

**HOME ENERGY AFFORDABILITY
IN CONNECTICUT:**

The Affordability Gap (2013)

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Table of Contents

Table of Contents

Table of Contents	i
Table of Tables.....	iii
Introduction.....	1
Methodology	2
Changes in “Second Series” Affordability Gap Analysis.....	4
Part 1: Home Energy Affordability in Connecticut in 2013	6
An Overview of the Statewide Affordability Gap.....	6
Six Important Findings	7
Part 2: Home Energy Affordability by Income	9
Affordability Gap by Poverty Level	9
Affordability at the Lowest Income Levels.....	11
Affordability at the Highest Income Levels	13
Measuring Energy Burdens rather than Dollar Gaps	15
Six Important Findings	16
Part 3: Home Energy Affordability by Geography	17
Data at the Regional Level.....	17
Aggregate and Per-Household Gap by Region	17
Regional Contributions to State Totals	18
Contributions to Regional Totals by Income Range	21

Six Important Findings	22
Part 4: Patterns of Incomes in Connecticut over Time	24
Median Income	24
Median Income by Tenure	25
Median Income by Household Size.....	25
Median Income by Age.....	26
Median Income by Work Experience.....	27
Mean Income	28
Mean Income by Income Quintile.....	28
Mean Income by Poverty Level.....	30
Mean Income by Poverty Level and Age.....	31
Poverty Status	32
Poverty Status by Educational Attainment	32
Food Stamps by Poverty Status.....	34
Twelve Important Findings	35
Sources of Information for Connecticut.....	38
U.S. Census Tables (American Community Survey).....	38
Data on Children Well-being	38
Data on Employment and Wages	39
Data on Energy and Fuel.....	39
Data on Housing Affordability.....	40
Data on Poverty and Income.....	40
Data on Working Households/Families/Persons	41

Table of Tables

Table 1. Affordability Gap and Number of Households by Ratio of Income to Poverty Level (2013)	10
Table 2. 2013 Affordability Gap by State Legislative House Districts (By Poverty Level)	12
Table 3. 2013 Average Per-Household Gap and Aggregate Gap by Selected FPL Ranges.....	14
Table 4. House Districts by Energy Burdens of Households at Selected Poverty Ranges (2013).....	15
Table 5. Aggregate and Average Home Energy Affordability Gap by Congressional District and Poverty Level Ranges (Connecticut) (2013)	19
Table 6. Aggregate Home Energy Affordability Gap by Congressional District and Contribution to State Total (Connecticut) (2013)	20
Table 7. Contribution to Congressional District Aggregate Affordability Gap by FPL Ranges (2013)	22
Table 8. Median Income by Tenure, 2010, 2011,2012 (Connecticut)	25
Table 9. Median Income by Household Size, 2010, 2011, 2012 (Connecticut)	26

Table 10. Median Income by Age of Householder, 2010, 2011, 2012 (Connecticut).....	27
Table 11. Median Income by Sex by Work Experience, 2010, 2011, 2012 (Connecticut).....	28
Table 12. Mean Income by Income Quintile, 2010, 2011, 2012 (Connecticut)	29
Table 13. Mean Income by Ratio of Income to Poverty Level, 2010, 2011, 2012 (Connecticut).....	30
Table 14. Mean Income by Ratio of Income to Federal Poverty Level and Age, 2010, 2011, 2012.....	31
Table 15: Individuals by Sex by Educational Attainment by Below-Poverty Status, 2010, 2011, 2012 (Connecticut) (persons age 25 and older).....	33
Table 16: Receipt of Food Stamps by Poverty Status for Households, 2010, 2011, 2012 (Connecticut).....	34
Table 17: Income by Receipt of Food Stamps, 2010, 2011, 2012 (Connecticut).....	35

Introduction

Home energy costs pose a crushing burden to Connecticut residents today. Particularly for households with incomes in “deep poverty,” home energy costs threaten not only the ability of Connecticut households to retain access to energy services, but also threaten access to housing, food, medical care and other necessities of life.

Home energy unaffordability in Connecticut is a statewide phenomenon. It affects areas of the state both rural and urban. It affects areas of the state both North and South, both East and West. The discussion below continues a series of reports looking at home energy affordability in Connecticut. The Home Energy Affordability Gap seeks to quantify the extent of energy unaffordability in Connecticut. The Affordability Gap measures the dollar amount by which actual home energy bills exceed affordable home energy bills. In this respect, “affordability” is examined in terms of home energy burdens, bills as a percentage of income. If a Connecticut household has an annual income of \$12,000 and an annual home energy bill of \$3,000, that household has a home energy burden of 25% ($\$3,000 / \$12,000 = 0.25$). An affordable home energy burden is set at 6%.¹

¹ The 6% is a calculated figure. It is based on the premise that utility costs should not exceed 20% of shelter costs. Moreover, it is based on the premise that total shelter costs should not exceed 30% of income. 20% of 30% yields a 6% affordable utility burden.

It is universally accepted that total shelter costs are “unaffordable” if they exceed 30% of income. Total shelter costs include not only rent/mortgage, but all utilities. See generally, Mary Schwartz and Ellen Wilson (2008). “Who

Methodology

The Home Energy Affordability Gap calculated for each Connecticut legislative district is determined based on the same fundamental model used for the annual Home Energy Affordability Gap calculated nationwide.² The Affordability Gap is that dollar amount by which home energy bills in a specified geographic region exceed what home energy bills would be if they were set equal to an affordable percentage of income. For purposes of the Home Energy

Can Afford to Live in a Home: A Look at Data from the 2006 American Community Survey,” U.S. Census Bureau: Washington D.C. They state in relevant part:

The conventional public policy indicator of housing affordability in the United States is the percent of income spent on housing. Housing expenditures that exceed 30 percent of household income have historically been viewed as an indicator of a housing affordability problem. The conventional 30 percent of household income that a household can devote to housing costs before the household is said to be “burdened” evolved from the United States National Housing Act of 1937.

* * *

Because the 30 percent rule was deemed a rule of thumb for the amount of income that a family could spend and still have enough left over for other nondiscretionary spending, it made its way to owner-occupied housing too. Prior to the mid-1990s the federal housing enterprises (Fannie Mae and Freddie Mac) would not purchase mortgages unless the principal, interest, tax, and insurance payment (PITI) did not exceed 28 percent of the borrower’s income for a conventional loan and 29 percent for an FHA insured loan. Because lenders were unwilling to hold mortgages in their portfolios, this simple lender ratio of PITI to income was one of many “hurdles” a prospective borrower needed to overcome to qualify for a mortgage. There are other qualifying ratios as well; most of which hover around 30 percent of income. The amount of debt outstanding and the size and frequency of payments on consumer installment loans and credit cards influence the lender’s subjective estimation of prospective homebuyers’ ability to meet the ongoing expenses of homeownership. Through the mid-1990s, under Fannie Mae guidelines for a conventional loan, total allowable consumer debt could not exceed eight percent of borrower’s income for conventional mortgage loans and 12 percent for FHA-insured mortgages. So through the mid-1990s, underwriting standards reflected the lender’s perception of loan risk. That is, a household could afford to spend nearly 30 percent of income for servicing housing debt and another 12 percent to service consumer debt. Above these thresholds, a household could not afford the home and the lender could not afford the risk. While there are many underwriting standards, none of them made their ways into the public policy lexicon like the 30 percent of income indicator of housing affordability.

The mid to late 1990s ushered in many less stringent guidelines. Many households whose housing costs exceed 30 percent of their incomes are choosing then to devote larger shares of their incomes to larger, more amenity-laden homes. These households often still have enough income left over to meet their non-housing expenses. For them, the 30 percent ratio is not an indicator of a true housing affordability problem but rather a lifestyle choice. But for those households at the bottom rungs of the income ladder, the use of housing costs in excess of 30 percent of their limited incomes as an indicator of a housing affordability problem is as relevant today as it was four decades ago.

² See generally, www.HomeEnergyAffordabilityGap.com (last accessed November 4, 2013).

Affordability Gap, a bill is considered “affordable” if it does not exceed six percent (6%) of annual household income.

The Home Energy Affordability Gap is a function of two calculations: (1) household income; and (2) household energy bills. Household income is based on the Federal Poverty Level for the median household size in the geographic region being studied. While the Federal Poverty Level is uniform for the 48 contiguous States, income by geographic area differs by geographic area. Poverty Level is a function of household size. Since median household size differs by geographic area (both between and within states), so, too, does the income used in the calculation of the Home Energy Affordability Gap.³ For example, 100% of Federal Poverty Level in a geographic area with a median household size of 2.4 persons will be lower than 100% of Federal Poverty Level in a geographic area with a median household size of 3.2 persons.

Home energy bills, calculated for the Home Energy Affordability Gap are a function of the following primary factors:

- Tenure of household (owner/renter).
- Housing unit size (by tenure).
- Heating Degree Days (HDDs) and Cooling Degree Days (CDDs) (by county).
- Household size (by tenure).
- Heating fuel mix (by tenure).
- Energy use intensities (by fuel and end use).

Separate bills are calculated for four end-uses: (1) space-heating; (2) space cooling; (3) domestic hot water; and (4) electric appliances (including lighting and refrigerators). Bills are calculated using the U.S. Department of Energy’s “energy intensities” most recently made publicly available through the U.S. Department of Energy’s Residential Energy Consumption Survey (RECS). The energy intensities for each state are those published for the Census Division in which the state is located. Connecticut, for example, is located in the “New England” Census Division. State-specific demographic data is obtained from the American Community Survey (ACS) published by the U.S. Census Bureau. The analysis uses three-year average ACS data; for example, the “2012” data is the three-year average (2010, 2011, 2012) with the most recent year being the reporting year. Heating Degree Days (HDDs) and Cooling Degree Days (CDDs) are obtained from the National Weather Service’s Climate Prediction Center on a county-by-county

³ The geographic area serving as the basis for the Home Energy Affordability Gap calculation is the county.

basis. State price data for each end-use is obtained from the Energy Information Administration's (EIA) fuel-specific price reports (e.g., Natural Gas Monthly, Electric Power Monthly).

