

Employment outlook: 2000–10

Occupational employment projections to 2010

Occupations requiring a postsecondary vocational award or an academic degree, which accounted for 29 percent of all jobs in 2000, will account for 42 percent of total job growth from 2000 to 2010

Daniel E. Hecker

Total employment is projected to increase by 22.2 million jobs over the 2000–10 period, rising to 167.8 million, according to the latest projections of the Bureau of Labor Statistics. This increase represents about a million more jobs than were added over the previous 10-year period (1990–2000). The projected 15.2-percent increase, however, is less than the 17.1-percent increase of the previous 10-year period.¹ Self employed is projected to grow from 11.5 to 11.7 million, or 1.7 percent.

The economy will continue generating jobs for workers at all levels of education and training, although growth rates are projected to be faster, on average, for occupations generally requiring a postsecondary award (a vocational certificate or other award or an associate or higher degree), than for occupations requiring less education or training. Most new jobs, however, will arise in occupations that require only work-related training (on-the-job training or work experience in a related occupation), even though these occupations are projected to grow more slowly, on average. This reflects the fact that these occupations accounted for about 7 out of 10 jobs in 2000.

This article discusses a number of aspects of the 2000–2010 projections along with related information:

- changes in the structure of employment at the major occupational group level;
- the detailed occupations that are projected to grow fastest as well as those with the largest numerical increases and decreases, along with their current educational or training requirements and earnings;
- 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; and
- the distribution of employment in 2000 and projected 2000–10 job openings by level of education or training.

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—serves to illustrate the importance of viewing job outlook from both perspectives. Employment of physician assistants numbered only 58,000 in 2000, and despite rapid projected growth over the 2000–10 period (53.5 percent), this occupation will add only 31,000

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jobs. In contrast, employment of elementary school teachers, except special education, was 1,532,000 in 2000; while employment is expected to grow by only 13 percent, the number of new jobs over the 2000–10 period will total 202,000—nearly 7 times as many as for physician assistants.

Major occupational groups

Among the major occupational groups, employment in the two largest in 2000—professional and related occupations and service occupations—will increase the fastest and add the most jobs from 2000 to 2010. (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 2000 to 2010. Employment in transportation and material moving occupations is projected to grow as fast as overall employment; management, business, and financial occupations; construction and extraction occupations; sales and related occupations; and installation, maintenance, and repair occupations will grow somewhat more slowly. The three slowest growing groups, all under 10 percent, are office and administrative support occupations; production occupations; and farming, fishing, and forestry 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 2010, 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. Only two groups will increase their relative share of employment—professional and related occupations and service occupations. (See table 1.)

The growth of occupational groups (and occupations) is determined, in large part, by growth in the 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 services industries, while production occupations are projected to grow more slowly than overall employment, largely because nearly 3 out of 4 are in the slow growing manufacturing sector.²

The number of *management, business, and financial workers* is projected to grow by 2.1 million from 2000 to 2010. Nearly a quarter of all job growth will be in business services industries, where these occupations should grow the fastest. About 354,000 new jobs are projected for rapidly growing engineering and management services and 238,000 for finance, insurance, and real estate. Slow growth is projected for government, except State and local education and hospitals, and for manufacturing, with relatively few new jobs in each—60,000 and 104,000, respectively.³ Overall pro-

jected growth among management, business, and financial workers also is affected by the decline of farmers and ranchers by 328,000. (See table 2.) Almost all farmers and ranchers are self-employed, causing self-employment in this major occupational group to decline. However, because of growing self-employment in other management, business, and financial occupations, the overall decline in self-employed is expected to be only 97,000. Excluding farmers and ranchers, management, business, and financial occupations are projected to increase 17.2 percent; the self-employed, excluding farmers and ranchers, is projected to increase 14.6 percent.

Employment in *professional and related occupations* is projected to grow faster and add more workers (7 million) than any other major group. In terms of employment share, professional and related occupations are expected to experience the largest increase, rising from 18.4 percent of total employment in 2000 to 20.1 percent in 2010. Three industry groups—business services; education, public and private; and health services—each will account for about a fifth of all growth. Another fifth is projected for the rest of services, including engineering and management, social, and legal services. Relatively slow growth is projected for government, except State and local education and hospitals, and for manufacturing, with 235,000 and 176,000 new jobs, respectively. Nearly three-quarters of the job growth for professional and related is projected for three subgroups—computer and mathematical occupations; health care practitioners and technical occupations; and education, training, and library occupations. A 10.3-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.

Computer and mathematical occupations are projected to add the most jobs, 2 million, and grow the fastest among the eight professional and related occupations subgroups. (See table 2.) The demand for computer-related occupations will continue to increase as a result of the rapid advances in computer technology and the continuing demand for new computer applications, including those for the Internet and intranets. Three out of five new jobs will be in the rapidly growing business services industries—primarily in computer and data processing services, where employment of computer and mathematical occupations is projected to more than double. In addition, in almost all industries, employment of these workers is projected to grow significantly faster than the average for all occupations. Self-employed workers are expected to increase 51.2 percent.

Health care practitioners and technical occupations are projected to add 1.6 million jobs, as the demand for health

Occupational classification and title changes

These projections reflect the 2000 Standard Occupational Classification system. The titles and content of major occupational groups and many detailed occupations in this article are substantially different than those used in the 1998–2008 projections presented in the November 1999 issue of the *Review*. Some major groups have been renamed, combined, or reorganized. For example, executive, administrative, and managerial occupations has been renamed management, business, and financial occupations. Technicians have become part of professional and related occupations, while two major groups—precision production, craft, and repair; and operators, fabricators, and laborers—have been reorganized into four groups—construction and extraction; installation, maintenance, and repair; production; and transportation and material moving occupations.

Some individual occupations also have been renamed or classified within different major groups. For example, farmers and farm managers, formerly in agriculture, forestry, fishing, and related occupations, now are classified as agricultural managers within management, business, and financial occupations. Aircraft pilots and flight engineers, and air traffic controllers, both formerly in technicians and related support occupations, are classified under transportation and material moving occupations. Teacher assistants, formerly in administrative support, including clerical occupations, now fall under education, training, and library occupations. Landscape,

groundskeeping, nursery, greenhouse, and lawn service occupations, formerly within agriculture, forestry, fishing, and related occupations, now are classified as landscaping and groundskeeping workers within services occupations, under building and grounds cleaning and maintenance occupations.

Many occupations were added to the 2000 soc. Table 2 includes nearly 700 detailed occupations, compared with more than 500 in the previous projections. Some occupations—such as network and computer systems administrators, and meeting and convention planners, are new. Other occupations have been split into more detailed components. For example, engineering, natural science, and computer and information systems managers, in the 1998–2008 projections, comprise three separate management occupations in the 2000–10 projections. Similarly, special education teachers have been split into three components, according to the level of school in which they teach—secondary school; middle school; and preschool, kindergarten, and elementary school.

Because of these changes, occupations and occupational groups are not comparable to those in earlier analyses. The 1998–2008 projections were accompanied by data for the previous 10-year period, 1988–98, showing employment changes for comparable major occupational groups. For these 2000–10 projections, it is not possible to calculate comparable occupational employment changes for the 1990–2000 period.

care services continues to grow rapidly. Nearly 3 out of 4 new jobs for workers in these occupations should be in the health services industry. Growth will be slower in government, except State and local education and hospitals. Registered nurses, by far the largest occupation in this group, should account for more than a third of all new jobs. The number of self-employed workers in this group is projected to decline somewhat. Self-employed physicians, dentists, and optometrists are expected to decline, mainly due to the shift of employment into incorporated group practices, while self-employed chiropractors, registered nurses, and therapists are projected to grow.

Education, training, and library occupations are projected to add 1.6 million jobs. This group is projected to grow, as the school-age population increases, a greater proportion of students are provided with special education, and classes become smaller. Four out of five new jobs are projected for public and private educational services. The fast-

est growth (35.6 percent) and 1 new job in 10 is projected for social services industries.

Community and social services occupations are projected to add 529,000 jobs and have the second fastest growth among professional and related occupations. 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, and individuals and families in crisis. More than 2 out of 5 new jobs should be in the social services industry. About 93,000 new jobs will be in health services. Relatively slow growth is projected for government, except State and local education and hospitals; and in religious organizations, with 85,000 and 58,000 new jobs, respectively.

Arts, design, entertainment, sports, and media occupations are projected to add 493,000 jobs. About one-fifth of new jobs are projected for very rapidly growing business services, which includes advertising and computer and data processing services. One job in eight is projected for amusement

Table 1. Employment by major occupational group, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupational group	Employment				Change	
	Number		Percent distribution		Number	Percent
	2000	2010	2000	2010		
Total, all occupations	145,594	167,754	100.0	100.0	22,160	15.2
Management, business, and financial occupations	15,519	17,635	10.7	10.5	2,115	13.6
Professional and related occupations	26,758	33,709	18.4	20.1	6,952	26.0
Service occupations	26,075	31,163	17.9	18.6	5,088	19.5
Sales and related occupations	15,513	17,365	10.7	10.4	1,852	11.9
Office and administrative support occupations	23,882	26,053	16.4	15.5	2,171	9.1
Farming, fishing, and forestry occupations	1,429	1,480	1.0	.9	51	3.6
Construction and extraction occupations	7,451	8,439	5.1	5.0	989	13.3
Installation, maintenance, and repair occupations	5,820	6,482	4.0	3.9	662	11.4
Production occupations	13,060	13,811	9.0	8.2	750	5.7
Transportation and material moving occupations	10,088	11,618	6.9	6.9	1,530	15.2

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

and recreation services. Nearly a quarter of all growth should be for self-employed workers (a 16.5-percent increase). Self-employed writers and authors, photographers, graphic designers, and musicians and singers should experience the largest increases.

Legal occupations are projected to add 216,000 jobs. Most growth is projected for the legal services industry, where these occupations should increase by 38.4 percent. Nearly a quarter of these workers were employed in government, except State and local education and hospitals in 2000, in which growth should be much slower, creating only 31,000 new jobs. Paralegals and legal assistants are projected to grow the fastest, while lawyers should add the most jobs, 123,000. The number of self-employed workers in this group is projected to decline, all among lawyers, reflecting the difficulty in establishing new legal practices.

