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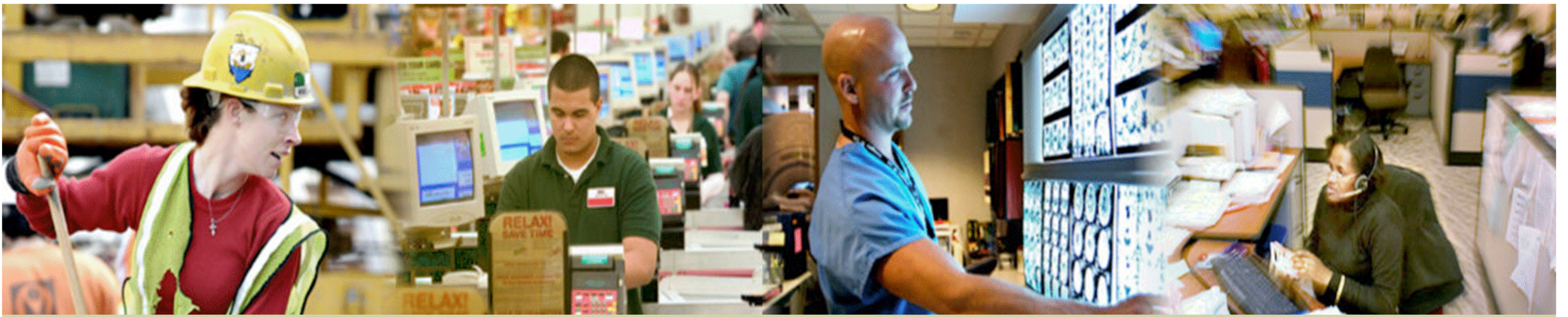
# Low Wage Earners and Low Wage Jobs in Greater Boston

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# **Low Wage Earners and Low Wage Jobs in Greater Boston**

by  
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Labor Resource Center  
University of Massachusetts Boston

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The Labor Resource Center of the College of Public and Community Service, UMass Boston provides links between the University and the Massachusetts Labor Movement. Programs include the Labor Studies Program, educating future labor leaders through courses, certificates and a bachelor's degree centered on today's workplace concerns from contingent work to globalization; Labor Extension, providing participatory training and education for union members and workers; and research initiatives focused on the Future of Work in Massachusetts.

Photographs on the cover are by Paul Shoul.

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# Low Wage Earners and Low Wage Jobs in Greater Boston

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## Introduction

Anybody who has ever been employed can readily list the qualities of a good job. Some are easily identified factors, such as good wages, health benefits, paid sick and vacation time, and a pension plan. Others are harder to measure, such as job security, reasonable workloads, flexible work schedules, workplace safety and health, or being treated with respect. In either case, it's clear that job quality is something to which every working person pays attention.

We should also be concerned about job quality as a society. A society that is characterized by jobs with family sustaining wages and benefits will look very different from one where many people struggle to live on low wages with poor benefits. The effects of low-wages and poor benefits are felt across generations and throughout our society as each family's economic status is associated with the health, educational attainment, and dependence on public services of its members. Job related benefits—specifically, health care and retirement benefits—are of particular importance in the United States, where the federal government does not offer universal health care and provides only limited pensions to retirees through Social Security.

Public attention to the need for good jobs and the growing prosperity divide in the United States, spurred us to ask: what is happening locally in Boston's job market? In order to explore this question, we focused on low wage work as a marker of the lack of good, or decent, jobs. In this study, we set out to explore two questions:

- What is the extent of low-wage employment in the Boston area?
- How have patterns of low wage employment in Boston changed over time?

## Defining low-wage work in Greater Boston

Researchers use many different thresholds to distinguish between low wages and decent wages: two-thirds of the median hourly wage, 200 percent of the federal poverty



level, the 1979 median wage for men, and the self-sufficiency standard are some common approaches (Table 1). The Family Economic Self-Sufficiency Standard (FESS) calculates how much money a working adult needs to earn in order to meet her or his basic needs without any public subsidies, accounting for different family types and for geographically specific costs of living. For this analysis we chose to use the self-sufficiency standard as our threshold value because it provides the most realistic accounting of household budget needs, while underscoring our analytical principle that every full-time job should provide sufficient income to meet the worker’s daily needs. The 2010 FESS wages for different household structures in greater Boston (defined as the 33 cities and towns in Norfolk, Suffolk and Middlesex counties) is presented in Table 2. As our low-wage benchmark for this study, we chose the hourly wage of \$16.15 (in 2010 dollars)—the wage that two adults working full-time would need to earn in order to support themselves and two children (one preschool aged and one school age).

**Table 1: Measures of low-wages and corresponding hourly wage per full-time working adult (2010 dollars)**

Measurement	Hourly Wage (2010)	Definition
<i>Federal Poverty Level</i>	\$10.60	Defined by the U.S. Department of Health and Human Services (2010). Calculated at 200% for a family of four with two full-time working adults.
<i>Social Inclusion</i>	\$14.94	Defined as two-thirds of the median hourly wage. See, for example, Boushey, et al. (2007). Calculated for the Boston area.
<i>Family Economic Self-Sufficiency Standard</i>	<b>\$16.15</b>	Developed by the Wider Opportunities for Women. See Pearce (2003), Crittenton Women’s Union (2010), and Albelda, et al., (2008). Calculated for a family of four with two full-time working adults in the Boston area.
<i>1979 Median Wage for Men</i>	\$18.42	See, for example, Schmitt (2008), who also argues that this pay rate would need to be accompanied by health insurance and pension benefits to qualify as a “good” job.



