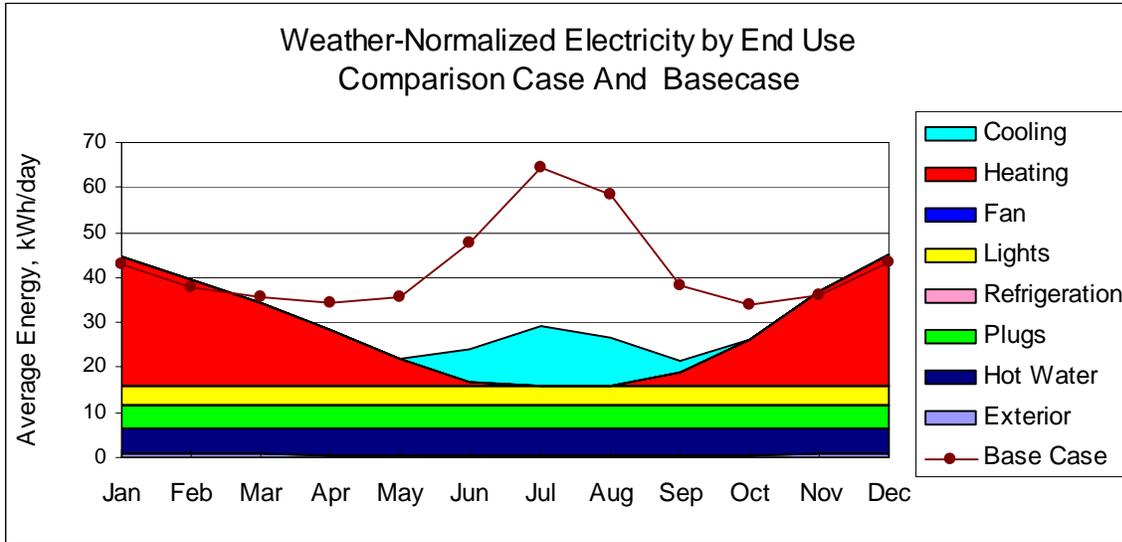


Figure 26: Electricity Savings (Case 7).

a) **Case 6**

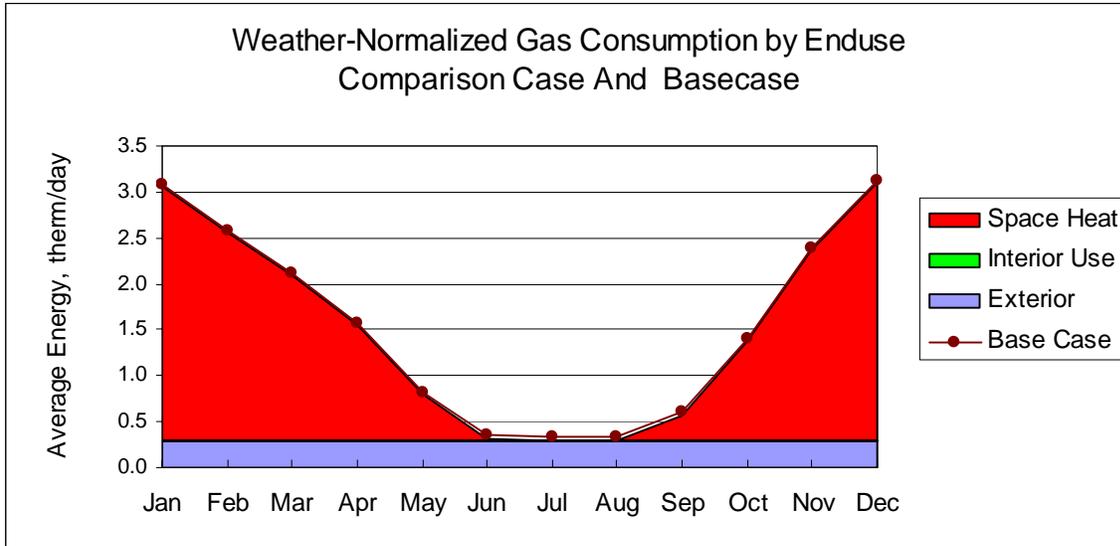
This is a wood frame home with 1,340 square feet of floor space and a crawlspace underneath. The home has central gas heat and a gas hot water heater, as well as an evaporative cooler.<sup>112</sup>

The energy saving improvements for this home were, low flow showerheads, and five compact fluorescent bulbs. The shell and ducts were pressure tested, but according to test results no repairs were required, so neither was sealed.

The total cost for this work was \$757. Gas use prior to retrofit was 567 therms, and after retrofit gas use was 556 therms for a savings of 11 therms (2%).

As shown in Figure 27, the savings pattern is consistent with hot water flow savings, yet this is a low yield for showerhead and aerator replacement. It is likely that one or more of the showerheads or aerators was removed post-retrofit.

<sup>112</sup> This is Site 453509.



**Figure 27: Natural Gas Savings (Case 8).**

Electricity savings for this home are shown in Figure 28. Electricity use decreased by about two-tenths of a kWh per day. This is a low yield for the five CFLs installed, suggesting the one or more have been removed post-retrofit. Baseline electricity use was 3,679 kWh and post-retrofit electricity use was 3,592, for a savings of 87 kWh (2.4%).

**a) Case 9**

This is a mobile home with 1,440 square feet of floor space and a crawlspace underneath. The home has central gas heat and a gas hot water heater.<sup>113</sup>

The energy saving improvements for this home were sealing the building shell, duct sealing, and five compact fluorescent bulbs. The total cost for this work was \$1,820. Gas use prior to retrofit was 1,187 therms, and post-retrofit use was 1,201 therms for an increase in gas use of 14 therms (1.2%).

The pattern of natural gas use in Figure 29 shows no evidence of energy savings.

<sup>113</sup> This is Site 152246.

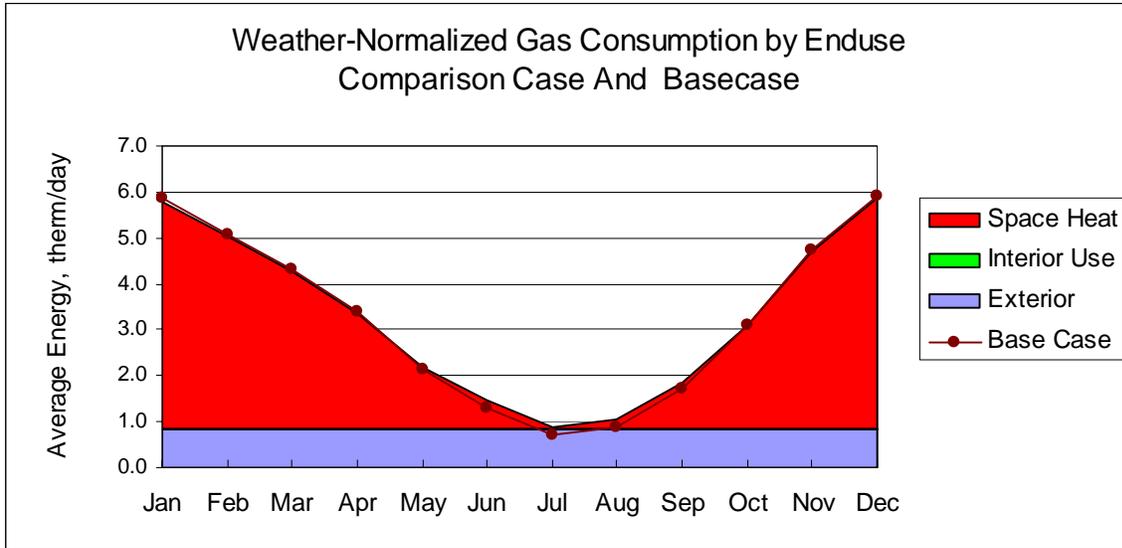


Figure 28: Natural Gas Savings (Case 9).

Electric use (Figure 29) increased slightly throughout the post-retrofit year, with large increases in summer. The usage pattern shown in Figure 29 suggests an increase of number of persons in the household in the post-retrofit year or possibly the addition of a new appliance. Baseline electricity use was 9,375 kWh and post-retrofit electricity use was 10,093 kWh, for an increase of 717 kWh (8%).

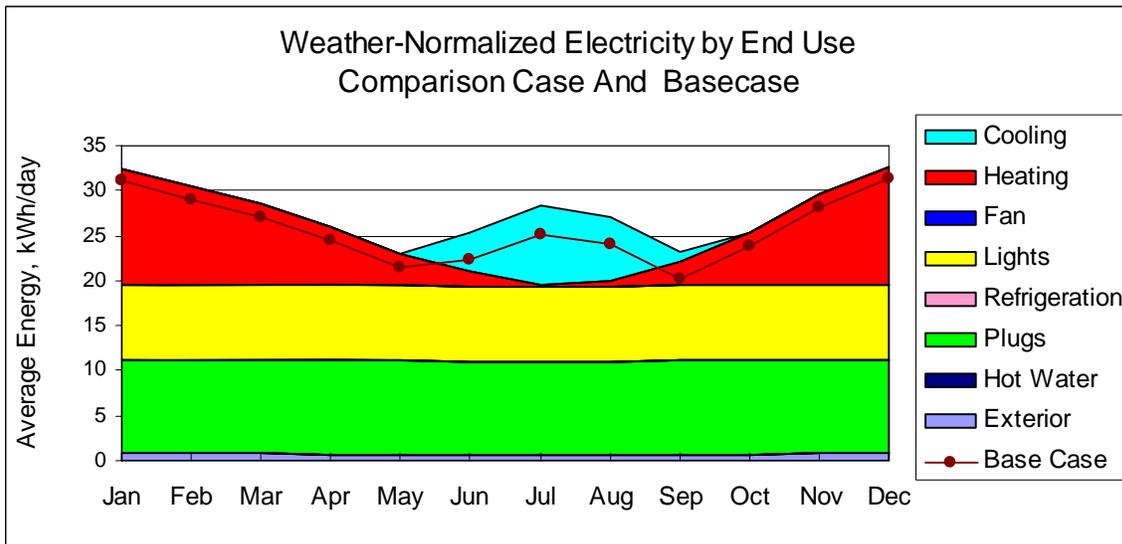
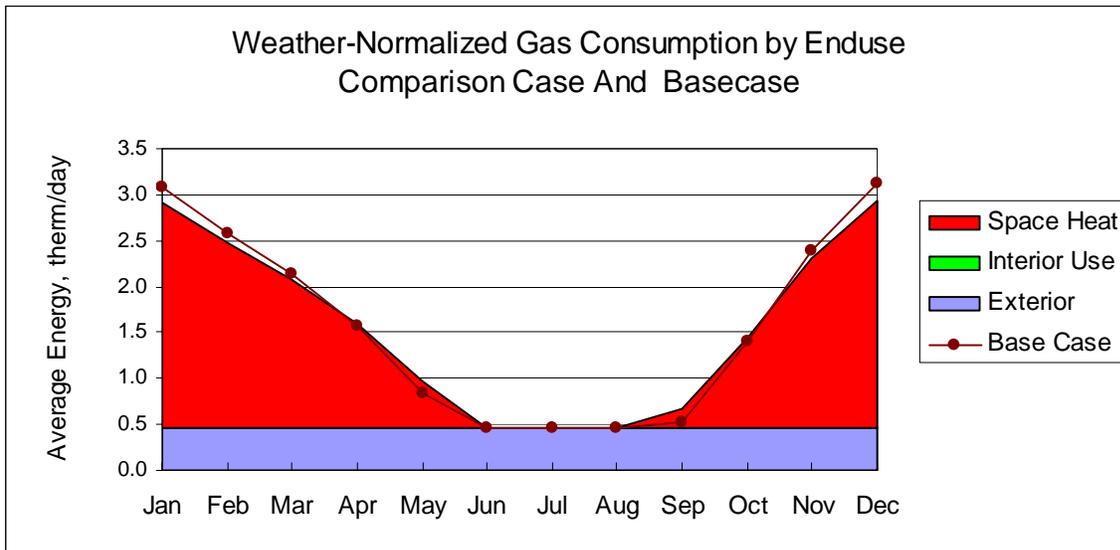


Figure 29: Electricity Use (Case 9).

a) **Case 10**

This is a small mobile home with 850 square feet of floor space and a crawlspace underneath. The home has central gas heat and a gas hot water heater.<sup>114</sup>

The energy saving improvements for this home were sealing the building shell, duct sealing, low-flow showerheads and five compact fluorescent bulbs. The total cost for this work was \$2,318. Gas use prior to retrofit was 576 therms, and the post-retrofit yearly use was 569 therms, a decrease of 7 therms (1.2%).



**Figure 30: Natural Gas Savings (Case 10).**

As shown in Figure 30, there is a gas savings of about two-tenths of a therm per day, beginning in January. There is no evidence of savings from the showerheads/aerators, suggesting that they may have been removed.

Electricity use for this home increases throughout the year (Figure 31). The pattern is indicative of an additional person in the home or addition of a new appliance.

<sup>114</sup> This is Site 179115.

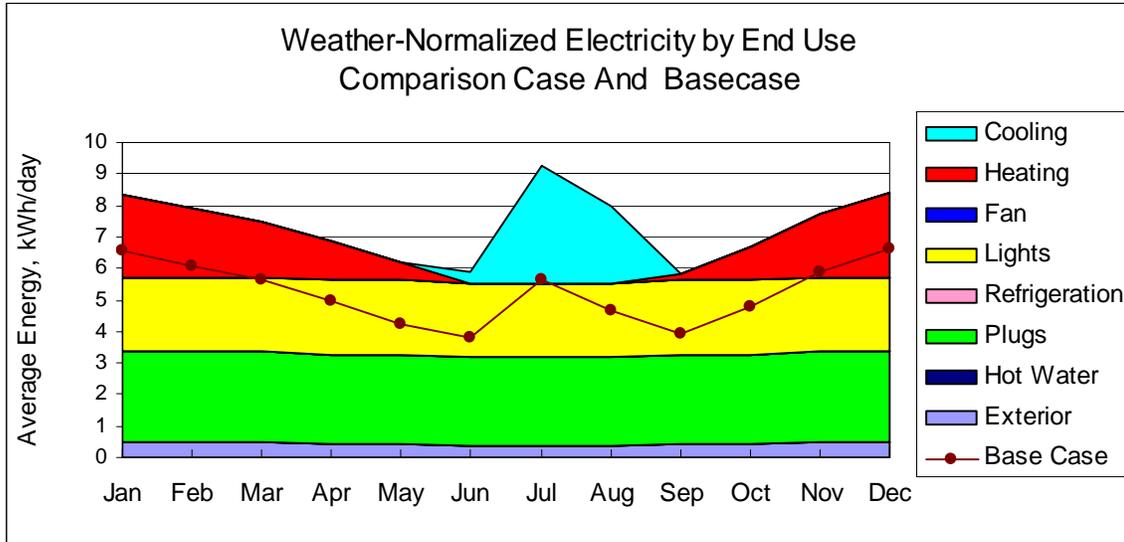


Figure 31: Electricity Use (Case 10).

a) **Case 11**

This is a wood frame home with 2,200 square feet of floor space and a crawlspace underneath. The home has central gas heat and a gas hot water heater, as well as an evaporative cooler.<sup>115</sup>

The energy saving improvements for this home were, shell sealing, duct sealing, and five compact fluorescent bulbs. The total cost for this work was \$1,033. Gas use prior to retrofit was 489 therms, and after retrofit gas use was 514 therms, for an increase of 24 therms (5%).

As shown in Figure 32, there is an increase in gas use in this home, although it is very small. There is no indication that the shell or duct measures had an effect.

<sup>115</sup> This is Site 161072.

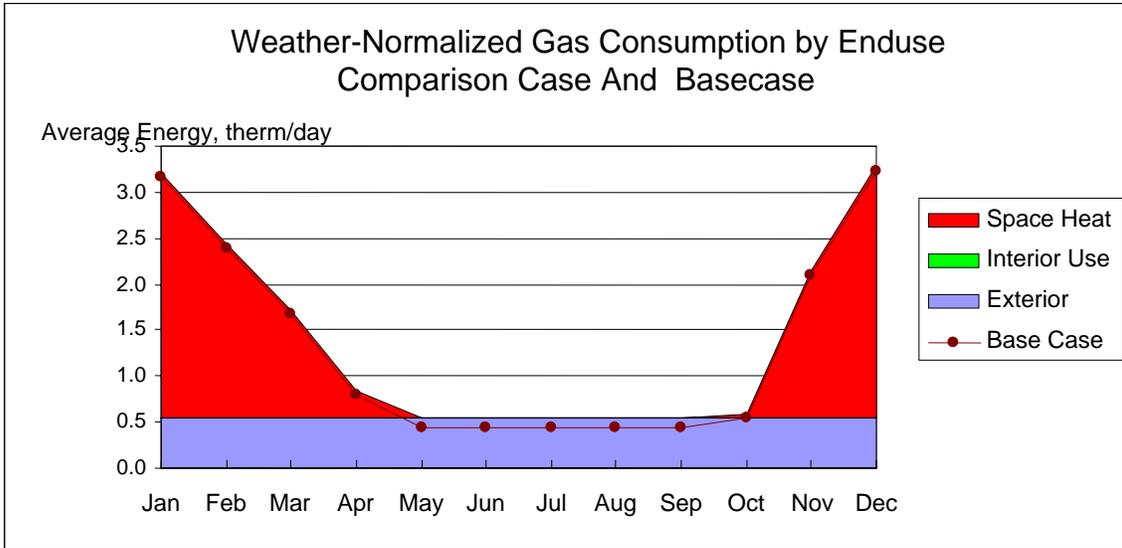


Figure 32: Gas Use (Case 11).

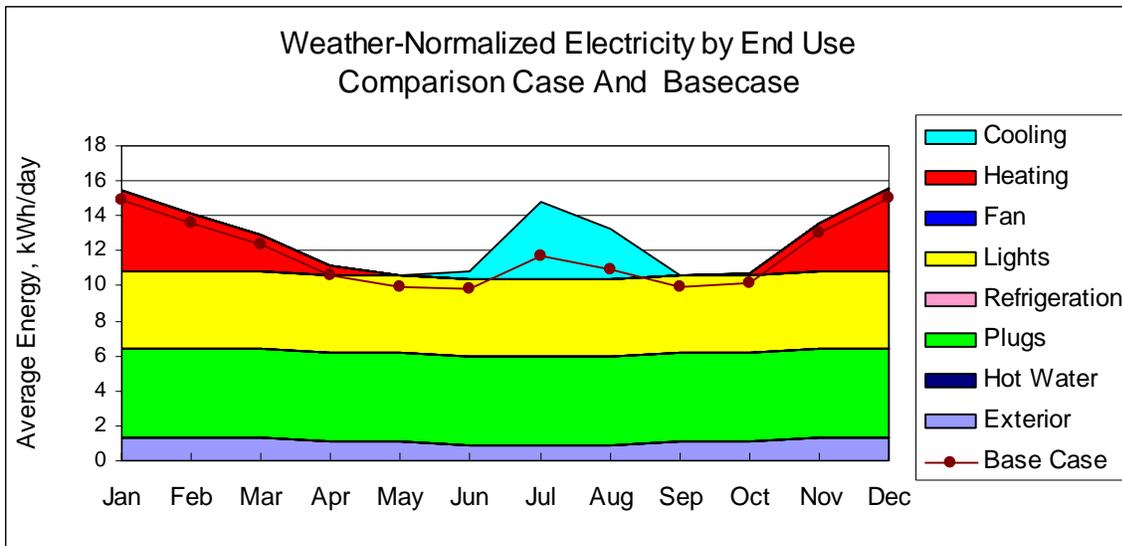


Figure 33: Electricity Use (Case 11).

As shown in Figure 33, electricity use at this home increased in summer (the blue area at the center indicates increased use of cooling), and slightly throughout the rest of the year. Baseline electricity use was 4,326 kWh and post-retrofit kWh was 4,680 kWh, for an increase of 354 kWh (8%). Cases such as this one illustrate how changes in appliances, number of residents, and in behavior can offset energy savings.

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## **K. Improvements and Plans**

**Housing Repair Fund:** A significant problem encountered in the field installation efforts by all Subgrantees is the older or rural home that does not meet current building codes or requires some kind of extensive repair. For example, when trying to do meaningful weatherization retrofit work, there can be a barrier of about \$1,000 per home (or somewhat over \$1,000) because old knob and tube wiring needs to be replaced. Proceeding to weatherize without bringing the wiring to code creates a fire hazard. Other homes might need significant roof repair or repair of holes in the flooring before they can be weatherized. These older or rural homes have the potential for significant energy savings but have to be skipped over for weatherization. Yet, these are often the homes that require treatment.

Each of the Subgrantees expressed a clear need for a designated repair fund outside the UEC guidelines and spending cap per home that currently cannot sustain the cost overhead of this type of repair work. Realistically, the UEC program has to overcome this repair barrier one way or another. Currently, the Subgrantees often try to leverage funds with other agency rehab dollars, but this doesn't solve the problem, because the problem is larger than the funds available.

We recommend designation of a repair fund outside other cost-effectiveness considerations or tests to meet this real need in rural and older homes. It could also cover some similar, but smaller, costs for non-rural Nevada homes. The basic need is to establish a separate fund for these real needs that is governed by different rules than the weatherization program itself.

**DSM Funds:** In SFY 2006, the Housing Division has worked with Nevada Power and Sierra Pacific Power to develop coordinated low-income programs. Essentially, in "coordinated programs" work carried out under the federally funded and state UEC residential weatherization effort can be treated an off-budget contribution towards effective low-income DSM programs from a utility or public service commission perspective.<sup>116</sup> For example, crews are already in the homes and carrying out the UEC work. Since that is a "sunk cost," utilities can add measures to improve the weatherization effort without duplicating the home visits. The state and federal weatherization effort can permit the DSM investment to be limited to purely incremental cost enabling it to be more cost-effective from the perspective of the "California tests." At the same time, federal regulations for weatherization work, which also guide UEC weatherization work permit all utility contributions to the weatherization effort to be counted as "leveraging."

Ernest Nielson has also suggested that there could be both an energy use component and a separate demand component to this funding because the

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116 Applications of benefit-cost analysis in the design of "Coordinated Programs" is developed by Lawrence J. Hill and Marilyn A. Brown in "Estimating the Cost-Effectiveness of Coordinated DSM Programs," *Evaluation Review*, 19(2):181-196, 1995.

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residential weatherization work creates both values for the utilities. While the full UEC could not be cost-justified on this basis from a utility perspective, given that the UEC work is authorized by law for different, though related, reasons, there should be DSM add-ons cost-beneficial from a utility perspective, and the Housing Division, Nevada Power, and Sierra Pacific Power have been working secure program designs that would meet with the approval of the Nevada Public Utility Commission for SFY 2007.<sup>117</sup>

### ***L. Staffing Analysis***

The Technical Officer position was added during SFY 2005. Based on observation of work in SFY 2006, this addition provided the very positive result of a flexible inspection capability to ensure higher quality work in weatherization installations. This has proved important in dealing with changes in staffing and contractor arrangements at Subgrantee Agencies. It also enables recurring training to be shifted from California to on-site training from the Housing Division. Overall the addition of the Technical Officer also costs less than outside consultant and out-of-state training alternative.

One further concern involves the dedication of a portion of Nevada Power and Sierra Pacific Power residential DSM funding to augment the Housing Division and subgrantee effort. Additional funding is being discussed to provide more intensive energy savings installations (for example air conditioner replacements), energy education, and to permit service to more Nevada homes. Should these plans develop, it will be important to provide staffing for additional services, either within the utilities, through contractors to the utilities, within the subgrantees, or in the Housing Division. The current Housing Division effort is very economically staffed and attention will have to be placed in developing additional resources if the utilities add significant program DSM support in a Housing Division/utility coordinated effort.

### ***M. Recommendations***

For the SFY 2006 evaluation, recommendations for the Housing Division are limited:

- Downloads from the Welfare Division should always include customer account numbers to support identification. [Note: This has been implemented.]
- A repair fund should be established.

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<sup>117</sup> Ernest K. Nielsen, an active participant in the formation of the UEC and of the committee following implementation has proposed and is working on these possibilities.

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- An additional staff position would be useful to insure coverage and accountability should the Public Service Commission approve the currently proposed low-income DSM program additions. As DSM ramps-up over the next few years and includes additional utility opportunities to coordinate with federal and UEC weatherization effort, this recommendation will become increasingly important.

