



**PREPARED BY THE
MONTACHUSETT
REGIONAL
PLANNING
COMMISSION**

AUGUST 2016

REGIONAL LOW INCOME THRESHOLD

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INTRODUCTION

The percentage of households within a community or region that fall below a determined low-income threshold serves as an important indicator of an area's vitality and stability. The need to identify a more regionally-specific low income threshold was identified through a public participation process, and was taken on by the transportation staff at Montachusett Regional Planning Commission (MRPC). The following identifies the process through which a more regionally appropriate low-income threshold was identified.

DEVELOPING A WEIGHTED AVERAGE OF MEDIAN INCOMES

The task of creating a more locally pertinent low-income standard was developed in a series of steps. First, data was collected from the US Census Bureau's American Community Survey, the only readily available source for local data regarding income. The five year estimates for median income were obtained for years 2010 through 2014 from Table S1903: *Median Income in the Past 12 months (In [Year] Inflation-Adjusted Dollars)*. Data for median income was also collected for the year 2000 from the Decennial Census Table *Median Household Income in [YEAR] (DOLLARS) by Tenure*. The unit of observation used was the 22 towns and cities that make up the Montachusett Region. This data was then used to create a weighted average of the median incomes of each community. This was done in a series of steps. The first step was to obtain the total number of households in each community through the same tables that contained the median income data. Then, the number of households in each community was divided by the total number of households within the region to obtain a percentage of the total regional households that each community held. This percentage was then multiplied by the median income for each community. Then, these 22 numbers were summed to obtain the average median income weighted by the number of households in each community. There are some inherent flaws in creating an average of medians; however, given the lack of raw data for household income from the US Census Bureau, the weighted average was the best possible method for a more regionally specific Median Income. This methodology produced the results presented in Table 1 (which follows).

Table 1: Weighted and Non-Weighted Average

| 2014 ACS 5-Year Estimates | | |
|---------------------------|----|------------------|
| Average Median Income | \$ | 74,796.91 |
| Weighted Average Median | \$ | 65,988.44 |
| Difference | \$ | 8,808.47 |
| 2013 ACS 5-Year Estimates | | |
| Average Median Income | \$ | 74,750.14 |
| Weighted Average Median | \$ | 65,707.98 |
| Difference | \$ | 9,042.16 |
| 2012 ACS 5-Year Estimates | | |
| Average Median Income | \$ | 75,027.00 |
| Weighted Average Median | \$ | 66,693.95 |
| Difference | \$ | 8,333.05 |

| 2011 ACS 5-Year Estimates | | |
|---------------------------|----|------------------|
| Average Median Income | \$ | 75,346.91 |
| Weighted Average Median | \$ | 66,383.50 |
| Difference | \$ | 8,963.41 |
| 2010 Census | | |
| Average Median Income | \$ | 74,381.00 |
| Weighted Average Median | \$ | 65,217.82 |
| Difference | \$ | 9,163.18 |
| 2000 Census | | |
| Average Median Income | \$ | 54,520.59 |
| Weighted Average Income | \$ | 48,194.67 |
| Difference | \$ | 6,325.92 |

Median Income

As seen in Table 1, the simple average of the median incomes for the 22 communities was also calculated for comparative purposes. It is evident

from the comparison between the two numbers that there is a significant difference between the two calculations, with the simple averages of the median incomes generally ranging between 12-14% higher than the weighted averages. This indicates that some of the larger cities and towns in the region have lower incomes than some of the surrounding towns with higher incomes, and therefore the region as a whole should potentially have a lower threshold that indicates low-income status.

DEVELOPING A LOW INCOME THRESHOLD

The methodology of calculating a low-income threshold was derived from the standards that the US Department of Housing and Urban Development (HUD) uses when determining eligibility for Section 8 Housing. HUD uses 80% of Area Median Income (AMI) as the low income standard for a 4-person household. Then, that income is multiplied by a certain percentage given how many people are within the household (Table 2). Additionally, HUD determines if a 4-person household is considered very low income by multiplying AMI by 50% and extremely low income 4-person are identified as those with income below 30% of AMI. Those incomes are also multiplied by the same percentages identified in Table 2 to determine the low income standards considering household size.

| Table 2: Multiplicative Factors for HUD Income Standards* | |
|--|------|
| 1 person | 70% |
| 2 person | 80% |
| 3 person | 90% |
| 5 person | 108% |
| 6 person | 116% |
| 7 person | 124% |
| 8 person | 132% |

*Percentages are applied to the value that represents 80% AMI

This method was applied to the weighted average of the median incomes for all of 6 of the years of data collected, and produced the results in Table 3, located on the following page. For the purposes of this report, the 4-person low income standard of 80% of AMI will be used as the general low income standard.

