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## EMPLOYMENT PROJECTIONS – 2010-20

Industries and occupations related to health care, personal care and social assistance, and construction are projected to have the fastest job growth between 2010 and 2020, the U.S. Bureau of Labor Statistics reported today. Total employment is projected to grow by 14.3 percent over the decade, resulting in 20.5 million new jobs. Despite rapid projected growth, construction is not expected to regain all of the jobs lost during the 2007-09 recession.

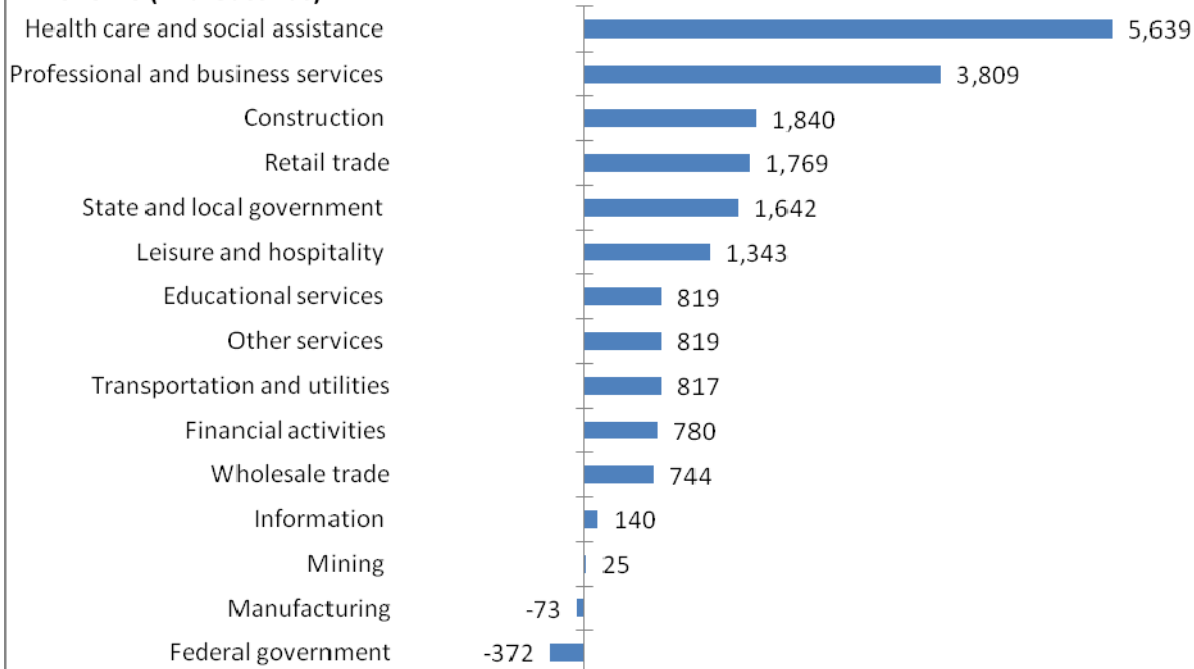
The 2010-20 projections incorporate a new BLS system that depicts education, training, and related work experience typically needed for occupations. In occupations in which a master's degree is typically needed for entry, employment is expected to grow by 21.7 percent, faster than the growth rate for any other education category. In occupations in which apprenticeship is the typical on-the-job training, employment is expected to grow by 22.5 percent, faster than for any other on-the-job training category.

This news release focuses on five areas: labor force and the macroeconomy, industry employment, occupational employment, education and training, and replacement needs.

### Labor force and the macroeconomy

- Slower population growth and a decreasing overall labor force participation rate are expected to lead to slower civilian labor force growth from 2010 to 2020: 0.7 percent annually, compared with 0.8 percent for 2000-10, and 1.3 percent for 1990-2000. The projected 0.7 percent growth rate will lead to a civilian labor force increase of 10.5 million by 2020. (See table 1.)
- The baby-boom generation moves entirely into the 55-years-and-older age group by 2020, increasing that age group's share of the labor force from 19.5 percent in 2010 to 25.2 percent in 2020. The "prime-age" working group (ages 25 to 54) is projected to drop to 63.7 percent of the 2020 labor force. The 16- to 24-year-old age group is projected to account for 11.2 percent of the labor force in 2020. (See table 1.)
- By 2020, the number of Hispanics in the labor force is projected to grow by 7.7 million, or 34.0 percent, and their share of the labor force is expected to increase from 14.8 percent in 2010 to 18.6 percent in 2020. The labor force shares for Asians and blacks are projected to be 5.7 and 12.0 percent, respectively, up slightly from 4.7 and 11.6 percent in 2010. (See table 1.)
- Gross domestic product (GDP) is projected to grow by 3.0 percent annually, consistent with slow labor force growth, the assumption of a full-employment economy in 2020, and labor productivity growth of 2.0 percent annually.

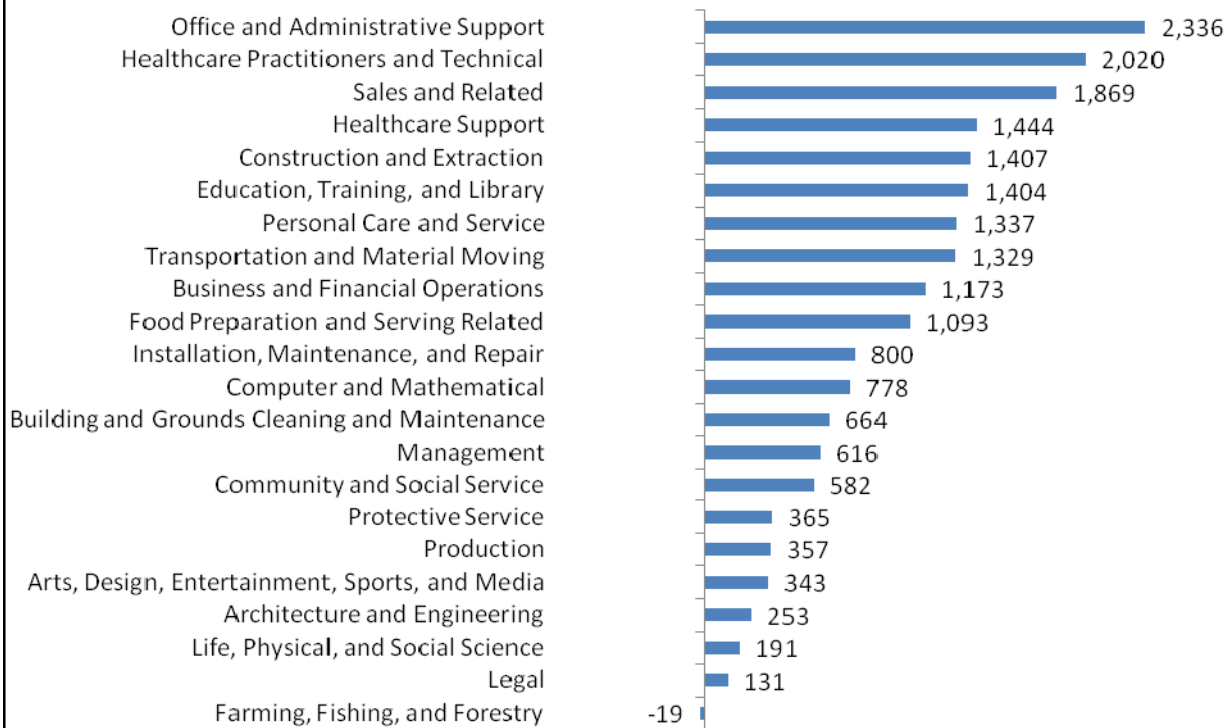
**Chart 1. Projected change in nonagriculture wage and salary employment by major industry, 2010-20 (in thousands)**