**Table 2: Self-sufficiency wages by household structure for Boston (2010)**

Type of Family/Household	Hourly Wage per Full-Time Working Adult
One adult, no children	\$13.60
<b>Two adults and two children (one preschool age and one school age)</b>	<b>\$16.15</b>
One adult and two children (one preschool age and one school age)	\$29.56

## **What is the extent of low-wage employment in the Boston area?**

In this study we used two different federal data sources to examine low-wage employment in the Boston area: the American Community Survey (ACS) and the Occupational Employment Statistics (OES). The ACS gathers data through annual surveys of individuals who are asked about their current employment, while the OES database is made up of employers' reports of hourly and annual wages paid to employees. By analyzing these data sets, we were able to explore low-wage employment through both worker and employer reports.

We began our analysis by examining the ACS data for employment patterns of low-wage workers living in the greater Boston area. The ACS database provides demographic, income, and employment data derived from regular surveys of a sample of housing units in all census tracts in the U.S. We used the ACS five year estimates for 2005-09 Public Use Microdata Sample files. (A detailed explanation of the data is provided in the Data Appendix.)

We classified workers as "low-wage earners" if their annual earnings were less than \$30,577 (the FESS annual earnings needed for self-sufficiency for the two working adult household with two school age children). Based on our calculations, on average 41% of Boston-area workers had annual earnings below this level during 2005-2009. However, it is unlikely that all of these individuals were earning less than \$16.15 per hour. As the data



in Table 3 indicate, Boston's low-wage earners were less likely to have full-time employment (only 47% of low-wage earners worked 35 hours per week or more, as compared to 74% of all workers), and they were less likely to be employed year-round (only 44% of low-wage earners were employed for 50 weeks or more, as compared to 69% of all workers). Between their hourly wage and level of employment, the effective pay rate for these workers was less than our low-wage threshold.

**Table 3: Employment statistics of low-wage earners in Boston (2005-2009)**

Characteristics	All Workers		Low-Wage Earners		
	Number of workers	Percent of all workers	Number of low-wage earners	Percent of low-wage earners	Percent of all workers in category
Total workers	1,947,980	100%	798,496	100%	41%
Employed full-time (35+ hours/week)	1,449,074	74%	376,953	47%	26%
Employed full-year (50+ weeks/year)	1,343,809	69%	352,661	44%	26%
Private sector	1,536,214	79%	633,623	81%	41%
Public sector	230,839	12%	73,581	9%	32%
Self-employed	177,931	9%	77,767	10%	44%
Unpaid family worker	2,996	0.2%	2,525	0.3%	84%

The data in Table 3 also show that while 12% of all Boston area workers were employed in the public sector in this period, only 9% of low-wage earners were. Thus, the public sector had proportionately fewer low-wage earners (32%) than the private (41%) and the self-employed (44%) sectors. Not surprisingly, unpaid family workers had the highest concentration of low-wage earners (84%).

We next analyzed the occupations and industries in which Boston-area workers reported working in 2005-2009. Table 4 presents the distribution of Boston's low-wage earners among the major industries. The main industries employing low-wage earners in the Boston area were Retail Trade (which employed 15% of low-wage earners), Healthcare & Social Assistance (14%), Educational Services (12%), and Accommodation & Food Services (12%). Together these industries accounted for 53% of all low-wage earners and



**Table 4: Boston's low-wage earners by industry (2005-2009)**

Industry	All Workers		Low-Wage Earners		
	Number of workers	Percent of all workers	Number of low-wage earners	Percent of low-wage earners	Percent of industry
Retail Trade	186,119	10%	116,218	15%	62%
Health Care & Social Assistance	278,159	14%	109,488	14%	39%
Educational Services	224,246	12%	97,330	12%	43%
Accommodation & Food Services	128,021	7%	97,004	12%	76%
Other Services (except Public Administration)	88,030	4%	54,217	7%	62%
Administrative, Support, Waste Management & Remediation Services	79,279	4%	46,354	6%	59%
Manufacturing	166,303	8%	45,652	6%	28%
Professional, Scientific & Technical Services	209,261	11%	43,604	6%	21%
Construction	109,954	6%	40,635	5%	37%
Transportation & Warehousing	66,348	3%	29,423	4%	44%
Arts, Entertainment & Recreation	41,249	2%	29,294	4%	71%
Finance & Insurance	129,962	7%	24,131	3%	19%
Information	58,616	3%	16,806	2%	29%
Public Administration	79,599	4%	16,789	2%	21%
Wholesale Trade	48,571	2%	13,603	2%	28%
Real Estate, Rental & Leasing	37,804	2%	13,333	2%	35%
Agriculture, Forestry, Fishing & Hunting	4,383	0%	2,962	0%	68%
Utilities	9,102	1%	1,122	0%	12%
Management of Companies & Enterprises	2,385	0%	395	0%	17%
Mining, Quarrying, Oil & Gas Extraction	589	0%	136	0%	23%
<b>TOTAL</b>	<b>1,947,980</b>	<b>100%</b>	<b>798,496</b>	<b>100%</b>	<b>41%</b>

\* "Percent of industry" presents the percentage of workers in each industry that are low-wage earners; values exceeding 41% indicate that low-wage earners were over-represented in that industry.



**Table 5: Boston's low-wage earners by occupation (2005-2009)**

Occupation	All Workers		Low-Wage Earners		
	Number of workers	Percent of all workers	Number of low-wage earners	Percent of low-wage earners	Percent of occupation
Office & Administrative Support	263,381	14%	133,322	17%	51%
Sales & Related	210,383	11%	104,158	13%	50%
Food Preparation & Serving	102,673	5%	85,467	11%	83%
Education, Training & Library	141,033	7%	64,291	8%	46%
Personal Care & Services	68,677	3%	54,939	7%	80%
Building & Grounds	70,829	4%	50,138	6%	71%
Transportation & Material Moving	77,557	4%	45,611	6%	59%
Production	73,510	4%	36,635	5%	50%
Construction & Extraction	87,679	4%	35,502	4%	41%
Management	208,694	11%	25,474	3%	12%
Healthcare Support	38,190	2%	23,894	3%	63%
Arts, Entertainment, Sports & Media	50,567	3%	22,426	3%	44%
Healthcare Practitioner & Technical	111,031	6%	22,156	3%	20%
Business & Financial Operations	117,903	6%	19,458	2%	17%
Protective Service	40,477	2%	15,297	2%	38%
Community & Social Services	32,552	2%	13,239	2%	41%
Installation, Maintenance & Repair	40,788	2%	10,913	1%	27%
Computer & Mathematical	80,444	4%	10,077	1%	13%
Life, Physical & Social Sciences	45,777	2%	9,680	1%	21%
Legal	35,999	2%	7,171	1%	20%
Architecture & Engineering	47,217	2%	6,639	1%	14%
Farming, Fishing & Forestry	2,619	0%	2,009	0%	77%
<b>TOTAL</b>	<b>1,947,980</b>	<b>100%</b>	<b>798,496</b>	<b>100%</b>	<b>41%</b>