Architecture and engineering jobs are projected to increase by 325,000, or 12.5 percent, the slowest growth among the eight professional and related subgroups. Nearly 3 out of 5 new jobs are projected for the rapidly growing engineering and management services industry. In the business services industry, more than 1 new job in 4 is projected, and even faster growth. In manufacturing industries—which employed 37 percent of these workers in 2000—very slow growth is expected, with only 35,000 new jobs. A small decline is projected in government, except State and local education and hospitals. Engineers, the largest occupational subgroup, is expected to grow 9.4 percent.

Life, physical, and social scientists are projected to add 223,000 jobs. Two out of five new jobs are projected for the engineering and management services industry, with 42.2 percent growth. This industry includes research and testing

services. Few new jobs and slow growth are projected in government and manufacturing, where about 2 out of 5 of these workers were employed in 2000. Self-employed psychologists are projected to add 10,000 jobs.

Employment in *service occupations* is projected to increase by 5.1 million, the second largest numerical gain and second highest rate of growth among the major occupational groups. More than half of the projected growth through 2010 is in the rapidly growing services industry, primarily in health, business, and social services. Nearly 30 percent of new jobs will arise in retail trade, primarily in eating and drinking places. The number of self-employed service workers is projected to increase slowly, with most growth projected for personal care and service occupations.

Of the subgroups making up service occupations, food preparation and serving related occupations was the largest in 2000, providing more than 10 million jobs. It also is projected to add the most jobs, about 1.6 million. Nearly 9 of 10 new jobs are projected for retail trade, including eating and drinking places. Employment should grow more slowly in health services, and decline slightly in education.

Healthcare support occupations are projected to add 1.1 million jobs, growing the fastest of the services subgroups. Close to 7 out of 10 new jobs are projected for the health services industry. Approximately 149,000 new jobs are projected for the social services industry, where growth should be fastest, at 47.8 percent.

Protective service occupations are expected to grow rapidly, adding 809,000 jobs. Half of all growth and a 55-percent increase is projected for business services, primarily in miscellaneous business services, which includes detective and guard

services. Two out of 5 new jobs should be in government, but here growth should be much slower.

Personal care and service occupations are projected to add 856,000 jobs. One-third of the new jobs for workers in these jobs, and the fastest growth (55.9 percent) are projected in social services. Fourteen percent of new jobs, and very fast growth are projected for health services. Overall growth is retarded by a 25-percent decline in the private household sector, where 7 percent of these workers were employed in 2000 and by slow growth among the self-employed, who made up a quarter of all workers in this group in 2000. Of the 75,000 projected new jobs among the self-employed, most should be for hairdressers, hairstylists, and cosmetologists and child care workers.

Building and grounds cleaning and maintenance occupations are projected to add 779,000 jobs with the slowest growth of the services occupation subgroups. Almost a quarter of new jobs and 42.5-percent growth is projected for the agriculture, forestry, and fishing services industry, which includes landscape and horticultural services. Another quarter of new jobs is projected for business services (including building cleaning and maintenance services and personnel supply services). Slow growth and relatively few new jobs are projected for education and manufacturing, and little or no growth is projected for the self-employed, who made up 8 percent of this group in 2000. A 25-percent decline is projected in the private household sector, where 10 percent of these workers were employed in 2000. Self-employed first-line supervisors/managers of landscaping, lawn service, and groundskeeping workers are projected to increase 32.3 percent, while self-employed maids and housekeeping cleaners and janitors and cleaners should decline.

Employment in *sales and related occupations* is projected to increase by 1.9 million workers from 2000 to 2010. The below-average job growth for sales workers is attributable, in part, to the increased use of automated sales systems, including those related to electronic business, which decrease the overall demand for labor.⁴ More than half of new sales jobs are projected for the retail trade industry. One of six new jobs is projected for business services, where employment is projected to grow rapidly (42.1 percent). Much slower growth, but 147,000 new jobs for sales workers, is expected in wholesale trade. The number of self-employed sales and related workers, who made up 13 percent of the group in 2000, is projected to drop slightly. Self-employed securities, commodities, and services sales agents; retail estate sales agents; and insurance sales agents are projected to increase, while retail salespersons; door-to-door sales workers, news and street vendors, and related workers; and telemarketers are projected to decline.

Employment in *office and administrative support occupations* is projected to increase by 2.2 million, but grow

slowly. Business services should have close to half of all job growth, with a 39.2-percent increase. This sector includes personnel supply services, which provides temporary employees to other industries on a contract or fee basis, and computer and data processing services. Another 40 percent of new jobs are projected for the rest of the services industries, primarily health, engineering and management, and legal services. In almost all industries, however, employment of these workers is projected to grow more slowly than overall employment, due to continued office automation, including that related to electronic business; and as organizations make greater use of temporary workers employed by the personnel supply industry, raising employment in that sector.⁵ In government, except State and local education and hospitals; manufacturing; and education, which together employed one-quarter of office and administrative support workers in 2000, employment is projected to decline. Many occupations with the largest projected job declines, including tellers and word processors and typists, are in this group. (See table 4.) However, a number of occupations that involve a great deal of contact with people, such as hotel, motel, and resort desk clerks and customer service representatives, are less affected by changing technology, and are projected to grow rapidly.

Farming, fishing, and forestry occupations are projected to grow by 51,000 jobs. The self-employed are projected to decline 9.1 percent. Self-employed first-line supervisors/managers/contractors of farming, fishing, and forestry workers are projected to increase, but fishers and related fishing workers and farm workers are projected to decline.

The *construction and extraction occupations* major group is projected to add 989,000 jobs, a 13.3-percent increase. More than 3 out of 5 new jobs are projected for the construction industry. The fastest growth (58.4 percent) is projected for business services, which should account for almost 10 percent of new jobs. Most of these jobs are in personnel supply services. A decline of 18,000 is projected for the mining industry—mostly for extraction workers. Self-employed construction and extraction workers are projected to increase 9.4 percent. Most new jobs among the self-employed are for first-line supervisors/managers of construction trades and extraction workers and for painters, construction and maintenance.

Installation, maintenance, and repair occupations are projected to add 662,000 jobs. A 25.3-percent growth rate, or approximately 1 new job in 5, is projected for the automotive repair, services, and parking industry. Most growth, however, is projected to occur in a wide range of other industries. Self-employed workers in this group are projected to decline slightly. Self-employed heating, air conditioning, and refrigeration mechanics and installers are projected to increase, but self-employed automotive body repairers and industrial machinery mechanics are projected to decline.

Production occupations are expected to add about 750,000 jobs, a small increase. In 2000, nearly 3 out of 4 production workers were employed in manufacturing, but only about a quarter of new jobs and very slow growth are projected for this industry. More than half of new jobs are projected for the business services industry (most in personnel supply services), with growth at 43.5 percent expected. Self-employed production occupations are projected to decline 13.3 percent. Tailors, dressmakers, and sewers; welders, cutters, solderers, and brazers; and cabinetmakers and bench carpenters should experience the largest declines.

Transportation and material moving occupations are projected to add 1.5 million jobs. More than 1 out of 3 new jobs should be in transportation and public utilities, and nearly 3 out of 10 new jobs, and growth of 50.1 percent, should occur in business services (primarily personnel supply services). Slower growth is projected for wholesale trade and retail trade, 166,000 and 95,000 jobs, respectively. Little change in employment is projected for these workers in manufacturing, where 1 out of 6 were employed in 2000. Water transportation occupations are projected to grow slowly, while railroad occupations will continue their long-term decline. Nearly 2 out of 5 new jobs should be for truck drivers and driver/sales workers. A small increase in self-employed jobs is projected; mostly for taxi drivers and chauffeurs and driver/salesworkers.

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 100 percent for computer software engineers, applications, to a decline of 61 percent for railroad brake, signal, and switch operators. Numeric growth ranges from 673,000 additional jobs for combined food preparation and service occupations, including fast food, to a decline of 328,000 farmers and ranchers. The 30 occupations with the largest numeric increases account for nearly half of the 22.2 million total increase over the 2000–10 period. (See table 4.) The 30 occupations that are projected as the fastest growing have growth rates of 36 percent or greater, more than twice the average for all occupations or faster. (See table 3.) Eight occupations (five computer-related and three health-related) are included in both groups—computer software engineers, application; computer software engineers, systems software; computer support specialists; network and computer systems administrators; computer systems analysts; personal and home care aides; medical assistants; and home health aides. (See table 4.)

Fastest growing occupations. Of the 30 fastest growing occupations, 17 are health-related and 10 are computer-related occupations. (See table 3.) The others are special education teachers, preschool, kindergarten, and elementary school; fitness trainers and aerobics instructors; and social and human services assistants.

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 68.6 percent, and computer and information systems managers, classified within management, business, and financial occupations, is projected to grow 47.9 percent. (See table 2.) Five computer-related occupations also are among the occupations with the largest projected numerical job growth.

The two healthcare groups discussed in the previous section—healthcare practitioners and technical occupations, and healthcare support occupations—have a combined growth rate of 27.9 percent. Rapid growth among health-related occupations reflects an aging population that requires more health care, a wealthier population that can afford better health care, and advances in medical technology that permit an increasing number of health problems to be treated more aggressively. However, job growth among health-related occupations will be limited by efforts to stem the rapid growth of spending on health care, both by private medical insurers and by government—to restrict the growth of Medicare and Medicaid reimbursements. Even so, continued efforts to control health care costs should stimulate some health-related occupations on this list (mostly technicians, aides and assistants) 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, pharmacists, physicians, and therapists. These occupations include physician assistants, physical therapist assistants and aides, occupational therapist assistants and aides, dental assistants, dental hygienists, and pharmacy technicians. Some healthcare occupations 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 and pharmacy technicians, as well as audiologists and speech-language pathologists. Employment of medical assistants should grow rapidly, because they are concentrated in rapidly growing outpatient care facilities.

