

# **STATE FISCAL YEAR 2003 EVALUATION OF THE NRS 702**

## **ENERGY ASSISTANCE PROGRAM & WEATHERIZATION ASSISTANCE PROGRAM**

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## I. EXECUTIVE SUMMARY

This document is the State Fiscal Year 2003 evaluation report for the Energy Assistance Program (NRS 702.260) and of the Weatherization Assistance Program (NRS 702.270).<sup>1</sup> This 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.

The general perspective developed in the SFY 2003 evaluation,<sup>2</sup> is that Nevada's Universal Energy Charge and the Energy Assistance Program and the Weatherization Assistance Program have been very well designed. For SFY 2003, there were major start-up constraints in the computer area. These computer constraints prevented putting into place the tools necessary for program administration and staff to operate the programs. These constraints have presented significant challenges that have slowed full implementation.

However, Welfare Division and Housing Division management and staff have done an excellent job of working with these challenges and moving the programs forward towards full implementation. The challenges were real, the response was good, and the programs moved forward. As with other programs of this scale, it will likely take three to five years for the programs to reach full implementation and smooth running operation.

Nevada has taken the best approach among the states in several ways:

1. The programs cover both electricity and gas (instead of only electricity).<sup>3</sup>
2. The state median household energy burden is used as the benchmark for the Energy Assistance Program, insuring fairness and instead of an arbitrary benchmark.<sup>4</sup> This feature also requires yearly re-calibration based on actual energy bills as the median energy burden of Nevada households changes.<sup>5</sup>

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

<sup>2</sup> This is the first full evaluation conducted pursuant to NRS 702.280(2-3).

<sup>3</sup> Some states (for example, Maryland) cover only electricity

<sup>4</sup> This yearly "true up" benchmarking approach to the median household energy burden is a significant advance that should be copied by all the other states. It keeps the Energy Assistance Program both current with economic conditions and energy costs and is inherently fair. Nevada's benchmarking approach self-calibrates each year. Other states, for example Pennsylvania, have placed arbitrary dollar amounts and arbitrary percentage amounts into state code. In that case, as time change both

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3. The assistance amount set at a realistic level. Nevada's approach can actually meet needs and solve problems.<sup>6</sup> Certainly the part of the design that moves to a year-around program is much superior to the federal Low Income Home Energy Assistance Program as important as the federal program continues to be, because it meets the needs of the West where there is a substantial need in the summer as well as in the winter.<sup>7</sup>

Nevada has certainly developed the best model for the Western states. Certain features of the Nevada approach should also be studied and copied by the states of the Midwest, the Middle Atlantic, the South, and the Northeast.

However, there are four 'stand out' problems that should be addressed to further refine the program. These involve the administrative caps, the participation criteria, and direction.

- (1) **Administrative Caps.** The legislation places caps on the administrative costs for the Public Utility Commission (3%), the Welfare Division (three percent of seventy five percent of ninety-seven percent or 2.1825%), and the Housing Division (six percent of twenty-five percent of ninety-seven percent or 1.455%) for a total administrative cap of 6.6375%.

This combined cap is too low to support fully effective program implementation and maintenance. Several states, along with the federal LIHEAP program set the administrative cap at 10%. The recommendation in this area is to raise the combined cap for the program to 10%, while reducing the Public Utility Commission cap from 3% to 2%.<sup>8</sup> This would provide for a senior level

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dollar amounts and percentages go out of calibration as economic conditions and energy prices change. No other state has thought this through as well Nevada in specifying the yearly determination of the median energy burden standard or come up with an approach as good as Nevada's.

<sup>5</sup> For the definition of energy burden, please see Appendix B, where the federal definition of energy burden is provided.

<sup>6</sup> Some states mandate program approaches that are essentially a gesture. Nevada has developed a real program that can provide a real solution for almost all households. There is integrity in this approach that other states would do well to copy.

<sup>7</sup> LIHEA, or as it is called in some state, LIHEAP, is a winter-oriented program built around the need of the Northeastern states. It reopens each year and closes at the end of the winter, and the dates shift each year so it is hard for those in need to know when to apply. Also, its current funding formula strongly favors the Northeastern states.

<sup>8</sup> Also, the Public Utility Commission 2% should be placed outside the administrative cap. Although the PUCN administers the collection of the Universal Energy Charge (UEC), this is a separate work from the work of administration of the Fund for Energy Assistance and Conservation (FEAC). Since it is the separate work of establishing, collecting, transmitting, and maintaining the UEC as a fund, and has no responsibilities for the program effort, it should be categorized as such in a revision of NRS 702. It is separate in fact; it should be separated in the language of the statute. As with the federal



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technical specialist/trainer/inspector for the Housing Division and the conversion of certain Welfare Division staff positions from employment agencies to civil service. These changes are necessary to support effective program implementation and control.

Alignment with the practices of the other states with somewhat similar programs and with the counterpart federal program is a conservative change that maintains the purpose of the cap but promotes a better functioning program.

- (2) **Eligibility Level.** As shown in this study, the federal poverty definition is far out of date and has not been sufficiently recalibrated to make it directly useful. This is indicated, for example, by the program participation criteria having been set at 150% of the federal poverty level. Actually, about 250% of the federal poverty level corresponds to the divide below which families and households currently have the experience of poverty and above which they do not. California recently moved its low-income rate program to 250% of poverty, and other states (such as Pennsylvania) use 200% of poverty for their housing assistance (weatherization) programs. The general recommendation in this area is to take the reality that households face into account and move the eligibility level upwards from 150% of poverty but not higher than 250% of poverty. Within this range, the specific recommendation at this time is to move the eligibility level to 60% of Nevada median household income. For comparison, since the poverty metric is dependent on family size as well as on income, the equivalent poverty percentage of 60% of median income is a range of poverty percentages. This range runs from about double (200% of poverty) for one or two person families to about 150% for a family of eight, essentially where the eligibility level is now. Also, a move to 60% of median income permits maintaining compatibility with the flexibility provided in the federal Low Income Home Energy Program (LIHEAP). The programs could be set together at 60% of Nevada household median energy burden. This means the Nevada program and the federal program could be kept in parallel to provide equal service to households and families eligible for either, as is currently the case at the 150% of poverty level.
- (3) **Energy Burden.** Based on legal opinion, NRS 702 has been interpreted to provide payment assistance according to the cost of units of energy used by a household, but not to include consideration of the fixed portion of utility bills or of supplementary fees and charges.<sup>9</sup>

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program precedent, the ten-percent administration cap properly belongs to administration of the programs (that, is, administration of FEAC payment assistance and weatherization assistance.

<sup>9</sup> For the federal definition of energy burden, please see Appendix B.

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This is a reasonable interpretation in that it provides symmetry in provision of assistance to the way in which the Universal Energy Charge is collected. The UEC collection amount is based on the number of units of electrical energy (kWh) or natural gas (therms) consumed.

However, the factual definition of energy burden is percentage of income *required to pay the household energy bills*. That is, the relevant criterion is the “please pay” amount in the household bills rather than the energy charge by itself.

For low-income customers it is often the case that the “please pay” amount is noticeably larger than the energy portion of the bill. A key factor in this recommendation is the largely arbitrary way that costs of service are allocated to the fixed (customer charge) and variable (per unit of energy) charge on bills by utilities. Utilities recover costs of service through both the variable commodity part of the bill and through the fixed costs that come from physical infrastructure (plants, offices, lines) and the basic staffing required to operate essential components of the company. From time to time, and across utilities the practice of allocation between the variable and fixed portions of a customer bill varies notably. It is true that the allocation is somewhat constrained due to technical results of cost of service studies, but these studies can produced different results depending on different approaches. That is, the allocation is not totally arbitrary but it is arbitrary enough that the allocation of customer bills between “fixed cost” and “variable cost” components has little substantive meaning. Whatever allocation rule is in use at a given point in time is a function of rate design. The allocations adopted by different utilities at different points of time should be viewed not so much technical results as technically informed decisions. For the customer, however, the relevant result is the monthly “please pay” amount. This should include both the fixed component and the variable component.

Accordingly, we recommend that the calculation of assistance be based on *the actual customer bills rather than on the energy portion of the bills*. This is in accord with meeting the real situation actually faced by Nevada households. It would also simplify calculation of assistance amounts.

The specific recommendation is to include the fixed and variable cost but not fees and penalties. Since the division between fixed and variable cost is largely arbitrary, these costs should be included together. Although differing reasonable opinions are possible on this point, leaving fees and penalties out may be necessary in order not to remove the current degree of effectiveness of these signals.

- (4) **Direction.** The Welfare Division and Housing Division are coordinating efforts, and implementation moving beyond the current report is notably

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improving. However, it would be reasonable to consider tasking a position in the Governor's Energy Office to provide assistance to the program.

This assistance would not be needed for technical issues within the Housing Division or for technical issues within the Welfare Division. These divisions each contain the specialized knowledge and experience needed to understand and operate the weatherization and conservation assistance and payment assistance programs.

However, there are two things that an overall coordinator at the level of the Governor's office could do:

- a. Conduct strategic ongoing and follow-up relations with the utilities in the areas of program development. There are significant "trade-offs" in the current UEC and FEAC that provide substantial benefit to the utilities. This is a well-designed "win-win-win" program that benefits low-income and payment-troubled households, the utilities, and the general public of the State of Nevada. However, the utility benefits are disproportionate, and there is room for further negotiation to improve balance. However, any such discussions and negotiation would have to take place above the Program Manager level, and are probably best placed in the Governor's Energy Office in order to maintain the best relationships and to obtain the best benefits to the state.
- b. Keep the program in-step with informal expectations of stakeholders, advocates, and households (both participants and not). This is a high profile program that does much good; it is important that it continue to operate well. This means not only following the formal provisions of NRS 702, but keeping the program in touch with practical and informal expectations.

In summary, the focus in this first evaluation focuses on the program design as well as on implementation. The states, with some assistance from federal programs, are trying to solve problems of household energy insecurity due to inability of households to pay their normal utility bills. In some states, no matter how good the execution of programs these problems cannot be solved due to the flawed templates put in place for the programs.

In contrast, Nevada's program as it has been designed in statute and as it is being implemented is probably the best program of its type among the fifty states. It can certainly serve as the model for the Western states. All other states should copy some of its features. However, as with all programs, it can be improved. A number of recommendations are presented in this report and are summarized as a list in Section IX of the Report.

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## II. THE NEED

The purpose of this section is to develop useful, policy-relevant information regarding the size of need for the Nevada Fund for Energy Assistance and Conservation.

### **A. *Energy Burden***

Energy Burden is defined as the percentage of household income that would be necessary to fully pay household energy bills including ordinary use of energy for lighting and appliances as well as heating and cooling.

Roger Colton has recently documented that home energy burdens in Nevada have been quite high. According to Colton's analysis based on Census data, the approximately 33,000 Nevada households with incomes of below 50% of the Federal Poverty Level are presented energy bills throughout the year that represent 42% or more of their annual income. An additional 16,000 with incomes from 50% to 75% of the Federal Poverty Level have home energy burdens of 17%, and about 21,000 households from 75% to 100% of the Federal Poverty Level have home energy burdens of 12%.<sup>10</sup>

### **B. *Income Changes***

Current income allocation and current energy burden are parts of the picture of need. Another key piece is the loss of real (inflation adjusted) income by Nevada low income families. As shown in Figure 3, overall Nevada families in the lowest 20% of families by income had about 5% less real income at the end of the 1990's than similar families did twenty years earlier. The lowest fifth by income of Nevada families with children had about 20% less real income at the end of the 1990's than similar families with children did twenty years earlier.<sup>11,12</sup>

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10 Roger Colton, "On the Brink, the Home Energy Affordability Gap in Nevada," April 2003. The numbers of households presented are from an independent analysis of 2000 Census data by Ryan Miller. Colton's energy burden results are not affected by this separate analysis.

11 Analysis by John Mitchell & H. Gil Peach, based on Center for Budget & Policy Priorities data taken from the Current Population Surveys, and adjusted using a common deflator.

12 We have been studying low-income clients and programs since 1988, including analysis in several states and regions and hundreds of interviews with low-income and payment-troubled families. Based on this work we can state unequivocally that low-income households would pay their utility bills on a regular basis if they had the income to do so. While it is true that each state or company can point to a few very visible exceptions (persons who take a negative attitude and do not pay bills when they could), some of these turn out not to be low-income and their relative number is extremely small, probably less than one-tenth of one percent of the total and mathematically meaningless.

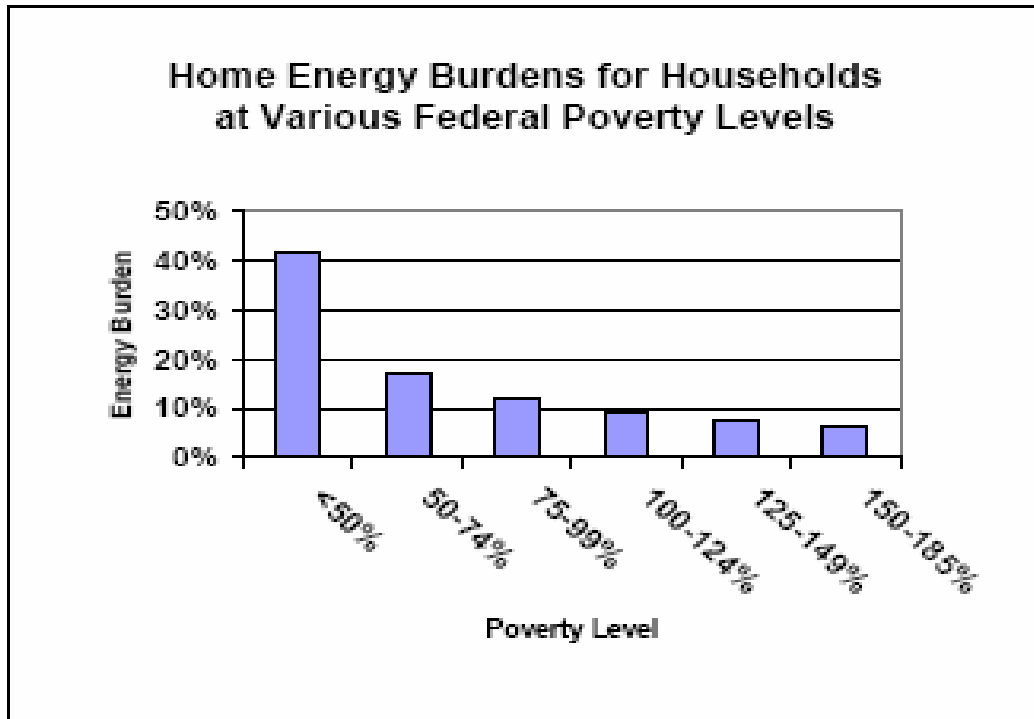


Figure 1: The UEC Context - Home Energy Burdens in Nevada.

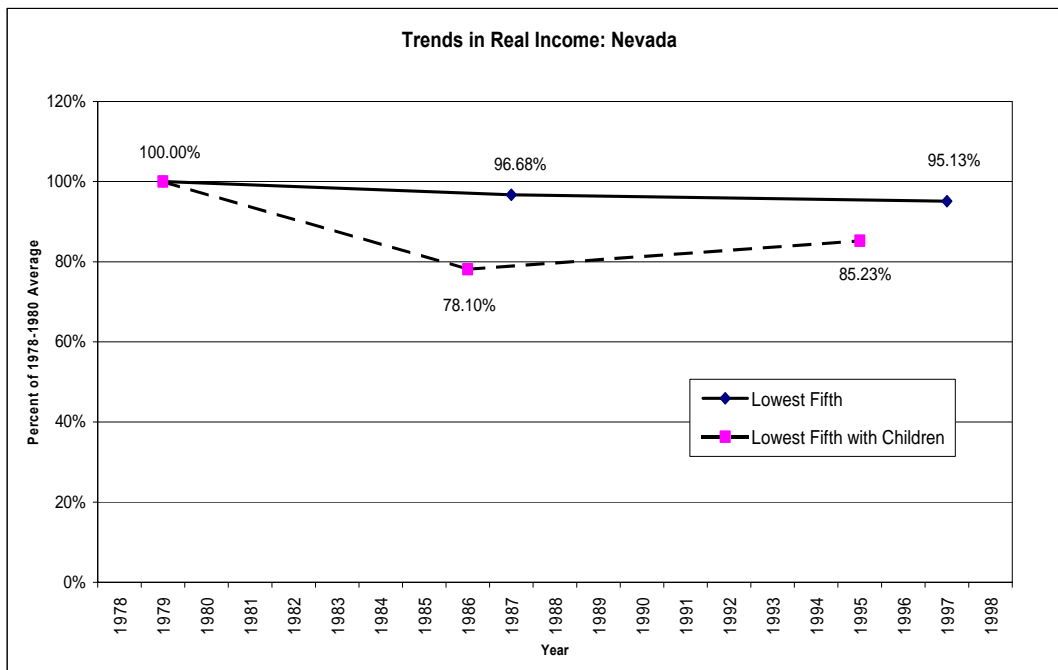


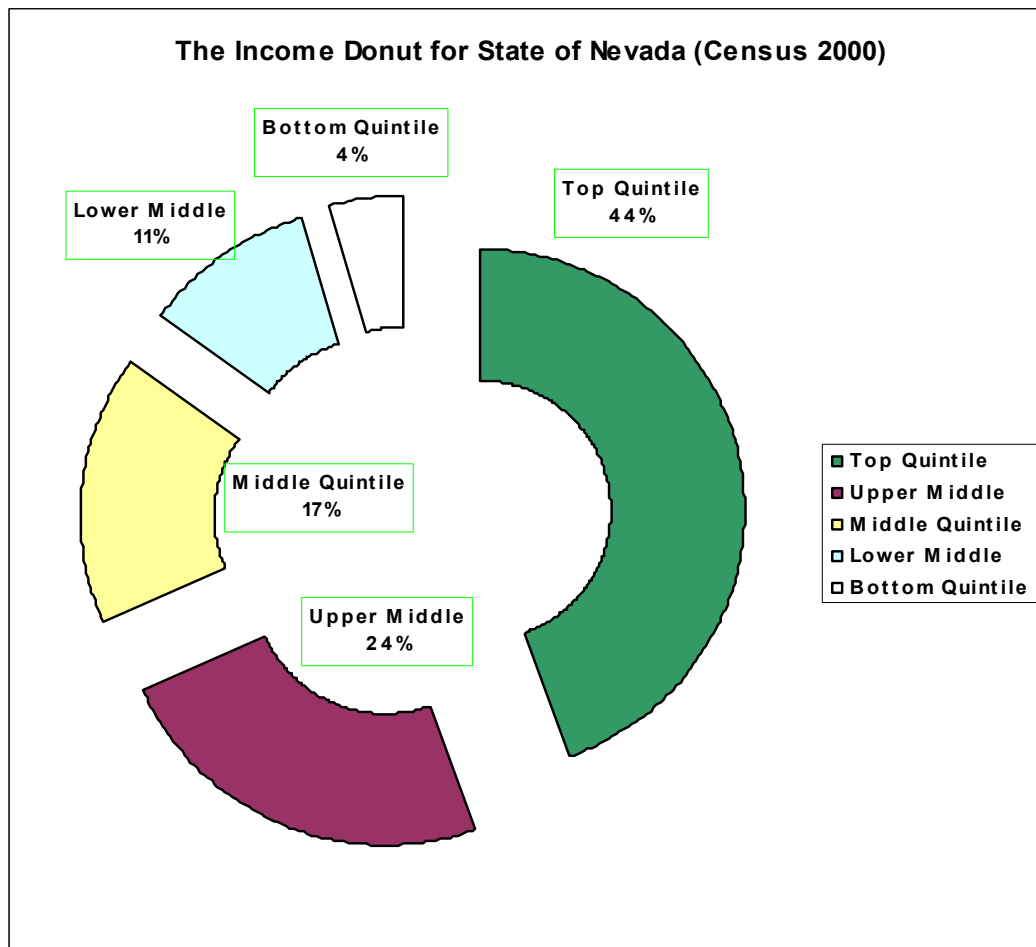
Figure 2: The UEC Context – Real Incomes of Nevada Families.

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### C. *Income Allocation*

The income donut for Nevada (Figure 3) 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>13</sup>

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 payment assistance program, while for the upper quintiles utility bills should be little or no problem.



**Figure 3: Income Donut – Income Allocation in Nevada.**

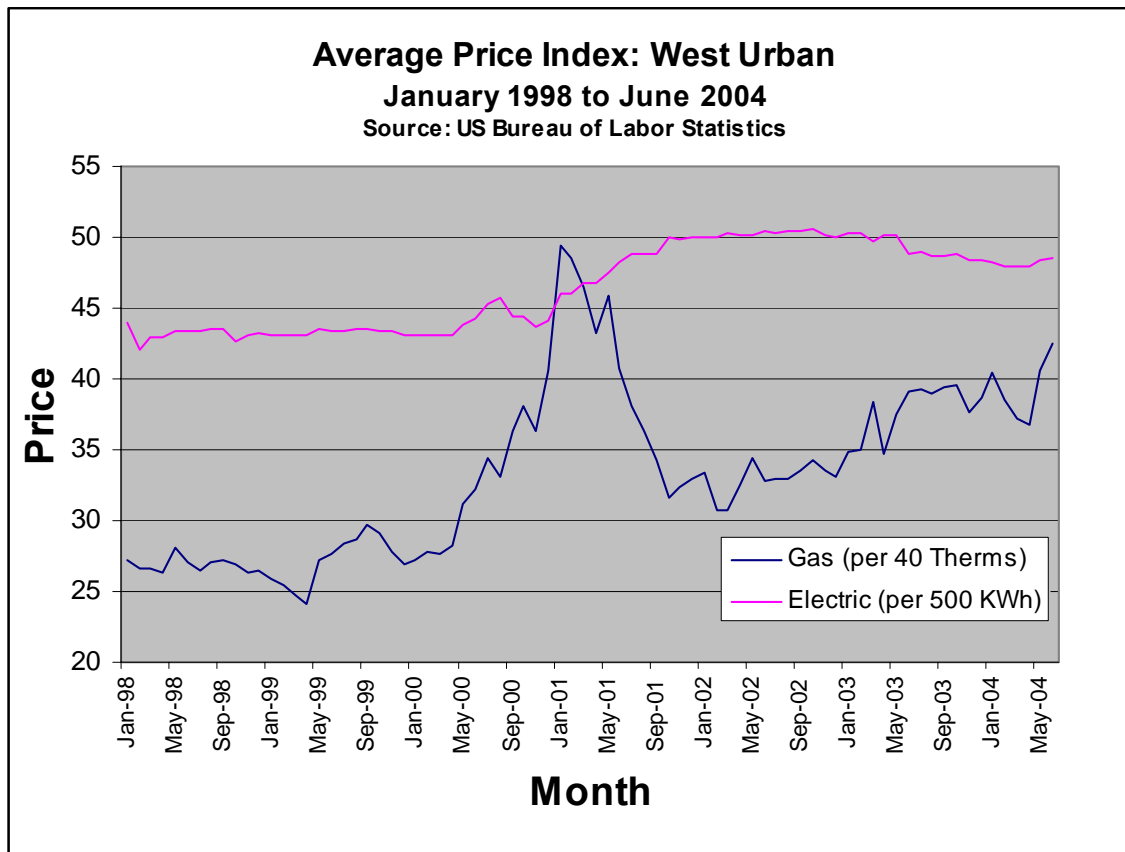
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<sup>13</sup> Household income is derived as payment for work (wages, salary) or as transfer income through social programs. If the job structure does not provide income necessary to meet ordinary social costs of living, there is no alternative but 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

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#### **D. Price Trend**

According to the US Bureau of Labor Statistics, gas prices have been increasing as a whole since January of 2000 in urban areas in the West. Figure 4 shows the average electric and gas utility price from January 1998 to June 2004. Even with the jump indicated at the beginning of 2001, probably due largely to the actions of Enron, the graph indicates an overall, steady increase in price. This trend does not appear to have an end in sight.



**Figure 4: Average Natural Gas & Electricity Price Indexes: West, Urban.**

Taken together, the decline in real income combined with the income allocation illustrates why it is that cost-based rates for energy services can no longer work for low income and some middle income households.

Steadily increasing gas prices, a trend that's mirrored throughout the energy sector, indicate that the situation will only get worse. If service is to be provided to low income families who have trouble paying their energy bills, the Fund for Energy Assistance and Conservation (FEAC) is necessary.



## E. Number of Eligible Households

There are approximately 150,000 households meeting the current income criteria for the programs (Table 1). If the income level for eligibility were raised to 175% of poverty, approximately 187,000 households would meet the income criteria; if eligibility were raised to 200% of poverty, 223,000 households would meet the income criteria.

These estimates are based on 2000 Census data and 2003 population estimates from the State of Nevada Demographer.<sup>14</sup> Nevada is the fastest growing state and is currently growing very quickly in population. Taking data from the Nevada Demographer's population estimates this estimate table is adjusted to take into account Nevada's population growth since 1999.

| Ratio-of-Income to Poverty Level, State of Nevada, by County - Estimated Households |           |         |         |        |           |        |          |        |         |        |
|---|-----------|---------|---------|--------|-----------|--------|----------|--------|---------|--------|
|   | Churchill | Clark   | Douglas | Elko   | Esmeralda | Eureka | Humboldt | Lander | Lincoln | Lyon   |
| Total   | 9,797     | 615,244 | 17,311  | 17,388 | 424       | 539    | 6,247    | 2,003  | 1,423   | 15,656 |
| Under .50   | 335       | 28,611  | 596     | 572    | 37        | 41     | 192      | 134    | 93      | 622    |
| 50 to .74   | 208       | 12,976  | 381     | 343    | 26        | 29     | 153      | 20     | 55      | 394    |
| 75 to .99   | 338       | 17,635  | 371     | 419    | 27        | 15     | 206      | 79     | 131     | 607    |
| 1.00 to 1.24  | 382       | 21,217  | 492     | 639    | 22        | 25     | 197      | 68     | 80      | 601    |
| 1.25 to 1.49  | 479       | 24,383  | 568     | 703    | 28        | 22     | 211      | 75     | 114     | 675    |
| 1.50 to 1.74  | 590       | 24,810  | 595     | 721    | 38        | 36     | 263      | 76     | 97      | 868    |
| 1.75 to 1.84  | 304       | 10,622  | 197     | 268    | 2         | 15     | 149      | 10     | 32      | 405    |
| 1.85 to 1.99  | 217       | 13,971  | 287     | 388    | 9         | 23     | 120      | 62     | 28      | 423    |
| 2.00 and ove  | 6,943     | 461,020 | 13,825  | 13,335 | 235       | 333    | 4,755    | 1,480  | 794     | 11,061 |
| Under 150%  | 1,742     | 104,821 | 2,408   | 2,675  | 139       | 133    | 960      | 375    | 473     | 2,900  |
| Under 175%  | 2,333     | 129,631 | 3,003   | 3,397  | 177       | 169    | 1,223    | 452    | 570     | 3,768  |
| Under 200%  | 2,854     | 154,224 | 3,487   | 4,053  | 188       | 206    | 1,492    | 524    | 629     | 4,596  |

|              | Mineral | Nye    | Pershing | Storey | Washoe  | White Pine | Carson City | Totals  |
|--------------|---------|--------|----------|--------|---------|------------|-------------|---------|
| Total        | 1,779   | 13,913 | 2,645    | 1,418  | 141,681 | 3,356      | 20,962      | 871,786 |
| Under .50    | 170     | 660    | 176      | 64     | 6,098   | 169        | 947         | 39,518  |
| 50 to .74    | 64      | 434    | 59       | 11     | 3,476   | 149        | 610         | 19,386  |
| 75 to .99    | 85      | 540    | 63       | 29     | 4,099   | 139        | 638         | 25,421  |
| 1.00 to 1.24 | 96      | 880    | 216      | 56     | 5,251   | 207        | 812         | 31,242  |
| 1.25 to 1.49 | 146     | 836    | 100      | 70     | 5,447   | 160        | 972         | 34,988  |
| 1.50 to 1.74 | 105     | 951    | 129      | 69     | 6,007   | 171        | 960         | 36,486  |
| 1.75 to 1.84 | 33      | 440    | 68       | 33     | 2,332   | 51         | 564         | 15,528  |
| 1.85 to 1.99 | 65      | 447    | 60       | 5      | 3,427   | 252        | 451         | 20,235  |
| 2.00 and ove | 1,016   | 8,724  | 1,773    | 1,081  | 105,544 | 2,058      | 15,006      | 648,981 |
| Under 150%   | 560     | 3,350  | 614      | 229    | 24,371  | 824        | 3,980       | 150,556 |
| Under 175%   | 665     | 4,301  | 743      | 298    | 30,378  | 996        | 4,940       | 187,042 |
| Under 200%   | 763     | 5,189  | 871      | 337    | 36,137  | 1,298      | 5,956       | 222,805 |

Source: 2000 Census, Summary File 3, Tables P88, P93; 2003 Population Estimates, Nevada State Demographer. See Calculations Worksheet

**Table 1: Number of Income-Eligible Households.**

<sup>14</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.

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### III. THE LOGIC OF THE PROGRAM

This section on program logic begins with a general introduction to the logic of the Universal Energy Charge fund and its two programs: payment assistance and weatherization assistance.<sup>15</sup> First, the typical American blend of self-reliance and community effort is briefly discussed. Next, six characteristics of the Nevada UEC are presented. These characteristics provide a basis for understanding the logic of the program. The Nevada UEC approach is shown as a necessary tool to moderate both market based costing of energy and traditional billing based on cost-of-service principles.<sup>16</sup>

Current physical resource constraints produce *increasing energy costs* and both gas and electricity bills are expected to continue to increase. The income trends of approximately the last thirty five years follow the opposite pattern. Low-income families and particularly low-income families with children are *losing real income* from year to year. The Nevada UEC bridges these two trends and is the basis for universal service. Affordable access to energy necessary for cooling, heating, hot water, cooking, and home appliances is essential to life for all households.

While the manipulation of Western energy markets by Enron and others hurt all households and service institutions in the region, the sudden price shocks of the 'Enron effect' are a precursor of the raw force of underlying tendencies already present in the markets. These tendencies for prices of electricity and gas to rise (although not as quickly as in the 'Enron effect') are driven by the problem of resource limits as a physical reality.

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15 Since about 1990, evaluations have included a section on the logic of the program. In this section, we look at the program activities and why they are there (in terms of the outcomes they are expected to produce). The emphasis in this section is on the underlying grounding for the program: goals, assumptions, objectives, indicators, and means of verification.