COMPARISON WITH HUD INCOME STANDARDS FOR FITCHBURG-LEOMINSTER HFMA

The figures for the low income standard for 4-person households in the 22 community-region can be compared to the figures presented by HUD for the Fitchburg-Leominster Housing Fair Market Area (HFMA). This area is defined by the Cities of Fitchburg, Leominster, and Gardner; as well as the towns of Ashburnham, Lunenburg, Templeton, Westminster, and Winchendon. The comparison of the figures is presented below (Table 4) :

| Table 4: Comparison of 4-person Household Low Income Thresholds | | |
|--|---------------------|---------------------------|
| | Montachusett Region | Fitchburg-Leominster HMFA |
| 2000 | \$ 38,555.74 | \$ 42,500.00 |
| 2010 | \$ 52,174.26 | \$ 62,550.00 |
| 2011 | \$ 53,106.80 | \$ 64,200.00 |
| 2012 | \$ 53,355.16 | \$ 65,000.00 |
| 2013 | \$ 59,800.11 | \$ 64,400.00 |
| 2014 | \$ 52,790.75 | \$ 63,900.00 |

As seen in Table 4, the Income thresholds developed for the Fitchburg-Leominster HFMA are higher than those developed for the purposes of this report. Consideration should be given to whether it is more appropriate for the region to adopt the low income threshold that involves all 22 communities, or to use HUD's standards for the Fitchburg-Leominster HMFA that involve eight (8) out of the 22 communities.

Table 3: Low Income Standards for the Montachusett Region (Years 2000, 2010-2014)

| 2000 Census | | | | | | | | |
|---------------------------|-------------|-------------|-------------|--------------------|-------------|-------------|-------------|-------------|
| | 1 person | 2 person | 3 person | 4 person* | 5 person | 6 person | 7 person | 8 person |
| Low Income | \$26,989.02 | \$30,844.59 | \$34,700.16 | \$38,555.74 | \$41,640.20 | \$44,724.65 | \$47,809.11 | \$50,893.57 |
| Very Low Income | \$16,868.13 | \$19,277.87 | \$21,687.60 | \$24,097.34 | \$26,025.12 | \$27,952.91 | \$29,880.70 | \$31,808.48 |
| Extremely Low Income | \$10,120.88 | \$11,566.72 | \$13,012.56 | \$14,458.40 | \$15,615.07 | \$16,771.75 | \$17,928.42 | \$19,085.09 |
| 2010 ACS 5-Year Estimates | | | | | | | | |
| | 1 person | 2 person | 3 person | 4 person* | 5 person | 6 person | 7 person | 8 person |
| Low Income | \$36,521.98 | \$41,739.40 | \$46,956.83 | \$52,174.26 | \$56,348.20 | \$60,522.14 | \$64,696.08 | \$68,870.02 |
| Very Low Income | \$22,826.24 | \$26,087.13 | \$29,348.02 | \$32,608.91 | \$35,217.62 | \$37,826.33 | \$40,435.05 | \$43,043.76 |
| Extremely Low Income | \$13,695.74 | \$15,652.28 | \$17,608.81 | \$19,565.35 | \$21,130.57 | \$22,695.80 | \$24,261.03 | \$25,826.26 |
| 2011 ACS 5-Year Estimates | | | | | | | | |
| | 1 person | 2 person | 3 person | 4 person* | 5 person | 6 person | 7 person | 8 person |
| Low Income | \$37,174.76 | \$42,485.44 | \$47,796.12 | \$53,106.80 | \$57,355.34 | \$61,603.89 | \$65,852.43 | \$70,100.97 |
| Very Low Income | \$23,234.22 | \$26,553.40 | \$29,872.57 | \$33,191.75 | \$35,847.09 | \$38,502.43 | \$41,157.77 | \$43,813.11 |
| Extremely Low Income | \$13,940.53 | \$15,932.04 | \$17,923.54 | \$19,915.05 | \$21,508.25 | \$23,101.46 | \$24,694.66 | \$26,287.87 |
| 2012 ACS 5-Year Estimates | | | | | | | | |
| | 1 person | 2 person | 3 person | 4 person* | 5 person | 6 person | 7 person | 8 person |
| Low Income | \$37,348.61 | \$42,684.13 | \$48,019.64 | \$53,355.16 | \$57,623.57 | \$61,891.98 | \$66,160.40 | \$70,428.81 |
| Very Low Income | \$23,342.88 | \$26,677.58 | \$30,012.28 | \$33,346.97 | \$36,014.73 | \$38,682.49 | \$41,350.25 | \$44,018.01 |
| Extremely Low Income | \$14,005.73 | \$16,006.55 | \$18,007.37 | \$20,008.18 | \$21,608.84 | \$23,209.49 | \$24,810.15 | \$26,410.80 |
| 2013 ACS 5-Year Estimates | | | | | | | | |
| | 1 person | 2 person | 3 person | 4 person* | 5 person | 6 person | 7 person | 8 person |
| Low Income | \$41,860.08 | \$47,840.09 | \$53,820.10 | \$59,800.11 | \$64,584.12 | \$69,368.13 | \$74,152.14 | \$78,936.14 |
| Very Low Income | \$22,997.79 | \$26,283.19 | \$29,568.59 | \$32,853.99 | \$35,482.31 | \$38,110.63 | \$40,738.95 | \$43,367.26 |
| Extremely Low Income | \$13,798.68 | \$15,769.91 | \$17,741.15 | \$19,712.39 | \$21,289.38 | \$22,866.38 | \$24,443.37 | \$26,020.36 |
| 2014 ACS 5-Year Estimates | | | | | | | | |
| | 1 person | 2 person | 3 person | 4 person* | 5 person | 6 person | 7 person | 8 person |
| Low Income | \$36,953.53 | \$42,232.60 | \$47,511.68 | \$52,790.75 | \$57,014.01 | \$61,237.28 | \$65,460.54 | \$69,683.80 |
| Very Low Income | \$23,095.96 | \$26,395.38 | \$29,694.80 | \$32,994.22 | \$35,633.76 | \$38,273.30 | \$40,912.83 | \$43,552.37 |
| Extremely Low Income | \$13,857.57 | \$15,837.23 | \$17,816.88 | \$19,796.53 | \$21,380.26 | \$22,963.98 | \$24,547.70 | \$26,131.42 |