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 increasing scrutiny by third-party payers, 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 health care, as well as personal care and housekeeping services 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 mental health and substance abuse social workers (classified as a community and social services occupation in table 2) is projected to grow rapidly because of greater efforts to treat drug abusers and people with mental health problems. Employment of veterinary technologists and technicians and veterinary assistants and laboratory animal caretakers, also classified as healthcare occupations, are projected to grow rapidly as pet owners spend more on animal care services, including day and overnight boarding, surgery, and intensive care.

Three other occupations also should be among the fastest growing. Fitness trainers and aerobics instructors are projected to grow rapidly, due to rising interest in personal training and other fitness activities. Special education teachers, preschool, kindergarten, and elementary school are projected to grow rapidly due to the growing number of students requiring special education and due to legislation emphasizing training and employment for individuals with disabilities. Social and human service assistants also are projected to grow rapidly as employers attempt to control costs. Social service agencies are restructuring services and hiring more lower-paid social and human service assistants instead of social workers, making these assistants the fastest growing community and social services occupation.

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 are from a much broader range of occupational groups than are the 30 fastest growing. Five are computer-related and five are health-related. Four each are in education, training, and library and in transportation and material moving major occupation groups, three fall under the category of office and administrative support, and two each in sales and related, and in management, business, and financial occupations. Five are service occupations other than those related to health, including two in building and grounds cleaning and maintenance

occupations and two in food service.

Twenty on the list had employment of at least 1 million in 2000. Of the 10 that had employment of less than a million, all except accountants and landscaping and groundskeeping workers have projected growth at least three times as fast as the 15.2-percent average for all occupations. Five are computer-related occupations; the largest is computer support specialists, with 2000 employment of 505,000. (Computer programmers, the largest computer occupation in 2000, but with only 16 percent growth, is not on the list.) Six occupations on the list, all with employment of 1.5 million or more, are projected to grow more slowly than 15.2 percent.

Registered nurses and nursing aides, orderlies, and attendants, by far the two largest health-related occupations in 2000, also 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 2000—postsecondary teachers; teacher assistants; elementary school teachers, except special education; and secondary school teachers, except special and vocational education—are projected to have large numbers of job openings. Elementary teachers, except special education is the only one with below average employment growth.

Of the four transportation and material moving occupations, laborers and freight, stock, and material movers, hand is the only one with below average employment growth. Packers and packagers; truck drivers, heavy and tractor trailer; and truck drivers, light and delivery services are projected to grow approximately 20 percent. Both sales and related occupations—retail salespersons and cashiers, except gaming—are projected to have below average growth, but in 2000, each one had employment of more than 3 million. The two food service occupations—combined food preparation and serving workers, including fast food and waiters and waitresses—have large base-year employment and faster than average growth rates.

General and operations managers should grow at about the same rate as the total for all occupations, while security guards is projected to grow 35.2 percent, making it the fastest growing occupation of the 30 on this list that is not computer or health related. Among building and grounds cleaning and maintenance occupations, janitors and cleaners is projected to have more openings than landscaping and groundskeeping workers, although growth of janitors is much slower than landscaping and groundskeeping workers, because employment in 2000 was much larger. Of the three office and administrative support occupations on the list, customer service representatives and receptionists and information clerks are projected to grow rapidly, while office

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Table 2. Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Total, all occupations	145,594	167,754	100.0	100.0	22,160	15.2	57,932
Management, business, and financial occupations	15,519	17,635	10.7	10.5	2,115	13.6	5,109
Management occupations	10,564	11,834	7.3	7.1	1,270	12.0	3,330
Administrative services managers	362	436	.2	.3	74	20.4	133
Advertising, marketing, promotions, public relations, and sales managers	707	936	.5	.6	229	32.4	331
Advertising and promotions managers	100	135	.1	.1	34	34.3	49
Marketing and sales managers	533	701	.4	.4	168	31.5	244
Marketing managers	190	246	.1	.1	55	29.1	83
Sales managers	343	455	.2	.3	112	32.8	162
Public relations managers	74	101	.1	.1	27	36.3	38
Agricultural managers	1,462	1,144	1.0	.7	-318	-21.7	103
Farm, ranch, and other agricultural managers	169	179	.1	.1	10	6.0	30
Farmers and ranchers	1,294	965	.9	.6	-328	-25.4	74
Chief executives	547	641	.4	.4	94	17.2	266
Computer and information systems managers	313	463	.2	.3	150	47.9	203
Construction managers	308	358	.2	.2	50	16.3	100
Education administrators	453	513	.3	.3	61	13.4	178
Engineering managers	282	305	.2	.2	23	8.0	69
Financial managers	658	780	.5	.5	122	18.5	223
Food service managers	465	535	.3	.3	70	15.0	125
Funeral directors	32	32	.0	.0	1	3.0	6
Gaming managers	4	5	.0	.0	1	30.0	2
General and operations managers	2,398	2,761	1.6	1.6	363	15.2	767
Human resources managers	219	246	.2	.1	28	12.7	66
Industrial production managers	255	271	.2	.2	16	6.2	57
Legislators	54	61	.0	.0	7	12.7	24
Lodging managers	68	75	.0	.0	6	9.3	14
Medical and health services managers	250	330	.2	.2	81	32.3	123
Natural sciences managers	42	45	.0	.0	3	7.6	11
Postmasters and mail superintendents	25	26	.0	.0	1	2.5	5
Property, real estate, and community association managers	270	331	.2	.2	61	22.7	105
Purchasing managers	132	125	.1	.1	-7	-5.5	41
Social and community service managers	128	160	.1	.1	32	24.8	56
Transportation, storage, and distribution managers	149	179	.1	.1	30	20.2	55
All other managers	981	1,074	.7	.6	93	9.5	267
Business and financial operations occupations	4,956	5,801	3.4	3.5	845	17.1	1,779
Business operations specialists	2,841	3,320	2.0	2.0	479	16.8	1,053
Agents and business managers of artists, performers, and athletes	17	22	.0	.0	5	27.9	8
Buyers and purchasing agents	404	424	.3	.3	20	4.8	128
Purchasing agents and buyers, farm products	20	23	.0	.0	3	16.8	7
Purchasing agents, except wholesale, retail, and farm products	237	266	.2	.2	29	12.3	76
Wholesale and retail buyers, except farm products	148	135	.1	.1	-13	-8.7	45
Claims adjusters, appraisers, examiners, and investigators	207	238	.1	.1	31	15.0	54
Claims adjusters, examiners, and investigators	194	223	.1	.1	29	15.1	51
Insurance appraisers, auto damage	13	15	.0	.0	2	14.3	3
Compliance officers, except agriculture, construction, health and safety, and transportation	140	152	.1	.1	12	8.9	48
Cost estimators	211	246	.1	.1	35	16.5	81
Emergency management specialists	10	12	.0	.0	2	18.1	5
Human resources, training, and labor relations specialists	490	578	.3	.3	88	18.0	183
Compensation, benefits, and job analysis specialists	87	100	.1	.1	14	15.7	30
Employment, recruitment, and placement specialists	199	234	.1	.1	35	17.6	73
Training and development specialists	204	244	.1	.1	40	19.4	79
Management analysts	501	646	.3	.4	145	28.9	189
Meeting and convention planners	34	42	.0	.0	8	23.3	14
All other business operations specialists	827	960	.6	.6	133	16.1	343
Financial specialists	2,115	2,481	1.5	1.5	367	17.3	726
Accountants and auditors	976	1,157	.7	.7	181	18.5	326
Appraisers and assessors of real estate	57	67	.0	.0	10	18.0	26
Budget analysts	70	80	.0	.0	10	14.6	24
Credit analysts	60	70	.0	.0	10	16.0	22
Financial analysts	145	182	.1	.1	37	25.5	57
Financial examiners	25	27	.0	.0	3	10.2	7
Insurance underwriters	107	109	.1	.1	2	2.0	18
Loan counselors and officers	265	281	.2	.2	16	6.1	69
Loan counselors	29	33	.0	.0	5	16.0	10

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Loan officers	236	248	0.2	0.1	12	4.9	59
Personal financial advisors	94	126	.1	.1	32	34.0	43
Tax examiners, collectors, and revenue agents	79	86	.1	.1	7	8.3	28
Tax preparers	69	81	.0	.0	12	17.4	26
All other financial specialists	169	216	.1	.1	47	28.0	81
Professional and related occupations	26,758	33,709	18.4	20.1	6,952	26.0	12,160
Computer and mathematical occupations	2,993	4,988	2.1	3.0	1,996	66.7	2,285
Computer specialists	2,903	4,894	2.0	2.9	1,991	68.6	2,259
Computer programmers	585	680	.4	.4	95	16.2	217
Computer scientists and systems analysts	459	729	.3	.4	269	58.6	309
Computer and information scientists, research	28	39	.0	.0	11	40.3	14
Computer systems analysts	431	689	.3	.4	258	59.7	296
Computer software engineers	697	1,361	.5	.8	664	95.4	711
Computer software engineers, applications	380	760	.3	.5	380	100.0	406
Computer software engineers, systems software	317	601	.2	.4	284	89.7	306
Computer support specialists	506	996	.3	.6	490	97.0	512
Database administrators	106	176	.1	.1	70	65.9	74
Network and computer systems administrators	229	416	.2	.2	187	81.9	197
Network systems and data communications analysts	119	211	.1	.1	92	77.5	97
All other computer specialists	203	326	.1	.2	123	60.7	141
Mathematical science occupations	89	95	.1	.1	5	5.7	26
Mathematical scientists and technicians	85	90	.1	.1	5	5.9	25
Actuaries	14	15	.0	.0	1	5.4	3
Mathematicians	4	4	.0	.0	0	-1.9	0
Operations research analysts	47	51	.0	.0	4	8.0	19
Statisticians	19	20	.0	.0	0	2.3	3
Miscellaneous mathematical science occupations	5	5	.0	.0	0	2.7	1
Architecture and engineering occupations	2,605	2,930	1.8	1.7	325	12.5	868
Architects, surveyors, and cartographers	196	229	.1	.1	33	17.1	61
Architects, except naval	124	150	.1	.1	26	20.7	33
Architects, except landscape and naval	102	121	.1	.1	19	18.5	25
Landscape architects	22	29	.0	.0	7	31.1	8
Surveyors, cartographers, and photogrammetrists	65	71	.0	.0	6	9.2	26
Cartographers and photogrammetrists	7	8	.0	.0	1	18.5	3
Surveyors	58	63	.0	.0	5	8.1	22
All other architects, surveyors, and cartographers	6	8	.0	.0	2	28.5	2
Engineers	1,465	1,603	1.0	1.0	138	9.4	432
Aerospace engineers	50	57	.0	.0	7	13.9	22
Agricultural engineers	2	3	.0	.0	0	14.8	1
Biomedical engineers	7	9	.0	.0	2	31.4	4
Chemical engineers	33	34	.0	.0	1	4.1	7
Civil engineers	232	256	.2	.2	24	10.2	60
Computer hardware engineers	60	75	.0	.0	15	24.9	23
Electrical and electronics engineers	288	319	.2	.2	31	10.9	84
Electrical engineers	157	175	.1	.1	18	11.3	47
Electronics engineers, except computer	130	144	.1	.1	14	10.4	37
Environmental engineers	52	66	.0	.0	14	26.0	24
Industrial engineers, including health and safety	198	210	.1	.1	12	5.9	45
Health and safety engineers, except mining safety engineers and inspectors	44	49	.0	.0	5	10.9	12
Industrial engineers	154	161	.1	.1	7	4.5	33
Marine engineers and naval architects	5	5	.0	.0	0	2.1	1
Materials engineers	33	35	.0	.0	2	5.3	9
Mechanical engineers	221	251	.2	.1	29	13.1	94
Mining and geological engineers, including mining safety engineers	6	6	.0	.0	0	-1.3	1
Nuclear engineers	14	14	.0	.0	0	1.8	3
Petroleum engineers	9	8	.0	.0	-1	-7.2	2
All other engineers	253	254	.2	.2	1	.4	51
Drafters, engineering, and mapping technicians	944	1,098	.6	.7	154	16.3	375
Drafters	213	255	.1	.2	42	19.5	106
Architectural and civil drafters	102	123	.1	.1	21	20.8	52
Electrical and electronics drafters	41	51	.0	.0	10	23.3	22
Mechanical drafters	70	81	.0	.0	11	15.4	32
Engineering technicians, except drafters	519	582	.4	.3	62	12.0	167
Aerospace engineering and operations technicians	21	22	.0	.0	1	5.6	5
Civil engineering technicians	94	105	.1	.1	11	11.9	30
Electrical and electronic engineering technicians	233	258	.2	.2	25	10.8	72