## Industry employment

- Nonagriculture wage and salary employment, which accounts for more than 9 in 10 jobs in the economy, is projected to expand to 150.2 million by 2020, up from 130.4 million in 2010. (See table 2.)
- The health care and social assistance sector is projected to gain the most jobs (5.6 million), followed by professional and business services (3.8 million), and construction (1.8 million). Despite rapid growth in the construction sector, employment in 2020 is not expected to reach its pre-recessionary annual average peak of 7.7 million in 2006. (See table 2 and chart 1.)
- About 5.0 million new jobs—25 percent of all new jobs—are expected in the three detailed industries projected to add the most jobs: construction, retail trade, and offices of health practitioners. Seven of the 20 industries gaining the most jobs are in the health care and social assistance sector, and five are in the professional and business services sector. (See table 3.)
- The 20 detailed industries projected to lose the largest numbers of jobs are primarily in the manufacturing sector (11 industries) and the federal government (3 industries). The largest job losses are projected for the Postal Service (-182,000), federal non-defense government (-122,000), and apparel knitting mills (-92,000). (See table 4.)

**Chart 2. Projected employment change by major occupational group, 2010-20 (in thousands)**



## Occupational employment

- Of the 22 major occupational groups, employment in healthcare support occupations is expected to grow most rapidly (34.5 percent), followed by personal care and services occupations (26.8 percent), and healthcare practitioners and technical occupations (25.9 percent). However, the office and administrative support occupations group, with projected slower than average growth of 10.3 percent, is expected to add the largest number of new jobs (2.3 million). (See table 5 and chart 2.)
- The four detailed occupations expected to add the most employment are registered nurses (712,000), retail salespersons (707,000), home health aides (706,000), and personal care aides (607,000). All have large employment in 2010 and are expected to grow faster than the average of 14.3 percent. (See table 6.)
- One-third of the projected fastest growing occupations are related to health care, reflecting expected increases in demand as the population ages and the health care and social assistance industry grows. (See table 7.)
- More than one-fourth of the projected fastest growing occupations are related to construction. Employment in most of these occupations, still at low levels in 2010 because of the 2007-09 recession, will recover along with the construction industry. But employment in most construction occupations is not expected to reach pre-recession levels. (See table 7.)
- Production occupations and office and administrative support occupations dominate the list of detailed occupations with the largest projected employment declines. However, farmers,

ranchers, and other agricultural managers top the list, with a projected loss of 96,100 jobs. (See table 8.)

### **Education and training**

- Occupations that typically need some type of postsecondary education for entry are projected to grow the fastest during the 2010-20 decade. Occupations classified as needing a master's degree are projected to grow by 21.7 percent, followed by doctoral or professional degree occupations at 19.9 percent, and associate's degree occupations at 18.0 percent. (See table 9.)
- In terms of typical on-the-job training, occupations that typically require apprenticeships are projected to grow the fastest (22.5 percent). (See table 9.)
- Of the 30 detailed occupations projected to have the fastest employment growth, 17 typically need some type of postsecondary education for entry into the occupation. (See table 7.)
- Two-thirds of the 30 occupations projected to have the largest number of new jobs typically require less than a postsecondary education, no related work experience, and short- or moderate-term on-the-job training. (See table 6.)
- Only 3 of the 30 detailed occupations projected to have the largest employment declines are classified as needing postsecondary education for entry. (See table 8.)

### **Replacement needs**

- Over the 2010-20 decade, 54.8 million total job openings are expected. (See table 9.) While growth will lead to many openings, more than half—61.6 percent—will come from the need to replace workers who retire or otherwise permanently leave an occupation.
- In 4 out of 5 occupations, openings due to replacement needs exceed the number due to growth. Replacement needs are expected in every occupation, even in those that are declining.
- More than two-thirds of all job openings are expected to be in occupations that typically do not need postsecondary education for entry. (See table 9.)
- Eighteen of the 30 occupations with the largest number of projected total job openings are classified as typically needing less than a postsecondary education and needing short-term on-the-job training. (See table 10.)

### **Interpreting the projections in light of the 2007-09 recession and recovery**

The BLS projections are built on the assumption of a full employment economy in 2020. The 2007-09 recession represented a sharp downturn in the economy—and the economy, especially the labor market, has been slow to recover. As a result, the 2010-20 projections reach a robust 2020 target year largely because the 2010 base year began from a relatively low point. Rapid growth rates for some measures reflect recovery from the recession and, with some important exceptions, growth beyond recovery.

## **A note about labor shortages and surpluses in the context of long-term economic projections**

Users of these data should not assume that the difference between the projected increase in the labor force and the projected increase in employment implies a labor shortage or surplus. The BLS projections assume labor market equilibrium, that is, one in which labor supply meets labor demand except for some degree of frictional unemployment. In addition, the employment and labor force measures use different concepts. Employment is a count of jobs, and one person may hold more than one job. Labor force is a count of people, and a person is counted only once regardless of how many jobs he or she holds. For a discussion of the basic projections methodology, see "Overview of projections to 2020," Dixie Sommers and James C. Franklin, January 2012 issue of the *Monthly Labor Review*.

### **More information**

The BLS projections are used by high school students and their teachers and parents, college students, career changers, and career development and guidance specialists. The projections are the foundation of the BLS *Occupational Outlook Handbook*, the nation's most widely used career information resource. The projections also are used by state workforce agencies to prepare state and area projections that, together with the national projections, are widely used by policymakers and education and training officials to make decisions about education and training policy, funding, and program offerings. In addition, other federal agencies, researchers, and academics use the projections to understand trends in the economy and labor market. The projections are updated every two years.

More detailed information on the 2010-20 projections appears in five articles in the January 2012 issue of the *Monthly Labor Review*, published by the Bureau of Labor Statistics, U.S. Department of Labor. The *Monthly Labor Review* is available online at [www.bls.gov/opub/mlr/mlrhome.htm](http://www.bls.gov/opub/mlr/mlrhome.htm).

The 2012-13 edition of the *Occupational Outlook Handbook* will feature the 2010-20 projections in assessing job outlook, work activities, wages, education and training requirements, and more for detailed occupations in 341 profiles. The updated *Handbook* will be available online in late March 2012, at [www.bls.gov/ooh](http://www.bls.gov/ooh). A graphic representation of the highlights of the projections appears in the Winter 2011-12 issue of the *Occupational Outlook Quarterly*, available online at [www.bls.gov/ooq](http://www.bls.gov/ooq).

Tables with detailed, comprehensive statistics used in preparing the projections are available online at [www.bls.gov/emp/tables.htm](http://www.bls.gov/emp/tables.htm), and projections methodology are accessible at [www.bls.gov/emp/ep\\_projections\\_methods.htm](http://www.bls.gov/emp/ep_projections_methods.htm).

