

Employment outlook: 2002–12

Occupational employment projections to 2012

Employment in professional and related and in service occupations are expected to increase the fastest and add the most jobs from 2002 to 2012, while office and administrative support occupations should grow about half as fast as the total; production occupations should grow very slowly

Daniel E. Hecker

Total employment is projected to increase by 21.3 million jobs over the 2002–12 period, rising to 165.3 million, according to the latest projections of the Bureau of Labor Statistics.¹ This increase represents about 600,000 more jobs than were added over the previous 10-year period (1992–2002). The projected 14.8-percent increase, however, is less than the 16.8-percent increase of the previous 10-year period. Self employment is projected to decline 2.3 percent, from 11.5 to 11.2 million.

This article discusses a number of aspects of the projections along with related information:

- changes in the structure of employment at the major occupational group level;
- the detailed occupations² that are projected to grow fastest as well as those with the largest numerical increases and decreases, along with their current educational and training requirements and earnings; and
- the total job openings projected to occur due to growth in the economy and the net replacement needs resulting from workers who leave the labor force or transfer to other occupations

In this article, projected employment is analyzed from two perspectives—percent change and numerical change—because one can be large and

the other small, depending on the size of employment in the base year. The following example using data for two occupations generally requiring the same level of education—a bachelor's degree—illustrates the importance of viewing job outlook from both perspectives:

Employment of environmental engineers is projected to grow twice as fast as employment of accountants and auditors over the 2002–12 period, 38.2 percent, compared with 19.5 percent. However, the accountants and auditors occupation is projected to add more than 11 times the number of new jobs (205,000 compared with 18,000), because employment was so much larger than for environmental engineers in 2002 (1,055,000 compared with 47,000).

Major occupational groups

Among the major occupational groups, employment in the two largest in 2002—professional and related occupations and service occupations—will increase the fastest and add the most jobs from 2002 to 2012. (See table 1.) These major groups, which are on opposite ends of the educational attainment and earnings spectrum, are expected to provide more than half of the total job growth from 2002 to 2012. Employment is projected to grow about as fast as overall employment in management, business, and finan-

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Table 1. Employment by major occupational group, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change	
	Number		Percent distribution		Number	Percent
	2002	2012	2002	2012		
00-0000 Total, all occupations	144,014	165,319	100.0	100.0	21,305	14.8
11-1300 Management, business, and financial occupations	15,501	17,883	10.8	10.8	2,382	15.4
15-2900 Professional and related occupations	27,687	34,147	19.2	20.7	6,459	23.3
31-3900 Service occupations	26,569	31,905	18.4	19.3	5,336	20.1
41-0000 Sales and related occupations	15,260	17,231	10.6	10.4	1,971	12.9
43-0000 Office and administrative support occupations	23,851	25,464	16.6	15.4	1,613	6.8
45-0000 Farming, fishing, and forestry occupations	1,072	1,107	.7	.7	35	3.3
47-0000 Construction and extraction occupations	7,292	8,388	5.1	5.1	1,096	15.0
49-0000 Installation, maintenance, and repair occupations	5,696	6,472	4.0	3.9	776	13.6
51-0000 Production occupations	11,258	11,612	7.8	7.0	354	3.1
53-0000 Transportation and material moving occupations	9,828	11,111	6.8	6.7	1,282	13.0

NOTE: Detail may not equal total or 100 percent due to rounding.

cial occupations and in construction and extraction occupations. Employment in installation, maintenance, and repair; transportation and material moving; and sales and related occupations will grow somewhat more slowly. The three slowest growing groups—all with rates less than 7 percent—are office and administrative support occupations; farming, fishing, and forestry occupations; and production occupations.

As a result of the different growth rates among the major occupational groups, the occupational distribution of total employment will change somewhat by the year 2012, but the relative ranking of the groups by employment size is not expected to change. Professional and related occupations will continue to rank first, while farming, fishing, and forestry occupations will continue to rank last. Professional and related and service occupations will significantly increase their relative share of employment—by 1.5 and 0.9 percentage points, respectively. However, office and administrative support occupations and production occupations should decrease significantly—by 1.2 and 0.8 points, respectively. (See table 1.)

The growth of occupational groups (and occupations) is determined, in large part, by growth in industries in which they are concentrated. For example, professional occupations are projected to grow the fastest, in large part because they are concentrated in some fast-growing industries such as healthcare and social assistance; and professional, scientific, and technical services; while production occupations are projected to grow very slowly, largely because 7 out of 10 are in the declining manufacturing sector.³

The number of *management, business, and financial workers* is projected to grow by 2.4 million from 2002 to 2012. Within this occupational group, about one-fifth of the new jobs will be in professional, scientific, and technical services,

which include management, scientific, and technical consulting, and accounting, tax preparation, bookkeeping, and payroll services. About 1 new job in 8 is projected for finance and insurance, and 1 in 9, for healthcare and social assistance. The self-employed in this group, accounting for one-fifth of the total, are projected to decline 5.6 percent. Overall projected growth among management, business, and financial workers is affected by the decline of farmers and ranchers, most self-employed, by 238,000. (See table 2.) Excluding farmers and ranchers, this major group is projected to increase 18.3 percent. The self-employed, excluding self-employed farmers and ranchers, are projected to increase 4.0 percent, with the largest increase for management analysts.

Employment in *professional and related occupations* is projected to grow the fastest and to add more workers (6.5 million) than any other major group. Three-tenths of the growth in these occupations is projected to take place in healthcare and social services, a quarter in government, and a seventh in professional, scientific, and technical services. There are eight occupational subgroups within professional and related occupations. Three occupational subgroups—education, training, and library; healthcare practitioners and technical; and computer and mathematical should account for three-quarters of the job growth.

A 6.1-percent increase is projected for self-employed professional and related occupations. Most growth among self-employed is projected for two subgroups—arts, design, entertainment, sports, and media occupations and computer and mathematical occupations.

Education, training, and library occupations are projected to grow faster than the average for all occupations, adding 2.1 million jobs, as shown on p. 97 (also, see table 2):

Text continues on p. 97

Table 2. Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
	Number		Percent distribution		Number	Percent	
	2002	2012	2002	2012			
00-0000 Total, all occupations	144,014	165,319	100.0	100.0	21,305	14.8	56,305
11-1300 Management, business, and financial occupations	15,501	17,883	10.8	10.8	2,382	15.4	5,319
11-0000 Management occupations	10,056	11,277	7.0	6.8	1,221	12.1	3,192
11-1000 Top executives	2,669	3,138	1.9	1.9	469	17.6	969
11-1011 Chief executives	553	645	.4	.4	93	16.7	197
11-1021 General and operations managers	2,049	2,425	1.4	1.5	376	18.4	762
11-1031 Legislators	67	68	.0	.0	1	1.1	9
11-2000 Advertising, marketing, promotions, public relations, and sales managers	700	885	.5	.5	185	26.5	313
11-2011 Advertising and promotions managers	85	107	.1	.1	21	25.0	37
11-2020 Marketing and sales managers	546	693	.4	.4	148	27.1	249
11-2021 Marketing managers	203	246	.1	.1	43	21.3	81
11-2022 Sales managers	343	448	.2	.3	105	30.5	168
11-2031 Public relations managers	69	85	.0	.1	16	23.4	28
11-3000 Operations specialties managers	1,807	2,163	1.3	1.3	356	19.7	671
11-3011 Administrative services managers	321	384	.2	.2	63	19.8	126
11-3021 Computer and information systems managers	284	387	.2	.2	103	36.1	154
11-3031 Financial managers	599	709	.4	.4	109	18.3	195
11-3040 Human resources managers	202	242	.1	.1	39	19.4	73
11-3051 Industrial production managers	182	197	.1	.1	14	7.9	50
11-3061 Purchasing managers	108	113	.1	.1	5	4.8	29
11-3071 Transportation, storage, and distribution managers	111	133	.1	.1	22	19.7	44
11-9000 Other management occupations	4,880	5,090	3.4	3.1	210	4.3	1,240
11-9010 Agricultural managers	1,376	1,149	1.0	.7	-227	-16.5	117
11-9011 Farm, ranch, and other agricultural managers	218	229	.2	.1	11	5.1	49
11-9012 Farmers and ranchers	1,158	920	.8	.6	-238	-20.6	68
11-9021 Construction managers	389	435	.3	.3	47	12.0	117
11-9030 Education administrators	427	527	.3	.3	101	23.6	207
11-9031 Education administrators, preschool and child care center/program	58	77	.0	.0	19	32.0	33
11-9032 Education administrators, elementary and secondary school	217	262	.2	.2	45	20.7	99
11-9033 Education administrators, postsecondary	125	157	.1	.1	32	25.9	63
11-9039 Education administrators, all other	27	32	.0	.0	5	19.1	12
11-9041 Engineering managers	212	231	.1	.1	20	9.2	62
11-9051 Food service managers	386	430	.3	.3	44	11.5	107
11-9061 Funeral directors	24	26	.0	.0	2	6.6	9
11-9071 Gaming managers	6	7	.0	.0	1	12.4	2
11-9081 Lodging managers	69	73	.0	.0	5	6.6	16
11-9111 Medical and health services managers	244	315	.2	.2	71	29.3	119
11-9121 Natural sciences managers	45	51	.0	.0	5	11.3	14
11-9131 Postmasters and mail superintendents	25	25	.0	.0	0	-.5	5
11-9141 Property, real estate, and community association managers	293	330	.2	.2	37	12.8	92
11-9151 Social and community service managers	129	164	.1	.1	36	27.7	60
11-9199 All other managers	1,256	1,325	.9	.8	69	5.5	314
13-0000 Business and financial operations occupations	5,445	6,606	3.8	4.0	1,162	21.3	2,127
13-1000 Business operations specialists	3,177	3,910	2.2	2.4	733	23.1	1,295
13-1011 Agents and business managers of artists, performers, and athletes	15	19	.0	.0	4	27.8	7
13-1020 Buyers and purchasing agents	419	455	.3	.3	36	8.6	144
13-1021 Purchasing agents and buyers, farm products	19	21	.0	.0	2	10.2	8
13-1022 Wholesale and retail buyers, except farm products	155	162	.1	.1	7	4.3	47
13-1023 Purchasing agents, except wholesale, retail, and farm products	245	273	.2	.2	27	11.2	88
13-1030 Claims adjusters, appraisers, examiners, and investigators	241	275	.2	.2	34	14.0	64
13-1031 Claims adjusters, examiners, and investigators	227	260	.2	.2	32	14.2	60
13-1032 Insurance appraisers, auto damage	14	16	.0	.0	2	11.7	3
13-1041 Compliance officers, except agriculture, construction, health and safety, and transportation	158	173	.1	.1	15	9.8	52
13-1051 Cost estimators	188	223	.1	.1	35	18.6	77
13-1061 Emergency management specialists	11	14	.0	.0	3	28.2	6
13-1070 Human resources, training, and labor relations specialists ⁴	474	606	.3	.4	131	27.7	204
13-1071 Employment, recruitment, and placement specialists	175	223	.1	.1	48	27.3	75
13-1072 Compensation, benefits, and job analysis specialists	91	116	.1	.1	25	28.0	39
13-1073 Training and development specialists	209	267	.1	.2	58	27.9	90
13-1111 Management analysts	577	753	.4	.5	176	30.4	255
13-1121 Meeting and convention planners	37	45	.0	.0	8	21.3	16
13-1198 All other business operations specialists ⁵	1,056	1,346	.7	.8	290	27.5	470
13-2000 Financial specialists	2,268	2,696	1.6	1.6	429	18.9	832

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title		Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
		Number		Percent distribution		Number	Percent	
		2002	2012	2002	2012			
13-2011	Accountants and auditors	1,055	1,261	0.7	0.8	205	19.5	405
13-2021	Appraisers and assessors of real estate	88	104	.1	.1	16	17.6	34
13-2031	Budget analysts	62	71	.0	.0	9	14.0	19
13-2041	Credit analysts	66	78	.0	.0	12	18.7	23
13-2050	Financial analysts and advisors	400	486	.3	.3	86	21.5	146
13-2051	Financial analysts	172	204	.1	.1	32	18.7	58
13-2052	Personal financial advisors	126	170	.1	.1	44	34.6	60
13-2053	Insurance underwriters	102	112	.1	.1	10	10.0	28
13-2061	Financial examiners	25	27	.0	.0	2	8.9	8
13-2070	Loan counselors and officers	255	302	.2	.2	48	18.7	89
13-2071	Loan counselors	31	37	.0	.0	6	17.8	11
13-2072	Loan officers	223	266	.2	.2	42	18.8	78
13-2080	Tax examiners, collectors, preparers, and revenue agents	154	176	.1	.1	22	14.4	52
13-2081	Tax examiners, collectors, and revenue agents	75	79	.1	.0	4	5.0	21
13-2082	Tax preparers	79	98	.1	.1	18	23.2	32
13-2099	All other financial specialists	162	190	.1	.1	28	17.6	57
15-2900	Professional and related occupations	27,687	34,147	19.2	20.7	6,459	23.3	11,794
15-0000	Computer and mathematical science occupations	3,018	4,069	2.1	2.5	1,051	34.8	1,465
15-1000	Computer specialists	2,911	3,954	2.0	2.4	1,043	35.8	1,429
15-1011	Computer and information scientists, research	23	30	.0	.0	7	29.9	10
15-1021	Computer programmers	499	571	.3	.3	73	14.6	190
15-1030	Computer software engineers	675	982	.5	.6	307	45.5	374
15-1031	Computer software engineers, applications	394	573	.3	.3	179	45.5	218
15-1032	Computer software engineers, systems software	281	409	.2	.2	128	45.5	156
15-1041	Computer support specialists	507	660	.4	.4	153	30.3	216
15-1051	Computer systems analysts	468	653	.3	.4	184	39.4	237
15-1061	Database administrators	110	159	.1	.1	49	44.2	60
15-1071	Network and computer systems administrators	251	345	.2	.2	94	37.4	122
15-1081	Network systems and data communications analysts	186	292	.1	.2	106	57.0	128
15-1099	All other computer specialists	192	262	.1	.2	70	36.5	92
15-2000	Mathematical science occupations	107	115	.1	.1	8	7.4	36
15-2011	Actuaries	15	18	.0	.0	2	14.9	9
15-2021	Mathematicians	3	3	.0	.0	0	-1.0	1
15-2031	Operations research analysts	62	66	.0	.0	4	6.2	17
15-2041	Statisticians	20	21	.0	.0	1	4.8	6
15-2090	Miscellaneous mathematical science occupations	7	8	.0	.0	1	11.8	2
17-0000	Architecture and engineering occupations	2,587	2,809	1.8	1.7	222	8.6	802
17-1000	Architects, surveyors, and cartographers	204	233	.1	.1	29	14.1	67
17-1010	Architects, except naval	136	161	.1	.1	25	18.1	40
17-1011	Architects, except landscape and naval	113	133	.1	.1	20	17.3	32
17-1012	Landscape architects	23	28	.0	.0	5	22.2	8
17-1020	Surveyors, cartographers, and photogrammetrists	64	68	.0	.0	4	5.6	26
17-1021	Cartographers and photogrammetrists	9	10	.0	.0	1	15.1	4
17-1022	Surveyors	56	58	.0	.0	2	4.2	21
17-1099	All other architects, surveyors, and cartographers ²	3	4	.0	.0	0	10.9	1
17-2000	Engineers	1,478	1,587	1.0	1.0	109	7.3	431
17-2011	Aerospace engineers	78	74	.1	.0	-4	-5.2	19
17-2021	Agricultural engineers	3	3	.0	.0	0	10.3	1
17-2031	Biomedical engineers	8	10	.0	.0	2	26.1	3
17-2041	Chemical engineers	33	33	.0	.0	0	.4	10
17-2051	Civil engineers	228	246	.2	.1	18	8.0	55
17-2061	Computer hardware engineers	74	78	.1	.0	5	6.1	17
17-2070	Electrical and electronics engineers	292	309	.2	.2	17	5.7	74
17-2071	Electrical engineers	156	160	.1	.1	4	2.5	34
17-2072	Electronics engineers, except computer	136	149	.1	.1	13	9.4	40
17-2081	Environmental engineers	47	65	.0	.0	18	38.2	26
17-2110	Industrial engineers, including health and safety	194	213	.1	.1	20	10.1	67
17-2111	Health and safety engineers, except mining safety engineers and inspectors	36	38	.0	.0	3	7.9	11
17-2112	Industrial engineers	158	175	.1	.1	17	10.6	55
17-2121	Marine engineers and naval architects	5	5	.0	.0	0	-5.0	2
17-2131	Materials engineers	24	25	.0	.0	1	4.1	7
17-2141	Mechanical engineers	215	225	.1	.1	10	4.8	69
17-2151	Mining and geological engineers, including mining safety engineers	5	5	.0	.0	0	-2.7	2