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Electro-mechanical technicians	43	50	0.0	0.0	6	14.5	15
Environmental engineering technicians	18	24	.0	.0	5	29.1	9
Industrial engineering technicians	52	57	.0	.0	5	10.1	16
Mechanical engineering technicians	58	66	.0	.0	8	13.9	20
Surveying and mapping technicians	55	70	.0	.0	14	25.3	32
All other drafters, engineering, and mapping technicians	156	192	.1	.1	36	23.2	70
Life, physical, and social science occupations	1,164	1,386	.8	.8	223	19.1	559
Life scientists	184	218	.1	.1	33	18.1	93
Agricultural and food scientists	17	19	.0	.0	2	8.8	7
Biological scientists	73	88	.1	.1	15	21.0	42
Conservation scientists and foresters	29	31	.0	.0	2	7.7	12
Conservation scientists	16	18	.0	.0	1	8.3	7
Foresters	12	13	.0	.0	1	7.0	5
Medical scientists	37	47	.0	.0	10	26.5	18
All other life scientists	28	33	.0	.0	4	15.9	15
Physical scientists	239	283	.2	.2	44	18.3	124
Astronomers and physicists	10	11	.0	.0	1	10.5	4
Atmospheric and space scientists	7	8	.0	.0	1	17.1	3
Chemists and materials scientists	92	110	.1	.1	18	19.2	47
Chemists	84	100	.1	.1	16	19.1	43
Materials scientists	8	9	.0	.0	2	19.8	4
Environmental scientists and geoscientists	97	118	.1	.1	21	21.5	52
Environmental scientists and specialists, including health	64	78	.0	.0	14	22.3	35
Geoscientists, except hydrologists and geographers	25	30	.0	.0	5	18.1	13
Hydrologists	8	10	.0	.0	2	25.7	5
All other physical scientists	33	36	.0	.0	3	9.4	17
Social scientists and related occupations	410	492	.3	.3	82	20.1	178
Economists	22	26	.0	.0	4	18.5	9
Market and survey researchers	113	142	.1	.1	30	26.4	55
Market research analysts	90	112	.1	.1	22	24.4	42
Survey researchers	23	30	.0	.0	8	34.5	13
Psychologists	182	214	.1	.1	33	18.1	75
Social scientists, other	15	17	.0	.0	3	17.2	6
Urban and regional planners	30	35	.0	.0	5	16.4	12
All other social scientists and related workers	49	58	.0	.0	8	17.1	20
Life, physical, and social science technicians	330	393	.2	.2	63	19.0	164
Agricultural and food science technicians	18	20	.0	.0	3	15.2	7
Biological technicians	41	52	.0	.0	11	26.4	21
Chemical technicians	73	84	.1	.1	11	15.0	28
Geological and petroleum technicians	10	11	.0	.0	1	6.5	3
Nuclear technicians	3	4	.0	.0	1	20.7	2
Other life, physical, and social science technicians	184	221	.1	.1	37	20.0	104
Environmental science and protection technicians, including health	27	34	.0	.0	7	24.5	17
Forensic science technicians	6	7	.0	.0	1	13.0	3
Forest and conservation technicians	18	19	.0	.0	1	3.2	7
All other life, physical, and social science technicians	133	161	.1	.1	29	21.7	77
Community and social services occupations	1,869	2,398	1.3	1.4	529	28.3	846
Counselors	465	585	.3	.3	120	25.8	215
Educational, vocational, and school counselors	205	257	.1	.2	52	25.3	94
Marriage and family therapists	21	27	.0	.0	6	29.9	11
Mental health counselors	67	82	.0	.0	15	21.7	28
Rehabilitation counselors	110	136	.1	.1	26	23.6	49
Substance abuse and behavioral disorder counselors	61	82	.0	.0	21	35.0	34
Miscellaneous community and social service specialists	398	575	.3	.3	177	44.5	236
Health educators	43	53	.0	.0	10	23.5	17
Probation officers and correctional treatment specialists	84	105	.1	.1	20	23.8	33
Social and human service assistants	271	418	.2	.2	147	54.2	187
Religious workers	293	338	.2	.2	45	15.4	112
Clergy	171	197	.1	.1	26	15.0	73
Directors, religious activities and education	121	141	.1	.1	19	15.9	40
Social workers	468	609	.3	.4	141	30.1	193
Child, family, and school social workers	281	357	.2	.2	76	26.9	107
Medical and public health social workers	104	136	.1	.1	33	31.6	44
Mental health and substance abuse social workers	83	116	.1	.1	33	39.1	42
All other counselors, social, and religious workers	244	290	.2	.2	46	18.8	89
Legal occupations	1,119	1,335	.8	.8	216	19.3	304
Judges, magistrates, and other judicial workers	43	44	.0	.0	2	3.8	14
Administrative law judges, adjudicators, and hearing officers	14	14	.0	.0	0	1.1	4
Arbitrators, mediators, and conciliators	4	6	.0	.0	1	27.2	2

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Judges, magistrate judges, and magistrates	24	24	0.0	0.0	0	1.1	7
Lawyers	681	803	.5	.5	123	18.0	168
Paralegals and legal assistants	188	251	.1	.1	62	33.2	74
Miscellaneous legal support workers	98	106	.1	.1	8	7.7	17
Court reporters	18	21	.0	.0	3	16.2	5
Law clerks	31	35	.0	.0	4	13.2	7
Title examiners, abstractors, and searchers	48	49	.0	.0	0	1.0	5
All other legal and related workers	109	131	.1	.1	22	20.2	32
Education, training, and library occupations	8,260	9,831	5.7	5.9	1,571	19.0	3,356
Postsecondary teachers	1,344	1,659	.9	1.0	315	23.5	682
Primary, secondary, and special education teachers	4,284	4,995	2.9	3.0	711	16.6	1,663
Preschool and kindergarten teachers	597	707	.4	.4	110	18.4	184
Preschool teachers, except special education	423	507	.3	.3	85	20.0	137
Kindergarten teachers, except special education	175	200	.1	.1	25	14.5	47
Elementary and middle school teachers	2,122	2,381	1.5	1.4	260	12.2	742
Elementary school teachers, except special education	1,532	1,734	1.1	1.0	202	13.2	551
Middle school teachers, except special and vocational education	570	625	.4	.4	55	9.6	184
Vocational education teachers, middle school	20	22	.0	.0	3	13.1	7
Secondary school teachers	1,113	1,314	.8	.8	201	18.1	540
Secondary school teachers, except special and vocational education	1,004	1,190	.7	.7	187	18.6	492
Vocational education teachers, secondary school	109	123	.1	.1	15	13.4	48
Special education teachers	453	592	.3	.4	140	30.9	197
Special education teachers, preschool, kindergarten, and elementary school	234	320	.2	.2	86	36.8	116
Special education teachers, middle school	96	119	.1	.1	23	24.4	35
Special education teachers, secondary school	123	153	.1	.1	30	24.6	46
Other teachers and instructors	901	1,076	.6	.6	175	19.4	266
Adult literacy, remedial education, and GED teachers and instructors	67	80	.0	.0	13	19.4	20
Self-enrichment education teachers	186	220	.1	.1	34	18.5	53
All other teachers, primary, secondary, and adult	648	776	.4	.5	128	19.7	193
Library, museum, training, and other education occupations	1,731	2,101	1.2	1.3	370	21.4	745
Archivists, curators, and museum technicians	21	24	.0	.0	3	11.9	7
Librarians	149	160	.1	.1	10	7.0	41
Library technicians	109	130	.1	.1	21	19.5	70
Teacher assistants	1,262	1,562	.9	.9	301	23.9	565
Other education, training, library, and museum workers	190	225	.1	.1	35	18.2	62
Audio-visual collections specialists	11	13	.0	.0	2	13.6	3
Farm and home management advisors	11	11	.0	.0	1	6.1	2
Instructional coordinators	81	101	.1	.1	20	25.0	32
All other library, museum, training, and other education workers	87	99	.1	.1	12	14.0	25
Arts, design, entertainment, sports, and media occupations	2,371	2,864	1.6	1.7	493	20.8	947
Art and design occupations	750	903	.5	.5	153	20.3	251
Artists and related workers	147	176	.1	.1	29	20.0	60
Art directors	47	56	.0	.0	10	21.1	19
Fine artists, including painters, sculptors, and illustrators	31	35	.0	.0	4	13.4	10
Multi-media artists and animators	69	85	.0	.1	15	22.2	30
Designers	492	596	.3	.4	104	21.2	154
Commercial and industrial designers	50	62	.0	.0	12	23.8	17
Fashion designers	16	19	.0	.0	3	20.3	5
Floral designers	102	118	.1	.1	15	14.9	26
Graphic designers	190	241	.1	.1	51	26.7	70
Interior designers	46	54	.0	.0	8	17.4	13
Merchandise displayers and window trimmers	76	88	.1	.1	12	15.9	20
Set and exhibit designers	12	15	.0	.0	3	27.0	4
All other art and design workers	112	130	.1	.1	19	16.8	37
Entertainers and performers, sports and related occupations	626	763	.4	.5	136	21.8	257
Actors, producers, and directors	158	200	.1	.1	42	26.9	73
Actors	99	126	.1	.1	26	26.7	46
Producers and directors	58	74	.0	.0	16	27.1	27
Athletes, coaches, umpires, and related workers	129	153	.1	.1	24	18.7	50
Athletes and sports competitors	18	22	.0	.0	4	22.5	7
Coaches and scouts	99	117	.1	.1	17	17.6	37
Umpires, referees, and other sports officials	11	14	.0	.0	3	22.7	5
Dancers and choreographers	26	30	.0	.0	4	16.3	9
Dancers	15	18	.0	.0	3	17.3	6
Choreographers	11	12	.0	.0	2	14.9	4