16 In theory, market based costing could work if real markets were like the ideal markets in economic textbooks. That is, if there were dozens of supply companies, easy entry and an excess of supply. These conditions do not exist. The character of market relations is different when these conditions are absent. Markets move from 'market freedom' to 'market oppression,' from the facilitative market of 'Econ 101' to a set of predatory extractive relationships. Similarly the principles of cost-based rate making could work if income distribution was sufficient to support cost-based rates. Cost-based rate making is an excellent technical theory. This theory incorporates technically adequate cost allocation with a principle of fairness. It could work if household incomes were adequate; and if household incomes were typically banded within a relatively narrow range of variation. These conditions do not actually exist. There is nothing wrong, in principle, with either theory. But, under current actual conditions, both approaches require extensive administration to provide benefits while controlling their significant downside effects. Only strong regulation by the state can preserve the model of balance in market relationships,

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Similarly, the problem of decreasing incomes is a problem of the effects of globalization and degradation of job structures on local employment opportunities. Though a social reality rather than a physical reality, the income problem has increasing material force. The upward direction of energy costs coupled with declining ability to pay for them requires a solution of the type embodied in the Nevada UEC. The fund insures universal service while permitting Nevada's energy companies to remain solvent.<sup>17</sup>

#### ***A. The Rationale for the Nevada Fund for Energy Efficiency and Conservation***

In the West, Americans are known for individualism combined with a community ethic. They are willing to work together when necessary to accomplish common goals, especially when everyone also tries to do their own part in the face of a common danger. In earlier times, neighbors might have helped neighbors on a ranch or on a farm when necessary, today we work together to help insure some of the essentials of modern life. Energy is one of these essentials.

When households encounter economic difficulties, they both rely on themselves (along with friends and relatives) and on others. Historically, mutual benefit societies such as lodges or civic clubs have helped their members and sometimes members of the wider community through both difficult personal experiences and the ongoing economic problems of difficult times. During the past 100 years, churches and community organizations have increasingly provided general assistance, which has included help with energy bills. Utilities typically provide equal payment plans and sometimes provide low-income rates. But the need has grown far beyond the ability of temporary assistance and voluntary response.<sup>18</sup> More recently, the assistance has been specifically focused on energy affordability as energy bills continue to rise from year to year while real income among low-income households tends to fall.<sup>19</sup>

Since the energy crisis of the early 1970's, utilities and community organizations (including such institutions as community action agencies and the Salvation Army) have worked with city, county, and state social service agencies to establish fuel

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17 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. Without a UEC, companies would find it necessary to exclude customers who are unable to pay for service. Depending on the state and area, this would lead to the gradual exclusion of from about 10% to 55% (Philadelphia) of households from gas and/or electric service in order to preserve energy companies from default.

18 Similarly, in broad areas of the country, food banks have grown dramatically but hunger has increased.

19 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.

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funds, payment assistance, and home weatherization assistance. The energy crisis also coincided with the beginning of the decrease in real income for the lower-income households.

From about 1900 through about 1970, and with the notable exception of the Great Depression of the 1930's, household income generally increased in the US, across all income groups. Since the 1970's while average household income has increased in most years, the increases have occurred primarily for the very top households by income, while lower-income households have often lost real income from year to year. The year-to-year decline in real household income is most severe for low-income households with children.

The Nevada UEC is one of the new variety of state energy assistance funds which have been established over the past ten years. It remedies a severe problem of many Nevada households – inability to pay for the energy necessary to meet such basic household needs as cooking, heating water, and moderating natural temperature extremes though home cooling and home heating.

Federal LIHEAP funds, also used for these purposes were always far short of need in Nevada due to the level of federal funding each year and a “locked in” allocation formula that sends these funds primarily to the Winter weather states of the Northeast. The Nevada UEC provides a means for the state to respond to the underlying tension of our times 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.

#### ***A. Programs of Energy Assistance: Six Characteristics***

Six features define the careful and conservative character of the Nevada UEC. These are (1) the “pay in” provision, (2) the understanding of the inability to pay, (3) a realistic assistance level grounded in a principle of fairness (median Nevada energy burden), (4) a conservative eligibility level for the start-up program (150% of the federal poverty level, taking income and family size into account), (5) a realistic approach to the long-term and “built-in” nature of the energy affordability problem on the payment program side, and (6) on the weatherization side the emphasis on investment subject to cost-effectiveness criteria.

**(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>20</sup>

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<sup>20</sup> Federal funds and some other state funds are used to the extent available to help households not paying in to the Nevada UEC.

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(2) **Inability to Pay.** Probably the essential, if unstated, basis for the Nevada UEC is the understanding that virtually all low-income Nevada households that encounter problems paying basic energy bills are *not* refusing to pay for service. They have, instead, become either temporarily or (increasingly) permanently *unable* to pay for necessary energy. The new generation of UEC programs adopted in a number of states represents attempts by legislatures to deal with the reality that energy affordability is now a chronic rather than a temporary problem for a large and increasing number of households.

(3) **Realistic and Fair.** By setting the UEC payment assistance at the level of the Nevada median household energy burden, the Nevada UEC establishes 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 income for the state. The portion below that level remains the household's responsibility. The portion above that level is covered by the UEC fund.

(4) **Starting with a Conservative Eligibility Level.** The eligibility level for SFY 2003 was set at 150% of the federal poverty level. Our calculations indicate that the breakpoint for poverty in the US is actually at 250% of the poverty level, and some of the newest program changes in other states are employing levels of two-thirds of state median income, 175% of poverty, 200% of poverty, or 250% of poverty.

(5) **Understanding of Long-Term Energy Affordability Problem.** The Nevada UEC parallels the federal Low-Income Home Energy Assistance (LIHEAP) and Weatherization Assistance (WAP) programs. The need in Nevada for assistance in both areas is severe. As the record shows it is not realistic to rely on the federal government, although the limited federal funding provided is both needed and quite useful. 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, and retirement) increasingly large numbers of American households, including households with one or more full time workers, 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 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 both long-term and built-in to the national economy.

(6) **Investment and Cost-Effective Approach to Weatherization.** The Nevada UEC weatherization effort also parallels the federal WAP program but makes a substantial effort possible in Nevada. 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

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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 UEC fund.

### ***B. The Logic of Utility Rates***

There is a current shortage of natural gas.

Generally, domestic gas fields are in decline and each year it takes more energy per unit of energy extracted to develop the remaining gas to serve industry and households. At the same time, during the brief encounter with energy deregulation, regulatory and public planning oversight of electricity generation was weakened in many states, not only in states that experimented with or instituted forms of deregulation. As a consequence, new merchant plants and those currently on the drawing boards (some of which are being built, but many of which will never be built as economic conditions continue to change) were often designed to capitalize on the short term advantages of generating electricity from natural gas. Had there been strong oversight it is likely that much greater fuel diversity would have occurred, along with a continuation of the very strong demand-side management effort of the early 1990’s which would have lowered dependence on both electricity and gas.

The lack of appropriate fuel diversity means households and electric generation stations are in competition for gas supply. Over the past two years as gas costs have risen and remained high, there has been a secondary effect in some areas in which households add electric heaters because they cannot pay their gas bills. Next, they find their electric bills have increased leading to payment problems for electric service. The net effect at both the macro level and the household level is that energy bills will increase for both natural gas and electricity.<sup>21</sup>

In the US, utility rates were traditionally regulated to reflect actual cost of utility service. The “cost of service” principle is retained today for electricity and gas distribution, while the “commodity cost” of gas is generally a “pass through” and 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

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21 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.

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that these deals disproportionately benefit the major market players at the expense of the residential, small commercial and low-income sectors.

Neither market rates nor cost of service rates work for low-income households. If some entities are freed to choose a supplier, everyone else has to cover more of the fixed costs of the utility generation, so household energy bills increase. 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>22</sup>

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.

### ***C. Potential Outcomes & Challenges***

The overall logic of the program is straightforward. Implementation, however, involves a large complex of material challenges. The Welfare Division and the Housing Division are charged with putting the Nevada UEC “on the ground” to fulfill legislative intent. With the exception of insuring collection of funds from the utilities, a responsibility of Public Utilities Commission, they carry out the legislative intent by implementing the program.

Although the program began in State Fiscal Year 2002, the legislation creating the Nevada UEC fund specified that the program would be operational under its full program design for State Fiscal Year 2003. Prior to that, funds would be applied using formulas developed for operation of the federal payment assistance (LIHEA) and weatherization assistance (WAP) programs. State Fiscal Year 2003 is thus the first real program year. As a rule of thumb, a program of this scale would take five (5) years to come fully “up to speed.”

Some implementation challenges are internal, some a mix of internal factors and external conditions, and some challenges involve primarily external conditions. Implementation challenges faced by the Nevada UEC are outlined below. Outcomes are addressed in other sections of the study.

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22 It is important to note that there is nothing wrong, in principle, with cost based rates. 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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## 1. *Internal Challenges*

Internal challenges can be primarily dealt with within the agencies and the state system, including program management, IT support, and development of procedures.

- **Formal Compliance.** Formal compliance is assessed by comparing agency work effort to the legislation mandating it.
- **Informal Compliance.** In addition to formal compliance, informal compliance is an intangible dimension concerned with how the program effort appears and the informal relations that support formal compliance function.
- **Reporting Systems.** Management reporting is essential for steering program implementation, insuring compliance, and maintaining program effort. This is the challenge of developing adequate tools (internal reporting systems) for managing the programs.
- **Coordination.** The most effective overall program effort would include close coordination between the payment assistance program (Welfare Division) and the weatherization assistance program (Housing Division). Coordination is an element of the enabling legislation.
- **Fiscal Management.** Although generally handled by existing state systems, there is a challenge in insuring accuracy of fiscal tracking.<sup>23</sup>
- **Automation.** Computer support is essential to Welfare Division and Housing Division program implementation and operations. As a program is implemented and begins to mature into its second or third program year, there is a challenge to gradually improve computer assistance or automation.

## 2. *Internal & External*

The areas above are similar to challenges that occur within any program implementation. Yet some challenges have very strong external components. These can be dealt with using internal resources. However, since they have large external or contextual components these challenges may require substantial effort, including iterative trial and error approaches, until the right combination of approaches enables the challenge to be met. There are three areas of this kind:

- **Outreach.** Outreach is both an internal and external challenge. There is a very strong and demonstrated need on the part of Nevada households for both payment assistance and weatherization assistance. Also, both parts of the

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<sup>23</sup> Since this is an evaluation rather than a financial audit, we confine consideration of the financial area to aspects that concern evaluation.

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program are well designed to make a real difference for eligible Nevada households. However, outreach is not automatic, and may require some years of effort, testing approaches, to flow smoothly.

- **Great Natural Diversity.** Another problem that is internal and external is how to deal with the great diversity of Nevada, from small communities and rural areas where it is more difficult to provide weatherization services to large cities; and the diversity of climate zones that include needs to focus on both cooling and heating.
- **Marketing.** A further problem is the inherent tension between marketing weatherization, for which comfort of the home is very important to the household. “Packages of measures” must combine ranking of weatherization measures in terms of cost effectiveness with some overhead features the households value in addition to energy efficiency. This marketing fact operates like a natural law. It is a social fact that has to be accommodated in program administration. The measure package must be optimized for market participation as well as for cost effectiveness. This is a joint optimization that requires trade offs to make the program acceptance work.

### 3. *External Challenges*

The external challenges lie in the national and state economy.

- **Funding Level.** Looking forward, energy costs will rise while real incomes will likely continue to deteriorate. This will affect the need for program funding.
- **Eligibility Level.** Looking at the eligibility level of 150% of poverty, a number of states are moving eligibility for payment assistance or weatherization assistance to 60% of state median income (permitted under the federal program), 200% of poverty, or 250% of poverty. This is another area of challenge for serious, but careful and conservative analysis and planning.
- **Turnover in the Housing Division Effort.** Nevada has a shortage of skilled weatherization contractors both within and outside of community based organizations. Other states with a smaller geography and more compact population have a “critical mass” of weatherization specialists in agencies and independent contractors. This is an external challenge that creates a need for continued training and steps to hold on to skilled people in the weatherization services grantee agencies.
- **Turnover in the Welfare Division Effort.** More broadly, both the Welfare Division and the Housing Division are experiencing intense pressures that induce people to move on to better jobs. Because most of the staff working on the payment assistance program is not in civil service, there is a tendency to

take civil service exams for other functions once they have become familiar with the state system. One of the recommendations in this document (see below) will be to convert certain positions in the Welfare Division to be civil service positions.

#### **D. Logic Model**

The overall logic model for the programs implemented from UEC funding is shown in Figure 5. The logic model is actually three interlocking models; one for funding,

| Program Logic Model   |   |  |   |   |         |
|---|---|--|---|---|---------|
| Activities  | Assumptions   | Objectives   | Indicators  | Means of Verification   | Funding |
| <b>Insure collections and appropriate refunds - Public Utility Commission (PUC)</b> |   |  |   |   | 100%    |
| <b>Administration</b>   | 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.                    | 3.00%   |
| <b>Low income Energy Assistance Program - Welfare Division (NWD)</b>                |   |  |   |   | 72.75%  |
| <b>Administration</b>   | The percentage is workable for administration.  | Implement, Administer                              | Implementation in compliance with regulatory intent (NRS 702)                               | Interviews, Compliance Review, Analysis of Effectiveness      | 2.18%   |
| <b>Assistance</b>   | Assistance will permit continued service and help with economic viability of households.  | Provide targeted assistance                        | Assistance program developed and implemented. Internal support systems in place.            | Interviews, Document Review                                   | 70.57%  |
| <b>Consumer outreach</b>  | Outreach and contact is a function that requires special effort   | Enroll households                                  | Enrollment target met or approached.  | Interviews, Program Records, Document Review                  |         |
| <b>Program design</b>   | Program improvement is a continuing function.   | Construct annual Plan                              | Program improvements developed. Annual plan submitted.                                      | Interviews, Review of Plan                                    |         |
| <b>Annual Evaluation</b>  | Annual evaluation will provide useful assessment and feedback for improvement   | Complete annual Evaluation                         | Evaluation for SFY 2003 completed.  | Completion of Evaluation                                      |         |
| <b>Weatherization Assistance Program - Housing Division (NHD)</b>                   |   |  |   |   | 24.25%  |
| <b>Administration</b>   | The percentage is workable for administration.  | Implement, Administer                              | Implementation in compliance with regulatory intent (NRS 702)                               | Interviews, Compliance Review, Analysis of Effectiveness      | 1.46%   |
| <b>Energy conservation/efficiency services</b>                                      | Services will lower energy bills  | Arrange services                                   | Subgrantees developed, training developed, services arranged                                | Interviews, review of Documents                               | 22.80%  |
| <b>Improvements for energy conservation/efficiency</b>                              | 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 |         |
| <b>Consumer outreach</b>  | Outreach and contact is a function that requires special effort   | Enroll households                                  | Enrollment target met or approached.  | Interviews, Program Records, Document Review                  |         |
| <b>Program design</b>   | Program improvement is a continuing function.   | Construct annual Plan                              | Program improvements developed. Annual plan submitted.                                      | Interviews, Review of Plan                                    |         |
| <b>Annual Evaluation</b>  | Annual evaluation will provide useful assessment and feedback for improvement   | Complete annual Evaluation                         | Evaluation for SFY 2003 completed.  | Completion of Evaluation                                      |         |
| <b>Administration (total)</b>   |   |  |   |   | 6.64%   |
|   |   |  |   |   | 100%    |

Note 1: Energy Assistance Authorization: The 2001 Nevada Legislature Assembly Bill (AB) 661, codified as Nevada Revised Statute (NRS) 702.

Note 2: The three logic models included in this table show the interlocking logic of the Nevada Fund for Energy Assistance and Conservation.

**Figure 5: Overall Logic Model.**

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one for payment assistance, and the other 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 and the discussion that has been presented in this section frame the overall logic of the program.

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#### **IV. PROGRAM STORIES**

Nevada's Universal Energy Charge (UEC) creates a fund that helps address the acute problems low income families face of increasingly high energy costs with decreasing opportunities for earning the incomes necessary to pay these costs. The UEC program is comprised of two services: payment assistance and weatherization assistance. The fund created through the UEC insures universal service while permitting Nevada's energy companies to remain solvent.

Through the program, income eligible families may receive weatherization measures to improve heating and cooling, repairs to and replacement of inefficient appliances and HVAC equipment, high efficiency windows and energy efficient light bulbs. Virtually any energy-consuming equipment or system can be treated to help eliminate wasteful energy use in the home. At the same time, safety is a key consideration in these homes, and measures are simultaneously taken to ensure that homes are free from potential fire hazards (from situations such as poor wiring) or indoor air quality problems (caused by situations such as inadequate ventilation).

Homeowners and renters come closer to self-sufficiency through this dual-pronged approach of treating the house and making it as environmentally safe and energy efficient as possible, then addressing any remaining constraints on a household's ability to pay the lower-but-still-high energy bills.

This evaluation has enumerated and measured the specific types of actions taken in each participating household over the past year. This section addresses the less tangible benefits gained by participating households that are nonetheless an important and equally necessary part of the program. Many low income households harbor feelings of being overwhelmed, hopelessness and inadequacy in dealing 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, these feelings have been replaced by feelings of hope, increased control over one's situation, and a general sense of empowerment that can lead toward economic self sufficiency and – if conditions do not worsen - reduced dependence on government programs over the long run. The lesson learned from previous low income program models is that this specific goal of economic self sufficiency could not be achieved through addressing only one half of the problem – either weatherization or payment assistance alone. Rather, both halves must be addressed simultaneously in order to achieve sustained change in this critical segment of society.

To document these impacts of the UEC, interviews were conducted with six Nevada families that received a variety of weatherization services in their homes. Their stories are summarized below.

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1. *Mr. and Mrs. N (Senior Couple)*

“Mr. and Mrs. N” live in Las Vegas. They are an elderly couple, living in a mobile home on a fixed income of around \$16,800 per year. The N’s are very appreciative that the State makes these services available to households such as theirs. When they first heard about this program, they inquired about it from a dual motivation of having high energy bills (electric and gas) and an interest in improving the comfort of their home. Mr. N reports that the program personnel responded quite promptly to his request for information, and again to schedule an appointment within a short time after he sent in the application. Overall, Mr. N could not think of any recommendation he would make to improve either the program or the participation process and he is very satisfied with the equipment and measures installed.

The N’s were provided with solar screens which they feel have made a significant difference in the deflection of heat away from their home, while still allowing them a view. Mr. N indicated that two visits – one to measure and one to install – were made by the local organization implementing the program, and that “the fellow was very professional.” Air sealing tests were performed to identify and correct infiltration problems. Most impressive to Mr. N, however was the thoroughness with which the implementing contractor checked for leaks on all the gas using appliances, - water heater, cooking equipment and furnace - and tested for carbon monoxide. A CO detector was installed, which adds to the couple’s peace of mind since their appliances are relatively old. On the electric side, Mr. N indicated that a primary energy user - their old refrigerator, which was over 12 years old – was replaced through the program, and has contributed undoubtedly to the reduction in electric bills that they have seen. Most important to the N’s, however has been the increase in their comfort and the feeling of having a more efficient home, with attention to the air leaks. Mr. N shared the opinion that “this is a great program and one that I am sure a lot of people are very pleased to have available.” At a cost of 18 hours of labor and approximately \$650 in materials, this elderly household’s comfort level has increased along several dimensions – physically, economically and structurally.

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1. *Mrs. T (Single Mother on Night Shift)*

Mrs. T is a single mother who works the night shift. She lives in Elko, Nevada with her teenage son in their mobile home. The T home is cooled by an evaporative cooling system<sup>24</sup> common to a desert environment where there is virtually no humidity. The gas stove had to be replaced for safety reasons, and the furnace repaired. Most of the work done in the T home addressed electricity use.

Mrs. T reports that the work done on her home in June 2003 has resulted in major improvements. The program services provided to Mrs. T – which were substantial at \$4,600 – literally made it possible for her and her son to remain in their home. “When I bought this trailer and up until the work was done [through the program], the windows would all ice up in the winter. It was freezing in here.” Windows were poorly sealed at best, and at worst, cracked or broken. Seven windows were replaced, completely transforming the comfort level of the home during both the winter and the summer seasons. The front door was replaced to complete sealing of the major air leaks to the mobile home. As a result, less pressure is now placed on both the propane heating system and the evaporative cooling unit.

The Ts’ stove was identified as a serious health hazard in the 840 square foot home, and was also replaced, the heating system repaired and a CO detector installed. “My propane bills have gone down a lot now, [because] it lasts longer.”

Ten standard fluorescent light bulbs were replaced with high efficiency compact fluorescent lamps. However, while she knows there are savings from the lamps, she cannot see them reflected in her electric bills. “They keep charging more and more and the bills keep going up and up on the electric.” She says the home uses a lot of hot water (so that may partly explain why the energy savings due to the new lights is not seen

But even with continuing high electric bills, at an annual household income of about \$12,000, Ms. T is effusively grateful for this program. “I wouldn’t know what to do if they didn’t do this for me. It’s 100% better. Tell them it’s worth it.” And later, thinking about others for whom these services are available, “I’m glad they provide this program for people like me. I couldn’t have afforded it, there’s no way.” Even though the work was completed over a year ago, the relief in her voice makes it evident that this program was a lifeline to her family.

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24 Also called a “desert cooler,” this system consists of a metal box the size of half of a refrigerator that has a pan on the bottom to catch condensation from water dripping onto canvas-like sheets which fans blow air across and into the home to cool the living spaces and provide some humidity to the air.

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2. Mrs. W (*Grandmother caring for grandchildren*)

Mrs. W is a grandmother who has been faced with caring full time for two teenaged grandchildren. She lives on a household income of \$22,800 which includes social security payments and income from a part time job that she must maintain to make ends meet. Her son, the father of the children, visits only temporarily and does not contribute to the family income.

Ms. W was compelling while relating what a difference the work done on her home has made for her. The air conditioning was broken, and she just got it fixed again. The insulation really has made a big difference in the electric bill. "The first year it made a lot of difference, but this year it has gone up a lot, but is still much lower than it was. My electric bill, used to be over \$300 per month, winter and summer. Now it's – so far my highest bill is \$222 – still way lower, on average. But the house is all electric, and even though the stove is gas, you have to have it plugged into the electric. Southwest Gas is my gas utility and then there's Nevada Power." Mrs. W is probably happiest about two replacement exterior doors, because the ones before were cracked and drafty. "They were bad bad doors, period. One was just kind of boarded up. There was not one good thing about them. I just love the new doors."

Health and safety issues were addressed through a general clean up around the interior that blocked air flow, and from installation of a CO detector. "The girls are school aged kids, and my one granddaughter (the 17-year-old) has asthma. I guess her health is better or about the same since the work was done, but she's more comfortable. I don't mess with the air conditioner too much, try to leave it where it is, but it gets real hot here so its great to have it cooler in here rather than have it all leaking out." She reports that the heating definitely feels better in the winter, too, and the solar screen makes a notable difference regarding their comfort. Generally, she is glad "now that we are not air conditioning the outside anymore."

The program has had a large impact on Mrs. W's ability to pay her bills, even though she still sees them rising, most likely due to higher rates. "I had terrible trouble paying my energy bills, and I still have trouble paying everything. I'm on Social Security now but I work part time." She reports that, since participating in the program, "*Everything* is better. I think was a wonderful, wonderful program. I had so much junk here – inside and out. I was a pack rat living here... and they helped me get rid of all that stuff, and fix everything. It really helped me a lot." Pride in her improved surroundings was evident as an additional side benefit.

But perhaps the biggest positive effect on Mrs. W's life from the program, though, is in what the repairs and improvements did to contribute to her ability to maintain her family's home. "For one reason or another someone is always back here...the point is, this is always my family's home and I struggle to keep it and take care of it because when something goes wrong, they always come back here. You always want some place you can come back to. And I try to keep it up for that reason."



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She concluded by thanking the program people several times. “I appreciate what the program did for me. They are all wonderful. Tell those people thank you again for me. They really were wonderful and I appreciate it so much.”

3. *Mrs. B (Elderly, living alone)*

Mrs. B lives in a slab construction single family home in Henderson, Nevada. The program provided Mrs. B, an elderly woman living alone, with substantial air sealing measures, attic insulation and general conservation measures such as compact fluorescent lamps and solar screening. Repairs consisted of replacement of a toilet flapper, and safety measures included a CO detector. For 12 hours of work and a materials cost to the program of \$2,411, these measures represent over 20% of one year’s income for Mrs. B, who lives on approximately \$11,000 per year. Although the work was done in spring 2003, Mrs. B remains overwhelmed at the generosity and comprehensiveness of the services provided. She noted the kindness of the program installation people, and is extremely appreciative to have been able to participate.

Mrs. B reports that the improvements have substantially improved the comfort level inside her home. Cooling is the primary energy use that was addressed in this project, and Mrs. B confirms that not only is she more comfortable for all the insulation, solar screening and air sealing work done, but that her utility bills are lower. Safety issues were addressed in checking all the major systems and in the installation of a CO detector. When asked if she felt better regarding her home’s safety and air quality, she said “I think so – the home feels safer for the repairs made.”

In regard to the program, Mrs. B shared: “I feel so thankful that they provided these services to me. It was wonderful.” In terms of the quality of the work that was done, “I feel like they did a good job, and were very nice.” In concluding the call, Mrs. B revealed, “I am 93 years old and my memory is not strong, so I can’t remember precisely when the work was done, [May 2003] but I really appreciated the help. The home feels much more comfortable. It’s a wonderful program.”

4. *Mrs. M (Single Mom with children)*

Mrs. M and her three children live in a single family home in Henderson of about 1,300 square feet that she owns and maintains on a total household income of \$10,560 per year. As a full time working mother, Mrs. M has little time to address issues such as home maintenance, appliance repair or energy efficiency opportunities. With her limited income, she has even fewer resources.

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The program delivered \$2,400 worth of equipment, weatherization measures and lighting for the M home in an attempt to address the multiple energy inefficiencies that were present. Solar screening, compact fluorescent replacement lamps, and a new refrigerator were the primary measures delivered to address electricity consumption, and repairs were made to the air conditioning unit. To reduce significant air leakage, both exterior doors were replaced, and weatherization measures installed.

Safety issues are also an important part of this program, and critical repairs were made to the gas furnace, and a CO detector installed. Finally, the program installed smoke detectors. With small children home during the day attended by their responsible but still not 18-years-old siblings, the attention to the safety issues in this home are very valuable.

Ms. M was enthusiastic about the work that was done on her home. Although she had solar screens before, they were torn and needed replacing – the new screens have made the house more comfortable. More impressive have been the two exterior replacement doors – “You can’t see the holes anymore where air was leaking around the sides.” She has noticed a significant difference in her gas bill with the installation of a new water heater, and repairs to her furnace. The electric bill, too, went down noticeably, with 13 CFLs installed replacing standard inefficient bulbs.

The bad news is that, since May 2004, “everything has been going up again.” The electric bills have increased due to rate increases [she thinks] and gas costs too have begun creeping back up. Even so, Ms. M is grateful – “They did a wonderful job, everything has been great.”

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5. *Mrs. G (Single mom with one child)*

Mrs. G is a single mom that lives in a 750 square foot mobile home in Elko County. She primarily uses gas for heating, water heating and cooking. Mrs. G is very enthusiastic about the work that was done on her home, which included replacement of her front door, repairs to the door trim and screen, installation of a water heater blanket, a CO detector, and water conservation devices. - Mrs. G maintains her household on an annual income of \$16,400.

“Being a single mom, [the program] made a really big difference in my home.” She noted that she absolutely could not have afforded to take care of the problems in her home herself, without the program. Of particular importance to her was replacement of her exterior door. “The old door was horrible I wouldn’t have been able to replace it without this program. Doors are kind of pricey items.”

In general, she reports that since the work was completed a year ago (May of 2003) the home “...is great, it’s much more comfortable.” The work done on the home included weatherization measures such as caulking, duct sealing, and shell sealing, with air infiltration checked before and after with blower door testing.

What she appreciates most is that several little and big things all got taken care of at one time, giving her peace of mind. “The program is just awesome, it really helped me a lot. I live alone with my 11 year old son. They were awesome with everything they did, things I could not have done myself.”

When asked if her energy bills had gone down, Mrs. G indicated that in fact she had not really noticed. Even so, she underscored the importance of the program’s services in her life and wanted to express her gratitude for the people who did the work {Desert Sage}.

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## V. FISCAL ANALYSIS

The Universal Energy Charge (UEC) was established by the 2001 Nevada State Legislature, and became effective during State Fiscal Year 2002. The fiscal analysis for this evaluation is focused in the evaluation window for the report, State Fiscal Year 2003 (beginning July 1, 2002 and ending June 30, 2003). Data from the prior fiscal year is included to show the SFY 2003 against the figures for the previous year.

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

Although “Universal Energy Charge” or “UEC” is usually used to indicate the collection, the fund, and the programs, it is useful to differentiate two high-level fund categories:

- **UEC:** The Universal Energy Charge (UEC) represents total collections of the Universal Energy Charge.<sup>25</sup> Collection is administered by the Public Utilities Commission. The Public Utilities Commission began to receive Universal Energy Charge payments in the fall of 2001 (SFY 2002). Amounts collected are periodically reconciled and then transmitted to the Accounting section of the Welfare Division.
- **FEAC:** The Fund for Energy Assistance and Conservation (FEAC) is maintained by the Accounting section of the Welfare Division. The FEAC is the UEC minus the administrative expense for the Commission. In addition, it includes any carry over funds from a prior fiscal year and interest accrued. It is reduced by the amount of any refunds directed by the Commission.<sup>26</sup>

### A. *SFY 2003 as the First Full Program Year*

In SFY 2002, as collection of the UEC by the Commission was underway, the Nevada Welfare Division (NWD) and the Nevada Housing Division (NHD) began to take the necessary structural and process steps to gear up to implement and administer the new Nevada programs. During this “pre-program” period, both the Welfare Division and the Housing Division worked to develop necessary implementation steps.

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25 Officially (NRS 702.100), “Universal Energy Charge” means the charge imposed pursuant to NRS 702.170.

26 Officially (NRS 702.040), “Fund” means the Fund for Energy Assistance and Conservation created by NRS 702.250.

The Housing Division was to implement the program beginning in SFY 2002, while the Welfare Division was to initiate in SFY 2002 under pre-existing program guidelines.<sup>27</sup> This situation continued until the new programs could be put into effect. For the Welfare Division, the new program was to go into effect in July 2002 (the beginning of SFY 2003).<sup>28</sup>

Since the enabling legislation (NRS 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>29</sup> Similarly, SFY 2004 is the second program year, and SFY 2005 will be the third. Activities in State Fiscal Year 2002 are treated as preparatory (Figure 6).

| Past                       |  | Evaluation Window                     | Future                                       |
|----------------------------|--|---------------------------------------|--|
| <b>SFY 2001</b><br>Pre-UEC | <b>SFY 2002</b><br>Pre-Program Year<br>Collection Begins | <b>SFY 2003</b><br>First Program Year | <b>---&gt; Future</b><br>SFY 2004 and Beyond |

**Figure 6: Evaluation Window.**

### ***B. Collections (Public Utilities Commission of Nevada)***

The Public Utilities Commission of Nevada (PUCN) is the locus of oversight for regulated Nevada utilities. The agency has both investigative and enforcement powers. The collection of the UEC is overseen by the Commission. The Public Utilities Commission has no operational responsibility for the program.