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## VIII. RESPONSES TO WEATHERIZATION CLIENT SURVEY

Beginning in late January and through February 2006, the Weatherization client survey for the SFY 2006 evaluation was sent to 573 participants listed in the completed BWR database for the SFY 2005 program year (July 1, 2004 through June 30, 2005).<sup>118</sup> For this report, the survey is focused on single family homes and mobile homes served with electricity and natural gas.<sup>119</sup>

Of these, 255 were returned, a completion rate of approximately 44%.<sup>120</sup> However, three clients reported they had not been weatherized. Also, three had moved since their home was weatherized, leaving 249 homes for the analysis. All clients in the analysis are still living in the homes weatherized.

The mini-survey (see Survey Appendix) contains eleven quantitative “check the correct box” type questions and four open-ended questions that require a verbal response. The survey has two purposes: (1) To provide information on what happens that might affect energy use in homes after weatherization work is completed; and (2) to provide information to develop a participant perspective on any problems encountered in the weatherization work and what could be done to improve the program.

### *A. What Happens After Weatherization?*

In the one to one and one-half years following weatherization, almost ten percent (10%) of weatherized homes replaced a heat pump or furnace (the same percentage as in the previous survey). Replacement of heat pump or furnace is shown in Table 26 & Figure 34.

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<sup>118</sup> This ACCESS™ database file was provided by the Housing Division to the evaluation team at the end of January 2006.

<sup>119</sup> The 573 homes in the survey are all homes in the BWR database that meet these criteria: weatherized in SFY 2005, mobile home or single family, electricity and natural gas. (The Weatherization client survey for the previous evaluation included all housing types.) For efficiency the evaluation, the SFY 2006 evaluation survey followed directly on completion of the survey for the SFY 2005 evaluation.

<sup>120</sup> The survey was sent in a single wave and is identical to the survey for the previous evaluation. As in the previous survey, letters were sent on Housing Division stationary with a note from Craig Davis and Suzanne Martin offering to answer any questions, the survey form, plus a postage paid return envelope addressed to the Housing Division in Carson City.

	Frequency	Percent	Cumulative Percent
No	225	90.4	90.4
Yes	24	9.6	100.0
Total	249	100.0	

Table 26: Have you replaced a heat pump or furnace?

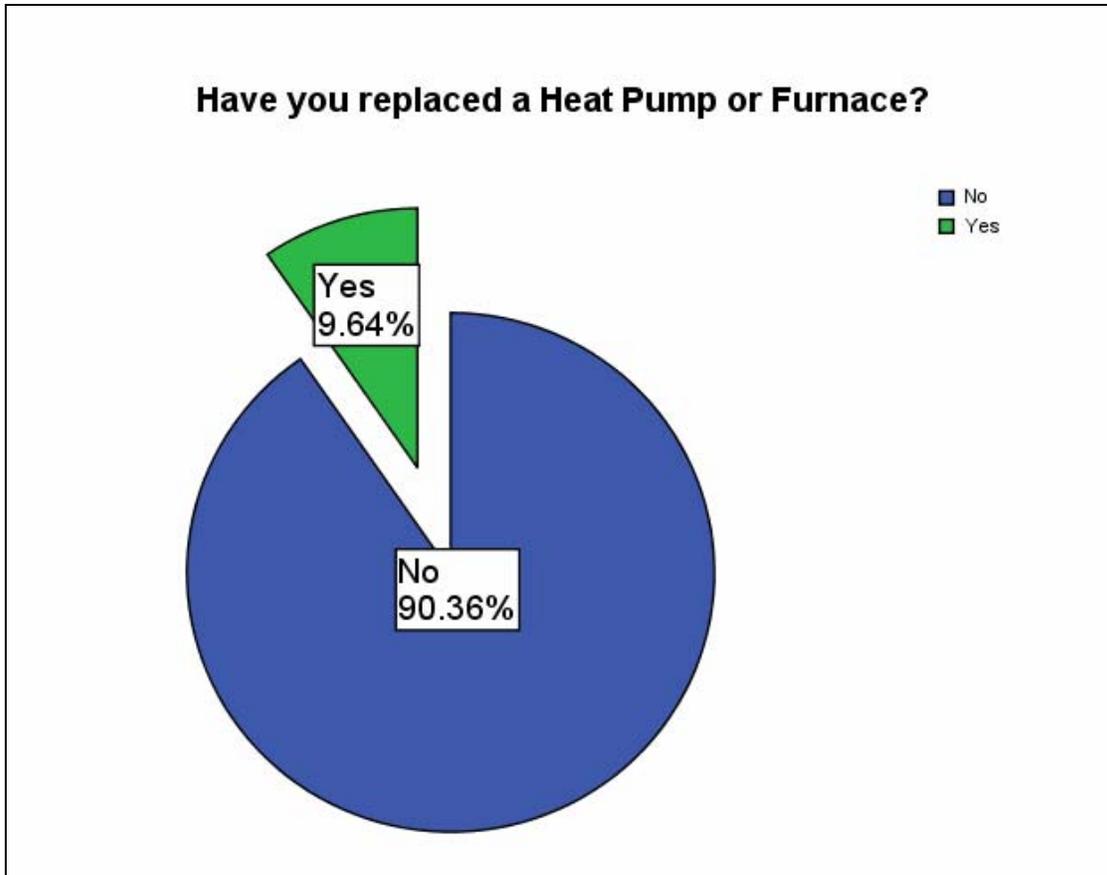


Figure 34: Heat Pump or Furnace.

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About thirteen percent (13%) of weatherized households replaced an air conditioner (Table 27 & Figure 35). This is essentially the same result as the twelve percent reported in the previous survey.

	Frequency	Percent	Cumulative Percent
No	216	86.7	86.7
Yes	33	13.3	100.0
Total	249	100.0	

Table 27: Have you replaced an air conditioner?

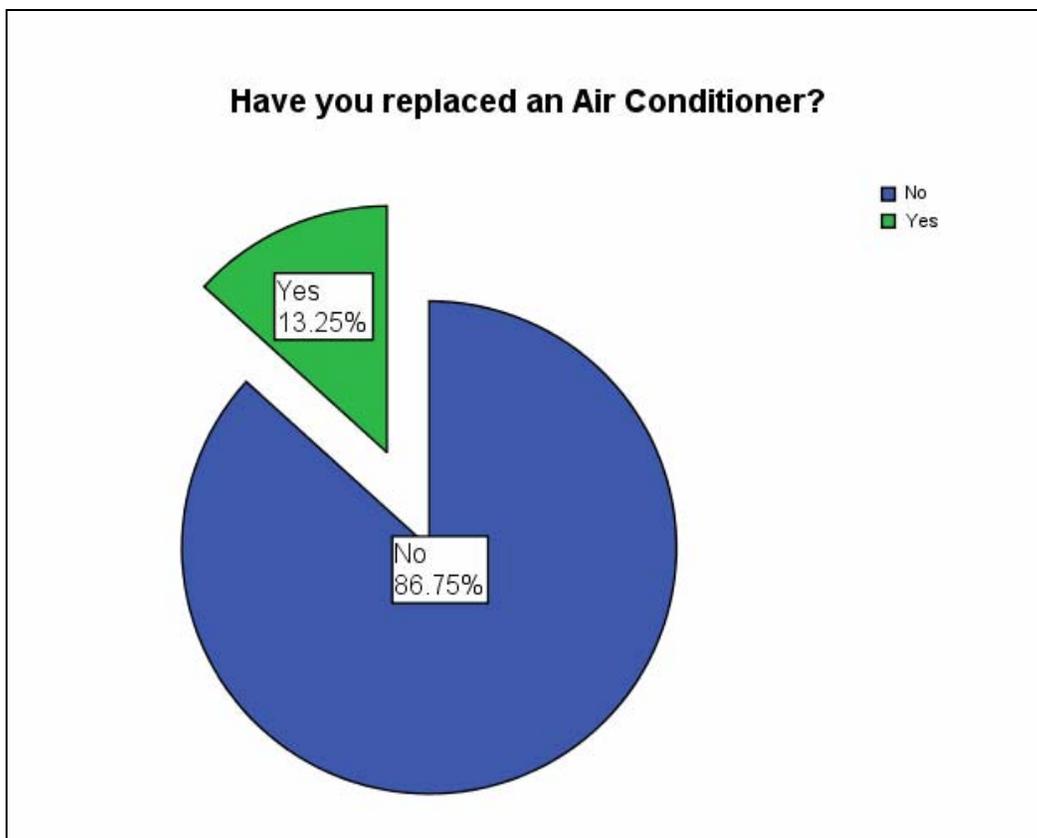


Figure 35: Air Conditioner.

Fifteen percent (15%) of households responding to the survey say they have replaced a major appliance (Table 28 & Figure 36). In the previous survey, twenty percent said they replaced a major appliance.<sup>121</sup>

	Frequency	Percent	Cumulative Percent
No	211	84.7	84.7
Yes	38	15.3	100.0
Total	249	100.0	

Table 28: Have you replaced any other major appliances?

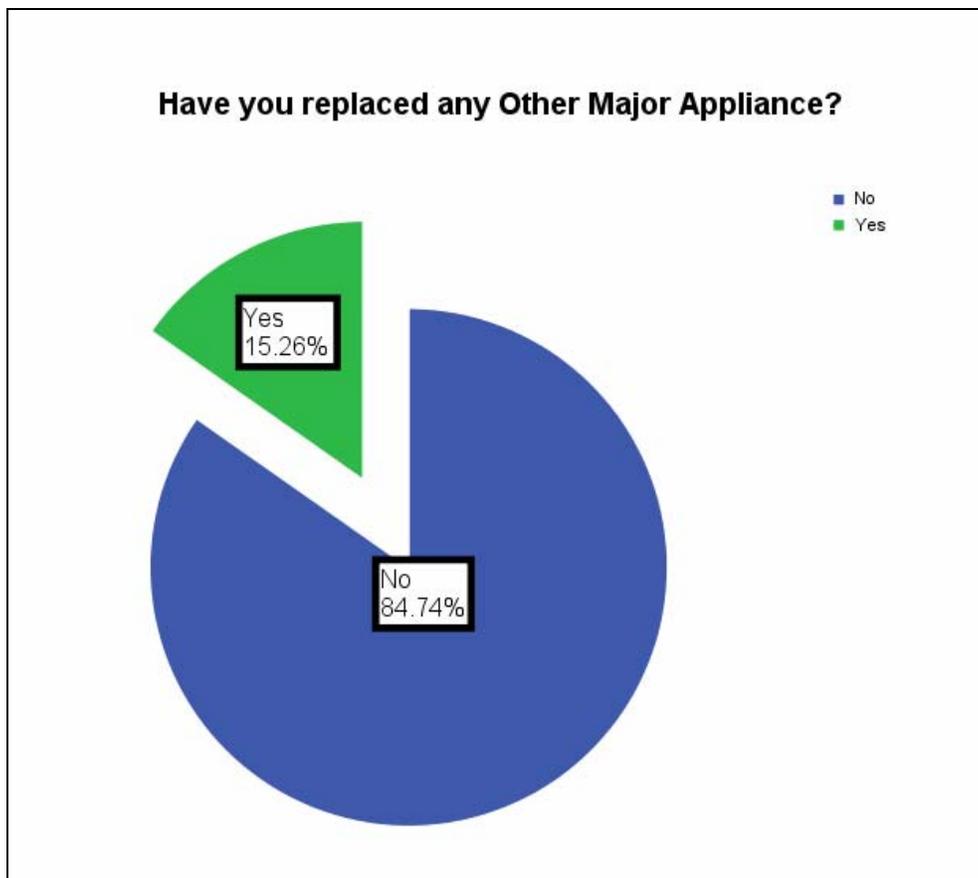


Figure 36: Other Major Appliance.

<sup>121</sup> The time between weatherization and the survey for the previous survey was two to two and one half years, while for the current survey it is one to one and one half years.

Less than one percent (0.8%) of the households responding to the survey say they added a waterbed since weatherization (Table 29 & Figure 37). This is essentially the same result as zero, the result from the previous survey.

	Frequency	Percent	Cumulative Percent
No	247	99.2	99.2
Yes	2	.8	100.0
Total	249	100.0	

Table 29: Have you added a waterbed?

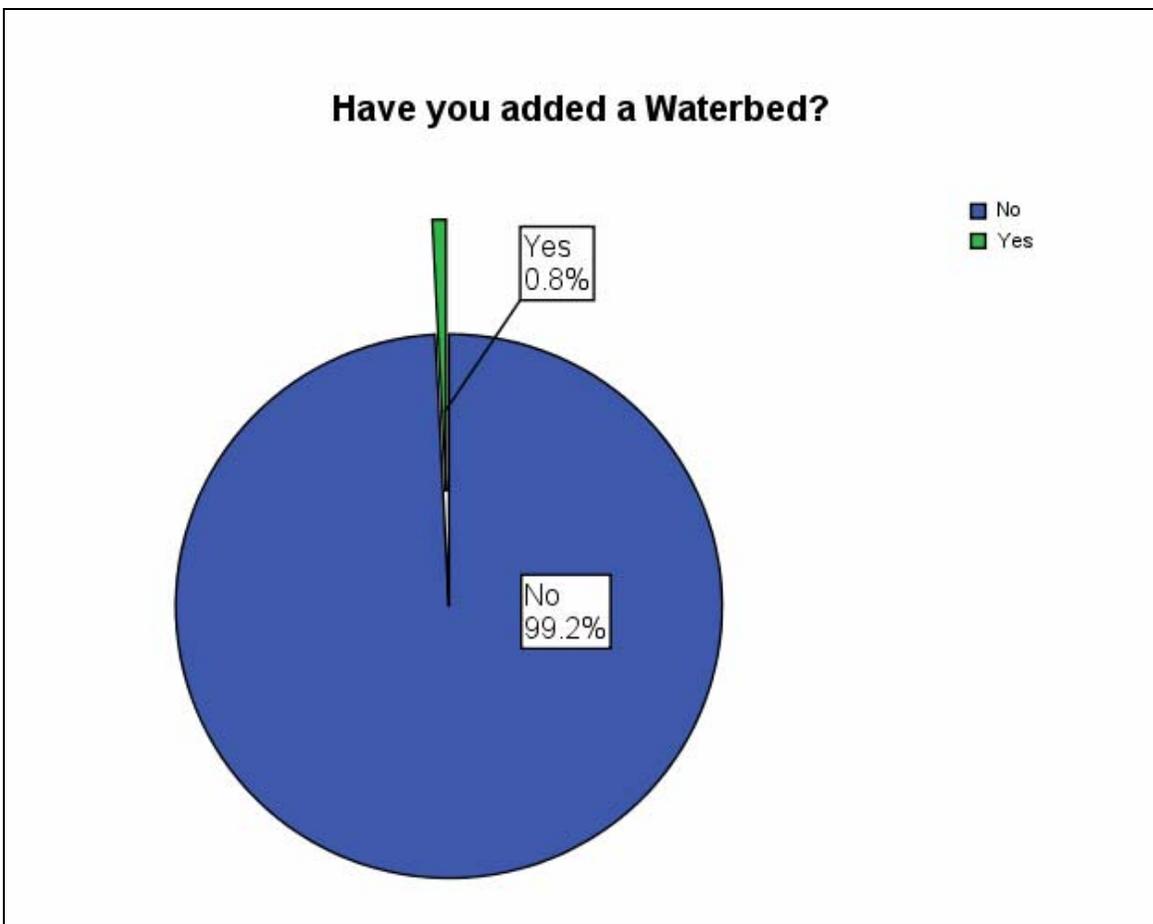


Figure 37: Waterbed.

Only one household (0.4%) added to the size of the home (Table 30; Figure 38). This is essentially the same result (1%) as in the previous survey.

	Frequency	Percent	Cumulative Percent
No	248	99.6	99.6
Yes	1	.4	100.0
Total	249	100.0	

Table 30: Have you increased the square footage of your home?

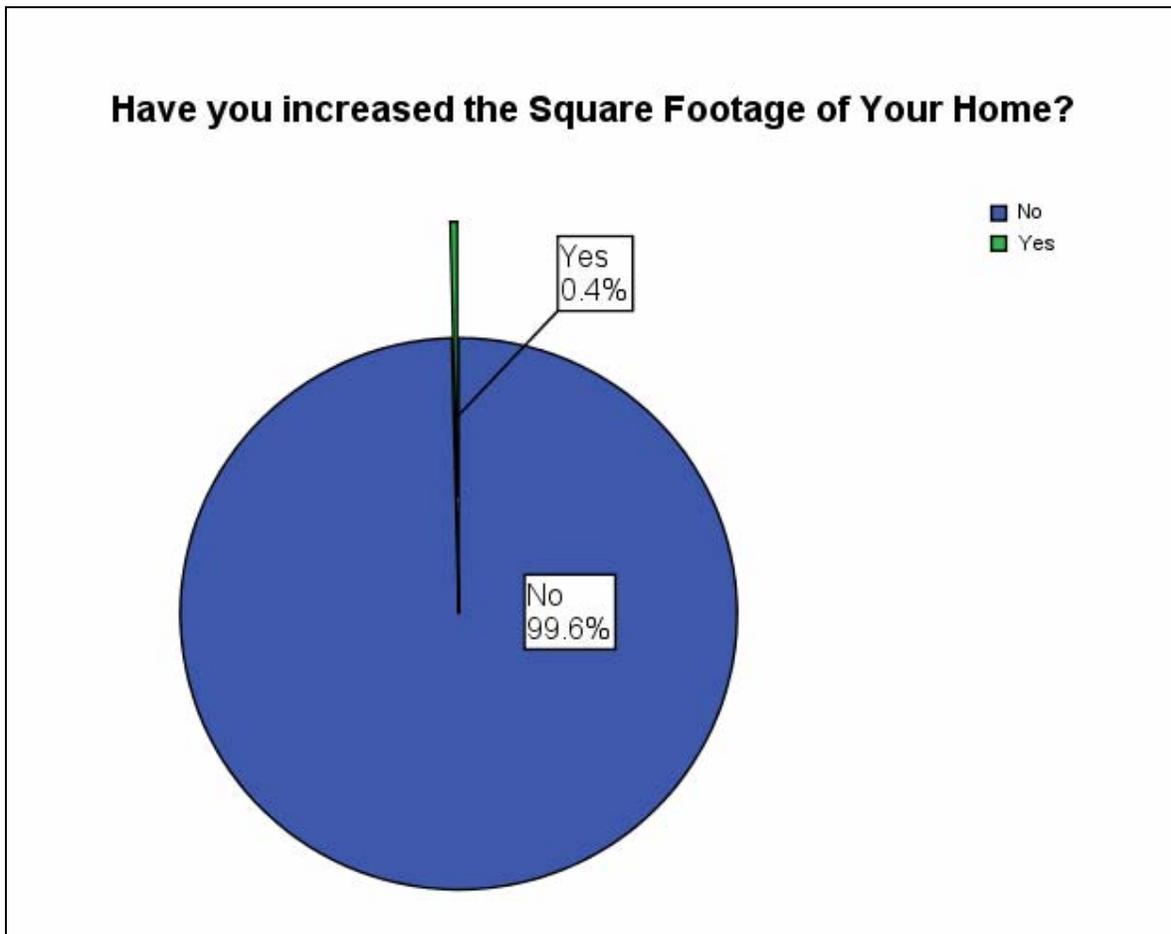
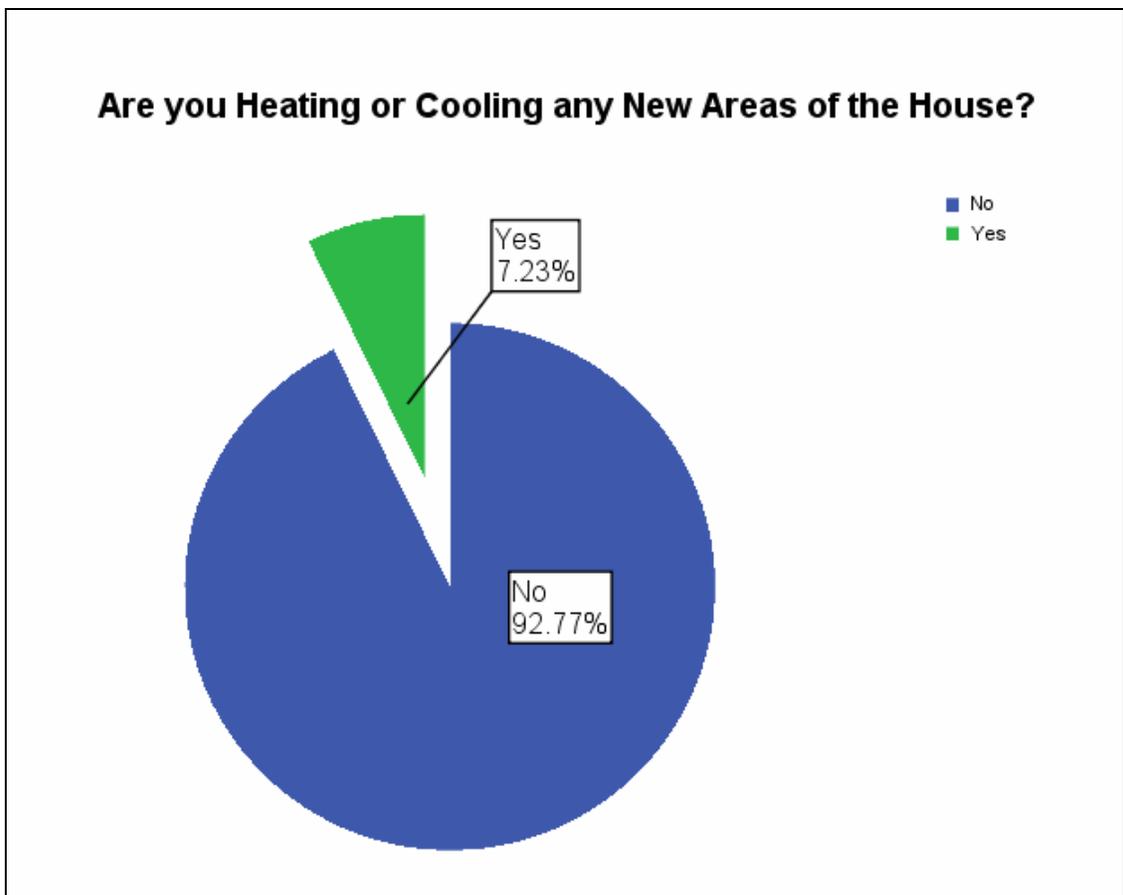


Figure 38: Adding Area.

Since weatherization, about seven percent (7%) of households responding to the survey extended the area of their homes heated or cooled, about double the percentage (3%) of the previous survey (Table 31 & Figure 39).