Information from this release will be made available to sensory impaired individuals upon request. Voice phone: (202) 691-5200; Federal Relay Services: 1 (800) 877-8339.

**Table 1. Civilian labor force, by age, sex, race, and ethnicity, 1990, 2000, 2010, and projected 2020**  
(In thousands)

Age, sex, race, and ethnicity	Levels				Change			Percent change			Percent distribution				Annual growth rate (percent)		
	1990	2000	2010	2020	1990-2000	2000-10	2010-20	1990-2000	2000-10	2010-20	1990	2000	2010	2020	1990-2000	2000-10	2010-20
Total, 16 years and older	125,840	142,583	153,889	164,360	16,743	11,306	10,471	13.3	7.9	6.8	100.0	100.0	100.0	100.0	1.3	0.8	0.7
Age, years:																	
16 to 24	22,492	22,520	20,934	18,330	28	-1,586	-2,604	0.1	-7.0	-12.4	17.9	15.8	13.6	11.2	0.0	-0.7	-1.3
25 to 54	88,322	101,394	102,940	104,619	13,072	1,546	1,679	14.8	1.5	1.6	70.2	71.1	66.9	63.7	1.4	0.2	0.2
55 and older	15,026	18,669	30,014	41,411	3,643	11,345	11,397	24.2	60.8	38.0	11.9	13.1	19.5	25.2	2.2	4.9	3.3
Sex:																	
Men	69,011	76,280	81,985	87,128	7,269	5,705	5,143	10.5	7.5	6.3	54.8	53.5	53.3	53.0	1.0	0.7	0.6
Women	56,829	66,303	71,904	77,232	9,474	5,601	5,328	16.7	8.4	7.4	45.2	46.5	46.7	47.0	1.6	0.8	0.7
Race:																	
White	107,447	118,545	125,084	130,516	11,098	6,539	5,432	10.3	5.5	4.3	85.4	83.1	81.3	79.4	1.0	0.5	0.4
Black	13,740	16,397	17,862	19,676	2,657	1,465	1,814	19.3	8.9	10.2	10.9	11.5	11.6	12.0	1.8	0.9	1.0
Asian	4,653	6,270	7,248	9,430	1,617	978	2,182	34.8	15.6	30.1	3.7	4.4	4.7	5.7	3.0	1.5	2.7
All other groups <sup>1</sup>	-	1,371	3,694	4,738	-	2,323	1,044	-	-	28.3	-	1.0	2.4	2.9	-	-	2.5
Ethnicity:																	
Hispanic origin	10,720	16,689	22,748	30,493	5,969	6,059	7,745	55.7	36.3	34.0	8.5	11.7	14.8	18.6	4.5	3.1	3.0
Other than Hispanic origin	115,120	125,894	131,141	133,867	10,774	5,247	2,726	9.4	4.2	2.1	91.5	88.3	85.2	81.4	0.9	0.4	0.2
White non-Hispanic	97,818	102,729	103,947	102,371	4,911	1,218	-1,576	5.0	1.2	-1.5	77.7	72.0	67.5	62.3	0.5	0.1	-0.2
Age of baby boomers	26 to 44	36 to 54	46 to 64	56 to 74													

<sup>1</sup> The "all other groups" category includes (1) those classified as being of multiple racial origin and (2) the race categories of (2a) American Indian and Alaska Native and (2b) Native Hawaiian and Other Pacific Islanders. Dash indicates no data collected for category. Details may not sum to totals because of rounding.

**Table 2. Employment by major industry sector, 2000, 2010, and projected 2020**

(In thousands)

Industry Sector	Employment			Change		Percent Distribution			Annual Growth Rate (percent)	
	2000	2010	2020	2000-10	2010-20	2000	2010	2020	2000-10	2010-20
Total <sup>1</sup>	146,236.0	143,068.2	163,537.1	-3,167.8	20,468.9	100.0	100.0	100.0	-0.2	1.3
Nonagriculture wage and salary <sup>2</sup>	132,425.0	130,435.6	150,176.8	-1,989.4	19,741.2	90.6	91.2	91.8	-0.2	1.4
Goods-producing, excluding agriculture	24,569.7	17,705.5	19,496.8	-6,864.2	1,791.3	16.8	12.4	11.9	-3.2	1.0
Mining	520.4	655.9	680.7	135.5	24.8	0.4	0.5	0.4	2.3	0.4
Construction	6,786.4	5,525.6	7,365.1	-1,260.8	1,839.5	4.6	3.9	4.5	-2.0	2.9
Manufacturing	17,262.9	11,524.0	11,450.9	-5,738.9	-73.1	11.8	8.1	7.0	-4.0	-0.1
Services-providing	107,855.3	112,730.1	130,680.1	4,874.8	17,950.0	73.8	78.8	79.9	0.4	1.5
Utilities	601.3	551.8	516.1	-49.5	-35.7	0.4	0.4	0.3	-0.9	-0.7
Wholesale trade	5,933.5	5,456.1	6,200.2	-477.4	744.1	4.1	3.8	3.8	-0.8	1.3
Retail trade	15,279.8	14,413.7	16,182.2	-866.1	1,768.5	10.4	10.1	9.9	-0.6	1.2
Transportation and warehousing	4,410.3	4,183.3	5,036.2	-227.0	852.9	3.0	2.9	3.1	-0.5	1.9
Information	3,630.6	2,710.9	2,851.2	-919.7	140.3	2.5	1.9	1.7	-2.9	0.5
Financial activities	7,687.5	7,630.2	8,410.6	-57.3	780.4	5.3	5.3	5.1	-0.1	1.0
Professional and business services	16,666.1	16,688.0	20,497.0	21.9	3,809.0	11.4	11.7	12.5	0.0	2.1
Educational services	2,390.6	3,149.6	3,968.8	759.0	819.2	1.6	2.2	2.4	2.8	2.3
Health care and social assistance	12,718.3	16,414.5	22,053.9	3,696.2	5,639.4	8.7	11.5	13.5	2.6	3.0
Leisure and hospitality	11,861.6	13,019.6	14,362.3	1,158.0	1,342.7	8.1	9.1	8.8	0.9	1.0
Other services	5,885.7	6,031.3	6,850.7	145.6	819.4	4.0	4.2	4.2	0.2	1.3
Federal government	2,865.0	2,968.0	2,596.0	103.0	-372.0	2.0	2.1	1.6	0.4	-1.3
State and local government	17,925.0	19,513.1	21,154.8	1,588.1	1,641.7	12.3	13.6	12.9	0.9	0.8
Agriculture, forestry, fishing, and hunting <sup>3</sup>	2,396.2	2,135.5	2,005.3	-260.7	-130.2	1.6	1.5	1.2	-1.1	-0.6
Agriculture wage and salary	1,354.0	1,282.1	1,236.1	-71.9	-46.0	0.9	0.9	0.8	-0.5	-0.4
Agriculture self-employed and unpaid family workers	1,042.2	853.4	769.3	-188.8	-84.1	0.7	0.6	0.5	-2.0	-1.0
Nonagriculture self-employed and unpaid family worker	9,313.7	8,943.8	9,720.6	-369.9	776.8	6.4	6.3	5.9	-0.4	0.8
Secondary wage and salary jobs in agriculture and private household industries <sup>(4, 5)</sup>	141.7	111.6	112.7	-30.1	1.1	0.1	0.1	0.1	-2.4	0.1
Secondary jobs as a self-employed or unpaid family worker <sup>(4, 6)</sup>	1,959.4	1,441.7	1,521.7	-517.7	80.0	1.3	1.0	0.9	-3.0	0.5

<sup>1</sup> Employment data for wage and salary workers are from the BLS Current Employment Statistics survey, which counts jobs, whereas self-employed, unpaid family workers, and agriculture, forestry, fishing, and hunting are from the Current Population Survey (household survey), which counts workers.