Changes in “Second Series” Affordability Gap Analysis.

The analysis of the Connecticut Home Energy Affordability Gap undertaken in 2013 introduces several modifications to prior Affordability Gap calculations. As a result, the Affordability Gap presented in this report begins the “Second Series” of the Affordability Gap, with results in this and subsequent years not comparable to the Affordability Gap calculated in prior years. While remaining fundamentally the same, several improvements have been introduced in both data and methodology in the Affordability Gap (2nd Series).

The most fundamental change in the Home Energy Affordability Gap (2nd Series) is the move to a use of the American Community Survey (ACS) (5-year data) as the source of foundational demographic data. The Affordability Gap (1st Series) relied on the 2000 Census as its source of demographic data. The ACS offers several advantages compared to the Decennial Census. While year-to-year changes are smoothed out through the use of multi-year averages, the ACS nonetheless is updated on an annual basis. As a result, numerous demographic inputs into the Affordability Gap (2nd Series) will reflect year-to-year changes on a county-by-county basis, including:

- The distribution of heating fuels by tenure;
- The average household size by tenure;
- The distribution of owner/renter status;
- The distribution of household size;
- The distribution of households by ratio of income to Poverty Level;

Data on housing unit size (both heated square feet and cooled square feet) is no longer calculated based on the number of rooms. Instead, Energy Information Administration / Department of Energy (EIA/DOE) data on square feet of heated and cooled living space per household member is used beginning with the Home Energy Affordability Gap (2nd Series). A distinction is now made between heated living space and cooled living space, rather than using total living space.

The change resulting in perhaps the greatest dollar difference in the aggregate and average Affordability Gap is a change in the treatment of income for households with income at or below 50% of the Federal Poverty Level. In recent years, it has become more evident that income for

households with income below 50% of Poverty Level is not normally distributed. Rather than using the mid-point of the Poverty range (i.e., 25% of Poverty Level) to determine income for these households, income is set somewhat higher (40% of Poverty). By setting income for that Poverty Level higher, both the average and aggregate Affordability Gap results not only for that Poverty range, but also for the state as a whole, will be lower. The Affordability Gap results for other Poverty ranges remain unaffected by this change.

Another change affecting both the aggregate and average Affordability Gap is a change in the definition of “low-income.” The Home Energy Affordability Gap (2nd Series) has increased the definition of “low-income” to 200% of the Federal Poverty Level (up from 185% of Poverty). While this change may increase the aggregate Affordability Gap for the State, it is likely to decrease the average Affordability Gap. Since more households are added to the analysis, the aggregate is likely to increase, but since the contribution of each additional household is less than the contributions of households with lower incomes, the overall average will decrease.

In light of these introductory comments, the discussion below considers home energy affordability Connecticut in the following sections:

- Part 1 considers statewide home energy affordability in 2013;
- Part 2 considers home energy affordability by income range;
- Part 3 considers home energy affordability by geographic area;
- Part 4 considers patterns and trends in income in Connecticut over time;

In addition to these sections, this report presents individual appendices consisting of “fact sheets” presenting the 2013 Affordability Gap for each state legislative district (both House and Senate), as well as for each of Connecticut’s Congressional districts.

Part 1: Home Energy Affordability in Connecticut in 2013

Home energy in Connecticut is not affordable for a substantial part of the low-income population in 2013. In this Part, we focus on the statewide data setting forth the Home Energy Affordability Gap for Connecticut in 2013.

An Overview of the Statewide Affordability Gap

The State of Connecticut has a large Home Energy Affordability Gap facing its low-income households, with available resources grossly insufficient to address the problem. As a result of this mismatch between energy bills and the resources needed to pay them, many low-income households incur unpaid bills and experience the termination of service associated with those arrears. In addition, the paid-but-unaffordable bill is a real phenomenon in Connecticut. Even when low-income households pay their bills in a full and timely manner, they often suffer significant adverse hunger, education, employment, health and housing consequences in order to make such payments.⁴

Energy prices have placed a substantial burden on the public and private energy assistance agencies in Connecticut. Current home heating, cooling and electric bills in Connecticut have driven the average per-household Home Energy Affordability Gap for households living with incomes at or below 200% of the Federal Poverty Level (FPL) to crushing levels. The average

⁴ The 2011 Connecticut Home Energy Affordability Gap presented an extensive discussion of these impacts. See, Colton (December 2011). Home Energy Affordability Gap: 2011, Connecticut Legislative Districts, at 14 – 31, prepared for Operation Fuel, Bloomfield (CT).

annual shortfall between actual and affordable home energy bills for households at or below 200% of FPL now reaches nearly \$2,368 per household. The aggregate Home Energy Affordability Gap in Connecticut now reaches nearly \$700 million statewide.

This \$700 million is *not* the total low-income home energy bill in Connecticut. Rather, the \$700 million is the dollar amount by which actual home energy bills exceed affordable home energy bills for Connecticut households with income at or below 200% of Federal Poverty Level.

The population of households facing this Affordability Gap is substantial. According to the 2012 American Community Survey, Connecticut had nearly 295,000 households with income at or below 200% of the Federal Poverty Level.

Existing sources of energy assistance do not adequately address the Home Energy Affordability Gap in Connecticut. While the primary source of energy assistance in Connecticut is the federal Low-Income Home Energy Assistance Program (LIHEAP), LIHEAP is insufficient to address the state's affordability need. LIHEAP covers only a fraction of the Home Energy Affordability Gap for a fraction of income-eligible households. The number of average annual low-income heating and cooling bills "covered" by Connecticut's gross LIHEAP allocation this year was 49,215. In comparison, the gross LIHEAP allocation to Connecticut last year covered 64,344 average annual bills.

The appendices attached to this report present Connecticut's 2013 Home Energy Affordability Gap from three perspectives:

- Appendix A presents the Home Energy Affordability Gap for each state legislative district (House) in Connecticut;
- Appendix B presents the Home Energy Affordability Gap for each state legislative district (Senate) in Connecticut; and
- Appendix C presents the Home Energy Affordability Gap for each Congressional district in Connecticut.

In contrast to these detailed statistics, the narrative discussion below highlights different aspects of the Home Energy Affordability Gap. The detailed statistics for each legislative district, however, can be obtained from the relevant appendices.

Six Important Findings

1. The Home Energy Affordability Gap in Connecticut is substantial on an aggregate basis. In 2013, the aggregate Home Energy Affordability Gap for households with income at or below 200% of the Federal Poverty Level was \$699,785,080.

2. The Home Energy Affordability Gap on an individual household basis is crushing in Connecticut. On average, actual home energy bills exceeded affordable home energy bills for households with income at or below 200% of Federal Poverty Level by \$2,368.
3. The low-income population in Connecticut facing these unaffordable bills is substantial. More than 295,000 Connecticut households lived with income at or below 200% of the Federal Poverty Level.
4. The primary source of energy affordability assistance, the federal Low-Income Home Energy Assistance Program (LIHEAP), is grossly insufficient to fill the state's Home Energy Affordability Gap. The number of average annual low-income heating and cooling bills "covered" by Connecticut's gross LIHEAP allocation decreased from 64,344 average annual bills last year to 49,214 average bills this year.
5. Connecticut's LIHEAP allocation was sufficient to pay roughly 11% of the state's Home Energy Affordability Gap. This 11% coverage is not of total home energy bills, but rather of the unaffordable portion of low-income home energy bills.
6. By design, LIHEAP is not intended to cover total low-income home energy bills. By statute, LIHEAP is directed toward helping to pay only home heating and/or cooling bills. Electric bills not associated with heating or cooling are not the target of LIHEAP benefits.

Part 2: Home Energy Affordability by Income

Having reviewed the overall impact of home energy affordability in Connecticut, this Part begins a more disaggregated review of the affordability of home energy. The pages that follow consider home energy affordability as disaggregated by different perspectives relative to income. In turn, income is defined by the ratio of household income to the Federal Poverty Level, to a maximum of 200% of Poverty Level. The ratio of income to Federal Poverty Level is disaggregated into six separate ranges. Home energy affordability is examined both from the perspective of the aggregate and the per-household Affordability Gap, as well as by a specific consideration of home energy burdens by Poverty Level.