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Musicians, singers, and related workers	240	285	0.2	0.2	45	18.7	90
Music directors and composers	50	56	.0	.0	6	13.1	16
Musicians and singers	191	229	.1	.1	38	20.1	74
All other entertainers and performers, sports and related workers	74	95	.1	.1	21	28.3	35
Media and communication occupations	703	856	.5	.5	153	21.8	315
Announcers	71	68	.0	.0	-4	-5.5	11
News analysts, reporters and correspondents	78	80	.1	.0	2	2.8	27
Public relations specialists	137	186	.1	.1	49	36.1	73
Writers and editors	305	385	.2	.2	80	26.3	158
Editors	122	149	.1	.1	27	22.6	67
Technical writers	57	74	.0	.0	17	29.6	34
Writers and authors	126	162	.1	.1	36	28.4	57
Miscellaneous media and communications workers	112	137	.1	.1	25	22.4	47
Interpreters and translators	22	27	.0	.0	5	23.8	9
All other media and communication workers	90	110	.1	.1	20	22.1	37
Media and communication equipment occupations	291	342	.2	.2	51	17.5	124
Broadcast and sound engineering technicians and radio operators	87	99	.1	.1	12	14.0	38
Audio and video equipment technicians	37	43	.0	.0	6	16.8	17
Broadcast technicians	36	40	.0	.0	4	10.2	14
Radio operators	3	3	.0	.0	0	6.2	1
Sound engineering technicians	11	13	.0	.0	2	19.0	5
Photographers	131	153	.1	.1	22	17.0	48
Television, video, and motion picture camera operators and editors	43	53	.0	.0	11	25.8	19
Camera operators, television, video, and motion picture	27	33	.0	.0	7	25.8	12
Film and video editors	16	20	.0	.0	4	25.8	7
All other media and communication equipment workers	31	36	.0	.0	6	18.1	19
Healthcare practitioners and technical occupations	6,379	7,978	4.4	4.8	1,599	25.1	2,995
Health diagnosing and treating practitioners	3,921	4,888	2.7	2.9	966	24.6	1,773
Chiropractors	50	62	.0	.0	12	23.4	21
Dentists	152	161	.1	.1	9	5.7	43
Dietitians and nutritionists	49	56	.0	.0	7	15.2	21
Optometrists	31	37	.0	.0	6	18.7	12
Pharmacists	217	270	.1	.2	53	24.3	118
Physicians and surgeons	598	705	.4	.4	107	17.9	196
Physician assistants	58	89	.0	.1	31	53.5	43
Podiatrists	18	20	.0	.0	3	14.2	6
Registered nurses	2,194	2,755	1.5	1.6	561	25.6	1,004
Therapists	439	584	.3	.3	145	33.2	255
Audiologists	13	19	.0	.0	6	44.7	9
Occupational therapists	78	105	.1	.1	27	33.9	46
Physical therapists	132	176	.1	.1	44	33.3	77
Radiation therapists	16	19	.0	.0	4	22.8	7
Recreational therapists	29	32	.0	.0	2	8.6	10
Respiratory therapists	83	112	.1	.1	29	34.8	50
Speech-language pathologists	88	122	.1	.1	34	39.2	57
Veterinarians	59	77	.0	.0	19	31.8	29
All other health diagnosing and treating practitioners	57	71	.0	.0	14	24.8	26
Other health professionals and technicians	2,457	3,090	1.7	1.8	633	25.7	1,222
Clinical laboratory technologists and technicians	295	348	.2	.2	53	18.0	122
Medical and clinical laboratory technologists	148	174	.1	.1	25	17.0	60
Medical and clinical laboratory technicians	147	175	.1	.1	28	19.0	62
Dental hygienists	147	201	.1	.1	54	37.1	76
Diagnostic related technologists and technicians	257	322	.2	.2	65	25.2	121
Cardiovascular technologists and technicians	39	52	.0	.0	14	34.9	22
Diagnostic medical sonographers	33	41	.0	.0	9	26.1	16
Nuclear medicine technologists	18	22	.0	.0	4	22.4	8
Radiologic technologists and technicians	167	206	.1	.1	39	23.1	75
Emergency medical technicians and paramedics	172	226	.1	.1	54	31.3	97
Health diagnosing and treating practitioner support technicians	417	551	.3	.3	134	32.2	242
Dietetic technicians	26	33	.0	.0	7	27.6	14
Pharmacy technicians	190	259	.1	.2	69	36.4	118
Psychiatric technicians	54	59	.0	.0	5	8.5	19
Respiratory therapy technicians	27	36	.0	.0	9	34.6	16
Surgical technologists	71	96	.0	.1	25	34.7	43
Veterinary technologists and technicians	49	69	.0	.0	19	39.3	32
Licensed practical and licensed vocational nurses	700	842	.5	.5	142	20.3	322
Medical records and health information technicians	136	202	.1	.1	66	49.0	97

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Opticians, dispensing	68	81	0.0	0.0	13	19.0	25
Other health practitioners and technical workers	266	317	.2	.2	50	19.0	119
Athletic trainers	15	17	.0	.0	3	18.5	6
Occupational health and safety specialists and technicians	35	40	.0	.0	5	15.0	14
Orthotists and prosthetists	5	6	.0	.0	1	17.3	2
All other health practitioners and technical workers	212	253	.1	.2	42	19.7	96
Service occupations	26,075	31,163	17.9	18.6	5,088	19.5	13,505
Healthcare support occupations	3,196	4,264	2.2	2.5	1,067	33.4	1,612
Dental assistants	247	339	.2	.2	92	37.2	136
Massage therapists	34	45	.0	.0	10	30.4	18
Nursing, psychiatric, and home health aides	2,053	2,676	1.4	1.6	623	30.4	885
Home health aides	615	907	.4	.5	291	47.3	370
Nursing aides, orderlies, and attendants	1,373	1,697	.9	1.0	323	23.5	498
Psychiatric aides	65	73	.0	.0	9	13.2	17
Occupational therapist assistants and aides	25	35	.0	.0	10	41.5	18
Occupational therapist assistants	17	23	.0	.0	7	39.7	11
Occupational therapist aides	9	12	.0	.0	4	45.2	6
Physical therapist assistants and aides	80	116	.1	.1	36	45.5	60
Physical therapist assistants	44	64	.0	.0	20	44.8	33
Physical therapist aides	36	53	.0	.0	17	46.3	27
Medical assistants and other healthcare support occupations	757	1,052	.5	.6	295	39.0	496
Medical assistants	329	516	.2	.3	187	57.0	274
Medical equipment preparers	33	39	.0	.0	6	18.2	15
Medical transcriptionists	102	132	.1	.1	30	29.8	57
Pharmacy aides	57	68	.0	.0	11	19.5	26
Veterinary assistants and laboratory animal caretakers	55	77	.0	.0	22	39.8	37
All other healthcare support workers	181	219	.1	.1	38	21.1	86
Protective service occupations	3,087	3,896	2.1	2.3	809	26.2	1,677
First-line supervisors/managers, protective service workers	273	319	.2	.2	46	16.7	122
First-line supervisors/managers of correctional officers	30	38	.0	.0	9	29.6	14
First-line supervisors/managers of fire fighting and prevention workers	62	66	.0	.0	4	7.2	24
First-line supervisors/managers of police and detectives	121	136	.1	.1	16	13.1	48
First-line supervisors/managers of protective service workers, except police, fire and corrections	61	78	.0	.0	17	27.1	35
Fire fighters	258	280	.2	.2	23	8.9	90
Fire inspectors	13	15	.0	.0	2	15.1	5
Law enforcement workers	1,150	1,445	.8	.9	295	25.6	551
Bailiffs, correctional officers, and jailers	427	563	.3	.3	136	31.8	240
Bailiffs	14	15	.0	.0	2	12.5	5
Correctional officers and jailers	414	548	.3	.3	134	32.4	235
Detectives and criminal investigators	93	108	.1	.1	15	16.4	36
Fish and game wardens	8	9	.0	.0	1	11.4	2
Parking enforcement workers	9	10	.0	.0	1	13.2	2
Police and sheriff's patrol officers	607	748	.4	.4	141	23.2	269
Transit and railroad police	6	7	.0	.0	1	16.5	2
Other protective service workers	1,394	1,837	1.0	1.1	443	31.8	910
Animal control workers	9	10	.0	.0	1	12.8	8
Crossing guards	74	81	.1	.0	6	8.7	32
Private detectives and investigators	39	48	.0	.0	9	23.5	20
Security guards and gaming surveillance officers	1,117	1,509	.8	.9	393	35.2	698
Gaming surveillance officers and gaming investigators	11	13	.0	.0	2	16.8	5
Security guards	1,106	1,497	.8	.9	391	35.4	693
All other protective service workers	156	190	.1	.1	34	21.7	153
Food preparation and serving related occupations	10,140	11,717	7.0	7.0	1,577	15.6	6,256
Supervisors, food preparation and serving workers	788	882	.5	.5	95	12.1	301
Chefs and head cooks	139	151	.1	.1	12	9.0	55
First-line supervisors/managers of food preparation and serving workers	649	731	.4	.4	83	12.7	246
Cooks and food preparation workers	2,709	3,041	1.9	1.8	333	12.3	1,193
Cooks	1,864	2,054	1.3	1.2	190	10.2	725
Cooks, fast food	522	518	.4	.3	-4	-7	148
Cooks, institution and cafeteria	465	500	.3	.3	35	7.6	167
Cooks, private household	5	4	.0	.0	-1	-18.0	1
Cooks, restaurant	668	813	.5	.5	145	21.7	335
Cooks, short order	205	219	.1	.1	14	6.8	72
Food preparation workers	844	988	.6	.6	143	16.9	469
Food and beverage serving workers	5,201	6,384	3.6	3.8	1,182	22.7	4,218