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
	Number		Percent distribution		Number	Percent	
	2002	2012	2002	2012			
17-2161 Nuclear engineers	16	16	0.0	0.0	0	-0.1	5
17-2171 Petroleum engineers	14	12	.0	.0	-1	-9.8	4
17-2199 All other engineers	243	267	.2	.2	24	9.7	70
17-3000 Drafters, engineering, and mapping technicians	905	990	.6	.6	85	9.4	304
17-3010 Drafters ⁴	216	222	.2	.1	6	2.8	67
17-3011 Architectural and civil drafters	106	110	.1	.1	4	4.2	34
17-3012 Electrical and electronics drafters	38	38	.0	.0	0	.7	11
17-3013 Mechanical drafters	72	74	.1	.0	1	1.9	22
17-3020 Engineering technicians, except drafters ⁴	478	526	.3	.3	48	10.1	148
17-3021 Aerospace engineering and operations technicians	15	15	.0	.0	0	1.5	3
17-3022 Civil engineering technicians	92	99	.1	.1	7	7.6	26
17-3023 Electrical and electronic engineering technicians	204	224	.1	.1	20	10.0	63
17-3024 Electro-mechanical technicians	31	35	.0	.0	4	11.5	10
17-3025 Environmental engineering technicians	19	24	.0	.0	5	28.4	9
17-3026 Industrial engineering technicians	62	67	.0	.0	5	8.7	18
17-3027 Mechanical engineering technicians	55	61	.0	.0	6	11.0	18
17-3031 Surveying and mapping technicians	60	74	.0	.0	14	23.1	36
17-3099 All other drafters, engineering, and mapping technicians ²	150	167	.1	.1	17	11.3	53
19-0000 Life, physical, and social science occupations	1,237	1,450	.9	.9	212	17.2	511
19-1000 Life scientists	214	253	.1	.2	39	18.2	91
19-1010 Agricultural and food scientists	18	20	.0	.0	2	9.1	5
19-1020 Biological scientists	75	90	.1	.1	14	19.0	38
19-1021 Biochemists and biophysicists	17	21	.0	.0	4	22.9	9
19-1022 Microbiologists	16	20	.0	.0	3	20.0	8
19-1023 Zoologists and wildlife biologists	15	16	.0	.0	1	7.7	6
19-1029 Biological scientists, all other	27	33	.0	.0	6	22.3	15
19-1030 Conservation scientists and foresters	33	34	.0	.0	1	4.4	11
19-1031 Conservation scientists	19	20	.0	.0	1	4.1	6
19-1032 Foresters	14	14	.0	.0	1	4.7	5
19-1040 Medical scientists	62	79	.0	.0	17	27.3	28
19-1041 Epidemiologists	4	5	.0	.0	1	32.5	2
19-1042 Medical scientists, except epidemiologists	58	73	.0	.0	16	26.9	26
19-1099 All other life scientists	26	31	.0	.0	5	18.3	9
19-2000 Physical scientists	251	287	.2	.2	36	14.4	100
19-2010 Astronomers and physicists	14	15	.0	.0	1	6.8	6
19-2011 Astronomers	1	1	.0	.0	0	4.9	0
19-2012 Physicists	13	14	.0	.0	1	6.9	5
19-2021 Atmospheric and space scientists	8	9	.0	.0	1	16.2	4
19-2030 Chemists and materials scientists	91	103	.1	.1	11	12.4	41
19-2031 Chemists	84	95	.1	.1	11	12.7	38
19-2032 Materials scientists	7	8	.0	.0	1	8.5	3
19-2040 Environmental scientists and geoscientists	101	121	.1	.1	20	20.1	38
19-2041 Environmental scientists and specialists, including health	65	80	.0	.0	15	23.7	27
19-2042 Geoscientists, except hydrologists and geographers	28	31	.0	.0	3	11.5	8
19-2043 Hydrologists	8	10	.0	.0	2	21.0	3
19-2099 All other physical scientists	37	39	.0	.0	2	6.5	11
19-3000 Social scientists and related occupations	426	512	.3	.3	86	20.1	190
19-3011 Economists	16	18	.0	.0	2	13.4	7
19-3020 Market and survey researchers	155	193	.1	.1	38	24.7	78
19-3021 Market research analysts	134	166	.1	.1	31	23.4	66
19-3022 Survey researchers	20	27	.0	.0	7	33.6	12
19-3030 Psychologists ⁴	139	173	.1	.1	34	24.3	64
19-3031 Clinical, counseling, and school psychologists	137	171	.1	.1	34	24.4	63
19-3032 Industrial-organizational psychologists	2	2	.0	.0	0	16.0	1
19-3041 Sociologists	3	3	.0	.0	0	13.4	1
19-3051 Urban and regional planners	32	36	.0	.0	3	10.7	14
19-3090 Miscellaneous social scientists and related workers ³	14	15	.0	.0	1	9.2	4
19-3091 Anthropologists and archeologists	5	5	.0	.0	1	12.8	2
19-3092 Geographers	1	1	.0	.0	0	19.5	0
19-3093 Historians	2	2	.0	.0	0	6.6	1
19-3094 Political scientists	6	6	.0	.0	0	5.9	2
19-3098 All other social scientists and related workers ⁵	68	74	.0	.0	7	9.7	21
19-4000 Life, physical, and social science technicians	346	397	.2	.2	51	14.8	130
19-4011 Agricultural and food science technicians	20	22	.0	.0	2	9.3	6
19-4021 Biological technicians	48	57	.0	.0	9	19.4	17
19-4031 Chemical technicians	69	72	.0	.0	3	4.7	20

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title		Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
		Number		Percent distribution		Number	Percent	
		2002	2012	2002	2012			
19-4041	Geological and petroleum technicians	11	11	0.0	0.0	0	1.3	3
19-4051	Nuclear technicians	6	6	.0	.0	0	1.5	2
19-4090	Other life, physical, and social science technicians ³	55	67	.0	.0	12	22.8	25
19-4091	Environmental science and protection technicians, including health	28	38	.0	.0	10	36.8	17
19-4092	Forensic science technicians	8	10	.0	.0	2	18.9	4
19-4093	Forest and conservation technicians	19	20	.0	.0	1	4.0	5
19-4098	All other life, physical, and social science technicians ⁵	137	161	.1	.1	24	17.5	56
21-0000	Community and social services occupations	2,190	2,764	1.5	1.7	574	26.2	992
21-1000	Counselors, social workers, and other community and social service specialists ⁴	1,436	1,853	1.0	1.1	417	29.0	695
21-1010	Counselors ⁴	526	645	.4	.4	119	22.6	239
21-1011	Substance abuse and behavioral disorder counselors	67	83	.0	.1	16	23.3	31
21-1012	Educational, vocational, and school counselors	228	262	.2	.2	34	15.0	86
21-1013	Marriage and family therapists	23	29	.0	.0	5	22.4	11
21-1014	Mental health counselors	85	107	.1	.1	23	26.7	42
21-1015	Rehabilitation counselors	122	164	.1	.1	41	33.8	69
21-1020	Social workers ⁴	477	604	.3	.4	127	26.7	209
21-1021	Child, family, and school social workers	274	338	.2	.2	64	23.2	111
21-1022	Medical and public health social workers	107	138	.1	.1	31	28.6	49
21-1023	Mental health and substance abuse social workers	95	128	.1	.1	33	34.5	49
21-1090	Miscellaneous community and social service specialists ⁴	434	605	.3	.4	171	39.4	247
21-1091	Health educators	45	54	.0	.0	10	21.9	18
21-1092	Probation officers and correctional treatment specialists	84	97	.1	.1	12	14.7	27
21-1093	Social and human service assistants	305	454	.2	.3	149	48.7	202
21-2000	Religious workers ⁴	506	593	.4	.4	87	17.3	181
21-2011	Clergy	400	463	.3	.3	62	15.5	144
21-2021	Directors, religious activities and education	105	131	.1	.1	25	24.1	37
21-9099	All other counselors, social, and religious workers ²	248	318	.2	.2	70	28.3	116
23-0000	Legal occupations	1,168	1,357	.8	.8	190	16.2	327
23-1000	Lawyers, judges, and related workers	747	869	.5	.5	122	16.4	218
23-1011	Lawyers	695	813	.5	.5	118	17.0	207
23-1020	Judges, magistrates, and other judicial workers	51	56	.0	.0	4	8.3	11
23-1021	Administrative law judges, adjudicators, and hearing officers	19	20	.0	.0	1	5.8	3
23-1022	Arbitrators, mediators, and conciliators	6	7	.0	.0	1	13.7	2
23-1023	Judges, magistrate judges, and magistrates	27	29	.0	.0	2	8.7	6
23-2000	Legal support workers	320	380	.2	.2	60	18.7	91
23-2011	Paralegals and legal assistants	200	257	.1	.2	57	28.7	73
23-2090	Miscellaneous legal support workers ⁴	121	123	.1	.1	3	2.1	17
23-2091	Court reporters	18	20	.0	.0	2	12.7	4
23-2092	Law clerks	48	50	.0	.0	2	3.7	7
23-2093	Title examiners, abstractors, and searchers	55	53	.0	.0	-1	-2.7	6
23-9099	All other legal and related workers ²	101	109	.1	.1	8	7.6	19
25-0000	Education, training, and library occupations	8,530	10,639	5.9	6.4	2,109	24.7	3,890
25-1000	Postsecondary teachers	1,581	2,184	1.1	1.3	603	38.1	960
25-2000	Primary, secondary, and special education teachers	4,187	4,983	2.9	3.0	795	19.0	1,733
25-2010	Preschool and kindergarten teachers	592	791	.4	.5	199	33.6	270
25-2011	Preschool teachers, except special education	424	577	.3	.3	153	36.2	204
25-2012	Kindergarten teachers, except special education	168	214	.1	.1	46	27.2	66
25-2020	Elementary and middle school teachers	2,070	2,347	1.4	1.4	277	13.4	734
25-2021	Elementary school teachers, except special education	1,467	1,690	1.0	1.0	223	15.2	547
25-2022	Middle school teachers, except special and vocational education	585	637	.4	.4	52	9.0	182
25-2023	Vocational education teachers, middle school	18	19	.0	.0	2	9.0	5
25-2030	Secondary school teachers	1,093	1,282	.8	.8	189	17.3	497
25-2031	Secondary school teachers, except special and vocational education	988	1,167	.7	.7	180	18.2	458
25-2032	Vocational education teachers, secondary school	105	115	.1	.1	10	9.0	39
25-2040	Special education teachers	433	563	.3	.3	130	30.0	233
25-3000	Other teachers and instructors	960	1,285	.7	.8	325	33.9	444
25-3011	Adult literacy, remedial education, and GED teachers and instructors	80	96	.1	.1	16	20.4	26
25-3021	Self-enrichment education teachers	200	281	.1	.2	80	40.1	105
25-3999	All other teachers, primary, secondary, and adult ²	679	908	.5	.5	229	33.7	312
25-4000	Librarians, curators, and archivists	309	349	.2	.2	41	13.2	129
25-4010	Archivists, curators, and museum technicians	22	26	.0	.0	4	17.0	9
25-4021	Librarians	167	184	.1	.1	17	10.1	57
25-4031	Library technicians	119	139	.1	.1	20	16.8	64

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
	Number		Percent distribution		Number	Percent	
	2002	2012	2002	2012			
25-9000 Other education, training, and library occupations	1,493	1,838	1.0	1.1	345	23.1	624
25-9011 Audio-visual collections specialists	10	11	.0	.0	2	16.3	3
25-9021 Farm and home management advisors	16	17	.0	.0	1	6.9	3
25-9031 Instructional coordinators	98	123	.1	.1	25	25.4	40
25-9041 Teacher assistants	1,277	1,571	.9	1.0	294	23.0	541
25-9199 All other library, museum, training, and other education workers ²	93	116	.1	.1	23	24.6	37
27-0000 Arts, design, entertainment, sports, and media occupations	2,377	2,769	1.7	1.7	393	16.5	847
27-1000 Art and design occupations	775	900	.5	.5	125	16.1	245
27-1010 Artists and related workers	149	170	.1	.1	21	14.4	54
27-1011 Art directors	51	56	.0	.0	6	11.4	17
27-1013 Fine artists, including painters, sculptors, and illustrators	23	27	.0	.0	4	16.5	9
27-1014 Multi-media artists and animators	75	87	.1	.1	12	15.8	28
27-1020 Designers	532	625	.4	.4	93	17.4	164
27-1021 Commercial and industrial designers	52	59	.0	.0	8	14.7	15
27-1022 Fashion designers	15	16	.0	.0	2	10.6	4
27-1023 Floral designers	104	117	.1	.1	13	12.4	27
27-1024 Graphic designers	212	258	.1	.2	46	21.9	75
27-1025 Interior designers	60	73	.0	.0	13	21.7	21
27-1026 Merchandise displayers and window trimmers	77	86	.1	.1	9	11.3	19
27-1027 Set and exhibit designers	12	15	.0	.0	3	20.9	4
27-1099 All other art and design workers ⁵	95	106	.1	.1	11	11.5	28
27-2000 Entertainers and performers, sports and related occupations	606	709	.4	.4	103	17.0	228
27-2010 Actors, producers, and directors	139	164	.1	.1	25	18.0	44
27-2011 Actors	63	74	.0	.0	11	17.7	19
27-2012 Producers and directors	76	90	.1	.1	14	18.3	25
27-2020 Athletes, coaches, umpires, and related workers	158	187	.1	.1	29	18.3	59
27-2021 Athletes and sports competitors	15	18	.0	.0	3	19.2	6
27-2022 Coaches and scouts	130	153	.1	.1	24	18.3	49
27-2023 Umpires, referees, and other sports officials	14	16	.0	.0	2	16.9	5
27-2030 Dancers and choreographers	37	42	.0	.0	5	13.3	28
27-2031 Dancers	20	22	.0	.0	2	11.1	15
27-2032 Choreographers	17	20	.0	.0	3	15.8	13
27-2040 Musicians, singers, and related workers	215	250	.1	.2	35	16.2	80
27-2041 Music directors and composers	54	62	.0	.0	7	13.5	19
27-2042 Musicians and singers	161	189	.1	.1	27	17.1	61
27-2099 All other entertainers and performers, sports and related workers	56	65	.0	.0	9	16.4	16
27-3000 Media and communication occupations	700	815	.5	.5	115	16.4	260
27-3010 Announcers	76	68	.1	.0	-8	-10.1	19
27-3020 News analysts, reporters and correspondents	66	70	.0	.0	4	6.2	20
27-3031 Public relations specialists	158	210	.1	.1	52	32.9	75
27-3040 Writers and editors	319	370	.2	.2	51	16.0	121
27-3041 Editors	130	145	.1	.1	15	11.8	47
27-3042 Technical writers	50	63	.0	.0	13	27.1	28
27-3043 Writers and authors	139	161	.1	.1	22	16.1	46
27-3090 Miscellaneous media and communications workers	82	97	.1	.1	15	18.6	25
27-3091 Interpreters and translators	24	29	.0	.0	5	22.1	8
27-3099 All other media and communication workers	58	68	.0	.0	10	17.2	17
27-4000 Media and communication equipment occupations	295	345	.2	.2	50	16.9	115
27-4010 Broadcast and sound engineering technicians and radio operators	93	111	.1	.1	18	19.6	41
27-4011 Audio and video equipment technicians	42	53	.0	.0	11	26.7	21
27-4012 Broadcast technicians	35	39	.0	.0	4	11.3	13
27-4013 Radio operators	3	3	.0	.0	0	-6.2	1
27-4014 Sound engineering technicians	13	16	.0	.0	3	25.5	6
27-4021 Photographers	130	148	.1	.1	18	13.6	44
27-4030 Television, video, and motion picture camera operators and editors	48	56	.0	.0	9	18.7	19
27-4031 Camera operators, television, video, and motion picture	28	32	.0	.0	4	13.4	10
27-4032 Film and video editors	19	25	.0	.0	5	26.4	9
27-4099 All other media and communication equipment workers	24	29	.0	.0	5	20.1	10
29-0000 Healthcare practitioners and technical occupations	6,580	8,288	4.6	5.0	1,708	26.0	2,959
29-1000 Health diagnosing and treating practitioners	4,071	5,125	2.8	3.1	1,054	25.9	1,849
29-1011 Chiropractors	49	60	.0	.0	11	23.3	21
29-1020 Dentists	153	159	.1	.1	6	4.1	32
29-1031 Dietitians and nutritionists	49	58	.0	.0	9	17.8	21
29-1041 Optometrists	32	38	.0	.0	5	17.1	14
29-1051 Pharmacists	230	299	.2	.2	69	30.1	114