Affordability Gap by Poverty Level

Clearly, the largest Home Energy Affordability Gap in Connecticut falls in the lowest income range in average per-household terms. As shown by Table 1 below, at each step-increase in household income as a percentage of Poverty Level (i.e., from 0-49% to 50-99%, from 50-99% to 100-124%, etc.), the per-household Affordability Gap *decreases*. While the per-household gap at the lowest range of Poverty is roughly \$3,100, the per-household gap at the next step-

increase is only \$2,700. While the per-household Affordability Gap at 100-124% of Poverty is roughly \$2,300, the per-household Gap at the next step-increase (125-149%) is \$2,100.⁵

Poverty Level	Number of Households	Average per HH Burden (% of income)	Average Per-HH Affordability Gap (\$s)	Aggregate Gap (\$s)
0 – 49%	57,707	51%	\$3,090	\$181,430,956
50 – 99%	70,722	27%	\$2,726	\$192,788,305
100 – 124%	38,295	18%	\$2,343	\$89,730,267
125 – 149%	41,148	15%	\$2,105	\$86,607,611
150 – 184%	60,807	12%	\$1,795	\$109,156,639
185 – 200%	25,798	11%	\$1,553	\$40,071,301
Total	295,477	---	\$2,368	\$699,785,080

Just because the *average* per-household Affordability Gap is greater at the lowest Poverty ranges, the *aggregate* Affordability Gap does not necessarily follow that same pattern. Because some income ranges at higher Poverty Levels have a greater number of households in them, the aggregate Affordability Gap at those higher Poverty ranges are roughly comparable, even while the average Affordability Gap may be lower. For example, while the aggregate statewide Affordability Gap for households with income less than 50% of Poverty Level was \$181 million (per-household Gap of \$3,090), the combined Affordability Gap for households with income between 50% and 100% of Poverty Level⁶ was \$193 million (per household Gap of \$2,726); the aggregate Gap for households between 100% and 150% of Poverty Level is \$176.3 million, even though the per-household Gap was between \$2,100 and \$2,300.

The reason is that while there were 57,707 households with income below 50% of Poverty, there were 70,722 households with income between 50% and 100% of Poverty, and 79,443 households with income between 100% and 150% of Poverty. Accordingly, while the average Gap in the lower range was higher, the aggregate Gap in the lower range is lower or substantially the same.

⁵ In reviewing these results, however, it is important to remember that Poverty Level involves income taking into account household size. A 2-person household with income at 30% of Poverty Level has a lower dollar income than a 3-person household with income at 30% of Poverty Level. Since mean household size differs by county, the dollar level of income will differ as well, even given identical levels of Poverty. A county with a mean household size of 2.62 persons per household, in other words, will exhibit different income characteristics, and thus different home energy burdens with a corresponding Affordability Gap, than a county with a mean household size of 2.12 persons per household all other things equal.

⁶ Be careful to note that not all Poverty Ranges presented in Table 1 are of the same size. There are some ranges presented in 50% increments (e.g., 50-99%), while some ranges are presented in smaller (e.g., 185-200%) increments.

Only in the highest income ranges⁷ are the per-household Affordability Gaps sufficiently low to result in lower aggregate Gaps as well. The population of 86,605 households with income between 150% and 200% of Poverty yields an aggregate Affordability Gap of \$149 million, while the population of roughly 58,700 households with income less than 50% of Poverty yields a Gap of \$181 million. The 70,700 households living between 50% and 100% of Poverty generate an Affordability Gap of \$193 million, compared to the \$149 million Gap generated by the larger population (86,600 households) living between 150% and 200% of Poverty.

The cautionary tale to understand from this data is not to assume that a higher per-household Affordability Gap in a lower Poverty range will yield a higher aggregate Affordability Gap in that Poverty range. In assessing the aggregate Affordability Gap, it is important to take into account *both* the average per-household Gap in each Poverty range *and* the number of households in each Poverty range.

Affordability at the Lowest Income Levels

On a statewide basis, households with income at or below 50% of the Federal Poverty Level experience energy burdens of over 50% of income. The average burden in dollar terms is nearly \$3,100 per household. The number of households experiencing such burdens is not insubstantial. Statewide, nearly 58,000 low-income households have income at or below 50% of the Federal Poverty Level.

Table 1 discussed above shows that while the burden drops quickly as incomes rise, the home energy burden as a percentage of income remains above affordable levels statewide through income levels reaching well above Poverty Level. Even households with income between 185% and 200% of Poverty Level, on average, experience energy burdens of 11% statewide in Connecticut.⁸

As always, however, care should be taken whenever considering “average” figures. Experience in individual legislative districts can vary widely from the average. For households with income between 100% and 124% of Poverty Level, for example, the per-household Affordability Gap in Connecticut in 2013 ranges widely, with the lowest Gap (\$2,170) being only 70% of the highest Affordability Gap (\$3,124). Table 2 shows that for households with income between 125% and 150% of Poverty Level, the Affordability Gap was below \$2,000 in 69 legislative House Districts and above \$2,500 in 17 House Districts.

⁷ All households are “low-income.” Some households are “higher income” only relative to others studied.

⁸ This is not to say that *all* households with income at this Poverty range have unaffordable energy burdens. It simply notes that, *on average*, households with income between 185% and 200% of Poverty in Connecticut in 2013 had bills that reached nearly 11% of income.

Table 2 distributes the number of state legislative House Districts by the average per-household Affordability Gap and further disaggregates the Affordability Gap into various ranges by Poverty Level. These ranges demonstrate the differences in the spread of unaffordability throughout the State of Connecticut. For households with income less than 50% of Poverty, the Affordability Gap levels is above \$2,500 in every legislative House District, with 17 House Districts having a Gap more than \$3,500. For households with income between 50% and 99% of Poverty, 131 House Districts had an average Affordability Gap of between \$2,500 and \$3,000; 113 House Districts had an average Gap between \$2,000 and \$2,500 for households between 100% and 124% of Poverty.

Table 2. 2013 Affordability Gap by State Legislative House Districts (By Poverty Level)

Average Gap	0 – 50% FPL		50 – 99% FPL		100 – 124% FPL		125 – 149% FPL		150 – 184% FPL		185 – 200% FPL	
	# of House Dist's	Avg Gap in Dollars /a/	# of House Dist's	Avg Gap in Dollars /a/	# of House Dist's	Avg Gap in Dollars /a/	# of House Dist's	Avg Gap in Dollars /a/	# of House Dist's	Avg Gap in Dollars /a/	# of House Dist's	Avg Gap in Dollars /a/
At or below \$1,500	0	---	0	---	0	---	0	---	0	---	110	\$1,415
\$1,501-\$1,700	0	---	0	---	0	---	0	---	69	\$1,632	3	\$1,627
\$1,701-\$2,000	0	---	0	---	0	---	69	\$1,940	45	\$1,762	22	\$1,794
\$2,001-\$2,500	0	---	0	---	113	\$2,253	65	\$2,161	32	\$2,147	16	\$2,144
\$2,501-\$3,000	69	\$2,938	131	\$2,685	33	\$2,699	17	\$2,700	5	\$2,546	0	---
\$3,001-\$3,500	65	\$3,180	16	\$3,247	5	\$3,116	0	---	0	---	0	---
\$3,501+	17	\$3,703	4	\$3,512	0	---	0	---	0	---	0	---

NOTES:
/a/ Average Gap reported here is not weighted by population. Each legislative house district is given equal weight.

In sum, for households at the lowest income ranges, it is misleading to consider only what the statewide average Affordability Gap might be. The average Affordability Gap in individual state legislative House Districts, depending on fuel penetration, household size, housing unit size and type, climate factors and the like, can be quite different from the average.

Affordability at the Highest Income Levels

Home energy unaffordability was evident at Connecticut's higher income ranges as well. In 2013, the Affordability Gap reaches into higher income ranges. In the 185% - 200% Poverty Range, for example, no state legislative House District had an Affordability Gap of \$0.

It would be a mistake, however, to view each of those legislative House Districts with a positive aggregate 2013 Affordability Gap equally. Of the 151 House Districts:

- Five (5) had an average per-household Affordability Gap of more than \$2,200;
- Eleven (11) more had a Gap of more than \$2,000 but less than \$2,200;
- Ten (10) more had a Gap of \$1,800 but less than \$2,000.

In contrast, 38 House Districts had a per-household Affordability Gap of less than \$1,400 in the population with income at 185% to 200% of Poverty.

As discussed above for the lowest income ranges, however, care should be taken whenever considering "average" figures. Experience in individual legislative districts can vary widely from the average. For households with income between 185% and 200% of Poverty Level, for example, the per-household Affordability Gap in Connecticut in 2013 ranges widely, with the lowest Gap (\$1,354) being less than 60% of the highest Gap (\$2,295) at that income level. For households with income between 150% and 185% of Poverty level, the lowest Affordability Gap (\$1,609) was only 63% as high as the highest Gap for households in that Poverty Level (\$2,554).

While the number of legislative House Districts with higher per-household Affordability Gaps is not insubstantial in the higher Poverty ranges, these House Districts do not necessarily represent the bulk of Connecticut's population. For all Poverty Level ranges at or below 100% of Poverty, 72 of the 151 House Districts had an average Affordability Gap less than the statewide average for each respective Poverty range. In contrast, for all Poverty Level ranges above 100% of Poverty, 110 House Districts had an average Affordability Gap less than the statewide average for the respective Poverty Range. In those higher income ranges above Poverty Level, in other words, a few legislative House Districts with substantially higher average Affordability Gaps brought the total statewide average higher. For households with incomes above 100% of Poverty, there is greater variability from top to bottom across the state than there is for households with income below 100% of Poverty.

Table 3. 2013 Average Per-Household Gap and Aggregate Gap by Selected FPL Ranges

Ratio of Income to Federal Poverty Level	Per Household Gap	Number of House Districts with Aggregate Affordability Gap that is: /b/			Aggregate Affordability Gap
		Less than \$500,000	\$500 - \$750,000	\$750,000 or more /c/	
100% - 125%	\$2,343	12	135	4	\$89,730,267
125% - 150%	\$2,105	32	115	4	\$86,607,611
150% - 185% /a/	\$1,795	0	117	34	\$109,156,639
185% - 200% /a/	\$1,553	147	4	0	\$40,071,301

NOTES:

/a/ Note that the Poverty Level ranges are not of equal size. The “highest” two ranges are not presented in increments of 25% as the lowest two ranges are.