Commission responsibilities include collection, refunds in accordance with legislative provisions,<sup>30</sup> and investigation and enforcement to the extent necessary. The

<sup>27</sup> At the same time, the Welfare Division has a general program expectation that federal LIHEA funds are to be expended prior to state funds in cases which either might be applied. Particularly at first, and as the program mechanisms were taking form, and due to the absence of necessary computer capability this resulted in a primary focus on the existing federal/state LIHEA program rather than on the UEC. UEC funds that are not expended in a fiscal year are carried over.

<sup>28</sup> NRS 702.260(5-6). There is no equivalent program provision for the Housing Division.

<sup>29</sup> SFY 2003 is the first program year for the Welfare Division since it is the first year the programs are to be in effect (see previous note). The Housing Division and Welfare Division are treated in parallel in this report, so SFY 2003 is taken as the first full program year for all program services.

<sup>30</sup> Refunds, as directed by the Commission and carried out by the Accounting section of the Welfare Division.

collections part of the UEC is running smoothly. There has been no occasion for exercise of the Commission's investigative or enforcement powers through SFY 2003.

In addition to managing collection, the Commission is responsible for periodically transferring UEC funds to the Fund for Energy Assistance and Conservation (FEAC) which is administered by the Welfare Division. The Welfare Division accounting function then transfers the appropriate percentage of net funds to the Housing Division.

The status of the UEC and the FEAC for SFY 2002 and SFY 2003 is shown in Table 2. There are some differences between this table and both the numbers maintained by the Commission and the numbers maintained on the state computer system (DAWN) by the Welfare Accounting Section. The numbers as maintained by the Commission are actuals, showing funds as received. The evaluation table (below) and the Welfare Accounting numbers on DAWN do not include pre-payments that belong in a subsequent fiscal year. Also, while the Commission determines refunds, they are implemented by the Welfare Accounting Section from the FEAC. However, in the evaluation table (below), these refunds are shown as part of the UEC rather than in the FEAC section of the table. This is to provide better clarity in presenting the information in the table.

| Universal Energy Charge<br>& Fund for Energy Assistance and Conservation |  |           |            |
|--|--|-----------|------------|
| Line   | Item   | SFY 2002  | SFY 2003   |
|  |  | (\$)      | (\$)       |
| Universal Energy Charge (UEC)  |  |           |            |
| 1  | UEC Receipts (Public Service Commission)           | 9,876,938 | 10,653,628 |
| 2  | UEC Refunds  | 610,711   | 789        |
| 3  | UEC Net of Refunds                                 | 9,266,227 | 10,652,839 |
| 4  | Cost of Administration (Public Utility Commission) | 211,912   | 105,704    |
| 5  | Net UEC for transfer to Welfare Division           | 9,054,315 | 10,547,135 |
| Fund for Energy Assistance and Conservation (FEAC)                       |  |           |            |
| 6  | FEAC (Net addition from UEC)                       | 9,054,315 | 10,547,135 |
| 7  | FEAC (Treasurer's Interest Distribution)           | 60,997    | 159,130    |
| 8  | FEAC (Net New Funding for Fiscal Year)             | 9,115,312 | 10,706,265 |
| 9  | FEAC (Funds Carried Forward from prior SFY)        | 0         | 4,773,928  |
| 10   | FEAC (Available for Fiscal Year)                   | 9,115,312 | 15,480,193 |

**Table 2: Top-Level Fiscal Perspective.**

The lines of the table are explained below:

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(1) **Line 1: Increased energy use in SFY 2003 over SFY 2002.** This is the total collected by the Commission for each fiscal year.

(2) **Line 2: UEC Refunds.** These are refunds determined by the Commission, issued by the Welfare Accounting Section for overpayment or incorrect payment into the UEC. As noted, they actually occur in the FEAC, but are shown in the UEC for better clarity.

(3) **Line 3: UEC Net of Refunds.** This represents the actual new funds collected for each fiscal year. Note the upward trend. Since the total UEC amount is a function of units of electricity and natural gas consumed in a given fiscal year (the more units consumed in the state by customers of participating utilities, the higher the UEC collected), net collection was \$10.65 million dollars in SFY 2003 and \$9.05 million dollars in SFY 2002. According to the Commission projections, UEC collections will trend upwards at about 2% per year. Actual collections will vary from year to year around this trend, but can be expected to follow Nevada's upward trend in energy use.

(4) **Line 4: Cost of Administration (Public Utility Commission).** The Commission spent about \$211,000 for administration in SFY 2002, about one half of which is due to start-up costs. In SFY 2003, cost of administration dropped to about \$106,000. Under NRS 702.701(4) the cost of Public Utility Commission administration of the UEC is capped at 3% UEC receipts. Monies within this authorization that are not spent for PUCN Administration flow through to the FEAC. In SFY 2003, actual PUCN Administration was about one-third (33%) of the authorization – about one percent (1%) of receipts. Unless there is a need for investigation and enforcement, the administrative amount required by the PUCN is likely to stay at about 1% to 2% of each year's UEC collections. Looking forward, the necessary percentage is likely to decrease as energy use in Nevada increases.

(5) **Line 5: Net UEC for Transfer to Welfare Division.** This is the yearly net amount transferred to the FEAC.

(6) **Line 6: FEAC (Net Addition from UEC).** The amount is the same as in Line 5, representing the net amount of UEC collections minus Commission administration transferred to the FEAC in each fiscal year.

(7) **Line 7: FEAC (Treasurer's Interest Distribution).** This is new money each year developed as interest on the FEAC account.

(8) **Line 8: FEAC (Net New Funding for Fiscal Year).** This is the sum of the new money from all sources for the fiscal year.

(9) **Line 9: FEAC (Funds Carried Forward from Prior Fiscal Year).** A new program with the complexity of the UEC generally takes about three to five years to



become fully functional. In the initial years, there is typically a substantial carry over of funds to subsequent fiscal years. In addition, once the programs are mature, they will probably show a small carry over each year that will serve to cover contingencies.

(10) **Line 10: Available for Fiscal Year.** This is the effective budget for the fiscal year, including funds from all sources.

### ***C. Program Operations: The Welfare & Housing Divisions***

The Welfare Division operates energy assistance and the Housing Division operates weatherization assistance. The Divisions coordinate effort in several ways but separately operate the two programs. Expenditure against work plan and expenditure against effective budget for both Divisions is shown in Table 3.

| Fund for Energy Assistance and Conservation<br>(Work Plan, Effective Budget, Overall Expenditures) |  |           |            |
|--|--|-----------|------------|
| Line   | Item                                       | SFY 2002  | SFY 2003   |
|  |  | (\$)      | (\$)       |
| Work Plan & Effective Budget   |  |           |            |
| 11   | FEAC (Available for Fiscal Year)           | 9,115,312 | 15,480,193 |
| 12   | FEAC Planned & Authorized for Fiscal Year  | 5,000,000 | 8,000,000  |
| 13   | FEAC Available over Planned                | 4,115,312 | 7,480,193  |
| 14   | Expended                                   | 2,631,437 | 6,322,571  |
| Overall Expenditures as Percentage of Work Plan and of Effective Budget                            |  |           |            |
| 15   | Expended as Compared to Work Plan          | 53%       | 79%        |
| 16   | Expended as Compared with Effective Budget | 29%       | 48%        |

**Table 3: Fund Plan, Budget, Expenditure.**

(11) **Line 11: FEAC (Available for Fiscal Year).** In Table 3, the available funds are shown in Line 11.

(12) **Line 12: FEAC Planned & Authorized for Fiscal Year.** The work plan for each year was set before funding was known. The work plan ("Work Program") reflects the approved level of effort expected for the year, and is legislatively approved. It can be adjusted during the year but, going into each year, it represents an expected and approved level of activity. Note that in the pre-program year (SFY 2002), the overall UEC effort expended about 29% of the effective budget and 53% of the

planned budget. In the first full program year (SFY 2003), the overall UEC effort expended approximately 48% of the effective budget and 79% of the planned budget.

As shown in Table 4, the required allocation percentages to the Welfare Division (75%) and Housing Division (25%) were maintained.<sup>31</sup>

| Fund for Energy Assistance and Conservation<br>Allocation to Divisions |  |           |      |            |      |
|--|--|-----------|------|------------|------|
| Line   | Item                                   | SFY 2002  |      | SFY 2003   |      |
|  |  | (\$)      | (%)  | (\$)       | (%)  |
| 1  | FEAC (Net New Funding for Fiscal Year) | 9,115,312 | 100% | 10,706,265 | 100% |
| 2  | Allocated to Welfare Division          | 6,825,233 | 75%  | 8,029,502  | 75%  |
| 3  | Allocated to Housing Division          | 2,290,079 | 25%  | 2,676,763  | 25%  |

**Table 4: Allocation to Divisions.**

| Rate of Expenditure |                                     |           |      |            |      |
|---------------------|-------------------------------------|-----------|------|------------|------|
| Welfare Division    |                                     |           |      |            |      |
| Line                | Item                                | SFY 2002  |      | SFY 2003   |      |
|                     |                                     | (\$)      | (%)  | (\$)       | (%)  |
| 1                   | Allocated to Welfare Division       | 6,825,233 |      | 8,029,502  |      |
| 2                   | Carried Over from Prior Fiscal Year | 0         |      | 4,773,928  |      |
| 3                   | Effective Budget for Fiscal Year    | 6,825,233 | 100% | 12,803,430 | 100% |
| 4                   | Expended                            | 2,051,305 | 30%  | 3,392,324  | 26%  |
| 5                   | Carried Forward                     | 4,773,928 | 70%  | 9,411,106  | 74%  |
| Housing Division    |                                     |           |      |            |      |
| Line                | Item                                | SFY 2002  |      | SFY 2003   |      |
|                     |                                     | (\$)      | (%)  | (\$)       | (%)  |
| 6                   | Allocated to Housing Division       | 2,290,079 |      | 2,676,763  |      |
| 7                   | Carried Over from Prior Fiscal Year | 0         |      | 1,709,947  |      |
| 8                   | Effective Budget for Fiscal Year    | 2,290,079 | 100% | 4,386,710  | 100% |
| 9                   | Expended                            | 580,132   | 25%  | 2,930,247  | 67%  |
| 10                  | Carried Forward                     | 1,709,947 | 75%  | 1,456,463  | 33%  |

**Table 5: Rate of Expenditure.**

As shown in Table 5, the Welfare Division expended 30% of its effective budget in the pre-program year (SFY 2002) and 26% of the effective budget in the first program year (SFY 2003). The Housing Division expended 25% of its effective budget in the pre-program year and 67% in the first program year.<sup>32</sup> The SFY 2003 results for the

31 NRS 702.260(1) and NRS 702.270(1),

32 Note that SFY 2003 was the first full program year for the Welfare Division [NRS 702.260(5-6)], while we are treating SFY 2003 as the first year for the Housing Division in this report.

Welfare Division or the Housing Division are not unusual for a first year program. Staffing and computer systems had to be developed and put into place. There were initial staffing constraints. Computer needs, in particular, set back implementation of payment assistance.<sup>33</sup> The pattern resulted in a carry over of \$4,773,928 of SFY 2002 funds into SFY 2003 for the Welfare Division and a \$1,709,947 SFY 2002 carry over for the Housing Division. The cumulative carry-forward from SFY 2003 into SFY 2004 was \$9,411,106 for the Welfare Division and \$1,456,463 for the Housing Division. Generally programs of this size and complexity take three years for the necessary support systems to be completely in place and five years to become fully functional. If this rule of thumb holds true, the required support systems will be fully functional in SFY 2005 and expenditure will match effective budgets in SFY 2005 to SFY 2006.

| Administration & Major Line Items   |   |           |         |            |         |
|---|---|-----------|---------|------------|---------|
| Col. 1  | Col. 2  | Col. 3    | Col. 4  | Col. 5     | Col. 6  |
| Line  | Item  | SFY 2002  |         | SFY 2003   |         |
|   |   | (\$)      | (%)     | (\$)       | (%)     |
| 1   | UEC Net of Refunds                                      | 9,266,277 | 100.00% | 10,653,628 | 100.00% |
| 2   | Cost of Administration (Public Utility Commission)      | 211,912   | 2.29%   | 105,704    | 0.99%   |
| 3   | Administration (Welfare Division)                       | 155,572   | 1.68%   | 101,475    | 0.95%   |
| 4   | Client Payments   | 1,565,658 | 16.90%  | 2,967,640  | 27.86%  |
| 5   | Outreach  | 28,877    | 0.31%   | 65,018     | 0.61%   |
| 6   | Program Design  | 288,131   | 3.11%   | 258,191    | 2.42%   |
| 7   | Evaluation  | 13,065    | 0.14%   | 65,738     | 0.62%   |
| 8   | Administration (Housing Division)                       | 15,427    | 0.17%   | 106,941    | 1.00%   |
| 9   | Housing Improvements, Weatherization, Energy Efficiency | 504,705   | 5.45%   | 2,772,464  | 26.02%  |
| 10  | Outreach  | 0         | 0.00%   | 1,112      | 0.01%   |
| 11  | Program Design  | 60,000    | 0.65%   | 27,456     | 0.26%   |
| 12  | Evaluation  | 0         | 0.00%   | 22,274     | 0.21%   |
| 13  | Total (Fiscal Year)                                     | 2,843,347 | 30.68%  | 6,494,013  | 60.96%  |
| Note: "UEC Net of Refunds" (Line 1, Col.3 or Line 1, Col. 5) is the base for all percentages shown in this table. Administrative cost breakouts were provided by the Housing Division and the Welfare Division. |   |           |         |            |         |

**Table 6: Administrative & Major Line Items.**

An innovation that the legislature placed into the program design is shown in Table 6, Lines 5-7 and Lines 10-12. In this design, administration was capped at three percent of the 75% Welfare Division allocation (or 4.5 percent of overall budget), and six percent of the 25% Housing Division allocation (or 1.5 percent of overall budget). However, for each program, three functions were left outside the caps: Outreach, Program Design (of which the major component is computer support), and Evaluation.

<sup>33</sup> See sections on staffing and on automation in this report for details.

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As discussed in the sections on staffing and best practices, the overall caps on Welfare Division and Housing Division administration have been set too low, resulting in a constraint in program implementation and requiring an adjustment for reasonable continued program implementation and control.<sup>34</sup>

#### ***D. Summary***

(1) The collection process is running smoothly and can be run well with an administrative overhead of about two percent (2%) in contrast to the current three percent (3%) of the total UEC specified in NRS 702.170(4). Because energy use, and hence UEC receipts is trending upwards in Nevada, this is a conservative finding and in the near future it may be that less than two percent (2%) is required.

(2) Funds are allocated according to the 75% Welfare Division and 25% Housing Division formula established in NRS 702.260(1) and NRS 702.270(1).

(3) The rate of expenditure against work plan and the rate of expenditure against effective budget are not unusual for the first program year (SFY 2003). For both the pre-program year (SFY 2002) and the first program year (SFY 2003) there is significant carry over. Reasons for this carry over are analyzed in other sections of this report (sections on staffing and on automation), but for programs of this complexity it is not unusual for necessary support systems to require three years to be fully in place and for programs to be fully implemented and functional in three to five years. The years to see how this works out will be SFY 2005 and SFY 2006.

(4) The administrative cap for NRS 702 is set too low, and should be raised to 10%. This is noted here and discussed more fully in the section on staffing.

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<sup>34</sup> As discussed in those sections, a conservative and reasonable overall cap for administration would be 10% of the total UEC, including the Welfare Division, the Housing Division and the administration of collection by the Commission. The current structure is: 3%, Commission; 2.25%, Welfare Division; and 1.5%, Housing Division for a total of 6.75%.

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***E. Recommendation***

In collecting figures for the fiscal analysis it became apparent that there are very small differences between the numbers maintained by the Commission and the numbers maintained by the Welfare Accounting Section in DAWN. These differences are not substantial and are probably due to timing. Still, the differences should not exist. Accordingly, we recommend that the Welfare Division Accounting section and the Commission re-establish the quarterly “true-up” meetings that existed at the start of the UEC collections, and continue to meet quarterly.

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## VI. THE WEATHERIZATION ASSISTANCE PROGRAM

### A. *Subgrantees and Service Territories*

The Housing Division administers the Weatherization Assistance Program through four subgrantee agencies. 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.

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

HELP (not an acronym) of Southern Nevada serves the Las Vegas area. HELP has been an active community outreach agency for 34 years and assists about 65,000 people each year. HELP is an umbrella organization that links individuals to support services and 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 or 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. There has been an Agency-wide drop in funding as the need for services in southern Nevada has ballooned. Explosive growth in need has been occurring in a depressed economy.

HELP has been weatherizing homes with the State using DOE funding since 1989. Weatherization funding includes FEAC, DOE, and utility funding. Nevada Power provides "GAP Funding" funding for cases over 150% Federal Poverty Level.<sup>35</sup> Sierra Pacific DSM funds were provided up to 200% Federal Poverty Level (DSM funding ended 12/31/03). HELP 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. HELP estimates they had treated about 1,100 homes with FEAC funds as of February 2004.

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<sup>35</sup> "GAP Funding" is a form of recognition of the increasing need to move the income limit for the Weatherization Assistance Program higher. As discussed elsewhere in this study, the actual line above which assistance is generally not needed is 250% of the federal poverty level (see sections on Need and Logic of the Program). Some programs have recently moved to 250% of poverty for either payment assistance or weatherization assistance program eligibility (most recently, California). LIHEA funding is permitted to 150% of poverty or 60% of the state median income. State funded and state mandated programs are in the process of moving to at least 200% of poverty (such as Pennsylvania). Nevada housing costs, for example are currently skyrocketing, up 25% for the state and up 35% in the major cities. As this cost, and related costs that are suddenly moving upwards (while wages and salaries are not moving in parallel) the impact will be to erode ability to meet utility bills. As discussed in the Needs section, utility bills have been going up and are forecast to continue to rise.

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Starting in the mid 1980s, Las Vegas' annual population increases averaged nearly 7 percent. The city's population almost doubled between 1985 and 1995, increasing from 186,380 to 368,360. In 2002, the population of Las Vegas was 514,640 and the Clark County population of 1,549,657 was up about 64,000 from 2001.<sup>36</sup>

There has been an Agency-wide drop in funding as the need for services in southern Nevada has ballooned. Explosive growth in need has been occurring in a depressed economy throughout the country.

It is expensive to get started in Las Vegas; the cost is estimated to be about \$2,200.<sup>37</sup> Casinos employ many people but all union employees need a particular skill set in order to join. The building industry is booming, but skills are needed there as well. Living costs are relatively low; but there is high mobility both into and out of the Las Vegas area. People can make money on service jobs with tips but there is no job security. About 10 days after 9/11/2001 about 20,000 people were laid off across all income levels, including some 2-income families. About 6,000 people have still not come back to work. Some are back part time, but in jobs that do not have benefits. Now, there is a labor pool informally called "steady extras" that work full time but are not classified as regular employees. They are akin to a new permanent pool of day laborers, with no benefits. There are also estimated to be 4,000 to 6,000 people in Las Vegas and the surrounds that are homeless.

The 'Homeless Corridor' concentrates homeless services on one street. There are 'short term homeless,' those willing and wanting work, a large homeless population with mental health problems, a small percentage who are homeless by choice, and a large teen population of homeless youth. There is a teen homeless shelter for the last category. The City of Las Vegas has a homeless case plan called "New Path" where rent and utilities can be provided for one year. Usually drug and alcohol counseling is needed for the homeless that participate in this program. Each case is sent to a caseworker, compliant with the plan, and 60 days' employment is arranged.

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

The Community Services Agency and Development Corporation (CSA) was also 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. CSA weatherizes homes with UEC funding within about a 200 mile radius of Reno. Counties served include Storey, Carson, Washoe, Lyon, Churchill, and Douglas. Some Indian reservations are also within the service area.

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<sup>36</sup> Source: Nevada State Demographer, see <http://gov.state.nv.us/pr/2003/01-27CensusPR.htm>.

<sup>37</sup> Source: Staff Interviews.



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CSA is a Community Action Agency, oftentimes called a CAP agency. CSA provides a number of programs including Head Start, Rental Assistance, Low-income Housing Development, First Time Homebuyer program, Energy Assistance, computer training classes, energy education, Weatherization, and other programs. Sixty percent of the population served by CSA is Spanish speaking. From 1982 to 1994 CSA operated a weatherization program with its own weatherization crews and subcontractors.

In Reno alone, the 2002 census estimates the population to be nearly 357,000. Many people come to Las Vegas and Reno looking for opportunity and attracted by what they have heard or seen about the gaming industry. The reputation of Las Vegas and Reno from past years is that ordinary working people can live well in service jobs associated with gaming. People come expecting to find jobs but the jobs associated with the gaming industry are declining.

The Reno area housing stock has a high proportion of manufactured homes. Other homes are primarily older single family homes along with some multifamily complexes. Multifamily homes house a large transient population. Most homes heat with natural gas. There is only one natural gas supplier in the area. CSA targeted both mobile homes and single family homes for weatherization in SFY 2002 to maximize energy savings.

The mobiles are largely owner occupied. The typical mobile (or manufactured or modular) housing in the area is not energy efficient and is often in very bad shape. There is no code to protect low-income customers from purchasing inefficient used housing. Often there is much damage to homes during transit and set up. Inspections are typically done for lenders, that is, they only check to see that there is an 8 point (8 sets of pier blocks) foundation. There is no inspection to determine that the home is level or that it has been undamaged.

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

The City of Henderson lies just outside of Las Vegas. The City of Henderson Neighborhood Services Division is operated under the City Manager's office. The Neighborhood Services Division offers outreach services and has four Divisions in addition to Affordable Housing Programs. These are the Neighborhood Programs, Neighborhood Enhancement, Grants (such as Community Development Block Grants) and Rebuild America.

The agency offered weatherization funded by State DOE funds in 1989-1992. With UEC funding they have begun offering weatherization again. About half the homes weatherized in FY2002-2003 were trailers or manufactured homes, and about half are apartment units. The agency began weatherizing homes with UEC funding in April 2003.

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The City of Henderson is essentially divided into East and West Henderson. East Henderson was developed during and after World War II. Most of the housing in East Henderson is older while ninety-four percent (94%) of the homes in West Henderson were built after 1980. There are about 25,000 housing units in East Henderson and 56,000 in West Henderson. In 2000, the housing stock included sixty-three percent (63%) single family homes, thirty-four percent (34%) multifamily homes and three percent (3%) mobile homes, trailers, and other uncategorized types. Henderson grew dramatically (by 170%) in the 1990's and is expected to grow another forty-five percent by 2010.<sup>38</sup>

The Area Median Income (AMI) was \$53,383 in 2002.<sup>39</sup> In 2004, 80% of the AMI for a family of five was about \$48,000. Henderson has the highest AMI in the greater Las Vegas valley. In this area 150% of the Federal Poverty Level translates into about thirty-five percent (35%) of area median income. It is estimated that in 2002, about 12.5% or 2,900 renters and 8.1% or 4,500 homeowners paid more than 30% of their income toward housing. The City of Henderson has an estimated 293 homeless persons, or 4.4% of a 1999 Las Vegas area one-night "point in time" count.<sup>40</sup>

The Affordable Housing Programs receive HOME Funds used for the low income Housing Trust Fund, weatherization, and First Time Home Buyer's program. Funds are used for participants with incomes below 80% Area Median Income (AMI) including deferred payment zero interest loans for major rehab work in owner occupied homes where participants with less than 60% AMI. Other low interest (3%) loans assist owner occupied homes up to 80% AMI. Repair grants (\$2500) are given to participants less than 50% AMI. These grants are most often used with weatherization program and most often for senior citizens.

Nevada Power and Sierra Pacific Power Company provide funds to fill the gap in need between 150% FPL and about 60% of the area median income. This "gap funding" is very important because housing and energy prices have been rising and many middle-income families now find increasing difficulty in covering their energy bills. Community Development Block Grants (CDBG) provides Administration funding for the Affordable Housing Coordinator and some staff, some emergency repair funding, and the rest of the funding is for CDBG capital projects.

The Housing Rehab program has been part of Neighborhood Services Affordable Housing Programs since 1981.

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38 TONYA Inc. Affordable Housing Policy Plan for 2002-2010. HUD: San Francisco, CA. undated, 12-13, & 16.

39 Ibid. 16

40 Ibid. 5, 16

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

The Rural Nevada Development Corporation (RNDC) provides services to the largest geographic area with the sparsest population. The RNDC office is located in Ely in White Pine County. RNDC provides services in an eight county radius, including White Pine County and Lincoln Counties on the eastern border, Eureka and Lander Counties in central Nevada, Humboldt and Elko Counties on the northern Nevada border, and Nye and Esmeralda Counties on the California border. In 2004, installations ranged from McDermitt and Owyhee on the northern Nevada border to Winnemucca on the west and Alamo and St. George to the south. In 2003, RNDC served Elko, White Pine, Lincoln, Nye, and Humboldt counties. RNDC began weatherizing homes with UEC funding in November 2002.

RNDC has done housing rehab and weatherization work since 1994. The Housing Division approached RNDC about participating as a UEC subgrantee in FY2001 and RNDC began training that year. RNDC began weatherizing homes as a subgrantee in October 2002.

The housing stock is somewhat like Reno, and unlike Las Vegas. The single family homes and trailers are for the most part very old homes. In the Elko area and in the Pahrump area there are many manufactured (mobile) homes. Many homes heat with propane. Some homes heat with electricity.

DOE funding is leveraged wherever possible. Where FEAC funds cannot be used due to the program eligibility rules, only DOE funding is available. Homes served by electric co-ops, city owned companies, and propane heated homes are not eligible for FEAC funded weatherization.

#### **B. *Installation Summary***

The following two tables summarize the FY2002-2003 installations by Weatherization Provider (Subgrantee).

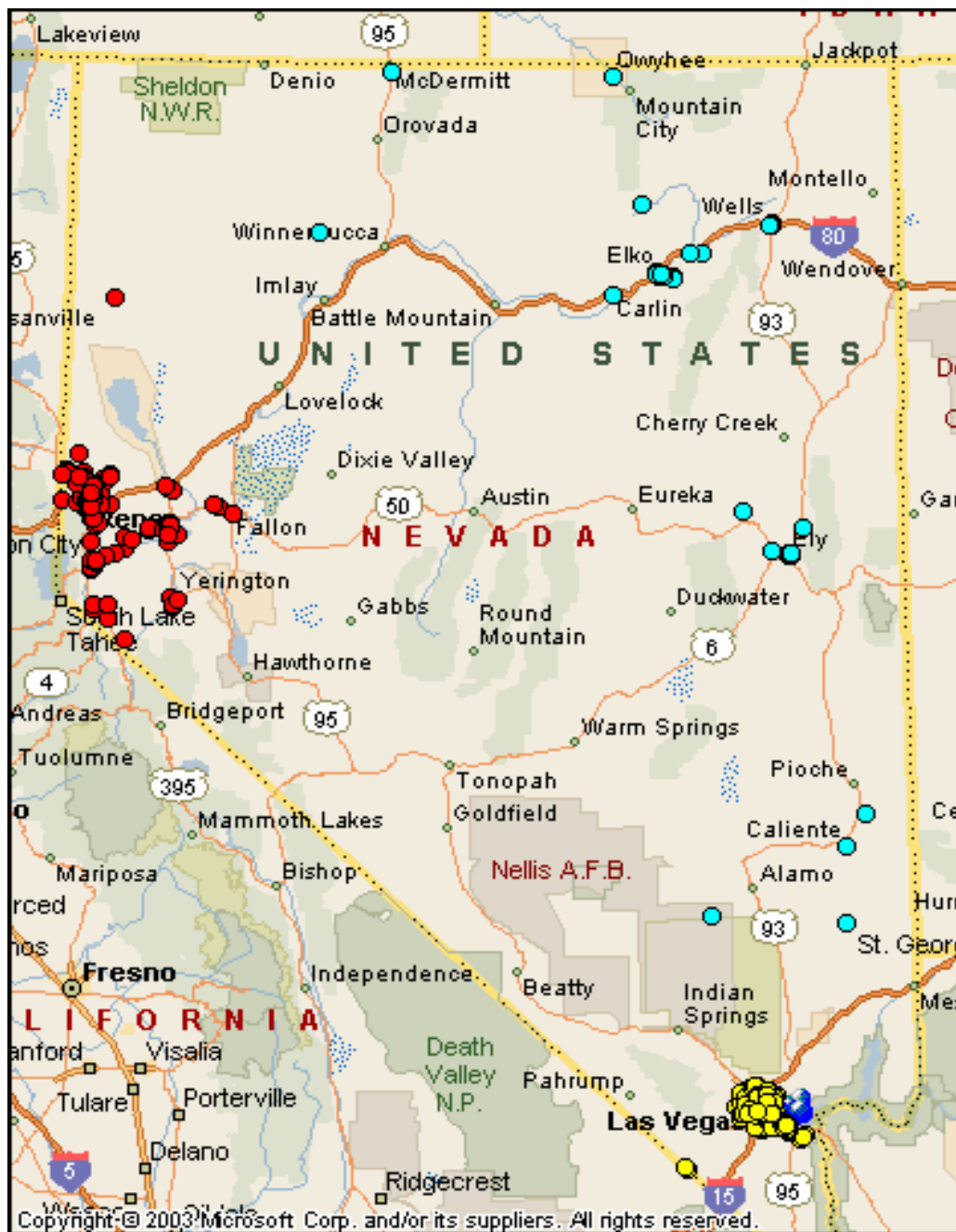
| Number of Homes Weatherized by<br>Weatherization Provider with DOE and FEAC Funds<br>FY2002-2003 |      |    |      |       |
|--|------|----|------|-------|
| CSA  | HELP | NS | RNDC | Total |
| 335  | 945  | 91 | 156  | 1.527 |

**Table 7: Homes Weatherized (by Subgrantee).**

| Number of Homes Weatherized by<br>Weatherization Provider and Housing Type<br>FY2002-2003 |       |         |       |         |       |         |       |         |       |         |
|---|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|
| Housing<br>Type   | CSA   |         | HELP  |         | NS    |         | RNDC  |         | Total |         |
|   | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent |
| <b>2-4<br/>Family</b>   | 15    | 4.4%    | 217   | 23.0%   | 5     | 5.5%    | 37    | 23.7%   | 274   | 17.9%   |
| <b>5+ Family</b>  | 64    | 19.1%   | 421   | 44.6%   | 62    | 68.1%   | 28    | 17.9%   | 575   | 37.7%   |
| <b>Mobile<br/>Home</b>  | 159   | 47.5%   | 160   | 16.9%   | 10    | 11.0%   | 34    | 21.8%   | 363   | 23.8%   |
| <b>Single<br/>Family</b>  | 97    | 29.0%   | 147   | 15.6%   | 14    | 15.4%   | 57    | 36.5%   | 315   | 20.6%   |
| <b>Total</b>  | 335   | 100%    | 945   | 100%    | 91    | 100%    | 156   | 100%    | 1527  | 100%    |

**Table 8: Types of Homes Weatherized (by Subgrantee).**

The map below shows the weatherization installations in FY2002-2003. Note that more than one installation can be represented by one dot. For example, the blue dot at McDermitt on the northern Nevada border represents 31 installations and Owyhee represents six installations.