\* "Percent of occupation" presents the percentage of workers in each occupation that are low-wage earners; values exceeding 41% indicate that low-wage earners were over-represented in that occupation.



43% of all workers. The “percent of industry” value shows that low-wage earners were highly clustered in two of these industries—Retail Trade and Accommodation & Food Services—and that Health Care & Social Assistance had only slightly lower than expected numbers of low-wage earners. In contrast, the Utilities, Management, and Finance & Insurance industries had the lowest fractions of low-wage earners.

Table 5 presents similar data about the distribution of Boston’s low-wage earners among the major occupations. The major occupations of low-wage earners in Boston in this period were Office & Administrative Support (17%), Sales & Related (13%), Food Preparation & Serving (11%), Education, Training & Library (8%), and Personal Care & Services (7%). Together these five occupational categories accounted for 56% of Boston’s low-wage earners. However, these occupations only accounted for 40% of all the workers. As we saw with the industry-based analysis, low-wage earners appear to be over-represented, or clustered in some occupations. Four of the five occupations identified above have high “percent of occupation” values showing that low-wage earners are indeed over-represented.

In summary, the reports of workers living in the greater-Boston area, as collected through the ACS, show that on average 40% of workers were low-wage earners between 2005 and 2009, and that these workers, instead of being evenly distributed among the industries and occupations, were clustered in a handful of industries and occupations.

We continued our analysis of low-wage work in the greater-Boston area by examining the Occupational Employment Statistics (OES) data. Since OES data is linked to the geographical location of the job rather than to where the worker lives, we were able to conduct a regional analysis of compensation rates associated with actual jobs located in the greater Boston area. However, the raw data from the OES surveys is not available to the public. Instead, OES provides statistical information that describes the range of wages paid for 22 major occupational groupings, in a specific geographical area; those statistics include the 10<sup>th</sup>, 25<sup>th</sup>, 50<sup>th</sup>, 75<sup>th</sup> and 90<sup>th</sup> percentiles for hourly and annual wages, as well as the average (or mean) wages. (See the Data Appendix for a detailed discussion of data sources and methods, including the OES definition of “greater Boston.”) For this part of the study,



we defined low-wage work as occupations that paid a median wage of less than \$16.15 per hour.

Using the OES, we developed a snap-shot of the distribution of low-wage work in greater Boston in 2010. Based on the OES's occupation-based wage statistics, we developed a typology of occupations based on each occupation's range of hourly wages. The typology consists of three categories of occupations:

- “low-wage” occupations were those whose median hourly wage was less than or equal to our low-wage threshold of \$16.15 (or, occupations where more than 50% of the jobs paid less than \$16.15 per hour);
- “second-tier” occupations were defined as occupations with 25<sup>th</sup> percentile wage rates below \$16.15 (or, occupations where less than 50% but more than 25% of the jobs paid less than \$16.15 per hour); and
- “higher wage” occupations were those whose 25<sup>th</sup> percentile wage rates fell above the \$16.15 hourly wage threshold (or, occupations where less than 25% of the jobs paid less than \$16.15 per hour).

Throughout this analysis, we converted all hourly wage rates to 2010 dollars so we could compare the wages to the FESS value.

Table 6 presents our typology of the major occupational groups, the number of people employed in each occupational group, and each occupational group's median hourly wage. Based on this analysis, in 2010 approximately 30% of all jobs in greater Boston were in low-wage occupations, 25% were in second-tier occupations, and 45% were in higher wage occupations.

To better visualize this typology of occupations, we developed Figure 1. In this figure, each major occupational group is represented by a vertical line. The bottom of the line marks the 25<sup>th</sup> percentile wage rate for that occupation (25% of all jobs in that occupation have an hourly wage rate lower than that amount), and the top of the line marks the 75<sup>th</sup> percentile wage rate for the occupation (25% of all jobs in the occupation have an hourly wage rate higher than that amount). The median (50<sup>th</sup> percentile) wage rate for each occupation is marked with a small triangle. The color of the triangle identifies