* 80% of AMI

COMPARISON BETWEEN YEARS

The low income thresholds can be compared between years, after adjusting all of the values for 2016 inflation rates. The results are presented below in Table 6. As you can see the highest low income rate calculated was for year 2013 (\$61,874.50), and the lowest was for 2014 (\$53,750.65).

| Table 6: Low Income Threshold* for the 22 MRPC Communities | | | |
|---|-------------|-----------|-------------------------------------|
| | Un-Adjusted | | Adjusted for 2016 Inflation Dollars |
| 2000 | \$ | 38,555.74 | \$ 53,969.00 |
| 2010 | \$ | 52,174.26 | \$ 57,672.88 |
| 2011 | \$ | 53,106.80 | \$ 56,907.68 |
| 2012 | \$ | 53,355.16 | \$ 56,014.62 |
| 2013 | \$ | 59,800.11 | \$ 61,874.50 |
| 2014 | \$ | 52,790.75 | \$ 53,750.07 |

* Low income threshold is defined as 80% of the respective town's median income

COMPARISON WITH WORCESTER COUNTY

A common practice for determining low income thresholds is to use the county median income as a basis for developing a low income threshold. The Montachusett Region falls within both Worcester County and Middlesex County. However, the majority of the communities (17 out of 22) are in Worcester County, so it would be most appropriate to use the median income of Worcester County as an indicator of the region as a whole. However, the Montachusett communities that fall within Worcester County only make up about 28% of the communities in the county, and therefore the data that is used to determine its median income is reflective of a much larger geographic area. Therefore, using the low income thresholds for Worcester County may provide an inaccurate representation of the region. To determine if this is true, the low income threshold for Worcester County and the one calculated above for the Montachusett Region were compared. The results are show below in Table 5.