	Frequency	Percent	Cumulative Percent
No	231	92.8	92.8
Yes	18	7.2	100.0
Total	249	100.0	

**Table 31: Are you heating or cooling any new areas of the house?**

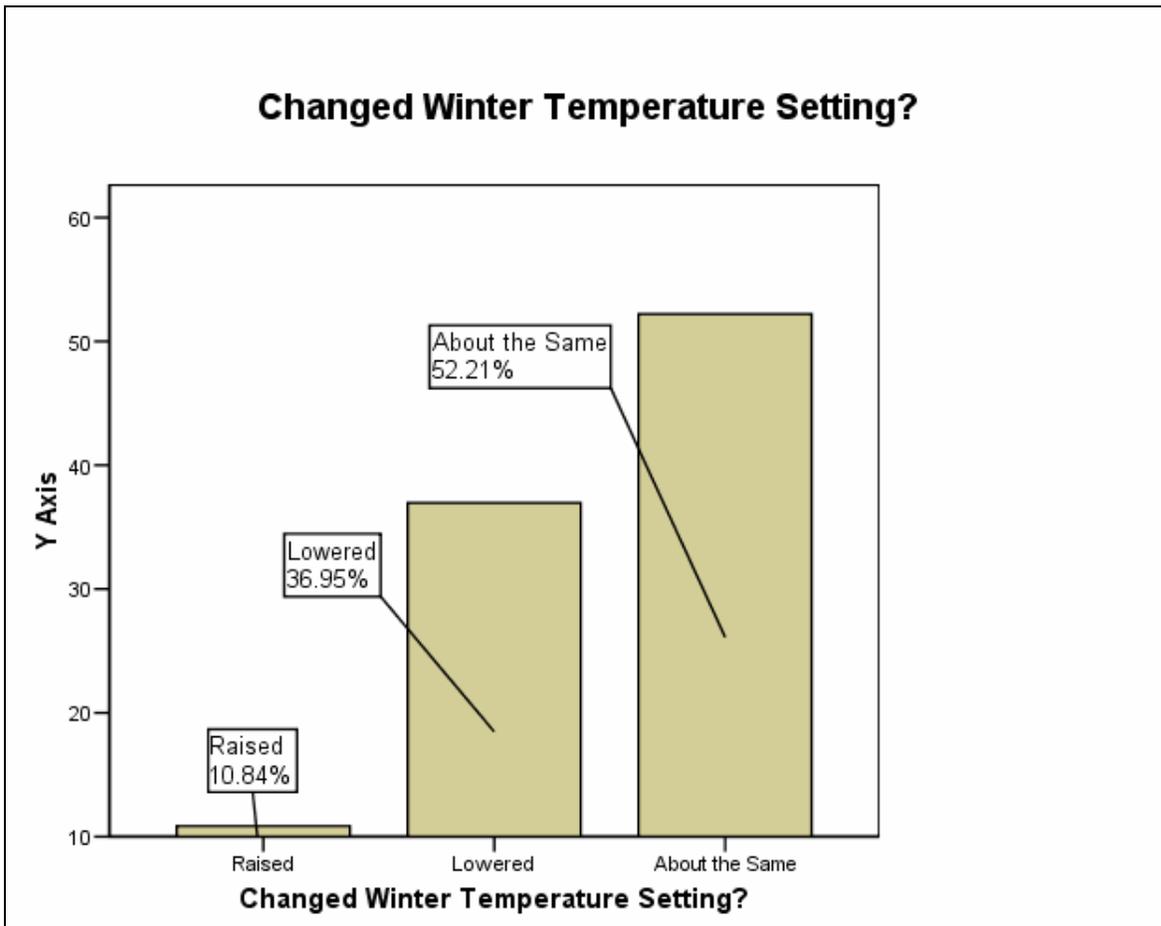


**Figure 39: Heating or Cooling New Areas.**

Since weatherization, approximately eleven percent (11%) of households returning the survey say they increased their winter heat setting, while thirty-seven percent (37%) set their thermostats lower in winter (Table 32; Figure 40). In the previous survey, these percentages are about the same (6% and 35%).

	Frequency	Percent	Cumulative Percent
<b>Raised</b>	27	10.8	10.8
<b>Lowered</b>	92	36.9	47.8
<b>About the Same</b>	130	52.2	100.0
<b>Total</b>	249	100.0	

**Table 32: Changed Winter Temperature Setting?**



**Figure 40: Winter Temperature.**

In the summer following weatherization (Table 33; Figure 41) twenty percent (20%) of households lowered their temperature setting; about ten percent (10%) raised their summer temperature setting. In the previous survey these percentages were about the same (23% and 9%).

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	<b>Raised</b>	26	10.4	10.5	10.5
	<b>Lowered</b>	50	20.1	20.2	30.6
	<b>About the Same</b>	172	69.1	69.4	100.0
	<b>Total</b>	248	99.6	100.0	
<b>Missing</b>	<b>Did not answer</b>	1	.4		
<b>Total</b>		249	100.0		

Table 33: Changed Summer Temperature Setting?

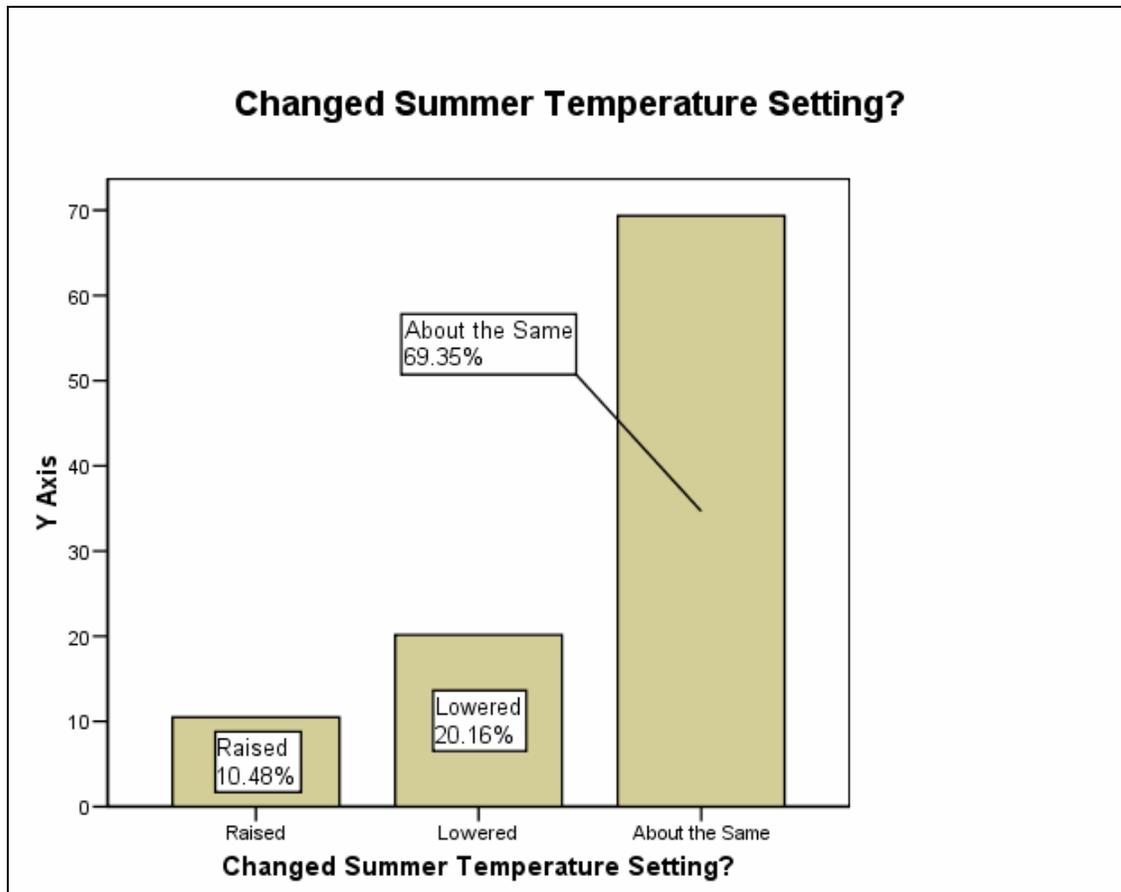
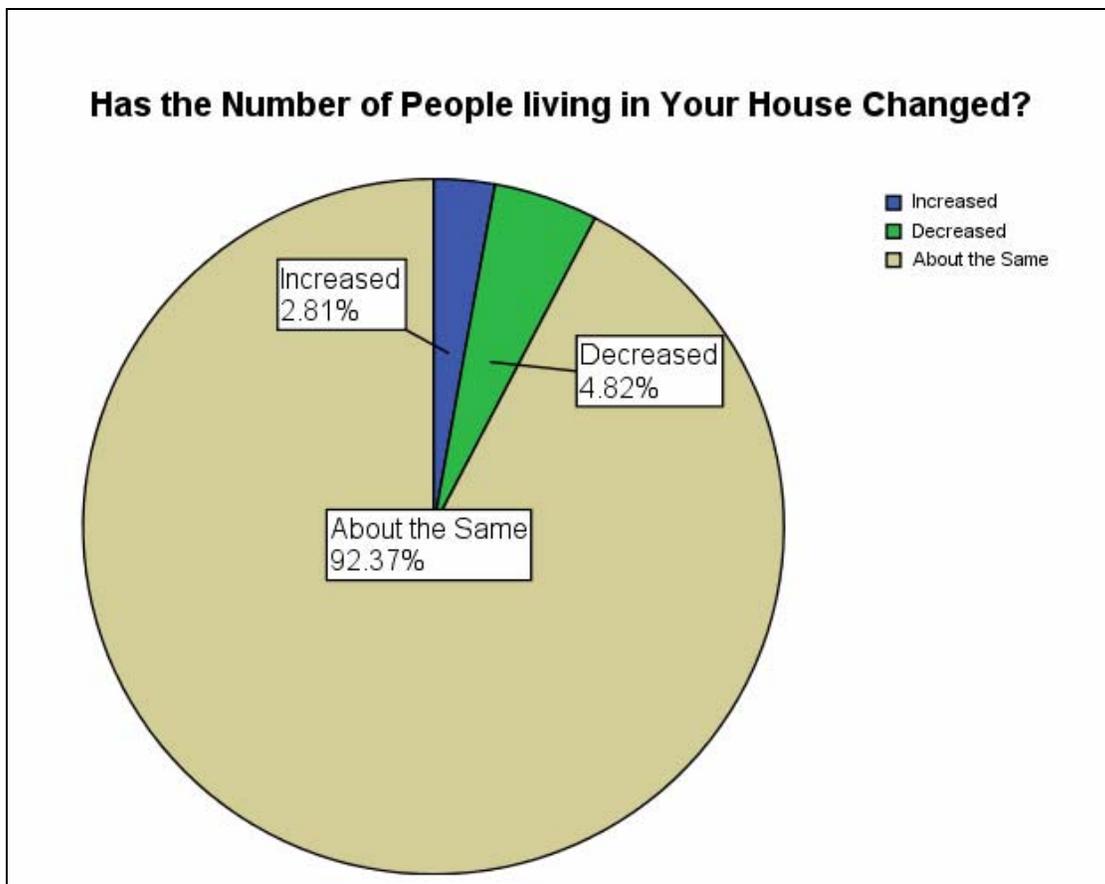


Figure 41: Summer Temperature.

Just under five percent (5%) of households responding to the survey had fewer people living in the home than when weatherization was completed (Table 34, Figure 42); about three percent (3%) had more people living in the home. In the previous survey, the increase was 1% and the decrease 4%.

	Frequency	Percent	Cumulative Percent
<b>Increased</b>	7	2.8	2.8
<b>Decreased</b>	12	4.8	7.6
<b>About the Same</b>	230	92.4	100.0
<b>Total</b>	249	100.0	

**Table 34 : Has the number of people living in your house changed?**

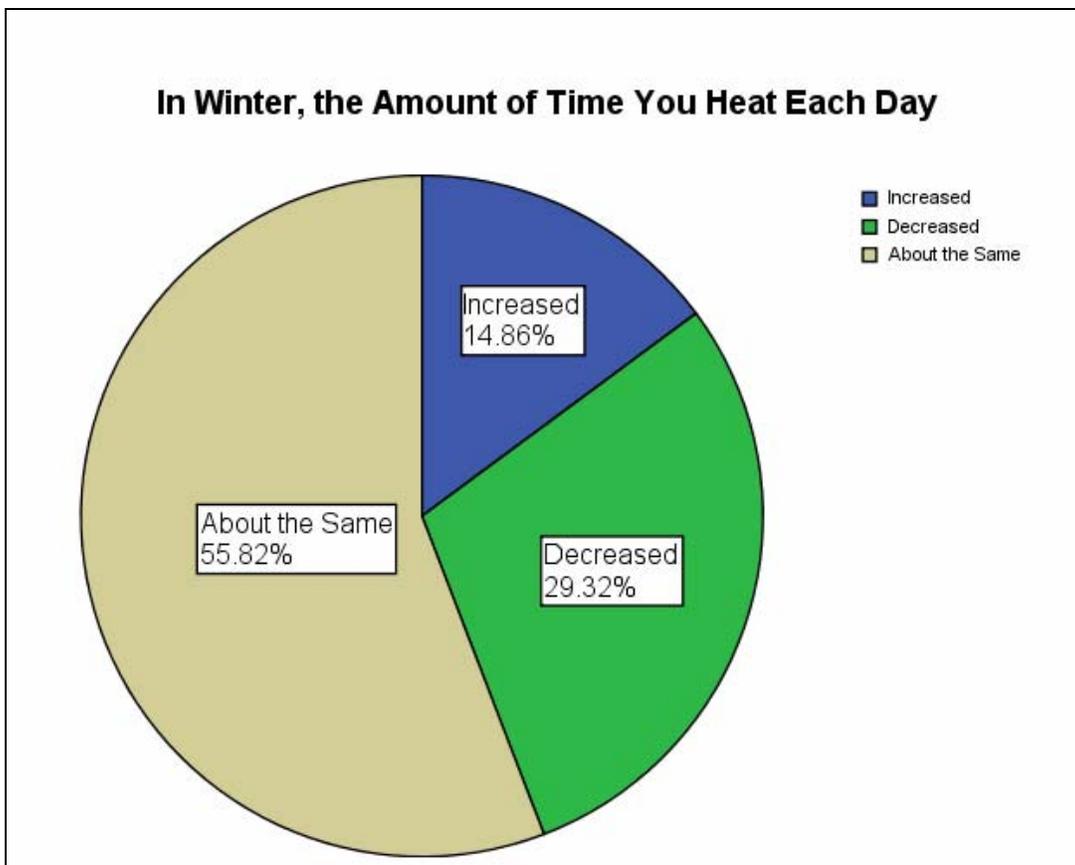


**Figure 42: Number of People.**

About thirty percent (30%) of households responding to the survey decreased the amount time the house was heated in the winter; while fifteen percent (15%) increased the time the house was heated (Table 35; Figure 43). Results in the previous survey were 20% and 9%.

	Frequency	Percent	Cumulative Percent
<b>Increased</b>	37	14.9	14.9
<b>Decreased</b>	73	29.3	44.2
<b>About the Same</b>	139	55.8	100.0
<b>Total</b>	249	100.0	

**Table 35: In winter, the amount of time you heat each day.**



**Figure 43: Daily Heating Time: Winter.**

About twenty-three percent (23%) of households decreased the hours of cooling in the summer, while about eight percent (8%) increased cooling hours in the summer (Table 36; Figure 44). These results are almost identical to the previous survey (21% and 8%).

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	<b>Increased</b>	19	7.6	7.7	7.7
	<b>Decreased</b>	58	23.3	23.4	31.0
	<b>About the Same</b>	171	68.7	69.0	100.0
	<b>Total</b>	248	99.6	100.0	
<b>Missing</b>	<b>Did not answer</b>	1	.4		
<b>Total</b>		249	100.0		

Table 36: In summer, the amount of time you cool each day.

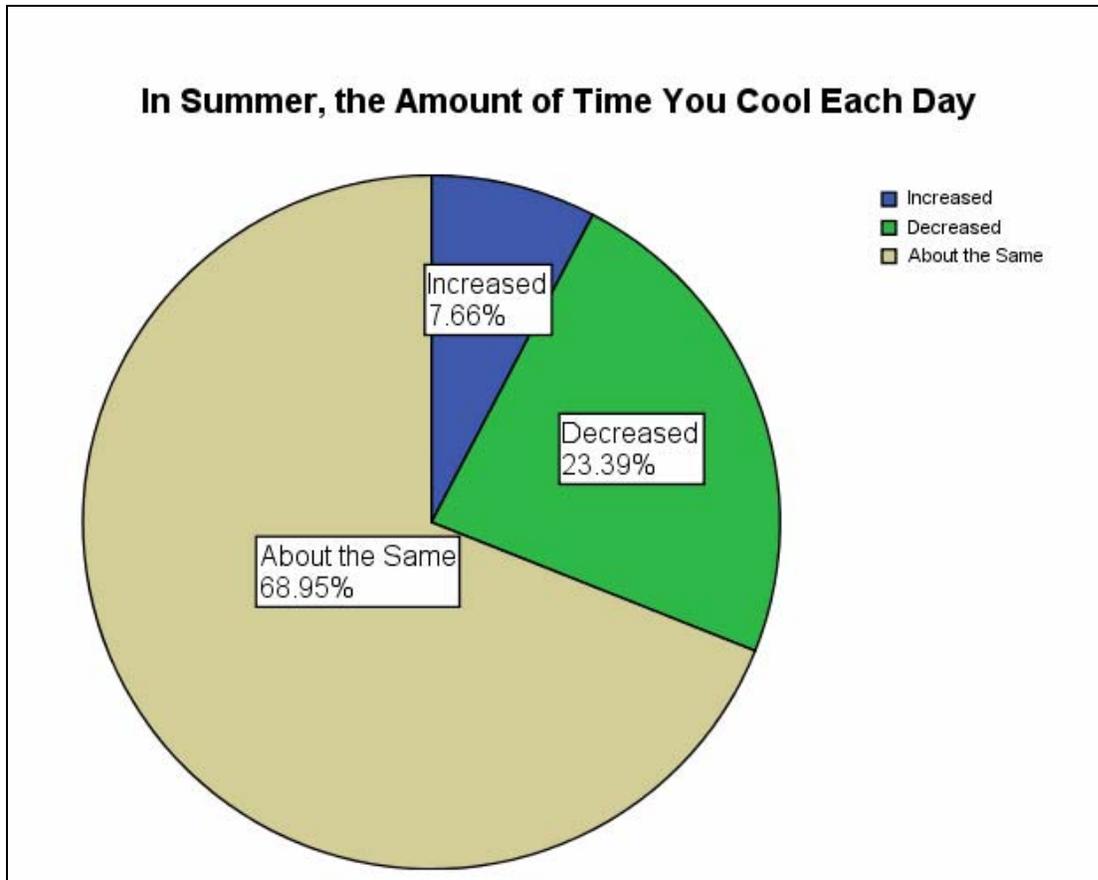


Figure 44: Daily Cooling Time: Summer.

There was very little change to the measures installed during weatherization (Table 37; Figure 45). About four percent (4%) of households responding to the survey said that they had removed at least one measure. About three percent (3%) said that they had added a measure or other energy improvement. These results are virtually identical to the previous survey (3% and 4%).

	Frequency	Percent	Cumulative Percent
Removed	10	4.0	4.0
Added	8	3.2	7.2
No Change	231	92.8	100.0
Total	249	100.0	

Table 37: Did you make changes to the measures installed?

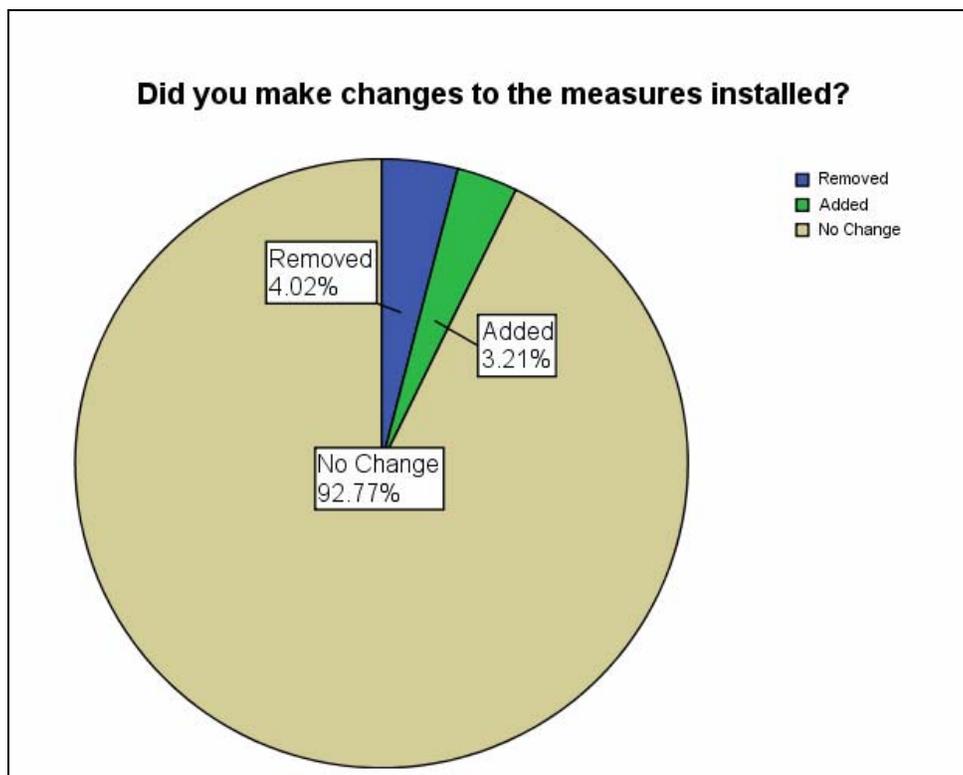


Figure 45: Changes to installed measures.

Approximately seven percent (7%) of households experienced a physical change in measures or appliances that could affect energy use. Also, only a very small number of homes experienced each type of change. Changes in individual homes are listed in Table 38. Some of the changes reported are not changes in the program

weatherization measures, but changes in household appliances that can affect energy use.

Changes Affecting Energy Use Since Weatherization (N=249)	No. of Households
<b>Air leakage measures (removed)</b> <ul style="list-style-type: none"> <li>• Removed door threshold</li> <li>• Removed stripping around door</li> <li>• Removed due to remodeling</li> </ul>	3
<b>Air leakage measures (added)</b> <ul style="list-style-type: none"> <li>• We put plastic on windows and a curtain over the door</li> </ul>	1
<b>AC, heat pumps, &amp; combine heat/air units</b> <ul style="list-style-type: none"> <li>• I had 2 window AC units which I removed when the new swamp cooler was installed</li> <li>• Old AC removed - New HP installed</li> <li>• Combined heat and air unit installed</li> </ul>	3
<b>Appliances</b> <ul style="list-style-type: none"> <li>• Added dishwasher and freezer</li> <li>• Refrigerator replaced</li> <li>• Refrigerator replaced</li> <li>• Refrigerator replaced, got efficiency model</li> </ul>	4
<b>CO Detector</b> <ul style="list-style-type: none"> <li>• CO detector removed. It signaled loudly for 24 hours. I had to get it removed so I could sleep</li> </ul>	1
<b>Showerheads</b> <ul style="list-style-type: none"> <li>• Removed the shower head because the one I had was better</li> <li>• Shower heads broke several weeks after being installed</li> </ul>	2
<b>Solar screens</b> <ul style="list-style-type: none"> <li>• Took off front living room solar screens because they make the room too dark.</li> <li>• Took off solar screens for winter. Will replace in warm weather</li> </ul>	2
<b>Water heaters</b> <ul style="list-style-type: none"> <li>• Had to get a new water heater.</li> <li>• Had to replace water heater they wrapped, got efficiency model.</li> </ul>	2
<b>Waterbed</b> <ul style="list-style-type: none"> <li>• Got rid of waterbed.</li> </ul>	10

**Table 38: Physical Changes affecting Energy Use.**

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## ***B. Problems with the Weatherization Program***

People reported experiencing a number of problems with their homes. These problems tend to fall into specific categories. The categories used here are general housing problems (virtually all of the general problems are actually not related to the weatherization work), air leakage problems, insulation problems, problems with solar screens, appearance problems, waiting for service, other process problems, quality control (Q/C) problems, and other problems. Sometime the problems are with weatherization measures not approved for the individual home or concern relationships with the installers.

The survey question for this part of the study is shown in the text box below.

**Having participated in the Weatherization Assistance Program, is there anything about it that is a problem? If so, could you please say what the problems are?**

While our evaluation focus is on weatherization, people do not always distinguish between problems related to weatherization and other housing problems. Some understand the difference and some do not. When we ask, we are told what is on people's minds.<sup>122</sup>

Often, these are actually landlord-tenant problems that are not related to the weatherization work. Nearly all do not fall into the scope of weatherization. We classify these problems as general housing problems.<sup>123</sup>

### *1. General Housing problems*

- There is a water leak over the stove hood.
- The roof still leaks.
- The heat pump is not working right.

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<sup>122</sup> Similarly, some survey forms are returned with inserts disputing a particular utility bill or with other correspondence with their city, county or with the state related to housing. We make a careful distinction between programs but some clients do not distinguish properly among programs and agencies. [When the evaluation team receives mail that is not relevant to the program we generally forward it back to the Housing Division and they attempt to route it to the correct program or agency.]

<sup>123</sup> This first category is made up of important housing related problems that are almost all outside the permitted weatherization scope of services. It should be noted that the Housing Division follows up on all complaints received with the respective subgrantee agency.

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- There is still a leak in the bedroom which has stained the acoustical ceiling and leaked onto the floor. The plastic covering the kitchen florescent lights is still broken. The shower stall still has problems. The floor in the bathroom seems to be sinking as the toilet slants sideways.
  - The AC does not work well. I run my swamp cooler to cool my home. The furnace doesn't seem to work as well as it should. My gas bill went up from \$39 to \$96.
  - Water heater needs to be worked on. It is leaking from the work done.
  - I need another visit because of cracks in walls that let cold air in.
  - They put in a new furnace in December 2004. By March 2005 they had to come back and replace a part (with the furnace being off for the summer). They had to come back in January 2006 to replace the same part.
  - The stove was not repaired right.
  - My ceiling leaks. I do not know who I can go to so I could get it fixed.