<sup>2</sup> Includes wage and salary data from the Current Employment Statistics survey, except private households, which is from the Current Population Survey. Logging workers are excluded.

<sup>3</sup> Includes agriculture, forestry, fishing, and hunting data from the Current Population Survey, except logging, which is from Current Employment Statistics survey. Government wage and salary workers are excluded.

<sup>4</sup> Due to methodological changes, these data are not comparable to previously published numbers for these categories of secondary workers.

<sup>5</sup> Workers who hold a secondary wage and salary job in agricultural production, forestry, fishing, and private household industries.

<sup>6</sup> Wage and salary workers who hold a secondary job as a self-employed or unpaid family worker.

**Table 3. The 20 industries with the largest projected wage and salary employment growth, 2010-20**

(In thousands)

Industry Code <sup>1</sup>	Industry Description	Sector	Employment		Change, 2010-20	Annual Growth Rate (percent), 2010-20
			2010	2020		
23	Construction	Construction	5,525.6	7,365.1	1,839.5	2.9
44, 45	Retail trade	Retail trade	14,413.7	16,182.2	1,768.5	1.2
6211, 6212, 6213	Offices of health practitioners	Health care and social assistance	3,818.2	5,209.6	1,391.4	3.2
622	Hospitals	Health care and social assistance	4,685.3	5,563.6	878.3	1.7
6216	Home health care services	Health care and social assistance	1,080.6	1,952.4	871.8	6.1
722	Food services and drinking places	Leisure and hospitality	9,351.8	10,212.2	860.4	0.9
6241	Individual and family services	Health care and social assistance	1,215.0	2,066.4	851.4	5.5
623	Nursing and residential care facilities	Health care and social assistance	3,129.0	3,951.0	822.0	2.4
42	Wholesale trade	Wholesale trade	5,456.1	6,200.2	744.1	1.3
NA	General Local government educational services compensation	State and local government	8,010.4	8,751.4	741.0	0.9
5415	Computer systems design and related services	Professional and business services	1,441.5	2,112.8	671.3	3.9
5613	Employment services	Professional and business services	2,716.7	3,348.0	631.3	2.1
5416	Management, scientific, and technical consulting services	Professional and business services	991.4	1,567.0	575.6	4.7
6112, 6113	Junior colleges, colleges, universities, and professional schools	Educational services	1,694.0	2,171.1	477.1	2.5
6214, 6215, 6219	Outpatient, laboratory, and other ambulatory care services	Health care and social assistance	1,077.1	1,471.2	394.1	3.2
5413	Architectural, engineering, and related services	Professional and business services	1,276.6	1,635.1	358.5	2.5
5617	Services to buildings and dwellings	Professional and business services	1,742.5	2,044.8	302.3	1.6
484	Truck transportation	Transportation and Warehousing	1,244.0	1,544.0	300.0	2.2
NA	General State government educational services compensation	State and local government	2,377.1	2,661.7	284.6	1.1
6244	Child day care services	Health care and social assistance	851.8	1,101.3	249.5	2.6

<sup>1</sup> As defined by the 2007 North American Industrial Classification System codes (NAICS).



**Table 4. The 20 industries with the largest projected wage and salary employment declines, 2010-20**

(In thousands)

Industry Code <sup>1</sup>	Industry Description	Sector	Employment		Change, 2010-20	Annual Growth Rate (percent), 2010-20
			2010	2020		
491	Postal Service	Federal government	656.4	474.6	-181.8	-3.2
NA	General federal non-defense government compensation	Federal government	1667.5	1545.7	-121.8	-0.8
3151	Apparel knitting mills	Manufacturing	157.7	66.1	-91.6	-8.3
5111	Newspaper, periodical, book, and directory publishers	Information	501.3	439.7	-61.6	-1.3
3399	Other miscellaneous manufacturing	Manufacturing	266.0	210.3	-55.7	-2.3
NA	General Federal defense government compensation	Federal government	545.5	496.0	-49.5	-0.9
3341	Computer and peripheral equipment manufacturing	Manufacturing	161.6	117.5	-44.1	-3.1
3345	Navigational, measuring, electromedical, and control instruments manufacturing	Manufacturing	406.0	363.2	-42.8	-1.1
111	Crop production	Agriculture, forestry, fishing and hunting	629.5	589.3	-40.2	-0.7
8123	Drycleaning and laundry services	Other services	302.1	265.7	-36.4	-1.3
2211	Electric power generation, transmission and distribution	Utilities	396.9	361.4	-35.5	-0.9
NA	State government enterprises	State and local government	517.8	484.6	-33.2	-0.7
3344	Semiconductor and other electronic component manufacturing	Manufacturing	369.7	336.9	-32.8	-0.9
3342	Communications equipment manufacturing	Manufacturing	118.0	85.7	-32.3	-3.1
323	Printing and related support activities	Manufacturing	486.9	454.7	-32.2	-0.7
3131	Fiber, yarn, and thread mills	Manufacturing	237.8	206.1	-31.7	-1.4
512	Motion picture, video, and sound recording industries	Information	372.0	347.0	-25.0	-0.7
3335	Metalworking machinery manufacturing	Manufacturing	153.2	130.5	-22.7	-1.6
3251	Basic chemical manufacturing	Manufacturing	142.4	121.6	-20.8	-1.6
3363	Motor vehicle parts manufacturing	Manufacturing	415.1	394.9	-20.2	-0.5

<sup>1</sup> As defined by the 2007 North American Industrial Classification System codes (NAICS).

**Table 5: Employment by major occupational group, 2010 and projected 2020, and median annual wage, May 2010**  
(In thousands)