**LEGEND:**

Community Services Agency (CSA) – Red  
 HELP of Southern Nevada (HELP) – Yellow  
 City of Henderson Neighborhood Services (NS) – Dark Blue  
 Rural Nevada Development Corporation (RNDC) – Light Blue

**Figure 7: Map of Weatherization installed.**

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### **C. Ramp-Up**

Prior to UEC, only DOE weatherization funding was available, with a total budget of about \$700-\$800,000. There was only one Housing Division staff person managing the program. Two agencies provided weatherization services, CSA in northern Nevada (located in Reno), and HELP of Southern Nevada, located in Las Vegas. At that time, due to limited resources homes were weatherized in Clark and Washoe counties plus one rural county each year. From 1999-2001, 592 units (or about 200 per year) were weatherized with DOE funds.

The FEAC funds added almost \$2,290,000 to the Housing Weatherization program in the last half of SFY 02. In SFY 03 about \$2,676,760 was added to the weatherization budget. The ramp-up was large, increasing the units weatherized from about 200 per year to 1,527 (with DOE and FEAC funds) in SFY 03 and 1527 (with DOE and FEAC funds) in SFY 04. FEAC Funding is distributed proportional to the funding collected. The Las Vegas area in Clark County receives 69% of the funding, as it has 69% of eligible households.

The FEAC funded weatherization was designed to dovetail with existing DOE funded weatherization program so that nearly the same guidelines are used for measure selection, program years, etc.

Single family residences, mobile and manufactured homes, multifamily and apartment complexes can all be weatherized with FEAC funding. Many mobile homes don't meet California standards. Nevada codes are substandard to CA and homes that don't meet CA codes end up in Nevada. Multifamily homes have 2-4 units, and large apartment complexes have more than 5 units. Multifamily apartments can be treated if 66% of the building tenants are verified low income. If the unit is income qualified, it will be treated with FEAC funds. If the resident is slightly over income, DOE funds can be used. Both funding streams can be used to treat one residence.

To ramp up, Weatherization Installation Standards and training were needed to prepare new crews. Richard Heath and Associates (RHA) was hired to develop standards, modifying California standards for Nevada. RHA works with the PGE training center in Stockton CA. Weatherization crews are required to attend a training session in Stockton within 90 days of being hired. Training includes 5 days' training in field policy and weatherization procedures, 5 days' blower door training, and combustion safety training. Training in Stockton is conducted in a simulated house; none of the training is in the field.

Housing management developed a Procedures Manual. The Manual and Installation Standards require periodic clarifications and updates as more field experience is gained.

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The rules for DOE and FEAC funded programs are somewhat different. DOE requires that measures installed have a Savings-to-Investment Ratio of 1.<sup>41</sup> A Savings-to-Investment-Ratio (SIR) was developed to rank measures and develop a “priority list” for the order of measure installation. The Weatherization Program added multifamily residences to its list of projects with FEAC funds. New measures have been added including compact fluorescent lights (CFL), refrigerator replacement, and insulation and polyurethane elastomeric coating on mobile home roofs. Programmable thermostats were added as a measure, but removed from the list in SFY 05 by the Housing Division. There were too many callbacks to justify the costs and savings. FEAC requires that installations be cost effective, but the rules do not require the SIR calculation.

The Building Weatherization Report (BWR) is the primary tool used by the Housing Weatherization Assistance Programs to track weatherization measures installed. The electronic BWR was put into use in March 2003 within the Housing Division and by the subgrantees. At the end of each month, subgrantees are required to submit an activity and financial statement report to the Housing Division. Housing appends the data to their database to compute summary reports.<sup>42</sup>

No application forms are used in common with Welfare. A working group consisting of both Housing and Welfare management tried to streamline the application so that both agencies could use a common form. 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>43</sup>

Referrals are made by Welfare to Housing by monthly downloads of client information with a FAC \$600 or more. Housing sends postcards to these high energy use clients with the intent to capture leads for the subgrantees. Daily emails of clients with FAC \$2,500 or more are sent to Housing for immediate follow-up. Housing continues to take applications for interested clients included in the download; even though Welfare has income qualified them.<sup>44</sup>

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41 The SIR is an engineering estimate. These estimates were computed for Housing by Architectural Energy Corporation (AEC).

42 The BWR is discussed in detail in the Housing Automation section of this report, as is the SIR.

43 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 1500 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.

44 The electronic link between Housing and Welfare is discussed in more detail in the Housing Automation section of this report.

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Housing also needed to recruit agencies to act as weatherization contractors. Finding qualified and interested weatherization agencies and technicians has not been an easy task. Two agencies already weatherizing homes under the DOE program agreed to participate. These were CSA, serving the Reno City area, and HELP of Southern Nevada, serving the Las Vegas area. These agencies were able to complete weatherization for the full SFY 03. Two other agencies were recruited that did not start weatherization until later in the year. RNDC, serving eastern and rural Nevada from the northern border to just north of Las Vegas, started weatherizing homes in October 2002. City of Henderson Neighborhood Services agreed to participate about November 2002 but the organization was not able to weatherize units until April 2003 after staff was hired and trained.

Each of the agencies has dealt with hiring and training weatherization technicians and subcontractors. Each has had their problems with having sufficient numbers of contractors: one contractor died, one was fired, and there has been high turnover in several crews. There are issues with management and unions in others, and there is general difficulty recruiting and training new contractors because the housing industry is currently in a very strong up-cycle. Nevada is not like many states where Community Action Agencies and others have continued to offer weatherization programs for many years, resulting in a permanent pool of trained weatherization contractors that have been supported by a perhaps twenty years of continuous and substantial weatherization funding.<sup>45</sup>

Ongoing outreach was discussed by a nine member Outreach Advisory Committee established in September 2003 (SFY 04). The Committee included one person each from Housing, Sprint, PUC, HELP, CSA, Welfare and three utility representatives. The Committee was formed to discuss marketing efforts and decided to hire a marketing firm to conduct statewide outreach. In the meantime, 40,000 flyers were distributed by a number of food closets in early 2004. By June 2004, Housing had received about 200 inquiries by clients receiving the flyers.

For Housing, marketing must be carefully balanced and timed. Marketing that is overly “successful” results in a backlog of homes waiting to be weatherized. If an application is over 90 days old, a new application must be made. Subgrantees are finding that most marketing is done by “word-of-mouth.” Advertising in local newspapers was not effective for subgrantees, but ads in the quarterly Parks and Recreation publication was, as well as flyers and presentations at senior centers and tribal meetings.

Each subgrantee is required to have an independent audit each year and provide the Housing Division with a copy for review. The Housing Division checks subgrantee financial records as part of the monitoring function. At the end of each program year, Housing monitors the performance of the subgrantees by conducting program year

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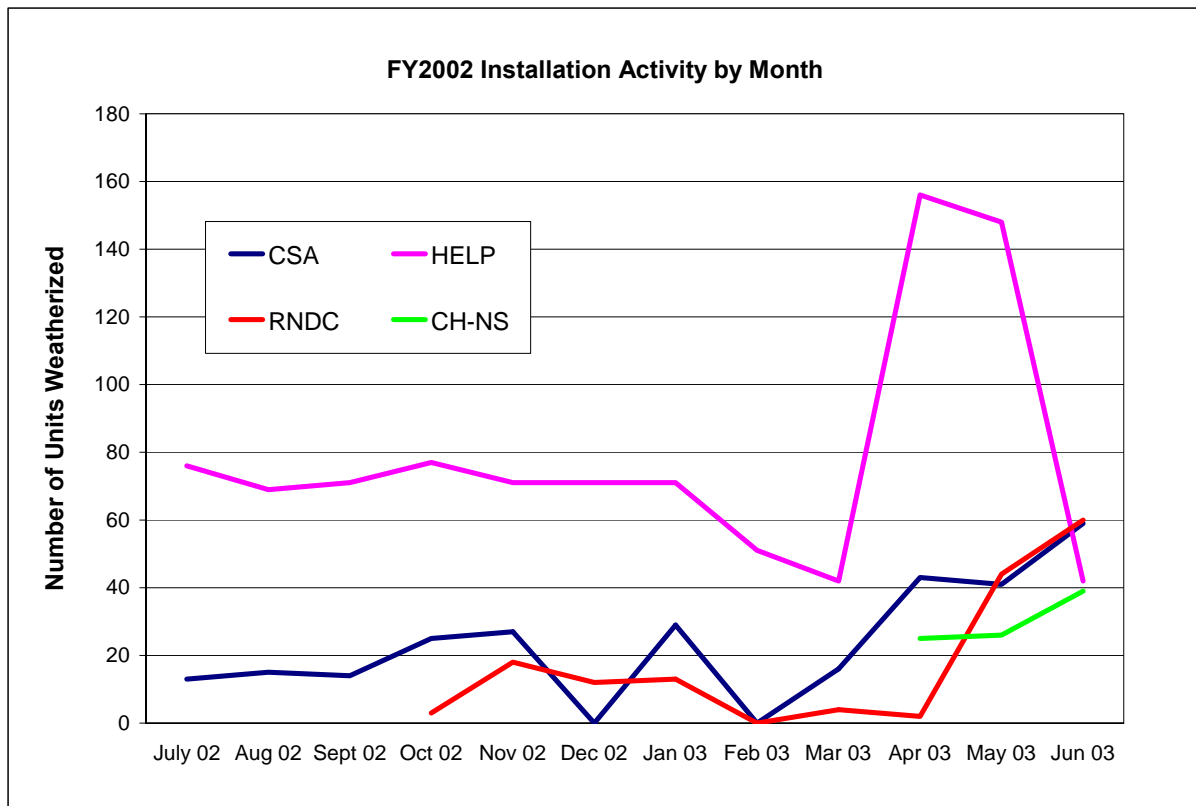
<sup>45</sup> As noted elsewhere in this report, the long-term federal LIHEAP weatherization effort which began in 1981 contains a funding formula that favors the Northeastern states.



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financial audits. In addition, 10% of each subgrantee's installations receive an on-site inspection including a blower door test, file review and financial review.

As shown in Figure 7, the subgrantees started in different months of SFY 2003. The level of activity of HELP (the purple line) is consistently higher than the level of activity of the other subgrantees for the fiscal year, although in June 2003, the last month of the fiscal year, activity was almost equal across agencies.



**Figure 8: Subgrantee Ramp-Up - Units Weatherized (SFY 2003).**

*1. Ramp up – HELP*

HELP has been providing weatherization services to the State since 1989. Prior to the availability of FEAC funding, the State provided about \$400,000 in DOE funding to weatherize about 300 homes. In January 2003, HELP was notified that funding was available. FEAC funding increased the budget to \$1.5 - 2 million, nearly a fourfold increase in the weatherization budget. The agency needed to ramp up quickly. In SFY 03 HELP's target was 740 weatherized units; 945 were completed by June 30. While the agency surpassed their target by June, some funds were reallocated to the other subgrantees in March because it was clear HELP would not

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expend their full budget. To meet the housing unit target, 45% of their treated units were large apartment complexes which require little weatherization work and, therefore, little expenditure of funds. Single family and mobile homes which require more work and the expenditure of more funds made up 16% and 17%, respectively, of the units treated.

HELP recruiting outreach includes presentations, talks, referrals of seniors, high utility bills, housing authorities, mobile home parks, apartment complexes, and referrals from other partner agencies and utilities provide referrals.

HELP is unique in that its weatherization technicians are employees and not subcontractors. During the initial ramp up, employees were hired increasing the staff to over 20 persons, including 16 weatherization technicians, an administrator, project manager, and an outreach and applications processor. As the largest provider, and because employees do the weatherization work, HELP needed an extensive increase in materials. They purchased 14 trucks, blower doors, tools, and supplies such as light bulbs and materials to construct solar screens. During the ramp-up period, the files organization process was time consuming. In the beginning, for example, manual verification (pulling files by hand) was necessary to determine whether the home had been previously weatherized within the last year. At that time, all monthly BWR reporting to the State was done by hand by counting from files. By the end of SFY 03, the agency had functioning spreadsheets so that data entered into the electronic files could be accessed and computed. Job costs and hours on the job were high in the beginning.

Moving into SFY 04, HELP continued to gear up and tailor their procedures to more efficiently and effectively meet their workload. Until September/October 2003 the employees constructed the solar screens in their warehouse. They found it was more cost effective to subcontract that work.

HELP continues to work through issues that can accompany growing pains from fast ramp-up of this size, including technician turnover and training, and technicians' issues with management styles and efforts to unionize. Some technicians were hired through HELP's Displaced Homeowner program. For various reasons, five employees were terminated. Bids were taken to hire other contractors but because there is a large building trade in the area, there is no shortage of work. Some contractors asked for \$85/hour for labor. The Las Vegas area construction market pays about \$25-\$30/hour. HELP pays about \$12/hr for weatherization technicians and would like to be more competitive and pay \$15/hr.

A new program manager hired in early 2004 has revamped the field crew, processes, and developed a software application to increase the efficiency of data tracking and administration. An outside weatherization subcontractor was hired in September 2003. This is the same contractor that City of Henderson-Neighborhood Services uses. These changes have improved and stabilized the work environment. The SFY 04 installation target was 645 units; 686 units were installed and they spent out the budget.

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## 2. *Ramp up – CSA*

From 1982 to 1994 CSA operated a weatherization program with its own weatherization crews and subcontractors. Prior to the availability of FEAC funding, the State provided about \$170,000 in DOE funding to weatherize approximately 40 units. FEAC funding increased the budget to \$500,000. An additional \$500,000 from the HELP reallocation was forwarded in April 2003.

The current Weatherization Program Manager was hired from another CSA department during the ramp-up period. Six intake personnel were needed and temporary employees were hired through March/April 2003. During the heyday of the ramp-up, there were 5 or 6 people taking applications and completing intakes. Ten intakes were often taken each day; the quota was 100 per week. However early production levels were low because required client documents were often missing and the job could not be given to the contractor for weatherization. In the early days, a pre-application screening was conducted. However, this process was too time-consuming, proved unnecessary, and was dropped.

Many resources were directed to outreach and intake during the ramp-up period. Early recruiting included the postcards and phone lists sent from Housing as well as some local advertising and flyers done by CSA. CSA also used their central database of customers who had received assistance in any of their other programs, including Head Start, Rental Assistance, Low-income Housing Development, First Time Homebuyer program, Energy Assistance, etc. Presentations were given for various groups, including for example, the Head Start population (about 680 people), the Center administration meetings and Policy Council meetings. At that time, there was much more outreach effort than completed intake. The outreach did not seem to have the returns expected.

Richard Heath and Associates (RHA) provided inspection services during the ramp-up period. CSA did not have staff trained at that time. Inspection is now conducted in-house, by two trained staff. One also works with the Rehab program, customer complaints, and standards and specifications. The second inspector also does minor repair as needed. More extensive repair is documented and referred back to the contractor.

The ramp-up process and work seemed to stabilize around September/October 2003 (SFY 04). Staff was reduced from 9 employees to 5. The staff now includes one intake/applications/data entry person, one backup office assistant who completed the BWR data entry during ramp-up and who conducts the energy education workshops, two field inspectors and supervisors, and the program manager.

The staff and program are now more stable and efficient. However, there is a large backlog, with only one intake person. If there is an emergency at a client's home or a health and safety issue, the intakes are put on hold to handle the emergency. In February 2004 there were about 530 households on the waiting list. While there is a

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backlog of work, there is not enough UEC funding to weatherize all the homes that qualify.

During the ramp up period there were 2 installation contractors. Now there is one; one contractor was dismissed in late 2003 (SFY 04). In short, the quality of work and performance of this crew was unsatisfactory. The current contractor has two crews who are able to handle the current work flow. There is no plan to increase the number of contractors.

CSA targets and schedules its weatherization jobs by County. Reno in Washoe County has the largest population, Storey County the smallest. Mineral County is three hours away and was added to their service area in SFY 04. CSA also targets single family and mobile homes where the largest energy savings can be captured.

### *3. Ramp up – City of Henderson Neighborhood Services*

The City of Henderson offered DOE funded weatherization from 1989-1992. They were approached by Housing and once the City of Henderson agreed to become a subgrantee in November 2002, it took 3-4 months to hire someone to manage the program as well as someone to take applications and do the inspections.

Weatherization subcontractors were hired as well. It was another three months to train staff and April 2003 before work could really start. The agency completed 91 units in 3 months and another 60 applications were in processing. To meet their target in a short time, 68% of the units recruited were in large apartment complexes. The FY 04 target is 200 homes.

There were initially two contractors, but one passed away and the remaining contractor, Ruiter Construction, has been doing all the work. Another contractor, Hanna Construction, was in training in February 2004 (SFY 04).

Moving into SFY 04 the agency began the process of hiring a student intern to do the intake and filing so that the specialist (who did all the office and field work) could concentrate on work in the field. The Agency has doubled their contract dollars twice. Their biggest concern about treating more homes would be the need to ramp up again.

### *4. Ramp up – RNDC*

Housing approached RNDC about participating as a UEC subgrantee in SFY 01 Prior to that RNDC did rehab and weatherization work, with the first programs offered in 1994-1995. RNDC began training that year. RNDC began weatherizing homes as a subgrantee in October 2002.

No additional staff was added when RNDC began doing the UEC funded weatherization work. The first grant was for \$5000 and was used to train existing staff. Computer equipment and repair, supplies, a percentage of the office rent, and

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advertising were initial start-up costs. The existing crews already doing rehab work for RNDC were solicited to provide weatherization work. UEC funded weatherization started up about October 2002. Contractor training and set-up led to a slow start.

Another person, who has since left the Agency, was in charge of weatherization when the initial ramp-up occurred. The current project manager was hired February 2003, more than half-way through SFY 03. The project manager is also the inspector, makes presentations to the community to recruit both participants and additional funders, supervises crews, etc.

In SFY 03 RNDC issued an RFP to contractors to bid on providing services. It was difficult to develop a price list for installed measures since costs are high in the remote eastern Nevada. The contracts are annual and another round of RFP was issued for SFY 04. Ongoing modifications are being made to better work with programs.

In SFY 03, RNDC had three subcontractors. The subcontractors were Desert Sage, Marks Way, and Harney Electric. Harney Electric did work on the reservation in McDermitt. In SFY 04, RNDC used Desert Sage, handling the largest amount of work in the northern area around Elko, Owyhee, and McDermitt. Ruitter Construction handled work in the southern portion of the territory, around Pahrump. Advance Installations Inc. covered the territory around Ely and across the state to Reno.

Desert Sage has had its own difficulty hiring, training, and retaining weatherization technicians. Technicians must pay their own training expenses. Desert Sage has instituted an incentive where they will reimburse expenses if the technician is with them one year.

The office continues to organize and refine internal program management. For example, a tracking system for each job, from application through finish, was being developed in Feb. 2004. The tracking system will assist management reporting and statistics such as the number of jobs in each stage. A new receptionist was recently hired (SFY 04) and a percentage of her time goes to assist the Program Manager with office tasks and work organization. If additional administrative funds were available, the workload could be increased. Additional office staff time would be required to handle additional load.

## *5. Leveraging Funds*

The amount of FEAC weatherization funds is not enough to meet the need. Agencies have 'no trouble' spending their money. Housing and the subgrantees have learned to work with the funds available. Dollars are leveraged between funding sources so that homes receive the maximum value and the dollars serve the most homeowners. Each agency is adept at leveraging the FEAC funds with other funds, including Housing Trust Funds, DOE weatherization funds, Federal dollars from the Community Development Block Grant (CDBG), rehab funds and DSM funds for example. DSM funds and Utility "Gap" funds can be used for those between 150%

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and 200% FPL. Subgrantees mix and match funds to meet the client's needs, according to the funding regulations.

Depending on the number of qualified applicants, work is prioritized by need and/or done on a first come-first served basis. Emergency situations will bring that client's work to the top of the list. Emergencies are such things as no winter heat, unvented gas ranges or cooktops, gas leaks, or no summer cooling.

Without much marketing, there is a waiting list for services at each of the agencies. For example, at CSA, there were over 500 waiting in February 2004. At RNDC, there were about 45 on the wait list across the service territory. There was also a 60-70 unit multifamily residence on the list for Elko. In the tribal projects RNDC serves, the whole community is scheduled at once. However with limited funds, homes must be treated on a first come-first served basis and not every home can be treated. RNDC is working with the Native American Program to explore leveraging additional funding to treat more homes. RNDC is also soliciting funding from the Coops that do not pay into the UEC so that additional weatherization can be completed.

The \$2500 *average* expenditure limit per home is a major issue that some subgrantees feel needs to be addressed. In single family homes for example, the allotted money per home is often spent, job costs sometimes ranging from \$2800-\$3600. Multifamily homes have fewer measures that can be installed and therefore cost less to treat. A mix of housing types is needed to balance the number of units targeted and the dollars available to spend.<sup>46</sup>

In another example, the new air conditioning requirement (SFY 04) that the unit be 13 SEER requires the purchase of more expensive air conditioners. The need for health and safety funding has also increased. For example, there are an increased number of homes requiring roof repair before weatherization. In February 2004 one agency had forty emergency health and safety repairs waiting to be completed. These included, for example, furnace replacements where the CO level is too high for safety.

## 6. *Recommendations*

- The per-home funding limit should be reviewed and raised if an additional designated fund for housing rehabilitation can be made available. Otherwise,

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<sup>46</sup> As a control tool, the Housing Division implemented a cap of \$4,000 per home for DOE or FEAC, or \$6,000 per home if both types of funding are used. The evaluation concurs that this is an excellent control tool. It provides some room above the average for certain cases for which need can be demonstrated, but holds to a strict cap. At the same time, there is a need for some separate rehab funding outside this limit. The Housing Division is running a residential weatherization program, not a housing rehabilitation program. However, there are some cases that require access to separate rehabilitation funding, and otherwise cannot proceed. Since this is the housing stock a separate fund needs to be identified or developed to allow the housing stock to be addressed.

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the evaluation concurs with the Housing Division policy of implementing a control tool to cap weatherization dollars per home. The Housing Division is using the DOE cap which is reviewed each year. For SFY 03 it was an average of \$2,500 per home. For SFY 2005 it will be \$2,650 per home. In addition, the single fund maximum is \$4,000 and if both DOE and FEAC funding are applied the cap is \$6,000. The evaluation recommendation is that this kind of control tool is an excellent way to insure good service to the largest number of homes.

- Statutory provision should be made to provide flexibility for the Welfare Division to designate additional funds for the Housing Division when this is jointly agreed between the Housing Division and the Welfare Division to be appropriate. At the same time, reliability of funding is more essential than amount of funding. The level of activity across years should be sustained and not reduced, but slowly expanded as the UEC collection amount slowly grows as projected by the Public Utility Commission forecast.
- We recommend that a separate repair fund be established outside of the funding for energy saving measures and equipment and subject to a different set of rules.

## *7. Administration Budgets*

The only cap in funding line items is in administration, which is 10% for the subgrantees of the Housing Division.

The Housing Division can obligate funds as needed into other categories. Currently, liability insurance and training are included under the weatherization services category in DOE funding. Housing would like to list the two categories separately. Housing would also like an additional position in its budget that would conduct third party inspections, training and technical assistance.

There is a cap of 10% of the total budget set for subgrantee administration funds. FEAC rules do not allow insurance or auditing expenses to come out of the program budget. Vehicle and warehouse insurance must come out of the program operations budget, as well as indirect personnel costs and operating costs of buildings weatherization staff is housed.

All subgrantees find the 10% administrative cap is too low and must move funds from other projects to help cover administration or spread staff costs over multiple projects to stay within the cap. CSA, for example, ran out of UEC administration funds in the seventh month of the fiscal year.

Administrative costs, for example, that other housing programs RNDC operates vary from 8%, which is "too low," to 15%, which is "wonderful." For CSA, administration budgets have ranged from 16% to 26% for other programs they have managed.

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## 8. *Recommendations*

- We recommend that liability insurance be created as a separate budget category, outside the administration category and cap.
- We recommend that the Housing Division consider a one-time audit of the subgrantees to establish if the 10% administrative cap is realistic, and to recommend either keeping the 10% cap or a different level for the cap.

## 9. *Contractor Training*

Technicians work in the field 30-90 days before attending mandatory training in Stockton, CA. Basic training is five days. Blower door and combustion appliance safety training is a five day course. Beginning in SFY 04, follow-up training is conducted about 6 months later at the job sites in Nevada.

While there is a line item in the subgrantee contracts for training, lost wages cannot be reimbursed with program funding. For some, the training budget was too low and a modification was requested to move funds from program operations and health and safety to training.

Contractors sent employees to training in shifts so that there were always technicians in the field and someone available to respond to emergencies (for example, no heating or no cooling). For contractors traveling from Ely and Elko the travel distance was a burden.

Contractors noted the basic training in Stockton focused on heating and the housing stock was not like the housing stock found around Nevada. Each of the four subgrantees said that the training needed to be tailored more to the Nevada climates. North and South Nevada are very different, with a large cooling load in Southern Nevada and a heating dominated climate in Northern Nevada. Both climates, contractors said, are different from California where the training was based. For example, temperatures can reach 112° in Southern Nevada and the focus should be on cooling which can be a life threatening issue. Many senior citizens' older homes use swamp coolers that reduce outside temperatures 10° -15° at 85° but are ineffective in meeting the overall need for cooling and are not energy efficient.

Contractors felt that in-field practice working on actual housing stock in their local area is best, with less time in the classroom. Each area tends to have different housing stock as well as different temperature grades. Around Las Vegas for example, the newer housing stock largely has slab-on-grade foundations and the older homes built in the 1960-1970s are cinder block construction. Northern Nevada



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has many mobile and manufactured homes. These types of homes require different treatment.

Other comments were that the training was 'too basic' for those with some prior weatherization experience. Another comment was that there were three views to weatherization: the State's, the installation agency's and that of the engineers setting the standards. Others thought various trainers presented the basic material differently. Subgrantees also wanted inspector and assessor training.

To remedy the training Housing made several changes at the end of SFY 04. Blower door training is held in Northern and Southern Nevada. One trainer was hired to provide all the basic training. Basic training was moved to Nevada, with two sessions in both Northern and Southern Nevada. Training is held in the field using the local housing stock in each area. A new inspector and assessor training class was held in March 2004 and the Policy and Procedures Manual developed.

The final training comments pertain to changes in the Policy and Procedures and Installation Standards Manuals. When changes or clarifications are needed to these manuals, the subgrantees received a completely new manual. Subgrantees had difficulty identifying the change and found it confusing. Sometimes only one page contained changes and it was hard to find. Some standards do not seem consistent; they should not be open to interpretation.

#### *10. Recommendation*

- We recommend that the Housing Division set up a protocol so that all revisions include a cover page that lists all changes made, including the page number and section changed.

#### *11. Energy Education*

Energy education is minimal for 3 of 4 subgrantees. Nevada Power Company and Sierra Pacific Power Company provide energy education brochures which are handed out to residents of weatherized homes. Beyond distributing the brochures, no formal energy education is delivered. Informal education happens on-site to the extent the technician and resident interact.

CSA used a REACH grant to offer a 3 hour energy education class. As part of the weatherization agreement, the head of household in each home is required to attend unless there are extenuating circumstances. Participants in the CSA energy education classes take a pre and post test and receive a \$25 credit on their Sierra Pacific power bill. After the REACH funding was expended Sierra Pacific granted \$10,000 toward energy education. There was no specific line item funding energy

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education in the FEAC grants in SFY 03 and SFY 04. CSA did include, and was granted, \$35,000 for energy education in SFY 05.

While NRS 702.270 does not specifically use the term “energy education” Provision 2(a) could include energy education. Provision 2(a) states the Housing Division may use distributed money to: “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.”

The energy savings analysis in this evaluation will examine the difference in energy savings between CSA and other agencies, and look for an effect of energy education.

## *12. The Application and Intake Processes*

Like other program areas, subgrantees have tailored the application and intake process to meet their needs. It is worth noting that two agencies, CSA and City of Henderson, both take the initial application by phone and conduct the final intake at the client’s residence. Both agencies like the in-home intake process so they can make personal contact with clients. The face-to-face contact adds a human touch early on. Staff can point out things that will be done or need to be taken care of prior to weatherization, and identify items that qualify for rehab or repair funds. The staff looks at the home environment for health and safety issues, unsanitary conditions, or other issues. A “walk away” process and form is put into play if the home needs a major clean-up or major rehab work before weatherization. The agencies prefer not to walk-away if possible.

The CSA intake staff visits the home with a digital camera and records the income, home ownership, and power bill. City of Henderson staff takes a copier into the field. Clients appreciate not taking their original documents out of the home to make copies. Going to the client’s home shortcuts problems with inadequate or improper documentation sent to the agency and the delay in obtaining proper documents.

While this in-home intake works for CSA and Henderson at the moment, it is threatened by staff stretched too thin handling both office and field work, including a large number of health and safety emergencies. In-home intake does not work logistically for HELP and RNDC. Both HELP and RNDC have made their own process work well.

## *13. Balance*

The Housing Division and the four subgrantees undertook a monumental task in SFY 03 to ramp up activities to weatherize nearly 1500+ homes expending nearly \$3.35

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million dollars, counting both DOE and FEAC funds. The number of homes needing weatherization, basic repair and health and safety services is very large. The subgrantees must leverage other program funds to treat homes but leveraging funds cannot always meet the need.

The funding-outreach-installation relationship is tricky to balance and presents rather a Catch-22. Many homes are energy inefficient and sometimes pose health and safety risks. There is much more work that is needed than the current funding levels can cover. Outreach must be carefully paced and delivered. Too much outreach results in too much interest and long waiting lists. A small, or non-existent, waiting list is desired by the agencies so that clients don't complain about waiting too long. Since weatherization is a long lasting approach to addressing high energy use, it is more effective in addressing energy burden in the long run. People will likely still need cash assistance with energy bills, but this cash, money management and budgeting will not solve the problems caused by energy inefficient housing. As long as the home remains untreated or unweatherized, bills will remain high because energy is wasted.

#### ***D. Formal and Informal Compliance***

The Housing Division is mandated to comply with certain codes regarding the weatherization program as stated in NRS 702. Below are some of the relevant passages from the code and a description of how Housing implemented these requirements or did not when it was unfeasible.

##### ***1. Specific Provisions***

#### **(1) 6(a) Solicit advice from Welfare and other knowledgeable persons**

A working group consisting of both Housing and Welfare management tried to streamline the application so that both agencies could use a common form.

Ongoing outreach was discussed by a nine member Outreach Advisory Committee established in September 2003 (SFY 04). The Committee included one person each from Housing, Sprint, PUC, HELP, CSA, Welfare, and three utility representatives. The Committee was formed to discuss marketing efforts and decided to hire a marketing firm to conduct statewide outreach. In the meantime, 40,000 flyers were distributed by a number of food closets in early 2004. By June 2004, Housing had received about 200 inquiries by clients receiving the flyers.