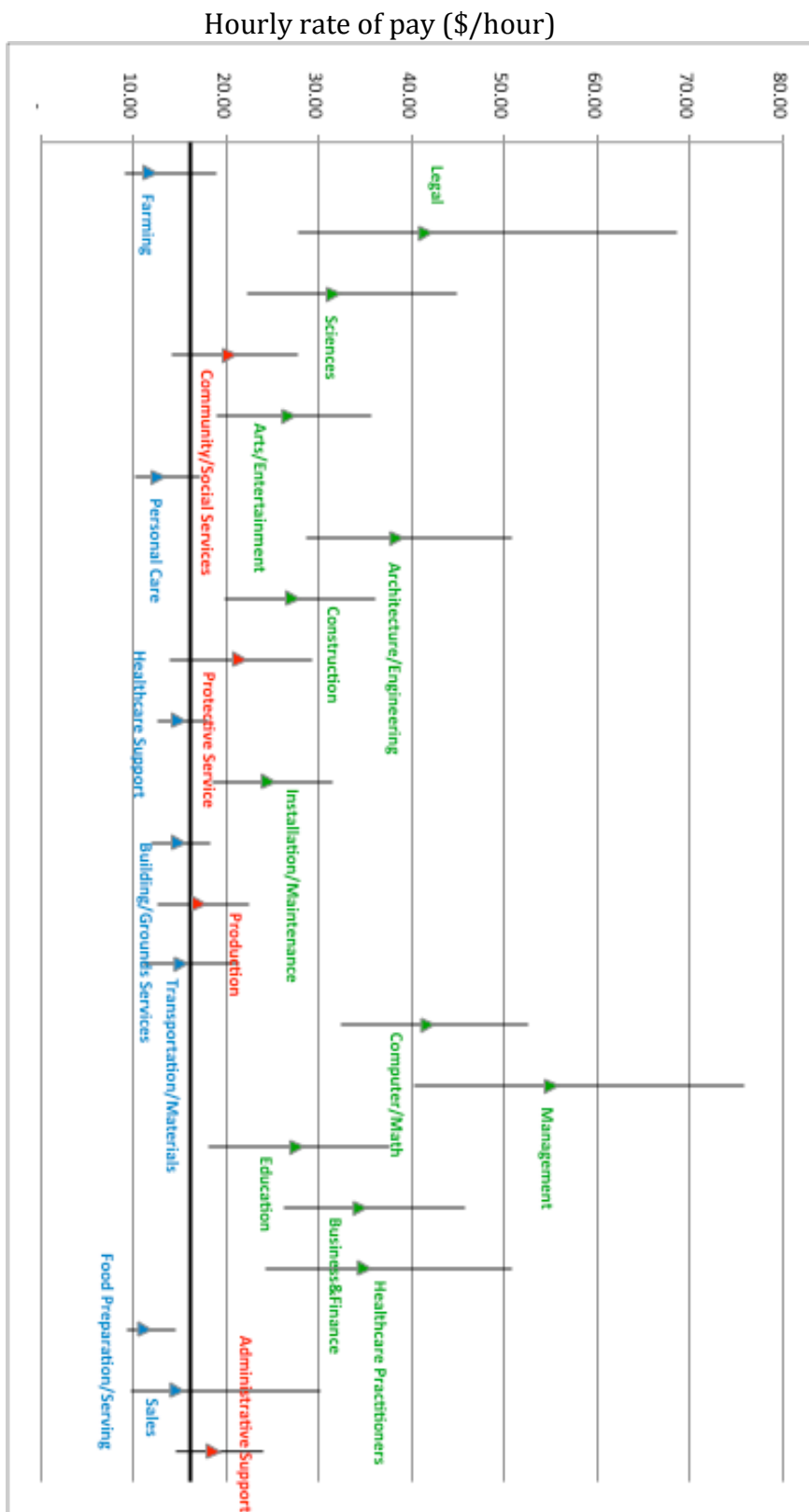
**Table 6: Boston area employment and wages by typology of occupations, 2010**

<b>Typology</b>	<b>Occupational Title</b>	<b>Number Employed</b>	<b>Percent of Total Employment</b>	<b>Median Hourly Wage*</b>
<b>Low-Wage Occupations</b>	Food Preparation/Serving	127,640	7.7%	\$11.28
	Farming	610	0.0%	\$11.81
	Personal Care	41,790	2.5%	\$12.71
	Sales	159,100	9.6%	\$14.76
	Building/Grounds Services	52,600	3.2%	\$14.85
	Healthcare Support	43,790	2.6%	\$14.86
	Transportation/Materials	68,100	4.1%	\$15.20
	<b>Low-Wage total</b>	<b>493,630</b>	<b>29.8%</b>	
<b>Second Tier Occupations</b>	Production	59,320	3.6%	\$17.07
	Administrative Support	270,310	16.3%	\$18.67
	Community/Social Services	35,030	2.1%	\$20.41
	Protective Service	42,680	2.6%	\$21.48
	<b>Second Tier total</b>	<b>407,340</b>	<b>24.6%</b>	
<b>Higher Wage Occupations</b>	Installation/Maintenance	45,390	2.7%	\$24.61
	Arts/Entertainment	37,130	2.2%	\$26.82
	Construction	42,130	2.5%	\$27.17
	Education	109,070	6.6%	\$27.69
	Sciences	29,910	1.8%	\$31.61
	Business/Finance	114,530	6.9%	\$34.51
	Healthcare Practitioners	122,000	7.4%	\$34.96
	Architecture/Engineering	42,070	2.5%	\$38.46
	Legal	18,740	1.1%	\$41.55
	Computer/Math	87,800	5.3%	\$41.80
	Management	108,270	6.5%	\$54.99
	<b>Higher Wage total</b>	<b>757,040</b>	<b>45.7%</b>	
<b>All Jobs</b>		<b>1,658,000</b>	<b>100.0%</b>	<b>\$22.40</b>

*\*Authors' analysis of 2010 OES wage data.*



**Figure 1: Inter-quartile hourly wage ranges by major occupations for Boston area, 2010**



*\* See text for key. Authors' analysis of 2010 OES data for Boston metropolitan area.*



which category the occupation is in: low-wage, second-tier, or higher wage. The dark horizontal line crossing the graph marks the \$16.15/hour low-wage threshold. Finally, the occupations are ranked from left to right by employment size; thus the occupation with the fewest jobs in the greater Boston area in 2010 was “farming,” while “administrative support” was the occupation with the most jobs.

In Figure 1, one can clearly identify which occupations’ wage ranges overlap or fall below the low-wage cutoff of \$16.15 per hour. In addition, the length of each occupation’s line gives some insight into the potential for wage progression within the occupation. Short lines indicate that there is little wage variation within the occupation, and it is likely that these occupations also offer little opportunity for wage progression for workers. It is notable that occupations with a low median hourly wage also tend to have short wage intervals.