2010 National Employment Matrix title and code		Employment		Change, 2010-20		Median annual wage, May 2010
		2010	2020	Number	Percent	
00-0000	Total, All Occupations	143,068.2	163,537.1	20,468.9	14.3	\$33,840
31-0000	Healthcare Support Occupations	4,190.0	5,633.7	1,443.7	34.5	24,760
39-0000	Personal Care and Service Occupations	4,994.7	6,331.4	1,336.6	26.8	20,640
29-0000	Healthcare Practitioners and Technical Occupations	7,799.3	9,819.0	2,019.7	25.9	58,490
21-0000	Community and Social Service Occupations	2,402.7	2,985.0	582.3	24.2	39,280
47-0000	Construction and Extraction Occupations	6,328.0	7,735.2	1,407.2	22.2	39,080
15-0000	Computer and Mathematical Occupations	3,542.8	4,321.1	778.3	22.0	73,720
13-0000	Business and Financial Operations Occupations	6,789.2	7,961.7	1,172.5	17.3	60,670
19-0000	Life, Physical, and Social Science Occupations	1,228.8	1,419.6	190.8	15.5	58,530
25-0000	Education, Training, and Library Occupations	9,193.6	10,597.3	1,403.7	15.3	45,690
53-0000	Transportation and Material Moving Occupations	9,004.8	10,333.4	1,328.7	14.8	28,400
49-0000	Installation, Maintenance, and Repair Occupations	5,428.6	6,228.7	800.2	14.7	40,120
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	2,708.5	3,051.0	342.5	12.6	42,870
41-0000	Sales and Related Occupations	14,915.6	16,784.7	1,869.1	12.5	24,370
37-0000	Building and Grounds Cleaning and Maintenance Occupations	5,498.5	6,162.5	664.0	12.1	22,490
33-0000	Protective Service Occupations	3,302.5	3,667.0	364.5	11.0	36,660
23-0000	Legal Occupations	1,211.9	1,342.9	131.0	10.8	74,580
17-0000	Architecture and Engineering Occupations	2,433.4	2,686.2	252.8	10.4	70,610
43-0000	Office and Administrative Support Occupations	22,602.5	24,938.2	2,335.7	10.3	30,710
35-0000	Food Preparation and Serving Related Occupations	11,150.3	12,242.8	1,092.5	9.8	18,770
11-0000	Management Occupations	8,776.1	9,391.9	615.8	7.0	91,440
51-0000	Production Occupations	8,594.4	8,951.2	356.8	4.2	30,330
45-0000	Farming, Fishing, and Forestry Occupations	972.1	952.6	-19.4	-2.0	19,630

**Table 6. The 30 occupations with the largest projected employment growth, 2010-20**  
(In thousands)

Occupation	Occupational group	Employment		Change		Pre-employment		During employment
		2010	2020	Number	Percent	Typical education needed for entry <sup>1</sup>	Work experience in a related occupation <sup>2</sup>	Typical on-the-job training <sup>3</sup>
Registered nurses	Healthcare Practitioners and Technical Occupations	2,737.4	3,449.3	711.9	26.0	Associate's degree	None	None
Retail salespersons	Sales and Related Occupations	4,261.6	4,968.4	706.8	16.6	Less than high school	None	Short-term on-the-job training
Home health aides	Healthcare Support Occupations	1,017.7	1,723.9	706.3	69.4	Less than high school	None	Short-term on-the-job training
Personal care aides	Personal Care and Service Occupations	861.0	1,468.0	607.0	70.5	Less than high school	None	Short-term on-the-job training
Office clerks, general	Office and Administrative Support Occupations	2,950.7	3,440.2	489.5	16.6	High school diploma or equivalent	None	Short-term on-the-job training
Combined food preparation and serving workers, including fast food	Food Preparation and Serving Related Occupations	2,682.1	3,080.1	398.0	14.8	Less than high school	None	Short-term on-the-job training
Customer service representatives	Office and Administrative Support Occupations	2,187.3	2,525.6	338.4	15.5	High school diploma or equivalent	None	Short-term on-the-job training
Heavy and tractor-trailer truck drivers	Transportation and Material Moving Occupations	1,604.8	1,934.9	330.1	20.6	High school diploma or equivalent	1 to 5 years	Short-term on-the-job training
Laborers and freight, stock, and material movers, hand	Transportation and Material Moving Occupations	2,068.2	2,387.3	319.1	15.4	Less than high school	None	Short-term on-the-job training
Postsecondary teachers	Education, Training, and Library Occupations	1,756.0	2,061.7	305.7	17.4	Doctoral or professional degree	None	None
Nursing aides, orderlies, and attendants	Healthcare Support Occupations	1,505.3	1,807.2	302.0	20.1	Postsecondary non-degree award	None	None
Childcare workers	Personal Care and Service Occupations	1,282.3	1,544.3	262.0	20.4	High school diploma or equivalent	None	Short-term on-the-job training
Bookkeeping, accounting, and auditing clerks	Office and Administrative Support Occupations	1,898.3	2,157.4	259.0	13.6	High school diploma or equivalent	None	Moderate-term on-the-job training
Cashiers	Sales and Related Occupations	3,362.6	3,612.8	250.2	7.4	Less than high school	None	Short-term on-the-job training
Elementary school teachers, except special education	Education, Training, and Library Occupations	1,476.5	1,725.3	248.8	16.8	Bachelor's degree	None	Internship/residency
Receptionists and information clerks	Office and Administrative Support Occupations	1,048.5	1,297.0	248.5	23.7	High school diploma or equivalent	None	Short-term on-the-job training
Janitors and cleaners, except maids and housekeeping cleaners	Building and Grounds Cleaning and Maintenance Occupations	2,310.4	2,556.8	246.4	10.7	Less than high school	None	Short-term on-the-job training
Landscaping and groundskeeping workers	Building and Grounds Cleaning and Maintenance Occupations	1,151.5	1,392.3	240.8	20.9	Less than high school	None	Short-term on-the-job training
Sales representatives, wholesale and manufacturing, except technical and scientific products	Sales and Related Occupations	1,430.0	1,653.4	223.4	15.6	High school diploma or equivalent	None	Moderate-term on-the-job training
Construction laborers	Construction and Extraction Occupations	998.8	1,211.2	212.4	21.3	Less than high school	None	Short-term on-the-job training
Medical secretaries	Office and Administrative Support Occupations	508.7	718.9	210.2	41.3	High school diploma or equivalent	None	Moderate-term on-the-job training
First-line supervisors of office and administrative support workers	Office and Administrative Support Occupations	1,424.4	1,627.8	203.4	14.3	High school diploma or equivalent	1 to 5 years	None
Carpenters	Construction and Extraction Occupations	1,001.7	1,197.6	196.0	19.6	High school diploma or equivalent	None	Apprenticeship
Waiters and waitresses	Food Preparation and Serving Related Occupations	2,260.3	2,456.2	195.9	8.7	Less than high school	None	Short-term on-the-job training
Security guards	Protective Service Occupations	1,035.7	1,230.7	195.0	18.8	High school diploma or equivalent	None	Short-term on-the-job training
Teacher assistants	Education, Training, and Library Occupations	1,288.3	1,479.3	191.1	14.8	High school diploma or equivalent	None	Short-term on-the-job training
Accountants and auditors	Business and Financial Operations Occupations	1,216.9	1,407.6	190.7	15.7	Bachelor's degree	None	None
Licensed practical and licensed vocational nurses	Healthcare Practitioners and Technical Occupations	752.3	920.8	168.5	22.4	Postsecondary non-degree award	None	None
Physicians and surgeons	Healthcare Practitioners and Technical Occupations	691.0	859.3	168.3	24.4	Doctoral or professional degree	None	Internship/residency
Medical assistants	Healthcare Support Occupations	527.6	690.4	162.9	30.9	High school diploma or equivalent	None	Moderate-term on-the-job training

<sup>1</sup> Represents the typical education level needed to enter the occupation.

<sup>2</sup> Indicates if work experience in a related occupation is commonly considered necessary by employers for entry, or is a commonly accepted substitute for formal types of training.

<sup>3</sup> Indicates the typical on-the-job training needed to attain competency in the occupation.