Table 2. Continued—Employment and occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title		Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
		Number		Percent distribution		Number	Percent	
		2002	2012	2002	2012			
29-1060	Physicians and surgeons	583	697	0.4	0.4	114	19.5	191
29-1071	Physician assistants	63	94	.0	.1	31	48.9	40
29-1081	Podiatrists	13	15	.0	.0	2	15.0	5
29-1111	Registered nurses	2,284	2,908	1.6	1.8	623	27.3	1,101
29-1120	Therapists ⁴	450	592	.3	.4	142	31.7	231
29-1121	Audiologists	11	14	.0	.0	3	29.0	6
29-1122	Occupational therapists	82	110	.1	.1	29	35.2	40
29-1123	Physical therapists	137	185	.1	.1	48	35.3	62
29-1124	Radiation therapists	14	18	.0	.0	4	31.6	7
29-1125	Recreational therapists	27	29	.0	.0	2	9.1	9
29-1126	Respiratory therapists	86	116	.1	.1	30	34.8	58
29-1127	Speech-language pathologists	94	120	.1	.1	26	27.2	49
29-1131	Veterinarians	58	72	.0	.0	14	25.1	28
29-1198	All other health diagnosing and treating practitioners ⁵	107	134	.1	.1	26	24.5	50
29-2000	Health technologists and technicians ⁴	2,263	2,857	1.6	1.7	593	26.2	1,002
29-2010	Clinical laboratory technologists and technicians	297	355	.2	.2	58	19.4	138
29-2011	Medical and clinical laboratory technologists	150	179	.1	.1	29	19.3	69
29-2012	Medical and clinical laboratory technicians	147	176	.1	.1	29	19.4	68
29-2021	Dental hygienists	148	212	.1	.1	64	43.1	76
29-2030	Diagnostic related technologists and technicians	271	338	.2	.2	67	24.8	118
29-2031	Cardiovascular technologists and technicians	43	58	.0	.0	15	33.5	23
29-2032	Diagnostic medical sonographers	37	45	.0	.0	9	24.0	16
29-2033	Nuclear medicine technologists	17	21	.0	.0	4	23.6	7
29-2034	Radiologic technologists and technicians	174	214	.1	.1	40	22.9	72
29-2041	Emergency medical technicians and paramedics	179	238	.1	.1	59	33.1	80
29-2050	Health diagnosing and treating practitioner support technicians	451	574	.3	.3	123	27.2	181
29-2051	Dietetic technicians	29	35	.0	.0	6	20.2	10
29-2052	Pharmacy technicians	211	271	.1	.2	61	28.8	88
29-2053	Psychiatric technicians	60	63	.0	.0	4	5.9	11
29-2054	Respiratory therapy technicians	26	35	.0	.0	9	34.2	12
29-2055	Surgical technologists	72	92	.1	.1	20	27.9	30
29-2056	Veterinary technologists and technicians	53	76	.0	.0	23	44.1	30
29-2061	Licensed practical and licensed vocational nurses	702	844	.5	.5	142	20.2	295
29-2071	Medical records and health information technicians	147	216	.1	.1	69	46.8	90
29-2081	Opticians, dispensing	63	75	.0	.0	11	18.2	23
29-2090	Miscellaneous health technologists and technicians ⁴	5	6	.0	.0	1	18.9	2
29-2091	Orthotists and prosthetists	5	6	.0	.0	1	18.9	2
29-9000	Other healthcare practitioners and technical occupations ⁴	56	65	.0	.0	10	17.4	22
29-9010	Occupational health and safety specialists and technicians	41	47	.0	.0	5	13.2	14
29-9090	Miscellaneous health practitioners and technical workers ⁴	14	19	.0	.0	4	29.9	7
29-9091	Athletic trainers	14	19	.0	.0	4	29.9	7
29-9199	All other health practitioners and technical workers ⁵	190	241	.1	.1	52	27.2	86
31-3900	Service occupations	26,569	31,905	18.4	19.3	5,336	20.1	12,962
31-0000	Healthcare support occupations	3,310	4,452	2.3	2.7	1,143	34.5	1,669
31-1000	Nursing, psychiatric, and home health aides	2,014	2,645	1.4	1.6	630	31.3	894
31-1011	Home health aides	580	859	.4	.5	279	48.1	355
31-1012	Nursing aides, orderlies, and attendants	1,375	1,718	1.0	1.0	343	24.9	523
31-1013	Psychiatric aides	59	68	.0	.0	9	14.5	16
31-2000	Occupational and physical therapist assistants and aides	114	164	.1	.1	50	44.2	68
31-2010	Occupational therapist assistants and aides	27	38	.0	.0	11	40.2	14
31-2011	Occupational therapist assistants	18	26	.0	.0	7	39.2	10
31-2012	Occupational therapist aides	8	12	.0	.0	4	42.6	5
31-2020	Physical therapist assistants and aides	87	127	.1	.1	40	45.4	54
31-2021	Physical therapist assistants	50	73	.0	.0	22	44.6	31
31-2022	Physical therapist aides	37	54	.0	.0	17	46.4	23
31-9000	Other healthcare support occupations	1,182	1,644	.8	1.0	462	39.1	706
31-9011	Massage therapists	92	117	.1	.1	25	27.1	43
31-9090	Miscellaneous healthcare support occupations	1,090	1,527	.8	.9	437	40.1	664
31-9091	Dental assistants	266	379	.2	.2	113	42.5	187
31-9092	Medical assistants	365	579	.3	.4	215	58.9	282
31-9093	Medical equipment preparers	36	43	.0	.0	7	18.1	13
31-9094	Medical transcriptionists	101	124	.1	.1	23	22.6	41
31-9095	Pharmacy aides	60	71	.0	.0	11	17.6	22
31-9096	Veterinary assistants and laboratory animal caretakers	63	79	.0	.0	16	26.2	28
31-9099	All other healthcare support workers	198	251	.1	.2	53	26.6	89

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
	Number		Percent distribution		Number	Percent	
	2002	2012	2002	2012			
33-0000 Protective service occupations	3,116	3,885	2.2	2.4	769	24.7	1,649
33-1000 First-line supervisors/managers, protective service workers	266	315	.2	.2	49	18.3	136
33-1010 First-line supervisors/managers, law enforcement workers	147	171	.1	.1	24	16.1	71
33-1011 First-line supervisors/managers of correctional officers	33	40	.0	.0	6	19.0	16
33-1012 First-line supervisors/managers of police and detectives	114	131	.1	.1	17	15.3	55
33-1021 First-line supervisors/managers of fire fighting and prevention workers	63	74	.0	.0	12	18.7	37
33-1099 All other first-line supervisors/managers, protective service workers	56	70	.0	.0	13	23.9	28
33-2000 Fire fighting and prevention workers	296	356	.2	.2	60	20.3	146
33-2011 Fire fighters	282	340	.2	.2	58	20.7	140
33-2020 Fire inspectors	14	16	.0	.0	2	11.6	6
33-3000 Law enforcement workers	1,179	1,460	.8	.9	281	23.9	563
33-3010 Bailiffs, correctional officers, and jailers	442	547	.3	.3	105	23.7	197
33-3011 Bailiffs	15	16	.0	.0	1	9.5	5
33-3012 Correctional officers and jailers	427	531	.3	.3	103	24.2	192
33-3021 Detectives and criminal investigators	94	115	.1	.1	21	22.4	46
33-3031 Fish and game wardens	8	8	.0	.0	1	7.1	2
33-3041 Parking enforcement workers	11	12	.0	.0	1	11.5	3
33-3050 Police officers	625	779	.4	.5	154	24.6	315
33-3051 Police and sheriff's patrol officers	619	772	.4	.5	153	24.7	313
33-3052 Transit and railroad police	6	7	.0	.0	1	15.9	2
33-9000 Other protective service workers	1,374	1,753	1.0	1.1	379	27.6	804
33-9011 Animal control workers	11	12	.0	.0	1	12.6	9
33-9021 Private detectives and investigators	48	60	.0	.0	12	25.3	22
33-9030 Security guards and gaming surveillance officers	1,004	1,324	.7	.8	319	31.8	538
33-9031 Gaming surveillance officers and gaming investigators	9	11	.0	.0	2	24.6	4
33-9032 Security guards	995	1,313	.7	.8	317	31.9	534
33-9091 Crossing guards	74	86	.1	.1	12	16.5	36
33-9095 All other protective service workers ⁵	237	271	.2	.2	34	14.3	199
35-0000 Food preparation and serving related occupations	10,200	11,807	7.1	7.1	1,607	15.8	5,659
35-1000 Supervisors, food preparation and serving workers	824	952	.6	.6	128	15.6	332
35-1011 Chefs and head cooks	132	153	.1	.1	21	15.8	60
35-1012 First-line supervisors/managers of food preparation and serving workers	692	800	.5	.5	107	15.5	272
35-2000 Cooks and food preparation workers ⁴	2,836	3,182	2.0	1.9	346	12.2	1,262
35-2010 Cooks ⁴	1,986	2,160	1.4	1.3	174	8.8	789
35-2011 Cooks, fast food	588	617	.4	.4	29	4.9	211
35-2012 Cooks, institution and cafeteria	436	445	.3	.3	9	2.1	144
35-2013 Cooks, private household	8	8	.0	.0	0	-5.4	3
35-2014 Cooks, restaurant	727	843	.5	.5	116	15.9	341
35-2015 Cooks, short order	227	247	.2	.1	20	9.0	91
35-2021 Food preparation workers	850	1,022	.6	.6	172	20.2	473
35-3000 Food and beverage serving workers	5,211	6,171	3.6	3.7	960	18.4	3,454
35-3011 Bartenders	463	503	.3	.3	40	8.6	223
35-3020 Fast food and counter workers	2,457	2,989	1.7	1.8	532	21.7	1,699
35-3021 Combined food preparation and serving workers, including fast food	1,990	2,444	1.4	1.5	454	22.8	1,317
35-3022 Counter attendants, cafeteria, food concession, and coffee shop	467	545	.3	.3	78	16.7	383
35-3031 Waiters and waitresses	2,097	2,464	1.5	1.5	367	17.5	1,446
35-3041 Food servers, nonrestaurant	195	215	.1	.1	20	10.4	85
35-9000 Other food preparation and serving related workers ⁴	1,328	1,502	.9	.9	173	13.0	611
35-9011 Dining room and cafeteria attendants and bartender helpers	409	470	.3	.3	61	14.9	198
35-9021 Dishwashers	505	551	.4	.3	46	9.0	216
35-9031 Hosts and hostesses, restaurant, lounge, and coffee shop	298	347	.2	.2	49	16.4	143
35-9098 All other food preparation and serving related workers ⁵	117	134	.1	.1	18	15.2	54
37-0000 Building and grounds cleaning and maintenance occupations	5,485	6,386	3.8	3.9	901	16.4	2,000
37-1000 Supervisors, building and grounds cleaning and maintenance workers	380	449	.3	.3	70	18.4	138
37-1011 First-line supervisors/managers of housekeeping and janitorial workers	230	267	.2	.2	37	16.2	92
37-1012 First-line supervisors/managers of landscaping, lawn service, and groundskeeping workers	150	182	.1	.1	32	21.6	46
37-2000 Building cleaning and pest control workers	3,820	4,381	2.7	2.7	561	14.7	1,314
37-2010 Building cleaning workers ⁴	3,759	4,309	2.6	2.6	550	14.6	1,294
37-2011 Janitors and cleaners, except maids and housekeeping cleaners	2,267	2,681	1.6	1.6	414	18.3	844
37-2012 Maids and housekeeping cleaners	1,492	1,629	1.0	1.0	137	9.2	450
37-2021 Pest control workers	62	72	.0	.0	10	17.0	20
37-3000 Grounds maintenance workers	1,285	1,555	.9	.9	270	21.0	548
37-3010 Grounds maintenance workers ⁴	1,160	1,410	.8	.9	250	21.5	503

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
	Number		Percent distribution		Number	Percent	
	2002	2012	2002	2012			
37-3011 Landscaping and groundskeeping workers	1,074	1,311	0.7	0.8	237	22.0	470
37-3012 Pesticide handlers, sprayers, and applicators, vegetation	27	30	.0	.0	3	9.7	9
37-3013 Tree trimmers and pruners	59	69	.0	.0	11	18.6	24
37-9099 All other building and grounds cleaning and maintenance workers ⁵	125	145	.1	.1	20	16.1	46
39-0000 Personal care and service occupations	4,458	5,375	3.1	3.3	917	20.6	1,985
39-1000 Supervisors, personal care and service workers	276	305	.2	.2	29	10.7	96
39-1010 First-line supervisors/managers of gaming workers	60	69	.0	.0	9	15.4	22
39-1011 Gaming supervisors	39	45	.0	.0	6	15.7	14
39-1012 Slot key persons	21	24	.0	.0	3	14.8	8
39-1021 First-line supervisors/managers of personal service workers	216	236	.1	.1	20	9.4	74
39-2000 Animal care and service workers	151	183	.1	.1	32	20.8	68
39-2011 Animal trainers	26	30	.0	.0	4	14.3	9
39-2021 Nonfarm animal caretakers	125	153	.1	.1	28	22.2	59
39-3000 Entertainment attendants and related workers	507	626	.4	.4	119	23.6	300
39-3010 Gaming services workers ⁴	92	115	.1	.1	23	24.7	52
39-3011 Gaming dealers	78	97	.1	.1	19	24.7	44
39-3012 Gaming and sports book writers and runners	14	18	.0	.0	3	24.4	8
39-3021 Motion picture projectionists	9	9	.0	.0	0	.4	5
39-3031 Ushers, lobby attendants, and ticket takers	105	121	.1	.1	16	15.5	76
39-3090 Miscellaneous entertainment attendants and related workers ⁴	261	333	.2	.2	72	27.6	147
39-3091 Amusement and recreation attendants	234	299	.2	.2	65	27.8	132
39-3092 Costume attendants	4	5	.0	.0	1	25.1	2
39-3093 Locker room, coatroom, and dressing room attendants	23	29	.0	.0	6	26.5	13
39-3199 All other gaming service workers ²	40	49	.0	.0	9	21.3	21
39-4000 Funeral service workers	33	38	.0	.0	5	16.7	12
39-4011 Embalmers	7	7	.0	.0	1	8.3	2
39-4021 Funeral attendants	26	31	.0	.0	5	18.9	10
39-5000 Personal appearance workers	754	865	.5	.5	111	14.7	262
39-5010 Barbers and cosmetologists	651	741	.5	.4	90	13.8	221
39-5011 Barbers	66	70	.0	.0	4	6.5	23
39-5012 Hairdressers, hairstylists, and cosmetologists	585	671	.4	.4	86	14.7	199
39-5090 Miscellaneous personal appearance workers	103	124	.1	.1	21	20.3	41
39-5091 Makeup artists, theatrical and performance	2	2	.0	.0	0	18.2	1
39-5092 Manicurists and pedicurists	51	63	.0	.0	12	22.7	21
39-5093 Shampooers	25	29	.0	.0	4	16.6	9
39-5094 Skin care specialists	25	30	.0	.0	5	19.4	10
39-6000 Transportation, tourism, and lodging attendants	248	284	.2	.2	36	14.7	84
39-6010 Baggage porters, bellhops, and concierges	75	86	.1	.1	11	14.6	31
39-6011 Baggage porters and bellhops	58	67	.0	.0	8	14.4	24
39-6012 Concierges	17	20	.0	.0	3	15.3	7
39-6020 Tour and travel guides	43	47	.0	.0	4	9.3	15
39-6021 Tour guides and escorts	36	40	.0	.0	4	11.0	14
39-6022 Travel guides	6	6	.0	.0	0	-3	2
39-6030 Transportation attendants	130	152	.1	.1	22	16.5	38
39-6031 Flight attendants	104	121	.1	.1	17	15.9	30
39-6032 Transportation attendants, except flight attendants and baggage porters ..	26	31	.0	.0	5	18.9	8
39-9000 Other personal care and service workers	2,490	3,073	1.7	1.9	583	23.4	1,161
39-9011 Child care workers	1,211	1,353	.8	.8	142	11.7	471
39-9021 Personal and home care aides	608	854	.4	.5	246	40.5	343
39-9030 Recreation and fitness workers	485	628	.3	.4	143	29.5	254
39-9031 Fitness trainers and aerobics instructors	183	264	.1	.2	81	44.5	123
39-9032 Recreation workers	302	364	.2	.2	62	20.5	131
39-9041 Residential advisors	53	71	.0	.0	18	33.6	29
39-9099 Personal care and service workers, all other	134	168	.1	.1	35	25.9	63
41-0000 Sales and related occupations	15,260	17,231	10.6	10.4	1,971	12.9	6,904
41-1000 Supervisors, sales workers	2,395	2,599	1.7	1.6	204	8.5	640
41-1011 First-line supervisors/managers of retail sales workers	1,798	1,962	1.2	1.2	163	9.1	486
41-1012 First-line supervisors/managers of non-retail sales workers	597	637	.4	.4	41	6.8	153
41-2000 Retail sales workers	8,224	9,392	5.7	5.7	1,167	14.2	4,578
41-2010 Cashiers	3,465	3,927	2.4	2.4	462	13.3	2,148
41-2011 Cashiers, except gaming	3,432	3,886	2.4	2.4	454	13.2	2,124
41-2012 Gaming change persons and booth cashiers	33	41	.0	.0	8	24.1	24
41-2020 Counter and rental clerks and parts salespersons	683	793	.5	.5	109	16.0	352
41-2021 Counter and rental clerks	436	550	.3	.3	114	26.3	281