/b/ The numbers in these columns are additive. The “less than \$0.5 mm” column is not a subset of the “less than \$2.0 mm” column.

/c/ No legislative House District has an individual aggregate Affordability Gap greater than \$1.0 million.

Table 3 shows that the Affordability Gap in the highest income ranges poses a danger in assuming that the average Affordability Gap is closely associated with the aggregate Gap in Connecticut. For households with income between 150% and 185% of Poverty, for example, while the average Gap is \$1,795 per household, the aggregate Gap is the highest of *any* of the stated income ranges (\$109.2 million). The reason is the large number of households who live with income between 150% and 185% of Poverty.

In that Poverty range, no House District has an aggregate Affordability Gap of less than \$0.50 million, even though the average Gap is the second lowest of any income range in the State. For households between 125% and 150% of Poverty, even though the average per-household Gap is second highest (\$2,105), there are 32 House Districts with aggregate Gaps of less than \$0.5 million. The distribution of House Districts by the size of the aggregate Affordability Gap shows that the per-household Gap can easily mislead relative to the aggregate.

Measuring Energy Burdens rather than Dollar Gaps

The relative affordability of home energy can also be measured by the home energy burdens imposed on Connecticut households. As discussed above, a home energy “burden” is the annual home energy bill divided by the household’s annual income. A household with a home energy bill of \$2,500 and an annual income of \$10,000, in other words, has a home energy burden of 25%. Home energy burdens that exceed 6% of income are considered to be unaffordable.

Table 4 below presents summary data on the home energy burdens experienced by Connecticut residents at differing ranges of the Federal Poverty Level. For Connecticut households in “deep poverty,” which is the term commonly attached to households with income of 50% of Poverty Level or below, home energy bills alone exceed the 30% burden considered to be “affordable” for *total shelter costs*. Indeed, in no (0) Connecticut legislative House District did home energy burdens for households with income at or below 50% of Poverty reach as low as 48% of income or lower. In contrast, 38 House Districts faced home energy burdens of more than 54% of income, up to and including five (5) with an average energy burden exceeding 60% of income at this Poverty range.

Table 4. House Districts by Energy Burdens of Households at Selected Poverty Ranges (2013)

Less than 50% FPL		100 – 125% FPL		150 – 185% FPL		185 – 200% FPL	
Burden Range	Number of Districts	Burden Range	Number of Districts	Burden Range	Number of Districts	Burden Range	Number of Districts
48% or less	0	<17%	0	<11%	0	<10%	0
>48% - 54%	113	17% - 20%	132	11% – 13%	113	10% - 11%	112
>54% - 60%	33	>20% - 22%	15	>13% - 15%	38	>11% - 12%	23
>60%	5	>22%	4	>15%	0	>12%	16

While households with income between 100% and 125% of Poverty do not have home energy burdens exceeding 60% of their income, or even exceeding 25% of their income, the average home energy burden exceeded 20% of income in 19 of Connecticut’s House Districts, while in an additional 132 of Connecticut’s 151 House Districts, home energy burdens fell between 17% and 20%, three or more times higher than the level considered to be “affordable.”

Even at 185% to 200% of Poverty Level, no legislative House District had an average energy burden that fell below 10% of income, let alone below the affordable home energy burden of 6%. Indeed, note that 16 House Districts at 185% to 200% of Poverty Level had average county-wide energy burdens of more than 12%, more than twice the affordable level, while an additional 135 House Districts had average home energy burdens of between 10% and 12%. No House District, however, had a burden exceeding 15% of income at that Poverty Level range.

Six Important Findings

1. The largest Home Energy Affordability Gap falls in the lowest ranges of Poverty in average per-household terms. At each step-increase in household income as a percentage of Poverty Level (i.e., from 0-49% to 50-99%, from 50-99% to 100-124%, etc.), the per-household Affordability Gap *decreases*.
2. Just because the *average* per-household Affordability Gap is greater at the lowest Poverty ranges, the *aggregate* Affordability Gap does not necessarily follow that same pattern. Because some income ranges at higher Poverty Levels have a greater number of households in them, the aggregate Affordability Gap at those higher Poverty ranges is greater even while the average Affordability Gap may be lower.
3. While the home energy burdens drop quickly as incomes rise, the home energy burden as a percentage of income remains above affordable levels statewide through income levels reaching well above Poverty Level. Even households with income between 185% and 200% of Poverty Level, on average, experience energy burdens of more than 6% statewide in Connecticut.
4. Care should be taken whenever considering “average” figures. The aggregate Affordability Gap in individual legislative Districts can vary widely from the statewide average.
5. While the number of House Districts with the highest per-household Affordability Gaps is not insubstantial on a geographic basis, these Districts do not represent the bulk of Connecticut’s population.
6. For Connecticut households in “deep poverty,” which is the term commonly attached to households with income of 50% of Poverty Level or below, home energy bills alone exceed the 30% burden considered to be “affordable” for *total shelter costs*.

Part 3: Home Energy Affordability by Geography

Home energy affordability in Connecticut can be examined geographically as well as by income. The Affordability Gap is substantial and it is statewide. It reaches into every region of the state, including both urban and rural areas. Connecticut regions with the lowest aggregate Affordability Gap nonetheless still have a Gap in the millions of dollars each year.

Data at the Regional Level

Connecticut's Home Energy Affordability Gap is a statewide phenomenon. Connecticut's Congressional Districts are used to define the state's regions. Connecticut has five Congressional Districts.

Aggregate and Per-Household Gap by Region

The Affordability Gap differs somewhat by geographic region within the State of Connecticut. The aggregate Home Energy Affordability Gap will differ by factors that include the heating degree days (HDDs) and cooling degree days (CDDs); the number of low-income households and the poverty level at which those households live; the type and size of housing unit; the mix of heating fuels (e.g., natural gas, electricity, fuel oil); and other similar factors.

While the Home Energy Affordability Gap varies somewhat based on geography within the state of Connecticut, there can be no question but that the Affordability Gap is a statewide

phenomenon. This fact can be seen by comparing the aggregate Affordability Gap in each Congressional District in Connecticut. The 2013 statewide Affordability Gap of \$700 million is split nearly evenly over each of Connecticut’s Congressional districts. While the distribution of the Affordability Gap is not identical over Connecticut’s Congressional districts, the variation is relatively small. Congressional District 4 contributes the least to the statewide total (17%), while the First, Second and Third District are all at the upper end (21% each). Congressional District #4, with the *smallest* Affordability Gap in Connecticut, nonetheless faces a Gap of more than \$119 million.

Table 5 below shows the aggregate and average affordability Gap by region for the total population below 200% of Federal Poverty Level along with selected ranges of Poverty Level. As is evident, and as was discussed previously, care must be taken in using the statewide average Home Energy Affordability Gap as illustrative of the affordability (or lack thereof) in any particular region of Connecticut on a per-household basis. Not only does the per-household Affordability Gap in most Congressional Districts differ from the statewide average, sometimes substantially, but the extent to which regional data varies from the statewide average depends on the specific region being considered. The statewide average Affordability Gap for Connecticut for the total population below 200% of Poverty Level was \$2,368 in 2013. On the “high” end, Congressional District 2 exceeds the statewide average by 12%, with an average Affordability Gap of \$2,649. The deviation on the “low” end is not quite as substantial. The largest deviation can be found in Congressional District 5 (\$2,358, only \$10 lower).

Regional Contributions to State Totals

As incomes increase, the disparities in the aggregate Affordability Gap (per Poverty Range) smooth out somewhat. Table 6 shows the aggregate affordability Gap by region and selected Poverty Levels along with the percentage contribution each region makes to the state total.

Several observations arise from this Table. Congressional District 4 consistently makes the lowest contribution to the total statewide Affordability Gap. In each of the Federal Poverty ranges presented, District 4 has the lowest percentage contribution to the state total. In contrast, while Congressional District 3 makes the greatest contribution to the statewide Affordability Gap for households with income less than 50% of Federal Poverty Level (22.9% of the statewide total), it falls to the second highest contribution (21.2%) by the time incomes reach 185% to 200% of Poverty, with District 2 making the largest contribution (21.8%) and District 5 making a contribution (20.4%) in the same range.

Table 5. Aggregate and Average Home Energy Affordability Gap by Congressional District and Poverty Level Ranges (Connecticut) (2013)

District	Total		< 50% FPL		50% - 99% FPL		100% - 125%		125% - 150% FPL		150% - 185% FPL		185% - 200% FPL	
	Sum (\$mm)	Average	Sum (\$mm)	Average	Sum (\$mm)	Average	Sum (\$mm)	Average	Sum (\$mm)	Average	Sum (\$mm)	Average	Sum (\$mm)	Average
1	\$146.0	\$2,241	\$38.6	\$2,964	\$42.5	\$2,608	\$18.8	\$2,226	\$16.7	\$1,971	\$22.0	\$1,666	\$7.5	\$1,411
2	\$145.2	\$2,649	\$34.7	\$3,436	\$37.6	\$3,079	\$18.1	\$2,697	\$18.9	\$2,442	\$25.6	\$2,136	\$10.2	\$1,881
3	\$149.1	\$2,287	\$41.5	\$3,008	\$40.9	\$2,647	\$19.3	\$2,261	\$18.4	\$2,004	\$21.1	\$1,695	\$7.8	\$1,438
4	\$119.0	\$2,344	\$30.1	\$3,110	\$33.2	\$2,736	\$15.7	\$2,335	\$15.0	\$2,068	\$18.8	\$1,748	\$6.3	\$1,480
5	\$140.6	\$2,358	\$36.5	\$3,124	\$38.5	\$2,763	\$17.9	\$2,376	\$17.7	\$2,118	\$21.7	\$1,808	\$8.3	\$1,550
Total / Avg	\$699.8	\$2,368	\$181.4	\$3,090	\$192.8	\$2,726	\$89.7	\$2,343	\$86.6	\$2,105	\$109.2	\$1,795	\$40.1	\$1,553