NOTE: For more information about the education, work experience, and on-the-job training categories assigned to occupations, see [www.bls.gov/emp/ep\\_education\\_training\\_system.htm](http://www.bls.gov/emp/ep_education_training_system.htm)

**Table 7. The 30 occupations with the fastest projected employment growth, 2010-20**  
(In thousands)

Occupation	Occupational group	Employment		Change		Pre-employment		During employment
		2010	2020	Number	Percent	Typical education needed for entry <sup>1</sup>	Work experience in a related occupation <sup>2</sup>	
Personal care aides	Personal Care and Service Occupations	861.0	1,468.0	607.0	70.5	Less than high school	None	Short-term on-the-job training
Home health aides	Healthcare Support Occupations	1,017.7	1,723.9	706.3	69.4	Less than high school	None	Short-term on-the-job training
Biomedical engineers	Architecture and Engineering Occupations	15.7	25.4	9.7	61.7	Bachelor's degree	None	None
Helpers--brickmasons, blockmasons, stonemasons, and tile and marble setters	Construction and Extraction Occupations	29.4	47.0	17.6	60.1	Less than high school	None	Short-term on-the-job training
Helpers--carpenters	Construction and Extraction Occupations	46.5	72.4	25.9	55.7	Less than high school	None	Short-term on-the-job training
Veterinary technologists and technicians	Healthcare Practitioners and Technical Occupations	80.2	121.9	41.7	52.0	Associate's degree	None	None
Reinforcing iron and rebar workers	Construction and Extraction Occupations	19.1	28.4	9.3	48.6	High school diploma or equivalent	None	Apprenticeship
Physical therapist assistants	Healthcare Support Occupations	67.4	98.2	30.8	45.7	Associate's degree	None	None
Helpers--pipelayers, plumbers, pipefitters, and steamfitters	Construction and Extraction Occupations	57.9	84.2	26.3	45.4	High school diploma or equivalent	None	Short-term on-the-job training
Meeting, convention, and event planners	Business and Financial Operations Occupations	71.6	102.9	31.3	43.7	Bachelor's degree	Less than 1 year	None
Diagnostic medical sonographers	Healthcare Practitioners and Technical Occupations	53.7	77.1	23.4	43.5	Associate's degree	None	None
Occupational therapy assistants	Healthcare Support Occupations	28.5	40.8	12.3	43.3	Associate's degree	None	None
Physical therapist aides	Healthcare Support Occupations	47.0	67.3	20.3	43.1	High school diploma or equivalent	None	Moderate-term on-the-job training
Glaziers	Construction and Extraction Occupations	41.9	59.6	17.7	42.4	High school diploma or equivalent	None	Apprenticeship
Interpreters and translators	Arts, Design, Entertainment, Sports, and Media Occupations	58.4	83.1	24.6	42.2	Bachelor's degree	None	Long-term on-the-job training
Medical secretaries	Office and Administrative Support Occupations	508.7	718.9	210.2	41.3	High school diploma or equivalent	None	Moderate-term on-the-job training
Market research analysts and marketing specialists	Business and Financial Operations Occupations	282.7	399.3	116.6	41.2	Bachelor's degree	None	None
Marriage and family therapists	Community and Social Service Occupations	36.0	50.8	14.8	41.2	Master's degree	None	Internship/residency
Brickmasons and blockmasons	Construction and Extraction Occupations	89.2	125.3	36.1	40.5	High school diploma or equivalent	None	Apprenticeship
Physical therapists	Healthcare Practitioners and Technical Occupations	198.6	276.0	77.4	39.0	Doctoral or professional degree	None	None
Dental hygienists	Healthcare Practitioners and Technical Occupations	181.8	250.3	68.5	37.7	Associate's degree	None	None
Bicycle repairers	Installation, Maintenance, and Repair Occupations	9.9	13.6	3.7	37.6	High school diploma or equivalent	None	Moderate-term on-the-job training
Audiologists	Healthcare Practitioners and Technical Occupations	13.0	17.8	4.8	36.8	Doctoral or professional degree	None	None
Health educators	Community and Social Service Occupations	63.4	86.6	23.2	36.5	Bachelor's degree	None	None
Stonemasons	Construction and Extraction Occupations	15.6	21.4	5.7	36.5	High school diploma or equivalent	None	Apprenticeship
Cost estimators	Business and Financial Operations Occupations	185.4	252.9	67.5	36.4	Bachelor's degree	None	None
Medical scientists, except epidemiologists	Life, Physical, and Social Science Occupations	100.0	136.5	36.4	36.4	Doctoral or professional degree	None	None
Mental health counselors	Community and Social Service Occupations	120.3	163.9	43.6	36.3	Master's degree	None	Internship/residency
Pile-driver operators	Construction and Extraction Occupations	4.1	5.6	1.5	36.0	High school diploma or equivalent	None	Moderate-term on-the-job training
Veterinarians	Healthcare Practitioners and Technical Occupations	61.4	83.4	22.0	35.9	Doctoral or professional degree	None	None

<sup>1</sup> Represents the typical education level needed to enter the occupation.

<sup>2</sup> Indicates if work experience in a related occupation is commonly considered necessary by employers for entry, or is a commonly accepted substitute for formal types of training.

<sup>3</sup> Indicates the typical on-the-job training needed to attain competency in the occupation.

NOTE: For more information about the education, work experience, and on-the-job training categories assigned to occupations, see [www.bls.gov/emp/ep\\_education\\_training\\_system.htm](http://www.bls.gov/emp/ep_education_training_system.htm).