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
	Number		Percent distribution		Number	Percent	
	2002	2012	2002	2012			
41-2022 Parts salespersons	248	243	0.2	0.1	-5	-2.0	71
41-2031 Retail salespersons	4,076	4,672	2.8	2.8	596	14.6	2,077
41-3000 Sales representatives, services ⁴	957	1,033	.7	.6	76	7.9	274
41-3011 Advertising sales agents	157	178	.1	.1	21	13.4	52
41-3021 Insurance sales agents	381	413	.3	.3	32	8.4	123
41-3031 Securities, commodities, and financial services sales agents	300	339	.2	.2	39	13.0	73
41-3041 Travel agents	118	102	.1	.1	-16	-13.8	27
41-4000 Sales representatives, wholesale and manufacturing	1,857	2,213	1.3	1.3	356	19.2	844
41-4011 Sales representatives, wholesale and manufacturing, technical and scientific products	398	475	.3	.3	77	19.3	182
41-4012 Sales representatives, wholesale and manufacturing, except technical and scientific products	1,459	1,738	1.0	1.1	279	19.1	662
41-9000 Other sales and related workers	1,827	1,994	1.3	1.2	167	9.2	568
41-9010 Models, demonstrators, and product promoters	179	210	.1	.1	30	16.9	70
41-9011 Demonstrators and product promoters	175	204	.1	.1	30	17.0	68
41-9012 Models	5	5	.0	.0	1	14.5	2
41-9020 Real estate brokers and sales agents	407	427	.3	.3	20	4.9	101
41-9021 Real estate brokers	99	101	.1	.1	2	2.4	22
41-9022 Real estate sales agents	308	325	.2	.2	18	5.7	79
41-9031 Sales engineers	82	98	.1	.1	16	19.9	41
41-9041 Telemarketers	428	406	.3	.2	-21	-4.9	70
41-9091 Door-to-door sales workers, news and street vendors, and related workers	155	137	.1	.1	-18	-11.8	37
41-9098 All other sales and related workers ⁵	577	717	.4	.4	140	24.3	250
43-0000 Office and administrative support occupations	23,851	25,464	16.6	15.4	1,613	6.8	7,499
43-1000 Supervisors, office and administrative support workers	1,459	1,555	1.0	.9	96	6.6	409
43-1011 First-line supervisors/managers of office and administrative support workers	1,459	1,555	1.0	.9	96	6.6	409
43-2000 Communications equipment operators	304	272	.2	.2	-32	-10.5	78
43-2011 Switchboard operators, including answering service	236	236	.2	.1	1	.3	61
43-2021 Telephone operators	50	22	.0	.0	-28	-56.3	13
43-2099 All other communications equipment operators	19	14	.0	.0	-5	-24.6	4
43-3000 Financial clerks	3,726	3,987	2.6	2.4	261	7.0	1,143
43-3011 Bill and account collectors	413	514	.3	.3	101	24.5	179
43-3021 Billing and posting clerks and machine operators	507	547	.4	.3	40	7.9	126
43-3031 Bookkeeping, accounting, and auditing clerks	1,983	2,042	1.4	1.2	59	3.0	431
43-3041 Gaming cage workers	18	21	.0	.0	3	14.5	12
43-3051 Payroll and timekeeping clerks	198	211	.1	.1	13	6.5	65
43-3061 Procurement clerks	77	72	.1	.0	-5	-6.7	20
43-3071 Tellers	530	580	.4	.4	50	9.4	311
43-4000 Information and record clerks ⁴	5,394	6,310	3.7	3.8	916	17.0	2,134
43-4011 Brokerage clerks	78	67	.1	.0	-11	-14.7	10
43-4021 Correspondence clerks	33	33	.0	.0	0	-1.4	10
43-4031 Court, municipal, and license clerks	106	119	.1	.1	13	12.3	36
43-4041 Credit authorizers, checkers, and clerks	80	74	.1	.0	-5	-6.7	15
43-4051 Customer service representatives	1,894	2,354	1.3	1.4	460	24.3	741
43-4061 Eligibility interviewers, government programs	94	83	.1	.1	-11	-11.6	25
43-4071 File clerks	265	264	.2	.2	-1	-.3	78
43-4081 Hotel, motel, and resort desk clerks	178	220	.1	.1	42	23.9	122
43-4111 Interviewers, except eligibility and loan	193	247	.1	.1	54	28.0	104
43-4121 Library assistants, clerical	120	146	.1	.1	26	21.5	75
43-4131 Loan interviewers and clerks	170	146	.1	.1	-24	-14.3	23
43-4141 New accounts clerks	99	110	.1	.1	11	11.2	36
43-4151 Order clerks	330	311	.2	.2	-19	-5.7	74
43-4161 Human resources assistants, except payroll and timekeeping	174	207	.1	.1	33	19.3	71
43-4171 Receptionists and information clerks	1,100	1,425	.8	.9	325	29.5	595
43-4181 Reservation and transportation ticket agents and travel clerks	177	199	.1	.1	22	12.2	68
43-4999 All other financial, information, and record clerks ²	304	306	.2	.2	2	.5	49
43-5000 Material recording, scheduling, dispatching, and distributing occupations	4,005	4,025	2.8	2.4	20	.5	1,306
43-5011 Cargo and freight agents	59	68	.0	.0	9	15.5	22
43-5021 Couriers and Messengers	132	138	.1	.1	5	4.0	36
43-5030 Dispatchers	262	298	.2	.2	36	13.8	92
43-5031 Police, fire, and ambulance dispatchers	92	104	.1	.1	12	12.7	32
43-5032 Dispatchers, except police, fire, and ambulance	170	194	.1	.1	24	14.4	61
43-5041 Meter readers, utilities	54	46	.0	.0	-8	-14.1	17
43-5050 Postal service workers	664	636	.5	.4	-28	-4.3	192
43-5051 Postal service clerks	77	77	.1	.0	0	-.5	20

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title		Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
		Number		Percent distribution		Number	Percent	
		2002	2012	2002	2012			
43-5052	Postal service mail carriers	334	333	0.2	0.2	-2	-0.5	105
43-5053	Postal service mail sorters, processors, and processing machine operators	253	226	.2	.1	-26	-10.5	67
43-5061	Production, planning, and expediting clerks	288	328	.2	.2	40	14.1	110
43-5071	Shipping, receiving, and traffic clerks	803	827	.6	.5	24	3.0	189
43-5081	Stock clerks and order fillers	1,628	1,560	1.1	.9	-68	-4.2	602
43-5111	Weighers, measurers, checkers, and samplers, recordkeeping	81	93	.1	.1	12	14.6	32
43-5199	All other material recording, scheduling, dispatching, and distributing workers ²	34	32	.0	.0	-2	-6.9	13
43-6000	Secretaries and administrative assistants	4,104	4,288	2.8	2.6	184	4.5	1,026
43-6011	Executive secretaries and administrative assistants	1,526	1,658	1.1	1.0	132	8.7	424
43-6012	Legal secretaries	264	313	.2	.2	50	18.8	100
43-6013	Medical secretaries	339	398	.2	.2	58	17.2	123
43-6014	Secretaries, except legal, medical, and executive	1,975	1,918	1.4	1.2	-57	-2.9	378
43-9000	Other office and administrative support workers	4,858	5,027	3.4	3.0	169	3.5	1,404
43-9011	Computer operators	182	151	.1	.1	-30	-16.7	39
43-9020	Data entry and information processing workers ⁴	633	519	.4	.3	-114	-18.1	146
43-9021	Data entry keyers	392	371	.3	.2	-21	-5.4	93
43-9022	Word processors and typists	241	148	.2	.1	-93	-38.6	53
43-9031	Desktop publishers	35	45	.0	.0	10	29.2	18
43-9041	Insurance claims and policy processing clerks	266	276	.2	.2	10	3.6	53
43-9051	Mail clerks and mail machine operators, except postal service	170	165	.1	.1	-5	-2.9	51
43-9061	Office clerks, general	2,991	3,301	2.1	2.0	310	10.4	972
43-9071	Office machine operators, except computer	96	91	.1	.1	-4	-4.6	24
43-9081	Proofreaders and copy markers	27	26	.0	.0	-1	-4.8	6
43-9111	Statistical assistants	23	22	.0	.0	-2	-7.2	4
43-9999	All other secretaries, administrative assistants, and other office support workers ²	435	431	.3	.3	-4	-9	92
45-0000	Farming, fishing, and forestry occupations	1,072	1,107	.7	.7	35	3.3	335
45-1000	Supervisors, farming, fishing, and forestry workers	52	58	.0	.0	6	11.4	18
45-2000	Agricultural workers	804	840	.6	.5	36	4.5	261
45-2011	Agricultural inspectors	16	17	.0	.0	1	6.7	5
45-2021	Animal breeders	9	10	.0	.0	1	6.1	2
45-2041	Graders and sorters, agricultural products	49	52	.0	.0	3	6.7	16
45-2090	Miscellaneous agricultural workers ⁴	731	762	.5	.5	31	4.3	238
45-2091	Agricultural equipment operators	61	65	.0	.0	4	7.3	22
45-2092	Farmworkers and laborers, crop, nursery, and greenhouse	617	641	.4	.4	24	4.0	199
45-2093	Farmworkers, farm and ranch animals	53	56	.0	.0	2	4.4	17
45-3000	Fishing and hunting workers	38	28	.0	.0	-10	-25.5	11
45-3011	Fishers and related fishing workers	36	27	.0	.0	-10	-26.8	10
45-3021	Hunters and trappers	1	2	.0	.0	0	6.5	1
45-4000	Forest, conservation, and logging workers	81	80	.1	.0	-2	-1.9	16
45-4011	Forest and conservation workers	14	15	.0	.0	1	4.5	4
45-4020	Logging workers ⁴	67	65	.0	.0	-2	-3.2	12
45-4021	Fallers	14	14	.0	.0	0	-3.4	3
45-4022	Logging equipment operators	43	41	.0	.0	-2	-3.7	8
45-4023	Log graders and scalers	10	10	.0	.0	0	-1.2	2
45-9099	All other farming, fishing, and forestry workers ⁵	96	101	.1	.1	4	4.5	28
47-0000	Construction and extraction occupations	7,292	8,388	5.1	5.1	1,096	15.0	2,548
47-1000	Supervisors, construction and extraction workers	633	722	.4	.4	89	14.1	197
47-1011	First-line supervisors/managers of construction trades and extraction workers	633	722	.4	.4	89	14.1	197
47-2000	Construction trades and related workers	5,596	6,452	3.9	3.9	857	15.3	1,887
47-2011	Boilermakers	25	25	.0	.0	0	1.7	9
47-2020	Brickmasons, blockmasons, and stonemasons	165	188	.1	.1	23	14.2	48
47-2021	Brickmasons and blockmasons	148	169	.1	.1	21	14.2	43
47-2022	Stonemasons	17	19	.0	.0	2	14.1	5
47-2031	Carpenters	1,209	1,331	.8	.8	122	10.1	319
47-2040	Carpet, floor, and tile installers and finishers	164	191	.1	.1	27	16.8	53
47-2041	Carpet installers	82	96	.1	.1	14	16.8	27
47-2042	Floor layers, except carpet, wood, and hard tiles	31	35	.0	.0	4	13.4	9
47-2043	Floor sanders and finishers	17	18	.0	.0	1	4.2	3
47-2044	Tile and marble setters	33	42	.0	.0	9	26.5	14