#### **(2) 6(c). Use the same simplified application form**

No application forms are used in common with Welfare. A working group consisting of both Housing and Welfare management tried to streamline the application so that

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both agencies could use a common form. 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>47</sup>

### **(3) 6(c). Coordinate with other agencies that provide energy assistance...**

Referrals are made by Welfare to Housing by monthly downloads of client information with FAC \$600 or more. Housing sends postcards to these high energy use clients with the intent to capture leads for the subgrantees. Daily emails of clients with FAC \$2500 or more are sent to Housing for immediate follow-up.<sup>48</sup>

The Housing Division coordinates with Sierra Pacific which provides "GAP" funding to treat homes up to 60% of area median income, which is about 200% of Federal Poverty Level. This Gap funding provides a 'safety net' and is available to weatherize homes between 150%-200% of FPL which would otherwise go untreated.

Additional utility DSM funding has helped toward client education curriculum. A portion of the funding for crew training and manuals came from DSM funds.

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

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

Unlike the EAP, which is centrally administered and implemented by the Nevada Welfare Division, the WAP is administered by the Housing Division but is implemented by four Subgrantees. This arrangement leads to some compliance problems, but these problems are minor, and have since been addressed.

Minor problems that became evident in the case review of the systematic random samples are as follows:

**(1) Documentation:** The vast majority of case files for FY 2003 do not include utility bills. For a large portion of the year, Subgrantees were unaware of the need to have

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47 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 1500 clients. With 15,000 income qualified LIHEAP clients, Housing could be overwhelmed with applications. A joint application system of this type would require careful scrutiny of costs and benefits.

48 The electronic link between Housing and Welfare is discussed in more detail in the Housing Automation section of this report.

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sample bills. The Subgrantees began maintaining copies of client utility bills after being notified by the Housing Division in February 2004.

**(2) Documentation:** One of the 119 case files was missing income verification.<sup>49</sup>

**(3) Uniform Application:** As far as specific compliance with subsection 3 of NRS 702.270, 1 of the cases appeared to be slightly over income but received assistance. It does not appear that this case fell under the emergency provision of subsection 4 of NRS 702.270.<sup>50</sup>

**(4) Best Practice:** The items on the BWR are entered electronically by all agencies and this data is submitted monthly to the State. We note, as a “best practice” that HELP has developed a database form to enter the information directly from the application to a computer file. While all subgrantees use the same Benefit Calculation Worksheets (BWR) to collect data. HELP’s software application electronically ties together the data collected on the application with the data collected on the BWR. This enhances the entire process (for discussion and recommendation, see section on automation).

**(5) General Quality of Records:** The WAP files are generally well kept and the problems listed above are the only problems that can be seen from a review of records. Due to the decentralized implementation of the program by the 4 community based organizations, the files lack overall uniformity. However, while forms not required by program policy may differ for each Subgrantee, all of the required forms are in fact being maintained by the program’s Subgrantees. However, the important information is present.<sup>51</sup>

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49 Another case did not include rent verification but was verified through the Welfare Division within the 90 day application window.

50 This case was corrected by Housing Division Accounting and the funding was taken from a non-UEC source.

51 Even though specific forms are not required by the regulations to be present in the files, 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 be in hard copy in the customer files. The hard copy of the forms also has things that cannot be entered electronically. While the focus in the SFY 2003 program evaluation has been on essential elements, for the SFY 2004 evaluation we will also look for 6 critical forms in addition to the application, income verification, and customer contact log that should be in all files. These are (1) the BWR – a 1-2 page form – the full copy should be in the file. (2) the CASIF (Combustion Appliance Safety Inspection Form) – a 6 page form completed in the field during the Combustion Appliance Safety assessment. (3) the Blower Door Weatherization Data Sheet is a 2 page document that records initial and final blower door assessments. (4) the Expenditure Report/Payment Authorization/Customer signoff form(s). (5) the Weatherization Field Measures Priority List or another form showing the precise items installed at the residence. (6) A 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.

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### 3. *Finding*

**Finding:** The Weatherization Assistance Program (WAP) is in compliance with the provisions of NRS 702.270 relevant to formal compliance.

### 4. *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 of real or apparent conflict of interest. Costs 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.

Although there was a significant carry forward of 75% from SFY 2002 (the “pre-program year) to SFY 2003, the cumulative carry forward from SFY 2003 to SFY 2004 was reduced to 33%, and has since been reduced to a minimal amount (to the level of what is essentially a contingency reserve for late costs at year end).

There are substantive problems in treating older rural homes that are far from current code. This is addressed in the section on Improvements and Plans. There is also a problem of expectations regarding replacement of screen doors (see section on Improvements and Plans). These, however, are the *normal* kinds of practical field problems that the implementation effort encounters as it moves forward.

Although these are subjective assessments, they are assessments for which no countervailing information of any kind has been encountered: it is a consensus of the evaluation team that everything about the Housing Division implementation “looks OK” and “feels right.” Expectations regarding rural homes and screen doors are practical problems that can be addressed through changes in program design.

## ***E. Housing Automation Analysis***

The automation study is focused in three areas: (1) the links between Housing and Welfare, (2) automation issues internal to Housing, and (3) automation issues internal to Welfare.

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## 1. *Links between Welfare and Housing*

In the ramp-up of SFY 02 and 03, a working group consisting of both Housing and Welfare management tried to streamline the application so that both agencies could use a common form. 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>52</sup>

Welfare Division and Housing Division management began discussing electronic links between Welfare and Housing so that Welfare could transfer data to Housing. The intent was to transfer data about income qualified clients to Housing so they could be contacted for targeted weatherization.

Early meetings included discussions about transferring enough demographic information for all Welfare clients receiving assistance so that Housing could complete an application and send it to potential clients, thereby shortening the response time from clients. However, this avenue was not pursued since household changes could occur between the data transfer and client contact. Also, if weatherization applications were sent to all 15,000 Welfare clients there would be more response than Housing could serve.

During SFY 03, in February and April 2003, Welfare made the first two data transfers to Housing. Data transfers included Welfare recipients with a fixed annual credit (FAC) of \$600 or more, the identified high energy users. Targeting this group would meet two needs. If homes with high energy use could be weatherized and the energy burden and associated fixed annual credit reduced, Welfare would be able to provide service to more clients. Also, targeting the high users makes the most practical sense in that these homes are likely the most energy inefficient. Low-income housing is often leaky and so requires much energy to heat and cool. It is prudent to target high energy users.

The downloads for these first transfers include a small amount of demographic information which allows Housing and the subgrantees to identify target populations of elderly, disabled, and the vulnerable in addition to high users. With data from the two transfers of 3607 names, Housing sent postcards in batches of 100 to potential clients. Housing then sent lists of these clients to the appropriate subgrantees for additional follow-up. These mailings are intended to generate leads for the subgrantees, instructing recipients to call the agency in their area.

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<sup>52</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 1500 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.

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Our analysis of the success of the postcards to generate leads shows that very few, only 21 of the 1527 total homes weatherized with FEAC or FEAC/DOE) funding were included in the Welfare download.<sup>53</sup> However, Welfare does not download their unique client identifier nor the utility account number with the rest of the data sent to Housing, and Housing did not collect or record the utility account number. Matching the BWR and Welfare download tables was done by name and address, in various configurations to obtain the largest number possible.<sup>54</sup>

## 2. *Welfare Link Recommendation*

- We recommend that the Welfare unique identifier, the UPI Index<sup>55</sup>, and the utility account numbers (sometimes two) be included in the download to Housing. With the UPI Index and the account numbers, weatherized homes that also receive Welfare LIHEA assistance can be easily identified for analysis. We also recommend that Housing broaden the download criteria, below FAC600.

## 3. *The Building Weatherization Report (BWR)*

The Housing Division made great progress during the ramp-up period in SFY 02 and extending into SFY 03 in developing the tools needed to track and manage the Weatherization Assistance Programs. In SFY 03, Housing increased the number of weatherized units per year to 1,527 with either DOE/FEAC or DOE only or FEAC only funding from 379 in SFY 02. This increase required a number of changes, not the least of which was expansions in data handling capabilities.

The Building Weatherization Report (BWR) is the primary tool used by the Housing Weatherization Assistance Programs to track weatherization measures installed. It has been used in the DOE funded weatherization programs since 1977 as a handwritten form with paper copies. An electronic version was developed in-house in late 2002 (SFY 03). This BWR is an ACCESS based database with additional reporting tables and databases developed to track both DOE and FEAC funded weatherization. The electronic BWR was put into use within the Housing Division and by the subgrantees in March 2003 (SFY 03).

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<sup>53</sup> Response rate is .0058% of the 3607 sent and 1.4% of homes weatherized.

<sup>54</sup> Matches were done by name alone, address alone, name & address together.

<sup>55</sup> The UPI Index number is unique to the client and is used in all Welfare Division-programs where the client receives services.



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The Housing and subgrantee BWR databases are stand-alone packages and are not electronically linked together. Ideally, each subgrantee would be networked to the Housing Division so that there would be one 'live' master database on the Housing server. This would need to be a web-based system where each subgrantee logged into the State system. The capability would cost time, effort, and resources to develop. The Housing Division examined this option but there were a number of issues not easily overcome. One was the issue of security and adequate firewalls between the State servers and outside agencies. At this time, there is no further discussion about networking the computers inside and outside the State agencies.<sup>56</sup>

A paper copy of the BWR is completed in the field by weatherization technicians. Completing the electronic BWR is not done in the field, but by office staff. When the weatherization work is finished, it is inspected. Then the owner or resident signs off on the paper copy of the BWR report. These forms are stored in the client's file.

The BWR data entry is completed by administrative staff since they deal with problems with the form, the application, job assignment, data entry and transmittal processes, verify funds expended, and other tasks related to the BWR. When data is entered into the BWR ACCESS form, the data writes to the BWR table. Electronic copies of the BWR and Financial Status Reports (FSR) are exported to Microsoft EXCEL and sent at the end of the month to the Housing Division by each subgrantee. Housing compiles the tables and has a number of routine management reports that it produces based on the subgrantee data.

#### 4. *Electronic Tablets*

At one of the subgrantee meetings a tool was introduced to collect BWR data in the field electronically, on PC tablets, similar to laptops. The Tablets would allow electronic data entry in the field and eliminate one data entry step. To load the BWR, each PC tablet purchased also requires a stand alone copy of Microsoft ACCESS.<sup>57</sup> Housing uses a PC Tablet in the field for monitoring.

Two subgrantee agencies have been using the PC Tablets more than others. According to the Subgrantees, this technology and process does not work as well as envisioned. While the agencies are still working with the technology to make it work, the subgrantees continue to use a paper copy of the BWR in the field and enter the electronic data back in the office. There are trade-offs between current and future

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<sup>56</sup> The issue of security is at the same time an inherently legitimate issue and an issue that may involve a technical assertion that contains an issue of unnecessary control. Some states have these links and some do not.

<sup>57</sup> The BWR is a Microsoft ACCESS based database.

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operational efficiencies, and the agencies will need to determine whether, and at what cost, the PC Tablets can become part of standard operations.

### 5. *BWR Adaptations*

Each of the subgrantees has varying levels of expertise working with computers. Some have modified the BWR to fit their needs in the field and for internal management reporting.

Agencies want the ability to tie all the data needed for internal reporting into one database and report. For example, at Neighborhood Services, multiple internal reports for various programs include the dates applications are taken, jobs completed and inspected. It would be useful for them to develop one internal management report. This is being explored and developed internally.

Another agency, HELP of Southern Nevada (WeatherEYES), is developing an internal network so that all databases for all programs can talk to each other. HELP operates a number of agencies and programs under one roof. Funding comes from various sources, including federal, state and others. Each program has its own reporting requirements according to the funding source. All databases were developed individually and do not talk to each other. Often clients participate in or qualify for more than one program. This requires duplicate data entry, or, sometimes qualified clients are not identified because they did not know to apply. HELP is incorporating all the individual software program tracking systems into a master system so that the individual program databases can communicate with each other. The vendor developing this 17 module system has a background in non-profit human services. Each time the program tracking requirements are changed however, the agency will need to hire the vendor to make the changes. So, for example, if the State decided to make additional changes to the database, it would require capital cost overhead to make changes to the system. Funding for these costs cannot come out of the program budget.

### 6. *Energy Savings Tracking Database*

An Energy Savings Tracking Database was developed for the Housing Division by Architectural Energy Corporation (AEC). This database interfaces with the BWR to compute therms and kWh savings using engineering estimates for measures installed.

For Nevada, AEC profiled savings by four climate zones and by building types. Profiles are currently based on county, fuel type, building type and historical installed cost data. These inputs figure into the computation of the savings to investment ratio

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(SIR). The SIR was used to rank measures and develop a “priority list” for the order of cost-effective measure installation. The priority installation list is now used in place of auditing each home prior to weatherization.

## *7. Program Reports Database*

Through SFY 03 the Housing Division had additional databases for internal management reporting. The subgrantees did not have this capability. The Program Report database includes the BWR table, the Financial Accounts table, and the Savings tables.

In the Program Reports database there are three Scorecard Reports, Monthly Production Reports and Financial Accounts Reports. For each there is one report for the Program as a whole, one for FEAC funded jobs and one for DOE funded jobs. Some homes use both funding streams and are included in both reports. The Monthly Reports summarize monthly production and are essentially the monthly version of the year to date Scorecard. Each of these three types of reports is also available for each of the four subgrantees individually.

The BWR monthly production reports and financial statements are provided electronically to Housing at the end of each month. Data is exported to Excel and the completed files for that month are selected for transmittal. At CSA for example, the IT staff encrypts and compresses the file before emailing it to the State. It takes about ½ hour each month to prepare the report for export.<sup>58</sup> Housing appends the data to their database to compute summary reports.

## *8. BWR Recommendations*

There are two types of corrections that should be made to the BWR in order to produce more accurate reporting results. These are data entry modifications and small changes to the BWR database. These recommendations are made after review of the original BWR databases in use in SFY 02 and 03. New versions of the BWR databases in use SFY 04 have not yet been evaluated.

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<sup>58</sup> CSA notes that to be in compliance with Federal HIPPA and other laws, the data files must be encrypted before sending over the Internet. CSA and Housing have a secure password to open the files. A standard disclaimer is sent with the electronic file. When Housing receives the encrypted data, the attachment is run, the password entered, and the file self extracts.

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## 9. *Data Entry Modification Recommendations*

1. Foremost, each job requires a unique job number. Several agencies had duplicate job numbers for different residences that causes problems with reporting and summarizing activity by job.
2. The utility account numbers that qualify the client for FEAC funded weatherization should be input on the form. This data was not required in SFY 03 and only exists in hard copy in the file, if at all.
3. A number of fields are not always coded by the subgrantee, that is, there is missing data. Each of the records should have complete data. For example, there are 13 cases (or less than one percent) where the number in the household is not recorded. Some fields are left blank where a zero or 'none' should be recorded. These include, for example, the number in the household over 60 (about 7% are missing), the number of disabled (6% are missing), the number under 6 (7% missing) and the number of Native Americans in the household (8% missing). While it might be assumed that no entry means zero or none, the zero/none answer should be recorded.

Other fields missing important information include for example, the fuel type (less than one percent missing), water heating fuel type (less than one percent missing), application date (37% missing), CFM reduction with duct sealing (18% missing), CFM reduction with shell sealing (18% missing), duct square footage (18% missing), existing floor R-value ( 83% missing), house square footage (error rate of 4%) and climate zone (86% missing). Other fields used to describe the housing have missing information including cooling type (21% missing), heating type (less than one percent missing).

FY 03 was a time in which the database did not look as good as it does today. The original database did not capture 80% of the information that it presently captures. The database was constantly evolving and some of the fields were not on the original electronic format so the fields would be vacant. The FY 03 database was not fully functional until March 2003 so approximately three quarters of SFY 03 had already passed before the subgrantees were doing the entries correctly and consistently. Under NRS 702, SFY 2003 is the first real program year, and it should be noted that this is what start-up years are like for programs. The data entry looked to be in good order for going into SFY 04.

Still, many of these entries are used in various computations and reports. It is important that the subgrantees completely fill out the BWR. If zero or none is the intended answer, then those values should be input.

4. There is a checkbox on the BWR for high energy user. This may be inaccurately recorded by the agencies. Observations and interviews at the

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agencies show the original application includes a checkbox for high energy user. This is checked if the client says they received LIHEA or a postcard. There is no check against the list of clients sent postcards by Housing. There is no check against the actual FAC. We recommend the agencies actually check the client application and BWR against the Housing list of clients with a fixed annual credit of \$600 or more before checking the high energy use box and/or using it to prioritize the order of weatherization jobs.

#### *10. BWR Database Modification Recommendations*

Interviews with subgrantees produced several suggestions that would make the BWR more accurate and user friendly. The electronic BWR from the State has limitations in the drop down menus so that the database does not exactly track the hard copy BWR completed in the field. These limitations in some instances do not allow for accurate data entry. For the most part the information that is required is for energy calculations appears to be accurate. Probably the subgrantees easily understand the need for accurate technical data, since they need it to do calculations. But for a state program, the demographics and classification data is also necessary.

BWR observations and recommendations made by the subgrantees include:

1. The choices for siding and foundations are too limited. For example, there is no place to indicate wood masonite framing or block foundation for mobile homes. Currently categories such as these are forced into existing choices (e.g., frame and crawlspace respectively).
2. Attic insulation existing levels are too limited. Most homes don't have these specified levels. It forces entry of inaccurate data.
3. More room is needed to record other measures that are out of the ordinary. The Housing Division is considering adding a drop down box to handle this concern.
4. More room is needed to record notes. The Housing Division is looking at adding more note space for the next program year.
5. In addition, an examination of the BWR database shows other areas that could be standardized. The Housing Division is looking at this area for the next program year.
6. Internal checks for missing data can be incorporated as validation rules. For example, each record that indicates attic insulation was installed should also have an entry for the number of square feet of attic insulated. There were 18 affirmative attic insulation installations with zero square feet installed. There

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were 61 with the number of bags of insulation coded as zero. Likewise, if an entry is recorded in the number of square feet of insulation installed, then the attic insulation installation should be checked 'yes.' There were 13 records with the number of square feet of attic insulation installed that did not indicate attic insulation was an installed measure. The same check should be conducted for floor insulation. There were 3 records with floor insulation indicated but zero square feet installed. For example, see the BWR FEAC Scorecard where 1 household received floor insulation and zero square feet of insulation were installed. The Housing Division has since entered validation rules. The Housing Division is adding to the list yearly as new validation rules are discovered.

7. The BWR shows that not all homes with CO detectors installed had a combustion inspection. Not all homes with combustion fuel had a combustion inspection. Apparently, some of the all electric homes (fuel & water heat both coded electric) had a combustion test. A check should be made to determine whether all homes with combustion appliances received a combustion appliance safety test (CAS). A checkbox for 'combustion appliance present' could be added to the BWR. This should remind the weatherization technicians to conduct the CAS and provide a means to document the presence of combustion appliances. The Housing Division is looking at this question. A CAS form is required on all houses with a combustion appliance.

#### *11. BWR Program Scorecard Recommendations*

1. On the BWR Program Scorecard, the report for the number of toilet dams installed is actually the total number installed and not the number of households receiving the measure.
2. The BWR Program Scorecard lists health and safety measures repaired and replaced, including air conditioners, evaporative coolers, furnaces, and heat pumps. A third column for 'clean and tune' should be added since this data is captured and provides additional information about the state of repair of the four appliances. The Housing Division has fixed this problem and "Clean and Tunes" has been added to the latest version.
3. The BWR Program Scorecard reports the number Air Conditioning and Evaporative Cooler Covers and the label needs correction. There is a typographical error in the label for Exhaust Fans. The Housing Division has fixed this problem in a later version

Other categories on the BWR Program Scorecard under 'Minor Home Repairs' could be added for roof repairs and painting. These are counted in separate categories. The number of 'other' home repairs could be recorded. Since a number of 'other'

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repairs are repeated and appear standard, these could be added to the BWR as specific categories. For example, corner pads, butyl tape, foam kits, door replacements, smoke detectors, combustion air vents, outlet gaskets, roof coatings, and door striker plates are quite common repairs. The Housing Division will review this suggestion and consider additions to future versions of the database.

## *12. Other Recommendations*

All agencies reported very good communications with Housing. While the agencies have various recommendations for BWR improvements, and we present recommendations here, it should be remembered that each change to the BWR form has a cost to each agency. Depending on how the BWR database has been integrated into an agency's existing network, changes will be more or less costly for each agency to make. Replacing the entire BWR database with modifications may be less costly in the long run and will also have some training cost attached. One database that incorporates the BWR and Program Reports databases is most practical and useful. The Housing Division has corrected this problem in a later version.

Weatherization technicians use other important forms in the field. These include the Blower Door Weatherization Data Sheet. To reduce the amount of paperwork in the field, items that are found on these forms which also appear on the BWR could be eliminated. For example, both the BWR and the Blower Door form ask for the dwelling type (structure), heating fuel type, heating system type, and cooling system type. The same answer options are not listed on both forms. The BWR could be modified to capture the largest number of answer options (combining the two forms' options) and used as the primary data source. We feel the use of this information is required in both places. On the BWR it is used for the energy calculations. On the BDDS it is used to estimate the economic stop perimeters by the crews and also whoever follows behind for monitoring.

## ***F. Housing Division Staffing Analysis***

Staffing for the program consists of two persons. These are the Weatherization Assistance Program Manager and a Program Officer.<sup>59</sup> The workload of this group

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59 The Civil Service title for these positions is Supervising Grants & Projects Analyst and Grants & Projects Analyst II. In Civil Service, job descriptions, titles, and position classifications seem to follow either a philosophy of specificity or of "broad-banding." An emphasis on specificity reflects the actual specialized knowledge and responsibilities within the domain of a government agency. The broad-banding approach classifies positions generically across agencies based on similar types of functions. To manage Weatherization for a state requires years of specialized experience. It requires understanding of buildings, residential contracting, the role of the building trades, community-based organizations, and the like. It also requires understanding of how physical, social, weather and other

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includes management of the Weatherization Assistance Program provisions of the federally funded DOE program, a similar program that has been of longstanding service but also chronically underfunded in relation to need for services.<sup>60</sup> Work of this part of the Housing Division is accomplished by direction of the WAP Manager through a set of four Subgrantee agencies that carry out the weatherization work and most related tasks for both the federal and UEC effort.

The UEC effort is restricted to customers of utilities that collect the Universal Energy Charge, while federally funded effort can be allocated to those areas served by utilities not covered by the UEC as well as those covered by the UEC.

The subgrantee agencies cover different regions of Nevada.<sup>61</sup> They are HELP of Southern Nevada (Las Vegas area), Community Services Agency (Storey, Carson, Washoe, Lyon, Churchill, and Douglas counties), City of Henderson Neighborhood Services (Henderson), and the Rural Nevada Development Corporation (located in Ely, RNDC covers most of the counties in rural areas of the state).

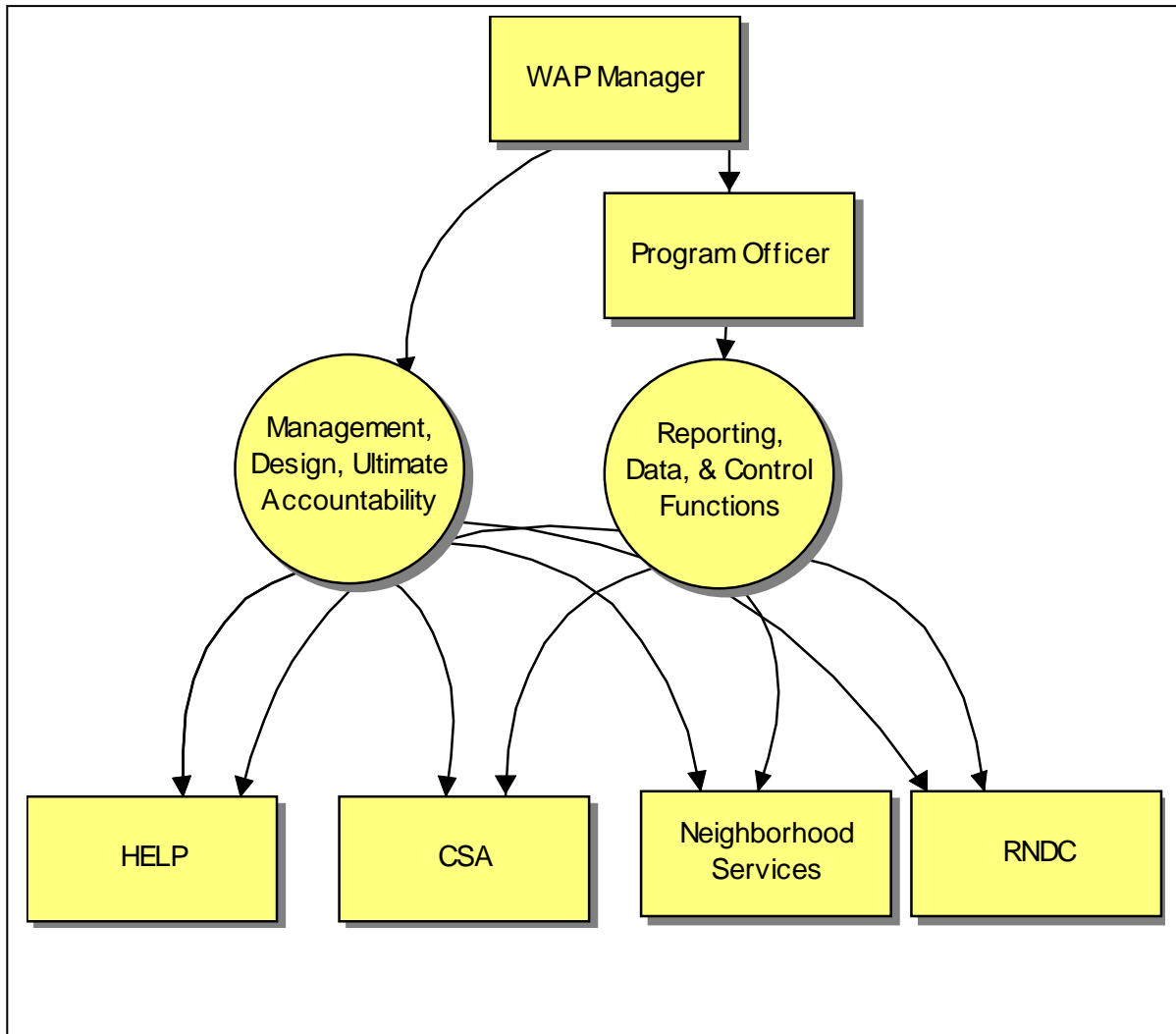
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factors affect program effort and results. While broad-banding has its “pluses” as well as its “minuses,” for the purposes of the evaluation it seems more relevant to use a terminology that better fits what people actually do. However, the recommendations relating to staff will need to be translated back into the proper Civil Service position terminology. Specific titles will have to be determined by the Housing Division through the appropriate process.

60 As noted elsewhere in this report, the federal funding formula favors the Northeastern States and the program does not take into account the different climate zones of Western States that create a need for continuous year-around services. The pre-existing federal program is the prototype for the UEC-funded state services. The Nevada program has been designed to capitalize from experience on the strong points of the federal program, with a few differences tailored to better meet needs in both Northern and Southern Nevada.

61 Subgrantees are discussed in Section V.



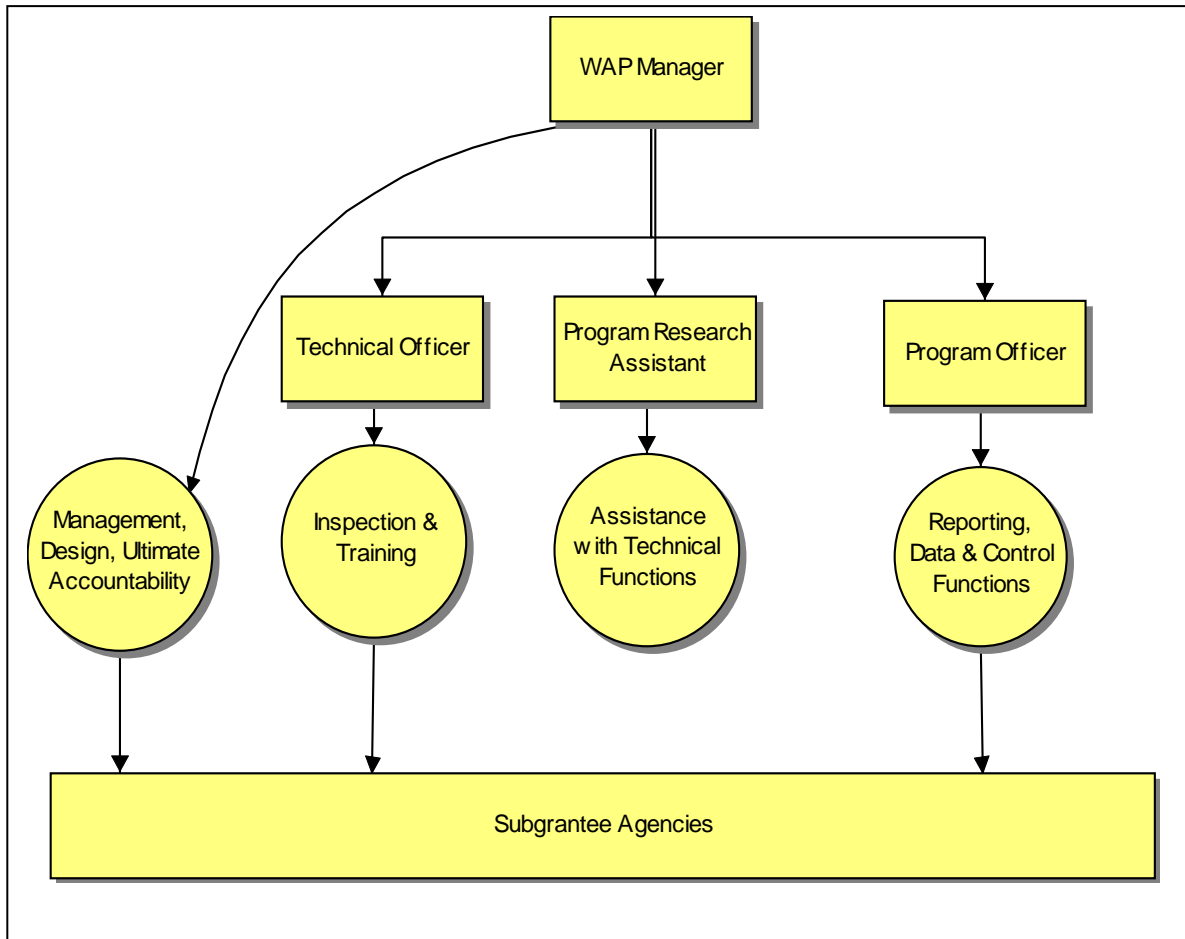


**Figure 9: Structure.**

A representation of the current organizational structure of the WAP effort is shown in Figure 9.<sup>62</sup> As shown in the chart, there are two responsible positions, the Manager and the Program Officer. Although the manager, of course, is the senior position with ultimate accountability for the program, the Program Officer has significant responsibilities to insure the data and reporting required by the extensive field work that is carried forward throughout the Northern and Southern Nevada by the Subgrantee agencies throughout the year.<sup>63</sup>

<sup>62</sup> This table is developed for the evaluation to illustrate positions and responsibilities. It is not an official agency organizational chart.