Table 6. Aggregate Home Energy Affordability Gap by Congressional District and Contribution to State Total (Connecticut) (2013)

District	Total		< 50% FPL		100% - 125% FPL		125% - 150% FPL		185% - 200% FPL	
	Sum (\$mm)	Statewide Contribution	Sum (\$mm)	Statewide Contribution	Sum (\$mm)	Statewide Contribution	Sum (\$mm)	Statewide Contribution	Sum (\$mm)	Statewide Contribution
1	\$146.00	21%	\$38.60	21%	\$42.50	22%	\$18.80	21%	\$16.70	19%
2	\$145.20	21%	\$34.70	19%	\$37.60	20%	\$18.10	20%	\$18.90	22%
3	\$149.10	21%	\$41.50	23%	\$40.90	21%	\$19.30	22%	\$18.40	21%
4	\$119.00	17%	\$30.10	17%	\$33.20	17%	\$15.70	18%	\$15.00	17%
5	\$140.60	20%	\$36.50	20%	\$38.50	20%	\$17.90	20%	\$17.70	20%
Total	\$699.80	100%	\$181.40	100%	\$192.80	100%	\$89.70	100%	\$86.60	100%

Congressional District 1 makes one of the highest contributions on a statewide basis under 100% of Poverty, but makes a steadily decreasing contribution to the statewide totals as incomes increase over Poverty. Starting with a contribution of 21.3% of the statewide Gap for households with income below 50% of Poverty, the District 1 contribution falls to 21.0% for households between 125% and 150%, and to 19.3% for households with income between 185% and 200% of Poverty. In contrast, District 2 has a steadily increasing contribution to the statewide total. Starting with a contribution of 19.5% of the statewide Gap for households with income below 50% of Poverty, the District 2 contribution increases to 19.5% for households at between 100% and 125% of Poverty, to 20.2% for households with income between 125% and 150% of Poverty, and to 21.8% for households with income between 185% and 200% of Poverty.

Congressional District 5 has a stable contribution toward the statewide total Affordability Gap. Its smallest contribution to the statewide total (100% - 125% and 125 - 150% of Poverty: 20.0%) does not substantially differ from its largest contribution (185% - 200% of Poverty: 20.4%). District 4, also, makes a reasonably consistent contribution to the statewide total at each Poverty level.

Contributions to Regional Totals by Income Range

Table 7 presents, within each Congressional District, how much each Poverty Level range contributes to the aggregate Affordability Gap within that District. Households are grouped together into six ranges below 200% of Poverty for purposes of this Table.

Statewide, the two lowest Poverty Level ranges (0-50%, 50-100%), despite their substantively different Affordability Gap levels on a per-household basis, contribute roughly similar amounts to the aggregate home energy affordability gap (25% - 30%). This equal contribution occurs in virtually every region. Congressional District 2 exhibits a somewhat lower contribution in the lowest income range (24% at less than 50% of Poverty) and somewhat higher in the higher income range (18% at 100-150% of Poverty and 7% at 185 - 200% of Poverty). In all Congressional Districts, except District 2, the aggregate Affordability Gap drops significantly at between 150% and 200% of Poverty.⁹

⁹ Note that the Poverty Ranges of 100 - 125% of Poverty and 125% - 150% of Poverty need to be added to make them comparable to the lower ranges (set forth in 50% increments). The Poverty Ranges of 150 - 185% and 185 - 200% of Poverty also need to be added to make them comparable to other increments of 50% of Poverty.

Table 7. Contribution to Congressional District Aggregate Affordability Gap by FPL Ranges (2013)

District	Aggregate Gap (\$mm) (100%)	Less than 50% FPL	50 – 100% FPL	100 – 125% FPL	125 – 150% FPL	150 - 185% FPL	185 – 200% FPL
1	\$146.00	26%	29%	13%	11%	15%	5%
2	\$145.20	24%	26%	12%	13%	18%	7%
3	\$149.10	28%	27%	13%	12%	14%	5%
4	\$119.00	25%	28%	13%	13%	16%	5%
5	\$140.60	26%	27%	13%	13%	15%	6%
Statewide	\$699.80	26%	28%	13%	12%	16%	6%

Connecticut is noteworthy in that each Poverty Level range contributes roughly equal proportions to the Affordability Gap in each Congressional District. The fact that the per-household Gap is highest in the lowest income ranges does not mean that the need for energy affordability assistance is the primary province of households with the lowest incomes.

What can be concluded from Table 7 is that care must be taken in making assumptions about the impact of differing affordability strategies in different regions of the state of Connecticut. Directing assistance toward the lowest income households in order to reach the greatest need would miss a considerable portion of the total aggregate Affordability Gap in each Congressional District. In contrast, expanding income eligibility to the higher ranges of income would be effective in meeting a significant proportion of the aggregate Affordability Gap.

Six Important Findings

1. While the Home Energy Affordability Gap varies somewhat based on geography within the state of Connecticut, there can be no question but that the Affordability Gap is a statewide phenomenon. The 2013 statewide Affordability Gap of \$700 million is split nearly evenly over each of Connecticut’s Congressional districts. While the distribution of the Affordability Gap is not identical over Connecticut’s Congressional districts, the variation is relatively small.
2. Care must be taken in using the statewide average Home Energy Affordability Gap as illustrative of the affordability (or lack thereof) in any particular region of Connecticut on a per-household basis. The per-household Affordability Gap in most Congressional Districts differs from the statewide average, sometimes substantially.

3. Congressional District 4 consistently makes the lowest contribution to the total statewide Affordability Gap. In each of the Federal Poverty ranges presented, District 4 has the lowest percentage contribution to the state total. In contrast, while Congressional District 3 makes the greatest contribution to the statewide Affordability Gap for households with income less than 50% of Federal Poverty Level, it falls to the second highest contribution by the time incomes reach 185% to 200% of Poverty, with District 2 making the largest contribution.
4. Statewide, the three lowest Poverty Level ranges (0-50%, 50-100%, 100-150%), despite their substantively different Affordability Gap levels on a per-household basis, contribute roughly similar amounts to the aggregate home energy affordability gap. This equal contribution occurs in virtually every region.
5. In all Congressional Districts except District 2, the aggregate Affordability Gap drops significantly at between 150% and 200% of Poverty. The proportionate contribution of the highest income range to the aggregate Affordability Gap cluster around 19 – 21% in Congressional Districts 1, 3, 4 and 5.
6. Care must be taken in making assumptions about the impact of differing affordability strategies in different regions of the state of Connecticut. Directing assistance toward the lowest income households in order to reach the greatest need would miss a considerable portion of the total aggregate Affordability Gap in each Congressional District. In contrast, expanding income eligibility to the higher ranges of income would be effective in meeting a significant proportion of the aggregate Affordability Gap.

Part 4: Patterns of Incomes in Connecticut over Time

In the discussion in the section immediately above, we saw how changes in the mix of income over the total population can have an impact on the total Home Energy Affordability Gap in Connecticut. To the extent that the numbers of households with the lowest income levels increase, both in absolute and proportionate terms, there will result a disproportionately higher increase in the overall Home Energy Affordability Gap. Given that realization, in this section, we will take a closer look at the dynamics of income in Connecticut since 2010 to determine whether trends and patterns can be identified.¹⁰

Median Income

This section considers the median income of Connecticut residents by various factors commonly recognized to be related to low-income status. Low-income households, for example, tend more frequently to be renters rather than homeowners. Frequently, household income is related to household size, with larger households having somewhat higher household income. Age is also frequently related to income, with income increasing throughout a person's working years and declining after retirement. The discussion that follows examines the median income for each of these factors. Median income represents the "middle." It is that point at which half of all households have income higher and half of all households have income lower.

¹⁰ Frequently, it is the *pattern* of income changes that is as important as the actual level of income in any given individual year.

Median Income by Tenure

Connecticut data confirms that tenants have significantly lower income than do homeowners. In Connecticut, median tenant income remains half of the annual income of homeowners. In 2012, while tenant income was \$34,226, homeowner income was \$87,742.¹¹

	2010	2011	2012	Change: 2010 – 2012
Total households	\$64,032	\$65,753	\$67,226	5.0%
Owner-occupied	\$83,376	\$85,610	\$87,742	5.2%
Tenant-occupied	\$33,556	\$33,755	\$34,226	2.0%

SOURCE: American Community Survey, 1-year data, Table B25119.

Both homeowners and tenants saw an increase in their real (inflation-adjusted) income from 2010 to 2012. Both groups experienced a slight increase in median income in 2011 relative to 2010, with homeowner incomes increasing markedly more than tenant incomes in 2012. Over the three year period, homeowner incomes increased more than 2.5 times faster than tenant incomes did.

Median Income by Household Size

Smaller households have noticeably lower incomes than do households with larger numbers of members in Connecticut. Median household income is lowest for 1-person households (\$31,807), with progressive increases as households gain members, up to \$74,359 for 2-person households; \$86,889 for 3-person households; and \$104,033 for 4-person households.

The relationship of household size and income is likely to result from a number of different, yet related, factors. One of the primary driving factors lies with the fact that smaller households are also associated with age. Households with aging household members tend to be smaller, being primarily one- and two-person units. These households tend to have lower annual incomes. So, too, however, do younger households tend to be disproportionately one- and two-person units.