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
	Number		Percent distribution		Number	Percent	
	2002	2012	2002	2012			
47-2050 Cement masons, concrete finishers, and terrazzo workers	188	236	0.1	0.1	48	25.7	86
47-2051 Cement masons and concrete finishers	182	229	.1	.1	47	26.1	84
47-2053 Terrazzo workers and finishers	6	7	.0	.0	1	15.2	2
47-2061 Construction laborers	938	1,070	.7	.6	133	14.2	258
47-2070 Construction equipment operators	416	460	.3	.3	45	10.7	144
47-2071 Paving, surfacing, and tamping equipment operators	58	65	.0	.0	7	12.6	16
47-2072 Pile-driver operators	5	6	.0	.0	0	8.2	1
47-2073 Operating engineers and other construction equipment operators	353	389	.2	.2	37	10.4	127
47-2080 Drywall installers, ceiling tile installers, and tapers	176	214	.1	.1	37	21.3	76
47-2081 Drywall and ceiling tile installers	135	164	.1	.1	29	21.4	58
47-2082 Tapers	41	49	.0	.0	8	20.8	17
47-2111 Electricians	659	814	.5	.5	154	23.4	285
47-2121 Glaziers	49	57	.0	.0	8	17.2	19
47-2130 Insulation workers	53	62	.0	.0	8	15.8	25
47-2140 Painters and paperhangers	468	521	.3	.3	53	11.4	124
47-2141 Painters, construction and maintenance	448	500	.3	.3	52	11.6	120
47-2142 Paperhangers	20	21	.0	.0	1	5.9	4
47-2150 Pipelayers, plumbers, pipefitters, and steamfitters	550	649	.4	.4	99	18.0	225
47-2151 Pipelayers	58	65	.0	.0	7	11.8	20
47-2152 Plumbers, pipefitters, and steamfitters	492	584	.3	.4	92	18.7	205
47-2161 Plasterers and stucco masons	59	67	.0	.0	8	13.5	19
47-2171 Reinforcing iron and rebar workers	29	33	.0	.0	5	16.7	10
47-2181 Roofers	166	197	.1	.1	31	18.6	70
47-2211 Sheet metal workers	205	246	.1	.1	41	19.8	90
47-2221 Structural iron and steel workers	78	90	.1	.1	12	15.9	28
47-3000 Helpers, construction trades	431	490	.3	.3	59	13.7	238
47-3010 Helpers, construction trades	431	490	.3	.3	59	13.7	238
47-3011 Helpers—Brickmasons, blockmasons, stonemasons, and tile and marble setters	59	61	.0	.0	1	2.2	26
47-3012 Helpers—Carpenters	97	111	.1	.1	14	14.0	54
47-3013 Helpers—Electricians	99	117	.1	.1	18	17.9	59
47-3014 Helpers—Painters, paperhangers, plasterers, and stucco masons	31	36	.0	.0	5	15.9	18
47-3015 Helpers—Pipelayers, plumbers, pipefitters, and steamfitters	79	88	.1	.1	9	10.9	42
47-3016 Helpers—Roofers	21	25	.0	.0	4	19.3	13
47-3019 All other helpers, construction trades	44	53	.0	.0	9	19.4	27
47-4000 Other construction and related workers ⁴	354	408	.2	.2	54	15.2	123
47-4011 Construction and building inspectors	84	95	.1	.1	12	13.8	30
47-4021 Elevator installers and repairers	21	25	.0	.0	4	17.1	9
47-4031 Fence erectors	27	31	.0	.0	4	13.4	8
47-4041 Hazardous materials removal workers	38	54	.0	.0	16	43.1	26
47-4051 Highway maintenance workers	154	170	.1	.1	16	10.4	38
47-4061 Rail-track laying and maintenance equipment operators	11	9	.0	.0	-1	-11.5	2
47-4071 Septic tank servicers and sewer pipe cleaners	18	22	.0	.0	4	21.2	9
47-4090 Miscellaneous construction and related workers ⁴	2	3	.0	.0	0	16.5	1
47-4091 Segmental pavers	2	3	.0	.0	0	16.5	1
47-4999 All other construction trades and related workers ²	110	146	.1	.1	35	32.0	53
47-5000 Extraction workers	167	169	.1	.1	2	1.2	51
47-5010 Derrick, rotary drill, and service unit operators, oil, gas, and mining	41	41	.0	.0	0	.5	12
47-5011 Derrick operators, oil and gas	15	15	.0	.0	0	.8	4
47-5012 Rotary drill operators, oil and gas	14	14	.0	.0	0	1.5	4
47-5013 Service unit operators, oil, gas, and mining	13	13	.0	.0	0	-.8	4
47-5021 Earth drillers, except oil and gas	23	25	.0	.0	2	7.7	7
47-5031 Explosives workers, ordnance handling experts, and blasters	5	5	.0	.0	0	2.0	2
47-5040 Mining machine operators	18	16	.0	.0	-2	-13.3	5
47-5041 Continuous mining machine operators	8	7	.0	.0	-2	-18.5	2
47-5042 Mine cutting and channeling machine operators	5	5	.0	.0	0	-7.1	1
47-5049 All other mining machine operators	4	4	.0	.0	0	-10.8	1
47-5051 Rock splitters, quarry	3	3	.0	.0	0	14.3	1
47-5061 Roof bolters, mining	4	3	.0	.0	-1	-27.7	1
47-5071 Roustabouts, oil and gas	32	34	.0	.0	2	6.4	11
47-5081 Helpers—Extraction workers	29	30	.0	.0	1	3.9	9
47-5099 Extraction workers, all other	12	12	.0	.0	0	-.8	3
49-0000 Installation, maintenance, and repair occupations	5,696	6,472	4.0	3.9	776	13.6	2,087
49-1000 Supervisors of installation, maintenance, and repair workers	444	512	.3	.3	68	15.4	180
49-1011 First-line supervisors/managers of mechanics, installers, and repairers	444	512	.3	.3	68	15.4	180

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
	Number		Percent distribution		Number	Percent	
	2002	2012	2002	2012			
49-2000 Electrical and electronic equipment mechanics, installers, and repairers	689	746	0.5	0.5	57	8.3	193
49-2011 Computer, automated teller, and office machine repairers	156	180	.1	.1	24	15.1	43
49-2020 Radio and telecommunications equipment installers and repairers	226	222	.2	.1	-4	-1.6	47
49-2021 Radio mechanics	7	5	.0	.0	-2	-29.3	2
49-2022 Telecommunications equipment installers and repairers, except line installers	219	217	.2	.1	-1	-.6	45
49-2090 Miscellaneous electrical and electronic equipment mechanics, installers, and repairers	284	317	.2	.2	33	11.5	95
49-2091 Avionics technicians	23	24	.0	.0	1	3.4	6
49-2092 Electric motor, power tool, and related repairers	31	33	.0	.0	2	5.3	9
49-2093 Electrical and electronics installers and repairers, transportation equipment	18	19	.0	.0	1	7.1	6
49-2094 Electrical and electronics repairers, commercial and industrial equipment	85	94	.1	.1	9	10.3	27
49-2095 Electrical and electronics repairers, powerhouse, substation, and relay	21	21	.0	.0	0	-.6	5
49-2096 Electronic equipment installers and repairers, motor vehicles	18	21	.0	.0	3	14.8	7
49-2097 Electronic home entertainment equipment installers and repairers	43	46	.0	.0	4	8.6	12
49-2098 Security and fire alarm systems installers	46	60	.0	.0	14	30.2	23
49-2099 All other electrical and electronic equipment mechanics, installers, and repairers ²	22	26	.0	.0	4	19.6	9
49-3000 Vehicle and mobile equipment mechanics, installers, and repairers	1,817	2,043	1.3	1.2	226	12.4	695
49-3011 Aircraft mechanics and service technicians	131	145	.1	.1	14	11.0	45
49-3020 Automotive technicians and repairers	1,038	1,168	.7	.7	130	12.5	392
49-3021 Automotive body and related repairers	198	225	.1	.1	26	13.2	67
49-3022 Automotive glass installers and repairers	22	24	.0	.0	2	10.7	6
49-3023 Automotive service technicians and mechanics	818	919	.6	.6	101	12.4	319
49-3031 Bus and truck mechanics and diesel engine specialists	267	305	.2	.2	38	14.2	107
49-3040 Heavy vehicle and mobile equipment service technicians and mechanics	176	191	.1	.1	15	8.8	54
49-3041 Farm equipment mechanics	35	38	.0	.0	3	7.7	10
49-3042 Mobile heavy equipment mechanics, except engines	126	138	.1	.1	12	9.6	39
49-3043 Rail car repairers	15	15	.0	.0	1	4.5	4
49-3050 Small engine mechanics	67	79	.0	.0	12	18.7	29
49-3051 Motorboat mechanics	22	26	.0	.0	4	18.3	9
49-3052 Motorcycle mechanics	15	18	.0	.0	3	18.7	7
49-3053 Outdoor power equipment and other small engine mechanics	30	36	.0	.0	6	18.9	13
49-3090 Miscellaneous vehicle and mobile equipment mechanics, installers, and repairers	102	113	.1	.1	11	10.4	54
49-3091 Bicycle repairers	7	8	.0	.0	1	18.8	4
49-3092 Recreational vehicle service technicians	13	15	.0	.0	3	21.8	8
49-3093 Tire repairers and changers	83	89	.1	.1	7	8.0	42
49-3099 All other vehicle and mobile equipment mechanics, installers, and repairers ²	36	41	.0	.0	6	15.4	15
49-9000 Other installation, maintenance, and repair occupations	2,746	3,171	1.9	1.9	424	15.5	1,019
49-9010 Control and valve installers and repairers	49	55	.0	.0	7	14.1	19
49-9011 Mechanical door repairers	11	13	.0	.0	2	21.8	5
49-9012 Control and valve installers and repairers, except mechanical door	38	42	.0	.0	5	12.0	14
49-9021 Heating, air conditioning, and refrigeration mechanics and installers	249	328	.2	.2	79	31.8	112
49-9031 Home appliance repairers	42	44	.0	.0	2	5.5	12
49-9040 Industrial machinery installation, repair, and maintenance workers	1,628	1,855	1.1	1.1	227	13.9	548
49-9041 Industrial machinery mechanics	197	208	.1	.1	11	5.5	51
49-9042 Maintenance and repair workers, general	1,266	1,472	.9	.9	207	16.3	450
49-9043 Maintenance workers, machinery	92	97	.1	.1	5	5.9	26
49-9044 Millwrights	69	73	.0	.0	4	5.3	21
49-9045 Refractory materials repairers, except brickmasons	4	4	.0	.0	0	5.6	1
49-9050 Line installers and repairers	268	301	.2	.2	33	12.3	111
49-9051 Electrical power-line installers and repairers	101	103	.1	.1	2	1.6	34
49-9052 Telecommunications line installers and repairers	167	199	.1	.1	31	18.8	77
49-9060 Precision instrument and equipment repairers	64	69	.0	.0	6	8.6	24
49-9061 Camera and photographic equipment repairers	7	6	.0	.0	0	-7.1	2
49-9062 Medical equipment repairers	29	33	.0	.0	4	14.8	12
49-9063 Musical instrument repairers and tuners	6	7	.0	.0	0	6.3	2
49-9064 Watch repairers	5	5	.0	.0	0	3.5	2
49-9069 All other precision instrument and equipment repairers	17	18	.0	.0	1	7.0	6
49-9090 Miscellaneous installation, maintenance, and repair workers	447	518	.3	.3	71	15.8	193
49-9091 Coin, vending, and amusement machine servicers and repairers	43	49	.0	.0	6	15.2	17
49-9092 Commercial divers	4	5	.0	.0	0	10.6	1
49-9093 Fabric menders, except garment	2	2	.0	.0	0	-2.2	1
49-9094 Locksmiths and safe repairers	23	28	.0	.0	5	21.0	12
49-9095 Manufactured building and mobile home installers	18	22	.0	.0	4	23.3	9

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
	Number		Percent distribution		Number	Percent	
	2002	2012	2002	2012			
49-9096 Riggers	14	16	0.0	0.0	2	14.3	5
49-9097 Signal and track switch repairers	8	8	.0	.0	0	-3.1	3
49-9098 Helpers—Installation, maintenance, and repair workers	150	181	.1	.1	30	20.3	81
49-9099 Installation, maintenance, and repair workers, all other	185	207	.1	.1	23	12.2	65
51-0000 Production occupations	11,258	11,612	7.8	7.0	354	3.1	3,361
51-1000 Supervisors, production workers	733	803	.5	.5	70	9.5	224
51-1011 First-line supervisors/managers of production and operating workers	733	803	.5	.5	70	9.5	224
51-2000 Assemblers and fabricators	2,122	2,044	1.5	1.2	-77	-3.6	547
51-2011 Aircraft structure, surfaces, rigging, and systems assemblers	27	24	.0	.0	-2	-9.4	7
51-2020 Electrical, electronics, and electromechanical assemblers	377	316	.3	.2	-61	-16.3	89
51-2021 Coil winders, tapers, and finishers	36	31	.0	.0	-5	-13.9	9
51-2022 Electrical and electronic equipment assemblers	281	230	.2	.1	-51	-18.3	66
51-2023 Electromechanical equipment assemblers	60	55	.0	.0	-5	-8.3	14
51-2031 Engine and other machine assemblers	50	49	.0	.0	-1	-1.9	14
51-2041 Structural metal fabricators and fitters	89	94	.1	.1	6	6.2	26
51-2090 Miscellaneous assemblers and fabricators	1,579	1,561	1.1	.9	-18	-1.1	410
51-2091 Fiberglass laminators and fabricators	37	39	.0	.0	2	5.6	12
51-2092 Team assemblers	1,174	1,155	.8	.7	-19	-1.6	304
51-2093 Timing device assemblers, adjusters, and calibrators	7	6	.0	.0	0	-3.0	2
51-2099 All other assemblers and fabricators	361	360	.3	.2	-1	-2	93
51-3000 Food processing occupations	757	836	.5	.5	79	10.5	254
51-3011 Bakers	173	192	.1	.1	19	11.2	59
51-3020 Butchers and other meat, poultry, and fish processing workers	414	459	.3	.3	45	10.9	139
51-3021 Butchers and meat cutters	132	129	.1	.1	-3	-2.5	29
51-3022 Meat, poultry, and fish cutters and trimmers	154	179	.1	.1	25	16.4	59
51-3023 Slaughterers and meat packers	128	151	.1	.1	23	18.1	51
51-3090 Miscellaneous food processing workers	127	137	.1	.1	9	7.2	41
51-3091 Food and tobacco roasting, baking, and drying machine operators and tenders	19	20	.0	.0	1	4.2	6
51-3092 Food batchmakers	74	79	.1	.0	5	7.2	23
51-3093 Food cooking machine operators and tenders	34	37	.0	.0	3	8.8	11
51-3099 All other food processing workers ²	42	48	.0	.0	6	13.4	15
51-4000 Metal workers and plastic workers ⁴	2,367	2,544	1.6	1.5	177	7.5	754
51-4010 Computer control programmers and operators	151	166	.1	.1	15	9.8	40
51-4011 Computer-controlled machine tool operators, metal and plastic	132	144	.1	.1	12	9.3	34
51-4012 Numerical tool and process control programmers	19	22	.0	.0	3	13.0	6
51-4020 Forming machine setters, operators, and tenders, metal and plastic	188	198	.1	.1	11	5.6	60
51-4021 Extruding and drawing machine setters, operators, and tenders, metal and plastic	98	105	.1	.1	7	7.1	40
51-4022 Forging machine setters, operators, and tenders, metal and plastic	45	48	.0	.0	3	5.9	9
51-4023 Rolling machine setters, operators, and tenders, metal and plastic	44	45	.0	.0	1	2.0	11
51-4030 Machine tool cutting setters, operators, and tenders, metal and plastic	546	569	.4	.3	24	4.3	144
51-4031 Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	283	302	.2	.2	19	6.8	85
51-4032 Drilling and boring machine tool setters, operators, and tenders, metal and plastic	53	54	.0	.0	1	2.1	17
51-4033 Grinding, lapping, polishing, and buffing machine tool setters, operators, and tenders, metal and plastic	104	106	.1	.1	3	2.4	22
51-4034 Lathe and turning machine tool setters, operators, and tenders, metal and plastic	75	75	.1	.0	1	.8	15
51-4035 Milling and planing machine setters, operators, and tenders, metal and plastic	31	31	.0	.0	0	.8	6
51-4041 Machinists	387	419	.3	.3	32	8.2	122
51-4050 Metal furnace and kiln operators and tenders	31	30	.0	.0	0	-1.3	7
51-4051 Metal-refining furnace operators and tenders	18	17	.0	.0	0	-8	4
51-4052 Pourers and casters, metal	13	13	.0	.0	0	-2.0	3
51-4060 Model makers and patternmakers, metal and plastic	15	16	.0	.0	1	9.8	6
51-4061 Model makers, metal and plastic	9	10	.0	.0	1	14.6	4
51-4062 Patternmakers, metal and plastic	6	7	.0	.0	0	3.6	2
51-4070 Molders and molding machine setters, operators, and tenders, metal and plastic	174	189	.1	.1	14	8.2	58
51-4071 Foundry mold and coremakers	23	24	.0	.0	1	3.6	7
51-4072 Molding, coremaking, and casting machine setters, operators, and tenders, metal and plastic	151	165	.1	.1	14	8.9	51
51-4081 Multiple machine tool setters, operators, and tenders, metal and plastic	99	107	.1	.1	8	8.3	35