Many of these problems, for example all water leak problems, are either clearly outside the scope of the weatherization work, or are very likely unrelated to the weatherization work.

## 2. Air Leakage -- Windows & Doors

Air leakage is a weatherization concern. The *most frequently mentioned* problem is air leakage. This was also the case in the previous survey. In some cases, clients indicate that work was not correctly performed. In others, clients expect windows, especially replacement of leaky single pane windows with new double pane windows.<sup>124</sup> There were twenty-eight comments on problems with air leakage treatment, reflecting concerns of about eleven percent of households returning surveys.<sup>125</sup>

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<sup>124</sup> In contrast to the early days of home weatherization, many people today are generally familiar with the kinds of measures installed in weatherization programs, and expect that programs involve caulking, weather stripping, and replacement of single pane windows. It is likely that "home improvement" TV programs, commercials for window replacements, and the occasional TV shows about energy conservation contribute to these expectations. Though window replacement is a major client expectation, cost effectiveness concerns limit window applications in most homes.

<sup>125</sup> The number of caulking and sealing problems indicates that their may be a restriction on sealing homes in the weatherization specs.

- 
- I own a mobile home. They refused to caulk inside of my window frames even though the dual panes are not longer effective and air leaks in. In winter, the drafts are so cold you cannot sit on the couch or sleep in the bed
  - Inability to agree on the needs of this home. The front door is still not keeping out cold air. The weather stripping applied has come off. Cold air is still coming in. The furnace does not heat near the bedrooms. As reported, the windows still leak cold air.
  - I still have a very high heating bill due to the fact that the weatherization really did nothing to decrease my heating bill. The program did not include caulking and sealing my windows which let in all the cold air. I cannot afford to seal or replace my windows.
  - The cooler cover was defective. The shower head broke. Two doors did not get weather stripping and leaked worse. The windows were not made to fit better - I have to put plastic over the leaky windows.
  - They should have put weather stripping around the doors and windows. The windows let in air and shake when we have high winds. Light comes in around two of the doors.
  - They don't do windows and that is where the cold air blows in.
  - Still have a cold draft from around the door, making it uncomfortable to sit in there without a robe or a blanket.
  - Nothing was done about the single pane windows. A lot of heat is lost through the windows. A lot of cold air is coming in through the windows.
  - Cracks around windows and doors were supposed to have been fixed. Problem is the same - cold air is coming in.
  - I get cold air in the master bedroom and bath when heating the house. From the beginning, I told the installer and inspectors. Also, I get a great deal of cold air through the front door when it is windy or very cold.
  - Windows still leak. Doors leak.
  - There is more work to be done. Quite a bit more caulking needs to be done around all of the windows outside and weather stripping is needed on the front and rear entrances.
  - The cold comes in through the windows.
  - A rollout and over windows leaks air.

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- Did not replace door weather stripping; or replace broken windows; or the poor window in the rear bedroom.
  - My front door needs stripping put on the bottom. I see opening and air is coming in.
  - I still get cold air through my windows and around doors.
  - There is a severe draft now that was never present before.
  - They could have done around my windows; that is where all of the air is coming into my house. Everything else is fine.
  - The doors were not sealed. Could see and feel light and air coming though.
  - There are gaps in the front and rear doors. Light shines in the house and air leaks out both doors -- but government specs were met on the air pressure test! Dust comes into the house from the gaps. Doors were not weather stripped because of federal specs, though they have 3/8 inch gaps!!
  - Windows still rattle; could be fixed.
  - My windows and front door seal is leaking since the weatherization program was performed. Also the windows were not checked.
  - I had one window that leaked (no caulk).
  - The front door is not weatherized. The cool air comes through it and in summer the hot air steps through it.
  - We still feel cold drafts from fireplace/wood stove, windows and doors.
  - More cold air around the front door.
  - I question the accuracy of the air leak test. I have a quarter inch to one-half inch gaps around my front door and one missing storm window, but the test is in the "OK" range. I also have one double framed window where the inside panes are broken and missing, but because the outside part is intact I did not qualify for repair. It is a major air leak place. I think it should have been repaired.

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### 3. Heat Loss – Insulation

Insulation is a weatherization concern. Six clients expressed a need for insulation.

- No insulation -- the house is still unbearably cold.
- Bedrooms are still very cold.
- The attic was not looked at. It needs insulation.
- I am told by a "helpful neighbor" that my roof does not have foam on it. I thought it was completed.
- I think insulation should have been installed in my attic. Currently the beams are exposed.
- Would like someone to see if there can be blown in insulation between the ceiling and the roof.

### 4. Solar Screens

There were seven comments on problems with solar screens, five from household where solar screens were desired, and two from households with solar screens where members of the household say they shut out too much light.

- I really need the solar screens. I didn't get them and I believe they would help cool the house in summer.
- They would not put in solar screens. It is unfair. If you do it for one, you should do it for all. And now they have changed the rules.
- Solar screens are needed for outside of windows.
- Two windows still need solar screens.
- Can't get solar windows, am told it is because of my front awning. I have 9 windows in the living room.
- Solar screens allowed indoor plants to wither and lose leaves.
- It is hard to see out the windows with the solar screens.

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## 5. *Appearance Problems*

Probably every project that involves construction or retrofit has associated with it some appearance concerns. There were only two comments on appearance problems from among households returning surveys, suggesting that two homes were not done as carefully as the others.

- The workmen made several permanent messes. (1) Ran a cord down the wall from a CO monitor (when the house is all electric) and scarred the wall. (2) Dropped goop onto the carpet and only partially cleaned it. (3) Got caulking on clothes in the closet.
- Have workers take shoes off (at least clean mud off) before walking through house.

## 6. *The Wait for Service*

This is a process question, and there were only a few comments in this area, but it is a concern that affects some households.

- It was slow getting started.
- Return calls. Be sure someone does all they can to make your home weatherproof. It was very hard to reach anyone on the phone. It took a month for someone to return a call.
- Not to take so long to do the work.
- Make it faster. I had to wait about six months.
- The program needs quicker response and repair time.
- It shouldn't take management so long to approve what they approve that they forget all about your home needing to be weatherized.

## 7. *Other Process Problems*

The following comments have to do with jobs not completed, or not sufficiently inspected or overseen from the perspective of the client.

- Had to keep calling to get things fixed.
- The never finished my weatherization; I never signed off.

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- The contractor for the replacement windows, ABC Seamless, was terrible. I had my front window torn out and replaced with a "temp" window for over three months. The contractor seemed indifferent to the issue. When the issue was reported to Debbie, she was very very helpful in contacting the contractor.
  - I could not get a warranty for the air conditioner when I requested it.
  - If there are follow-up problems, the client needs to have a protocol for recourse to the contractors. I had one window that leaked (no caulk). Also the furnace didn't come on.
  - Get contractors who can install detectors straight and find leaks in the home.
  - This work is not complete (see letter attached).
  - Unfinished work Please call me. I am blind; it is hard to explain in writing.
  - My house has not been weatherized. They told me they would come back and I never saw anyone. Every time I call to ask what happened and when will someone come back, I get told someone will call me back. So I gave up. I would like my house weatherized.
  - Haven't received anything; its freezing in here. They said it would cost so much so I would have to move. I need weatherization in my home. My gas bill is out of control (\$174 for one person). There were problems I had to correct before they react.
  - I did not have any weatherization work done.
  - I never participated in the energy weatherization program.
  - They did not do anything for me because I started back working. I can use some help.
  - If your people commit to performing a procedure they should follow through and do it. Not fare to tell me they are doing something necessary then back out of it and sign the project off as complete.
  - Someone should call you when they said, and they should actually complete the things they said you are entitled to. They should complete their job.
  - Spend money allotted to each home to make it energy efficient. You spent a total of \$100 and did not make my trailer weatherproof.

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- They brought an inside cover for the swamp cooler down draft. I did not need it. I use a real thick foam core covered in canvas that is inserted into the down draft. Why don't they check in winter so they can see how cold a dwelling gets? It would be impossible for me to lower my consumption any more. I seldom turn lights on after dark, except to cook. My water heater is set to "vacation." I use a microwave for the majority of cooking. I have a Coleman gas furnace and use the electronic switch to turn it off and on. I use it 1-2 times a day in winter and only to 65-68 degrees and turn it off. I use 3-4 blankets to keep warm during the day. In spring, the gas supply is turned off altogether until fall.
  - Everyone I know in your program got many new windows and they were weather tight. You did not work on my unit for over one year on the waiting list; then failed to help me.
  - I don't have a thermostat to warm my place up. I have 2 small electric heaters to try to stay warm. My electric bill goes high. No one wants to help me. I am disabled but they say I have to be 60 years old before they will help. I am only 46. Can you help?
  - A few of the people that answer the phones could be better informed.
  - Don't change the rules as you go along.
  - Finish what is started.
  - A lady from your office insisted I put my old refrigerator next to the curb for pick up. I responded by saying that just because she gave me a new one doesn't mean I don't still own my old one (it still runs). She got real mad when I did not "obey."
  - I don't like being taken advantage of and not getting a say in what is done to my home and why.
  - Work crews need to be more professional and respectful of home owners.
  - Communications between home owner and repair persons. The stove does NOT light until 6-10 seconds after being turned on, as reported three times.

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## 8. Q/C Problems

The following appear to be quality control problems.

- My pilot light keeps going out. I need to find a way to stop the pilot from going out. I am scared I might burn my house. They installed a stove top and it is very uneven. The door they fixed is hard for me and my son to open.
- The wife and I are both seniors (84 & 85 years). We appreciate what has been done but the air circulation does not cool the house, so we put on the roof cooler. The furnace has a rumble before it works. Thank you for your concern.
- I still have problems with two outside doors not closing properly.
- Windows and roof need to be checked and corrected.
- The front door seems to have a bit of suction to it - hard to open.
- They have been to my home 3 times to fix the back door the replaced. It's the wrong one. It needs to be fixed right.
- I never received the key for the sliding door. Also never received the operating manual and warranty information on the heat pump/AC.
- I still need the motor for the blower on the furnace.
- The weatherization to my home did not make a difference. It is worse.
- The airflow check was not completed due to patio doors. These were replaced by a regular door. The airflow should now be re-checked and the weatherization completed.
- The night light you gave me never worked. I still have it in the box. I'd like another. Thank you.
- My AC runs longer on hot days and my energy bills are higher. The old AC came through the roof; the new one is out of the floor. Heat rises; cold air falls -- so the cool air never gets up into the living area. It is alright for my feet.
- A 13 SEER unit was installed. My electric usage increased by 15% (had a 10 SEER). The installer did not clean coils or an expansion valve. Also, the unit was under charged by four pounds. I paid to have these fixes done.

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- I have three windows on the east side that leak when it rains. I discovered this when I heard a dripping noise and realized it was my vertical blinds. I had to place old towels on the window sills and the carpeting below the windows. Also the ceiling vent in the laundry room had loose insulation put in so if you remove the square cover it falls down on you.
  - I had to have all of the electronics in the furnace replaced. The repairman said the thermostat your people installed cause the blow out of the existing electronic equipment. Also, the gap around my door is still not fixed. Please don't send anyone else here to fix my house. The last time it cost me over \$300.
  - The AC was not installed properly. The pipes were cut and welded many times. The furnace needed major work when I went to turn it on this winter. It took 2 weeks to get it fixed, then longer waiting for parts.
  - My heater was never checked. Only the thermostat was replaced. Also my windows and front door seal is leaking since the weatherization program was performed. Also the windows were not checked. The duct work was not checked for leakage.
  - Did not replace door weather stripping; door gasket on refrigerator; or replace broken windows; or the poor window in the rear bedroom. When they tested the house, they left the furnace wrapped in plastic that caused the furnace to overheat and shut down. I had to do the removal of the plastic and figure out how to reset the furnace myself.
  - My bathroom wall is peeling off -- the one they re-did.
  - Find competent installers.
  - They need to slow down and would not make so many mistakes or forget things.

### *9. Other Problems*

- They took out my upgraded stove and put in a non-self cleaning stove. I was at the doctors when they were there and my son let them do it. If I was home, I would have stopped them. I am 81 years old and can't clean the stove. I want my self-cleaning stove back.
- The installers said they had to remove my expensive shower heads. Several weeks after they put in the cheap shower heads they broke and you would not repair them. The shower head that was removed cost about \$40 and it had special water savers.

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- It was decided my old refrigerator was OK. But it concerns me because something in it is running all the time with loud humming. And it freezes things in the fridge part even if it is turned down.
  - The only problem is that costs have gone up - the price of fuel is higher!
  - The carbon monoxide detector is defective.
  - There is not enough water from the energy efficient showerhead.
  - I need a new sliding door, but they ran out of money.
  - My refrigerator is 35 years old and I know it is costing me around \$50 a month for electric.
  - Yes. I told them my Air/Heat is not good. They say it is fine. It is busted. Help me.
  - The AC is old and costs too much to run.

### ***C. What could be done to Make the Program Better***

In addition to asking about problems, the survey asked what could be done to make the program better. The survey question that requests information on making the program better is shown in the text block below, followed by the responses.<sup>126</sup>

**Is there anything that should be done to change the program to make it better?**

- Why should landlords and corporate apartment owners gain from the changes made for low-income tenants? The owners should be forced to make those improvements - they can afford it. The program should be for low income homeowners. Renters could apply for 3M window covers (temporary items that have to be replaced annually). There should be no discrimination between homes and mobile homes.

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<sup>126</sup> Note that only some of these desires are within the scope of the program. Funding does not permit dollars to stretch to cover every problem at every home. Addressing leaking roofs, architectural, and structural problems is not allowable except in extreme health and safety situations since these repairs are both expensive not cost-effective. Also, for example, building shell sealing is generally not cost-effective in the southern portion of Nevada due to high labor costs.

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- Apply weather stripping around the outside doors.
  - Weatherstrip doors, add door sweeps, caulk or weatherstrip windows.
  - Add weather stripping around the door frame.
  - Do more with weather stripping to seal doors.
  - I wish they would have put stripping around my front door and back door.
  - What is being done helps, but in the long run doors and windows are where all the heat goes in the winter, and costs everyone in fuel and higher rates. If we use more, they think we need more and then charge more.
  - Check the insulation around the windows and not just the doors. Use blanket style insulation instead of loose material in ceiling crawl vent.
  - New windows in my trailer would have helped.
  - A window weatherization should be put in. If the wind comes in at the windows, all the top insulation doesn't do any good. We are just cold.
  - Insulation in the attic would help with heating costs. Also, I had heard from a neighbor that the program changed three or four of his old single pane windows to thermal pane. I have changed two since living here and can't really afford to change the larger living room windows.
  - More vents in bedrooms or more insulation in walls and ceilings. Windows on outside need caulking.
  - Make sure heat is not lost through the windows. Help with older homes that have single pane windows. People on limited incomes have difficulties securing items that would save on energy bills.
  - Bring back window and door replacements.
  - I would like a door in my kitchen to keep my house warmer.
  - Extend the program to include heating and cooling loss from sliding door.
  - More insulation
  - What mobile homes, in particular, need is to be better insulated in the walls.

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- I have a Mobile Home and I wish there were a way to get some insulation in the roof.
  - Weatherize the additions that are attached to mobile homes.
  - In older mobile homes the windows and sliding glass doors need help with closing and opening due to worn tracks and bearings. Perhaps replacing these minor items would help to seal better and cut costs for heating and cooling. I can't afford to replace the old sliding glass door. Make more public announcements to reach seniors who qualify for help. In my park very few were aware due to being homebound or partial blindness for reading circulars. Make more funds available for insulation other than strips and wall covers.
  - Raise the amount of money allotted for each home so that the necessary work can be completed.
  - Need help in roofing - need terribly but do not understand the cost.
  - Add roof repairs to the program.
  - I need a new roof.
  - Find solar screens that eliminate sun glare but do not darken rooms so much.
  - Install a better doggy door.
  - It took almost a year to get help. I think if you need help with heating or air you shouldn't have to wait five years! Whenever you need help, it should be available!
  - Please raise the support to cover increased cost.
  - I think they should do yearly check-ups.
  - Do follow ups maybe every 3-6 months.
  - Replace items that break. Do not remove anything from the property.
  - People who perform this weatherization program should check out the people who perform the work for the program to make sure the job they do for people is completed right.
  - A more complete weatherization program should be offered. All this program did was put a band-aid on the wound!

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- Have follow-up check ups on a reasonable basis to ensure the work was properly done. Especially after the warranty runs out to be certain the merchandise paid for was of a good quality and on one got preferential treatment for obtaining the contract under false pretences.
  - Better communication on time of eligibility. Confusion as to when I can make appointment to apply. When I call, I am told one thing and when I go in I am told another.
  - Make more people aware of the program, especially the elderly. We were not aware of the program until last year. Also, our furnace is 27 years old, is not efficient and is a major cost for heating. Because we are on a fixed income we wish there was a low cost way to replace it.

#### ***D. Lingerin g Concerns***

The following comments express unresolved concerns from households in the SFY 2005 weatherization effort:

- Stop the leakings in my roof.
- Some spots leaking on the roof.
- I have no heat.
- Cold air is coming in....I need help with this problem.
- I get cold air coming in... It is a wonderful program, but follow-up is necessary to correct problems.
- With the increased rate, I cannot tell if I am saving anything or not.
- Electric bill much higher than before!
- Thank you. Excellent service. Seem to be paying about the same 2003, 2004, 2005.
- We are very thankful for this program. It is just unfortunate that the house we live in is very old and drafty so the power bills are still outrageous, but we are hoping to move soon. Thank you for all you do.
- I greatly appreciated everything that was done for us, but sadly I have seen almost no change in the cost of our cooling and heating expenses. Our power still goes over \$300 a month in summer and the gas is higher than before.

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- I had hoped that my utility bills would decrease, but they have escalated, especially my gas bill which is one-third more. Now I have to raise the thermostat by six degrees more to get any heat at all. There was duct work done which, I feel, contributes to the escalation in having to adjust the thermostat to a higher temperature.
  - My gas bill increased for the house three times. It is because my air and heat are in the same unit.
  - The electrical usage seemed very high for the amount of time the AC was used. I feel it is not working properly or is drawing excessive electricity to run.
  - The initial work crew that came here committed to applying insulation if I made some changes. I incurred the expense, provided my own labor only to be told my project was signed off. The second team (inspection team) did the same thing regarding a gas wall heater they determined was unsafe. I applied for this program to get some assistance with attic insulation. The R factors in my attic are way below standards. My home is not energy efficient and according to your people I have an unsafe heating unit.
  - Need help in weatherizing the mobile. Please contact me. I receive \$114 per month social security. Thank you for your help.
  - They added Freon, but it does not keep the house cool in summer. It is costly to run the AC.
  - I would like to have someone look at my heat pump temperature setting please.
  - My 29 year old AC went out a year after weatherization. The water heater busted after. I try calling. I use fan for air, and fan heat for winter. Check the Air, Heat. Help me.
  - I don't know what and where the measures are installed and what kinds of changes have to be done. Please advice.
  - I appreciate the doors weather stripping, the installation of the carbon monoxide monitor, etc. But when I called about the windows leaking, I was told they can only come out every five years (the leaking was not disclosed by the previous owner when I bought the house).
  - The water heater is twelve years old. You put a blanket around it and it is fine. Should I consider replacing it? Thank you very much.

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### ***E. Additional Comments***

Clients offered these additional comments:

- Your program installed a new furnace in my house (a new window also). My old heater didn't work and wasn't safe. Now my whole house is warm. It's been a nice winter. I am very happy with all aspects of your service. Thank you very much!
- The men who did the check were very thorough and pleasant to work with.
- Everything is as good as it can be. Nick was a very helpful person.
- This program is a great assistance for my self and all seniors. Thank you. Thank you to you and Governor Guinn. Keep up the wonderful work.
- The program is very good for low income people. The contractors are very nice and competent. Keep up the good work.
- All in all, everything is OK.
- You are doing great! Thank you!
- Wonderful job done by good workers. Many thanks.
- I am pleased with the work that was done. Thank you for your help.
- Thank you. Your people were informative and courteous.
- Everything was excellent. Thank you very much.
- The workmen were clean and courteous and I am appreciative of what they have done.
- Thank you for your help.
- Thank you for all the assistance.
- In winter, I keep my thermostat set at 60 degrees and the temperature seems to stay pretty consistent. I leave the window covering open during the day to allow the sun in to warm it up. It seems to work well. I am not cold.
- Thank you for helping families with low income.

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- If it hadn't been for your program, the rate increases at SPPC would have cost me my home. Thank you.
  - Your program was a great help to me and my family. I thank you very much for all you did.
  - It is an excellent program. The workers and management were thoughtful and careful. The roofing has been just wonderful to keep temperature stabilized day and night. The house is much cleaner after the good work on the vents. I thank you so much.
  - I am very happy with the work done. My power bill is not as high anymore. Thank you.
  - Thank you.
  - Thank you for what was done.
  - I was happy and pleased with the work they did to my home.
  - We heat and cool one less bedroom (we shut it). I am thankful for the program.
  - We are surprised our gas and power bills have not improved, but it's hard to tell with rates rising. Summer months did show improvement and we are grateful. Everyone was helpful and kind.
  - Thank you. I really appreciate what you did for my son and myself.
  - I wish to thank you for being concerned about us seniors, especially when we do not have anyone, or families to help us out. God Bless your assistance program. Thank you for helping those that really and sincerely need it.
  - The program was all a person wished for. Thank you very very much.
  - My bills are lower than they were before.
  - Thank you very much for what you have done. I am grateful.
  - The crew as exceptionally polite and very experienced. Thank you to the Housing Division and the crew.
  - Thank you for this help.
  - I am very pleased with the program. Your workers were very good.

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- Thank you so very much for having programs like yours available to people that find themselves in situations like mine. The money I get each month is such that I could in no way be able to change things in my home to save energy and also money. God Bless to everyone involved with your programs! Keep up the good work!
  - For me, personally, the program was a blessing. I was preparing to abandon my home because I couldn't afford the repairs needed. Thank you all very much.
  - Your services have been a great help and a big improvement. Thank you.
  - Wonderful work, Wonderful improvements.
  - Just great people who care. Thank you again.
  - Your program is wonderful. I'll never forget the great things you guys did. Thanks so very much.
  - Thank you for all your help!
  - I appreciate your coming out, giving me valuable tips on what is available and checking my mobile home.
  - I want to thank you for all the weatherization in my home. You did a good job.
  - The program is great. I did not answer the questions on heating and cooling because my unit blew up.
  - Thank you so much for the help.
  - They did a great job and thanks.
  - My health (breathing) improved after the new furnace was installed, and now with a new refrigerator my food stays good longer. Thank you so much! I am 76 years old and it has made my life more comfortable and safer!
  - We were exceptionally grateful for all the help.
  - I am happy.
  - Everything and the people doing the work were great. Keep up the good work.

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- We were pleased with what was done. Thank you.
  - I certainly appreciate being able to participate in the Weatherization Assistance Program and think it is a fine offering. Thank you.
  - I can't say enough good about the program. It has been a blessing. Thank you so much.
  - There has been a noticeable savings on my electric bill.
  - Let people know that your presence in the home is a big intrusion, even though when you are done it is really worth the inconvenience. When there is a bunch of guys in the house it is hard to tell if anyone is leading or following because they appear to be just discussing and not doing much. You have benefited me tremendously not only in money saved, also in increased comfort level.
  - Thank you so much, you have helped me so much.
  - Everyone was very nice. I am happy. Thanks.
  - I am so happy with the program it helped me so much. I don't know what I would have done without it. I couldn't afford all the things they did. My new air conditioner and everything else. God bless you and thank you so much.
  - The staff was thorough. A lot more was done than I had anticipated. All good. Crew was polite, considerate, and down right friendly. I feel I was treated good and the job has been beneficial. Thank you again.
  - The people were very friendly and helpful.
  - I appreciate the help. The solar screens have helped to cool. Thank you.
  - The parts done (windows, hot water heater wrap) are great.
  - Can't thank you enough for all you did. My home is more comfortable.
  - Thank you so much and may God bless all who made it possible.
  - Was very satisfied with the professionalism of administrators and workers.
  - This is a great program. My house stays warmer and costs less than before.