The lower incomes associated with smaller households, therefore, may well reflect the age of the householder as much as reflecting an inherent earning disparity for households with fewer members. It is possible to see, for example, that the income disparity based on household size largely disappears for households with four members or more.

¹¹ In this one section, when dollar figures are presented, the 1-year ACS data is used. The multi-year averages tended to mask year-to-year changes.

Table 9. Median Income by Household Size, 2010, 2011, 2012 (Connecticut)

	2010	2011	2012	Change: 2010 - 2012
All households	\$64,032	\$65,753	\$67,276	5.1%
1-person	\$31,828	\$32,951	\$31,807	-0.1%
2-person	\$71,916	\$72,986	\$74,359	3.4%
3-person	\$82,373	\$85,296	\$86,889	5.5%
4-person	\$98,122	\$100,518	\$104,033	6.0%
5-person	\$93,913	\$97,676	\$100,984	7.5%
6-person	\$90,677	\$100,673	\$94,790	4.5%
7+-persons	\$101,368	\$91,496	\$99,164	-2.2%

SOURCE: American Community Survey, 1-year data, Table B19019.

Aside from age, households with a larger number of members are more likely also to have a greater number of worker incomes. By definition, in other words, a one-person household will not have two workers contributing to overall household income. In Connecticut in 2011, 37% of all one-worker households represented one-person households; 57% of all two-worker households represented three- and four-person households.¹²

Overall, smaller households experienced a lesser increase in real incomes than did larger households over the three year period 2010 through 2012. Median income for a one-person Connecticut household held virtually unchanged (-0.1%) from 2010 to 2012, with two-person increasing by 3.4%. Incomes increased at a greater rate for households with three to six persons. Indeed, the income of 5-person households increased by 7.5% in that same three-year time period. Only 7-person households experienced a substantive decline in real income.

Median Income by Age

Median income is related to age in Connecticut. On the one hand, householders age 25 years or younger have a median income less than half that of the statewide median (\$29,945 vs. \$67,276). On the other hand, householders age 65 years or older have a median income somewhat less than 65% of the statewide median (\$41,947 vs. \$65,276).

Younger households experienced a decline in income in the three-year period 2010 through 2012, while older householders did not. The three-year median income decline of 1.5% for

¹² American Community Survey (1-year data), at Table B08202.

householders aged 25 or younger was in contrast to income increases for householders aged 25 – 44 (2.2%) as well as householders aged 45 – 64 (5.5%). In Connecticut, from 2010 to 2012, retirement aged householders (age 65 and older) experienced the greatest growth in real incomes (6.9%).

Table 10. Median Income by Age of Householder, 2010, 2011, 2012 (Connecticut)				
Age of Householder	2010	2011	2012	Change: 2010 - 2012
Total households:	\$64,032	\$65,753	\$67,276	5.1%
Under 25 years	\$30,400	\$27,425	\$29,945	-1.5%
25 to 44 years	\$68,650	\$68,875	\$70,181	2.2%
45 to 64 years	\$81,004	\$82,223	\$85,472	5.5%
65 years and over	\$39,235	\$41,843	\$41,947	6.9%

SOURCE: American Community Survey, 1-year data, Table B19049.

While young Connecticut householders (age 25 and younger) experienced a decline in median income from 2010 through 2012, they began to trend upward again in 2012. Having lost income from 2010 to 2011, the 2012 improvement was simply insufficient to recoup their prior year loss. In every other age group in Connecticut, median incomes increased for all three years consecutively.

Median Income by Work Experience

Median income for full-time year-round workers in Connecticut remained virtually unchanged from 2010 to 2012. Real median income for full-time, year-round male workers increased by only \$39 (\$61,831 to \$61,870) from 2011 to 2012, while median income for full-time, year-round female workers declined (from \$49,902 to \$49,621).

Workers who worked either part-time, or for a partial year, fared somewhat better in Connecticut. Male workers experienced an increased income in 2012 relative to 2011 that just barely placed them back to their 2010 level (2010: \$18,767 vs. 2012: \$18,775). Female workers who were employed either part-time or for a partial year experienced a small increased income in 2011 with further increases in 2012 (\$14,148 to \$14,228 in 2011 to \$14,708 in 2012)

Table 11. Median Income by Sex by Work Experience, 2010, 2011, 2012 (Connecticut)			
Work Status in past 12-Months	2010	2011	2012
Total (dollars):	\$31,025	\$31,458	\$32,920
Male --			
Total (dollars)	\$40,070	\$40,279	\$41,099
Full-time, year-round	\$61,257	\$61,831	\$61,870
Other	\$18,767	\$18,197	\$18,775
Female –			
Total	\$24,742	\$25,017	\$25,808
Full-time, year-round	\$47,206	\$49,902	\$49,621
Other	\$14,148	\$14,228	\$14,708
SOURCE: American Community Survey, 1-year data, Table B19326.			

Overall, unlike the immediately preceding years, incomes for Connecticut workers overall increased in 2012, including for both men (\$40,279 to \$41,099) and women (\$25,017 to \$25,808).

Mean Income

In contrast to the median incomes examined above, this section considers the *average* (i.e., mean) income for Connecticut residents by various demographic factors.¹³ The year 2012 is the most recent year for which data is yet available.

Mean Income by Income Quintile

Average income in Connecticut declined in real, inflation-adjusted, terms from 2010 to 2012 at the lowest level of income, but not for higher levels of income. Table 12 presents the mean income by income quintile for the three-year period. A “quintile” represents one-fifth of the Connecticut population. Thus, for example, the “lowest” quintile is the one-fifth of households in Connecticut with the lowest incomes. The “highest quintile” is the one-fifth of households in Connecticut with the highest incomes. The “third quintile” is the middle, which includes those households falling between 40% and 60%. Quintiles are based on counts of households, not the level of income.

¹³ The average (“mean”) differs from the median in that very high, or very low, incomes can affect the average more substantially.

Income declined in Connecticut for the lowest income quintile from 2010 through 2012. The mean income for the lowest income quintile declined from \$13,969 (2010) to \$13,928 (2012) (-0.3%). The primary decline occurred in 2011 (\$13,969 in 2010 to \$13,851 in 2011); while income in the lowest quintile rebounded in 2012 (from \$13,851 to \$13,928), the rebound was insufficient to return these households to their 2010 levels.

Incomes in the higher quintiles experienced increasingly large three-year increases as incomes became relatively higher. The third quintile increase of 4.9% exceeded the second quintile increase of 3.0%, while the fourth quintile increase (5.1%) exceeded the third quintile. Households in the highest quintile of income also experienced the largest growth in income from 2010 to 2012 (6.1%); the households in the “top 5%” of income experienced even higher growth over the three-year period (7.0%).

The dollar level of income in the lowest income quintile for Connecticut is substantially below the Federal Poverty Level. Poverty Level for a two-person household in 2012 was \$15,130. Poverty Level for a three-person household in 2012 was \$19,090. The average household size in Connecticut in 2012 was 2.56 persons. In contrast, income in the lowest income quintile in 2012 was \$13,928.

Indeed, the bottom two quintiles of income in Connecticut in 2010 were likely at or below 200% of Federal Poverty Level. It is not until households reach the middle (“third quintile”) of income that they are comfortably in excess of 200% of Poverty. Incomes at or below 200% of Poverty Level, however, appear to characterize 40% or more of Connecticut’s overall population.

Table 12. Mean Income by Income Quintile, 2010, 2011, 2012 (Connecticut)				
Quintile Means	2010	2011	2012	Change: 2010 – 2012
Lowest Quintile	\$13,969	\$13,851	\$13,928	-0.3%
Second Quintile	\$37,716	\$38,253	\$38,840	3.0%
Third Quintile	\$64,256	\$66,114	\$67,388	4.9%
Fourth Quintile	\$100,813	\$103,747	\$105,935	5.1%
Highest Quintile	\$233,617	\$239,273	\$247,890	6.1%
Top 5 Percent	\$436,169	\$436,723	\$466,734	7.0%

SOURCE: American Community Survey, 1-year data, Table B19081.

As discussed in more detail below, incomes can also be compared to “living wage” (or “self-sufficiency”) income calculations. Incomes in Connecticut do not equal or exceed a “living wage” income for households in the two lowest income quintiles in Connecticut.

Mean Income by Poverty Level

The mean incomes presented in Table 13 indicate that households in Connecticut do not experience a “living wage” (sometimes referred to as a “self-sufficient income”) until they achieve an income well in excess of 200% of Poverty Level. According to a “living wage calculator” prepared by the Massachusetts Institute of Technology (MIT), the “living wage” in Connecticut is:

- \$48,940 for a two-person (one-adult, one child) household;
- \$58,739 for a three-person (one adult, two child) household;
- \$41,747 for a three-person (two adults, one child) household;
- \$44,667 for a four-person (two adult, two child) household.

In contrast to these living wage incomes, the mean annual income of households with income below 200% of Poverty Level in Connecticut is less than \$41,000.

Table 13. Mean Income by Ratio of Income to Poverty Level, 2010, 2011, 2012 (Connecticut)			
Persons	2010	2011	2012
Total	\$111,048	\$106,818	\$107,540
Below 50%	\$25,685	\$15,286	\$13,975
50 – 75%	\$22,514	\$15,977	\$24,227
75 – 100%	\$20,921	\$24,104	\$21,073
100 – 125%	\$27,373	\$25,196	\$24,993
125 - 150%	\$34,070	\$27,690	\$32,487
150 – 175%	\$44,388	\$35,456	\$36,428
175 – 200%	\$42,478	\$42,881	\$40,480
200 – 300%	\$53,348	\$55,326	\$55,379
300 – 400%	\$68,810	\$72,380	\$76,493
400% and above	\$168,452	\$167,501	\$170,941
SOURCE: Current Population Survey, Annual Social and Economic Supplement.			