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
	Number		Percent distribution		Number	Percent	
	2002	2012	2002	2012			
51-4111 Tool and die makers	109	110	0.1	0.1	0	0.4	25
51-4120 Welding, soldering, and brazing workers	452	518	.3	.3	67	14.8	194
51-4121 Welders, cutters, solderers, and brazers	391	457	.3	.3	66	17.0	177
51-4122 Welding, soldering, and brazing machine setters, operators, and tenders	61	62	.0	.0	1	.9	18
51-4190 Miscellaneous metalworkers and plastic workers	215	221	.1	.1	6	2.6	62
51-4191 Heat treating equipment setters, operators, and tenders, metal and plastic	29	29	.0	.0	0	-.6	9
51-4192 Lay-out workers, metal and plastic	13	15	.0	.0	2	15.6	4
51-4193 Plating and coating machine setters, operators, and tenders, metal and plastic	44	42	.0	.0	-1	-2.6	10
51-4194 Tool grinders, filers, and sharpeners	26	24	.0	.0	-2	-7.7	8
51-4199 All other metal workers and plastic workers	104	111	.1	.1	7	6.6	31
51-5000 Printing occupations	465	466	.3	.3	1	.3	128
51-5010 Bookbinders and bindery workers	98	93	.1	.1	-5	-4.7	26
51-5011 Bindery workers	91	86	.1	.1	-5	-5.2	24
51-5012 Bookbinders	7	7	.0	.0	0	1.3	2
51-5020 Printers	346	350	.2	.2	4	1.2	95
51-5021 Job printers	56	61	.0	.0	5	9.2	21
51-5022 Prepress technicians and workers	91	81	.1	.0	-10	-11.2	18
51-5023 Printing machine operators	199	208	.1	.1	9	4.6	55
51-5099 All other printing workers ²	21	23	.0	.0	2	9.3	7
51-6000 Textile, apparel, and furnishings occupations	1,085	932	.8	.6	-152	-14.1	240
51-6011 Laundry and dry-cleaning workers	231	260	.2	.2	29	12.3	91
51-6021 Pressers, textile, garment, and related materials	91	91	.1	.1	0	-.2	14
51-6031 Sewing machine operators	315	216	.2	.1	-99	-31.5	39
51-6040 Shoe and leather workers	23	18	.0	.0	-4	-19.0	6
51-6041 Shoe and leather workers and repairers	16	14	.0	.0	-3	-16.1	5
51-6042 Shoe machine operators and tenders	7	5	.0	.0	-2	-26.1	1
51-6050 Tailors, dressmakers, and sewers	90	77	.1	.0	-13	-14.0	16
51-6051 Sewers, hand	36	29	.0	.0	-8	-21.2	6
51-6052 Tailors, dressmakers, and custom sewers	53	48	.0	.0	-5	-9.1	9
51-6060 Textile machine setters, operators, and tenders	179	124	.1	.1	-56	-31.0	33
51-6061 Textile bleaching and dyeing machine operators and tenders	27	19	.0	.0	-8	-28.7	7
51-6062 Textile cutting machine setters, operators, and tenders	34	26	.0	.0	-8	-22.6	8
51-6063 Textile knitting and weaving machine setters, operators, and tenders	53	33	.0	.0	-20	-38.6	6
51-6064 Textile winding, twisting, and drawing out machine setters, operators, and tenders	66	46	.0	.0	-20	-30.3	12
51-6090 Miscellaneous textile, apparel, and furnishings workers	156	147	.1	.1	-9	-5.9	41
51-6091 Extruding and forming machine setters, operators, and tenders, synthetic and glass fibers	27	24	.0	.0	-4	-13.1	5
51-6092 Fabric and apparel patternmakers	11	8	.0	.0	-3	-24.6	5
51-6093 Upholsterers	56	51	.0	.0	-5	-8.7	14
51-6099 All other textile, apparel, and furnishings workers	61	63	.0	.0	2	3.3	16
51-7000 Woodworkers	374	393	.3	.2	19	5.1	115
51-7011 Cabinetmakers and bench carpenters	147	160	.1	.1	14	9.4	50
51-7021 Furniture finishers	39	41	.0	.0	1	3.3	9
51-7030 Model makers and patternmakers, wood	9	10	.0	.0	1	11.1	3
51-7031 Model makers, wood	4	5	.0	.0	0	10.3	2
51-7032 Patternmakers, wood	4	5	.0	.0	0	11.8	2
51-7040 Woodworking machine setters, operators, and tenders	151	153	.1	.1	3	1.8	44
51-7041 Sawing machine setters, operators, and tenders, wood	56	56	.0	.0	0	-.2	16
51-7042 Woodworking machine setters, operators, and tenders, except sawing	95	98	.1	.1	3	3.0	28
51-7099 All other woodworkers	29	29	.0	.0	0	1.7	9
51-8000 Plant and system operators	346	353	.2	.2	7	2.0	120
51-8010 Power plant operators, distributors, and dispatchers	51	51	.0	.0	0	-.7	14
51-8011 Nuclear power reactor operators	3	3	.0	.0	0	-3.2	1
51-8012 Power distributors and dispatchers	12	12	.0	.0	0	-3.0	3
51-8013 Power plant operators	35	36	.0	.0	0	.3	10
51-8021 Stationary engineers and boiler operators	55	56	.0	.0	0	.3	10
51-8031 Water and liquid waste treatment plant and system operators	99	115	.1	.1	16	16.0	50
51-8090 Miscellaneous plant and system operators	141	132	.1	.1	-9	-6.2	46
51-8091 Chemical plant and system operators	58	51	.0	.0	-7	-12.3	18
51-8092 Gas plant operators	12	13	.0	.0	1	6.7	5
51-8093 Petroleum pump system operators, refinery operators, and gaugers	39	35	.0	.0	-4	-11.0	12
51-8099 All other plant and system operators	32	33	.0	.0	2	5.6	12
51-9000 Other production occupations	3,010	3,240	2.1	2.0	230	7.7	977
51-9010 Chemical processing machine setters, operators, and tenders	94	92	.1	.1	-2	-2.0	30
51-9011 Chemical equipment operators and tenders	58	56	.0	.0	-2	-3.8	19

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
	Number		Percent distribution		Number	Percent	
	2002	2012	2002	2012			
51-9012 Separating, filtering, clarifying, precipitating, and still machine setters, operators, and tenders	36	36	0.0	0.0	0	0.8	12
51-9020 Crushing, grinding, polishing, mixing, and blending workers	196	192	.1	.1	-4	-2.1	55
51-9021 Crushing, grinding, and polishing machine setters, operators, and tenders ...	45	44	.0	.0	-1	-2.8	12
51-9022 Grinding and polishing workers, hand	45	49	.0	.0	4	9.0	16
51-9023 Mixing and blending machine setters, operators, and tenders	106	99	.1	.1	-7	-6.5	28
51-9030 Cutting workers	109	116	.1	.1	7	6.9	30
51-9031 Cutters and trimmers, hand	31	33	.0	.0	2	7.6	9
51-9032 Cutting and slicing machine setters, operators, and tenders	77	83	.1	.0	5	6.6	21
51-9041 Extruding, forming, pressing, and compacting machine setters, operators, and tenders	73	73	.1	.0	0	-.1	19
51-9051 Furnace, kiln, oven, drier, and kettle operators and tenders	31	29	.0	.0	-2	-4.9	7
51-9061 Inspectors, testers, sorters, samplers, and weighers	515	539	.4	.3	24	4.7	141
51-9071 Jewelers and precious stone and metal workers	40	42	.0	.0	2	4.5	10
51-9080 Medical, dental, and ophthalmic laboratory technicians	94	101	.1	.1	7	7.4	27
51-9081 Dental laboratory technicians	47	49	.0	.0	2	3.6	12
51-9082 Medical appliance technicians	14	16	.0	.0	2	16.1	5
51-9083 Ophthalmic laboratory technicians	33	36	.0	.0	3	9.2	10
51-9111 Packaging and filling machine operators and tenders	387	468	.3	.3	82	21.1	159
51-9120 Painting workers	187	211	.1	.1	24	13.0	73
51-9121 Coating, painting, and spraying machine setters, operators, and tenders	103	112	.1	.1	10	9.4	36
51-9122 Painters, transportation equipment	50	59	.0	.0	9	17.5	22
51-9123 Painting, coating, and decorating workers	34	40	.0	.0	6	17.6	15
51-9130 Photographic process workers and processing machine operators	82	89	.1	.1	6	7.9	27
51-9131 Photographic process workers	28	30	.0	.0	2	5.4	9
51-9132 Photographic processing machine operators	54	59	.0	.0	5	9.2	18
51-9141 Semiconductor processors	46	42	.0	.0	-5	-10.6	10
51-9190 Miscellaneous production workers	1,155	1,245	.8	.8	90	7.8	388
51-9191 Cementing and gluing machine operators and tenders	27	28	.0	.0	0	1.1	8
51-9192 Cleaning, washing, and metal pickling equipment operators and tenders	18	19	.0	.0	1	6.9	7
51-9193 Cooling and freezing equipment operators and tenders	7	8	.0	.0	1	7.1	3
51-9194 Etchers and engravers	10	10	.0	.0	1	6.1	3
51-9195 Molders, shapers, and casters, except metal and plastic	46	49	.0	.0	3	6.4	14
51-9196 Paper goods machine setters, operators, and tenders	117	114	.1	.1	-3	-2.8	25
51-9197 Tire builders	14	15	.0	.0	1	6.6	4
51-9198 Helpers—Production workers	467	503	.3	.3	36	7.7	167
51-9199 All other production workers	449	500	.3	.3	51	11.3	158
53-0000 Transportation and material moving occupations	9,828	11,111	6.8	6.7	1,282	13.0	3,496
53-1000 Supervisors, transportation and material moving workers	364	411	.3	.2	47	12.9	132
53-1011 Aircraft cargo handling supervisors	9	10	.0	.0	1	15.6	3
53-1021 First-line supervisors/managers of helpers, laborers, and material movers, hand	147	168	.1	.1	21	14.0	55
53-1031 First-line supervisors/managers of transportation and material-moving machine and vehicle operators	207	232	.1	.1	25	12.1	74
53-2000 Air transportation occupations	144	168	.1	.1	24	17.0	62
53-2010 Aircraft pilots and flight engineers	100	118	.1	.1	18	17.8	45
53-2011 Airline pilots, copilots, and flight engineers	79	94	.1	.1	15	18.5	36
53-2012 Commercial pilots	21	24	.0	.0	3	14.9	9
53-2020 Air traffic controllers and airfield operations specialists	32	36	.0	.0	4	13.5	12
53-2021 Air traffic controllers	26	29	.0	.0	3	12.6	10
53-2022 Airfield operations specialists	6	7	.0	.0	1	17.2	3
53-2099 All other air transportation workers ²	12	14	.0	.0	2	19.4	5
53-3000 Motor vehicle operators	4,136	4,896	2.9	3.0	760	18.4	1,385
53-3011 Ambulance drivers and attendants, except emergency medical technicians	17	22	.0	.0	5	26.7	6
53-3020 Bus drivers	654	761	.5	.5	106	16.2	249
53-3021 Bus drivers, transit and intercity	202	233	.1	.1	31	15.2	75
53-3022 Bus drivers, school	453	528	.3	.3	76	16.7	174
53-3030 Driver/sales workers and truck drivers	3,221	3,813	2.2	2.3	592	18.4	1,045
53-3031 Driver/sales workers	431	450	.3	.3	19	4.3	89
53-3032 Truck drivers, heavy and tractor-trailer	1,767	2,104	1.2	1.3	337	19.0	625
53-3033 Truck drivers, light or delivery services	1,022	1,259	.7	.8	237	23.2	331
53-3041 Taxi drivers and chauffeurs	132	161	.1	.1	29	21.7	41
53-3099 All other motor vehicle operators	111	139	.1	.1	28	25.2	44
53-4000 Rail transportation occupations	101	96	.1	.1	-5	-5.3	28
53-4010 Locomotive engineers and operators	33	31	.0	.0	-2	-7.2	10

Table 2. Continued—Employment by occupation, 2002 and projected 2012

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment				Change		Total job openings due to growth and net replacements, 2002-12 ¹
	Number		Percent distribution		Number	Percent	
	2002	2012	2002	2012			
53-4021 Railroad brake, signal, and switch operators	15	12	0.0	0.0	-3	-22.8	2
53-4031 Railroad conductors and yardmasters	38	36	.0	.0	-2	-4.2	10
53-4039 Subway, streetcar operators and all other rail transportation workers ⁵	15	17	.0	.0	2	13.2	7
53-5000 Water transportation occupations	68	70	.0	.0	2	3.4	25
53-5011 Sailors and marine oilers	27	28	.0	.0	1	4.0	11
53-5020 Ship and boat captains and operators	29	30	.0	.0	1	2.4	9
53-5021 Captains, mates, and pilots of water vessels	25	26	.0	.0	1	2.4	8
53-5022 Motorboat operators	4	4	.0	.0	0	2.7	1
53-5031 Ship engineers	8	9	.0	.0	0	4.5	4
53-5099 All other water transportation workers ²	4	4	.0	.0	0	5.6	1
53-6000 Other transportation workers	294	326	.2	.2	32	11.0	135
53-6011 Bridge and lock tenders	4	3	.0	.0	-1	-17.4	1
53-6021 Parking lot attendants	107	128	.1	.1	21	19.2	52
53-6031 Service station attendants	107	111	.1	.1	4	3.3	52
53-6041 Traffic technicians	6	6	.0	.0	1	9.3	2
53-6051 Transportation inspectors	29	32	.0	.0	2	7.7	9
53-6099 All other related transportation workers	40	47	.0	.0	6	15.1	18
53-7000 Material moving occupations	4,722	5,144	3.3	3.1	422	8.9	1,729
53-7011 Conveyor operators and tenders	58	65	.0	.0	7	12.4	24
53-7021 Crane and tower operators	50	55	.0	.0	5	10.8	16
53-7030 Dredge, excavating, and loading machine operators	87	94	.1	.1	7	7.5	31
53-7031 Dredge operators	3	3	.0	.0	0	.3	1
53-7032 Excavating and loading machine and dragline operators	80	87	.1	.1	7	8.9	29
53-7033 Loading machine operators, underground mining	4	3	.0	.0	-1	-14.1	1
53-7041 Hoist and winch operators	9	10	.0	.0	1	13.0	4
53-7051 Industrial truck and tractor operators	594	659	.4	.4	66	11.1	178
53-7060 Laborers and material movers, hand	3,659	3,967	2.5	2.4	308	8.4	1,376
53-7061 Cleaners of vehicles and equipment	344	374	.2	.2	30	8.7	150
53-7062 Laborers and freight, stock, and material movers, hand	2,231	2,378	1.5	1.4	147	6.6	876
53-7063 Machine feeders and offbearers	164	162	.1	.1	-2	-1.4	45
53-7064 Packers and packagers, hand	920	1,052	.6	.6	132	14.4	305
53-7070 Pumping station operators	32	30	.0	.0	-2	-6.0	7
53-7071 Gas compressor and gas pumping station operators	7	7	.0	.0	0	1.0	2
53-7072 Pump operators, except wellhead pumps	13	13	.0	.0	-1	-5.0	3
53-7073 Wellhead pumps	11	10	.0	.0	-1	-11.7	3
53-7081 Refuse and recyclable material collectors	134	158	.1	.1	24	17.6	58
53-7111 Shuttle car operators	3	2	.0	.0	-1	-31.3	1
53-7121 Tank car, truck, and ship loaders	17	17	.0	.0	0	-2.1	5
53-7199 Material moving workers, all other	78	86	.1	.1	8	10.0	29

¹ Total job openings represent the sum of employment increases and net replacements. If employment change is negative, job openings due to growth are zero and total job openings equal net replacements.

² This occupation was created by the OES survey. There is no SOC equivalent.

³ This minor occupation group contains a detailed occupation from another

minor occupation group.

⁴ Information about the detailed residual occupation for this broad occupation is not included.

⁵ This occupation contains two or more detailed SOC occupations.

NOTE: Detail may not equal total or 100 percent due to rounding.

<i>Professional and related occupations subgroup</i>	<i>Percent change</i>	<i>Numeric change (in thousands)</i>
Computer and mathematical	34.8	1,051
Community and social service	26.2	574
Healthcare practitioners and technical	26.0	1,708
Education, training, and library	24.7	2,109
Life, physical, and social science	17.2	212
Arts, design, entertainment, sports, and media	16.5	393
Legal	16.2	190
Architecture and engineering	8.6	222

This group is projected to grow as the school-age population increases; a greater proportion of preschool-age children attend school; a greater proportion of students are provided with special education; and classes become smaller. In addition, rapid growth is expected in the number of adults attending both career and job training schools and self-enrichment classes. More than 3 out of 5 new jobs are projected for government and 1 in 5 for rapidly-growing private educational services.⁴

Healthcare practitioners and technical occupations are projected to add 1.7 million jobs, as the demand for healthcare

services continues to grow rapidly. (See p. 101 for a discussion of reasons for growth.) More than 3 out of 4 new jobs in these occupations are expected to be in the healthcare industry. Relatively few new jobs, and slow growth, are projected in government.⁵ Registered nurses, by far the largest occupation in this group, should account for more than 1 out of 3 new jobs. The number of self-employed workers in this group is projected to decline slightly. Self-employed physicians are expected to decline significantly, as employment shifts into incorporated group practices, while self-employed registered nurses, chiropractors, veterinarians, and speech-language pathologists are projected to increase.