**Table 8. The 30 occupations with the largest projected employment declines, 2010-20**  
(In thousands)

Occupation	Occupational group	Employment		Change		Pre-employment		During employment
		2010	2020	Number	Percent	Typical education needed for entry <sup>1</sup>	Work experience in a related occupation <sup>2</sup>	Typical on-the-job training <sup>3</sup>
Farmers, ranchers, and other agricultural managers	Management Occupations	1,202.5	1,106.4	-96.1	-8.0	High school diploma or equivalent	More than 5 years	None
Postal Service mail sorters, processors, and processing machine operators	Office and Administrative Support Occupations	142.0	73.0	-68.9	-48.5	High school diploma or equivalent	None	Short-term on-the-job training
Sewing machine operators	Production Occupations	163.2	121.1	-42.1	-25.8	Less than high school	None	Short-term on-the-job training
Postal Service mail carriers	Office and Administrative Support Occupations	316.7	278.5	-38.1	-12.0	High school diploma or equivalent	None	Short-term on-the-job training
Switchboard operators, including answering service	Office and Administrative Support Occupations	142.5	109.3	-33.2	-23.3	High school diploma or equivalent	None	Short-term on-the-job training
Postal Service clerks	Office and Administrative Support Occupations	65.6	34.0	-31.6	-48.2	High school diploma or equivalent	None	Short-term on-the-job training
Cooks, fast food	Food Preparation and Serving Related Occupations	530.4	511.4	-19.1	-3.6	Less than high school	None	Short-term on-the-job training
Miscellaneous agricultural workers	Farming, Fishing, and Forestry Occupations	746.4	727.3	-19.1	-2.6	Less than high school	None	Short-term on-the-job training
Data entry keyers	Office and Administrative Support Occupations	234.7	218.8	-15.9	-6.8	High school diploma or equivalent	None	Moderate-term on-the-job training
Word processors and typists	Office and Administrative Support Occupations	115.3	102.1	-13.2	-11.5	High school diploma or equivalent	None	Short-term on-the-job training
Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	Sales and Related Occupations	153.8	142.3	-11.5	-7.5	High school diploma or equivalent	None	Short-term on-the-job training
Food Service Managers	Management Occupations	320.6	310.0	-10.6	-3.3	High school diploma or equivalent	1 to 5 years	None
Electrical and Electronic Equipment Assemblers	Production Occupations	182.9	172.4	-10.4	-5.7	High school diploma or equivalent	None	Short-term on-the-job training
File Clerks	Office and Administrative Support Occupations	185.0	176.2	-8.8	-4.8	High school diploma or equivalent	None	Short-term on-the-job training
Prepress Technicians and Workers	Production Occupations	50.8	42.8	-8.1	-15.9	Postsecondary non-degree award	None	None
Computer Operators	Office and Administrative Support Occupations	86.4	78.9	-7.4	-8.6	High school diploma or equivalent	None	Moderate-term on-the-job training
Postmasters and Mail Superintendents	Management Occupations	24.5	17.7	-6.8	-27.8	High school diploma or equivalent	1 to 5 years	Moderate-term on-the-job training
Office Machine Operators, Except Computer	Production Occupations	69.8	63.0	-6.8	-9.7	High school diploma or equivalent	None	Short-term on-the-job training
Pressers, Textile, Garment, and Related Materials	Office and Administrative Support Occupations	57.8	51.0	-6.8	-11.8	Less than high school	None	Short-term on-the-job training
Floral Designers	Arts, Design, Entertainment, Sports, and Media Occupations	66.5	60.3	-6.2	-9.3	High school diploma or equivalent	None	Short-term on-the-job training
Petroleum Pump System Operators, Refinery Operators, and Gaugers	Production Occupations	44.2	38.0	-6.2	-14.0	High school diploma or equivalent	None	Long-term on-the-job training
Loan Interviewers and Clerks	Office and Administrative Support Occupations	182.5	176.8	-5.7	-3.1	High school diploma or equivalent	None	Short-term on-the-job training
Paper Goods Machine Setters, Operators, and Tenders	Production Occupations	90.9	85.3	-5.5	-6.1	High school diploma or equivalent	None	Moderate-term on-the-job training
Chemical Plant and System Operators	Production Occupations	43.3	38.0	-5.3	-12.2	High school diploma or equivalent	None	Long-term on-the-job training
Photographic Process Workers and Processing Machine Operators	Production Occupations	58.7	54.2	-4.5	-7.7	High school diploma or equivalent	None	Short-term on-the-job training
Textile Knitting and Weaving Machine Setters, Operators, and Tenders	Production Occupations	22.5	18.4	-4.1	-18.2	High school diploma or equivalent	None	Moderate-term on-the-job training
Reporters and Correspondents	Arts, Design, Entertainment, Sports, and Media Occupations	51.9	48.0	-3.9	-7.5	Bachelor's degree	None	None
Semiconductor Processors	Production Occupations	21.1	17.3	-3.8	-17.9	Associate's degree	None	Moderate-term on-the-job training
Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	Production Occupations	29.0	25.4	-3.6	-12.4	High school diploma or equivalent	None	Moderate-term on-the-job training
Chemical Equipment Operators and Tenders	Production Occupations	47.4	43.8	-3.5	-7.5	High school diploma or equivalent	None	Moderate-term on-the-job training

<sup>1</sup> Represents the typical education level needed to enter the occupation.

<sup>2</sup> Indicates if work experience in a related occupation is commonly considered necessary by employers for entry, or is a commonly accepted substitute for formal types of training.

<sup>3</sup> Indicates the typical on-the-job training needed to attain competency in the occupation.

NOTE: For more information about the education, work experience, and on-the-job training categories assigned to occupations, see [www.bls.gov/emp/ep\\_education\\_training\\_system.htm](http://www.bls.gov/emp/ep_education_training_system.htm).

**Table 9. Employment and total job openings by education, work experience, and on-the-job training category, 2010 and projected 2020**

(In thousands)

Education, work experience, and on-the-job training	Employment				Change, 2010-20		Total job openings due to growth and replacement needs, 2010-20 <sup>1</sup>	
	Number		Percent distribution		Number	Percent	Number	Percent distribution
	2010	2020	2010	2020				
<b>Typical education needed for entry<sup>2</sup></b>								
Total, all occupations .....	143,068.2	163,537.1	100.0	100.0	20,468.9	14.3	54,787.4	100.0
Doctoral or professional degree.....	4,409.7	5,286.3	3.1	3.2	876.6	19.9	1,701.8	3.1
Master's degree .....	1,986.0	2,417.2	1.4	1.5	431.2	21.7	903.9	1.6
Bachelor's degree .....	22,171.1	25,827.2	15.5	15.8	3,656.1	16.5	8,562.4	15.6
Associate's degree .....	7,994.6	9,434.6	5.6	5.8	1,440.0	18.0	2,941.0	5.4
Postsecondary non-degree award .....	6,524.0	7,624.9	4.6	4.7	1,100.9	16.9	2,389.6	4.4
Some college, no degree.....	811.6	953.8	0.6	0.6	142.2	17.5	362.0	0.7
High school diploma or equivalent.....	62,089.6	69,665.7	43.4	42.6	7,576.1	12.2	21,745.9	39.7
Less than high school.....	37,081.7	42,327.4	25.9	25.9	5,245.7	14.1	16,180.8	29.5
<b>Work experience in a related occupation<sup>3</sup></b>								
Total, all occupations .....	143,068.2	163,537.1	100.0	100.0	20,468.9	14.3	54,787.4	100.0
More than 5 years.....	4,612.4	4,956.0	3.2	3.0	343.6	7.4	1,368.5	2.5
1 to 5 years.....	17,103.0	19,078.2	12.0	11.7	1,975.2	11.5	5,638.7	10.3
Less than 1 year.....	3,129.6	3,535.2	2.2	2.2	405.6	13.0	1,125.2	2.1
None.....	118,223.3	135,967.7	82.6	83.1	17,744.5	15.0	46,654.9	85.2
<b>Typical on-the-job training<sup>4</sup></b>								
Total, all occupations .....	143,068.2	163,537.1	100.0	100.0	20,468.9	14.3	54,787.4	100.0
Internship/residency.....	5,374.2	6,271.5	3.8	3.8	897.3	16.7	2,193.6	4.0
Apprenticeship.....	2,539.0	3,109.2	1.8	1.9	570.2	22.5	1,183.0	2.2
Long-term.....	7,039.0	7,920.5	4.9	4.8	881.5	12.5	2,545.5	4.6
Moderate-term.....	25,007.0	28,244.5	17.5	17.3	3,237.5	12.9	8,682.0	15.8
Short-term.....	58,171.0	66,040.0	40.7	40.4	7,869.0	13.5	23,767.8	43.4
None.....	44,937.9	51,951.3	31.4	31.8	7,013.4	15.6	16,415.5	30.0

<sup>1</sup>Total job openings represent the sum of employment increases and replacement needs. If employment change is negative, then job openings due to growth are zero and total job openings equals replacements.

<sup>2</sup> Represents the typical education level needed to enter the occupation.

<sup>3</sup> Indicates if work experience in a related occupation is commonly considered necessary by employers for entry, or is a commonly accepted substitute for formal types of training.