Indeed, in contrast to these “living wage” calculations by MIT, the mean income for households with income between 200% and 300% of Poverty Level was \$55,379.

Mean Income by Poverty Level and Age

Table 14 layers “age” as an additional factor to consider onto the examination of mean incomes by ratio of income to Federal Poverty Level. With one exception (50 – 75% of Poverty), across-the-board, aging households have lower incomes holding Federal Poverty Level constant. In 2012, for example, a household with a head of household age 65 or older living with income between 100% and 125% of Poverty Level would have had an average income of \$13,497, while a household with a head of household between 18 and 64 years of age had an income more than 80% higher (\$24,553). An aging household living with an average income between 175% and 200% of Poverty had an average income (\$28,949) only two-thirds (67.5%) of the income of a household with a head of household age 16 to 64 (\$42,849).

Table 14. Mean Income by Ratio of Income to Federal Poverty Level and Age, 2010, 2011, 2012

Persons	2010			2011			2012		
	Total	18-64	64-85+	Total	18-64	64-85+	Total	18-64	64-85+
Total	\$111,048	\$116,796	\$57,928	\$106,818	\$112,445	\$69,929	\$107,540	\$110,570	\$76,969
Below 50%	\$25,685	\$29,853	\$1,598	\$15,286	\$19,323	\$4,394	\$13,975	\$11,737	\$2,017
50 – 75%	\$22,514	\$28,625	\$7,505	\$15,977	\$16,597	\$7,305	\$24,227	\$24,648	\$28,590
75 – 100%	\$20,921	\$23,709	\$11,674	\$24,101	\$26,153	\$13,154	\$21,073	\$20,540	\$11,120
100 – 125%	\$27,373	\$27,223	\$22,007	\$25,196	\$26,295	\$11,756	\$24,993	\$24,553	\$13,497
125 - 150%	\$34,070	\$38,102	\$18,786	\$27,690	\$30,354	\$18,070	\$32,487	\$32,430	\$27,524
150 – 175%	\$44,388	\$55,452	\$22,431	\$35,456	\$43,367	\$18,575	\$36,428	\$39,856	\$22,969
175 – 200%	\$42,478	\$49,106	\$25,810	\$42,881	\$47,952	\$27,627	\$40,480	\$42,849	\$28,949
200 – 300%	\$53,318	\$55,559	\$35,880	\$55,326	\$55,745	\$37,146	\$55,379	\$57,548	\$34,658
300 – 400%	\$68,810	\$70,156	\$47,321	\$72,380	\$72,814	\$45,451	\$76,493	\$76,215	\$53,808
400% and above	\$168,452	\$165,271	\$104,510	\$167,501	\$166,337	\$127,714	\$170,941	\$165,002	\$138,432

SOURCE: Current Population Survey, Annual Social and Economic Supplement.

One reason for this is that, as discussed above, aging households are likely to live with smaller household sizes. Since Poverty Level is income taking into account household size, a household with fewer members will, by definition, have a lower income holding Poverty Level constant.

Nonetheless, aging households quite clearly have fewer resources to pay home energy bills in Connecticut, particularly at the lowest Poverty Levels. In the income range of “below 50% of

Poverty,” aging households have less than 20% of the income that working age households do. With the exception noted above, the ratio of aging income to working-age income stays below 60% through 125% of Poverty (75 - 100% FPL: 54%; 100 – 125% FPL: 55%). As Poverty Level increases, the income gap between aging households and non-aging households narrows. Between 150% and 400% of Poverty, the ratio of average aging incomes to non-aging incomes narrows to between 60% and 70%, while above 400% of Poverty, the ratio narrows further to roughly 80%. The difference in income at the lowest Poverty Levels, by age of the householder, in other words, cannot be attributed exclusively to the size of the household.

Poverty Status

In the discussion above, we examined the dollar levels of income by various factors that might have an influence on the ratio of income to the Federal Poverty Level. In the discussion below, our attention turns away from dollars of income to instead consider Poverty *status*. The term “poverty status” indicates simply whether a household’s income is below the Federal Poverty Level or above the Federal Poverty Level in the year in question.

The measure is of the number of households. For these purposes, in other words, it matters not whether someone is at 20% of Poverty Level or 95% of Poverty Level. In either case, they are “below Poverty.” It matters not whether someone is at 125% of Poverty Level or at 425% of Poverty Level. In either case, they are “above Poverty.”

The factors considered below include educational attainment and the receipt of Food Stamps. In addition to these assessments of Poverty status, the discussion below will also briefly consider the extent to which Connecticut residents are recipients of public assistance income, including Food Stamps.¹⁴

Poverty Status by Educational Attainment

The level of educational attainment in Connecticut has a substantive influence on the Poverty status of Connecticut residents. Table 15 presents data on Poverty status by the level of educational attainment. According to this Table, in 2012, nearly two-thirds of both men (68%) and women (62%) living with income below Poverty Level have only a high school degree or less. Within the male population, 29% of individuals age 25 or older who are living below Poverty have less than a high school education, while roughly the same percentage of women do (27%). An additional 38% of men in Poverty have only a high school degree, but no further education, while 35% of women do.

¹⁴ The Federal “Food Stamp” program is now formally referred to as the Supplemental Nutrition Assistance Program (SNAP). Because of the general familiarity of persons with the Food Stamp nomenclature, and the continuing use of the “Food Stamp” phraseology by the U.S. Census Bureau, references below are to Food Stamps rather than to SNAP.

Table 15: Individuals by Sex by Educational Attainment by Below-Poverty Status, 2010, 2011, 2012 (Connecticut) (persons age 25 and older)			
	2010	2011	2012
Total:	2,388,444	2,399,147	2,414,730
Below Poverty:	198,421	208,379	205,418
Male:	80,586	83,170	84,610
Less than HS graduate	24,662	24,484	24,955
HS graduate /a/	30,920	27,890	32,311
Some college /b/	12,534	17,649	17,520
Bachelor's degree /c/	12,470	13,057	9,824
Female:	117,835	125,209	120,808
Less than HS graduate	30,847	36,735	32,243
HS graduate /a/	39,653	41,705	42,628
Some college /b/	30,837	29,900	29,715
Bachelor's degree /c/	16,498	16,869	16,222
SOURCE: American Community Survey, 1-year data, Table B17003.			
NOTES: /a/ Includes High School equivalency. /b/ Includes associates degree. /c/ Or higher.			

The absolute number of individuals falling into Poverty with a high school degree or less shows a gender difference that has grown since 2010. In 2012, nearly 20,000 more women than men age 25 years or older with a high school diploma or less lived in Poverty in Connecticut. Moreover, from 2010 to 2012, the number of women living below Poverty with a high school degree or less grew somewhat more rapidly than the number of men (6% growth in number of women vs. 3% growth in number of men). The growth rate for women in poverty was faster than the growth rate for men in poverty both for those who lacked a high school diploma (5% women vs. 1% men) and for those who were a high school graduate but lacked further schooling (8% women vs. 4% men).

The growth in the number of men who lived in poverty while having some college education (but not a degree) (140%) exploded from 2010 to 2012, while the number of women in poverty having some college education (but not a degree) actually contracted (-3.6%).

Food Stamps by Poverty Status

The federal Food Stamp program is widely considered to be the most fully-enrolled public assistance program in the country today. In Connecticut, in Fiscal Year 2010 (the last year for which data is available), 78% of all households eligible for Food Stamps actually participated in the Food Stamp program, an increase from 68% in 2007. Food Stamp participation has continued to experience a dramatic increase in Connecticut. The participation of 403,466 persons in 2012 represented a 79% increase in Food Stamp participation over a five year period.¹⁵

Food Stamps in Last 12-Months? /a/ /b/	2010	2011	2012
Total:	1,358,809	1,351,643	1,357,812
Received Food Stamps	138,205	152,131	163,064
Income below Poverty	63,852	75,016	76,797
Income above Poverty	74,353	77,115	86,267
No Food Stamps	1,220,604	1,199,512	1,194,748
Income below Poverty	71,522	68,295	64,831
Income above Poverty	1,149,082	1,131,217	1,129,917

SOURCE: American Community Survey, 1-year data, Table B22003.

NOTES:
/a/ Income and receipt of Food Stamps both within previous 12 months.
/b/ "Above Poverty" includes at or above Poverty Level.

One reason for the increase in Food Stamp participation is the increase in Food Stamp participants amongst households that have income above the Federal Poverty Level. In 2009, households with above-Poverty incomes represented only 46% of the total Food Stamp participant population; by 2011, the participation of above-Poverty households had increased to more than 77,000 households, representing more than half (51%) of the total participant population; by 2012, the number of above-Poverty Food Stamp recipients had risen to more than 86,000 households. Indeed, of the 25,000 increase in participant households from 2010 to 2012, 12,000 (48%) fell within the population of households having income *above* the Federal Poverty Level.

¹⁵ Food Research and Action Coalition (FRAC). Profile of Hunger, Poverty and Federal Nutrition Programs (Connecticut). <http://frac.org/wp-content/uploads/2010/07/ct.pdf> (last accessed November 4, 2013).

This impact can be seen, as well, in the average income of Food Stamp recipients. Despite the increase in the number of households with above-Poverty incomes, the average income of Food Stamp recipients remains extremely low. In 2012, the median income of Food Stamp recipient households was only \$18,365, roughly one-quarter (27%) of the overall statewide average income in Connecticut. Even then, the ratio of Food Stamp recipient to total income for all households is increasing; in 2009, the average Food Stamp income was only 24% of the total average income.