Computer and mathematical occupations are projected to add 1.1 million jobs, and grow the fastest among the eight subgroups. The demand for computer-related occupations should increase, despite the recent downturn, as a result of rapid advances in computer technology and the demand for new computer applications, including those for the Internet and Intranets. Growth will not be as rapid as during the previous decade, however, as the software industry begins to mature and as routine work is increasingly outsourced overseas. More than a third of new jobs will be in computer systems design and related services, and one-fifth will be in the information industry—primarily in software publishers, data processing and related, and Internet-related industries. In both groups, projected growth for these occupations exceeds 50 percent. In addition, in many industries, employment of these workers is projected to grow faster than the average for all occupations. Self-employed computer and mathematical workers are expected to increase 39.8 percent.

Community and social services occupations are projected to add 574,000 jobs. Continued rapid growth should result as the elderly population increases rapidly and as greater efforts are made to provide services for the disabled, the sick, substance abusers, and individuals and families in crisis. Within this occupational group, about 3 out of 5 new jobs are expected to be in the healthcare and social assistance industry and 1 out of 5 in religious organizations. Slow growth and 1 new job in 8 are projected for the large government sector.

Arts, design, entertainment, sports, and media occupations are projected to add 393,000 jobs. About one-fifth of these new jobs is projected for professional, scientific, and technical services, which includes both advertising and computer systems design and related services. One job in seven is projected for the information sector, which includes both motion pictures and publishing industries. About one-sixth of the growth is expected for self-employed workers (a 9.3-percent increase), with largest increases for writers and authors, graphic designers, musicians and singers, and photographers.

Architecture and engineering jobs are projected to grow slowly, adding 222,000 jobs. About 2 out of 5 new jobs in

these occupations are projected for the professional, scientific, and technical services industry. One new job in 6 is projected for the rapidly growing employment services industry, which provides employees to other industries on a contract or fee basis. One new job in 8 is projected for government. In manufacturing industries—which employed a third of these workers in 2002—little change is projected. Engineers, the largest occupational subgroup, is expected to grow 7.3 percent.

Life, physical, and social scientists are projected to add 212,000 jobs. More than a quarter of these jobs are projected for the professional, scientific, and technical services industry which includes scientific consulting services and scientific research and development services. Nearly a quarter of new jobs is projected in government and 1 new job in 7 is projected for rapidly-growing healthcare and social assistance. Self-employed are projected to grow slowly, with most growth among psychologists.

Legal occupations are projected to add 190,000 jobs, with about 7 of 10 projected for the legal services industry, where these occupations should increase rapidly. A quarter of all growth is projected for government. Paralegals and legal assistants are projected to grow the fastest, while lawyers should add the most jobs, 118,000. The number of self-employed workers in this group is projected to decline 7.0 percent, all among lawyers, reflecting the difficulty in establishing new legal practices.

Employment in *service occupations* is projected to increase by 5.3 million, the second largest numerical gain and second highest rate of growth among the major occupational groups. For these occupations, about 3 out of 10 new jobs, and fastest growth, are projected for the healthcare and social assistance industry. A quarter of new jobs are projected for the accommodation and food services industry. The number of self-employed service workers is projected to increase slightly.

Of the five subgroups making up service occupations, food preparation and serving-related occupations was the largest in 2002—with 10.2 million jobs—and is projected to add the most jobs, about 1.6 million. Nevertheless, it has the slowest projected growth. (See table 2.) Nearly 4 of 5 new jobs are projected for the accommodation and food services industry. The following tabulation shows the percent and numeric change for the services occupation subgroups:

	<i>Percent change</i>	<i>Numeric change (in thousands)</i>
Healthcare support	34.5	1,143
Protective service	24.7	769
Personal care and service	20.6	917
Building and grounds cleaning and maintenance	16.4	901
Food preparation and serving related	15.8	1,607

Healthcare support occupations are projected to add 1.1 million jobs, growing the fastest of the services subgroups. (See p. 101 for a discussion of reasons for growth.) Seven out of eight new jobs are projected for the healthcare and social assistance industry. Self-employed healthcare support occupations are projected to grow 16.6 percent, with most growth among massage therapists.

Personal care and service occupations are projected to add 917,000 jobs. Nearly half of new jobs, and the fastest growth (51.6 percent) for these occupations, are projected in the healthcare and social assistance industry. One new job in 6 is projected for arts, entertainment, and recreation, which includes amusement parks and fitness and recreational sports centers. Overall growth is retarded by a 1.6-percent decline among the self-employed, who made up a quarter of all workers in this group in 2002. Declines among self-employed are primarily among first-line supervisors/managers of personal care and service workers (mostly proprietors of small businesses) and childcare workers.

Building and grounds cleaning and maintenance occupations are projected to add 901,000 jobs. Forty-five percent of new jobs, and fast growth, are projected for administrative and support and waste management and remediation services, which includes both services to buildings and dwellings and employment services. About 1 job in 8 is projected for healthcare and social assistance and 1 in 10 each in accommodation and food service and government. A 39,000 decline is projected in the private household sector, where 10 percent of these workers were employed. Only 2.9-percent growth is projected for the self-employed. Among the self-employed, landscaping and groundskeeping workers, as well as first-line supervisors/managers of these workers, are projected to increase, while maids and housekeeping cleaners are expected to decline.

Protective service occupations are projected to add 769,000 jobs. Half of the growth is projected for government, and nearly two-fifths is projected for rapidly growing investigation and security services.

Employment in *sales and related occupations* is projected to increase by 2 million. More than 3 out of 5 new jobs are projected for retail trade, and 1 in 8 for wholesale trade. The self-employed made up 12 percent of this group in 2002. Their employment is projected to decline by 9 percent, with the largest decreases among self-employed first-line supervisors/managers of sales workers (owners of stores or other marketing businesses); retail sales workers; and door-to-door sales workers, news and street vendors, and related workers.

Employment in *office and administrative support occupations* is projected to increase by 1.6 million but grow slowly. More than a quarter of these new jobs are projected for rapidly-growing employment services, which provides employees to other industries on a contract or fee basis. A quarter of

new jobs are projected for the healthcare and social assistance industries, and 1 in 6 for professional, scientific, and technical services. In almost all industries, employment of these workers are expected to grow more slowly than overall employment, due to continued office automation, including that related to electronic business,⁶ and as organizations make greater use of temporary workers employed by the employment services industry. Thirteen out of 30 occupations with the largest projected job declines, including word processors and typists; stock clerks and order fillers; and secretaries, except legal, medical, and executive, are in this group. (See table 5.) However, a number of personal-contact occupations, such as receptionists and information clerks, and bill and account collectors, are less affected by changing technology, and have relatively large projected growth.

Farming, fishing, and forestry occupations are projected to grow by 35,000 jobs. Self-employed are projected to decline 7.6 percent, with most declines among fishers and related fishing workers. (Agricultural managers, including farmers and ranchers, are classified with management, business, and financial occupations.)

The *construction and extraction occupations* major group is projected to add 1.1 million jobs, with 7 out of 10 in the construction industry. One new job in 9, and fastest growth, is projected for the employment services industry. A decline of 10,000 is projected for the mining industry—mostly for extraction workers. Self-employed construction and extraction workers are projected to increase slightly. Self-employed first-line supervisors/managers of construction trades and extraction workers (mostly contractors) are projected to increase, while self-employed carpenters are projected to decline.

Installation, maintenance, and repair occupations are projected to add 776,000 jobs. About 1 new job in 6 is projected for retail trade, which includes motor vehicle and parts dealers; 1 new job in 8 is projected for the construction industry, and 1 in 10, for automotive repair and maintenance. Self-employed workers in this group are projected to remain unchanged. Self-employed heating, air conditioning, and refrigeration mechanics and installers are projected to increase, but others are projected to decline.

Production occupations are expected to add 354,000 jobs. Most growth is projected for rapidly-growing employment services, which provides employees to other industries on a contract or fee basis, while some growth is projected for wholesale and retail trade. Manufacturing, which employed 7 out of 10 production workers in 2002, is projected to lose nearly 200,000 of these workers. Self-employed production workers are projected to decline 8.8 percent, with largest declines among apparel occupations and woodworkers.

Transportation and material moving occupations are projected to add 1.3 million jobs. More than 2 out of 5 new jobs should be in transportation and warehousing, and 1 in 4,

in employment services. Little change is projected for these workers in manufacturing, where 1 out of 6 was employed in 2002. Water transportation occupations are projected to grow slowly, while railroad occupations continue their long-term decline. Nearly half of new jobs should be for truck drivers and driver/sales workers. Little change is projected for self-employed transportation workers.

Detailed occupations

This section focuses in occupations that are the fastest growing, have the largest numeric increases, and have the largest numeric declines. Data on numeric and percent growth for nearly 700 detailed occupations are presented in table 2.

The growth rates for detailed occupations range from an increase of 59 percent for medical assistants to a decline of 56 percent for telephone operators. Numeric growth ranges from 623,000 additional jobs for registered nurses to a decline of 238,000 farmers and ranchers. The 30 occupations with the largest numeric increase (table 4) account for 44 percent of the 21.3-million total increase over the 2002–12 period. The 30 occupations that are projected as the fastest growing (table 3) have growth rates of 35 percent or greater, more than twice the average for all occupations or faster. Six occupations—three health related, two computer, and one education, are included in both groups—personal and home care aides; medical assistants; home health aides; computer software engineers, application; computer systems analysts; and postsecondary teachers.

Table 3. Fastest growing occupations, 2002–12

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment		Change		Quartile rank by 2002 median annual earnings ¹	Most significant source of postsecondary education or training ²
	2002	2012	Number	Percent		
31-9092 Medical assistants	365	579	215	59	3	Moderate-term on-the-job training
15-1081 Network systems and data communications analysts	186	292	106	57	1	Bachelor's degree
29-1071 Physician assistants	63	94	31	49	1	Bachelor's degree
21-1093 Social and human service assistants	305	454	149	49	3	Moderate-term on-the-job training
31-1011 Home health aides	580	859	279	48	4	Short-term on-the-job training
29-2071 Medical records and health information technicians	147	216	69	47	3	Associate degree
31-2022 Physical therapist aides	37	54	17	46	3	Short-term on-the-job training
15-1031 Computer software engineers, applications	394	573	179	46	1	Bachelor's degree
15-1032 Computer software engineers, systems software	281	409	128	45	1	Bachelor's degree
31-2021 Physical therapist assistants	50	73	22	45	2	Associate degree
39-9031 Fitness trainers and aerobics instructors	183	264	81	44	3	Postsecondary vocational award
15-1061 Database administrators	110	159	49	44	1	Bachelor's degree
29-2056 Veterinary technologists and technicians	53	76	23	44	3	Associate degree
47-4041 Hazardous materials removal workers	38	54	16	43	2	Moderate-term on-the-job training
29-2021 Dental hygienists	148	212	64	43	1	Associate degree
31-2012 Occupational therapist aides	8	12	4	43	3	Short-term on-the-job training
31-9091 Dental assistants	266	379	113	42	3	Moderate-term on-the-job training
39-9021 Personal and home care aides	608	854	246	40	4	Short-term on-the-job training
25-3021 Self-enrichment education teachers	200	281	80	40	2	Work experience in a related occupation
15-1051 Computer systems analysts	468	653	184	39	1	Bachelor's degree
31-2011 Occupational therapist assistants	18	26	7	39	2	Associate degree
17-2081 Environmental engineers	47	65	18	38	1	Bachelor's degree
25-1000 Postsecondary teachers	1,581	2,184	603	38	1	Doctoral degree
15-1071 Network and computer systems administrators	251	345	94	37	1	Bachelor's degree
19-4091 Environmental science and protection technicians, including health	28	38	10	37	2	Associate degree
25-2011 Preschool teachers, except special education	424	577	153	36	4	Postsecondary vocational award
11-3021 Computer and information systems managers	284	387	103	36	1	Bachelor's or higher degree, plus work experience
29-1123 Physical therapists	137	185	48	35	1	Master's degree
29-1122 Occupational therapists	82	110	29	35	1	Bachelor's degree
29-1126 Respiratory therapists	86	116	30	35	2	Associate degree

¹ The quartile rankings of Occupational Employment Statistics annual earnings data are presented in the following categories: 1=very high (\$41,820 and over), 2=high (\$27,500 to \$41,780), 3=low (\$19,710 to \$27,380), and 4=very low (up to \$19,600). The rankings were based on quartiles using one-fourth of total employment to define each quartile. Earnings are for wage and salary workers.

² An occupation is placed into one of 11 categories that best describes the education or training needed by most workers to become fully qualified. For more information about the categories, see *Occupational Projections and Training Data*, Bulletin 2572 (Bureau of Labor Statistics, forthcoming).

Table 4. Occupations with the largest job growth, 2002–12

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment		Change		Quartile rank by 2002 median annual earnings ¹	Most significant source of postsecondary education or training ²
	2002	2012	Number	Percent		
29-1111 Registered nurses	2,284	2,908	623	27	1	Associate degree
25-1000 Postsecondary teachers	1,581	2,184	603	38	1	Doctoral degree
41-2031 Retail salespersons	4,076	4,672	596	15	4	Short-term on-the-job training
43-4051 Customer service representatives	1,894	2,354	460	24	3	Moderate-term on-the-job training
35-3021 Combined food preparation and serving workers, including fast food	1,990	2,444	454	23	4	Short-term on-the-job training
41-2011 Cashiers, except gaming	3,432	3,886	454	13	4	Short-term on-the-job training
37-2011 Janitors and cleaners, except maids and housekeeping cleaners	2,267	2,681	414	18	4	Short-term on-the-job training
11-1021 General and operations managers	2,049	2,425	376	18	1	Bachelor's or higher degree, plus work experience
35-3031 Waiters and waitresses	2,097	2,464	367	18	4	Short-term on-the-job training
31-1012 Nursing aides, orderlies, and attendants	1,375	1,718	343	25	3	Short-term on-the-job training
53-3032 Truck drivers, heavy and tractor-trailer	1,767	2,104	337	19	2	Moderate-term on-the-job training
43-4171 Receptionists and information clerks	1,100	1,425	325	29	3	Short-term on-the-job training
33-9032 Security guards	995	1,313	317	32	4	Short-term on-the-job training
43-9061 Office clerks, general	2,991	3,301	310	10	3	Short-term on-the-job training
25-9041 Teacher assistants	1,277	1,571	294	23	4	Short-term on-the-job training
41-4012 Sales representatives, wholesale and manufacturing, except technical and scientific products	1,459	1,738	279	19	1	Moderate-term on-the-job training
31-1011 Home health aides	580	859	279	48	4	Short-term on-the-job training
39-9021 Personal and home care aides	608	854	246	40	4	Short-term on-the-job training
53-3033 Truck drivers, light or delivery services	1,022	1,259	237	23	3	Short-term on-the-job training
37-3011 Landscaping and groundskeeping workers	1,074	1,311	237	22	3	Short-term on-the-job training
25-2021 Elementary school teachers, except special education	1,467	1,690	223	15	2	Bachelor's degree
31-9092 Medical assistants	365	579	215	59	3	Moderate-term on-the-job training
49-9042 Maintenance and repair workers, general	1,266	1,472	207	16	2	Moderate-term on-the-job training
13-2011 Accountants and auditors	1,055	1,261	205	19	1	Bachelor's degree
15-1051 Computer systems analysts	468	653	184	39	1	Bachelor's degree
25-2031 Secondary school teachers, except special and vocational education	988	1,167	180	18	1	Bachelor's degree
15-1031 Computer software engineers, applications	394	573	179	46	1	Bachelor's degree
13-1111 Management analysts	577	753	176	30	1	Bachelor's or higher degree, plus work experience
35-2021 Food preparation workers	850	1,022	172	20	4	Short-term on-the-job training
41-1011 First-line supervisors/managers of retail sales workers	1,798	1,962	163	9	2	Work experience in a related occupation

¹ The quartile rankings of Occupational Employment Statistics annual earnings data are presented in the following categories: 1=very high (\$41,820 and over), 2=high (\$27,500 to \$41,780), 3=low (\$19,710 to \$27,380), and 4=very low (up to \$19,600). The rankings were based on quartiles using one-fourth of total employment to define each quartile. Earnings are for wage and salary workers.

² An occupation is placed into one of 11 categories that best describes the education or training needed by most workers to become fully qualified. For more information about the categories, see *Occupational Projections and Training Data*, Bulletin 2572 (Bureau of Labor Statistics, forthcoming).

Fastest growing occupations. Fifteen of the 30 fastest growing occupations are health related, 7 are computer-related occupations, 3 are teachers, and 3 are environment related. (See table 3.) The others are social and human services assistants, and fitness trainers and aerobics instructors.