The pictures of low-wage work drawn by these two datasets are very similar. The ACS data show approximately 40% of Boston-area workers receiving low wages, and the OES data show approximately 30% of Boston-area jobs are found in low-wage occupations. Both data sets also show that low-wage work is not distributed evenly across all occupations, but instead is clustered in a few occupations, most notably in Sales and Food Preparation & Serving.

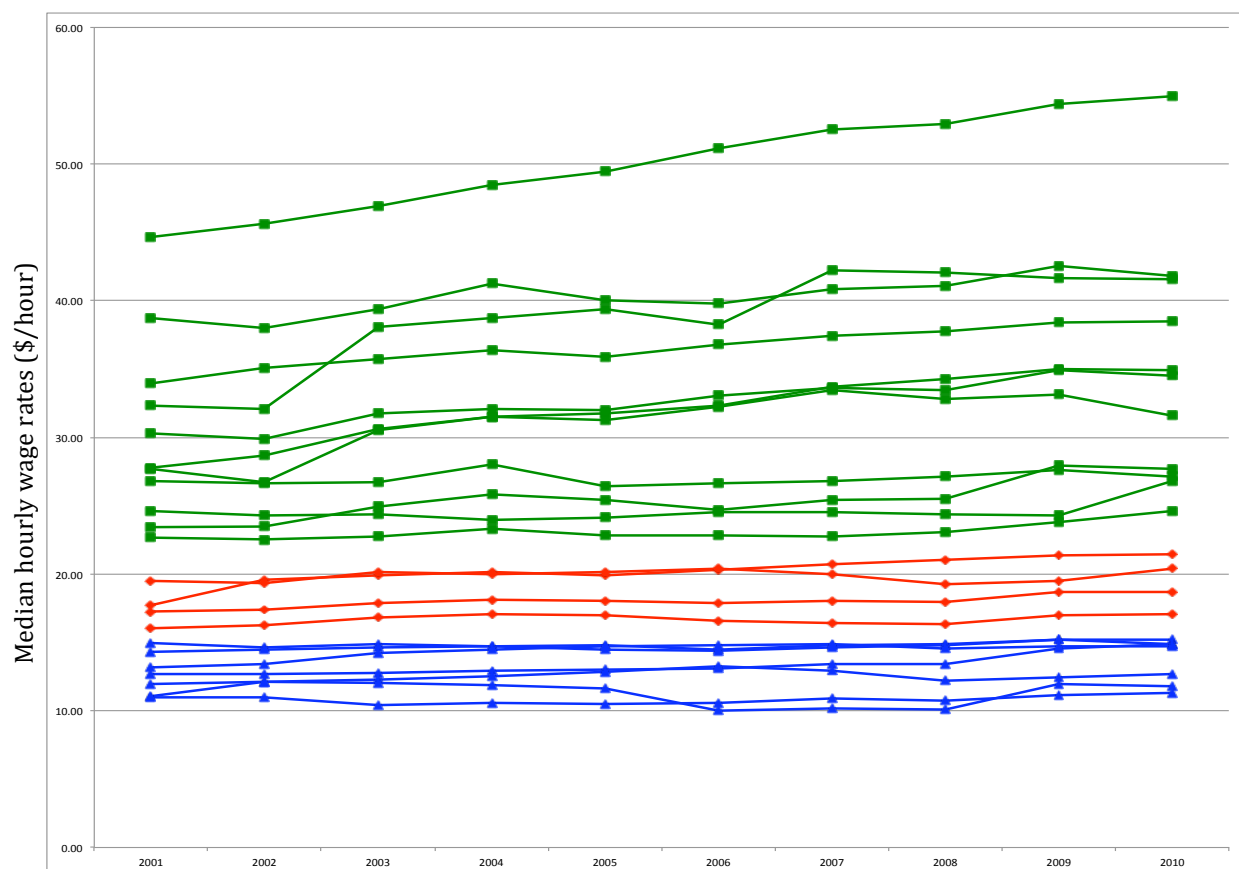
## **Has the distribution of low-wage jobs changed over time?**

Using the OES data for the Boston area allowed us to examine how our typology of “low wage”, “second tier”, and “higher wage” jobs has changed over time. The Occupational Employment Statistics exist for the Boston area beginning in 2001. However, between 2004 and 2005, OES changed the geographical definition for the metropolitan Boston area (see Data Appendix for more details). Bearing this in mind, we converted all 25<sup>th</sup>, 50<sup>th</sup>, and 75<sup>th</sup> percentile hourly rates for each occupation and for each year (2001-2010) to 2010 dollars and applied our typology as described above. (The adjusted median hourly wages for each occupation across this time period are listed in Appendix A.)

First we noted that no occupation changed category within our typology over the ten year period we examined. The occupations that met the criterion to be classified as “low-wage” jobs in 2010, met that same criterion for each year. The same was true of the occupations within the “second tier” and “higher wage” categories.

We next examined how the actual hourly wages had changed over time. Figure 2 shows the range of median wages for the occupations within each category of our typology over time: the green lines are the “higher wage” occupations; the red lines, the “second tier” occupations; and the blue lines, the “low-wage” occupations. It is clear in this figure that the median wages for “low wage” occupations in Boston declined slightly from 2001 to 2008, and then increased slightly to 2010. In contrast, there was a slight increase in the median

**Figure 2: Median hourly wage rates for low-wage (blue), second tier (red), and higher wage (green) occupations in Boston, 2001-2010**



