

## Executive Summary

This study examines the recent experience of the two largest heating assistance programs in Spokane County: the federal Low Income Home Energy Assistance Program (LIHEAP) and the Avista Utilities-funded Low Income Rate Assistance Program (LIRAP). The study's central goal is to assess the reach of these programs among the eligible population. While both programs target low income households, the LIHEAP statute demands that attention be given to three sub-groups: households with at least one senior, households with at least one child less than five years of age and households with at least one member with a disability. The study was able to estimate total number of low income households and of one of the sub-groups, those with seniors.

The study team reviewed the relatively scant literature on heating assistance programs to frame the results found for the County. There are several approaches of calculating the income share of household expenditures on heat or energy. One must first keep a clear distinction between residential energy and heating in any reading of the data and analysis. Much of the literature takes up residential *energy* shares or burden. *Heating* shares or burdens, the focus of this study, are a subset of energy shares, usually at around the 40% range.

Analysis conducted for the federal administrator of the LIHEAP program, the Department of Health & Human Services, points out that both measures of a "typical" household, mean and median, are appropriate. The mean is the average of any distribution of numbers, while the median is the central value at which 50% of the numbers lie above and 50% lie below. The same analysis uses two different ways of calculating the mean and median ratios. The first uses actual individual household ratios, while the second uses heating costs summed across groups of certain sizes, divided by the sum of household income for those groups.

Both approaches are valid, but yield considerably different results. For example, from the sample of all households in the most recent national survey (2006 updated data), the mean for "individual" shares of heating expenditures was 2.9%. However, the mean of "group" shares was 1.1%. In this study, data availability led to an adoption of nearly all approaches.

A final methodological consideration taken up by this report is a review of the threshold above which a heating expenditure share becomes a "burden". There are a variety of ways that one might set this threshold and they are briefly considered in the narrative. The two research groups that have published in the field have determined a threshold based on total housing, or shelter, costs. They first examine the energy component for those households spending 50% or more (high burden) and those households spending between 30% and 49% (moderate burden) of their income on shelter. They then apply a percentage of heating costs to the energy cost component. The result: a *high* burden is 4.3% or more while a *moderate* burden is one between 2.6% and 4.2% of household income. Note that these calculations are based on "individual" ratios.

Since paired household heating expenditure and income data sets were unavailable to the research team, the estimation of the number of Spokane households eligible for heating assistance proceeded on the basis of income alone. The LIHEAP statute allows two low-income standards: at some multiple of the Federal Poverty Level (FPL) and at 60% of a state's median household income. The analysis took up both approaches; however, only the results from the FPL approach, at 125% and 150%, are given below, since Washington State has adopted the 125% threshold. As no current, detailed estimates of household income were available, a distribution was developed from the 2000 census for each census tract in the County. This allowed the estimation of the number of

households that would fall at or under the 125% and 150% of the FPL for each tract.

The result for 2008: about 43,000 eligible or “at-risk” households in the County had income low enough to qualify for LIHEAP or LIRAP. This represented about 24% of all County households. According to the most recent national estimate, the number of income eligible households is about 21%; the share at the state level is about 18%. While the share of Spokane County is higher than both benchmarks, poverty in the County, as measured the share of the population at the FPL, is also considerably higher.

Using a similar approach to examine low-income households with at least one member age 65 or over who are at-risk, the research team arrived at a 2008 estimate of 9,400. This represents about 26% of all Spokane County senior households.

A spatial distribution of at-risk households shows that they are concentrated in Spokane City, with the heaviest clusters in the central and eastern sections. This study also forecasted the growth of the at-risk number of households over the 2010-2012 periods. It used two different techniques to arrive at an estimate of these households growing by slightly more than 500 per year over 2008 numbers.

The second strand of the data analysis dealt with the production of current heating costs for all of Spokane County households. Coupled with the census tract estimates of median household income, heating costs estimates allowed the calculation of heating shares for all tracts in the County. This is an example of the group approach to examining heating shares or burdens.

Developing the heating costs estimates by census tracts posed considerable challenges. The research team gathered monthly, anonymized billing information from most of the electric utilities in the County. Sorting the

information into mutually exclusive classes of customers, by fuel use, was daunting, however. The four major heating sources are natural gas, electricity, fuel oil and liquid propane gas (LPG). With the exception of the natural gas data supplied by Avista Utilities, heating cost data from the other the sources was either not current or was “mixed” with general electricity consumption.

In the end, some simplifying assumptions were necessarily made about the natural gas use by residences whose electricity comes from utilities other than Avista. The number of households currently using fuel oil and LPG was assumed to be the same as in 2000. Heating costs for the utilities from which no data were retrieved were approximated by heating costs from their non-profit peers.

The result was a ratio of average heating expenditures to median household income for every County census tract in heating season 2008. (In the study, heating seasons are labeled by the year in which they end.) As Appendix B shows, the ratios range from 0.49% to 4.13%. The average of all census tracts was 1.4%. The distribution was hardly uniform, as the maps in section 7 reveal. Consistent with the spatial distribution of household income shown in section 5, the census tracts with the highest energy shares were predominantly in the central part of the City of Spokane, followed by concentrations in the northeast of the City, Cheney, the western part of Spokane Valley, Millwood and the eastern part of the West Plains area.

With its 2008 average, the County is not very different from the national, all-household group mean of 1.1% for 2006. If the research team had access to census tract household income means instead of median values, the Spokane County average would likely be smaller, and consequently even closer to the national group mean.

The final strand of analysis in this report is a detailed look at the administrative data from the administrator of the County's LIHEAP and LIRAP programs, SNAP. This was done for the period 2004 through 2009. Highlights of the results, described in section 6, are:

- The total number of households served has fluctuated between approximately 8,800 and 11,000, until the most recent heating year when 13,140 were assisted.
- Use of LIRAP has declined in the past two heating seasons.
- The mean benefit, from both LIHEAP and LIRAP, has gone up 19% between heating seasons 2004 and 2009, from \$467 to \$557.
- The gross (pre-assistance) median heating burden of all SNAP-assisted households has gone up by 13% over the same period, from 5.4 to 6.1% of household income.
- The net (post-assistance) median heating burden for all SNAP-assisted households has gone up by 75%, from 0.8% to 1.4% of household income.
- Between heating seasons 2004 and 2008, SNAP served between 22% and 26% of the eligible, or at-risk households.

- With the large spike in service delivery in 2009, SNAP served nearly 30% of eligible households. (This includes LIHEAP & LIRAP.)
- Geographic analysis of SNAP activities reveal for the most recent years that five Spokane City zipcodes 99207, 99205, 99202, 99201, 99208 account for over 50% of all assisted households.
- Spatial analysis shows that the median gross heating burdens for these zipcodes ranged from 5.1 to 6.5%, with one exception: zipcode 99201 was at 7.4% in 2009.
- Spatial analysis also shows that median gross heating burdens increase from urban to rural locations.

A comparison of the drop in the median Spokane heating burden from gross to net to the latest national averages of gross and net shows SNAP awards lowering the burden by a far greater percentage. Finally, the 2009 estimate of 30% coverage of eligible households by SNAP assistance is considerably higher than the most recent national average of 16%.