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- You are doing a great service to this community. Please keep the program working as is in Clark County. Thank you very much for all the assistance that you have supplied to my home.
  - The house is cleaner, warmer, cooler. Bills are lower, even with raise in utility rates. Wonderful! Thank you!
  - Thank you.
  - It's a great program! Thank you very much for your help!
  - The program is wonderful. Thank you so much!
  - Thank you for the help.
  - I am pleased with the work that was done on my house.
  - I really did like the help received. It is nice to have something that can help you save money.
  - I am totally impressed with your program. I have seen anywhere from 40% to 60% savings. Thank you.
  - We have noticed a difference of \$25 to \$40 in our power bill from the previous year. It has made us aware of everyday usage in all areas of our household. Thank you!
  - Everything works better. You are great and I am very happy. Thank you.
  - I just want to thank you for helping me and my family. You just don't know how you really helped us.
  - Great program!
  - I want to thank you for your help. Without your help I really don't know what I would have done.
  - Everything was great.
  - A job well done.
  - I am very pleased with the program and all parties were great.
  - Thank you for helping me.

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- Since they weatherized my back door and installed solar screens my kitchen has stayed a lot cooler in summer and warmer in the winter as the stripping around the door frame and threshold really keeps the draft out. I really appreciate everything they have done for me.
  - Thanks for the installation of the sunscreen.
  - I cannot say how much I saved, but it must be plenty since the cost of the power company continues to increase every year. This year they are thinking of going up twenty percent. I think with the increase in prices I saved plenty with the weatherization program. My expenses are the same as last year, so I saved on all the increases from last year. I also saved on the water bill.
  - Thank you for all that was done.
  - Thank you.
  - I am very grateful for all this program has done. Being a single mom of 3 is hard -- I appreciate it!
  - I really think this program is a very good thing for people on low income. I am very happy to be part of a great program.
  - Thank you!!
  - I so appreciated all of the work that was done in a courteous and timely manner.
  - Everything was great. Thank you so much. On our income we could not have done the improvements on our own.
  - The young lady, who came to approve the program from City of Henderson, was just great. I could not but give an A plus on the program and her kindness and the respect she showed towards me.
  - My house is less drafty in winter and a lot cooler in summer.
  - On the whole the program is a worthy one. I am very grateful for all the work done to my home to weatherize it. At 80 years old I am considerably limited in what I am able to do to help myself. I deeply appreciate your care and concern.
  - Thank you.
  - My heating/cooling bill has gone down about one-third.

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- Thank you very much for your help.
  - Thanks for everything.
  - I am happy with the program. Thank you.
  - I am very happy with the help. My thermostat is lower. Very happy with everything that has been done.
  - What the program did was the best thing that could have happened to my family and myself. Thank you for what you have done for us. It is greatly appreciated. You don't realize how great it was for us!
  - Everybody was very courteous and helpful. No one made me feel bad. Everyone cared. Thank you for all the help.
  - Thank you so much for your help, it is greatly appreciated.
  - Thank you for improving my home and life.
  - This is the best thing since buttered toast! Thanks much!
  - We were very appreciative of the improvements. Your employees were very helpful and polite. Because utility costs are going up it is hard to determine the effect of weatherization on the bill.
  - Thank you very much.
  - They did a good job.
  - The windows are wonderful and make an amazing difference. The inspection of the heating system removed my anxieties about the function of the heater and restored peace of mind. I feel truly blessed to receive all of the gifts, and express my sincere gratitude.
  - Thank you all.
  - I used to heat with wood but had to go to electric due to health problems. I could not manage without the new system to heat with.
  - We were totally satisfied. We could tell a difference in the warmth of the house as soon as they were completed with their work. Excellent service, we are very happy to have it done. It really improved things.
  - Thank you for all your help! Great program!

- 
- Thank you. I have seen a tremendous decrease of gas and electricity in my home since the weatherization was done and a great difference in the amount of my monthly bills for both electricity and gas. Thank you again!
  - Thanks a million! You have great workers.
  - Despite the distances and few businesses to handle such jobs in northern Nevada's rural areas, the system seemed to operate well. I was patient and I was always contacted and told how my situation was progressing. I was very pleased and surprised at the service and products received. My personal situation was improved and my two boys and I are more comfortable after the improvements. The first contractor was lazy and gave up quickly saying he could do nothing. He hardly looked at anything. The contractor that did the work was energetic, resourceful, and polite and worked hard to solve the problems with my house. He and his men should be commended.
  - I wish I had known about you sooner. Thank you very much.

### ***F. Summary***

The Weatherization survey was conducted to find out about changes in the weatherized homes that might affect energy savings after weatherization was completed. A second purpose of the survey was to provide client perceptions of the program – on problems encountered, and on household perspectives of what might be done to improve the program.

With regard to changes in weatherized homes in the period following weatherization, results were almost identical to the results of last year's survey. Most homes report no changes. However, some homes subsequently replaced a heat pump or furnace (10%), an air conditioner (13%), or a major appliance (15%).

Waterbeds are not an important factor in the homes served by the program; there is no tendency to increase the square footage of homes; and, overall, the number of persons changes for only a few homes. Most homes do not change temperature settings or hours of heating and cooling, but for those households making a change, most changes favor energy conservation. Changes to measures installed (removing or adding) are minor for the group as a whole.

Problems identified by participant households have been grouped by type, with about 10% of households reporting a problem with air leakage, and much smaller percentages of households reporting other types of problems.

There were several suggestions for program improvement, and a small number of households expressed lingering concerns.

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The evaluation team has left the household expressions as stated in the surveys so the communication can be direct.<sup>127</sup> Although a number of problems and suggestions for change are expressed, as with the previous survey, the largest numbers of expressions were of thanks for the program and its positive effects. An overall “thank you” was generally part of the response even when problems were noted and/or improvements suggested.

## IX. ENERGY ASSISTANCE PROGRAM

The Energy Assistance Program helps eligible households pay utility bills. The program is not designed to pay the total cost of energy, but only the portion of the yearly energy bills that is above the median Nevada energy burden. Each household is responsible for paying the balance beyond the assistance provided, and it is expected that they will make payments to the utilities every month.

Eligible households receive an annual benefit which is paid directly to their energy providers.<sup>128</sup> Applications are accepted through June 30th, or until funds are exhausted, whichever comes first. Prior year recipients may not reapply until approximately eleven (11) months after they received their last benefit.<sup>129</sup> Payments from the Fund for Energy Assistance and Conservation are keyed to the state median household energy burden. The program year begins each July 1<sup>st</sup> and is the same as the State Fiscal Year.

Although more steps are involved, the three primary steps in calculating the Fixed Annual Credit for a household are:

- **Identify household's annual gross income.** The Welfare Division identifies the household gross annual income. The household's annual income must not be more than 150% of the federally designated level signifying poverty, as determined by the Welfare Division. Eligibility is based on the income of the entire household, and is documented during the application process.<sup>130</sup>
- **Apply the median energy burden.** The Welfare Division then applies the median energy burden percentage to determine the amount the household is

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<sup>127</sup> Except that proper names were removed to maintain confidentiality of responses.

<sup>128</sup> For customers of UEC utilities, the Division of Welfare and Supportive Services uses UEC funds for payment to utilities in UEC. Federal LIHEA and/or other funds are used for payments to non-UEC utilities, such as propane dealers.

<sup>129</sup> Application packets are mailed to prior year recipients when it is time for them to apply.

<sup>130</sup> There is no asset test for FY 2006.

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expected to pay. For FY 2006, Nevada's median income was \$44,581 and the median household energy burden for natural gas and electricity 3.33% of household income.<sup>131</sup>

- **Identify household's annual usage in dollars for all energy sources.** During the application, the Welfare Division determines the total annual cost of energy use for the household (including, for example, natural gas, electricity, wood, oil, propane, and kerosene), and generally requests the client to show bills or may receive copies of bills directly from energy supply companies. The Welfare Division has a computer link to the customer information systems of the three major utilities (Nevada Power, Sierra Pacific Power Company, and Southwest Gas). The applicants are expected to help the Welfare Division obtain billing records where necessary.
- **Determine the Fixed Annual Credit.** For SFY 2006, if the household's annual dollar cost of energy usage is greater than 3.33% the of household's income, the difference is the Fixed Annual Credit (FAC). If the result of the calculation is less than \$180, the result is set equal to \$180, the minimum payment for eligible households.<sup>132</sup>

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<sup>131</sup> Nevada State Welfare Division, Nevada Fund for Energy Assistance and Conservation State Plan 2006, Page 18. Note that Nevada median income for setting the median household energy burden is calculated by the Nevada State Demographer and is different from the State Median Income Estimate established by the U.S. Census Bureau for a four person family (for Nevada this is \$63,005 for federal fiscal year 2006). U.S. Census Bureau, Median Income for 4-Person Families, by State, for use by the Department of Health and Human Services (HHS) for the Low Income Home Energy Assistance Program (LIHEAP) at <http://www.census.gov/hhes/income/4person.html>.

<sup>132</sup> If all utilities are in landlord's name and are included in the rent and the household does not receive a separate bill that includes consumption & dollar usage, the household will receive \$180. If all utilities are in landlord's name but the household receives a separate bill which includes consumption and dollar usage, the household receives a FAC and the benefit is paid to the household. If one of the utilities is in landlord's name and one is in household's name, the household will receive a FAC based on the utility in the household's name payable to the utility, unless the household receives a separate bill from the landlord that includes consumption & dollar usage in which case the household receives a FAC based on both utilities that is payable to the household's utility not to exceed the annual usage, and the remainder is paid to the household.

<b>SFY 2006 Energy Assistance Program (Gross) Income Guidelines</b>		
<b>HH Size</b>	<b>Annual</b>	<b>Monthly</b>
	<b>150% Federal Poverty Level</b>	
<b>1</b>	\$ 14,355	\$ 1,196.25
<b>2</b>	\$ 19,245	\$ 1,603.75
<b>3</b>	\$ 24,135	\$ 2,011.25
<b>4</b>	\$ 29,025	\$ 2,418.75
<b>5</b>	\$ 33,915	\$ 2,826.25
<b>6</b>	\$ 38,805	\$ 3,233.75
<b>7</b>	\$ 43,695	\$ 3,641.25
<b>8</b>	\$ 48,585	\$ 4,048.75
<b>Add for each additional person</b>	\$ 4,890	\$ 407.50

Source: Nevada State Welfare Division, Energy Assistance Manual, Appendix A, MTL 1/05, 30 Jun 05, P. 1.

**Table 39: Income Guidelines.**

Income eligibility guidelines for SFY 2006 are shown in Table 39.

Only customers of utilities that require customers to pay the Universal Energy Charge (UEC) on their monthly bills are eligible to receive help from the Nevada Fund for Energy Assistance and Conservation (FEAC). However, the state UEC program is coordinated with the federal program so that all eligible Nevada households receive equal treatment.<sup>133</sup> For SFY 2006, the Fixed Annual Credit could be paid from the Nevada Fund for Energy Assistance and Conservation (FEAC) or from federal low-income Energy Assistance (LIHEA) funds.

### ***A. Fast-Track Component***

The Welfare Division attempts to fast-track households that have been disconnected from service or that have received a 48-hour disconnect notice, or are nearly out of heating fuel. This is not an emergency program, but will jump an application to first position in processing. Normally, applications are processed in date order received.<sup>134</sup>

<sup>133</sup> This coordination implements NRS 702.250(3): "The Division shall, to the extent practicable, ensure that the money in the Fund is administered in a manner which is coordinated with all other sources of money that are available for energy assistance and conservation, including, without limitation, money contributed from private sources, money obtained from the Federal Government and money obtained from any agency or instrumentality of this state or political subdivision of this state."

<sup>134</sup> There are additional conditions that must be met to be placed in the Fast-Track component. The additional requirements are designed to ensure that a household designated for priority service is

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## ***B. Crisis-Intervention Component***

The Crisis Intervention Program assists households experiencing a special circumstance or crisis and whose gross annual income exceeds 150 percent of poverty except for allowable qualifying expenses that reduce the annual income to 150% of poverty.<sup>135</sup>

## ***C. Year-Around Service***

The Welfare Division provides help year-around, a good fit to Nevada's diverse climates and weather.<sup>136</sup>

## ***D. Arrearage Component***

When an eligible household receives a Fixed Annual Credit, the credit is sent to the utility (or divided among the utilities) as a one-time payment. It is designed to enable a household to pay the median Nevada energy burden for twelve months with the Fixed Annual Credit making up (approximately) the difference in the utility bills. This means that if the Fixed Annual Credit is applied to a household without current arrearage, it can approximate the difference between Nevada's median energy burden and total bill for the next twelve months, so long as the household makes payments equivalent to the median energy burden. However, if the household starts out with an arrearage problem the utility will first apply the Fixed Annual Credit to back bills, and the amount left for the next twelve months may fall significantly short of providing the necessary bill assistance beyond the first months of the twelve month period. The Arrearage Payment Program is designed to supplement the effect of the Fixed Annual Credit by eliminating debt owed to a household's heating/cooling energy supplier. This enables the Fixed Annual Credit to function as designed for the next twelve months.

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doing what it can to meet its energy bills. Both Fast-Track and Crisis Intervention components will be continued in SFY 2007.

<sup>135</sup> Qualifying expenses must be supported by valid and verifiable documentation and must create a financial hardship of no less than three months, and may include: un-reimbursed medical expenses for medical emergencies or long-term, chronic medical conditions; un-reimbursed compulsory and necessary home repairs; automobile repairs only if transportation is needed for ongoing medical care, the repairs are critical to the operation of the vehicle, and it is the only registered vehicle in the household. Regular maintenance is excluded, including tire purchases.

<sup>136</sup> This is a program feature that fits the climates of the Western states and which other states should consider adopting. States that do not have a UEC but rely on federal LIHEA funding typically have narrow service windows that change from year to year depending on when federal budgets are passed and on variable federal funding.

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A Universal Energy Charge household may receive arrearage help only once.<sup>137</sup> As with the Fixed Annual Credit, the household's annual income must not exceed 150% of the federal poverty level. Application for arrearage assistance can only be made with or following application for the Fixed Annual Credit since it is designed as a supplement to the Fixed Annual Credit. In addition, to be eligible for arrearage assistance the UEC-eligible household must have paid an amount equal to at least 3.06% of their current income toward the arrearage during the twelve months in which the arrearage occurred.<sup>138</sup>

Once accepted for arrearage assistance, the household must budget its Fixed Annual Credit over the next twelve months to ensure an arrearage does not occur.<sup>139</sup>

For FY 2006, for a total of 3,446 households, total arrearage payments were \$1,312,420. The average arrearage payment was \$381.

### ***E. Energy Assistance Program (Formal Compliance)***

<p><b>Finding: The Energy Assistance Program (EAP) is in compliance with subsections 3<sup>140</sup> and 8<sup>141</sup> of NRS 702.260, the relevant sections related to formal compliance.</b></p>
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<sup>137</sup> There is an exception for households with chronic, long-term medical conditions that create a financial hardship and/or increase energy consumption.

<sup>138</sup> See Nevada Fund for Energy Assistance and Conservation State Plan, SFY 2006, P. 24. It is possible to request a hardship exemption to this provision by written petition to the Administrator of the Welfare Division.

<sup>139</sup> If the household incurs another arrearage within twelve months and receives a shutoff notice from their utility or service is terminated, the household is ineligible for expedited case processing, such as Fast Track.

<sup>140</sup> NRS 702.260 (3): Except as otherwise provided in subsection 4, to be eligible to receive assistance from the Division pursuant to this section, a household must have a household income that is not more than 150 percent of the federally designated level signifying poverty, as determined by the Division.

<sup>141</sup> NRS 702.260 (8): In carrying out the provisions of this section, the Division shall: (a) Solicit advice from the Housing Division and from other knowledgeable persons; (b) Identify and implement appropriate delivery systems to distribute money from the Fund and to provide other assistance pursuant to this section; (c) Coordinate with other federal, state and local agencies that provide energy assistance or conservation services to low-income persons and, to the extent allowed by federal law and to the extent practicable, use the same simplified application forms as those other agencies; (d) Establish a process for evaluating the programs conducted pursuant to this section; (e) Develop a process for making changes to such programs; and (f) Engage in annual planning and evaluation processes with the Housing Division as required by NRS 702.280. (Added to NRS by 2001, 3234; A 2005, 22nd Special Session, 78)

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The Division of Welfare and Supportive Services is mandated to implement the Energy Assistance Program according to the applicable provisions of NRS 702. Below are the specifications in NRS 702 relevant to the evaluation, and a description of how the Division of Welfare and Supportive Services implemented these requirements or did not when it was unfeasible.

1. *Specific Provisions*

**(1) 702.260 (3) Eligibility**

Division of Welfare and Supportive Services staff have developed and established a set of functional procedures that fully implement the income eligibility requirements of NRS 702. Based on review of systematic samples of cases, this implementation is correct in approximately 100% of cases.<sup>142</sup>

**(2) 6(a) Solicit advice from Welfare and other knowledgeable persons**

Division of Welfare and Supportive Services staff worked with the Governor's Energy Advisor, and with the utilities to coordinate and strengthen program services. There were a number of formal and informal meetings with stakeholders/advocates to discuss aspects of the program and how the program could be improved. The Welfare Division participated with the Housing Division in the statewide open planning meeting, held in the spring, and worked jointly to implement the SFY 2006 program plan and to develop the SFY 2007 program plan.

**(3) 6(b). Implement delivery systems and provide other assistance**

Over the first years of the program, the Division of Welfare and Supportive Services has implemented effective delivery systems and continues to improve their efficiency. These improvements are part of day-to-day operations in which ideas for improvement are encouraged by the Program Manager and by the organizational work style of the Division of Welfare and Supportive Services, and at a higher level are reflected in an openness to concepts developed by the Advisory Committee and in a formal way in the annual plan developed each year.

**(4) 6(c). To the extent practicable, use the same simplified application form**

A common simplified application form has not been implemented. The prospect of a common and simplified application form for the Welfare Division and the Housing Division was investigated during the first program year. As reported in the SFY 2003 evaluation, a working group consisting of both Housing and Welfare management tried to streamline the application so that both agencies could use a common simplified form. However, the two agencies have different data collection needs and

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<sup>142</sup> See "Determination of Eligibility" and Table 58 in "Review of Client Files," which follows this subsection.

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the joint form became too long. Based on this practical reality, the agencies decided to continue using their own forms.<sup>143</sup>

At the same time, a part of this goal has been successfully implemented in that the Housing Division uses a single application form for weatherization services, across funding sources. Weatherization services administered through the Housing Division draw primarily on Universal Energy Charge (UEC) funding, but also on federal Weatherization Assistance Program funds, and other state funding, when available, and as appropriate. In the same way, the Division of Welfare and Supportive Services uses a single application form for energy assistance (utility payment) services that draws upon UEC funding, federal LIHEA funding, and other sources when available, and as appropriate.

**(5) 6(c). Coordinate with other agencies that provide energy assistance**

The Welfare and Supportive Services Division carefully coordinated Nevada Fund for Energy Assistance and Conservation (FEAC) funding for the Energy Assistance Program with federal LIHEA payment assistance funding throughout SFY2006. This creative coordination of funding permitted equal provision of services to UEC and non-UEC homes for utility bill assistance in SFY 2006, while following the requirement that UEC funds may be used to assist only households served by at least one utility which implements the Universal Energy Charge.

In coordination with the Housing Division, the Welfare and Supportive Services Division downloads records for all recipients receiving energy payment assistance to the Housing Division. Daily e-mails of clients with a FAC of \$2,000 or greater<sup>144</sup> are sent to the Housing Division for immediate follow-up.

**(6) 6(d). Establish a process for evaluating the program**

In the first program year, the Division of Welfare and Supportive Services and the Housing Division implemented the evaluation provisions of NRS 702. The current evaluation for SFY 2006 is the fourth State Fiscal Year evaluation in this series.

**(7) 6(e). Develop a process for making program changes**

The Division of Welfare and Supportive Services and the Housing Division have each year improved the program. Some of the improvements reflect recommendations

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<sup>143</sup> Housing has identified a software program "DirectApps" that could be used by Welfare and Housing for common applications. This would require an initial investment of \$80-100,000 to purchase and modify the application for use, plus the cost to incorporate the application into both Welfare and Housing systems. The initial application would be taken at any point of contact and this system would forward income qualified applications to both agencies. At the current weatherization funding levels Housing can serve roughly 1,500 clients. With 15,000 and more income qualified LIHEA clients, Housing could be overwhelmed with applications. A joint application system of this type would require careful scrutiny of costs and benefits.

<sup>144</sup> This is a change from \$2,500 (in prior years) to \$2,000.

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from the evaluations and others improvements generated by management and staff, and by the Advisory Group. The formal structure for these changes is in the annual planning process, though a number of small improvements have progressively been implemented by management and staff below the level of the formal planning process, and on an ongoing basis. Some proposed changes have been above the scope of an operating agency, and in those cases have been transmitted to the governor and legislature for consideration. Progressive modifications in NRS 702, documented by date, mark this process.

**(8) 6(f). Engage in annual planning and evaluation with Housing Division**

As enacted in NRS 702, there is an annual planning and evaluation process conducted jointly with the Housing Division, which has been implemented following the provisions of NRS 702.280.<sup>145</sup> Each State Fiscal Year can be viewed as an annual program cycle. For each cycle an evaluation is conducted and there is a structured planning process resulting in the Program Plan for the following year.

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<sup>145</sup> NRS 702.280: Coordination and evaluation of programs; duties of Division of Welfare and Supportive Services and Housing Division; submission of report to Governor, Legislative Commission and Interim Finance Committee. 1. The Division of Welfare and Supportive Services and the Housing Division jointly shall establish an annual plan to coordinate their activities and programs pursuant to this chapter. In preparing the annual plan, the Divisions shall solicit advice from knowledgeable persons. The annual plan must include, without limitation, a description of: (a) The resources and services being used by each program and the efforts that will be undertaken to increase or improve those resources and services; (b) The efforts that will be undertaken to improve administrative efficiency; (c) The efforts that will be undertaken to coordinate with other federal, state and local agencies, nonprofit organizations and any private business or trade organizations that provide energy assistance or conservation services to low-income persons; (d) The measures concerning program design that will be undertaken to improve program effectiveness; and (e) The efforts that will be taken to address issues identified during the most recently completed annual evaluation conducted pursuant to subsection 2. 2. The Division of Welfare and Supportive Services and the Housing Division jointly shall: (a) Conduct an annual evaluation of the programs that each Division carries out pursuant to NRS 702.260 and 702.270; (b) Solicit advice from the Commission as part of the annual evaluation; and (c) Prepare a report concerning the annual evaluation and submit the report to the Governor, the Legislative Commission and the Interim Finance Committee. 3. The report prepared pursuant to subsection 2 must include, without limitation: (a) A description of the objectives of each program; (b) An analysis of the effectiveness and efficiency of each program in meeting the objectives of the program; (c) The amount of money distributed from the Fund for each program and a detailed description of the use of that money for each program; (d) An analysis of the coordination between the Divisions concerning each program; and (e) Any changes planned for each program. (Added to NRS by 2001, 3236)

## 2. Review of Client Files

The Energy Assistance Program is administered from two Division of Welfare and Supportive Services offices. The Carson City office serves Northern Nevada. The Las Vegas office serves Southern Nevada. Records were checked by drawing two systematic random samples of cases, one for the Carson City office and the other for the Las Vegas office.<sup>146</sup> In a careful examination of these client records (folders), we found no major problems with either the procedures used to carry out the Energy Assistance Program or in the calculations of appropriate assistance amounts.

**Determination of Eligibility:** All cases were in full compliance with subsection 3 of NRS 702.260 (eligibility). There are no errors in determining eligibility in the two-hundred and forty (240) cases reviewed. All approved cases were under 150% Federal Poverty Level and cases over 150% FPL were properly denied.

**Uniform Application:** In the judgment of the evaluators, all cases exhibited a sufficient amount of consistency to be considered uniform.

<b>Fund for Energy Assistance &amp; Conservation Energy Assistance Program (SFY 2006)</b>			
<b>Office</b>	<b>Initial Review Sample</b>	<b>Final Review Sample</b>	<b>Approved Cases in Sample</b>
<b>Carson City (15,950 applied)</b>	120	120	91
<b>Las Vegas (9,027 applied)</b>	120	120	113
<b>Total</b>	240	240	204
<p>Note: A total of 24,977 applications were received in SFY 2006, of which 17,446 (69.8%) were found to be eligible and 7,531 (30.2%) were found to be ineligible. See Table 43 for detail.</p>			

**Table 40: Review Sample: Energy Assistance Program.**

<sup>146</sup> For the Welfare analysis, the evaluation team requested that Welfare pull the cases from the files, as in SFY 2005. For SFY 2003 and 2004, the evaluation team had pulled the files for Las Vegas, and Welfare for Carson City. In all, 240 cases were drawn, 120 for Carson City and 120 for Las Vegas.