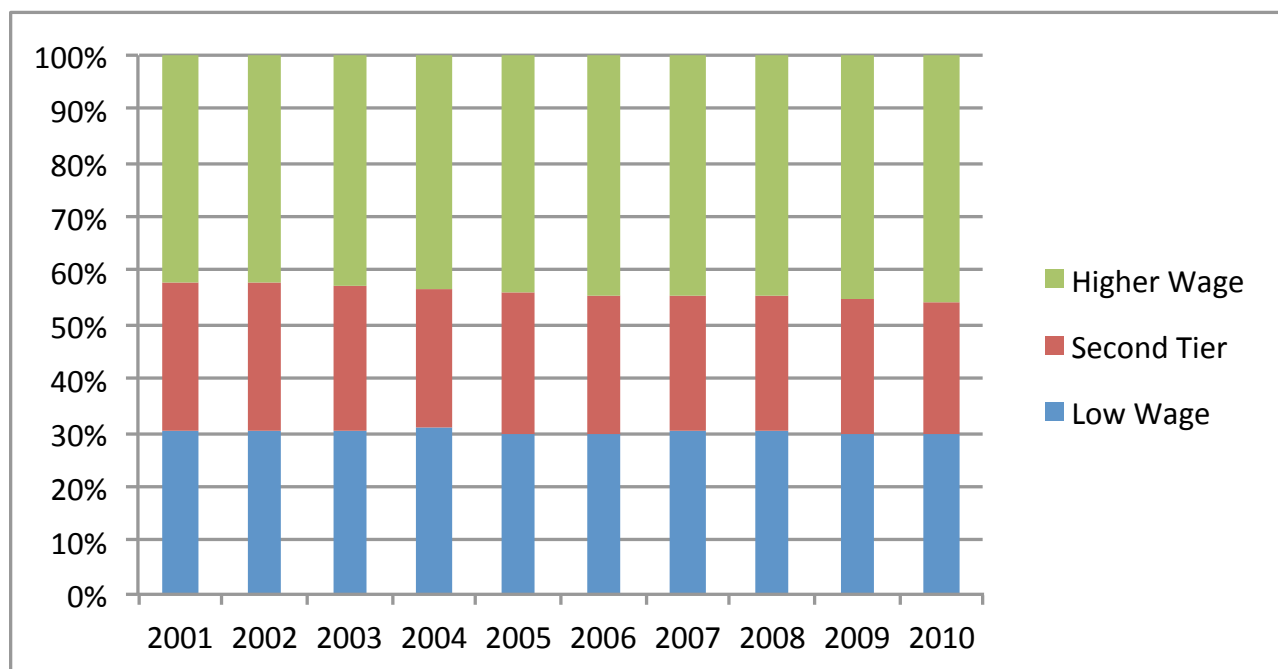
*\*Authors' analysis of OES for Boston metropolitan area, 2001-2010. Median hourly wage rates were standardized to 2010 dollars for means of comparison.*



wages of some “second tier” occupations, and the median wages for “higher wage” occupations increased mostly due to the gains made in the highest paid occupations.

Finally, we examined how the distribution of Boston area jobs within our typography changed over this period. Figure 3 shows the change in distribution of Boston area jobs over time by percentage of jobs. This figure reveals that even during this period of economic contraction, with the total number of jobs shrinking, “higher wage” occupations comprised an ever growing share of jobs, so that by 2010 these occupations made up nearly 46% of Boston’s jobs. In contrast, “low-wage” occupations consistently made up approximately 30% of total jobs, and “second tier” occupations made up a shrinking proportion of the jobs, decreasing from 27.65% in 2001 to 24.6% in 2010. (See Appendix B for total employment by major occupation for this time period.)

**Figure 3: Proportion of low-wage, second tier and higher wage occupations in Boston, 2001-2010**



## Discussion of findings

The findings of this study paint a very different picture of the job market in Boston than what is often reported in the news. Instead of focusing on the high-end jobs that greater Boston is known for, this study shines a spotlight on the substantial and persistent segment of low-wage jobs. Our key findings are:

- approximately 40% of Boston's workers are low-wage earners, earning below the Family Economic Self-Sufficiency standard for a family of four based on two wage earners;
- approximately 30% of the job base in greater Boston are in low-wage occupations;
- more than half of the low wage job base is comprised of Sales and Food Preparation & Serving occupations;
- low-wage occupations in greater Boston tend to have compressed wage scales, with little opportunity for wage advancement; and
- the low-wage job base has held constant at 30% over the past 10 years, while providing very limited wage increases.

The fact that low-wage jobs make up about 30% of the employment base in Boston, and that this proportion appears to be holding steady overtime with no indications that the pattern will change, shows that not even a highly skilled metropolitan area like Boston is immune to the structural problems endemic in the U.S. labor market. While regional and local economic development and workforce training initiatives have likely contributed both to the increasing numbers of jobs in higher wage occupations and to the numbers of adequately prepared workers for those jobs, these activities do not address the problems faced by workers laboring in the bottom third of the labor market. Indeed, as Paul Osterman and Beth Shulman highlight in their book, *Good Jobs America: Making Work Better for Everyone*, training and education alone cannot solve this problem, as these low-wage jobs will be filled by workers no matter what level of education and training they have achieved. Furthermore, regional economic development strategies that only focus on attracting high end jobs to our region will continue to stratify our job market, continuing the trends we have documented of increasing numbers of jobs and wage gains in the



“higher wage” occupations, while the number of “second tier” jobs shrink and the wages of “low wage” occupations remain stagnant.

The problems we face are systemic ones, not ones of individual ability. This study has shown that 40% of Boston area workers are low wage earners. If we cannot affect the structural problem in our local job market that keeps nearly one in three workers laboring at sub-standards wages by improving the wages and benefits in our local jobs, then we will leave these families struggling on the brink of poverty and dependent on state aid.

While the solutions to this problem are not simple, they are also not unknown. Unionization of workers in low wage occupations has been shown repeatedly to improve wages, benefits and working conditions. Similarly, public policies that drive up wages (such as minimum wage laws, prevailing wage laws, and living wage ordinances) have been shown to improve job quality without having detrimental affects on local businesses. Enforcement of existing labor laws and the development of new standards that hold employers responsible for the working conditions of everybody working for their company can help to create better jobs while also leveling the playing field for employers.

This study underscores the need to pursue these and other solutions. The problem of low-wage work is a not a problem only happening in other areas of the U.S.—it is a problem here in Boston that we must tackle so that we do not continue to condemn upwards of a third of our neighbors to a low wage existence.