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Bartenders	387	439	0.3	0.3	52	13.4	204
Combined food preparation and serving workers, including fast food	2,206	2,879	1.5	1.7	673	30.5	2,023
Counter attendants, cafeteria, food concession, and coffee shop	421	482	.3	.3	61	14.4	387
Food servers, nonrestaurant	205	238	.1	.1	34	16.4	124
Waiters and waitresses	1,983	2,347	1.4	1.4	364	18.3	1,479
Other food preparation and serving related workers	1,442	1,410	1.0	.8	-33	-2.3	543
Dining room and cafeteria attendants and bartender helpers	431	402	.3	.2	-29	-6.7	145
Dishwashers	525	483	.4	.3	-42	-8.0	197
Hosts and hostesses, restaurant, lounge, and coffee shop	343	388	.2	.2	45	13.0	147
All other food preparation and serving related workers	143	137	.1	.1	-7	-4.6	54
Building and grounds cleaning and maintenance occupations	5,549	6,328	3.8	3.8	779	14.0	1,912
Supervisors, building and grounds cleaning and maintenance workers	378	441	.3	.3	63	16.7	131
First-line supervisors/managers of housekeeping and janitorial workers	219	250	.2	.1	31	14.2	91
First-line supervisors/managers of landscaping, lawn service, and groundskeeping workers	159	191	.1	.1	32	20.1	41
Building cleaning workers	3,981	4,381	2.7	2.6	400	10.1	1,179
Janitors and cleaners, except maids and housekeeping cleaners	2,348	2,665	1.6	1.6	317	13.5	741
Maids and housekeeping cleaners	1,633	1,716	1.1	1.0	83	5.1	438
Grounds maintenance workers	973	1,245	.7	.7	272	27.9	516
Landscaping and groundskeeping workers	894	1,154	.6	.7	260	29.0	484
Pesticide handlers, sprayers, and applicators, vegetation	27	30	.0	.0	4	13.6	10
Tree trimmers and pruners	52	61	.0	.0	8	16.3	22
Pest control workers	58	71	.0	.0	13	22.1	24
All other building and grounds cleaning and maintenance workers	159	190	.1	.1	31	19.6	63
Personal care and service occupations	4,103	4,959	2.8	3.0	856	20.9	2,047
First-line supervisors/managers of personal service workers	125	144	.1	.1	19	15.1	53
Animal care and service workers	145	176	.1	.1	31	21.2	61
Animal trainers	15	17	.0	.0	3	18.4	5
Nonfarm animal caretakers	131	159	.1	.1	28	21.6	56
Child care workers	1,193	1,319	.8	.8	127	10.6	531
Entertainment attendants and related workers	344	421	.2	.3	77	22.5	247
Motion picture projectionists	11	8	.0	.0	-3	-27.0	3
Ushers, lobby attendants, and ticket takers	112	124	.1	.1	12	11.0	102
Miscellaneous entertainment attendants and related workers	221	289	.2	.2	68	30.9	142
Amusement and recreation attendants	197	260	.1	.2	64	32.4	130
Costume, locker room and other attendants	24	28	.0	.0	5	19.1	13
Funeral service workers	33	38	.0	.0	5	13.8	12
Embalmers	7	7	.0	.0	0	-6	2
Funeral attendants	26	31	.0	.0	5	17.8	11
Gaming occupations	167	211	.1	.1	44	26.5	98
First-line supervisors/managers, gaming workers	46	55	.0	.0	9	20.0	22
Gaming supervisors	31	37	.0	.0	6	18.4	15
Slot key persons	14	18	.0	.0	3	23.3	7
Gaming services workers	100	131	.1	.1	31	31.1	65
Gaming and sports book writers and runners	12	15	.0	.0	3	21.6	7
Gaming dealers	88	116	.1	.1	28	32.4	59
All other gaming service workers	21	25	.0	.0	4	18.7	11
Personal appearance workers	790	880	.5	.5	90	11.4	294
Barbers	73	64	.0	.0	-8	-11.5	21
Hairdressers, hairstylists, and cosmetologists	636	718	.4	.4	82	13.0	238
Miscellaneous personal appearance workers	81	97	.1	.1	16	19.8	36
Manicurists and pedicurists	40	51	.0	.0	11	26.5	21
Shampooers	20	22	.0	.0	3	13.2	7
Skin care specialists	21	24	.0	.0	3	13.3	8
Personal and home care aides	414	672	.3	.4	258	62.5	322
Recreation and fitness workers	427	545	.3	.3	118	27.6	206
Fitness trainers and aerobics instructors	158	222	.1	.1	64	40.3	97
Recreation workers	269	323	.2	.2	54	20.1	110
Residential advisors	44	55	.0	.0	11	24.0	21
Transportation, tourism, and lodging attendants	259	300	.2	.2	41	15.7	128
Baggage porters, bellhops, and concierges	68	78	.0	.0	9	13.4	33
Baggage porters and bellhops	51	57	.0	.0	6	12.6	24
Concierges	18	20	.0	.0	3	15.7	9
Tour and travel guides	44	48	.0	.0	4	9.5	18
Transportation attendants	147	174	.1	.1	27	18.6	78
Flight attendants	124	147	.1	.1	23	18.4	65

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Transportation attendants, except flight attendants and baggage porters	23	27	0.0	0.0	5	20.0	12
All other personal care and service workers	163	198	.1	.1	35	21.7	72
Sales and related occupations	15,513	17,365	10.7	10.4	1,852	11.9	6,712
Advertising sales agents	155	196	.1	.1	41	26.3	72
Cashiers	3,363	3,851	2.3	2.3	488	14.5	2,013
Cashiers, except gaming	3,325	3,799	2.3	2.3	474	14.2	1,982
Gaming change persons and booth cashiers	38	52	.0	.0	14	36.1	31
Counter and rental clerks	423	506	.3	.3	82	19.4	274
Door-to-door sales workers, news and street vendors, and related workers	166	156	.1	.1	-10	-6.2	42
Insurance sales agents	378	390	.3	.2	13	3.3	109
Models, demonstrators, and product promoters	121	152	.1	.1	30	24.9	70
Demonstrators and product promoters	118	147	.1	.1	29	24.9	68
Models	4	5	.0	.0	1	26.0	2
Parts salespersons	260	248	.2	.1	-12	-4.4	77
Real estate brokers and sales agents	432	473	.3	.3	41	9.5	116
Real estate brokers	93	102	.1	.1	9	9.6	25
Real estate sales agents	339	371	.2	.2	32	9.5	91
Retail salespersons	4,109	4,619	2.8	2.8	510	12.4	2,073
Sales engineers	85	100	.1	.1	15	17.7	37
Sales representatives, wholesale and manufacturing	1,821	1,932	1.3	1.2	111	6.1	606
Sales representatives, wholesale and manufacturing, technical and scientific products	396	426	.3	.3	30	7.5	137
Sales representatives, wholesale and manufacturing, except technical and scientific products	1,425	1,507	1.0	.9	82	5.7	469
Securities, commodities, and financial services sales agents	367	449	.3	.3	82	22.3	112
Supervisors, sales workers	2,504	2,697	1.7	1.6	193	7.7	556
First-line supervisors/managers of retail sales workers	2,072	2,240	1.4	1.3	168	8.1	467
First-line supervisors/managers of non-retail sales workers	432	457	.3	.3	25	5.8	89
Telemarketers	572	699	.4	.4	127	22.2	244
Travel agents	135	139	.1	.1	4	3.2	37
All other sales and related workers	621	758	.4	.5	137	22.0	273
Office and administrative support occupations	23,882	26,053	16.4	15.5	2,171	9.1	7,667
First-line supervisors/managers of office and administrative support workers	1,392	1,522	1.0	.9	130	9.4	399
Communications equipment operators	339	273	.2	.2	-65	-19.3	101
Switchboard operators, including answering service	259	218	.2	.1	-41	-15.7	77
Telephone operators	54	35	.0	.0	-19	-35.3	16
All other communications equipment operators	26	20	.0	.0	-6	-21.8	9
Financial, information, and record clerks	9,006	10,178	6.2	6.1	1,172	13.0	3,237
Financial clerks	3,696	3,821	2.5	2.3	126	3.4	1,121
Bill and account collectors	400	502	.3	.3	101	25.3	201
Billing and posting clerks and machine operators	506	549	.3	.3	43	8.5	167
Bookkeeping, accounting, and auditing clerks	1,991	2,030	1.4	1.2	39	2.0	417
Gaming cage workers	22	27	.0	.0	6	25.2	15
Payroll and timekeeping clerks	201	206	.1	.1	5	2.3	63
Procurement clerks	76	67	.1	.0	-9	-12.2	17
Tellers	499	440	.3	.3	-59	-11.8	240
Information and record clerks	5,099	6,105	3.5	3.6	1,006	19.7	2,047
Brokerage clerks	70	69	.0	.0	-1	-1.4	9
Correspondence clerks	38	42	.0	.0	3	9.1	15
Court, municipal, and license clerks	105	117	.1	.1	13	12.0	29
Credit authorizers, checkers, and clerks	86	90	.1	.1	4	4.1	11
Customer service representatives	1,946	2,577	1.3	1.5	631	32.4	796
Eligibility interviewers, government programs	117	106	.1	.1	-11	-9.3	34
File clerks	288	314	.2	.2	26	9.1	118
Hotel, motel, and resort desk clerks	177	236	.1	.1	59	33.4	136
Human resources assistants, except payroll and timekeeping	177	211	.1	.1	34	19.3	74
Interviewers, except eligibility and loan	154	205	.1	.1	51	33.4	84
Library assistants, clerical	98	118	.1	.1	19	19.7	63
Loan interviewers and clerks	139	101	.1	.1	-38	-27.6	9
New accounts clerks	87	89	.1	.1	2	2.7	21
Order clerks	348	277	.2	.2	-71	-20.4	74
Receptionists and information clerks	1,078	1,334	.7	.8	256	23.7	493
Reservation and transportation ticket agents and travel clerks	191	219	.1	.1	28	14.5	79