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**Review Sample:** A review sample of 120 systematic random cases (each) was selected from Carson City and from Las Vegas client files for SFY 2006 (Table 40).

**Case Documentation (Carson City):** Of the 120 cases for Carson City, ninety-one (75.8%) were approved. Of those not approved, the reasons were:

- Information not sent by deadline (19 cases or 15.8%)<sup>147</sup>
- Over income (7 cases or 5.8%)
- Other (3 cases or 2.5%)<sup>148</sup>

Of those approved, for the sixty clients who did not require a Request for Information (RFI) and subsequent return of response documentation, the mean time to approval was thirty-one (31) days. The goal is thirty days.

For the thirty clients for whom a Request for Information was necessary, the average time to sending the RFI was 30.3 days.<sup>149</sup> The average time from RFI to approval for these cases was nineteen (19) days.

**Case Documentation (Las Vegas):** Of the 120 cases for Las Vegas, one-hundred (83.3%) were approved. Of those not approved, the reasons were:

- Information not sent by deadline (16 cases or 13.33%)
- Over income (2 cases or 1.6%)
- Other (2 cases or 1.6%)<sup>150</sup>

Of those approved, for the sixty-two clients whose applications were complete and did not require a Request for Information (RFI) and subsequent return of response documentation, the mean time to approval for the Las Vegas office was 37.5 days. The goal is thirty days.

For the thirty-eight clients for whom a Request for Information was necessary, the average time to sending the RFI was 41 days.<sup>151</sup> The average time from RFI to approval for these cases was 16.3 days.

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<sup>147</sup> Failure to send by deadline is generally a large category for low-income payment assistance programs. The number shown here (19 or 15.8% of 120) reflects a failure to follow through with necessary documentation after having applied. The problem in rental housing is the failure of the landlord to provide necessary documentation after the tenant applies.

<sup>148</sup> The "Other" reasons were "Moved and not notified" (1), "Did not pay 3.06 % toward utility bill" (1), and "Willful concealment" - left grandfather off list of household members (1).

<sup>149</sup> All "number of day" calculations are calendar days, not business days.

<sup>150</sup> The other "Other" reasons are "Moved out of State (1) and "Too early to re-apply" (1).

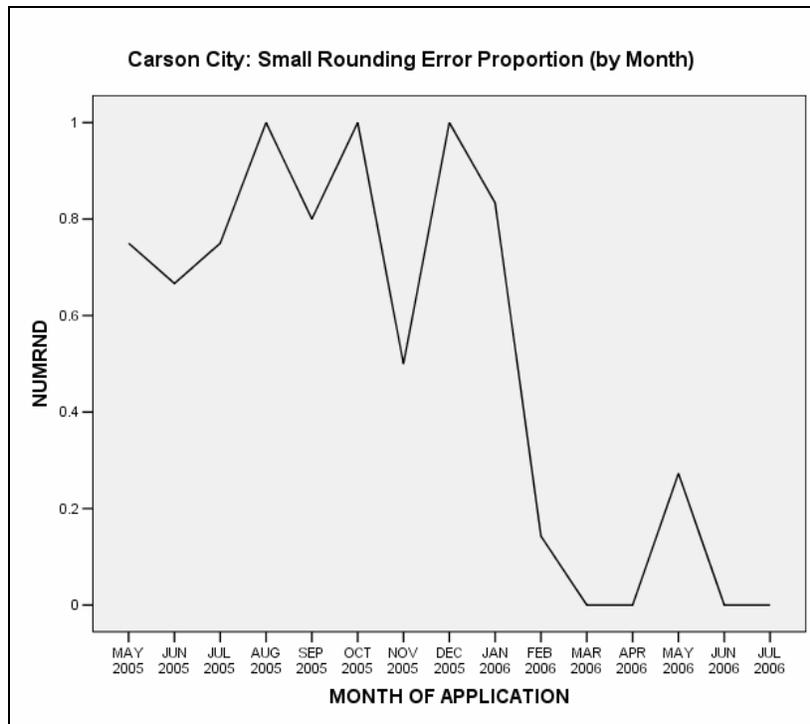
<sup>151</sup> All "number of day" calculations are calendar days, not business days.

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**Arithmetic Calculation Problem (Carson City & Las Vegas):** Approximately 50.5% of the approved Carson City cases and about 41% of Las Vegas cases reviewed had Fixed Annual Credits that had to be manually changed by one dollar (\$1.00) due to a bug in the computer system that causes a rounding error.

As shown in the graph for Carson City (Figure 46), the rounding problem was resolved in January and in March there were zero errors. In May there was evidently some residual problem, but the errors went to zero again in June.

The same pattern of correction is clear in the Las Vegas sample (Figure 47), with the rounding error going to zero in February and remaining at zero for the balance of the State Fiscal Year.



**Figure 46: Carson City (Rounding Problem).**



**Figure 47: Las Vegas (Rounding Problem).**

Since the error caused rounding down to the nearest dollar in the Fixed Annual Credit, the size of the problem for any individual household was minimal. This was a deficiency in the original computer programming in SFY 2003, and has been on a list of changes to be addressed by the IT programmers. It has now been resolved.

***F. Informal Compliance***

With regard to informal compliance, that is, meeting expectations that are outside formal requirements, the Energy Assistance Program reached a full level of activity in SFY 2005, sufficient to turn the corner in fully expending program funds. With activity at this level, the “carry forward problem” is disappearing in SFY 2006.

**Advice & Planning:** The Welfare Division and the Housing Division carefully coordinated activities and shared data to provide services during SFY 2006. Planning activity was jointly coordinated, as envisioned in the legislation for the program. There was also an active Advisory Committee, and consultation.

***G. Calculation of Median Energy Burden***

Central to the Energy Assistance Program is the calculation of a state wide median energy burden to determine what the average household spends on energy. This is accomplished by a simple but effective formula. The major utilities provide program

staff with average usage data in dollars.<sup>152</sup> These figures are then compared to the state-wide median income for the program year to find a median energy burden for the customers of each utility. Those burdens are then averaged to find a state-wide mean energy burden.

The energy burden for FY 2006 was calculated as follows (Table 41):

<b>Median Household Energy Burden</b>	
NEVP - Electric	\$1,075.55
SW Gas - South	399.02
<i>Subtotal Southern Nevada</i>	<u>\$1,474.57</u>
Average % Energy Burden ( <i>\$1,468.74 / by \$44,581</i> )	3.31%
SPPC - Electric	\$790.00
SPPC - Gas	669.88
<i>Subtotal SPPC-Northern Nevada</i>	<u>\$1,459.88</u>
Average % Energy Burden ( <i>\$1,459.88 / by \$44,581</i> )	3.27%
SPPC -Electric	\$790.00
SW Gas - North	\$731.42
<i>Subtotal Northern Nevada</i>	<u>\$1,521.42</u>
Average % Energy Burden ( <i>\$1,521.42 / by \$44,581</i> )	3.41%
<b>Statewide Median HH Energy Burden</b>	
<b>for Electricity and Natural Gas</b>	<b>3.33%</b>
<i>Median HH Electric Energy Burden</i>	1.666%
<i>Median HH Natural Gas Energy Burden</i>	1.666%

**Table 41: Energy Burden Calculation.**

<sup>152</sup> Note that the calculation goes into effect for the succeeding state fiscal year and is based on utility calendar year data. The overall lag, then, is about one and one-half years for a household entering the program at the beginning of a new fiscal year. This self-updating feature of the Nevada legislation is a notable advance. Many states have not included a self-calibrating factor in their program definitions, and states that do not do so encounter substantial problems as costs and incomes change over time.

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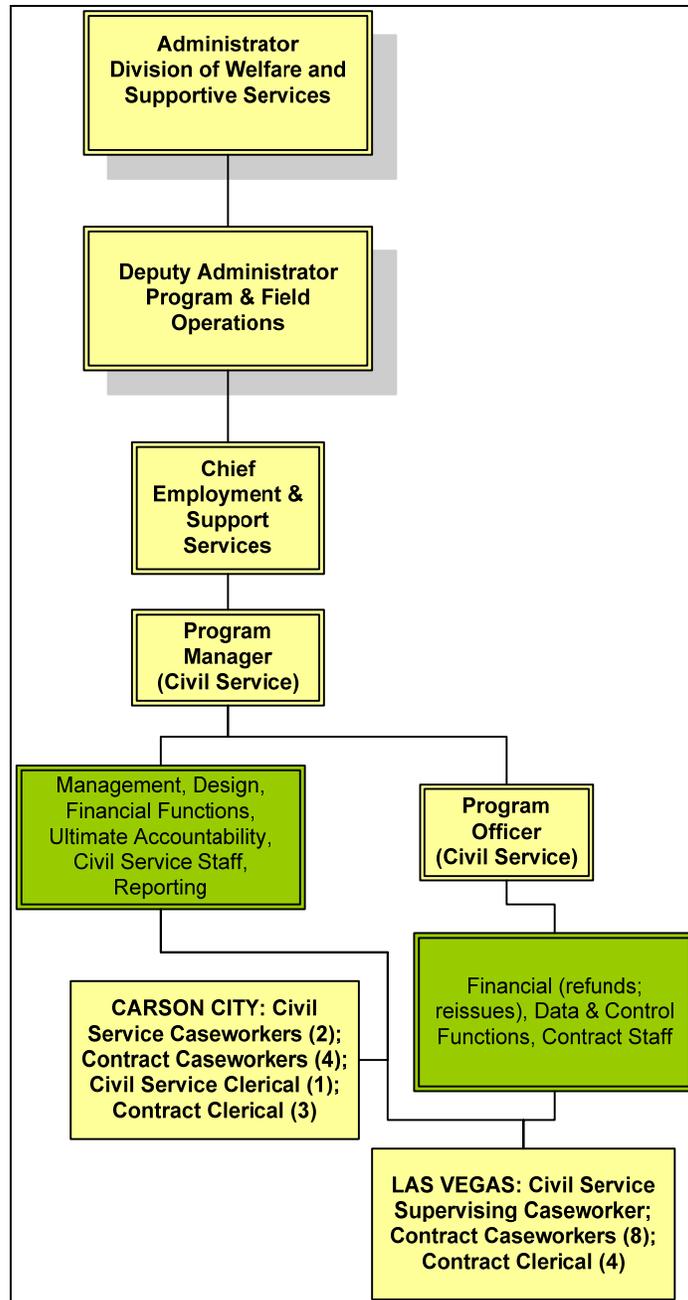
Each utility was required to submit a full accounting and estimate of their customers' annual usage. The median income was acquired through the State Demographer. The method is sound on its face.

In SFY 2003, the mean energy burden (4.27%) was higher than subsequent years (2.90% in SFY 2004, 3.06% in SFY 2005, and 3.33 in SFY 2006) due to the Welfare Division being given only partial utility data and due to using a lower average income. Both of these issues were dealt with and are not present in improved calculations, beginning in SFY 2004 and onward.

### ***H. Staffing Analysis***

Prior to the UEC, the Welfare Division operated the statewide program from Carson City with a staff of five state employees. The UEC brought a very substantial increase in caseload. Due to the need for a Las Vegas office to service the increased caseload for UEC a Las Vegas office was opened.

The basic structure for the Welfare Division implementation for UEC (and for continuing LIHEA services) is shown in Figure 48.



**Figure 48: Staffing Structure.**

With this staff size and composition, the Welfare Division is able to cover the caseload, including additional caseload that is being developed from marketing and other efforts. There is no recommendation at this time to increase staff.

However, as previously recommended, the Welfare Division should move toward converting the eight casework positions and the seven clerical positions from contract staff to Civil Service.

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It is reasonable to use contract staff on a short term basis for program start-up. However, the need now is for a staff of the current size that will stay with the program and allow it to mature. Certainly some turnover will necessarily be accommodated. However, contract staff tends to become experienced with Civil Service requirements and modes of operation and then, with this familiarity (and with growing experience), bid on Civil Service positions in other agencies as open-competitive positions occur over time. While the state may not lose the investment in training and experience for contract staff in an overall perspective, it is important in ensuring program stability and eventual maturity of operations to maintain a core staff with the appropriate experience and skills. The contract workers attain the specific skills and experience required by serving in the contract positions. Accordingly, the recommendation in this area is to move towards converting the contract staff positions to Civil Service positions.

As noted in the prior evaluation, there is, of course, a “pro and con” on this recommendation. First, Civil Service staff cost more than contract staff. Based on Welfare Division records, a contract caseworker may cost approximately \$32,157 per year (52\*\$618.40). A Grade 29, step 9, caseworker will cost approximately \$54,430 per year (inclusive of benefits figured at 28%). The difference is \$22,273 per position moved from contract to Civil Service. Second, the state implicitly makes a long-term commitment to Civil Service staff, while a contract worker is a form of temporary worker, even if particular assignments turn out to become long-term.

Evaluators have to focus on what makes the organization more effective and efficient. From this perspective, the cost advantage of contract workers is outweighed by other considerations.

- This program will be long-term. Our evaluation projections of need indicate that need for the program is large and will increase.<sup>153</sup> Given that definition of the program, positions should be gradually shifted into the Civil Service to provide for stability, continuity, long-term program control and accountability, and maintenance of the basic skills and knowledge essential to operate the program.
- Depth of staff is essential to accommodate changes and challenges as need increases.
- The change would provide family security to the staff in the form of Civil Service salary and benefits. These costs are small and easily accommodated within the recommendations of this evaluation in the area of administrative costs.

There are three specific recommendations:

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<sup>153</sup> Please see the sections on Program Logic and Needs Analysis.

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**Recommendation 1:** The Welfare Division should move towards converting these positions from contract workers to Civil Service, providing opportunity for current staff to move to Civil Service where possible and consistent with Civil Service provisions and regulations.

**Recommendation 2:** For the current time, at least five of the positions should be converted to Civil Service.

**Recommendation 3:** If it is necessary to move very slowly in this direction, at least three positions should be converted now to ensure stability and control of office functions.

### ***I. Payment Behavior***

This evaluation contains a third analysis of payments.<sup>154</sup>

- For the SFY 2003 evaluation, payment data was not yet available.
- In the SFY 2004 evaluation, Nevada Power (n=175) and Sierra Pacific Power (n=138) households that received a Fixed Annual Credit (FAC) in SFY 2003 were shown to have a meaningfully better percentage of bills paid in SFY 2003 over SFY 2002.<sup>155</sup> For Nevada Power customers, 53% of annual bill was paid prior to participation and 73% during the participation year. For Sierra Pacific Power customers, 59% was paid in the year prior to participation and 79% during the program participation year. Including both companies, the weighted average for SFY 2002 (prior to participation) was 56%, and for SFY 2003 (during participation) 74%.
- In the SFY 2005 evaluation (n=2,364), customers of Nevada Power and Sierra Pacific Power paid 57% of bill in the quarter prior to participation. The Fixed Annual Credit (excluding cases with a minimum FAC) created a positive balance in the customer account that, on average, lasted through the first half year following receipt of the FAC payment. After the positive balance ran out, in the third quarter, only 87% of bill was paid, on average. However, for the fourth quarter about 106% of the bill was paid. For clients receiving the regular FAC payment, the analysis showed that even though only a few clients

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<sup>154</sup> For the next few evaluations, each analysis will go deeper. It will take four to five evaluation cycles to adjust data constraints to reach the optimal analysis.

<sup>155</sup> Peach, H. Gil, Ryan Miller, Luisa Freeman and Anne West, State Fiscal Year 2004 Evaluation of the NRS 702 Energy Assistance Program & Weatherization Assistance Program. Beaverton, Oregon: H. Gil Peach & Associates LLC, April 2005, Pp. VII-11 to VII-13.

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made payments during the months their account showed a positive balance, the “average” or “typical” client eventually made up their share of the yearly billed amount by the end of the program year.

- Also in the SFY 2005 evaluation, in contrast, for clients receiving the minimum FAC payment of \$180, payments were about 55% of bill in the quarter prior to receiving payment, 56% in the quarter in which the FAC was credited, and 58% in the following quarter. These results indicate that the minimum FAC payment of \$180 is too small to have an effect on payment amount or payment proportion for the program year.

In SFY 2006, this payment pattern continued (Table 42). While the Energy Assistance program is working for clients receiving a full FAC payment, the typical payment pattern is not as planned. The average client tends not to pay while their utility bill shows a positive credit balance. They then have to struggle to pay the full bill for the remaining months once the credit is used up and they are again presented with a “please pay” amount on the monthly bill.

As noted, in the program logic, a goal is to encourage clients to make regular monthly payments. However, it is likely that unless bills are redesigned to present utility customers who are program clients with a specially tailored “please pay” amount (separate from the positive credit balance and ideally as a part of an equal billing payment arrangement); the pattern shown in Table 42 will continue to be the typical payment pattern.<sup>156</sup>

The importance of the program can be seen in the relative proportion of payment assistance received by clients. In a sample of Nevada Power customers served by either the UEC or LIHEA in SFY 2006, four (4) received help from a guarantor (such as a family member) with an average assistance amount of \$249.29. Seven (7) clients received payment assistance from HELP of Southern Nevada, with an average assistance amount of \$297.81. Thirty-three (33) received payment assistance from the Salvation Army Lift Program with an average assistance amount of \$155.19. One-thousand three-hundred twenty-five (1,325) received assistance from the UEC or LIHEA. The average assistance amount from UEC/LIHEA was

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<sup>156</sup> Part of the problem in program design is that the planning effort tends to be logical within a frame of reference of persons who generally have sufficient income to pay their basic bills, and to whom it seems obvious that a monthly payment planned to stretch the FAC amount through the end of the program year is the right payment. For the households making the payments, only a small percentage has a similar life experience. For most, bills for the normal costs of living increase over the years while income either is fixed or does not increase in proportion to normal costs (for example, think of how the federal minimum wage has been kept from moving with cost of living, and of the way the federal poverty metric has slipped dramatically in relation to median income). A payment logic that works for a household in such an economically stressed situation may not be the one that seems on its face logical to program planners. It may be that a redesigned bill is necessary to encourage more regular payments.

\$808.74.<sup>157</sup> This pattern is repeated for the Sierra Pacific Power Company and Southwest Gas. One sometimes hears the comment that there are other programs available than the UEC or LIHEA, and there are, but this example illustrates the relative proportion of need served by UEC and LIHEA in relation to help from guarantors and local programs.

<b>Typical Pattern of Bill Payment (SFY 2006)</b>	
<b>Account A</b>	
<b>Monthly Bill</b>	<b>Monthly Payment</b>
-126.17 ← FAC Results in Negative Bill	317.00 ← FAC Credited to Account
-86.40	.00
38.02	.00
48.00	38.02
48.00	48.00
48.00	48.00
79.51	.00
<b>Account B</b>	
<b>Monthly Bill</b>	<b>Monthly Payment</b>
114.92	91.19
-1020.28 ← FAC Results in Negative Bill	1213.00 ← FAC Credited to Account
-981.85	.00
-745.00	.00
-537.82	.00
-454.65	.00
-278.49	.00
<b>Account C</b>	
<b>Monthly Bill</b>	<b>Monthly Payment</b>
-2016.13 ← FAC Results in Negative Bill	2705.09 ← FAC Credited to Account
-1797.22	.00
-1411.46	.00
-984.25	.00
-718.93	.00
-18.90	.00
259.77	100.00

**Table 42: Pattern of Bill Payment.**

***J. Effectiveness and Efficiency***

The fiscal year effort is summarized in Table 43, which shows Energy Assistance Program funding and participation.

<sup>157</sup> The UEC/LIHEA amount is derived from utility records; the utilities do not differentiate in their record keeping between UEC and LIHEA.

**DIVISION OF WELFARE AND SUPPORTIVE SERVICES  
FY 2006 ENERGY ASSISTANCE PROGRAM STATISTICS  
July 1, 2005 through June 30, 2006**

CATEGORIES	STATEWIDE		By Office			
	TOTAL	PERCENT	Vegas	Percent	Carson	Percent
<b># HOUSEHOLDS APPLIED</b>	<b>24,977</b>		15,950	63.9%	9,027	36.1%
<b># HOUSEHOLDS SERVED</b>	<b>17,446</b>	69.8%	10,481	65.7%	6,965	77.2%
*Households with Elderly	7,260	41.6%	4,268	40.7%	2,992	43.0%
*Households with Disabled	8,367	48.0%	5,055	48.2%	3,312	47.6%
*Households with Children 6 and Under	3,920	22.5%	2,499	23.8%	1,421	20.4%
Households with None of the Above	8,302	47.6%	5,213	49.7%	3,089	44.4%
*Social Security Recipients	11,361	65.1%	6,781	64.7%	4,580	65.8%
*SSI Recipients	4,357	25.0%	2,897	27.6%	1,460	21.0%
*Earned Income	4,410	25.3%	2,638	25.2%	1,772	25.4%
None of the Above	7,776	44.6%	4,699	44.8%	3,077	44.2%
Households that Rent	13,537	77.6%	8,845	84.4%	4,692	67.4%
Households that Buy/Own	3,909	22.4%	1,621	15.5%	2,288	32.8%
House	4,710	27.0%	2,785	26.6%	1,925	27.6%
Mobile	2,594	14.9%	892	8.5%	1,702	24.4%
Duplex	583	3.3%	215	2.1%	368	5.3%
Apartment/Studio	8,427	48.3%	5,727	54.6%	2,700	38.8%
Condo	906	5.2%	728	6.9%	178	2.6%
Travel Trailer/Motor Home	152	0.9%	84	0.8%	68	1.0%
Rent A Room	25	0.1%	19	0.2%	6	0.1%
Other	49	0.3%	18	0.2%	31	0.4%
1-2 Person Households	11,722	67.2%	6,765	64.5%	4,957	71.2%
3+ Person Households	5,724	32.8%	3,716	35.5%	2,008	28.8%
0% - 75% Poverty	4,677	26.8%	2,727	26.0%	1,950	28.0%
76% - 100% Poverty	5,365	30.8%	3,261	31.1%	2,104	30.2%
101% - 125% Poverty	4,128	23.7%	2,414	23.0%	1,714	24.6%
126% - 150% Poverty	3,276	18.8%	1,949	18.6%	1,327	19.1%
*Households w/Electric Vendor	17,030	97.6%	10,433	99.5%	6,597	94.7%
*Households w/Natural Gas Vendor	9,052	51.9%	4,717	45.0%	4,335	62.2%
*Households w/Propane Vendor	968	5.5%	78	0.7%	890	12.8%
*Households w/Heating Oil Vendor	72	0.4%	1	0.0%	71	1.0%
*Households w/other sources of Energy	15	0.1%	0	0.0%	15	0.2%
TOTAL FAC PAYMENTS	\$14,338,264		\$7,989,957		\$6,348,307	
Average FAC Payment	\$822		\$762		\$911	
TOTAL ARREARAGE PAYMENTS	\$1,312,420		\$823,694		\$488,726	
# of Recipients	3,446		2,119		1,327	
Average Arrearage Payment	\$381		\$389		\$368	
TOTAL ALL RECIPIENT PAYMENTS	\$15,650,684		\$8,813,651		\$6,837,033	
UEC Recipient Expenditures	8,373,617		4,715,614		3,658,003	
LIHEA Recipient Expenditures	7,278,008		4,098,348		3,179,660	
HBOND Returned Payments	(941)		(311)		(630)	
<b># APPLICATIONS DENIED</b>	<b>7,531</b>	30.15%	5,469	34.3%	2,062	22.8%

\* These characteristics may include duplicate counts when appropriate (i.e., if a household member is elderly and disabled they are counted in both categories).

Note: The Las Vegas office served Clark, Lincoln, and half of Nye county. The Carson City office served all other counties.

**Table 43: Fiscal Year 2006 Program Statistics.**

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As shown in this table, funds were distributed almost evenly between the northern and southern regions of Nevada, although Fixed Annual Credit funds were distributed slightly more to Las Vegas/Henderson (56%) and about sixty-three percent (63%) of arrearage assistance was distributed to Las Vegas/Henderson. Households in northern Nevada had a somewhat higher average utility payment than those in southern Nevada (FAC of \$911 vs. \$762) and a slightly lower arrearage payment (\$368 vs. \$89) than households in southern Nevada.