<sup>4</sup> Indicates the typical on-the-job training needed to attain competency in the occupation.

NOTE: For more information about the education, work experience, and on-the-job training categories assigned to occupations, see [www.bls.gov/emp/ep\\_education\\_training\\_system.htm](http://www.bls.gov/emp/ep_education_training_system.htm).

**Table 10. The 30 occupations with the largest projected number of total job openings due to growth and replacements, 2010-20**  
(In thousands)

Occupation	Occupational group	Employment		Change		Replacement needs	Total job openings due to growth and replacements <sup>1</sup>	Pre-employment		During employment
		2010	2020	Number	Percent			Typical education needed for entry <sup>2</sup>	Work experience in a related occupation <sup>3</sup>	
Retail Salespersons	Sales and Related Occupations	4,261.6	4,968.4	706.8	16.6	1,251.9	1,958.7	Less than high school	None	Short-term on-the-job training
Cashiers	Sales and Related Occupations	3,362.6	3,612.8	250.2	7.4	1,525.7	1,775.9	Less than high school	None	Short-term on-the-job training
Waiters and Waitresses	Food Preparation and Serving Related Occupations	2,260.3	2,456.2	195.9	8.7	1,128.4	1,324.3	Less than high school	None	Short-term on-the-job training
Registered Nurses	Healthcare Practitioners and Technical Occupations	2,737.4	3,449.3	711.9	26.0	495.5	1,207.4	Associate's degree	None	None
Combined Food Preparation and Serving Workers, Including Fast Food	Food Preparation and Serving Related Occupations	2,682.1	3,080.1	398.0	14.8	748.5	1,146.5	Less than high school	None	Short-term on-the-job training
Office Clerks, General	Office and Administrative Support Occupations	2,950.7	3,440.2	489.5	16.6	522.0	1,011.5	High school diploma or equivalent	None	Short-term on-the-job training
Laborers and Freight, Stock, and Material Movers, Hand	Transportation and Material Moving Occupations	2,068.2	2,387.3	319.1	15.4	661.1	980.2	Less than high school	None	Short-term on-the-job training
Customer Service Representatives	Office and Administrative Support Occupations	2,187.3	2,525.6	338.4	15.5	621.2	959.6	High school diploma or equivalent	None	Short-term on-the-job training
Home Health Aides	Healthcare Support Occupations	1,017.7	1,723.9	706.3	69.4	131.2	837.5	Less than high school	None	Short-term on-the-job training
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	Building and Grounds Cleaning and Maintenance Occupations	2,310.4	2,556.8	246.4	10.7	435.6	682.0	Less than high school	None	Short-term on-the-job training
Personal Care Aides	Personal Care and Service Occupations	861.0	1,468.0	607.0	70.5	68.2	675.2	Less than high school	None	Short-term on-the-job training
Childcare Workers	Personal Care and Service Occupations	1,282.3	1,544.3	262.0	20.4	403.8	665.8	High school diploma or equivalent	None	Short-term on-the-job training
Heavy and Tractor-Trailer Truck Drivers	Transportation and Material Moving Occupations	1,604.8	1,934.9	330.1	20.6	319.3	649.4	High school diploma or equivalent	1 to 5 years	Short-term on-the-job training
Postsecondary Teachers	Education, Training, and Library Occupations	1,756.0	2,061.7	305.7	17.4	280.4	586.1	Doctoral or professional degree	None	None
First-Line Supervisors of Office and Administrative Support Workers	Office and Administrative Support Occupations	1,424.4	1,627.8	203.4	14.3	381.0	584.4	High school diploma or equivalent	1 to 5 years	None
Elementary School Teachers, Except Special Education	Education, Training, and Library Occupations	1,476.5	1,725.3	248.8	16.8	324.4	573.2	Bachelor's degree	None	Internship/residency
Receptionists and Information Clerks	Office and Administrative Support Occupations	1,048.5	1,297.0	248.5	23.7	317.1	565.6	High school diploma or equivalent	None	Short-term on-the-job training
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	Sales and Related Occupations	1,430.0	1,653.4	223.4	15.6	336.5	559.9	High school diploma or equivalent	None	Moderate-term on-the-job training
First-Line Supervisors of Retail Sales Workers	Sales and Related Occupations	1,619.5	1,755.5	136.0	8.4	377.7	513.7	High school diploma or equivalent	1 to 5 years	None
Nursing Aides, Orderlies, and Attendants	Healthcare Support Occupations	1,505.3	1,807.2	302.0	20.1	194.1	496.1	Postsecondary non-degree award	None	None
Teacher Assistants	Education, Training, and Library Occupations	1,288.3	1,479.3	191.1	14.8	290.5	481.6	High school diploma or equivalent	None	Short-term on-the-job training
Bookkeeping, Accounting, and Auditing Clerks	Office and Administrative Support Occupations	1,898.3	2,157.4	259.0	13.6	208.8	467.8	High school diploma or equivalent	None	Moderate-term on-the-job training
Stock Clerks and Order Fillers	Office and Administrative Support Occupations	1,787.4	1,808.3	20.9	1.2	444.1	465.0	Less than high school	None	Short-term on-the-job training
Accountants and Auditors	Business and Financial Operations Occupations	1,216.9	1,407.6	190.7	15.7	261.4	452.1	Bachelor's degree	None	None
Landscaping and Groundskeeping Workers	Building and Grounds Cleaning and Maintenance Occupations	1,151.5	1,392.3	240.8	20.9	203.6	444.4	Less than high school	None	Short-term on-the-job training
General and Operations Managers	Management Occupations	1,767.1	1,848.6	81.6	4.6	328.5	410.1	Associate's degree	1 to 5 years	None
Carpenters	Construction and Extraction Occupations	1,001.7	1,197.6	196.0	19.6	212.3	408.3	High school diploma or equivalent	None	Apprenticeship
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	Office and Administrative Support Occupations	2,032.2	2,150.8	118.5	5.8	272.5	391.0	High school diploma or equivalent	None	Short-term on-the-job training
Maintenance and Repair Workers, General	Installation, Maintenance, and Repair Occupations	1,289.0	1,431.0	142.0	11.0	237.1	379.1	High school diploma or equivalent	None	Moderate-term on-the-job training
Food Preparation Workers	Food Preparation and Serving Related Occupations	813.7	897.9	84.1	10.3	293.0	377.1	Less than high school	None	Short-term on-the-job training

<sup>1</sup>Total job openings represent the sum of employment increases and replacements. If employment change is negative, then job openings due to growth are zero and total job openings equal replacements. For more information about occupational replacement needs, see "Estimating Occupational Replacement Needs," on the Internet at [www.bls.gov/emp/ep\\_replacements.htm](http://www.bls.gov/emp/ep_replacements.htm).

<sup>2</sup>Represents the typical education level needed to enter the occupation.

<sup>3</sup>Indicates if work experience in a related occupation is commonly considered necessary by employers for entry, or is a commonly accepted substitute for formal types of training.

<sup>4</sup>Indicates the typical on-the-job training needed to attain competency in the occupation.

NOTE: For more information about the education, work experience, and on-the-job training categories assigned to occupations, see [www.bls.gov/emp/ep\\_education\\_training\\_system.htm](http://www.bls.gov/emp/ep_education_training_system.htm).