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
All other financial, information, and record clerks	211	252	0.1	0.2	41	19.3	69
Material recording, scheduling, dispatching, and distributing occupations	4,238	4,579	2.9	2.7	341	8.1	1,530
Cargo and freight agents	60	65	.0	.0	5	8.3	17
Couriers and Messengers	141	135	.1	.1	-5	-3.9	38
Dispatchers	254	304	.2	.2	50	19.6	92
Dispatchers, except police, fire, and ambulance	168	206	.1	.1	37	22.2	65
Police, fire, and ambulance dispatchers	86	98	.1	.1	12	14.5	27
Meter readers, utilities	49	36	.0	.0	-13	-26.0	12
Postal service workers	688	683	.5	.4	-5	-7	187
Postal service clerks	74	76	.1	.0	2	2.4	18
Postal service mail carriers	324	332	.2	.2	8	2.4	106
Postal service mail sorters, processors, and processing machine operators	289	275	.2	.2	-14	-4.9	63
Production, planning, and expediting clerks	332	391	.2	.2	60	17.9	115
Shipping, receiving, and traffic clerks	890	973	.6	.6	83	9.3	262
Stock clerks and order fillers	1,679	1,821	1.2	1.1	142	8.5	740
Weighers, measurers, checkers, and samplers, recordkeeping	83	98	.1	.1	15	17.9	35
All other material recording, scheduling, dispatching, and distributing workers	63	73	.0	.0	10	15.5	32
Secretaries, administrative assistants, and other office support occupations	8,908	9,500	6.1	5.7	592	6.6	2,400
Computer operators	194	161	.1	.1	-33	-17.1	35
Data entry and information processing workers	806	774	.6	.5	-32	-3.9	165
Data entry keyers	509	534	.3	.3	25	4.9	106
Word processors and typists	297	240	.2	.1	-57	-19.1	60
Desktop publishers	38	63	.0	.0	25	66.7	32
Insurance claims and policy processing clerks	289	231	.2	.1	-58	-20.2	50
Mail clerks and mail machine operators, except postal service	188	207	.1	.1	19	9.9	74
Office clerks, general	2,705	3,135	1.9	1.9	430	15.9	949
Office machine operators, except computer	84	68	.1	.0	-16	-18.8	29
Proofreaders and copy markers	35	33	.0	.0	-2	-5.5	13
Secretaries and administrative assistants	3,902	4,167	2.7	2.5	265	6.8	946
Executive secretaries and administrative assistants	1,445	1,612	1.0	1.0	167	11.5	412
Legal secretaries	279	336	.2	.2	57	20.3	104
Medical secretaries	314	373	.2	.2	60	19.0	113
Secretaries, except legal, medical, and executive	1,864	1,846	1.3	1.1	-18	-1.0	317
Statistical assistants	21	22	.0	.0	0	2.1	2
All other secretaries, administrative assistants, and other office support workers	645	639	.4	.4	-6	-9	104
Farming, fishing, and forestry occupations	1,429	1,480	1.0	.9	51	3.6	485
First-line supervisors/managers/contractors of farming, fishing, and forestry workers	100	113	.1	.1	13	13.0	21
Agricultural workers	987	1,024	.7	.6	37	3.7	359
Agricultural inspectors	15	16	.0	.0	1	6.6	5
Farmworkers	909	939	.6	.6	30	3.3	334
Graders and sorters, agricultural products	63	69	.0	.0	6	9.1	20
Fishers and fishing vessel operators	53	46	.0	.0	-6	-12.2	17
Forest, conservation, and logging workers	90	88	.1	.1	-2	-1.8	19
Forest and conservation workers	21	22	.0	.0	1	3.9	6
Logging workers	69	66	.0	.0	-2	-3.5	13
Fallers	13	12	.0	.0	-1	-8.7	3
Logging equipment operators	47	46	.0	.0	-1	-2.0	9
Log graders and scalers	8	8	.0	.0	0	-4.0	2
All other farming, fishing, and forestry workers	199	209	.1	.1	10	4.9	70
Construction and extraction occupations	7,451	8,439	5.1	5.0	989	13.3	2,469
First-line supervisors/managers of construction trades and extraction workers	792	923	.5	.6	131	16.5	311
Construction trades and related workers	6,466	7,328	4.4	4.4	862	13.3	2,086
Boilermakers	27	28	.0	.0	1	2.1	8
Brickmasons, blockmasons, and stonemasons	158	179	.1	.1	21	13.2	50
Brickmasons and blockmasons	144	162	.1	.1	18	12.5	45
Stonemasons	14	17	.0	.0	3	20.8	5
Carpenters	1,204	1,302	.8	.8	98	8.2	302
Carpet, floor, and tile installers and finishers	167	189	.1	.1	22	13.2	50
Carpet installers	76	84	.1	.1	8	10.5	21

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Floor layers, except carpet, wood, and hard tiles	23	27	0.0	0.0	4	15.8	8
Floor sanders and finishers	14	16	.0	.0	2	14.7	4
Tile and marble setters	54	62	.0	.0	8	15.6	17
Cement masons, concrete finishers, and terrazzo workers	166	171	.1	.1	5	3.0	19
Cement masons and concrete finishers	162	167	.1	.1	5	3.0	19
Terrazzo workers and finishers	3	4	.0	.0	0	2.0	0
Construction laborers	791	926	.5	.6	135	17.0	207
Construction equipment operators	416	450	.3	.3	34	8.1	123
Operating engineers and other construction equipment operators	357	382	.2	.2	25	6.9	103
Paving, surfacing, and tamping equipment operators	55	63	.0	.0	8	15.5	19
Pile-driver operators	4	5	.0	.0	1	14.0	1
Drywall installers, ceiling tile installers, and tapers	188	205	.1	.1	17	9.1	35
Drywall and ceiling tile installers	143	157	.1	.1	13	9.4	27
Tapers	44	48	.0	.0	4	8.3	8
Electricians	698	819	.5	.5	120	17.3	251
Glaziers	49	56	.0	.0	7	14.8	16
Insulation workers	53	60	.0	.0	7	13.6	23
Painters, construction and maintenance	491	585	.3	.3	94	19.1	180
Paperhangers	27	32	.0	.0	5	20.2	10
Pipelayers, plumbers, pipefitters, and steamfitters	568	627	.4	.4	59	10.4	153
Pipelayers	65	73	.0	.0	8	11.9	19
Plumbers, pipefitters, and steamfitters	503	554	.3	.3	51	10.2	134
Plasterers and stucco masons	54	61	.0	.0	6	11.9	16
Reinforcing iron and rebar workers	27	32	.0	.0	5	17.5	8
Roofers	158	188	.1	.1	31	19.4	67
Sheet metal workers	224	275	.2	.2	51	23.0	98
Structural iron and steel workers	84	99	.1	.1	15	18.4	24
Helpers, construction trades	450	510	.3	.3	60	13.3	283
Helpers-Brickmasons, blockmasons, stonemasons, and tile and marble setters	58	66	.0	.0	8	14.1	37
Helpers-Carpenters	101	108	.1	.1	7	6.6	57
Helpers-Electricians	114	129	.1	.1	15	13.3	72
Helpers-Painters, paperhangers, plasterers, and stucco masons	27	30	.0	.0	3	12.9	17
Helpers-Pipelayers, plumbers, pipefitters, and steamfitters	86	96	.1	.1	10	11.5	53
Helpers-Roofers	23	28	.0	.0	5	19.3	16
All other helpers, construction trades	41	53	.0	.0	12	29.1	32
Other construction and related workers	465	534	.3	.3	69	14.8	162
Construction and building inspectors	75	86	.1	.1	11	15.0	28
Elevator installers and repairers	23	27	.0	.0	4	17.2	11
Fence erectors	29	30	.0	.0	1	4.6	6
Hazardous materials removal workers	37	49	.0	.0	12	32.8	23
Highway maintenance workers	151	159	.1	.1	8	5.2	31
Rail-track laying and maintenance equipment operators	12	9	.0	.0	-3	-26.1	3
Septic tank servicers and sewer pipe cleaners	15	18	.0	.0	3	16.5	6
All other construction and related workers	123	156	.1	.1	33	26.7	54
Extraction workers	193	189	.1	.1	-4	-2.1	72
Derrick, rotary drill, and service unit operators, oil, gas, and mining	45	44	.0	.0	-2	-3.5	16
Derrick operators, oil and gas	16	16	.0	.0	0	.1	6
Rotary drill operators, oil and gas	18	17	.0	.0	-1	-8.0	6
Service unit operators, oil, gas, and mining	11	11	.0	.0	0	-1.2	4
Earth drillers, except oil and gas	24	27	.0	.0	3	12.6	8
Explosives workers, ordnance handling experts, and blasters	5	5	.0	.0	0	1.9	2
Helpers-Extraction workers	37	38	.0	.0	1	2.4	18
Mining machine operators	22	19	.0	.0	-3	-12.9	8
Continuous mining machine operators	10	8	.0	.0	-1	-13.4	3
Miscellaneous mining machine operators	12	11	.0	.0	-2	-12.5	4
Roustabouts, oil and gas	41	40	.0	.0	-2	-4.2	14
All other extraction workers	19	17	.0	.0	-2	-10.7	7
Installation, maintenance, and repair occupations	5,820	6,482	4.0	3.9	662	11.4	1,944
First-line supervisors/managers of mechanics, installers, and repairers	442	513	.3	.3	71	16.0	186
Electrical and electronic equipment mechanics, installers, and repairers	683	726	.5	.4	43	6.3	178
Avionics technicians	16	17	.0	.0	2	9.8	5
Computer, automated teller, and office machine repairers	172	197	.1	.1	24	14.2	43
Electric motor, power tool, and related repairers	37	40	.0	.0	3	7.9	11