The two healthcare groups discussed in the previous section—healthcare practitioners and technical occupations, and healthcare support occupations—have a combined growth rate of 28.8 percent. Rapid growth among health-related occupations reflects an aging population that requires more healthcare, a wealthier population that can afford better healthcare, and advances in medical technology that permit more health problems to be treated more aggressively. How-

ever, job growth among health-related occupations will be limited by efforts to control the rapid growth of spending on healthcare, both by private medical insurers and by government—to restrict the growth of Medicare and Medicaid reimbursements. Even so, continued efforts to control healthcare costs should stimulate some health-related occupations (mostly aides, assistants, and technicians) to grow even more rapidly than overall health employment. They will assume some duties formerly done by more highly paid healthcare workers, such as dentists, physicians, and therapists. These include dental assistants, dental hygienists, physician assistants, physical therapist assistants and aides, and occupational therapist assistants and aides. Some healthcare occu-

pations also will grow more rapidly than overall healthcare employment because they are more likely to provide services to the rapidly growing older population. These include some listed above, such as physical and occupational therapist assistants and aides, as well as physical therapists, occupational therapists, and respiratory therapists. Employment of medical assistants should grow the fastest of any occupation, as they perform an increasing share of administrative and clinical duties in rapidly-growing offices of physicians.

The number of medical records and health information technicians employed also is expected to grow rapidly due to the need to maintain records for an increasing number of medical tests, treatments, and procedures that will undergo greater scrutiny by third-party payers, regulators, courts, and consumers. Employment of home health aides and of personal and home care aides (included in this discussion of health-related occupations but classified as a personal service occupation in table 2) also should be stimulated, as the older population grows and as efforts to contain healthcare costs continue. The older population is more likely to need in-home healthcare, as well as personal care and housekeeping that these workers provide. In addition, patients of all ages are being discharged from hospitals and nursing facilities as early as possible. These aides also provide care to this rapidly growing group of patients. Employment of veterinary technologists and technicians, also classified as a healthcare occupation, is projected to grow rapidly as pet owners spend more on advanced animal care services, such as preventive dental care and surgical procedures.

The increasing demand for computer-related occupations reflects the rapid advances in computer technology and the continuing development of new computer applications, including the Internet and Intranets. Overall, computer specialists, a component of computer and mathematical occupations, is projected to grow 35.8 percent; and computer and information systems managers—classified within management, business, and financial occupations—is projected to grow 36.1 percent. (See table 2.) Two computer-related occupations also are among the occupations with the largest projected numerical job growth. (See table 4).

Employment of environmental engineers; environmental science and protection technicians, including health; and hazardous material removal workers will be stimulated by a need to meet environmental regulations, develop methods of cleaning up existing hazards, and, more generally, respond to increasing public concern for a safe and clean environment.

Employment of postsecondary school teachers is projected to grow as the population of 18- to 24-year-olds increases and as more adults return to college, but the number of tenure-track positions is expected to decline as institutions seek flexibility in dealing with financial matters and changing student interests. Employment of preschool teachers, except

special education, should grow as the proportion of preschool-age children attending school increases, while employment of self-enrichment education teachers is expected to grow as more people embrace lifelong learning, particularly retired baby boomers.

Fitness trainers and aerobics instructors are projected to grow rapidly, due to rising interest in personal training, aerobics classes, and other fitness activities. Social and human service assistants are projected to grow rapidly as employers attempt to control costs in the face of rapid growth in demand for services. Social service agencies are restructuring services and hiring more lower-paid social and human service assistants instead of social workers.

Twenty-one of the 30 fastest growing occupations generally require a postsecondary vocational award or a degree.⁷ This is consistent with growth rates by major group presented in the previous section. The fastest growing group, professional and related, is made up mostly of occupations that generally require this level of education. Thirteen of the fastest growing occupations are concentrated in the first earnings quartile and eight in the third earnings quartile.

Occupations with the largest job growth. Very large occupations with average or even below-average growth rates provide many job openings, as do very fast growing ones with smaller base-year employment. These 30 occupations shown on table 4 are from a much broader range of occupational groups than are the 30 fastest growing. Five are health related, and six are service occupations other than those related to health, including three in food service and two in building and grounds cleaning and maintenance occupations. Four each are in education, training, and library, and in sales and related occupations. Three each are in management, business, and financial, and in office and administrative support occupations; and two each are in computer and mathematical, and in transportation and material moving major occupation groups; one is installation, maintenance, and repair.

Twenty-one of the 30 had 2002 employment of 1 million or more. Of the others, seven have projected growth at least twice the 14.8-percent average for all occupations. The three largest occupations in 2002, each with employment of 3 million or more, are projected to grow more slowly than the total for all occupations.

Registered nurses and nursing aides, orderlies, and attendants—by far the two largest health-related occupations in 2002—are projected to have more numerical growth than any other health-related occupations. Home health aides, medical assistants, and personal and home care aides, all among the 30 fastest growing, are also on this list. The four largest education, training, and library occupations in 2002—postsecondary teachers; elementary school teachers, except special education; teachers assistants; and secondary school

teachers, except special and vocational education—are also among the top 30 occupations. Of the four sales and related occupations: retail salespersons and cashiers, except gaming are projected to grow about as fast as the average for all occupations; while sales representatives, wholesale and manufacturing, except technical and scientific products are projected to grow somewhat faster. First-line supervisors/managers of retail sales workers are projected to grow relatively slowly, with a 9.7-percent decline among the self-employed (owners of stores and other retail businesses).

Management analysts and security guards are projected to grow about twice as fast as the average for all occupations, while accountants and auditors and general and operations managers should grow somewhat faster than the average. The list has three food-service occupations—combined food preparation and serving workers, including fast food and waiters and waitresses, have base-year employment of about 2 million, while

food preparation workers has 850,000. Of the two transportation and material moving occupations: truck drivers, heavy and tractor trailer; and truck drivers, light and delivery services, are projected to grow 19 and 23 percent, respectively. Among building and grounds cleaning and maintenance occupations, janitors and cleaners is projected to have more openings than landscaping and groundskeeping workers, even though the latter is projected to grow faster. Of the three office and administrative support occupations, customer service representatives and receptionists and information clerks are projected to grow rapidly, while office clerks, general, with employment of 3 million, is projected to grow relatively slowly.

Half of the 30 occupations with the largest numerical job growth are in the short-term on-the-job training category, and 9 are in the associate or higher degree category. Of those with the largest numeric increases, 9 are in the first, and 10 are in the fourth earnings quartile.

Table 5. Occupations with the largest job decline, 2002–12

[Numbers in thousands of jobs]

2000 standard occupation classification code and title	Employment		Change		Quartile rank by 2002 median annual earnings ¹	Most significant source of postsecondary education or training ²
	2002	2012	Number	Percent		
11-9012 Farmers and ranchers	1,158	920	-238	-21	3	Long-term on-the-job training
51-6031 Sewing machine operators	315	216	-99	-31	4	Moderate-term on-the-job training
43-9022 Word processors and typists	241	148	-93	-39	3	Moderate-term on-the-job training
43-5081 Stock clerks and order fillers	1,628	1,560	-68	-4	4	Short-term on-the-job training
43-6014 Secretaries, except legal, medical, and executive	1,975	1,918	-57	-3	3	Moderate-term on-the-job training
51-2022 Electrical and electronic equipment assemblers	281	230	-51	-18	3	Short-term on-the-job training
43-9011 Computer operators	182	151	-30	-17	2	Moderate-term on-the-job training
43-2021 Telephone operators	50	22	-28	-56	2	Short-term on-the-job training
43-5053 Postal service mail sorters, processors, and processing machine operators	253	226	-26	-10	2	Short-term on-the-job training
43-4131 Loan interviewers and clerks	170	146	-24	-14	2	Short-term on-the-job training
43-9021 Data entry keyers	392	371	-21	-5	3	Moderate-term on-the-job training
41-9041 Telemarketers	428	406	-21	-5	4	Short-term on-the-job training
51-6063 Textile knitting and weaving machine setters, operators, and tenders	53	33	-20	-39	3	Long-term on-the-job training
51-6064 Textile winding, twisting, and drawing out machine setters, operators, and tenders	66	46	-20	-30	3	Moderate-term on-the-job training
51-2092 Team assemblers	1,174	1,155	-19	-2	3	Moderate-term on-the-job training
43-4151 Order clerks	330	311	-19	-6	3	Short-term on-the-job training
41-9091 Door-to-door sales workers, news and street vendors, and related workers	155	137	-18	-12	3	Short-term on-the-job training
41-3041 Travel agents	118	102	-16	-14	3	Postsecondary vocational award
43-4011 Brokerage clerks	78	67	-11	-15	2	Moderate-term on-the-job training
43-4061 Eligibility interviewers, government programs	94	83	-11	-12	2	Moderate-term on-the-job training
51-5022 Prepress technicians and workers	91	81	-10	-11	2	Long-term on-the-job training
45-3011 Fishers and related fishing workers	36	27	-10	-27	3	Moderate-term on-the-job training
51-6051 Sewers, hand	36	29	-8	-21	4	Short-term on-the-job training
51-6062 Textile cutting machine setters, operators, and tenders	34	26	-8	-23	3	Moderate-term on-the-job training
51-6061 Textile bleaching and dyeing machine operators and tenders	27	19	-8	-29	3	Moderate-term on-the-job training
27-3010 Announcers	76	68	-8	-10	3	Long-term on-the-job training
43-5041 Meter readers, utilities	54	46	-8	-14	2	Short-term on-the-job training
51-8091 Chemical plant and system operators	58	51	-7	-12	1	Long-term on-the-job training
51-9023 Mixing and blending machine setters, operators, and tenders	106	99	-7	-7	2	Moderate-term on-the-job training
43-4041 Credit authorizers, checkers, and clerks	80	74	-5	-7	3	Short-term on-the-job training

¹ The quartile rankings of Occupational Employment Statistics annual earnings data are presented in the following categories: 1=very high (\$41,820 and over), 2=high (\$27,500 to \$41,780), 3=low (\$19,710 to \$27,380), and 4=very low (up to \$19,600). The rankings were based on quartiles using one-fourth of total employment to define each quartile. Earnings are for wage and salary workers.

² An occupation is placed into one of 11 categories that best describes the education or training needed by most workers to become fully qualified. For more information about the categories, see *Occupational Projections and Training Data*, Bulletin 2572 (Bureau of Labor Statistics, forthcoming).

Declining occupations. This section of the article focuses just on those occupations with the largest *numerical* job declines because many detailed occupations with the fastest *rates* of decline are small, with very small employment declines. (See table 5.) Thirteen of the occupations with the largest declines are office and administrative support, 11 are production, and 3 are sales and related. Others are farmers and ranchers, fishers and related fishing workers, and announcers. Changes in technology or business practices will reduce the demand for most of the 30 occupations.

Advances in computer, optical scanning, and voice recognition technologies and growth in electronic business will reduce demand for word processors and typists; stock clerks and order fillers; secretaries, except legal, medical, and executive; telephone operators; postal service mail sorters, processors, and processing machine operators; loan interviewers and clerks; data entry keyers; order clerks; and other office and administrative support occupations.⁸ Advances in technology, such as faster machines and more automated processes, and a shift of assembly and other production activities to other countries will lower employment for electrical and electronic equipment assemblers, team assemblers, chemical plant and systems operators, and mixing and blending machine workers. Prepress technicians and workers also will be affected as electronic publishing and printing-on-demand limit the production of printed material.

Employment in the textile and apparel industries will decline, due to greater imports—as import quotas are lifted—and to improved production technology. This will cause employment declines for sewing machine operators; sewers, hand; and the four textile machine operator occupations listed on table 5. Farmers and ranchers will decline as market pressures cause farm consolidation and as farm technology improves.

Employment of travel agents should decline as more travelers rely on the Internet to book travel. Telemarketers will decrease as more people opt out of receiving calls and as blocking technology improves. Door-to-door sales workers, news and street vendors, and related workers will decline due to competition from stores and on-line outlets. Radio and television station consolidation and improved editing and other off-air technologies are expected to lower employment of announcers. Fishers and related workers are projected to decline as the stock of fish decreases and the technology for finding fish improves.

Thirteen of the 30 occupations with the largest numerical declines were in the moderate-term on-the-job training category, 11 were in the short-term category, and none were in a degree category. Of the largest declines, 9 are in the second earnings quartile, and 16 are in the third earnings quartile.

Total job openings

In addition to occupational employment growth, another aspect of the demand for workers is the need to replace those who leave their jobs to enter other occupations, retire, or leave the labor force for other reasons. Job openings resulting from replacement needs are very important because, in most occupations, they exceed those resulting from employment growth. Even occupations that are projected to decline provide some job openings—for example, farmers and ranchers and aerospace engineers. (See table 2.)

The measure of replacement needs is complex because of the continuous movement of workers into and out of occupations. The replacement needs cited in this article are based on the net change in employment (entrants minus separations) in each age cohort over the projection period. Although this measure understates the total number of job openings in an occupation, it best represents the job openings for new labor force entrants over the projection period.⁹

Over the 2002–12 period, more job openings are expected to result from replacement needs (35 million) than from employment growth in the economy (21.3 million). Service occupations are projected to have the most total job openings, 13 million. The number of job openings due to net replacement needs should exceed the number due to growth in major groups with average or below-average projected growth, as well as those among service occupations, which includes many occupations with high turnover. Food preparation and serving occupations have particularly high replacement needs. However, healthcare support occupations should have only half as many replacement openings as growth openings.

The only major group with fewer openings from replacement needs than from employment growth is professional and related occupations, the fastest growing. Even within this group, however, replacement openings exceed growth openings in three subgroups—architecture and engineering; life, physical, and social scientists; and arts, design, entertainment, sports, and media occupations. □

Notes

¹ Occupational projections presented in this article provide information to those interested in labor market issues. They also provide the background for analyses of future employment opportunities described in the forthcoming 2004–05 *Occupational Outlook Handbook*. The Internet version of this edition of the *Handbook*, which will be accessible at <http://www.bls.gov/oco/>, is expected to be available in late February 2004; the print version of

the 2004–05 *Handbook*, BLS Bulletin 2570, should be available in Spring 2004. Job outlook information in the 2004–05 *Handbook* will use the projections presented in each of the articles in this issue of the *Monthly Labor Review*. For a description of the methodology used to develop employment projections, see BLS *Handbook of Methods*, Bulletin 2490 (Bureau of Labor Statistics, April 1997), pp. 122–29.

² Occupational data reflect the 2000 Standard Occupational Classification system. Base year employment data were developed using the 2002 Occupational Employment Statistics Survey, supplemented with data from the Current Population Survey for self-employed and unpaid family workers.

³ The Bureau has recently shifted to the 2002 North American Industry Classification System (NAICS). Industry data in this article reflect this shift. The NAICS classification will also be used in an article on high technology in a forthcoming issue of the *Review*. The article will update *High-technology employment: a broader view*, which appeared in the June 1999 *Review*.

⁴ Previous occupational projections articles in the *Review* included State and local government education employment and hospital employment in the education services and health services industries, respectively. This article includes them with government—as do industry output and employment projections articles in this and earlier issues of the *Review*.

⁵ *Ibid.*

⁶ Daniel E. Hecker, “Employment impact of electronic business,” *Monthly Labor Review*, May 2001, p. 5.

⁷ Education and training categories listed in tables 3, 4, and 5 show the category that best describes the education or training needed by most workers to become fully qualified. However, for many occupations there are other sources of education and training, as well. Data from the Bureau’s Current Population Survey show that for most occupations, workers have a variety of education levels. More detail on education and training is available in the *Occupational Outlook Handbook*; more on education and training categories is available in *Occupational Projections and Training Data*, Bulletin 2572 (Bureau of Labor Statistics, forthcoming). Also, see footnote 1.

⁸ Hecker, “Employment impact...”

⁹ Net separations do not count all movements of workers out of an occupation, which is a measure termed total separations. For example, an opening caused by a worker who stops working for a period and then gets another job in his or her previous occupation would be counted in the measure of total separations but not net separations. See the discussion on the uses of replacement needs information developed in *Occupational Projections and Training Data*, Bulletin 2572 (Bureau of Labor Statistics, forthcoming).