## APPENDIX A: Median wages of Boston area jobs by major occupation and job typology, 2001-2010

Major Occupation		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Low Wage	Building/Grounds Services	\$12.65	\$12.70	\$12.77	\$12.94	\$13.04	\$13.07	\$13.46	\$13.45	\$14.57	\$14.85
	Farming	\$11.06	\$12.11	\$12.03	\$11.85	\$11.63	\$9.99	\$10.16	\$10.10	\$11.96	\$11.81
	Food Preparation/Serving	\$11.03	\$10.96	\$10.42	\$10.57	\$10.54	\$10.58	\$10.87	\$10.72	\$11.19	\$11.28
	Healthcare Support	\$14.29	\$14.51	\$14.65	\$14.70	\$14.47	\$14.38	\$14.63	\$14.83	\$15.22	\$14.86
	Personal Care	\$11.95	\$12.10	\$12.31	\$12.55	\$12.86	\$13.27	\$12.91	\$12.23	\$12.42	\$12.71
	Sales	\$13.18	\$13.39	\$14.21	\$14.49	\$14.71	\$14.79	\$14.89	\$14.59	\$14.70	\$14.76
	Transportation/Materials	\$14.99	\$14.67	\$14.92	\$14.75	\$14.77	\$14.45	\$14.77	\$14.87	\$15.20	\$15.20
Second Tier	Community/Social Services	\$19.53	\$19.36	\$20.18	\$20.03	\$20.16	\$20.37	\$20.01	\$19.25	\$19.48	\$20.41
	Administrative Support	\$17.27	\$17.39	\$17.91	\$18.13	\$18.08	\$17.86	\$18.04	\$17.97	\$18.67	\$18.67
	Production	\$16.04	\$16.25	\$16.85	\$17.06	\$16.97	\$16.55	\$16.42	\$16.38	\$17.03	\$17.07
	Protective Service	\$17.69	\$19.58	\$19.95	\$20.20	\$19.89	\$20.29	\$20.72	\$21.03	\$21.40	\$21.48
Higher Wage	Architecture/Engineering	\$33.93	\$35.10	\$35.77	\$36.36	\$35.94	\$36.81	\$37.41	\$37.76	\$38.40	\$38.46
	Arts/Entertainment	\$24.61	\$24.29	\$24.35	\$23.94	\$24.15	\$24.52	\$24.55	\$24.37	\$24.31	\$26.82
	Business&Finance	\$30.28	\$29.87	\$31.73	\$32.10	\$31.97	\$33.02	\$33.59	\$33.43	\$34.92	\$34.51
	Computer/Math	\$38.73	\$37.99	\$39.37	\$41.24	\$40.07	\$39.82	\$40.87	\$41.12	\$42.58	\$41.80
	Construction	\$26.83	\$26.63	\$26.74	\$28.03	\$26.43	\$26.65	\$26.80	\$27.14	\$27.64	\$27.17
	Education	\$23.44	\$23.51	\$24.91	\$25.82	\$25.45	\$24.69	\$25.44	\$25.53	\$27.92	\$27.69
	Healthcare Practitioners	\$27.77	\$28.65	\$30.64	\$31.50	\$31.74	\$32.29	\$33.68	\$34.29	\$34.97	\$34.96
	Installation/Maintenance	\$22.70	\$22.55	\$22.77	\$23.29	\$22.86	\$22.84	\$22.78	\$23.11	\$23.81	\$24.61
	Legal	\$32.32	\$32.05	\$38.06	\$38.74	\$39.42	\$38.23	\$42.26	\$42.08	\$41.62	\$41.55
	Sciences	\$27.70	\$26.70	\$30.53	\$31.53	\$31.24	\$32.28	\$33.43	\$32.81	\$33.10	\$31.61
	Management	\$44.64	\$45.63	\$46.98	\$48.45	\$49.46	\$51.15	\$52.53	\$52.93	\$54.39	\$54.99
All Occupations		\$19.68	\$19.78	\$20.46	\$20.95	\$21.16	\$21.17	\$21.27	\$21.31	\$22.25	\$22.40

*\*OES data for Boston metropolitan area. All wage values have been converted to 2010 dollars.*