The practical program constraints involved in getting a fully functional computer support system in place in SFY 2003 were overcome by the end of SFY 2004. During this period, caseworkers were constrained in providing services because fully functional support technology had yet to be completed. By the end of SFY 2004, this program barrier had been eliminated for staff work in receiving and evaluating applications. The management reporting piece was completed in SFY 2005 and operational for most of SFY 2006.<sup>158</sup>

### ***K. Improvements and Plans***

The Division of Welfare and Supportive Services has a goal to process Energy Assistance Program applications within thirty calendar days or less, and continues to work towards this goal. The Carson City office is faster than the Las Vegas office. The primary barrier to quicker turnaround appears to be the need to request additional documentation from clients. Sometimes clients return documentation quickly, but often stretch out the time from initial application to completion.

In SFY 2006, the Division of Welfare and Supportive Services continued a staggered mailing process for sending out applications. This has been effective.

In SFY 2006, the Division of Welfare and Supportive Services continued to use the NOMADS computer system to communicate with TANF, Food Stamp, and Medicare clients regarding the Energy Assistance Program.

The Division of Welfare and Supportive Services has also undertaken internal reviews and made changes in equipment and procedures to improve efficiency of operations.

For 2006 the Division of Welfare and Supportive Services improved transmission of data records for the evaluation by a programming change that permits inclusion of zip codes in the data records.

Both the Division of Welfare and Supportive Services and the Housing Division continue to place priority on households with a FAC benefit of \$2,000 or more.

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<sup>158</sup> See section on Automation Analysis.

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Equal payment or some alternative form of optimizing customer payment is a *utility responsibility* and not a responsibility of the Division of Welfare and Supportive Services. However, the development of “equal payment” or “budget billing” would be a useful component of the approach to regular payment.

- Barbara Alexander, a highly regarded national consultant in the area of design of low-income energy programs, brought into the Nevada design process by AARP, has recommended that the utilities move customers to equal billing and pro-rate the payment assistance amount equally across these bills.
- On September 25, 2003, a workshop was held around the vision of an equal bill/equal payment concept put forward by Ernest K. Nielsen, Washoe County Senior Law Project. As a result of a workshop, language was crafted to be given to eligible households, illustrating how they might make utility payments in a way that will accomplish the same result.<sup>159</sup>
- Under Nevada’s Customer Bill of Rights, utilities must offer a budget billing option and payment plans for needy customers.<sup>160, 161</sup> It has not yet been clarified how the UEC payment assistance is to be configured in the context of these rights.

The current provision to help customers pay something toward the bill each month is the letter shown in Figure 49. This letter is provided to each household by the Welfare Division to serve as a reminder.

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<sup>159</sup> Results of Workshop Related to Equalized Payment and Universal Energy Assistance, September 25, 2003. This workshop was organized around a vision of an equal bill/equal payment concept put forward by Ernest K. Nielsen, Washoe County Senior Law Project.

<sup>160</sup> For the Customer Bill of Rights, see the Nevada Public Utilities Commission Website, <http://www.puc.state.nv.us>.

<sup>161</sup> This “budget billing” option is becoming very widespread across the states. A more extensive approach has been taken by Northwest Natural Gas in Oregon. A recent order of the Oregon Public Utility Commission places *all residential* customers under an equal pay plan, with an “opt-out” for customers who request it. According to the company, this substantially helps the cash flow of both the company and the customers who participate.

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### Make Your Energy Benefit Last All Year

Your 2005-2006 Energy Assistance Program notice of eligibility is enclosed.

Your benefit amount is \$\_\_\_\_\_. This is an annual, one-time per year benefit. Your benefit divided by *12 months* equals \$\_\_\_\_\_. Look at your bill each month and pay the amount above the *monthly benefit amount*. If you pay towards your bill each month and allow the benefit credit to slowly reduce to zero over the next 12 months, the benefit will be there for you all year long.

Remember, if you choose to use the Energy Assistance Program credit to cover your utility bill(s) in full until it is used up, you are not eligible to apply for benefits again until \_\_\_\_\_.

*Be aware: The utility will use your Energy Assistance Program credit to pay past-due bills. This will impact how long your benefit lasts and affect the monthly benefit amount noted.*

**Figure 49: Payment Reminder.**

The kind of change required would necessarily involve modifications in utility billing systems. It may also require additional utility staff effort in the collections area. In an ideal form, the utility or an agency contracted by the utility for payment counseling would coach each payment troubled customer to optimize collection up to the customer amount each month and then apply the balance from the payment assistance amount for that customer. Of course, utilities are not staffed for this level of individual attention. So, the problem is to modify billing systems to produce an equivalent result.

At the same time, given the realities of income, there may be months for which a customer cannot pay the customer amount pro-rated for that month and the full payment for that month would have to be drawn from the payment assistance balance on the account. The key change would be for the “in-full” draw for a month not to be automatic. At the same time, the application of the proportioned payment should be automatic, leaving the customer with only any unpaid customer portion of the bill to make up.<sup>162</sup>

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<sup>162</sup> The challenges in moving in this direction should not be underestimated. A complication is that low-income payment troubled households move more than others. Beyond this, the Western states are known for high mobility for all households. The cities of Reno and Las Vegas have exceptionally high mobility. Putting these three factors together, it is simpler for the utility to apply a single credit. It was a reasonable way to start for program implementation. Also, the recent national direction of utility credit and collections is to lower transaction costs by moving customers to automated payment processes and away from direct service through local offices. Not long ago, payment-troubled customers could be coached and arrangements could be made personally through office visits. Today, most utilities have shifted most customers to mail, automated, or semi-automated payments and direct face-to-face assistance in local offices is not available. In checking with other states to find

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**Recommendation:** The Division of Welfare and Supportive Services and the Advisory Committee should work with the utilities to understand the availability of budget billing so that clients can expect a regular bill of a standard amount. Also, the Division of Welfare and Supportive Services should work with the utilities to see if the customer portion of the monthly bill can be blended with the Fixed Annual Credit (FAC) amount month by month so as to make the FAC amount stretch to cover the full year.

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“best practices,” we found only New Jersey to have implemented utility billing systems that allocate UEC (or USF) payment assistance proportionately each month, requiring the customer portion each month. Since it has been done, it can be done.

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## **X. RESPONSES TO THE ENERGY ASSISTANCE CLIENT SURVEY**

The Energy Assistance (payment assistance) mini-survey was sent in the spring of 2006 to a random sample of households assisted by the Welfare Division during SFY 2005.<sup>163</sup> A mini-survey is a very short survey that is designed to be simple and easy for a client to complete, and is sent to a sample that is adequate but smaller than would be used in a full scale survey.<sup>164</sup>

### ***A. Survey Measures of Program Effectiveness***

Of those responding, ninety percent (90%) said they were having problems paying utility bills when they received Energy Assistance.<sup>165</sup> Eighty-nine percent (89%) said the Energy Assistance Program was helpful to them in paying their energy bills. As expected, about ninety-five percent (95%) said that the Energy Assistance Program had the effect of helping them to better pay for other bills, such as food bills, medical bills, or bills for medical prescriptions.<sup>166</sup> These results indicate that the assistance is well-targeted.

### ***B. Problems with the Energy Assistance Program***

People who answered the survey were also asked, having participated in the Energy Assistance Program, if there is anything about the program that is a problem, and if there is anything that could be done to change the program to make it better. Responses are listed below, and have been grouped into five areas: program timing, application processing, increasing utility bills, the need to raise income eligibility, and

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<sup>163</sup> The evaluation team sent two-hundred and fifty surveys for Northern Nevada and two hundred and fifty for Southern Nevada for a total of five-hundred surveys in all. Each was sent with a letter from Dr. Peach, the survey form, and a stamped return envelope addressed to the evaluation office. Of these, one-hundred and twenty-four were completed by program participants and returned (a return rate of about twenty-five percent (25%).

<sup>164</sup> The survey form is included in the Appendix to this report. Mini-surveys are generally targeted to develop simple proportions and do not provide the large number cases required to support subsequent multivariate analysis. For mini-surveys, see Finsterbusch, Kurt, "Demonstrating the Value of Mini-Surveys in Social Research," Pp. 117-136, *Sociological Methods & Research*, Vol.5, No. 1, August 1976.

<sup>165</sup> Why is this ninety percent and not ninety-nine percent? Probably it is because the program intake operates year-around. For some clients the "shoulder months" of fall and spring offer utility bills that they can manage for those months, though they cannot manage the larger summer and winter bills.

<sup>166</sup> This is consistent with results of other studies which document the pattern, particularly for senior citizens, to pay mortgage or rent and utility bills first, and then skip required medicine, and cut back on food to make fixed income stretch.

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“other.” The responses have been kept in people’s own words so that their sense can be independently assessed by the reader.

### *1. Timing of Assistance*

First, a number of responses had to do with assistance running out. When assistance runs out it may mean that the client has not paid a monthly proportion of each utility bill on an ongoing basis. The program is not supposed to pay full utility bills, but only the portion of the yearly utility bills that exceeds the state median household energy burden. However, the process by which the annual assistance amount is transferred to the utility is a one-time transfer of the full annual assistance amount. Usually, this transfer is equivalent to a single large payment that establishes a large credit amount on the account. If the customer does not make regular additional payments (the customer share under the program design), ongoing monthly bills will be placed against the credit until the credit runs out. The client is asked to make monthly payments. If they do not, the full utility bill each month will go against the credit until the assistance is used up, leaving additional months in which the client will be responsible for the full monthly bill without assistance.

A client with no arrearage or a client who qualifies for the one-time arrearage assistance alongside the full Fixed Annual Credit (FAC) is provided with a situation in which small ongoing monthly payments will keep utility bills paid for a full year. Of course, if the client comes in with a large arrearage and does not qualify for the one-time arrearage assistance (for example, because they received it last year), then the assistance amount will first be credited to clear the arrearage. For these clients, assistance remaining after arrearage is covered may leave a sizable portion of the yearly utility bills to be paid by the client, returning the client to the payment situation that they are unable to handle.

In addition, some clients felt that the program should provide assistance during the winter months and over the summer months when utility bills are highest. We can assume they say this because the program did not pay these bills in either winter or summer. It is likely that some of these clients are not making regular monthly payments so as to stretch the assistance for the full year. In other words, for some, the assistance does not cover winter bills or summer bills because they have not been paying the client share of each bill month by month. Some may not understand the program, and may think the program is to pay the utility bill rather than a portion of the utility bill.

- You should be able to get help every six months.
- I think you should be able to apply for the four hot months. My electric goes from less than \$30 a month to over \$75 per month.

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- In the winter months the gas bill goes sky high. The help you give goes so quickly. And in summer the electric bill goes high. In those months my bill is over \$200 and I live in a one-bedroom apartment.
  - The assistance should be applied to the Gas Bill in the winter months and the electric bill in the summer months.
  - Some of the assistance came when the utility bills were not the highest.
  - The only thing that would help is being able to continue or extend the assistance when still eligible, instead of just cutting off the help when you still need it. Having to wait another year is a long time.
  - We really appreciate the help. The first year we applied in December and received help in March. Then we could not reapply until March and received help in April after the winter bills.
  - Build the energy assistance to cover peak use. It may help more.
  - Have the program twice a year.
  - Fix the timing of the program.

In summary, while for some clients assistance does run out due to the assistance amount having been applied to arrearage, it appears that some other clients do not fully grasp the format of the program, that is, that by making their payment each month they can stretch the assistance for twelve months. Some are apparently allowing the assistance to fully pay for a set of months, and then the assistance runs out leaving them responsible for full payment for the remaining months before they may reapply. Clients have the most trouble with bills in summer and winter when bills are large.

A related problem is that for some clients, the required wait until the end of their individual twelve-month participation year to file an application for the next program year combines with a processing delay and they miss receiving assistance over the winter months or summer months during the processing delay. This problem is discussed next.

## *2. Processing Applications*

The waiting requirement to file for the next year's program is a source of frustration for some clients. These households try to organize themselves in advance, or whenever they happen to focus on securing the household's renewal in the program. They attempt to submit the application for the next year's program when they think about it, rather than when their participation year ends. They are looking to feel

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secure that there will not be gap in assistance between two program years by trying to submit an early application. Currently, the program will not accept a new application until the eleventh month of a client's program year.<sup>167</sup>

The Division of Welfare and Supportive Services has a processing goal of thirty days for applications. When additional information is not required from clients it meets this goal for many clients and the average is very close to this goal. However, when clients (or, in some cases, their landlords) must supply additional information, time to process can stretch.

These concerns are from clients with longer processing times. If the thirty-day processing goal is met (or approximately met), there is still a distribution of cases around the average with some cases processed very quickly (in the lower tail of the distribution) and others which take a relatively long time (in the upper tail of the distribution). We can assume that the concerns here are coming from households in the upper tail. In most cases, the source of the problem is the time it takes the client to return documentation. However, this is an area that can be looked at more closely.

- I call each year; they are not consistent with sending the application forms. I am due to reapply in February, but I have to call in to get the form and the approval does not come through until June.
- I did not get my new application approved until February; it should have been by November. My high bills are in November, December and January.
- I just wish you did not have to wait twelve months. I feel like there should be less time to wait if you need help. I also think the time of help should be during summer, like right now I could use the help.
- It takes 4-6 months to get help after applying. I had to borrow from everyone to pay my energy and other bills so I could get food.
- Hire more employees so our information can be OK'd sooner. I applied because I needed help then. I took my application to them and they said they would contact me. Four or five months later they did and I was accepted. The ladies that handled my case were very pleasant and seemed concerned. I had to keep calling and calling. I lost my companion due to a heart attack. He had been a hard worker.

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<sup>167</sup> Applications are sent automatically to current program participants at the end of their individual participation year so they will have time to get information back to the Division of Welfare and Supportive Services. This helps even out the processing workload. Applications received within thirty calendar days prior to the client's benefit expiration date are accepted.

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- Should clients be informed about when/how to reapply before assistance money runs out?
  - When I first applied I was able to get an application right away. Last year when I called, the woman who I was transferred to was a little rude. I was told to wait until I received one, otherwise I would be denied. I waited three months then called back. I was told I should have been sent one when I first called in July. It was then October.
  - Maybe the application process could be shorter; waiting for approval.
  - Shorter application form
  - Knowing that each application goes quarterly was tough -- I kept getting the old application forms.
  - You should always be able to submit your application in January to get help with winter bills.

Some clients would like approval to last more than one year. Others indicate that they would like the program to permit them to reapply early to be sure processing for the next program year is completed well in advance of the end of their current program year.

### *3. Rising Utility Bills vs. the Assistance Amount*

For seniors on fixed incomes and for working families on inadequate paychecks, there is economic fear in seeing utility bills continue to rise. For some there is a concern that the amount of assistance is not enough to cover the increasing cost of utilities. Some ask that utility bills not be allowed to rise, a perspective that will not work in the general economy but which is a logical and understandable perspective for a household with a permanently fixed income. What they are probably experiencing is that, since the assistance amount is "backward looking," that is, set based on the prior year, if there is a rapid run up in bill amounts during a household's assistance year, the assistance will not take a rapid increase into account.

- Amount was for only \$140 each for Nevada Power and Southwest Gas. Need to increase the dollars.
- Increase the dollar amount to provide meaningful help. Not using the AC.
- If it could be more dollars! I am scared because even though I try to be conservative in using the AC, the bill is still going to be high in the hot months.

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- The amount of benefit should be according to wages and number of people living out of that income.
  - Count only the paycheck money we receive after the deduction for taxes.
  - Qualifying monthly income is set wrong. They don't take taxes into account.
  - The assistance lasted a short time and the energy is too high for me.
  - I need help again because my income is too low and my energy bills are too high.
  - This year you only gave \$180 for both utilities. Last year you gave a nice amount that lasted ten months and I was able to buy more food. I don't know what will happen this year. It hurts.
  - Need more help, more money.
  - Give more money. It is still hard with the increases - utilities keep going up. There are going to be more increases.
  - Price of utilities keeps going up. 2006 has been higher than other years. The assistance does not reflect the increase.
  - People on oxygen have to run the concentrator and it runs about \$20 more a month. Can something be done to help with the oxygen concentrator?
  - Require a small partial payment to extend the life of the credit. The customer goes from non payment needed due to the credit to a full bill, which creates another hardship. Some people will not be able to determine this by themselves!
  - Please stop raising the energy and gas bills every year.

From an analytic perspective, rising energy bills are a function of energy supply constraints and institutional arrangements. From a household perspective bills for a necessity (energy) not within their control is a problem. Because changes in rates and bills are not under their control and since income is often fixed or inadequate there is serious concern on the part of some clients. Some clients ask that assistance calculations be based on net income rather than gross income. For example, since the government takes money out of their paychecks for taxes and they only receive the "net of deductions" amount, gross income is a myth. Only the dollars they actually receive each month are real.

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#### 4. *Income Eligibility*

A fourth problem is the income eligibility cut-off level for participation. As discussed earlier in this study (in the section on Needs Analysis), poverty as experienced by households and families is a tide that runs considerably above the federal government's poverty metric. So it is to be expected that a number of clients would say that eligibility limits for the program should be raised. When households try to do a normal range of activity and the money usually runs out before the end of the month so that some bills cannot be paid, there is a material problem for the household whether the federal poverty metric indicates there is a problem, or not. As discussed in the Needs Analysis, this problem is extensive. Government will need to catch up to the actual experience of the people. Here are comments of households found ineligible:

- I am 64 years old, disabled widow on Social Security of \$650 a month. Because I have a temporary job that calls me in for a few days a month, I don't qualify. I can't keep reapplying every few weeks or every month. The application is 17 pages.
- At the time I was getting TANF for my son. I was having problems with paying my bill. With TANF and the help from my mother, they said I could not get the program.
- If a person says they need help, it is for a reason and something should be done.
- When a person gets \$1,021 a month in income and the rent goes to over \$800, plus you need to pay for your car and upkeep of the house, clothes, and food -- you need help.
- As a senior on fixed income, I am told my income is too high (\$1410 a month), but with rent at \$800, big increases in utility bills, and other bills, we are faced with utility shut off.
- The problem was that the assistance stopped, and I had to stop buying my medicine. Am I eligible to apply now again? Please let me know.
- Increase the income eligibility criteria.
- I applied but was not accepted. They said if my sons would write letters saying they would no longer help me, I could be reconsidered. But I can't ask my sons to do that after they paid for a new compressor for the AC and a furnace replacement. I have to ask the utility for a flat rate.

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## 5. Other Problems

Fifth, there are problems that appear to affect a few households and require a special solution.

- Moving – Before I moved I had a light bill and a gas bill. When I moved I only have a light bill so I called and asked for the assistance money to all be moved to the light bill but they said they couldn't do it.
- Moving – I received the energy allowance split for electric and gas utilities. When I moved, I had only electric. I had a gas allowance left over, but instead of being transferred over to electricity I lost the benefits that would have been of great help during my move.
- Moving – The ability to move assistance across bills if you change from one utility bill to two or from two bills to one.
- Flat Rate – If we could pay a flat rate all year that we would be able to budget.
- Hours of Service – Your hours are a problem. I had to find someone to return my papers.
- Communications – Having to maintain communication with Nevada Power is tedious and degrading. Asking for an extension to pay my bills before a disconnection is extremely worrisome. I never know if they understand my situation or not.
- Communications – Communication between available assistance programs could be improved. It seems as if better communications between Nevada Power and your assistance program would improve the circumstances.
- Communications – No one contacted me after the application. I tried to call but was always put off or on hold.
- Communications – I applied in March-April with no response. Since my wife has cancer and it is tough living on \$825 per month. The energy assistance still has not paid anything so we had to leave our home because of the high cost of gas and electricity.
- Communications – I know some people cheat but everyone does not. Your team should not belittle people, make them feel small. It is not a nice feeling.

### **C. Additional Comments**

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In addition to the responses to the request to help identify problems and suggest solutions, many people added expressions of thanks for the Energy Assistance Program. These were volunteered, and not asked for. Those who identified problems also usually included a “thank-you” to the staff for their direct help, or to Nevada for the program. The following are some of the expressions of thanks:

- I am sick with cancer and am not able to work. The program is really great.
- I am on life support. It is a life-saver to have EAP.
- The program is very good for low-income people over 55.
- I could not make it without energy assistance. In the summer it would be unbearable. Thank you.
- I have a small income and it helps so much.
- I very much appreciate the help, and the people in the office have been very gracious and helpful too.
- It helped me a great deal in being able to buy food and my other bills. Thank you so very much.
- I hope they never stop the program, it would be a hard time to get by.
- The Program is so helpful on heat in the winter and Power in the summer.
- I very much appreciate the help you have given me. I am on a fixed income, aged 70.
- I would not be able to eat well if I didn't have this help.
- It helps so much. I am disabled and have to pay a lot of medical bills each month. Thank you very much for helping.
- It was very helpful for myself and my daughter, I was able to pay other bills and buy food.
- The program has helped me so much, so I can afford food medical, etc. Thank you for the help.
- The service is great.
- It is a good program for people like me on a fixed income.

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- Thank you for all your help.

#### ***D. Summary***

There are not many perceived problems with the program. However, the problem of monthly client payment needs to be worked on with clients, and other problems with assistance running out need to be studied with the possibility of some additions and changes in the program design. The problem of processing time requires continuing examination although the Division of Welfare and Supportive Services already has a focus on improving processing time. Possibly applications could be authorized for more than one year for senior citizens whose income is not going to change. Also, possibly the time for reapplication could be moved forward three months to provide some to accommodate processing problems with return of requests for additional information. The fact that energy bills have dramatically increased while incomes have remained fixed is a correctly identified problem that has to be worked with. As discussed in the Needs Analysis section of the report, there are substantial reasons for raising the income eligibility of the program. Finally, people who have been included in Energy Assistance are very thankful for the program, as they say directly in this section.

#### ***E. Recommendations***

To provide better focus for the perceptions raised by clients,

- (1) Explore the possibility of moving reapplication and re-verification forward by two months and moving the application cycle from the eleventh month to the tenth month of program participation.
- (2) Continue to study how to improve processing time.
- (3) Explore the possibility of moving to a two-year authorization for senior citizens, clients on a fixed income, and any client for whom the Division of Welfare and Supportive Assistance is concurrently evaluating household income under another program or for which household income verification is occurring on an ongoing basis. This would require a periodic review of utility bills, but this could be done electronically for clients who are exclusively customers of the three major utilities. For other clients, utility billing records would have to be manually retrieved.

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## **XI. BEST PRACTICES**

In past evaluations, the review of best practices has focused on the funding percentage for program administration (SFY 2003 evaluation), the possibility of developing, with the utilities, an equal payment arrangement integrated with budget billing (SFY 2004 evaluation), and strengthening the energy education component of the programs (SFY 2005 evaluation). In the current evaluation, the focus is on the “best practice” features of the Nevada UEC programs and why they are best practices.

The UEC programs are important for the following reasons:

- The program is greatly appreciated by the clients and, for a high percentage, is essential to their being able to simultaneously pay their utility bills, pay for prescriptions, clothe children for school, and put meals on the table for their families. Many households are trapped in the “heat or eat”, or “run the AC or pay for prescriptions” situation. As shown in this report, households and families are caught by changing times. In our time, viewed analytically and systematically, income is being reallocated to the very upper income groups in our world society and away from the bottom and middle income groups. There are a number of reasons for these changes, some of which have been discussed in earlier sections of this report, but it is fair to summarize the causes as being due to broad structural changes in the world economy that impact the United States, and impact Nevada. These are diffuse economic changes coming from outside; changes that have continued to grow in force and impact since the early 1970s.
- From time to time, we see questioning of whether or not the UEC programs are necessary, and the assertion that there are other sources of help that would meet needs without the UEC programs. In this report, we have looked at the relative shares of help coming from guarantors, from other programs, and from the UEC and LIHEA (together). The reality is that there is no way to meet the size and extent of current need except through the UEC and the Fund for Energy Assistance and Conservation programs.
- As also noted in this report, energy prices, for a variety of reasons are expected to increase over the next fifty years.
- On the Housing Division side, the health and safety changes carried out by the Housing Division using UEC and DOE funds produce a major positive impact to the life and health of families. No one else provides these services.
- On the Division of Welfare and Supportive Services energy payment assistance side, the program is similarly essential to the health and continued

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economic viability of households. This is a real program and not a token program.

Certain features developed in the legislation for NRS 702 make the program unique and properly targeted. The following six features constitute best practices.