<sup>63</sup> In addition to standard reporting, detailed information is collected on work done on each home, the characteristics of homes in which energy saving installations have been made, and the like. This information is essential for fiscal integrity and also to documents physical improvements to improve practice for better efficiency and effectiveness.



**Figure 10: Recommended Structure.**

Based on the evaluation study of the program, the amount of work effort required by this part of the Housing Division is substantial.

To keep the program effort as carried out by the Subgrantee agencies well directed and accountable, two additional positions are required within this office. As noted below, experience would lead to a recommendation of seven positions in all (including the WAP manager); however we at this time recommend a staff of four as the minimum requirement. The recommended structure is shown in Figure 10.

- A Technical Officer is required to carryout inspection and training functions. Although, ideally, the inspection function should be supported by a Technical Officer and at least two inspectors, at this time the recommendation is to proceed with the creation of a Technical Officer position and the appointment of a Technical Officer to implement inspection and training functions. Both of these functions belong within the office rather than under contract with service providers. Although the Subgrantee agencies are well run and sound, it is

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important that the state have an inspection function independent of the agencies. It is not that this Officer is required to carry out all inspections, but that quality of all inspections is likely to be maintained and to improve simply by having this position in the Housing Division. In the Nevada context, with the substantial increase in need for services that is now being partially met by the UEC Weather Assistance Program funding in addition to the ongoing federal LIHEAP Weather Assistance Program funding, this position is necessary to help insure quality assurance. Nevada has not had an in depth system of Subgrantee community action agencies and other community agencies engaged in weatherization work, as have, for example, states in the Middle Atlantic and Northeast where a “critical mass” of Subgrantee agency effort has been long established. Because of this Nevada has to insure continued training of Subgrantee personnel. This is complicated not only by the lack of an in depth network of community action and related agencies in this area, but also by the situation in the market for persons with housing construction-related skills. Community agencies generally cannot pay at the same scales as private homebuilders, and as agency staff becomes seasoned in buildings work through service in residential Weatherization it is natural and realistic for there to be significant turnover. The Technical Officer position will enable some of the required ongoing training to be shifted from California to on-site training from the Housing Division.

- A Program Research Assistant is required to supplement the general work of the office and serve as an understudy to the Program Officer and the Technical Officer. In the context of Nevada’s continuing population expansion, the level of need, and the level of effort in the federal and UEC Weatherization Assistance Programs, an Assistant position is recommended at this time. This would bring state staff to four. A staff of four is a minimum required to keep functional accountability and control over the program and to insure that direction by the WAP Manager is carried out. It is also important in this context that there be an understudy position to help insure that essential knowledge in this area is retained by Housing Division over the coming years.

In the evaluation, there is a need to carefully balance the assessment of need with available funding, and also to review which functions are best done within the Housing Division and which outside. If the management percentage of funding for this function is brought into line with best practice in other states, or with the model of the federal program, and considering that there will be some offset of training funds, it would be possible to fund these two positions.

The amount and diversity of work carried out by the Housing Division in the area of the federal and UEC funded Weatherization Assistance Programs easily requires a seven person staff (including the manager).

By recommending a four person staff, we are not recommending the optimal program staffing, but the minimum necessary for ongoing program control, and ability to improve effectiveness.

### **G. Effectiveness and Efficiency**

For the SFY 2003 evaluation, the analysis of energy consumption and energy savings was carried out, but results are not reported due to data problems. The problems encountered are discussed in this section. The fundamental problem is fitting the evaluation cycle to the utility data capabilities. While it was envisioned that for each State Fiscal Year the evaluation report would provide analysis of that year's data, analysis related to utility data will necessarily lag by one evaluation report. This is because the method of analysis requires a full "baseline year," a program year (SFY), and a "post year," plus provision for data transfer and analysis. This is the same pattern as required for analysis of federal Weatherization Assistance Program results, which are reported with a lag of one to two years.

The "data years" required for each evaluation are shown in Figure 11, which shows quantitative analysis ("A") in December of each year. For portions of analysis dependent on utility data, the evaluation report will contain the analysis lagged by one program year. That is, the SFY 2004 evaluation report will contain the SFY 2003 quantitative analysis of utility consumption and energy savings data; the SFY 2005 evaluation report will contain the SFY 2004 analysis, and so on (Table 9).

| Baseline Years, Program Years, Post Years and Analysis |          |                  |                  |                  |                  |           |           |
|--|----------|------------------|------------------|------------------|------------------|-----------|-----------|
| 2001   | 2002     | 2003             | 2004             | 2005             | 2006             | 2007      |           |
| SFY 2002   | SFY 2003 | SFY 2004         | SFY 2005         | SFY 2006         | SFY 2007         |           |           |
|  | BASELINE | SFY 2003 PROGRAM | POST YEAR        | <b>A→</b>        |                  |           |           |
|  |          | BASELINE         | SFY 2004 PROGRAM | POST YEAR        | <b>A→</b>        |           |           |
|  |          |                  | BASELINE         | SFY 2005 PROGRAM | POST YEAR        | <b>A→</b> |           |
|  |          |                  |                  | BASELINE         | SFY 2006 PROGRAM | POST YEAR | <b>A→</b> |

**Figure 11: Timing for Quantitative Analysis of Utility Data.**

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| Inclusion of Utility-Related Data in Evaluation Reports |                        |                        |                                |  |
|---|------------------------|------------------------|--------------------------------|--|
| Program Year  | Baseline Year          | Post Year              | Quantitative Analysis Complete | Included in Evaluation Report for Program Year |
| SFY 2003  | July 2001<br>June 2002 | July 2003<br>June 2004 | Dec-04                         | SFY 2004                                       |
| SFY 2004  | July 2002<br>June 2003 | July 2004<br>June 2005 | Dec-05                         | SFY 2005                                       |
| SFY 2005  | July 2003<br>June 2004 | July 2005<br>June 2006 | Dec-06                         | SFY 2006                                       |
| SFY 2006  | July 2004<br>June 2005 | July 2006<br>June 2007 | Dec-07                         | SFY 2007                                       |

**Table 9: Reporting Sequence for Analysis Dependent on Utility Data.**

1. *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 insure data transfers and then actualizing the first set of data transfers took considerable time. The first data 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. 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.

2. *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, there is essentially a thirty-six month window on each analysis. The necessary length of this window means that there will be an analysis lag of one year.

The data requirements will also require each evaluation cycle to begin in December, rather than in the following July. Two data requests to the utilities will be required each year and each request will be split into two parts. One part will be focused on baseline data and the other on post year data and two program years will be included in each data request.

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### 3. *The SFY 2003 Data Request*

For the SFY 2003 evaluation, the data request was limited to homes weatherized in the first half of SFY 2003 (that is through December 31, 2002). However, additional information will be requested in the next data request.

The data reflects only participation in the early start up of the program before current procedures were put into place. Start up data is inherently not reflective of the actual program. It includes only the first two agencies involved in program delivery.

There was very high attrition in the samples. In each case the final sample at the analysis category level was less than thirty-five (35) households, which does not meet the sample size criterion for representative analysis. We think this high attrition is due at least in part to the high turnover of Western households, and particularly of low-income households in Nevada.

The evaluation sample design plan anticipated complete data on 300 homes from Northern Nevada and another 300 homes from Southern Nevada to reflect Nevada's climate diversity. Each part of the analysis plan called for group sizes of about 300. However, there were not sufficient numbers of homes weatherized to obtain the planned amount of data, and attrition further eliminated households from the samples. The plan was also for the SFY 2003 sample to include some homes that received both WAP and LIHEA services. For this initial "start-up" period, however, we found there was no overlap in the sample. And, as noted, there are a very small number of homes in the final samples due to attrition and the numbers were too small to permit analysis until additional data is requested and supplied by the utilities.

### 4. *Southern Nevada*

Nevada Power provides electricity for Southern Nevada homes and Southwest Gas provides gas. The slight over-sample includes 334 homes weatherized by the HELP agency. Of these, forty-seven (47) were identified by weatherization contractors as electric heat homes and 287 were natural gas heated homes. Only electric data was available for this analysis. Southwest Gas made a good faith effort to provide consumption and payment data. However, we found that Southwest Gas maintains data for only a twenty-four month window and could not supply the required baseline year data. We have addressed this by developing a new schedule for the utility data requests, which will now be made twice each year in order to catch the necessary data before it is deleted from utility data systems.

The following attrition table shows the steps used to prepare and analyze the data, and the number of cases available with each step. The plan was to use 300 homes, and there was a slight over-sample. Of the 334 homes with electric data, 175 had enough data needed for analysis in both the pre and post-weatherization periods. In

this case, homes with at least eleven (11) months of data both before and after weatherization were included.<sup>64</sup> Data was weather normalized using PRISM.<sup>65</sup> Data quality screens were imposed on the output to identify homes for which the model worked well and the normalized annual consumption could be considered reliable. Once screens were imposed, only one-hundred cases remained for analysis. These included nine electrically heated homes and ninety-one gas heated homes. The electric homes are far too few in number to warrant analysis. While there are ninety-one gas homes, a further breakdown shows that the final analysis group size by type of dwelling is in each case too small to warrant analysis for SFY 2003.

| <b>Attrition Table for Southern Nevada</b>  |                                       |
|---|---------------------------------------|
| Sample cases with data (N=334)  |                                       |
| Cases with at least 11 months of consumption data both before and after weatherization<br>N=175 |                                       |
| PRISM weather normalization<br>Data quality screens and checks<br>N=100                         |                                       |
| Electric Heat (N=9)   | Gas Heat (N = 91)                     |
| <b>Home Profiles for Southern Nevada</b>  |                                       |
| <b>Electric Heat (N=9)</b>  | <b>Gas Heat (N=91)</b>                |
| 2 2-4 Family  | 20 2-4 Family                         |
| 3 5+ Family   | 33 5+ Family                          |
| 3 Mobile Home   | 21 Mobile Home                        |
| 1 Single Family   | 17 Single Family                      |
| 4 owners, 5 renters   | 34 owners, 57 renters                 |
| 2 Electric AC   | 30 Electric AC                        |
| 1 Evaporative cooler  | 2 Evaporative cooler                  |
| 8 Electric water heaters  | 1 Electric water heater               |
| 1 Gas water heater  | 90 Gas water heaters                  |
| Average 3 measures installed per home   | Average 4 measures installed per home |

**Table 10: Attrition & Profiles - Southern Nevada.**

<sup>64</sup> A full year baseline and a full post year is the goal, but the analysis can be conducted with one month missing in either or both years.

<sup>65</sup> PRISM is the Princeton Scorekeeping Method, a standardized approach to weather normalization that is used across utilities to help insure consistency of results.

The number of measures installed in several measure groups, for the subsets of electric heat and gas heat are shown in Table 11.

- The water measures group includes the following, and any mix of these measures could be installed: water heater blanket, pipe wrap, low flow shower heads, faucet aerator, and toilet dam. Each item is counted as one measure.
- Infiltration measures include shell sealing, caulking, door bottom, and threshold. Again, any mix of these items can be installed and each item is counted as one measure.
- Repair and replacement of major equipment include the following: refrigerator replacement, air conditioner replacement, air conditioner repair, evaporative cooler replacement, evaporative cooler repair, furnace replacement, furnace repair, heat pump replacement, and heat pump repair.

| <b>Number of Measures Installed</b><br><b>(By Fuel Type and House Type in the Sample of Southern Nevada Homes)</b> |               |                     |                  |                    |                      |             |                         |                   |                     |                       |           |
|--|---------------|---------------------|------------------|--------------------|----------------------|-------------|-------------------------|-------------------|---------------------|-----------------------|-----------|
|  |               | Electric Heat (N=9) |                  |                    |                      |             | Natural Gas Heat (N=91) |                   |                     |                       |           |
|  | Installation  | 2-4 Family<br>N=2   | 5+ Family<br>N=3 | Mobile Home<br>N=3 | Single Family<br>N=1 | Total Elec. | 2-4 Family<br>N=20      | 5+ Family<br>N=33 | Mobile Home<br>N=21 | Single Family<br>N=17 | Total Gas |
| Water Measures   | Not installed |                     | 1                | 1                  |                      | 2           | 1                       | 9                 | 8                   | 7                     | 25        |
|  | 1 measure     | 1                   |                  |                    | 1                    | 2           | 3                       | 12                | 8                   | 7                     | 30        |
|  | 2 measures    | 1                   | 1                | 2                  |                      | 4           | 4                       | 5                 | 5                   | 1                     | 15        |
|  | 3 measures    |                     |                  |                    |                      |             | 9                       | 6                 |                     | 1                     | 16        |
|  | 4 measures    |                     | 1                |                    |                      | 1           | 3                       | 1                 |                     | 1                     | 5         |
| Compact Fluorescents   | Not installed |                     |                  | 3                  | 1                    | 4           | 2                       | 5                 | 19                  | 8                     | 34        |
|  | Installed     | 2                   | 3                |                    |                      | 5           | 18                      | 28                | 2                   | 9                     | 57        |
| Attic Insulation   | Not installed | 2                   | 3                | 3                  | 1                    | 9           | 20                      | 33                | 21                  | 12                    | 86        |
|  | Installed     |                     |                  |                    |                      |             |                         |                   |                     | 5                     | 5         |
| Infiltration Measures  | Not installed | 2                   | 3                | 3                  |                      | 8           | 16                      | 27                | 10                  | 7                     | 60        |
|  | 1 measure     |                     |                  |                    |                      |             | 3                       | 6                 | 10                  | 3                     | 22        |
|  | 2 measures    |                     |                  |                    | 1                    | 1           | 1                       |                   |                     | 7                     | 8         |
|  | 3 measures    |                     |                  |                    |                      |             |                         |                   | 1                   |                       | 1         |
| Duct Sealing & Insulation  | Not installed | 2                   | 3                | 3                  | 1                    | 9           | 20                      | 32                | 18                  | 13                    | 83        |
|  | Installed     |                     |                  |                    |                      |             |                         | 1                 | 3                   | 4                     | 8         |
| Repair-Replace Major Equipment   | Not installed | 2                   | 2                | 3                  | 1                    | 8           | 10                      | 9                 | 18                  | 10                    | 47        |
|  | 1 measure     |                     | 1                |                    |                      | 1           | 10                      | 24                | 2                   | 6                     | 42        |
|  | 2 measures    |                     |                  |                    |                      |             |                         |                   | 1                   | 1                     | 2         |
| Solar Screens  | Not installed |                     | 1                | 1                  |                      | 2           |                         | 4                 | 3                   | 2                     | 9         |
|  | Installed     | 2                   | 2                | 2                  | 1                    | 7           | 20                      | 29                | 18                  | 15                    | 82        |

**Table 11 Measures - Southern Nevada.**



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## 5. Northern Nevada

Sierra Pacific provides both gas and electricity for Northern Nevada homes. Both electric and gas data was made available by Sierra Pacific. While the planned sample was three hundred (300), the actual final sample was limited to sixty-five (65) homes weatherized by the CSA agency (Table 12). Of these, electric data was available for all and gas data for forty-three (43). Weatherization contractors identified the heating fuel type as electric for eight cases, natural gas for fifty-three, and propane for four. The propane heated homes were dropped from analysis. Also of the sixty-five homes, only twenty-three had electric air conditioning. Fourteen use electricity for water heating, forty-eight use gas for water heating, and three use propane to heat household water.

| Attrition Table for Northern Nevada   |  |
|---|--|
| Sample cases with data<br>N=65<br>N=65 electric data and N=39 gas data  |  |
| Cases with at least 11 months of consumption data<br>both before and after weatherization<br>N=46 electric and N=30 gas |  |
| PRISM weather normalization<br>Data quality screens and checks<br>N=36 electric and N=28                                |  |
| Electric Heat (N=36)  | Gas Heat (N = 28)                          |
| Home Profiles for Northern Nevada   |  |
| Electricity Only (N=36)   | Gas & Electric (N=28)                      |
| 2 2-4 Family  | 0 2-4 Family                               |
| 1 5+ Family   | 0 5+ Family                                |
| 19 Mobile Home  | 12 Mobile Home                             |
| 14 Single Family  | 16 Single Family                           |
| 32 owners, 4 renters  | 25 owners, 3 renters                       |
| 12 Electric AC  | 9 Electric AC                              |
| 4 Electric water heaters  | 1 Electric water heater                    |
| 32 Gas water heaters  | 27 Gas water heaters                       |
| Average 4.1 measures<br>installed per home  | Average 4.5 measures installed<br>per home |

**Table 12: Attrition & Profiles - Northern Nevada.**

In this analysis, all homes use electricity. However, not all homes heat with gas. Of the homes passing data quality screens, twenty-five had both electric and gas data. These homes are profiled below. No multifamily homes were heated with natural gas.

| <b>Profile of Homes With Both Gas and Electric Data</b> |
|---|
| Passing Data Quality Screens<br>N=25                    |
| 11 Mobile Homes, 14 Single Family                       |
| 8 electric AC   |
| 1 electric water heater, 24 natural gas water heaters   |
| 22 owners, 3 renters                                    |
| Average 4.3 measures installed                          |

**Table 13: Profile – Northern Nevada Homes with both Gas & Electric Data.**

| <b>Number of Measures Installed<br/>By Fuel Type and House Type<br/>Sample of Northern Nevada Homes with Using Gas Heat (N=28)</b> |               |                     |                       |       |
|--|---------------|---------------------|-----------------------|-------|
|  |               | Mobile Home<br>N=12 | Single Family<br>N=16 | Total |
| Water Measures   | Not installed | 2                   |                       | 2     |
|  | 1 measure     | 1                   | 7                     | 8     |
|  | 2 measures    | 5                   | 6                     | 11    |
|  | 3 measures    | 3                   | 3                     | 6     |
|  | 4 measures    | 1                   |                       | 1     |
| Lighting Measures  | Not installed | 12                  | 16                    | 28    |
| Attic Insulation   | Not installed | 12                  | 14                    | 26    |
|  | Installed     |                     | 2                     | 2     |
| Infiltration Measures  | Not installed | 1                   |                       | 1     |
|  | 1 measure     | 4                   | 8                     | 12    |
|  | 2 measures    | 6                   | 2                     | 8     |
|  | 3 measures    | 1                   | 6                     | 7     |
| Duct Sealing-Insulation  | Not installed | 1                   | 7                     | 8     |
|  | Installed     | 11                  | 9                     | 20    |
| Repair-Replace Major Equipment   | Not installed | 12                  | 14                    | 26    |
|  | 1 measure     |                     | 2                     | 2     |

**Table 14: Measures Installed - Northern Nevada Homes with Gas Heat.**

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Analysis in this area will go forward as we receive additional utility data. Based on the data constraints, the first full analysis will be for the SFY 2005 program year.

#### ***H. Improvements and Plans***

Suggestions have been put forward for improvement of the Weatherization Assistance Program part of the UEC. These include, of course, the staffing recommendation that we have put forward in this report.

Other suggestions include:

**Housing Repair Fund:** Providing the weatherization work effort with access to a fund that could cover necessary home repairs. A significant problem encountered in the field installation effort is old rural homes that do not meet current architectural code. When trying to do meaningful weatherization retrofit work, there can be a barrier of about \$1,000 per home (or somewhat over \$1,000) due to the need to replace old knob and tube wiring. Proceeding to weatherize without bringing the wiring to code creates a fire hazard. So these rural homes have to be skipped over for significant energy savings measures. Yet, in rural Nevada, these are often the homes that require treatment.

The Housing Division has, at times, been able to secure access to repair funding by applying other state housing funding. However, this arrangement is not currently in place. Also, the Housing Division is working on trying to secure federal cooperation that might provide such funding for a small number of rural homes that meet both UEC and federal criteria.

There remains, however, a clear need for a designated repair fund outside the UEC guidelines that currently cannot sustain the cost overhead of this type of repair work. The fact is that rural Nevada has a real history and the older housing is what it is. Realistically, the UEC program has to overcome this repair barrier one way or another. The recommendation is to create a designated fund outside other cost-effectiveness considerations or tests to meet this real rural need. 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:** Justification of additional funds from utilities under the framework of Integrated Resource Planning where the Least-Cost alternative to utilities may be an addition to the ongoing residential weatherization work. Essentially, this is a “coordinated program” recommendation in which, for Demand-Side Management (DSM) purposes the work carried out already under the federally funded and state

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UEC residential weatherization effort would be looked at by the utilities as an off-budget cost for purposes of developing a DSM addition to the current program.<sup>66</sup>

Crews are already in the homes and carrying out the UEC work. Since that is a “sunk cost,” could the utilities use that effort as leverage to fund additional measures that are not covered under the current program? It should be noted that Sierra Pacific Power Company and Nevada Power do provide DSM assistance that is used, for example, by Henderson Neighborhood Services to extend residential weatherization beyond the UEC income limit of 150% of the federal poverty level, so that a coordinated program approach does exist in that sense. The proposal here, however, differs in the concept of an “add on” to homes covered by the current program. As proposed by Ernest Nielson, there could be both an energy use component and a separate demand component to this funding because the 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.<sup>67</sup>

**Screen Doors.** In those cases in which a door must be replaced, it is not unusual for the home’s old screen door to either come apart or to not to fit back with the new door. This does not affect energy efficiency, but is noted as a problem in meeting expectations of households.<sup>68</sup>

The reason screen doors are not an allowable measure is that they do not contribute to energy savings, so the Housing Division cannot authorize installation. Still, households expect to have the screen put back and this is a possible health issue. Although not justifiable from an energy perspective, these are rationales for a rule that would require that screens to be restored to homes that had them when the work crew arrived. However, this would require a separate fund for “customer relations overhead, health, and repair.”

**Alternative Energy.** In some states, there has been an attempt to develop low-income solar and renewable measures. The most cost-effective of these is typically solar water heating. The drawbacks to this approach are the initial cost of the equipment and the eventual cost of maintenance, repair, and eventual replacement of equipment at the end of its service life. On the plus side, solar

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66 Technique for 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.

67 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.

68 The screen door problem came up in review of documents and records in which both families and subgrantee agencies raised this problem.

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water heating can remove hot water related needs from the need for connected utility supply. It is not clear, exactly, how the cost, maintenance, and replacement issues can be addressed. However, the area is technically promising and it has been shown in pilots in other states that low-income homeowners are quite good with the care of the equipment and appreciate this part of the yearly cycle of energy needs of their homes disappearing from their utility bills. With the growing capability of community-based organizations, it may be that a way can be found to combine an organizational framework, and ownership framework, and a service capability to make these approaches completely workable.<sup>69</sup>

**Windows.** Energy efficient replacement windows are often the most popular measure in terms of satisfaction when they are incorporated into a retrofit program. They tend to make a home “look good” as well as contribute to energy efficiency. The problem is that, while a very effective energy saving measure, windows tend to be expensive.<sup>70</sup>

### 1. *Recommendations*

At this time, for the SFY 2003 evaluation, recommendations for the Housing Division are limited:

(1) **Staffing** – The staff should be expanded to four positions, as discussed above.<sup>71</sup>

(2) **Repair Fund** – Designate a separate repair fund (to overcome this barrier to weatherizing rural Nevada homes, and to cover small additional overhead costs of this type, such as the screen doors).

(3) **Continuity of Funding** – although not discussed above, the Housing Division should in no case lose funding, and should be able to plan for a slow expansion over the next several years. The PUC projects a slow but sure increase in funding for the UEC as energy use and population in Nevada continues to increase (dramatically, in comparison with other states). It is important that the legislature and the executive, who examine and review this programmatic effort

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69 Ernest K. Nielsen, see footnote above, has been advocating for addition of some solar and/or renewable measures. As noted, the technical problems are basically solved. Also, each year, price is dropping for the necessary equipment. However, there are issues of cost and structure of approach remaining for resolution. Clearly, this is an area for continued exploration, effort, and proposals.

70 Ernest K. Nielsen, see above, has advocated incorporation of some windows in the measure mix. It is possible that some form of windows measure, on a limited basis, could be made to work. This is an area worth continued exploration,

71 See Staffing section of this report.

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from a higher level take into account the need to maintain funding and avoid shifts that might move program funding down (or up then down). The overall effort is served by a conservative approach that provides sure and gradually increasing funding.

The other ideas proposed are good, but require further development. We suggest that the Housing Division continue to work with stakeholders and advocates to see if some form of each of these could be made workable and tried out, perhaps on a limited basis. These are areas in which to jointly develop workable proposals.

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## VII. ENERGY ASSISTANCE PROGRAM

### A. *Formal and Informal Compliance*

**Finding: The Energy Assistance Program (EAP) program is in compliance with subsections 3 and 6 NRS 702.260, the relevant sections related to formal compliance.**

Records were checked by drawing a systematic random sample of cases. In a careful examination of 161 client files developed as systematic random samples from the Las Vegas office and the Carson City headquarters office, there were no major problems with the procedures used to carry out the program or in the calculations of appropriate assistance amounts.

A few **minor problems** did surface, however.

**Arithmetic Calculation:** Approximately 26% (42 of 161) of the cases had FACs that had to be reduced by \$1.00 due to a bug in the computer system that causes a rounding error. No case in the random sample shows an increase to the FAC caused by the bug. A one dollar reduction in the FAC is not a serious problem when looked on a case by case basis, but on the macro level it indicates a significant amount of money that is not being paid out due to an idiosyncrasy in the computer system. (See section on Automation.)

**Case Documentation:** Cases should include verification documentation. Of the 161 sampled cases, 6 did not include proper rent verification and 24 of the 161 cases (nearly 15%) did not include a utility bill sample. While this is not a strict program requirement, it is recommended that both rent verification and a utility bill sample be included in the case files. Also, two Benefit Calculation Worksheets (BCWs) did not have caseworker signatures, both from the Las Vegas office. (See section on Alternative Staffing.)

**Determination of Eligibility:** Virtually all cases were in full compliance with subsection 3 of NRS 702.260 (eligibility). Those that were not in full compliance did not have substantive errors. All approved cases were under 150% Federal Poverty Level and cases over 150% FPL were properly denied. There were, however a few small issues with the calculation of the household energy burden and the FAC, defined in subsection 6 of NRS 702.260. Of the 161 cases, 15 had a miscalculated household energy burden and 9 of those 15 used the automated BCW. The maximum miscalculation was \$3.00, and most were under \$0.50. Also, a check of the FAC calculations shows that 8 cases were exactly \$1.00 short. In light of the

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computer system bug (above), this seems to be due to caseworkers reducing the FAC by a dollar to match the output of the system. Considering the amount of dollars represented in all the calculations these errors are negligible, but they do point to possible human or computer error in the calculations of household energy burden.

**Uniform Application:** Only one case of the 161 sampled contains a serious issue concerning uniform application. One case from the Las Vegas office was denied due to the calculated FAC being less than \$10. A change was made to the program guidelines that allowed for any household determined to be income eligible to receive a minimum benefit of \$120 if the FAC was calculated to be less than that amount. There was no indication in the case file that the application was recertified following the change in guidelines.<sup>72</sup> All other cases exhibited a sufficient amount of consistency to be considered uniform.

**Informal Compliance:** With regard to informal compliance, that is, meeting expectations that are outside formal requirements, there was a problem in SFY 2003 in implementing the program in a way that could fully expend program funds. However, when closely studied in the evaluation, it turned out that administration and staff worked well with the practical constraints that were encountered. The constraints were primarily in getting the necessary computer based tools in place to provide Fund for Energy Conservation payment assistance. These are described in the following section. Viewed objectively, management and staff did a fine job in working with these challenges, developing manual and computer “work-arounds” that allowed service to begin while the necessary computer support to provide the program was being developed.

#### **A. *Welfare Automation Analysis for SFY 2003***

Essential computer support was not fully in place in SFY 2003.

A program of the complexity and statewide scale as the combined federal and Nevada payment assistance programs would likely require a staff multiple of four or five time current staffing to accomplish the same work in the absence of computer support as the effort scales up to full participation levels. The scale of the payment assistance program means it is dependent on computer based systems to insure the exactness and appropriateness of specific calculations that must be carried out for each client.

Necessary computer system support includes:

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<sup>72</sup> The EAP Program Officer informed the evaluation team that this case was not picked up by the computer system after the change in procedure. The case is now being reprocessed and the appropriate (in this case, \$120) payment assistance amount will be delivered.



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- Calculation of energy burden and the correct payment assistance amount using the appropriate and standardized method of calculation for each client.
  - Electronic linkages between the Welfare Division and the major utilities to secure gas and electric energy usage data on a current basis when processing each client application.
  - Computer generated lists in electronic format (sometimes generated across systems) to support outreach. Eventually, these linkages will enable participation in LIHEA based on screening and participation in other Welfare Division services.
  - Computer coordination with the Housing Division.
  - Computerized management reports to be used by the Program Manager and Program Officer to insure program accountability, access to information, and to use in program control.

From the base of experience in the federal LIHEA program, the program scale approximately doubled during FY 2003. Prior to receipt of UEC funding, LIHEA funding served 8,500 households at or below 150% of poverty. With UEC funding in SFY 2003 over 17,500 households applied and 15,000 received assistance considering LIHEA and UEC together. Doubling the number of households served was one of several changes that accompanied implementation of Nevada payment assistance in SFY 2003.

These changes required substantive accommodation in the program design and delivery structure and in the supporting computer arrangements. These included providing for the application of different funding sources, incorporating a number of specific changes between the federal LIHEA and more adequately adapted state program, and moving to a year-around program design.

All such changes require implementation within the “parallel universe” of computer support systems. The necessary computer support changes were implemented gradually within the overall “vision” of a long-term information technology strategy. Due to the pace of computer implementation, it is likely that it will take until SFY 2005 for required computer support to reach a level that would have been essential for full program implementation in SFY 2003.

The lack of computer support capabilities required program management and staff to “cover off” for the effects of the lags and constrained the ability of Welfare Division program staff to meet SFY 2003 service goals. During SFY 2003, computer calculations had to be checked by staff. Almost all work effort required manual

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“work-around” or required manual checking. Implementation of computer support significantly lagged.<sup>73</sup>

### 1. *Vision & Realities*

The “vision” or the long-term strategy on the computer side appears appropriate and even excellent. The long-term high-level strategy of (the former) Welfare’s Deputy Administrator for Information Systems, Program & Field Operations was to simplify the various Welfare programs through automation.<sup>74</sup> There are three basic components of this high level system, from the perspective of energy payment assistance:

- NOMADS - NOMADS is the Welfare Division’s primary computer server, the processor that tracks such programs as TANF, Food Stamps, Medicaid, Child support, and others, but not the Low Income Home Energy Assistance program (LIHEA). This is an Internet based server intentionally designed so State offices anywhere can access the system.<sup>75</sup>
- OASIS - OASIS was developed and designed by an outside contractor, Covansys® to allow for automated case management of the clients assigned to the Division’s Employment and Training program. OASIS was built with a

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<sup>73</sup> Readers familiar with implementation of computer support in complex and statewide program efforts or in large corporate organizations will not find a substantial lag in computer capabilities to be an unusual occurrence. As a rule of thumb, programs of the scale and complexity of the Nevada payment assistance program take about five years to get fully up to speed. Also, it is not unreasonable for technical computer support of the complexity required in this instance to require at least three years to become fully in-place and functional. Expressed as a practical “rule of thumb,” if you think computer support will be in place in a year, it will take three. One reason these practical expectations have emerged in organizational analysis is that the technical computer work necessary to support program implementation is more difficult than we are likely to take into account in the planning stage. Another reason is that where implementation and technical projects were once staffed-up quickly to move forward, today the tendency in both government and corporations is to short-staff both implementation and computer functions and add staff only on the basis of demonstrated need. This approach avoids problems of over-spending on administration and technical functions and other problems of quick start-ups, but it has the consequence that programs come up to full implementation slowly because they cannot do their work efficiently until the technical systems on which they rely for most steps in their work processes are mature.