| Table 5: Comparison of Low Income Thresholds* of the Montachusett Region and Worcester County** | | | |
|--|---------------------|-----------|------------------|
| | Montachusett Region | | Worcester County |
| 2000 | \$ | 53,969.00 | \$ 65,283.81 |
| 2010 | \$ | 57,672.88 | \$ 56,638.61 |
| 2011 | \$ | 56,907.68 | \$ 56,292.01 |
| 2012 | \$ | 56,014.62 | \$ 52,774.40 |
| 2013 | \$ | 61,874.50 | \$ 53,900.83 |
| 2014 | \$ | 53,750.07 | \$ 53,227.45 |

* Low income threshold is defined as 80% of the respective town's median income

** Adjusted for 2016 Inflation Dollars

As you can see in Table 5, the difference between the low income thresholds varies from year to year. In the year 2000, the Montachusett region had a significantly lower low income threshold than Worcester County. Ten years later, however, the median income thresholds had evened out, and were within \$1,000 of each other for 2010 and 2011. For the years 2012 and 2013, the Montachusett Region had a higher low income threshold than Worcester County, and lastly in 2014 the thresholds were roughly the same.

This analysis may indicate that the economic status of the Montachusett Region fluctuates in a different manner or to a different degree than that of Worcester County, and therefore the use of the Montachusett Region low income threshold may be more appropriate for capturing a regional narrative.

COMPARISON BETWEEN COMMUNITIES

It should be noted that there are significant differences in the affluence of the communities that comprise the Montachusett Region. This may result in a skewed low income threshold that does not accurately represent the low income threshold of a particularly affluent or impoverished community within the region. Therefore, the same methodology applied in the above sections was performed for the individual communities within the region to determine the variation of low income thresholds as dictated by HUD's section 8 housing standard (Table 7).

| Table 7: Low-Income Thresholds* for Individual Communities | | | |
|---|---------------------|-------------|-------------|
| Ashburnham | \$68,529.60 | Lancaster | \$65,466.40 |
| Ashby | \$67,133.60 | Leominster | \$47,410.40 |
| Athol | \$37,697.60 | Lunenburg | \$56,844.00 |
| Ayer | \$53,688.00 | Petersham | \$52,500.00 |
| Clinton | \$51,893.60 | Phillipston | \$62,792.00 |
| Fitchburg | \$37,302.40 | Royalston | \$48,454.40 |
| Gardner | \$37,271.20 | Shirley | \$53,162.40 |
| Groton | \$93,348.80 | Sterling | \$72,364.00 |
| Havard | \$105,250.40 | Templeton | \$55,143.20 |
| Hubbardson | \$66,750.40 | Townsend | \$66,139.20 |
| | | Westminster | \$69,818.40 |
| | | Winchendon | \$47,465.60 |

* Low income threshold is defined as 80% of the respective community's median income

As depicted in Table 7, there is a large disparity between low income thresholds in the 22 communities. Gardner has the lowest median income, and therefore the lowest low income threshold, and Harvard has the highest low income threshold. In fact, the low income threshold calculated for Harvard is almost three times larger than that of Gardner.

The validity of using such a methodology should be contemplated before the use of these figures. It may be that the use of a singular town's median income for the determination of a low income threshold may not provide enough data for an accurate representation of what is to be considered low income for the area.

For instance, in the case of Gardner, the low income threshold calculated is \$37,271.20. This is significantly lower than the regional low income threshold determined for 2014 (\$52,790.75). This indicates that Gardner households, on average, have lower incomes. However, even though a household may be above the municipal threshold of 80% of AMI, their income is still considered low for the region as a whole, and therefore they may suffer from the same problems and concerns that a low income person typically does. In other words, affordability cannot be determined from one town alone, given the small scale of towns in this region, as well as the fact that individuals generally work, shop, and live in a regional context.

Therefore, the use of the individual communities' low income threshold may pose significant issues, and it would most likely be more appropriate to use the regional threshold as an indicator of low income status.

CONCLUSION

This report sought to develop a more regionally pertinent low income threshold. From the comparisons made in the above pages, it is clear that there are differences between the income levels of the Montachusett Region and the comparative geographies, and using this low income threshold may rectify the issues with using a non-conforming geography's median income values.

However, there are some inherent issues with calculating an average of a median. For example, there may be extreme values within the data that don't get accounted for in the weighted average. The lack of availability of raw data for income households in the region leads us to necessarily adopt a flawed methodology. However, these calculations may still provide a more specific indicator for the Montachusett Region than county level data or metropolitan area data can provide.