- (1) **Size of Assistance Amount.** The size of assistance provided to individual households is appropriately gauged for the size of economic problem of utility bills. Given the federal funding formula that discriminates against the Western and Southern states for LIHEAP funding, the erratic nature of federal funding, and the general decline in federal funding (in real dollars) since the inception of the federal program, only a significant state commitment of the size of the UEC is capable of meeting needs at the household level. The UEC provides material assistance to qualifying households that meets the size of the utility payment problem encountered by households.
- (2) **Coordination with Federal Program.** The Energy Assistance Program has been structured to provide a melding of state UEC and federal LIHEA funds to provide equal treatment for Nevada households, while respecting the provisions of both programs. This provides fairness in administration and simplifies communication.
- (3) **Year-around Operation.** This is the best fit for Nevada's diverse climates and weather. The federal time table is structured towards programs that only serve during the winter months, since the original federal program was targeted to the Northeastern states. Also, the dates for opening and closing the Winter-only version of the program vary year by year making for communications problems with clients.
- (4) **Fairness of Median State Energy Burden Criterion.** Setting the criterion of assistance at the median Nevada energy burden is on its face appropriate from the perspective of equality of burden. It is a criterion that is easy to communicate and seems inherently fair.
- (5) **Automatic Updating of the Median State Energy Burden.** Not all states have set annual adjustment procedures for their assistance programs. If a legislature has not structured an adjustment procedure when a state energy assistance program is legislated, their program goes increasingly out of calibration with utility bills over time. Nevada avoided this problem by requiring that the median household energy burden be used as the criterion for calculating the Fixed Annual Credit (FAC), and further requiring that the calculation be carried out each year. Though the calculated amount is anchored in the values of the previous year (and so, does not take a sudden spike in price during a particular program year into account), it never drifts out of calibration.

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**(6) Appropriateness of Median State Energy Burden Method.** The Nevada energy assistance program adjusts assistance amount to both energy bills and household income. Essentially, Nevada has developed an approach that includes the advantages of a percentage of income approach in that it is referenced to actual household (gross) income. The percentage of income payment program approach is more effective and more efficient than the other program design alternatives, such as the uniform or blocked rate discount designs, the percentage of bill payment approach, and other approaches.<sup>168</sup> At the same time, calculation of energy burden also takes total energy bill into account.

One way to understand why the Nevada approach is a best practice is to compare it to a utility discount approach. In general, utility discount approaches (using a flat utility discount, such as 10% or 20%) tend to distribute assistance dollars *less to households where it is most needed and more to households where it is less needed*. Further, the size of the assistance amount to individual households is inadequate to meet need for the lower income households.

To get a sense of this difference, Table 58 provides the current rate equations for the three major utilities (Nevada Power, Sierra Pacific Power, and Southwest Gas). A simple discount would apply a fixed discount percentage to the total annual utility bill, for example 10% or 20%.

The result can be compared with the Fixed Annual Credit expressed as a percentage of the annual energy bill (Table 44). The flat discount percentage selected (e.g., 10%, 20%) contrasts with the typical percentages of equivalent annual energy bill discounts provided by application of the Fixed Annual Credit (FAC) using the Nevada median household energy burden as the adjustment factor (that is, taking percentage of income and percentage of bill into account).

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<sup>168</sup> The percentage of income approach, of which the Nevada Energy Assistance Program is a uniquely developed example, can be shown mathematically to be the most efficient of the program designs.

<b>Calculation Table for Annual Utility Bill</b>		
<b>Electric Bills</b>		
<b>Nevada Power Company</b>	$((6.00 + (\text{kWh} \times .10439)) \times 1.05) + (\text{kWh} \times .00039)$	
<b>Sierra Pacific Power Company</b>	$((6.00 + (\text{kWh} \times .12401)) \times 1.02) + (\text{kWh} \times .00039)$	
<b>Natural Gas Bills</b>		
<b>Sierra Pacific Power Company</b>	$((6.50 + (\text{therm} \times 1.25651)) \times 1.02) + (\text{therm} \times .0033)$	
<b>SW Gas</b>	May-Oct	For fifteen therms or under: $8.50 + (\text{therm} \times 1.23225)$
		For over fifteen therms: $8.50 + (15 \times 1.23225) + ((\text{therm}-15) \times 1.04126)$
	Nov-Apr	For forty-five therms or under: $8.50 + (\text{therm} \times 1.23225)$
		For over forty-five therms: $8.50 + (45 \times 1.23225) + ((\text{therm}-45) \times 1.04126)$
<p>Note: The total annual utility bill is sum of the electric bill and the natural gas bill. This table can be used to calculate total bill, given the kWh and therms for each month. It takes both the volumetric charge and the fixed charge portions of the bill into account.</p>		

**Table 44: Bill Calculation Table.**

<b>Fixed Annual Credit as Percentage of Annual Energy Bill</b>					
49%	71%	51%	65%	62%	43%
62%	41%	64%	59%	37%	76%
46%	26%	37%	49%	96%	28%
56%	81%	44%	75%	78%	52%
<p>Note: Values shown in this table are selected as typical values from clients served by a combination of Nevada Power Company and SW Gas.</p>					

**Table 45: Percentage of Annual Energy Bill.**

Nevada’s Fixed Annual Credit approach adjusts to the income and bill situation of each household to produce an individual percentage of bills covered by assistance that is unique to the household (as in Table 45). A utility bill discount using a flat discount rate would apply across all eligible households. If it were set high enough to

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meet the needs of households most in need, it would be set too high for other households – resulting in an inefficient use of funds by applying assistance where it was not needed. If it were set to the needs of households in less need or of average need, it would not meet the need of households in most need. Nevada’s approach automatically takes these factors into account and provides the most efficient use of funds.<sup>169</sup>

The following three tables (Table 46, Table 47 & Table 48) further illustrate how the program works, using actual client cases.

Because they do constitute best practices, the six features of the Nevada UEC listed above in this section of the study should be retained. Other states might also look to these features as possible examples to copy.

The following three tables illustrate how the program works, using actual client cases.

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<sup>169</sup> The way to approximate the Fixed Annual Credit result using a bill discount approach is to create many bill discount percentages instead of just one. For example, with twenty or more “bins” according to poverty level, each with a different discount, the efficiency of the Fixed Annual Credit method can be approached, but the result is still approximate and relatively inefficient.

**CLIENTS WITH SIERRA PACIFIC POWER COMPANY ELECTRIC AND NATURAL GAS SERVICE**

Client ID	Total Assistance Paid	Electricity (kWh)	Gas (Therms)	Annual Electric Bill	Annual Gas Bill	Annual Household Income	Electric Bill Assistance	Gas Bill Assistance	Post Program Bill	Pre-Program Household Energy Burden	Post Program Burden	Assistance (Percentage of Total Energy Bill)
4722000	1363.23	4780	689	474.39	973.95	2556	888.84	474.39	85.11	56.66%	3.33%	94.12%
4160000	180	1704	252	156.11	216.26	7625.04	59	59	253.91	4.88%	3.33%	48.34%
1587000	294	2800	346	259.48	340.66	9192	147	147	306.09	6.53%	3.33%	48.99%
6772100	975	8450	396	796.93	484.28	9192	484.28	490.72	306.09	13.94%	3.33%	76.10%
9898000	1780	7758	1066	791.13	1325.23	10104	988.87	791.13	336.46	20.95%	3.33%	84.11%
8759000	1115.88	4896	633	487.4	955.75	9828	628.48	487.4	327.27	14.68%	3.33%	77.32%
75000	279.65	2833	273	277.84	289.52	8640	139.82	139.83	287.71	6.57%	3.33%	49.29%
8543100	1051	9668	704	879.99	598.75	12833.12	525.5	525.5	427.34	11.52%	3.33%	71.07%
8621000	351.36	4554	215	457.36	211.68	9540	175.68	175.68	317.68	7.01%	3.33%	52.52%
4753100	1299	10534	656	985.16	903.73	17700.4	313.84	985.16	589.42	10.67%	3.33%	68.77%
3042100	1114.78	3095	802	312.43	1153.55	10546.6	802.35	312.43	351.2	13.90%	3.33%	76.04%
2961000	908.86	6260	310	631.18	526.63	7476	454.43	454.43	248.95	15.49%	3.33%	78.50%
11820100	881	6676	594	628.24	533.67	8416.24	440.5	440.5	280.26	13.81%	3.33%	75.82%
11682100	448.59	3807	505	388.12	760.12	21010.56	224.29	224.3	699.65	5.47%	3.33%	39.07%
7018000	1127	7231	533	748.64	767.46	11676	563.5	563.5	388.81	12.98%	3.33%	74.34%
2083000	185	2680	397	263.41	390.88	14076	92.5	92.5	468.73	4.65%	3.33%	28.27%
5844100	652.86	5579	320	617.85	544.1	15288	326.43	326.43	509.09	7.60%	3.33%	56.19%
10803000	1298.99	6842	1024	671.04	1227.35	18000	649.49	649.5	599.4	10.55%	3.33%	68.43%
11137000	2061	11487	1098	1261.16	1081.07	8452.24	1030.5	1030.5	281.46	27.71%	3.33%	87.99%
5073000	708.66	7034	876	759.74	862.49	27434.42	354.33	354.33	913.57	5.91%	3.33%	43.68%
2864100	2175.19	8788	1397	962.14	1715.75	15096	1715.75	459.44	502.7	17.74%	3.33%	81.23%
9936000	1045	6855	953	702.49	856.44	15408	522.5	522.5	513.09	10.12%	3.33%	67.03%
3312100	962	6414	517	664.55	761.12	13908	481	481	463.14	10.25%	3.33%	67.48%
11109000	653	3865	700	367.12	913.3	18816.97	326.5	326.5	626.61	6.80%	3.33%	51.00%
11506000	1212.47	7323	545	745.52	859.76	11796	606.23	606.24	392.81	13.61%	3.33%	75.53%
10671100	844	5579	357	617.85	468.75	7260	422	422	241.76	14.97%	3.33%	77.67%
4030100	2259	11216	1171	1126.18	1433.44	8996	1132.82	1126.18	299.57	28.45%	3.33%	88.26%
4510000	849.33	2699	653	267.34	837.61	7676.16	837.61	11.72	255.62	14.39%	3.33%	76.87%
8914000	553	3075	349	320.51	486.98	7624.8	486.98	66.02	253.91	10.59%	3.33%	68.48%
3647000	1412	7023	650	759.95	896.48	7320	706	706	243.76	22.63%	3.33%	85.24%

**Table 46: Sierra Pacific Power Electric & Natural Gas Service.**

**CLIENTS USING NEVADA POWER ELECTRIC SERVICE AND SOUTHWEST GAS**

Client ID	Total Assistance Paid	Electricity (kWh)	Gas (Therms)	Annual Electric Bill	Annual Gas Bill	Annual Household Income	Electric Bill Assistance	Gas Bill Assistance	Post Program Bill	Pre-Program Household Energy Burden	Post Program Burden	Assistance (Percentage of Total Energy Bill)
7234000	2283.18	17197	766	1598.92	840.10	4,680.00	840.1	1443.08	155.84	52.12%	3.33%	93.61%
3730000	331.1	4053	86	383.96	202.64	7,672.80	165.55	165.55	255.5	7.65%	3.33%	56.44%
3508000	1012.68	6441	519	610.22	678.58	8,292.00	506.34	506.34	276.12	15.54%	3.33%	78.58%
4068000	706	6950	366	616.91	405.69	9,495.60	353	353	316.2	10.77%	3.33%	69.04%
10846000	243	3795	280	353.81	294.99	12,168.00	121.5	121.5	405.19	5.33%	3.33%	37.45%
10863100	537	10114	395	941.64	379.93	23,535.58	268.5	268.5	783.73	5.62%	3.33%	40.63%
11804100	343	4260	224	395.61	333.94	11,587.45	171.5	171.5	385.86	6.30%	3.33%	47.02%
6886000	868.16	10103	201	946.54	329.21	12,240.00	329.21	538.95	407.59	10.42%	3.33%	68.05%
413000	1566	19598	568	1816.15	587.08	25,128.95	587.08	978.92	836.79	9.56%	3.33%	65.16%
6352100	1321.37	14767	339	1359.64	399.29	13,140.00	399.29	922.08	437.56	13.39%	3.33%	75.12%
6630000	253	2633	196	242.53	290.28	8,364.00	10.47	242.53	278.52	6.37%	3.33%	47.48%
493000	1149	13551	588	1263.26	579.21	20,819.00	574.5	574.5	693.27	8.85%	3.33%	62.36%
4451000	779	7311	325	677.51	351.39	7,476.00	351.39	427.61	248.95	13.76%	3.33%	75.71%
6530000	1378.09	11992	386	1111.3	539.05	8,176.00	539.05	839.04	272.26	20.19%	3.33%	83.50%
258000	667	6441	700	596.89	708.74	19,149.60	333.5	333.5	637.68	6.82%	3.33%	51.09%
6791000	1196	8883	537	827.67	608.15	7,188.00	598	598	239.36	19.98%	3.33%	83.30%
995000	837	9037	267	843.24	263.92	8,096.40	263.92	393.08	269.61	13.67%	3.33%	75.60%
1821100	519.78	6136	332	580.9	478.34	16,200.00	259.89	259.89	539.46	6.54%	3.33%	49.07%
7946000	309.12	5307	447	493.15	518.55	21,098.48	154.56	154.56	702.58	4.80%	3.33%	30.55%
8022100	1726.56	13968	922	1243.6	902.94	12,612.00	863.28	863.28	419.98	17.02%	3.33%	80.43%
9973000	216	7979	374	743.15	457.01	29,536.00	108	108	983.55	4.06%	3.33%	18.00%
160100	2041	18085	1220	1675.94	1,194.58	24,881.02	1020.5	1020.5	828.54	11.54%	3.33%	71.10%
6502000	445	6084	433	566.55	442.23	16,904.16	445	100.56	562.91	5.97%	3.33%	44.11%
7862100	1549.93	9307	846	880.27	1,010.52	10,236.00	774.96	774.97	340.86	18.47%	3.33%	81.97%
2471000	611	8450	312	791.47	291.19	14,135.38	291.19	319.81	470.71	7.66%	3.33%	56.44%
9983000	571.09	3754	349	361.94	500.46	8,748.00	285.54	285.55	291.31	9.86%	3.33%	66.22%
3034000	1801	14686	846	1367.89	855.42	12,673.20	855.42	945.58	422.02	17.54%	3.33%	81.01%
8724100	303	6883	251	648.3	299.64	19,341.00	151.5	151.5	644.06	4.90%	3.33%	31.96%
1071000	1286	12176	565	1133.96	566.08	12,432.00	152.04	1133.96	413.99	13.67%	3.33%	75.65%
2004000	2009	14825	703	1373.83	716.39	2,430.00	716.39	1292.61	80.92	86.02%	3.33%	96.11%

**Table 47: Nevada Power Electric Service & Southwest Gas.**

**NEVADA POWER - ALL ELECTRIC HOMES**

Client ID	Total Assistance Paid	Electricity (kWh)	Annual Electric Bill	Annual Household Income	Electric Bill Assistance	Post Program Bill	Pre-Program Household Energy Burden	Post Program Burden	Assistance (Percentage of Total Energy Bill)
12643000	551	8684	804.75	7,584.00	551.00	252.55	10.61%	3.33%	68.47%
12811100	468	11587	1,068.19	18,006.04	468.00	599.60	5.93%	3.33%	43.81%
13911000	518	8450	791.47	8,208.00	518.00	273.33	9.64%	3.33%	65.45%
14031000	938	13737	1,275.30	10,112.38	938.00	336.74	12.61%	3.33%	73.55%
14219000	687.57	10106	966.24	8,368.56	687.57	278.67	11.55%	3.33%	71.16%
14224000	1339	16856	1,570.98	6,948.00	1,339.00	231.37	22.61%	3.33%	85.23%
14415000	675	10958	1,007.20	9,960.00	675.00	331.67	10.11%	3.33%	67.02%
14609000	1349	27607	2,577.00	36,885.50	1,349.00	1,228.29	6.99%	3.33%	52.35%
16136000	573.4	12346	1,151.94	17,373.72	573.40	578.54	6.63%	3.33%	49.78%
17307000	704	12147	1,117.04	12,408.00	704.00	413.19	9.00%	3.33%	63.02%
17522100	1185.86	16050	1,527.12	10,248.00	1,185.86	341.26	14.90%	3.33%	77.65%
18814000	455	8952	748.72	8,796.00	455.00	292.91	8.51%	3.33%	60.77%
19154100	344.16	5019	470.78	3,802.50	344.16	126.62	12.38%	3.33%	73.10%
19332000	228	5202	482.07	7,620.00	228.00	253.75	6.33%	3.33%	47.30%
19471000	1072	13614	1,272.53	6,000.00	1,072.00	199.80	21.21%	3.33%	84.24%
20010100	645	8963	831.59	5,592.00	645.00	186.21	14.87%	3.33%	77.56%
20934000	803.61	9367	857.16	1,608.00	803.61	53.55	53.31%	3.33%	93.75%
21022000	611	9239	860.13	7,476.00	611.00	248.95	11.51%	3.33%	71.04%
21270100	265.48	11859	1,119.82	25,656.00	265.48	854.34	4.36%	3.33%	23.71%
22168000	409	9050	828.17	12,576.00	409.00	418.78	6.59%	3.33%	49.39%
22521100	630.68	10091	958.35	9,840.00	630.68	327.67	9.74%	3.33%	65.81%
23930000	221	5080	467.48	7,384.80	221.00	245.91	6.33%	3.33%	47.27%
24834000	1767	24061	2,243.46	14,280.00	1,767.00	475.52	15.71%	3.33%	78.76%
25312100	537	11662	1,076.36	16,188.00	537.00	539.06	6.65%	3.33%	49.89%
25358000	231	6028	554.19	9,708.00	231.00	323.28	5.71%	3.33%	41.68%
25370100	550.51	8450	791.47	7,236.00	550.51	240.96	10.94%	3.33%	69.56%
26197000	1137.68	13865	1,284.87	4,420.00	1,137.68	147.19	29.07%	3.33%	88.54%
26277000	450.07	8451	773.35	9,708.00	450.07	323.28	7.97%	3.33%	58.20%
26985000	748	8640	793.98	1,344.00	748.00	44.76	59.08%	3.33%	94.21%
27949000	1121.89	15954	1,459.95	10,152.00	1,121.89	338.06	14.38%	3.33%	76.84%

**Table 48: Nevada Power -- All Electric Homes.**

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## **XII. APPENDIX 1. SFY 2006 RECOMMENDATIONS**

Recommendations for the Division of Welfare and Supportive Services and the Housing Division are listed separately.<sup>170</sup>

### ***A. Division of Welfare and Supportive Services (Energy Assistance Program)***

- (1) Expand the definition of “energy bill” for the purposes of NRS 702 to include both the volumetric portion of the utility bill (as currently) and the monthly fixed charge (an addition) so that the energy bill for the year more closely approximates the “please pay” total (Page 16, ¶2; Page 36, Recommendation 2).
- (2) Expand the eligibility for the Energy Assistance Program and the Weatherization Assistance Program from 150% to 200% of the federal poverty level, or as near that target as can be negotiated with the Department of Health and Human Services and the Department of Energy, while keeping the state Universal Energy Charge programs and their counterpart federal programs equivalent (Page 35, Recommendation 1).
- (3) Institute planning to move program eligibility to the “Income Self-Sufficiency” level in the long run (Page 36, Recommendation 3).
- (4) Continue to work to develop collaboration to increase Nevada’s share of the federal LIHEA allocation (Page 36, Recommendation 4).
- (5) Downloads from the Welfare Division should always include customer account numbers to support identification (Page 98, first bullet). [Note: This has been implemented.]
- (6) The Welfare Division should move towards converting positions from contract workers to Civil Service, providing opportunity for current staff to move to Civil Service where possible and consistent with Civil Service provisions and regulations. For the current time, at least five of the positions should be converted to Civil Service. If it is necessary to move very slowly in this direction, at least three positions should be converted now to insure stability and control of office functions (See pages 149-253 & Recommendation 1, Page 152).

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<sup>170</sup> Note that several of the recommendations would require involvement by the Advisory Committee, one would require work by the utilities, and some would require legislative review and determination.

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- (7) The Division of Welfare and Supportive Services and the Advisory Committee should work with the utilities to understand the availability of budget billing so that clients can expect a regular bill of a standard amount. Also, the Division of Welfare and Supportive Services should work with the utilities to see if the customer portion of the monthly bill can be blended with the Fixed Annual Credit (FAC) amount month by month so as to make the FAC amount stretch to cover the full year (Pages 157-158; Page 159, Recommendation 1).
  - (8) The Division of Welfare and Supportive Services should explore the possibility of moving reapplication and re-verification forward by two months and moving the application cycle from the eleventh month to the tenth month of program participation (Page 169, Recommendation 1).
  - (9) The Division of Welfare and Supportive Services should continue to study how to improve processing time (Page 169, Recommendation 2).
  - (10) The Division of Welfare and Supportive Services should explore the possibility of moving to a two-year authorization for senior citizens, clients on a fixed income, and any client for whom the Division of Welfare and Supportive Assistance is concurrently evaluating household income under another program or for which household income verification is occurring on an ongoing basis. This would require a periodic review of utility bills, but this could be done electronically for clients who are exclusively customers of the three major utilities. For other clients, utility billing records would have to be manually retrieved (Page 169, Recommendation 3).
  - (11) The Division of Welfare and Supportive Services should provide monthly rather than quarterly fund transfers to the Housing Division due to the uneven flow of funds which follows the cycle of energy use each year. [Note that this may also require monthly transfers from the Public Utility Commission of Nevada to the Division of Welfare and Supportive Services.] The flow of funds is uneven and follows the seasonal pattern of energy use, with a lag. Monthly transfers would improve the flow of funds.
  - (12) The federal program allows up to fifteen percent of LIHEA funds to be transferred to Weatherization Assistance. The disadvantage of the transfer is that there is then less funding for payment assistance. The advantage is that LIHEA funding transferred to Weatherization is unrestricted in the sense that can be used for housing repairs and furnace replacements. These are definite needs associated with Weatherization and the transfer of some percentage should be considered. [Note: This recommendation is linked to Recommendation B (3) on Page 180.]

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***B. Housing Division (Weatherization Assistance Program)***

- (1) The Housing Division should request Subgrantee Agencies to measure shower flow (for example, using a Microwier) to document the difference in performance between old shower heads and new energy efficient shower heads.
- (2) The Housing Division should check specifications and require the use of 1.5-2.0 GPM showerheads made of a non-scaling material such as “Teflon®” or “Delrin®.”
- (3) A repair fund should be established by the Housing Division (Page 97, ¶1-3, Page 98, Bullet 2). [Note: This recommendation is linked to Recommendation A (12) on Page 179.]
- (4) For the Housing Division, an additional staff position would be useful to insure coverage and accountability should the Public Service Commission approve the currently proposed low-income DSM program additions. As DSM ramps up over the next few years and includes additional utility opportunities to coordinate with federal and UEC weatherization effort, this recommendation will become increasingly important (Page 99).
- (5) Each job done by Housing should have a unique number. [Note: This recommendation has been implemented.]



**WEATHERIZATION CLIENT SURVEY**

Please place a check mark to show any changes since the weatherization work was completed on your home:

- 1. Are you living in the same home, or did you move?     Same     Moved
- 2. Have you replaced a heat pump or furnace?     Yes     No
- 3. Have you replaced an air conditioner?     Yes     No
- 4. Have you replaced any other major appliances?     Yes     No
- 5. Have you added a waterbed?     Yes     No
- 6. Have you increased the sq. footage of your home?     Yes     No
- 7. Are you heating or cooling any areas of the house which were not being heated or cooled prior to receiving weatherization assistance?  
 Yes     No
- 8a. In Winter, have you changed the temperature setting for heating your home?  
 Raised     Lowered     About the same.
- 8b. In Summer, have you changed the temperature setting for cooling your home?  
 Raised     Lowered     About the same.
- 9. Has the number of people living in your house changed?  
 Increased     Decreased     About the same.
- 10a. In Winter, the amount of time you are heating your house each day:  
 Increased     Decreased     About the same.
- 10b. In Summer, the amount of time you are cooling your house each day:  
 Increased     Decreased     About the same.
- 11. Did you make changes to the measures installed?  
 Removed     Added     No change
- 12. If removed, what was removed?  
\_\_\_\_\_  
\_\_\_\_\_  
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*(Please see other side)*

**Figure 51: Client Survey -- Housing Division (Page 1).**

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Having participated in the Weatherization Assistance Program, is there anything about it that is a problem? If so, could you please say what the problems are?

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Is there anything that should be done to change the program to make it better?

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Do you have any additional comments?

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*Thanks for your help with this survey!*

*(Please see other side)*

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**Figure 52: Client Survey - Housing Division (Page 2).**