<sup>74</sup> A new Deputy Administrator for Information Systems was hired at the end of SFY 2004. The former Deputy Administrator for Information Systems is now the Deputy Administrator for Program & Field Operations.

<sup>75</sup> NOMADS is fully operational. However, some readers may recall that NOMADS had its own multi-year history of difficult development. Now that Nevada is better developing its own in-house computer talent and resources in comparison with past years, development problems of this type are likely to recede into the technical history of state computer support. However, control of such problems in the computer area requires a “critical mass” of in-house computer management, systems analysis, and programming talent and capability.

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robust forms and notices capability, which works in conjunction with NOMADS. It does outgoing document imaging but not incoming document imaging. OASIS development cost about 1.5 million dollars and was already underway in 2001.<sup>76</sup>

- LIHEA – LIHEA is a separate computer system for the Low Income Home Energy Assistance program. Anything unique to LIHEA resides in the LIHEA database. It was designed so that if the data is entered in either NOMADS or OASIS that is common to LIHEA, data fields are populated in LIHEA without the need for duplicate entry. LIHEA uses the OASIS forms engine.

Computer system support *enabled* program implementation and delivery, but – at the same time – computer system support was also the *single major factor that constrained* program delivery.

Development got off to a slow start during SFY 2002. After six months of development as a stand-alone system, IS decided LIHEA would mirror the OASIS computer system and couple with OASIS and NOMADS. In late SFY 2002 (the spring of 2002) development work began. Development work continued in SFY 2003.

The contract for development was awarded to an off-shore company, Covansys®. While two programmers worked at the Welfare office on design work, the development for the low-income energy assistance system was carried out in India.<sup>77</sup>

Six features of the new system should be noted:

- First, there is the existence of the database itself. This database underlies the ability of the Program Manager and Program Officer to implement and operate the payment assistance program. The LIHEA database development was the first most significant LIHEA computer/programming change brought about with UEC funding. The LIHEA database development cost about \$254,000 (much

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<sup>76</sup> OASIS also required a special focus of existing computer resources, but is now functional. To some extent, OASIS was – in the bigger picture – a system that had to generally take priority over LIHEA for computer resources until it was fully operational.

<sup>77</sup> The award was prior to the emergence of the current controversy surrounding the ethics of award of public agency contracts to companies offering skilled programmers substantially below cost of using American computer professionals by off shoring computer support. Today, these issues are the subject of national news analysis programs on TV, in newspapers, and in publications aimed at a technical audience. *MIT Technology Review* recently reported the off shoring of thousands of IBM mid-level and some high-level computer jobs to China and India. At the recent joint low-income conferences in St. Louis, there was informal discussion on whether public and state governments should off shore computer jobs. Off shoring can dramatically reduce cost to states while insuring substantial profit to a vendor, which can capture a piece of the difference in national wage levels as profit while still underbidding vendors that do not offshore. The downside is that off shoring degrades the job structures of US states and cities.

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less than it otherwise might have cost) because it piggybacked on OASIS development. On-going IT work continues to run about \$200,000 per year.

- Second, the eventual incorporation of fiscal functions. Before LIHEA database development, fiscal functions were a separate system application (Legacy system) for the energy assistance program. With the new system, the general ledger in the LIHEA database system allows payment to different vendors from different funding sources, that is, federal LIHEA, UEC, and Housing Bond funds. Initially, the new system presented problems. As initially programmed, the computer could only equally allocate costs, requiring manual work-around. After some time, the programming was changed to handle any kind of payment split between multiple energy funding sources or vendors.<sup>78</sup> Today, this part of the system works well, but it was not working well in SFY 2003. The incorporation of fiscal functions is a significant feature of the LIHEA system.
- A third change to the original Welfare LIHEA program was in the administrative handling of LIHEA funding. In the old program, which followed the federal funding pattern observed in other states, the LIHEA season would open and everyone applied at once during that window. The season would stay open eight months (from about September to April)<sup>79</sup>, or until funding ran out. Once the UEC funding arrived, it permitted development of a more appropriate year-around program.
- As the Nevada payment assistance program was implemented, it initially followed the legacy pattern of the federal LIHEA funding cycle. In July 2002, at the onset of SFY 2003, about 8,000 applications were sent, all at once, to prior year recipients, resulting in a three month processing backlog. In July 2003, the beginning of SFY 2004, the Welfare Division began to send the application mailings in groups, and the program became a year-round program, as envisioned by the legislation.

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<sup>78</sup> It is a commonplace experience that in a situation in which the computer has a high capability to automate a function and link it to others in a way that might facilitate work performance, the intermediate results can both create additional work and reduce capabilities. In this case, initially, the automation of fiscal functions had less capability to deal with the actual substance and complexity of the work than the previous arrangement. This part of the system now works well. However the process of change in moving from the old arrangement caused additional manual work for SFY 2003.

<sup>79</sup> Year around service is a major change brought about by the UEC. In states that do not have a UEC, the LIHEA (or LIHEAP, as some states designate their programs) is open for a little over half a year and funding is focused on winter. This design meets the needs of the Northeastern states (which are favored in the federal funding formula). The year-around arrangement is much more appropriate for Nevada. This approach permits Nevada to provide service during both summer and winter, a format that is much better tailored to the Western region and to the different climate zones in the Northern and Southern Nevada.

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- A fifth important change is that recipients are now informed that their benefit has to last 12 months and they need to try to budget utility payments.<sup>80</sup>
  - Sixth, recipients are mailed an application eleven months after receipt of the prior year benefit.

All of these changes provide a base for increased effectiveness of program operations.

## 2. *Progress, Problems and Workarounds*

In order to operate the Nevada energy assistance program, the Welfare Division requires the cooperation, through computer interface, with the three largest utilities in the State, serving 88% of Welfare Division payment assistance client base. Welfare retrieves twelve months of energy usage history to compute the individual client's energy burden and the client's benefit amount.

When the initial computer link-ups were developed in SFY 03, there was trouble exchanging data because two of the three utilities were using old encryption software. This created long delays processing applications for about sixty percent (60%) of applicants. At that time, the processing time was 6-10 weeks. The utility

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<sup>80</sup> There has been much discussion of application of the yearly payment assistance amount on a monthly (rather than a one-time) basis. In the current payment assistance program implementation the full payment assistance amount for the year is sent to the utility as a single payment. If this amount exceeds the current amount owed by the customer to the utility, the utility carries over the difference and applies it to the subsequent bill, and so on until the benefit is expended. This means that the actual operation of payment assistance takes the form of a lump sum payment to the utilities, which then apply it to cover the next set of monthly bills in full, leaving the subsequent utility bills completely to the client until payment assistance is sent for the following year. Advocates would like the payment to come in the form of twelve (12) equal monthly payments from the Welfare Division to the utility or from the utility to the customer. The Welfare Division investigated the options and found there are two problems. First, neither the Welfare data systems nor the utility data systems are currently programmed to hold a year's payment and allocate it by month as a contribution to each monthly bill. [Yet, in the abstract, the purpose of the program is to pay the amount of each bill above a certain percentage of income. Ideally, each month the customer would pay the percent of income and the remainder of the current bill would be covered by the payment assistance amount for the year.] Second, because an estimated 60% of households served by the program move in a year tracking the moves to apply the equal payments would be administratively difficult. Currently, when a client moves the utility calls Welfare for instructions. The amount of benefit left on the account is tracked and sent back to Welfare. If a new energy vendor is identified the benefits can be reissued to the new vendor. If the vendor is the same but the address changes, Welfare applies the benefit to the new account address. In SFY 2004, Welfare added a new requirement that stated the client must notify Welfare of a move within 10 days or the benefit cannot be reissued. In Las Vegas, one staff person tracks households in the program who move. In the West, households generally move much more frequently than in other regions of the country. Although low-income households tend to move more than others, the combined effect yields high transience in Nevada. The special draw of Las Vegas and Reno, and the state's current rapid population growth by in-migration from other states also contribute to this unusual situation.

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computer connections have now been upgraded and the processing time is down to 2-4 weeks. The goal is to complete the applications in thirty days; two weeks would be ideal. As an indication of significant progress, no application has taken longer than thirty days to process in SFY 2004.

As suggested by the examples above, the development of the OASIS and LIHEA databases and associated automation of the payment assistance program has involved gradual solution of many computer related problems. The original LIHEA database was delivered about six weeks late, in mid-August 2002, and it was 'working' but unfinished. Note that this basic tool to enable the payment assistance program was not provided to the Program Manager until the beginning of calendar year 2003. To add to the delays in completing and debugging the database programming, they were written in JAVA script which, at that time, no one at the State was trained to use.<sup>81</sup>

- In the database delivered by Covansys®, data could be entered but no payments could be made until November. While the system possessed the capabilities for authorization of payment the Division was delayed in securing the approval of new payment methodologies from the State Controller's Office. This concern has since been corrected.
- The system as delivered by Covansys® was not computing income or benefits correctly. As a "work-around" a stand-alone Microsoft EXCEL spreadsheet (the Benefit Calculation Worksheet or BCW) was developed by a LIHEA staff member to calculate benefits. While the LIHEA database now computes benefits, it is often wrong (and randomly wrong) rounding the benefit up or down by \$1. The Benefit Calculation Worksheet (BCW) is still used and a paper copy kept in the client's file. This is still an open item. It is a small matter for each client, but the computer system should be able to handle rounding to the correct dollar.

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<sup>81</sup> The contract with Covansys® was terminated upon state acknowledgement of completion. Thereafter the state assumed ongoing maintenance and operational responsibilities. While from some perspectives, the work was eventually "signed-off" and accepted, from other perspectives – including those associated with trying to get the assistance program implemented and working efficiently, there were numerous and substantive problems with Covansys® work. In particular, although the program functioned to pass the acceptance test, as client data was added into the system all management reports ceased to function. It was determined that if a management report option was selected, the entire system ceased to function, so the reporting functions to provide the computerized information with which to steer the program were turned off throughout SFY 2003. All reporting was done through manual work-around. One of the case managers in the Welfare Division helped considerably in this situation by designing some Excel programs that kept the program functioning while providing a check on energy burden and payment assistance calculations. Requests for fixes for the LIHEA system accumulated and only the most essential were done during SFY 2003. According to the (new at the end of SFY 2004) Director of Information Systems, fixing the management reports will be a top priority in SFY 2005 and it is expected that the system will be fully functional by the end of 2005.

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- The computer was designed to determine which fund to draw from to pay out benefits. Housing Bond funds and federal LIHEA funds are used in addition to UEC funds. This slowed the expenditure of funds and contributed to UEC under spending. The system was changed in late SFY 2004 to draw from UEC first, then LIHEA. This was an essential feature because the program strategy to serve all of the people of Nevada is to use UEC funds where authorized so that similar services can be provided using LIHEA funds to other households. Without this control feature, LIHEA funds would be expended first and run out.
  - Through SFY 2003 and 2004, the system had a problem with applicants spanning two fiscal years. That is, if a client applied in one SFY (in June for example) and sent in the completed application in the next SFY (in July), staff members could not view or access the data entered in the prior fiscal year. This problem was fixed by the end of SFY 2004.
  - There are a variety of other problems, all of which have work-arounds developed by LIHEA staff. One of the most significant problems is that none of the database reports worked through SFY 2003 and SFY 2004. Staff members manually generate routine reports. For example, to track the number of vulnerable members of the household (children under 6, elderly, disabled) staff members put sticky notes on the Notices of Eligibility that are tallied at the end of the day. Spreadsheets are manually generated to tally the number of applications received. It takes 3 to 5 hours each week to manually generate the weekly vendor payment report.

Manual tracking and data entry has a 4% error rate. Fixing the reports had been a work item for 18 months in February 2004. At that time, there were 25 items including these and other problems on the IT work order and 19 prioritized for work.

Much staff time has been spent discovering problems, determining their extent, and developing tasks to work around the problem. The Program Officer and Program Manager have developed a work-around for every problem and a method to manually generate each routine report (there are at least 14). They have computed the amount of time each work-around adds to process each application. Just computing the BCW adds 5 minutes per application.

The Program Officer and Program Manager determined that with the new LIHEA database system, caseworkers should be able to complete 16 applications per day. Prior to UEC caseworkers completed 20 certifications per day. Currently, caseworkers are able to complete 12 certifications per day or about 1.5 each hour. If they could complete four more per day, the nine caseworkers could complete an additional 36 cases per day, or, 180 per week. This is equivalent to one new staff member.

The Program Officer and Program Manager spend fifteen percent (15%) of their time on system issues and work-arounds, including manually generated routine reports.

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This is time that could be spent more productively doing other things. For example, five percent (5%) might be spent monitoring staff. Five percent (5%) could be used with vendors and caseworkers on rules and regulation issues. The other five percent (5%) could be used monitoring the system issues. If routine reports were functional, another lower level staff member could be responsible for many of them.

Without the constant system monitoring and work-around, client benefits would not be correctly computed, requests for information would not be sent and the client could be dropped, and routine management reports could not be generated which, for example, include payments to energy vendors. These and other computer shortcomings are serious issues and the State IT group is working on them. However there are two things hampering quick turnaround: funding and status on the long list of IT tasks.

Regarding funding, the (previous) IT Manager noted that if he assigns more people to the LIHEA system work that the budget would be expended faster, and if something came up, there would be no funds to deal with the problem. Spreading limited funds over the year became a matter of juggling priorities. The EAP Program Manager notes however, that the legislature provided for this situation by designating certain key areas that could be covered as needed, including outreach and program design. The Program Manager requested approval to hire a dedicated programmer. The request took 18 months for approval, and it was not until mid SFY 2004 that the required IT staff resources to complete and maintain computer support were finally in place.

In SFY 2003, the (former) Deputy Administrator for Information Systems approached database work by prioritized need. Problems with critical operations that impact fiscal integrity were addressed first, *e.g.*, if a problem impacts calculating eligibility correctly or producing accurate notices it came first. If the problem did not fall under critical operations then it would fall back in priority and have to compete for IT time and resources with all of the other needs in the Welfare Division programs.

For SFY 2003, this created a “Catch 22” situation. It meant that the most serious problems were addressed; however, if there was a work-around the problem was considered to not be a priority and therefore subjected to review with all other Divisional requests for automation assistance.<sup>82</sup>

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<sup>82</sup> At the beginning of SFY 2005, nearly all problems discussed in this section have been resolved and there is a focus on developing the missing management reports. However, it likely that the level of computer support required for the payment assistance program will be in place and functional by the end of SFY 2005. Much of this requirement was missing in SFY 2003.



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### 3. *Automation in the Future*

Intake agencies assist clients to complete applications and then forward the application to the main Welfare office for eligibility determination. Agencies and advocates have expressed a desire to have the intake sites complete applications and determine eligibility and benefits. This would require the outside Agencies to be tied into the State computer system. The Deputy Administrator for Program & Field Operations notes that there are three levels of things that need to happen to be able to have other agencies determine eligibility and process the applications. Time and money to build the infrastructure are the issues, not technology. However, building a system that exists outside of the State computer system firewall where outside users can come into the State system poses many security issues.

Things that need to happen include:

Level 1: The State has already begun building an open domain website. This provides access on a case management level. Just like pins and debit cards recognize the user, they have built a system to recognize the user to initiate a case. The biggest concern is that outside users don't "pollute" the site with bad data, fictitious data, duplicate data, etc. The system must be built so that entries can be merged into a common record without duplicates. The architecture to support this has been developed on a limited basis for a couple of programs, and it is being tested now.

Level 2: Registered outside user sites must be developed. This includes systems needed to authenticate partners who can view and change data. In the future it would be desirable for customers to be able to log in at kiosks and change their phone number and address instead of taking staff time to go into the system to make these kinds of changes.

Level 3: There are 12 points on the State computer systems that are critical eligibility verification points. If registered advocates or community agencies want to determine eligibility, they would need to sign liability statements. For example, if the customer is ineligible because the registered agency got any of these 12 points wrong, and the agency erroneously authorizes benefits, then the registered agency must be willing and ready to return the client's benefit to the State.

While a system like this might be more effective and efficient in the long run, it takes time and money to put it into place. The "master plan" is an open domain system, with a voice response unit, internet site, and more. Some development has been underway for about two years, leveraging funds as appropriate from various federal and state sources. However, in addition to the many serious issues that must be addressed, there are other cost issues to consider. These include duplication of office infrastructure, e.g., phones, computers, staff, etc. While the State is not opposed to allowing outside agencies to determine eligibility and authorize benefits, this is apparently not something that will happen in the near future.

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#### 4. *Recommendation*

(1) **Provide Computer Resources.** Based on the SFY 2003 implementation and performance, we recommend the State Welfare Division adequately fund development of the computer systems, taking a more client oriented approach to meeting the needs of LIHEA Program Manager and Officer. Programmers dedicated to LIHEA should be assigned or hired.

This is a formal recommendation, based on the record. However, this recommendation has already been carried into in practice as this evaluation report is completed, and by the end of SFY 2004 there were three programmers dedicated to the LIHEA program. The (new) IT Manager is placing priority on the development of the missing management reports during SFY 2005.

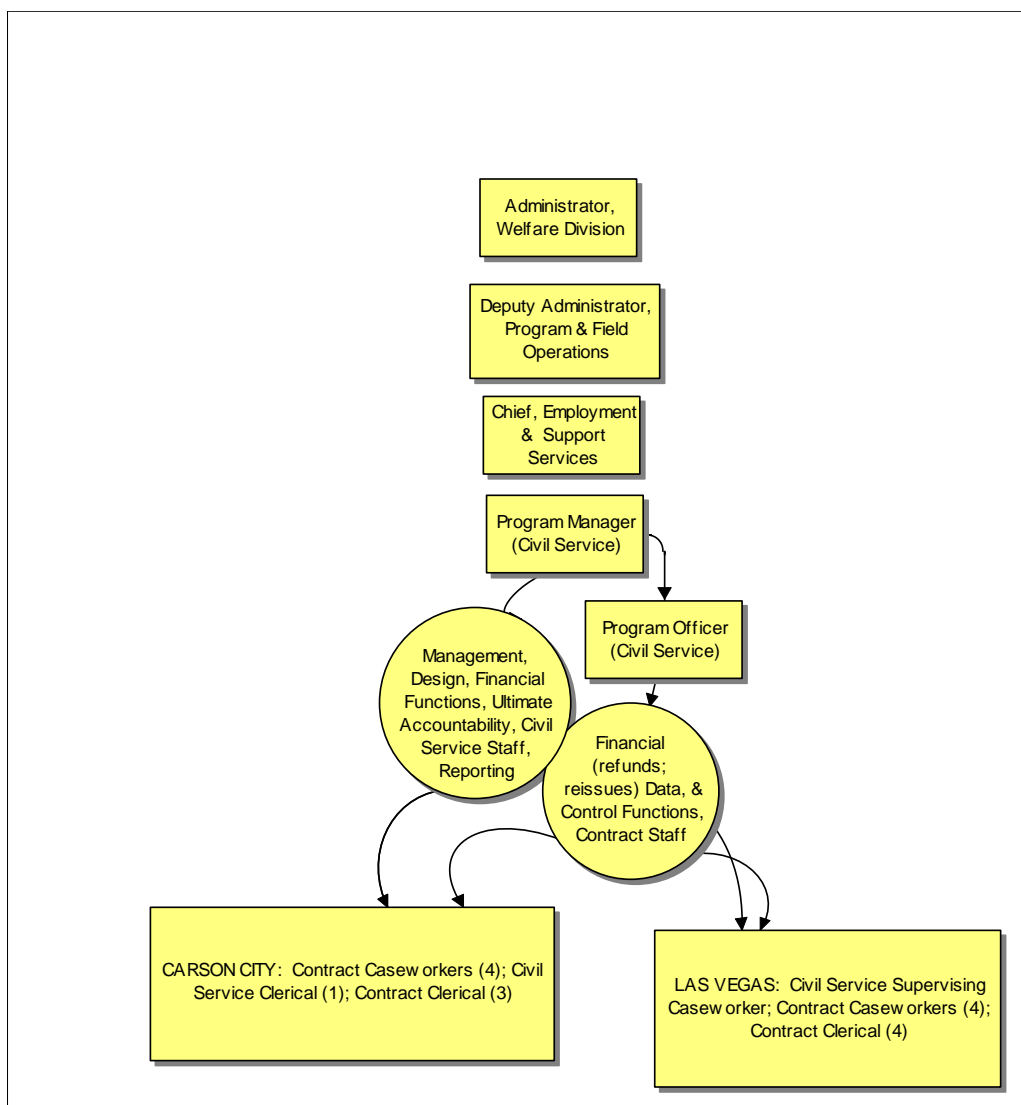
The LIHEA Program Manager and Program Officer have noted the dedication of the programmers and have expressed confidence that the program computer support will be fully in place and operational by the end of SFY 2005.

#### ***B. Staffing Analysis***

Prior to the UEC, the Welfare Division operated the statewide program from Carson City with a staff of five state employees. The staff consisted of the Program Manager, three caseworkers, and one clerical support person. With the beginning of the UEC, one of the Carson City caseworker positions was converted to a Program Officer position to provide for the new program and to augment the day-to-day management of the new contract caseworker staff. The office structure now consists of the Program Manager, a Program Officer, six contract caseworkers, two Civil Service case workers, one Civil Service clerical staff member, and three contract clerical persons.

In addition, due to the need for a Las Vegas office to service the increased caseload for UEC a Las Vegas office was opened. The structure of the Las Vegas office consists of a Supervising Caseworker, four full-time contract caseworkers, and four contract clerical support persons. The Supervising Caseworker is Civil Service; the other positions are contract staff.

The basic structure for the Welfare Division implementation for UEC (and for continuing LIHEA services) is shown in Figure 13.



**Figure 12: Structure.**

With this staff size and composition, the Welfare Division will be 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, note that all of the eight casework positions and seven of the eight clerical positions are currently contract staff. While it may be reasonable to use contract staff on a short term basis for program start-up, 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 insuring program stability and eventual maturity of

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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.

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.

These advantages of contract workers are outweighed by other considerations. First, this program will be long-term. Our evaluation projections of need indicate that need for the program is large and will increase.<sup>83</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. Second, some depth of staff is essential to accommodate changes, or what economists like to call “changes in structure” as a result of deeper economic changes. Similar to a security function, there is a need to maintain some staff depth simply for that purpose – to have the depth to accommodate challenges. Third, there is some ethical obligation when assignments are long-term and essential to state needs and purposes to integrate the positions into the state career structure to 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.<sup>84</sup>

There are two specific recommendations:

(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.

(2) For the current time, at least five of the positions should be converted to Civil Service.

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<sup>83</sup> Please see sections on Need and Program Logic.

<sup>84</sup> Please see section on Best Practices.

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### **C. Effectiveness and Efficiency**

In the FY 2003 Energy Assistance Program Funding and Participation Information provided by the Welfare Division, the program fiscal year is summarized (Table 15). As shown in this table, considering the LIHEA and UEC/FEAC funding together, the year over year improvement in meeting the need was about 163%. This was a

| <b>CUMULATIVE DEMOGRAPHIC &amp; STATISTICAL COMPARISON OF FY03 TO FY02<br/>(State of Nevada Integrated Financial System)</b> |                  |                 |              |                 |
|--|------------------|-----------------|--------------|-----------------|
| <b>CATEGORIES</b>  | <b>STATEWIDE</b> |                 |              |                 |
|  | <b>FY 03</b>     | <b>Jun-2003</b> | <b>FY 02</b> | <b>Jun-2002</b> |
| Applications Received  | 17,925           |                 | 20,076       |                 |
| Applications Approved  | 15,144           | 84.5%           | 15,665       | 78.0%           |
| Applications Denied  | 2,781            | 15.5%           | 4,411        | 22.0%           |
| *Households Approved with ELDERLY  | 5,755            | 38.0%           | 8,416        | 53.7%           |
| *Households Approved with DISABLED   | 7,269            | 48.0%           | 9,497        | 60.6%           |
| *Households Approved with CHILDREN UNDER 2   | 1,424            | 9.4%            | 2,603        | 16.6%           |
| Households Approved in SUBSIDIZED HOUSING  | 5,452            | 36.0%           | 5,965        | 38.1%           |
| Households Approved Below 75% of Poverty Level   | 4,943            | 32.6%           | 5,069        | 32.4%           |
| Households Approved Between 75%-100% of Poverty  | 4,611            | 30.4%           | 4,716        | 30.1%           |
| Households Approved Between 101%-125% of Poverty   | 3,282            | 21.7%           | 3,544        | 22.6%           |
| Households Approved Between 126%-150% of Poverty   | 2,308            | 15.2%           | 2,336        | 14.9%           |
| TOTAL EXPENDITURES/OBLIGATIONS   | \$6,966,405      |                 | \$4,415,217  |                 |
| AVERAGE PAYMENT  | \$460            |                 | \$282        |                 |

**Table 15: Comparison of SFY 2003 & SFY 2002.**

substantial improvement. It derives from two changes that result from the administration of the UEC/FEAC. These are a reduction in the number of denied applications and an average grant size that much better approximates actual energy bill shortfalls experienced by Nevada low-income households.

The Welfare Division experienced practical program constraints in getting a fully functional computer support system in place. This makes these accomplishments a substantial success of the SFY 2003 service effort as authorized by NRS 702. At the same time, it should be noted that although much work was done to implement the required computer support, the programming needed to make the program fully operational as well as produce the necessary administrative reporting were not completed during SFY 2003.<sup>85</sup> Caseworkers were constrained in providing services because fully functional support technology had yet to be completed. This came to be perceived as an outreach problem. From an outside or overall perspective there was a need to extend outreach in SFY 2003. Without the computer infrastructure in

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<sup>85</sup> For this area, please see the Welfare Automation section in this report.

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place it is not clear that it would have been possible to serve higher numbers of applicants. For SFY 2003, after encountering significant computer constraints as a startup problem, the Welfare Division took the best possible approach by focusing on putting the tools in place to make full program implementation possible, and at the same time to insuring that federal funds were fully expended. At the same time, the Welfare Division engaged in discussions and requested input from the advisory committee on ways to improve outreach. From the perspective of the evaluation, all of these steps along with the relative effort invested in each for SFY 2003 were the appropriate management calls.

Nevada has designed a very good program with features that are innovative and which are better than or as good in class program features as those of other states.<sup>86</sup> Implementing a major program of this type is a three to five year job. It is likely that only during SFY 2005 that all of the necessary computer tools will be in place to allow caseworkers to fully implement the statutory intent of the program, and for the managers to have the necessary administrative tools to fully target and control the program effort.

To summarize, for SFY 2003 efficiency and effectiveness were constrained by one-time start-up problems; bringing the necessary tools to operate the program into place. Only a portion of the SFY 2003 UEC/FEAC fund was used and this became perceived as a problem of outreach. However, from the evaluative perspective, management performed well in the face of the challenges encountered. Given the emergence of computer technical support problems, management made the correct calls in focusing on this area, expending the LIHEA dollars prior to UEC/FEAC dollars, and engaging the advisory committee in the area of outreach.

While, from an outside perspective it is reasonable to desire the SFY 2003 FEAC to be fully committed in SFY 2003, it was initially necessary to get the systems working. Also, within the technical constraints given for SFY 2003, caseworkers and management did what was possible by increasing the grant size in accordance with the statute and by increasing the rate of approvals of applications. As noted, in this regard total output (in dollars to meet energy bill deficiencies) in meeting need in SFY 2003 (across both LIHEA and UEC) was 165% of SFY 2002.

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<sup>86</sup> It combines gas and electricity, it implements and is based on energy burden, it keys to the state median residential energy burden and so is inherently fair, the payment percentage is set realistically so that it can actually meet the need (as opposed to being a gesture), and the combination of an administrative cap with a very small number of key line items outside the cap is a particularly good approach. In all, this is remarkably good legislation, intelligent and well thought through.

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#### **D. Improvements and Plans**

**Minimum Payment Rule:** One significant change put into operation in SFY 2003 is the “minimum payment rule.” Prior to the minimum payment rule, a number of applications were denied because while need was documented, the need fell below a threshold used in the calculating formula. For SFY 2003, any FY03 household that was income eligible but for which an annual benefit of zero to \$119 was calculated received a supplemental payment to bring their benefit up to \$120. This change reduced the number of denied applications in comparison to the prior year and improves program operation.<sup>87</sup>

**Fixed Annual Credit Calculation Method:** The approach to calculating the energy bill deficiency was significantly changed in SFY 2003. As discussed in the prior section, implementation of NRS 702 means that households receive substantive help in this area. This feature of NRS 702 accomplishes a major step forward in real service for Nevada households.

**Year-Around Operation:** A third significant change put into operation in SFY 2003 is year-around operation. This is essential for the energy realities encountered by Nevada households, and it is one of the primary advantages of the UEC as compared with the seasonal funding of the federal LIHEA program (LIHEAP). The federal program was simply not designed with the climates of the Western states in mind. This feature of NRS 702 accomplishes a major step forward in real service for Nevada households.

**Advisory Committee:** In other areas, constructing the annual plan provides the opportunity for open and inclusive discussion of possible improvements. In developing the annual plan coordinating their activities, the Welfare Division and the Housing Division solicited advice from knowledgeable persons.<sup>88</sup> This process was approached by the formation of an active committee of knowledgeable persons, including all interested stakeholders and advocates. Participants include representatives of the major utilities, the American Association of Retired Persons, the Washoe County Senior Law Project, the service agencies and other interested parties. Putting this active committee advisory process into place was a major improvement for SFY 2003.

**Outreach:** For SFY 2003, there was considerable discussion of extended outreach. A number of contrasting approaches have been discussed, and these will be covered in SFY 2004 evaluation as discussion and perception of need in this area continued

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<sup>87</sup> The minimum payment is an administrative simplification that improves program services and operation. Also, note that the calculations used to determine the energy bill payment amount do not take the fixed cost portion of energy bills or the (often substantial) utility “add-ons” for fees and penalties into account.

<sup>88</sup> NRS 702.280.

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through 2004. As discussed above, the key problem in SFY 2003 were the constraints in getting the computer technology necessary to support the program into place. In SFY 2004, this ongoing discussion led to the development of a favorably leveraged specialized marketing approach.<sup>89</sup> At the end of SFY 2003, this area remained one of intensive discussion of alternative approaches.