## APPENDIX B: Number and percent employed by major occupation and job typology, 2001-2010

Major Occupation		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Low Wage	Building/Grounds Services	69,500	68,360	68,100	65,760	56,040	56,870	56,800	56,320	54,180	52,600
	Farming	1,130	1,400	1,230	1,150	1,110	1,540	1,380	1,430	680	610
	Food Preparation/Serving	141,550	141,580	140,770	144,790	121,940	124,080	127,690	130,790	129,580	127,640
	Healthcare Support	48,950	46,220	48,530	52,800	43,580	43,560	43,770	45,340	44,590	43,790
	Personal Care	44,550	44,850	46,490	44,110	36,840	36,690	41,070	45,020	45,580	41,790
	Sales	196,050	190,030	185,780	189,980	156,010	159,720	161,980	165,730	158,680	159,100
	Transportation/Materials	92,750	87,240	88,890	89,450	70,600	71,120	74,810	75,130	67,820	68,100
	<b>Total Number Employed</b>	<b>596,481</b>	<b>581,682</b>	<b>581,793</b>	<b>590,044</b>	<b>488,125</b>	<b>495,586</b>	<b>509,507</b>	<b>521,768</b>	<b>503,119</b>	<b>495,640</b>
	<b>% of Total Employment</b>	<b>30.3%</b>	<b>30.5%</b>	<b>30.6%</b>	<b>30.9%</b>	<b>30.0%</b>	<b>30.0%</b>	<b>30.2%</b>	<b>30.4%</b>	<b>29.8%</b>	<b>29.9%</b>
Second Tier	Community/Social Services	28,640	32,690	29,350	31,350	26,140	26,310	29,240	31,730	30,890	35,030
	Administrative Support	359,560	346,250	342,080	336,020	288,810	293,420	297,680	298,970	287,050	270,310
	Production	108,870	97,600	86,590	83,210	66,800	64,010	66,380	63,250	60,450	59,320
	Protective Service	46,730	43,400	46,520	46,040	41,050	38,280	38,760	39,870	42,840	42,680
	<b>Total Number Employed</b>	<b>543,800</b>	<b>519,940</b>	<b>504,540</b>	<b>496,620</b>	<b>422,800</b>	<b>422,020</b>	<b>432,060</b>	<b>433,820</b>	<b>421,230</b>	<b>407,340</b>
	<b>% of Total Employment</b>	<b>27.6%</b>	<b>27.3%</b>	<b>26.6%</b>	<b>26.0%</b>	<b>25.9%</b>	<b>25.6%</b>	<b>25.6%</b>	<b>25.3%</b>	<b>25.0%</b>	<b>24.6%</b>
Higher Wage	Architecture/Engineering	53,380	49,610	51,250	52,140	43,940	43,260	44,270	45,190	44,220	42,070
	Arts/Entertainment	29,340	27,670	29,860	31,890	29,720	30,900	32,260	34,860	33,560	37,130
	Business&Finance	92,340	85,830	99,160	108,570	103,710	113,190	114,670	114,980	112,790	114,530
	Computer/Math	84,490	79,460	81,100	84,070	74,810	77,450	80,350	84,650	85,740	87,800
	Construction	67,320	69,630	69,890	68,690	52,820	53,060	51,210	50,080	45,590	42,130
	Education	117,450	117,680	110,230	114,470	100,440	104,910	106,250	105,790	108,830	109,070
	Healthcare Practitioners	112,390	108,360	113,240	116,640	105,820	106,600	112,620	114,250	123,540	122,000
	Installation/Maintenance	64,560	62,530	60,610	56,530	46,760	47,330	47,620	47,980	45,640	45,390
	Legal	20,600	21,590	19,060	19,300	18,340	17,470	18,170	18,950	18,130	18,740
	Sciences	30,730	29,610	29,820	30,000	27,640	31,300	33,290	37,240	37,470	29,910
	Management	160,170	155,680	150,480	140,120	116,420	108,880	108,220	109,740	108,050	108,270
	<b>Total Number Employed</b>	<b>832,770</b>	<b>807,650</b>	<b>814,700</b>	<b>822,420</b>	<b>720,420</b>	<b>734,350</b>	<b>748,930</b>	<b>763,710</b>	<b>763,560</b>	<b>757,040</b>
	<b>% of Total Employment</b>	<b>42.3%</b>	<b>42.3%</b>	<b>42.9%</b>	<b>43.1%</b>	<b>44.2%</b>	<b>44.5%</b>	<b>44.4%</b>	<b>44.5%</b>	<b>45.3%</b>	<b>45.7%</b>
All Occupations		1,971,030	1,907,280	1,899,020	1,907,080	1,629,340	1,649,960	1,688,490	1,717,290	1,685,900	1,658,000



## Data Appendix

In order to examine low wage employment and jobs in the geographical area of greater-Boston, and within specific occupations, we relied on two sources of data: the American Community Survey (ACS), and the Occupational Employment Survey (OES).

### American Community Survey (ACS)

The American Community Survey, conducted by U.S. Census Bureau, provides population and housing information, which includes individual employment status, occupation and industry of current or most recent job, and wage and salary earnings for the 12 months prior to the survey. ACS products come in a variety of forms. We used the 5-year estimate (2005-09) Public Use Microdata Sample files for our analysis. Geographically, we drew from the sample representing Suffolk, Norfolk, and Middlesex counties in Massachusetts.

The ACS does not provide information on hourly wage, but does provide estimates of annual wage and salary earnings. We estimated hourly wage using the sub sample of individuals who worked full-time (more than 30 hours per week) for the full year (at least 48 weeks) and making the necessary calculations using annual earnings.

### Occupational Employment Statistics (OES)

For the analysis of jobs in the greater-Boston area, we used survey data from the Occupational Employment Statistics (OES), collected by the U.S. Department of Labor. The OES survey is mailed twice yearly to a representative sample of approximately 200,000 non-farm establishments. Employees covered in the OES survey includes all part-time and full-time workers who are paid a wage or salary, but excludes self-employed, household, and unpaid family workers. Wages for the OES survey are defined as straight-time, gross pay, exclusive of premium pay and employer costs of non-wage benefits.

Occupational and industrial classifications are assigned to jobs covered by the survey, using the 2000 Standard Occupational Classification (SOC) system and the North

American Industry Classification System (NAICS), respectively.

Based on the survey data, OES creates geographic specific statistics, by occupation and industry, of the total employment, and 10<sup>th</sup> percentile, 25<sup>th</sup> percentile, median, 75<sup>th</sup> percentile, 90<sup>th</sup> percentile, and mean hourly and annual wages.

Between the years 2001 and 2010, the OES data used two different definitions of the Boston metropolitan area. From 2001 through 2004, the OES used the Boston, MA-NH PMSA (Primary Metropolitan Statistical Area) which consisted of 129 cities and towns. In 2005 and forward, the OES used the Boston-Cambridge-Quincy, MA NECTA Division which consisted of 97 cities and towns. This change in definition of the “greater Boston” region created a split in our dataset between 2004 and 2005 which makes it difficult to produce an estimate of the change in the number employed in difference occupations. The U.S. Census Bureau and the U.S. Bureau of Labor Statistics provide the metropolitan definitions and components which are designated by the U.S. Office of Management and Budget. See <http://www.census.gov/population/estimates/metro-city/99mfips.txt> for the Boston, MA-NH PMSA and [http://www.bls.gov/oes/2008/may/msa\\_def.htm#716540](http://www.bls.gov/oes/2008/may/msa_def.htm#716540) for the Boston-Cambridge-Quincy, MA NECTA Division.



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