Table 17: Income by Receipt of Food Stamps, 2010, 2011, 2012 (Connecticut)			
	2010	2011	2012
Total:	\$64,032	\$65,753	\$67,276
Received Food Stamps	\$17,710	\$17,185	\$18,365
Did not receive Food Stamps	\$70,597	\$73,427	\$75,061
SOURCE: American Community Survey, 3-year data, Table B22008.			

The decrease in the differential between Food Stamp incomes and total incomes occurs because of the increasing income of Food Stamp recipients. From 2010 to 2012, the average income of a Food Stamp recipient household increased by 4%, from \$17,710 to \$18,365.

Twelve Important Findings

1. Connecticut tenants have significantly lower incomes than do homeowners. In Connecticut, median tenant income remains less than half of the annual income of homeowners. Both homeowners and tenants saw an increase in their real (inflation-adjusted) income from 2010 to 2012.
2. Smaller households have noticeably lower incomes than do households with larger numbers of members in Connecticut. Median household income is lowest for 1-person households, with progressive increases as households gain members. One of the primary driving factors lies with the fact that smaller households are also associated with age. Households with aging household members tend to be smaller, being primarily one- and two-person units.
3. Median income is related to age in Connecticut. On the one hand, householders age 25 years or younger have a median income less than half that of the statewide median. On the other hand, householders age 65 years or older have a median income somewhat less than 65% of the statewide median.

4. So long as workers were able to maintain their full-time, year-round jobs in Connecticut, their incomes, though not increasing substantially beyond inflation, nonetheless did not show substantial declines. Men who worked full-time for a full year saw virtually no change in income from 2011 to 2012 (+\$39), while women who worked full-time for a full year experienced a slight decline in real income (-\$281).
5. Average income in Connecticut increased in real, inflation-adjusted, terms from 2010 to 2012 at all levels of income but the lowest. Income deteriorated in the lowest quintile of income. The inflation-adjusted increase in income was higher in each succeeding higher income quintile over the three year period.
6. The dollar level of income in the lowest income quintile for Connecticut is substantially below the Federal Poverty Level. The bottom two quintiles of income in Connecticut in 2012 were likely at or below 200% of Federal Poverty Level.
7. Households in Connecticut do not experience a “living wage” (sometimes referred to as a “self-sufficient income”) until they achieve an income well in excess of 200% of Poverty Level.
8. Across-the-board, aging households have lower incomes holding Federal Poverty Level constant. One reason for this is that aging households are likely to live with smaller household sizes. Since Poverty Level is income taking into account household size, a household with fewer members will, by definition, have a lower income holding Poverty Level constant.
9. The level of educational attainment in Connecticut has a substantive influence on the Poverty status of Connecticut residents. Two-thirds of both men and women living with income below Poverty Level in Connecticut have only a high school degree or less.
10. The absolute number of individuals falling into Poverty with a high school degree or less shows a gender difference that has grown since 2010. In 2012, nearly 20,000 more women than men age 25 years or older with a high school diploma or less lived in Poverty in Connecticut. Moreover, from 2010 to 2012, the number of women living below Poverty with less a high school degree or less grew somewhat more rapidly than the number of men. The growth rate for women in poverty was faster than the growth rate for men in poverty both for those who lacked a high school diploma and for those who were a high school graduate but lacked further schooling.
11. Food Stamp participation experienced an increase from 2010 through 2012. Food Stamp participation in 2012 was 18% higher than Food Stamp participation in 2010, an increase

of more than 25,000 household participants. In Connecticut, in Fiscal Year 2010 (the last year for which data is available), 78% of all households eligible for Food Stamps participated in the Food Stamp program, an increase from 68% in 2007. Food Stamp participation has continued to experience a dramatic increase in Connecticut. The 2012 participation in 2012 represented a 79% increase in Food Stamp participation over a five year period.

12. One reason for the increase in Food Stamp participation is the increase in Food Stamp participants amongst Connecticut households that have income above the Federal Poverty Level. In 2009, households with above-Poverty incomes represented only 46% of the total Food Stamp participant population; by 2011, the participation of above-Poverty households had increased to more than 77,000 households, representing more than half (51%) of the total participant population; by 2012, the number of above-Poverty Food Stamp recipients had risen to more than 86,000 households.

Sources of Information for Connecticut

U.S. Census Tables (American Community Survey)

<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>: The American Fact Finder presents the U.S. Census Bureau’s basic periodic Census survey data at all jurisdiction levels.

<http://www.census.gov/cps/data/cpstablecreator.html>: The U.S. Census Bureau makes available an on-line “table maker” tool for creating state-level tables using data from its annual “Current Population Survey,” using data from the CPS Annual Social and Economic Supplement.

Data on Children Well-being

<http://datacenter.kidscount.org/>: The Annie E. Casey Foundation makes available a comprehensive data center for its “Kids Count” initiative.

<http://frac.org/federal-foodnutrition-programs/>: The Food Research and Action Center (FRAC) publishes comprehensive data on a variety of food and nutrition topics, including data and program descriptions on federal food nutrition programs.

<http://www.nccp.org/tools/>: The National Center on Children and Poverty has three important on-line “data tools”: (1) the Basic Needs Calculator through which the user can calculate a Basic Family Needs Budget by local jurisdiction and family size and type; (2) the Family Resource Simulator through which the user can determine total household resources (e.g., taking into account how increases in income result in reductions in public assistance); and (3) an Income Converter through which the user can insert a dollar income for a particular state and particular household size and receive a calculation of the ratio of income to Federal Poverty Level and the percentage of State Median Income which that income represents (and vice versa—convert percentage of State Median Income/Poverty Level into dollar levels).

Data on Employment and Wages

<http://www.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=5>: The Bureau of Economic Analysis, within the U.S. Department of Commerce, makes available statistical data on “local area personal income and employment.” State-level, as well as regional, data is also available.

Data on Energy and Fuel

<http://www.eia.gov/electricity/data.cfm>: The Energy Information Administration of the U.S. Department of Energy (EIA) makes available comprehensive state-level information on the price and sales of electricity by month.

<http://www.eia.gov/naturalgas/data.cfm>: EIA/DOE also makes available similar state-level data sets for natural gas prices and sales.

<http://www.eia.gov/petroleum>: EIA/DOE makes available data on petroleum products, including fuel oil and propane.

<http://www.eia.gov/consumption/residential/index.cfm>: The Residential Energy Consumption Survey (RECS) provides comprehensive data on consumption, housing characteristics, energy bills, and related data. Starting in 2005, the RECS provided “Home Energy Insecurity Scale” questions.

<http://www.ncat.org/liheap>: Information on statistical and administrative aspects of the federal Low-Income Home Energy Assistance Program (LIHEAP) can be found at the LIHEAP Clearinghouse, operated by the National Center on Appropriate Technology and funded through the federal LIHEAP office.

Data on Housing Affordability

<http://nlihc.org/oor>: For more than 20 years, the National Low-Income Housing Coalition has published its “Out of Reach” annual study, setting forth the Housing Wage by local jurisdiction, that wage needed for families to be able to afford basic housing in their community.

<https://pic.hud.gov/pic/RCRPublic/rcrmain.asp>: Data on public and assisted housing, at a national, state, Congressional District, county and various local demarcations, including specific Housing Authorities, is available through the Resident Characteristics Reports (RCR) data published by the U.S. Department of Housing and Urban Development (HUD).

<http://www.hud.gov/offices/cpd/affordablehousing/reports/dash.cfm>: The U.S. Department of Housing and Urban Development (HUD) provides on a state and local basis jurisdiction-specific reports on the production of affordable housing units.

Data on Poverty and Income

<http://www.epi.org/resources/budget>: The Economic Policy Institute (EPI) provides an on-line calculator to determine, for states and specific metropolitan areas within each state, a “basic family needs budget” by household type.

<http://www.selfsufficiencystandard.org/pubs.html#statefind>: The Center for Women’s Welfare provides an on-line index for how to find, state-by-state, publications on self-sufficiency incomes. It also presents an index to available on-line state-specific self-sufficiency calculators.

<http://aspe.hhs.gov/poverty/11poverty.shtml>: The U.S. Department of Health and Human Services (HHS) provides the annual Poverty Guidelines by year since 1973.

<http://www.statehealthfacts.org/profile.jsp>: The Henry J. Kaiser Family Foundation makes available comprehensive health care statistics by state, along with a wide array of data on demographics including poverty and income.

<http://livingwage.mit.edu/>: The Massachusetts Institute of Technology makes available a “living wage” calculator by state.

http://www.spotlightonpoverty.org/poverty_data_map.aspx: The Spotlight on Poverty is a major foundation-supported initiative that allows users to create state and local reports on major indicators of poverty and household well-being.

Data on Working Households/Families/Persons

<http://www.brookings.edu/research/interactives/eitc>: The Brookings Institute provides an inter-active web page allowing the user to create jurisdiction-specific (state, county, state legislative district) reports on the use of the Earned Income Tax Credit (EITC) by year. Available are not only data on the use of the EITC, but data on tax returns by gross annual income of the tax-filer.

<http://www.ctvoices.org>: The Connecticut Voices for Children provides annual reports on “The State of Working Connecticut.” Each year discusses a different aspect of jobs and income in Connecticut. In addition, the Connecticut Voices publishes a periodic “pulling apart” report, which examines income trends in Connecticut.

Appendix A

State House Districts

Appendix B

State Senate Districts

Appendix C

Congressional Districts