**Equal Payment:** At the same time, there was recognition and discussion of the problem of a one-time yearly payment as contrasted to a pro-rated payment that would reduce bills regularly throughout the year. Barbara Alexander, a nationally recognized consultant in the area of design of low-income energy programs (brought in by AARP) recommended that the utilities move customers to equal billing (similar to the budget billing often provided as an option to customers who request it) and pro-rate the payment assistance amount equally across these bills. 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>90</sup> The barriers in the way of implementing these approaches were found to be substantial so the program design could not be modified along these lines. This kind of change requires modifying the utility billing systems and would cause administrative problems in dealing with the pattern of frequent housing moves that is typical of the Western states, and particularly of many Nevada households. At the end of SFY 2003, this area remained one that caused intensive discussion for alternative approaches. This area will be developed further in the SFY 2004 evaluation report.

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<sup>89</sup> Since the activity went forward in SFY 2004, the outreach area will be presented in the SFY 2004 evaluation report.

<sup>90</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.



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## VIII. BEST PRACTICES COMPARISON

For this evaluation the Best Practices section is focused on funding for administration. The pattern of administrative cost authorization for similar programs is shown in Table 16. These are the best comparisons. Comparisons with some other states are possible, but these are the most directly comparable.<sup>91</sup>

The recommendation in this area will be to amend the statute to increase the administrative cap to ten percent (10%), and to make some small changes in the allocation flexibility between the Welfare Division and the Housing Division. We begin with a review of NRS 702 provisions in this area and relevant comparisons.

| Comparison of Administrative Cost Provisions   |   |
|--|---|
| Nevada   | 6.6375% plus Outreach, Program Design, & Evaluation |
| Illinois   | 10%   |
| Maryland   | 10%   |
| New Hampshire  | No Cap, running at 12%-13%                          |
| New Jersey   | 10%, plus One-Time Start-Up Costs                   |
| Federal LIHEAP   | 10%   |
| Source: State information, except Nevada developed by Kay Joslin, Director, LIHEAP Clearinghouse, National Center for Appropriate Technology |   |

**Table 16: Administrative Cost.**

### B. *Nevada Revised Statutes: Chapter 702*

The administrative portion of the UEC is capped by statute, according to the following limits:<sup>92</sup>

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<sup>91</sup> The evaluation team would like to thank the National Center for Appropriate Technology (NCAT) for maintaining state data profiles on low-income programs for the US Department of Health and Human Services, Administration for Children and Families (<http://www.ncat.org/liheap/www.htm>). This data archive of program information is essential in helping to identify best practices. We would, in particular, like to thank Kay Joslin, Director, LIHEAP Clearinghouse for identifying the information required for this section of the evaluation.

<sup>92</sup> The Welfare Division may spend outside this cap to assist eligible households in paying for natural gas and electricity, to carry out activities related to consumer outreach, to pay for program design, and to pay for the annual evaluations conducted pursuant to NRS 702.280. Similarly, the Housing Division

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- Public Utility Commission of Nevada (Administration of the UEC) – 3% of net UEC collected. Unspent amounts roll into the Fund for Energy Assistance and Conservation (FEAC), administered by the Welfare Division.
  - Welfare Division Administration – 3% of 75% of the net amount yearly transmitted from the UEC by the Commission to the FEAC. This is 3% of 75% of 97% or 2.1825% of the UEC. If the Commission does not use its full 3% administrative allocation, the Welfare Division amount for administration may be slightly more. For example, if the Commission uses 2% of the UEC and returns 98% to the FEAC, the Welfare amount would be 3% of 75% of 98% or 2.205%.
  - Housing Division Administration – 6% of 25% of the net amount yearly transmitted from the UEC by the Commission to the FEAC. This is 6% of 25% of 97% or 1.455%. If the Commission uses 2% of the UEC for administration and transmits 98% to the FEAC, the Housing Division amount would be 1.47%.

If the Commission uses its 3%, total administration is 6.64% of the annual UEC collected ( $3\% + 2.1825\% + 1.455\% = 6.6375\%$ ). If the Commission uses 2% of the UEC for administration, total administration is 5.675% ( $2\% + 2.205\% + 1.47\% = 5.675\%$ ). Since it appears that the Commission will run at about two percent (2%) of the UEC, this means that under the statute total administration will run at about seven tenths of one percent under the overall administrative CAP authorized ( $6.6375\% - 5.675\% = 0.7\%$ ). Consumer outreach, program design, and the annual evaluation are outside these caps.

## **A. Illinois**

According to Illinois Public Act 90-0561, Sec. 13 (a), administration is set at ten percent (10%) of funds collected.<sup>93</sup>

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may spend outside this cap to 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; pay for appropriate improvements associated with energy conservation, weatherization and energy efficiency; carry out activities related to consumer outreach; pay for program design; and pay for the annual evaluations conducted pursuant to NRS 702.280.

<sup>93</sup> The Supplemental Low-Income Energy Assistance Fund is hereby created as a special fund in the State Treasury. The Supplemental Low-Income Energy Assistance Fund is authorized to receive, by statutory deposit, the moneys collected pursuant to this Section. Subject to appropriation, the Department shall use moneys from the Supplemental Low-Income Energy Assistance Fund for payments to electric or gas public utilities, municipal electric or gas utilities, and electric cooperatives on behalf of their customers who are participants in the program authorized by Section 4 of this Act, for the provision of weatherization services and for

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**B. Maryland**

Administration was not capped by statute in Maryland, but was left to an annual determination by the Public Utility Commission. In the first determination, administration was set at ten percent (10%).<sup>94</sup>

**C. New Hampshire**

Administration was not capped in New Hampshire, but is running at twelve to thirteen percent (12-13%).<sup>95</sup>

**D. New Jersey**

New Jersey capped administration at 10% the first year, but exempted all “one-time start up costs” from the cap.<sup>96</sup>

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administration of the Supplemental Low-Income Energy Assistance Fund. The yearly expenditures for weatherization may not exceed 10% of the amount collected during the year pursuant to this Section. In determining which customers will participate in the weatherization component, the Department shall target weatherization for those customers with the greatest energy burden, that is the lowest income and greatest utility bills. The yearly administrative expenses of the Supplemental Low-Income Energy Assistance Fund may not exceed 10% of the amount collected during that year pursuant to this Section. See:

<http://www.legis.state.il.us/legislation/publicacts/pubact90/acts/90-0561.html>.

<sup>94</sup> Administrative funds are capped at a maximum amount of 10 percent of the full annual allocation, per a decision of the Maryland Public Utility Commission, which has oversight over the state's universal service fund. The statute (S300) that created Maryland's Universal Service Fund was silent on administration. However, the Department of Human Resources, which administers LIHEAP, was named as chief administrator with oversight from the Public Utility Commission. When DHR put together its first year budget, it asked for 10 percent for administrative costs, and the PUC in a letter dated July 6, 2001 approved the 10 percent and has done so every year since then.

<sup>95</sup> Order # No. 23,980 (May 30, 2002) established a Statewide Low-Income Electric Assistance Program/Tiered Discount Program with community action agencies as primary administrators. There were a number of other orders since then, but the New Hampshire Public Utility Commission declined to set an arbitrary cap on administrative costs. Discussion still continues on administrative costs because the program is so new (started in October 2002.) However, according to the state LIHEAP office of which as an oversight role, administrative costs have been between 12 and 13 percent per year.

<sup>96</sup> “The USF program will be fully funded at \$30 million for the first year plus administrative expenses capped at 10%. The one-time start-up costs will not be counted as administrative expenses and will not be subject to the cap. New Jersey Docket No. EX001009I, March 20, 2003. In a follow-up order dated July 16, 2003 the exempt start-up costs are given as one-half million dollars: “DHS and OIT have indicated the one-time start-up costs are estimated to be approximately \$500,000.

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**E. Federal Low-Income Home Energy Assistance Program (LIHEAP)**

The Low-Income Home Energy Assistance program (LIHEAP) is a block grant program under which the Federal government gives annual grants to States, the District of Columbia, U.S. territories and Commonwealths, and Indian tribal organizations in order to operate home energy assistance programs for low-income households. Up to 10 percent of LIHEAP funds may be used for administrative and planning costs.

Based on these comparisons, it is clear that the general pattern is to allocate 10% of the fund for program administration.

Current administration for SFY 2003 is shown in Table 17.

| Administration & Major Line Items  |   |           |         |            |         |
|--|---|-----------|---------|------------|---------|
| Col. 1   | Col. 2  | Col. 3    | Col. 4  | Col. 5     | Col. 6  |
| Line   | Item  | SFY 2002  |         | SFY 2003   |         |
|  |   | (\$)      | (%)     | (\$)       | (%)     |
| 1  | UEC Net of Refunds                                      | 9,266,277 | 100.00% | 10,653,628 | 100.00% |
| 2  | Cost of Administration (Public Utility Commission)      | 211,912   | 2.29%   | 105,704    | 0.99%   |
| 3  | Administration (Welfare Division)                       | 155,572   | 1.68%   | 101,475    | 0.95%   |
| 4  | Client Payments   | 1,565,658 | 16.90%  | 2,967,640  | 27.86%  |
| 5  | Outreach  | 28,877    | 0.31%   | 65,018     | 0.61%   |
| 6  | Program Design  | 288,131   | 3.11%   | 258,191    | 2.42%   |
| 7  | Evaluation  | 13,065    | 0.14%   | 65,738     | 0.62%   |
| 8  | Administration (Housing Division)                       | 15,427    | 0.17%   | 106,941    | 1.00%   |
| 9  | Housing Improvements, Weatherization, Energy Efficiency | 504,705   | 5.45%   | 2,772,464  | 26.02%  |
| 10   | Outreach  | 0         | 0.00%   | 1,112      | 0.01%   |
| 11   | Program Design  | 60,000    | 0.65%   | 27,456     | 0.26%   |
| 12   | Evaluation  | 0         | 0.00%   | 22,274     | 0.21%   |
| 13   | Total (Fiscal Year)                                     | 2,843,347 | 30.68%  | 6,494,013  | 60.96%  |
| Note: "UEC Net of Refunds" (Line 1, Col.3 or Line 1, Col. 5) is the base for all percentages shown in this table.<br>Administrative cost breakouts were provided by the Housing Division and the Welfare Division. |   |           |         |            |         |

**Table 17: Current Administration & Major Line Items.**

If we look at the figures in Table 17, in 2002 administration was 1.68% of the UEC Net of Refunds for the Welfare Division and 0.17% for the Housing Division. If we add in Outreach, Program Design, and Evaluation, the total for the Welfare Division and the Housing Division together was 6.06%.

In 2003, the total across all categories was 6.5%. Adding in the Commission cost for administration of the UEC, the percentages become 8.35% and 7.49%.

However, the cost of administration for the Public Utilities Commission is best re-categorized as cost of the collection operation, a separate set of UEC tasks that produces the fund (FEAC). These are not really administrative costs, but the costs of a collection operation. With this change, the recommendation is to increase the administrative cost permitted by statute to ten percent (10%) of the yearly UEC.

A proposed allocation of the UEC is shown in Table 18.

The new elements in Table 18 are increases in administration for the Welfare Division and for the Housing Division. In addition, there is an administrative allocation to the Governor's Energy Office to fund a position that would carry out a leadership role in insuring compliance with statute, working with stakeholders and advocates and the agencies to improve the effectiveness and efficiency of the overall effort, and work to secure additional funding for energy efficiency for households up to 250% of poverty.

| Recommended Funding Allocation                             |           |           |            |
|--|-----------|-----------|------------|
| Responsibility Area  | Current   | Proposed  | Net Change |
| <b>Collection of UEC (UEC)</b>                             |           |           |            |
| <b>Public Utility Commission</b>                           | 3.0000%   | 2.0000%   | -1.0000%   |
| <b>Subtotal, Collection</b>                                | 3.0000%   | 2.0000%   | -1.0000%   |
| <b>Program Administration (FEAC)</b>                       |           |           |            |
| <b>Governor's Energy Office</b>                            | 0.0000%   | 2.0000%   | 2.0000%    |
| <b>Welfare Division Admin.</b>                             | 2.1825%   | 5.4000%   | 3.2175%    |
| <b>Housing Division Admin.</b>                             | 1.4550%   | 2.6000%   | 1.1450%    |
| <b>Subtotal, Administration</b>                            | 3.6375%   | 10.0000%  | 6.3625%    |
| <b>Program (FEAC)</b>                                      |           |           |            |
| <b>Welfare Division</b>                                    | 70.5675%  | 65.0000%  | -5.5675%   |
| <b>Housing Division</b>                                    | 22.7950%  | 22.0000%  | -0.7950%   |
| <b>Housing Repair Fund</b>                                 | 0.0000%   | 1.0000%   | 1.0000%    |
| <b>Subtotal, Program</b>                                   | 93.3625%  | 88.0000%  | -5.3625%   |
| <b>Total</b>   | 100.0000% | 100.0000% | 0.0000%    |
| Note: Entries in the table are percents of the yearly UEC. |           |           |            |

**Table 18: Recommended Allocation.**

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## IX. SUMMARY OF RECOMMENDATIONS

### A. *Statutory Recommendations*

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| <p>Note: A proposed funding allocation showing effects of these changes is given in Table 12, Section VIII, Page 23.</p> |
|--|

- (1) Change the statutory cap on the administrative costs for the Public Utility Commission from (3%) to (2%) of the UEC. **(Section I, Page 2)**
- (2) Place the administration costs for the Public Utility Commission outside the administrative cap for the programs. Fund administration and collection is a separate work and different in kind from the work of providing services using the Fund for Energy Assistance and Conservation (FEAC) to deliver payment assistance and weather assistance and conservation services. This factual difference in works should be recognized in statute. **(Section I, Page 2 and Footnote 6)**
- (3) Change the total cap for the Public Utility Commission, the Welfare Division and the Housing Division from a total administrative cap of 6.6375% of the UEC to a combined total cap of 10% of the UEC, leaving other provisions unchanged. **(Section I, Page 2; see also entire Section VIII, Best Practices)**
- (4) Move the eligibility level for program participation upwards from 150% of poverty, to 60% of Nevada household energy burden. **(Section I, Page 3; Section III, Page 8, “Eligibility Level”; also see Table 1 at Section II, Page 5; and Appendix A)**
- (5) That the calculation of assistance be based on the actual customer bills, which includes fixed (customer charge) portion of utility bills and the variable (commodity charge) portion of energy bills. As is currently the case, supplementary fees or penalties would not be included. **(Section I, Page 2; also see Appendix B)**
- (6) Task a position in the Governor’s Energy Office. **(Section I, Pages 3 &4)**
- (7) Provide provision for flexibility for the Welfare Division to designate additional funds for the Housing Division when this is jointly agreed between both Divisions. The level of activity across years should be sustained and not reduced, but slowly expanded as the UEC collection amount slowly grows. **(Section VI, Page 17; Section VII, Pages 19 & 20)**

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## ***B. Welfare***

- (1) The Welfare Division should move towards converting the positions that deal with energy assistance from contract worker status to Civil Service, providing opportunity for current staff to move to Civil Service where possible and consistent with Civil Service provisions and regulations. At least five of the positions should be converted. **(Section VII, Page 14)**
- (2) Based on the SFY 2003 implementation and performance, State Welfare Division should adequately fund development of the computer systems, taking a more client oriented approach to meeting the needs of LIHEA Program Manager and Officer. Programmers dedicated to LIHEA should be assigned or hired. **(Section VII, Page 12)**
- (3) That the Welfare Division Accounting section and the Commission re-establish the quarterly “true-up” meetings that existed at the start of the UEC collections because it has become apparent that there are very small differences between the numbers maintained by the Commission and the numbers maintained by the Welfare Accounting Section in DAWN. **(Section V, Pages 8 & 9)**
- (4) The Welfare unique identifier, the UPI Index<sup>97</sup>, and the utility account numbers (sometimes two) should be included in the download to Housing. With this information, the weatherized homes that also receive Welfare LIHEA program assistance can be easily identified for analysis. Housing should broaden the download criteria, below a FAC benefit of \$600. **(Section VI, Page 26)**

## ***C. Housing***

- (1) There should be a staff of at least four people to oversee the WAP effort that would include two significant new positions; a Technical Officer and a Program Research Assistant. **(Section VI, Pages 36 & 37)**
- (2) Providing the weatherization work effort with access to a Housing Repair Fund that could cover necessary home repairs that would be outside the UEC guidelines. A significant problem encountered in the field installation effort is old rural homes that do not meet current architectural code. **(Section VI, Page 17; Section VI, Page 45)**
- (3) The per-home funding limit should be reviewed and raised if an additional designated fund for housing rehabilitation can be made available. In addition,

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<sup>97</sup> The UPI Index number is unique to the client and is used in all Welfare Division-programs where the client receives services.



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the evaluation concurs with the Housing Division policy of implementing a control tool to cap weatherization dollars per home. **(Section VI, Pages 16 & 17)**

- (4) Liability insurance should be created as a separate budget category, outside the administration category and cap. **(Section VI, Page 18)**
- (5) A one-time audit of the subgrantees should be conducted to establish if the 10% administrative cap is realistic or should be changed. **(Section VI, Page 18)**
- (6) A protocol should be set up so that all revisions include a cover page that lists all changes made, including the page number and section changed. **(Section VI, Page 19)**
- (7) Each job done by Housing should have a unique number. **(Section VI, Page 30)**
- (8) The utility account numbers that qualify the client for FEAC funded weatherization should be input on the form. This data was not required in SFY 03 and only exists in hard copy in the file, if at all. **(Section VI, Page 30)**
- (9) Number fields in the forms filled by subgrantees should always be filled, even if it a 'zero' quantity. **(Section VI, Page 30)**
- (10) The agencies should check the client application and BWR against the Housing list of clients with a fixed annual credit of \$600 or more before checking the high energy use box and/or using it to prioritize the order of weatherization jobs. **(Section VI, Page 31)**
- (11) The BWR should be changed to allow more choices for siding and foundations, attic existing insulation levels, provide more spaces for notes, more standardized options for certain fields, have internal checks of inconsistent data and have a checkbox for 'combustion appliance present' to remind weatherization technicians to perform the appropriate tests. **(Section VI, Pages 31 & 32)**
- (12) Demand-Side Management Funds should be developed and made available both as an energy use component and a separate demand component to this funding because the residential weatherization work creates both values for the utilities. **(Section VI, Pages 45-46)**
- (13) Screen doors often need to be replaced after work is done to a home, but it is not currently covered. If the screen door could be justified as an energy measure, the problem could be solved. However, since it is not, this cost

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would be an administrative need, that is, an addition to program overhead. **(Section VI, Page 46)**

- (14) The Housing Division should continue to work with stakeholders and advocates in the area of alternative energy sources. With the growing capability of community-based organizations, it may be that a way can be found to combine an organizational framework, and ownership framework, and a service capability to make these approaches completely workable. **(Section VI, Pages 46-47)**
- (15) Funding for Housing should be continued, and slowly increased over the years. The continuity of funding without “ups” followed by “downs” is important. **(Section VI, Page 47)**

#### ***D. Evaluation***

- (1) Modify the plan for evaluations to take account of the lag problem with parts of the analysis dependent on utility supplied customer information system data. This will mean that evaluation reporting will need to lag by one year, similar to the way that federal Weatherization Assistance Program reporting always lags by one to two years. Thus, the SFY 2004 evaluation report will contain the SFY 2003 quantitative analysis of utility consumption and energy savings data; the SFY 2005 evaluation report will contain the SFY 2004 analysis, and so on. **(Section VI-38)**
- (2) Modify the plan for evaluations to take account of constraints in the utility data systems. To work around the constraints, the evaluation for each State Fiscal Year should begin in December of that year, rather than the following July. The SFY 2005 evaluation would start in December 2004; the SFY 2006 evaluation would start in December 2005, and so on. **(Section VI-39).**

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## **X. APPENDICES**

There are two appendices. The first is a discussion of why the percent of poverty is a poor metric. The second provides an official definition of energy burden.

### **A. *Self Sufficiency vs. Percent of Poverty***

The current standard used to calculate eligibility for participation in low income programs is that of the Federal Poverty Level (FPL). A different metric, the self-sufficiency standard allows for an alternative definition of eligibility. The sufficiency standard is relatively new and comes much closer to representing the needs of families.

The development of the self-sufficiency standard was required to take into account the many critical problems in the calculation of the Federal Poverty Level. The poverty level is based on the concept that food is one third of the income expenditure of American people. This was not a bad estimate in the mid-1960's when the metric was created using data from the late 1950's. Since that time, although the poverty level is updated each year, it has gone out of calibration and severely under-represents actual poverty. The existence of federal program guidelines based on 150%, 175%, 185%, 200%, or 250% of the Federal Poverty Level indicate a practical adjustment to take into account the failed calibration and the set of inadequacies of the basic measure. For example, the federal standard for LIHEAP is 150% of poverty or 60% of state median income, rather than the poverty level.

Generally recognized problems with the official Federal Poverty Level calculation include:<sup>98</sup>

- Overweighting of food costs.
- Being based on low-value food that is no longer available, and if it were available would require someone at home all day to do the cooking.
- Inability to incorporate increased costs of health care, housing, transportation. Currently medical costs, housing, and energy have increased dramatically, and prices are continuing to push upwards with no relief in sight. The simple mid-1960's formula based on a multiple of the cost of low-end food cannot

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98 These problems are discussed in detail in Alwitt & Donley, Chapter 3, "The Definition of Poverty." Alwitt, Linda F. & Thomas D. Donley, *The Low-Income Consumer, Adjusting the Balance of Exchange*. Thousand Oaks, California: Sage Publications, 1996. Also see: Gutfeld, Rose, "The Real Cost of Living," Ford Foundation Report, Winter 2001.

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handle this, and so official poverty fails to reach to the level of real poverty as it is experienced by American households.

- Inability to incorporate geographic cost differences.
- Exclusion (plus and minus) of taxes.
- Assumption of two-parent families with one spouse taking care of children.
- Inadequate adjustment for size of family.
- Inability to take children's needs at different ages into account.
- No adjustment for disabilities or serious accidents or illnesses.
- Many normal costs of families not included.

As noted in this list, the food component on which the poverty metric is based assumes availability of low-cost, low-quality food that is unattainable in most of the country and would require many hours of food preparation. Also, these hours of preparation are not possible in a single-parent family or when two parents are both piecing together multiple low-end jobs (usually without health benefits, defined pension, or job security) that together produce less than a living wage.

In general, there is strong consensus that Federal Poverty Levels do not accurately indicate need as households understand and experience poverty.

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. State mandated weatherization is set at 200% of poverty in Pennsylvania. The Philadelphia Gas Works, the largest municipal gas utility in the US requested to set its Senior Citizen Discount eligibility at 250% of poverty<sup>99</sup>, and California went to 250% of poverty for eligibility for its low-income rate program beginning in 2004. 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.

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<sup>99</sup> The request had the support of the Mayor and the majority of the City Council but was not approved by the Pennsylvania Public Utility Commission, which has tended to see senior (age-related) discounts as discriminatory. However the point is that 250% of poverty is the analytically correct level to use for Philadelphia and the technical analysis, most of the intervening parties, and the political leaders of the City were in agreement with the request to the state.

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With a much higher administrative burden, the family budget approach used by the Self-Sufficiency Project is more accurate.

As a rule of thumb, mathematically recalibrating the FPL to its original relation to median income would lead to a criterion of 200% of the current FPL.<sup>100</sup> This, then, is a conservative base required for fairness in order to recapture the coverage of the programs in the 1960s and compensate for economic erosion.

However, 250% of poverty is the level at which poverty is no longer experienced. Because Swedish counterparts review our work (H. Gil Peach & Associates is a member of the Scan America®, Group, made up of US, Canadian, and Swedish researchers), we are continually made painfully aware of the backwardness, laggardness, and mean-spiritedness of the US welfare system in comparison with the EU. This sounds harsh, but it is, unfortunately, true – we have a long road to go to bring back basic American community values. As one example, in Sweden there is a child allowance that pays pretty much the actual cost of a child, there is an excellent socialized medical system, and free education through college. Given the everyday realities of our system in which a person can work full time, and receive some help in addition and still be at 50% or 70% of poverty, the EU standards sound unreal, though they are real.

It is from this European perspective that the “250%” figure is given as a precept, but from an American practical perspective “150%” is used consistently in the analysis.

The bottom line, however, is that the federally defined poverty criteria have become seriously mismatched to the actual situation of poverty as experienced by households. Being outside the 100% of poverty level means little. The 150% of Federal Poverty Level is a criterion that captures a good bit of slippage in the federal indicator system, restoring much of the balance to the effective level of the initial situation of the 1960s when the poverty definitions were introduced. However, the 200% level is more accurate. To be certain, the 250% of the Federal Poverty Level begins to indicate the rate at which poverty is not actually experienced and a minimal but decent level of family living over the full lifespan is supported.<sup>101</sup>

The self-sufficiency standard was originally developed with funding from the Ford Foundation, and the methodology is currently being used in several states to provide a better estimate of need than is provided by the Federal Poverty Level definitions.

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100 Calculation performed based on data presented in Figure 2, P. 11. Pearce, Diana & Jennifer Brooks, “The Self-Sufficiency Standard for Pennsylvania, Summary Report.” Swarthmore, Pennsylvania: Women’s Association for Women’s Alternatives: 1998. See also, “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.PlanNevada.org](http://www.PlanNevada.org).

<sup>101</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, or the ability to deal with family emergencies.

The use of a 250% criterion is the most appropriate if life cycle expenses of a family are figured in. The EU has this level of living, showing (to apply Amory Lovins' concise statement of principle to achievement of a civil level of living) that "since it has been done, it can be done."

## **B. Comparison of Alternative Eligibility Levels**

| <b>Comparison of Alternative Eligibility Levels</b> |                              |                          |                             |               |   |                 |                 |                 |
|---|------------------------------|--------------------------|-----------------------------|---------------|---|-----------------|-----------------|-----------------|
| <b>HH<br/>Size</b>                                  | <b>Federal Poverty Level</b> |                          | <b>60% of Nevada Median</b> |               | <b>Increase from Current 150% Level</b> |                 |                 |                 |
|   | <b>100% FPL<br/>(\$)</b>     | <b>150% FPL<br/>(\$)</b> | <b>(\$)</b>                 | <b>% FPL</b>  | <b>60 % of<br/>Nevada<br/>Median</b>    | <b>175% FPL</b> | <b>200% FPL</b> | <b>250% FPL</b> |
|   | <b>Col. 1</b>                | <b>Col. 2</b>            | <b>Col. 3</b>               | <b>Col. 4</b> | <b>Col. 5</b>                           | <b>Col. 6</b>   | <b>Col. 7</b>   | <b>Col. 8</b>   |
| <b>1</b>  | 9,310                        | 13,965                   | 18,591                      | 200%          | 33%                                     | 17%             | 33%             | 67%             |
| <b>2</b>  | 12,490                       | 18,735                   | 23,312                      | 187%          | 24%                                     | 17%             | 33%             | 67%             |
| <b>3</b>  | 15,670                       | 23,505                   | 30,032                      | 192%          | 28%                                     | 17%             | 33%             | 67%             |
| <b>4</b>  | 18,850                       | 28,275                   | 35,753                      | 190%          | 26%                                     | 17%             | 33%             | 67%             |
| <b>5</b>  | 22,030                       | 33,045                   | 41,473                      | 188%          | 26%                                     | 17%             | 33%             | 67%             |
| <b>6</b>  | 25,210                       | 37,815                   | 47,194                      | 187%          | 25%                                     | 17%             | 33%             | 67%             |
| <b>7</b>  | 28,390                       | 42,585                   | 48,266                      | 170%          | 13%                                     | 17%             | 33%             | 67%             |
| <b>8</b>  | 31,570                       | 47,355                   | 49,339                      | 156%          | 4%                                      | 17%             | 33%             | 67%             |

**Table 19: Alternative Eligibility Levels.**

Table 19 shows the State Fiscal Year 2005 income levels for poverty (Col. 1), one-hundred fifty percent of poverty (Col. 2), and sixty percent of Nevada Median Income (Col. 3). The equivalent federal poverty level (FPL) for the sixty percent of median income eligibility criterion is shown in Col. 4.

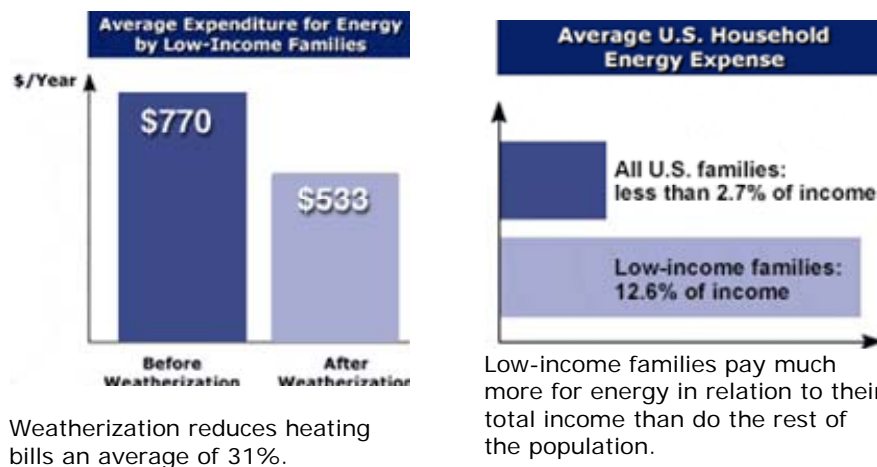
The percentage increases from the current 150% of poverty level to four alternatives are shown in the table. The sixty percent of Nevada median income alternative is shown in Col. 5. Percentage increases from 150% of poverty to alternative levels are shown in Col. 6 through Col. 8.

### C. The Definition of Energy Burden

The definition of energy burden is given by the US DOE, Weatherization Assistance Program as follows:<sup>102</sup>

Weatherization is very simple — it improves energy efficiency and permanently reduces energy bills. Weatherization serves low-income American families that pay the highest percentage of their incomes for energy bills, producing long-lasting benefits for them and an economic boost for their communities.

Low-income households spend much more of their income on energy bills than do families with median incomes (see chart). 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 lived 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>103</sup> The Nevada interpretation for the UEC is currently that "energy" means simply a multiple of kWh time the applicable electric rate and a multiple of therms times the applicable gas rate. However, note that in the above example, "energy" is

<sup>102</sup> The insert is from the US DOE Weatherization Assistance Program at <http://www.energy.gov/weatherization/reducing.html>.

<sup>103</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)].

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used interchangeably with “energy bills.” Substantively, energy burden is a matter of energy bills. Also, as any household struggling with bills can tell you, the relevant feature of the bill to the low-income household is not a legal abstraction base on energy units but the “Please Pay” amount.

Nevada’s definition should be changed to match the needs of households as understood by households, particularly since the allocation of bills into fixed and variable (commodity) cost components is an administrative matter. Though cost of service studies are used in the construction of this allocation, the allocation is a matter of decision and approach rather than a technical allocation. The relevant feature is that the utility intent is to recover a certain total bill. The total bill amount is the true energy cost to the household. Whether and how a utility bundles or separates cost elements is not relevant to the need for payment assistance; only the total bill amount (“please pay”) is relevant.

Moving the Nevada definition to the actual bills (the “Please Pay”) would make for a simpler calculation and would show fidelity to the reality of bills that must be paid. It would also facilitate calculation of assistance amounts.