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Electrical and electronics installers and repairers, transportation equipment	14	15	0.0	0.0	2	13.6	4
Electrical and electronics repairers, industrial and utility	108	116	.1	.1	8	7.3	30
Electrical and electronics repairers, commercial and industrial equipment	90	98	.1	.1	8	9.2	26
Electrical and electronics repairers, powerhouse, substation, and relay	18	18	.0	.0	0	-2.3	4
Electronic equipment installers and repairers, motor vehicles	13	15	.0	.0	2	15.6	5
Electronic home entertainment equipment installers and repairers	37	30	.0	.0	-7	-17.9	7
Radio and telecommunications equipment installers and repairers	196	188	.1	.1	-7	-3.8	37
Radio mechanics	7	5	.0	.0	-2	-24.2	1
Telecommunications equipment installers and repairers, except line installers	189	183	.1	.1	-6	-3.1	36
Security and fire alarm systems installers	44	54	.0	.0	10	23.4	18
All other electrical and electronic equipment mechanics, installers, and repairers	48	54	.0	.0	6	13.4	17
Vehicle and mobile equipment mechanics, installers, and repairers	1,931	2,218	1.3	1.3	286	14.8	778
Aircraft mechanics and service technicians	158	184	.1	.1	26	16.7	60
Automotive body and related repairers	199	219	.1	.1	20	10.2	69
Automotive glass installers and repairers	22	24	.0	.0	2	10.5	8
Automotive service technicians and mechanics	840	991	.6	.6	151	18.0	349
Bus and truck mechanics and diesel engine specialists	285	326	.2	.2	40	14.2	114
Heavy vehicle and mobile equipment service technicians and mechanics	185	203	.1	.1	17	9.4	66
Farm equipment mechanics	41	42	.0	.0	0	.9	11
Mobile heavy equipment mechanics, except engines	130	148	.1	.1	18	14.0	52
Rail car repairers	14	13	.0	.0	-1	-7.6	4
Small engine mechanics	73	79	.0	.0	6	8.6	24
Motorboat mechanics	25	27	.0	.0	2	9.0	9
Motorcycle mechanics	14	16	.0	.0	1	8.6	5
Outdoor power equipment and other small engine mechanics	33	36	.0	.0	3	8.2	11
Miscellaneous vehicle and mobile equipment mechanics, installers, and repairers	170	192	.1	.1	22	13.2	87
Bicycle repairers	9	10	.0	.0	2	17.7	5
Recreational vehicle service technicians	12	15	.0	.0	3	25.4	8
Tire repairers and changers	89	95	.1	.1	6	6.8	40
All other vehicle and mobile equipment mechanics, installers, and repairers	60	72	.0	.0	12	19.6	35
Other installation, maintenance, and repair occupations	2,764	3,026	1.9	1.8	262	9.5	802
Coin, vending, and amusement machine servicers and repairers	37	44	.0	.0	7	18.5	15
Control and valve installers and repairers	46	48	.0	.0	2	5.2	17
Control and valve installers and repairers, except mechanical door	34	35	.0	.0	1	2.7	12
Mechanical door repairers	11	13	.0	.0	1	12.7	5
Heating, air conditioning, and refrigeration mechanics and installers	243	297	.2	.2	54	22.3	79
Helpers-Installation, maintenance, and repair workers	145	172	.1	.1	27	18.5	101
Home appliance repairers	43	46	.0	.0	3	6.2	11
Industrial machinery mechanics	198	205	.1	.1	7	3.4	60
Line installers and repairers	263	317	.2	.2	54	20.7	118
Electrical power-line installers and repairers	99	108	.1	.1	9	9.3	41
Telecommunications line installers and repairers	164	209	.1	.1	45	27.6	76
Locksmiths and safe repairers	23	25	.0	.0	2	8.7	10
Maintenance and repair workers, general	1,251	1,310	.9	.8	59	4.7	221
Maintenance workers, machinery	114	120	.1	.1	7	5.8	37
Manufactured building and mobile home installers	17	20	.0	.0	3	19.1	7
Millwrights	72	75	.0	.0	3	3.9	25
Precision instrument and equipment repairers	63	69	.0	.0	6	9.7	22
Camera and photographic equipment repairers	7	7	.0	.0	0	-2.1	2
Medical equipment repairers	28	33	.0	.0	4	14.9	11
Musical instrument repairers and tuners	7	8	.0	.0	1	9.4	2
Watch repairers	5	6	.0	.0	0	6.2	2
All other precision instrument and equipment repairers	15	16	.0	.0	1	6.8	5
Riggers	20	22	.0	.0	2	10.1	6
All other installation, maintenance, and repair workers	228	254	.2	.2	26	11.5	73
Production occupations	13,060	13,811	9.0	8.2	750	5.7	3,932

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
First-line supervisors/managers of production and operating workers	819	827	0.6	0.5	9	1.0	224
Assemblers and fabricators	2,653	2,824	1.8	1.7	171	6.5	702
Aircraft structure, surfaces, rigging, and systems assemblers	20	23	.0	.0	3	14.2	8
Electrical, electronics, and electromechanical assemblers	508	492	.3	.3	-16	-3.1	138
Coil winders, tapers, and finishers	56	61	.0	.0	5	8.2	19
Electrical and electronic equipment assemblers	379	355	.3	.2	-24	-6.3	97
Electromechanical equipment assemblers	73	76	.1	.0	3	4.5	22
Engine and other machine assemblers	67	72	.0	.0	5	7.1	18
Structural metal fabricators and fitters	101	120	.1	.1	20	19.5	35
Miscellaneous assemblers and fabricators	1,957	2,117	1.3	1.3	160	8.2	503
Fiberglass laminators and fabricators	48	53	.0	.0	5	11.4	14
Team assemblers	1,458	1,545	1.0	.9	87	5.9	342
Timing device assemblers, adjusters, and calibrators	12	12	.0	.0	0	2.5	2
All other assemblers and fabricators	439	507	.3	.3	68	15.4	144
Food processing occupations	760	783	.5	.5	23	3.0	214
Bakers	160	187	.1	.1	27	16.8	52
Butchers and other meat, poultry, and fish processing workers	411	415	.3	.2	5	1.2	117
Butchers and meat cutters	141	128	.1	.1	-13	-8.9	34
Meat, poultry, and fish cutters and trimmers	148	162	.1	.1	14	9.5	50
Slaughterers and meat packers	122	125	.1	.1	3	2.6	33
Food and tobacco roasting, baking, and drying machine operators and tenders	18	17	.0	.0	-2	-9.0	4
Food batchmakers	66	67	.0	.0	1	1.4	17
Food cooking machine operators and tenders	37	37	.0	.0	0	.6	7
All other food processing workers	69	61	.0	.0	-8	-11.6	17
Metal workers and plastic workers	2,907	3,156	2.0	1.9	249	8.6	994
Computer control programmers and operators	186	222	.1	.1	36	19.3	102
Computer-controlled machine tool operators, metal and plastic ..	162	194	.1	.1	32	19.7	89
Numerical tool and process control programmers	24	28	.0	.0	4	16.6	12
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	372	357	.3	.2	-15	-4.0	73
Drilling and boring machine tool setters, operators, and tenders, metal and plastic	71	68	.0	.0	-3	-4.5	23
Extruding and drawing machine setters, operators, and tenders, metal and plastic	126	143	.1	.1	17	13.5	45
Forging machine setters, operators, and tenders, metal and plastic	54	59	.0	.0	5	9.1	22
Grinding, lapping, polishing, and buffing machine tool setters, operators, and tenders, metal and plastic	145	156	.1	.1	11	7.3	46
Heat treating equipment setters, operators, and tenders, metal and plastic	43	49	.0	.0	6	13.4	14
Lathe and turning machine tool setters, operators, and tenders, metal and plastic	84	78	.1	.0	-6	-7.4	33
Lay-out workers, metal and plastic	18	17	.0	.0	-1	-6.0	5
Machinists	430	469	.3	.3	39	9.1	127
Metal furnace and kiln operators and tenders	40	43	.0	.0	3	7.2	14
Metal-refining furnace operators and tenders	24	26	.0	.0	2	7.4	8
Pourers and casters, metal	16	18	.0	.0	1	6.9	6
Milling and planing machine setters, operators, and tenders, metal and plastic	34	32	.0	.0	-2	-6.7	11
Model makers and patternmakers, metal and plastic	19	18	.0	.0	-1	-5.6	5
Model makers, metal and plastic	11	10	.0	.0	0	-3.2	3
Patternmakers, metal and plastic	9	8	.0	.0	-1	-8.4	2
Molders and molding machine setters, operators, and tenders, metal and plastic	235	252	.2	.2	17	7.0	65
Foundry mold and coremakers	59	59	.0	.0	-1	-1.2	12
Molding, coremaking, and casting machine setters, operators, and tenders, metal and plastic	176	193	.1	.1	17	9.8	53
Multiple machine tool setters, operators, and tenders, metal and plastic	105	121	.1	.1	15	14.7	32
Plating and coating machine setters, operators, and tenders, metal and plastic	65	72	.0	.0	7	10.2	20
Rolling machine setters, operators, and tenders, metal and plastic	49	50	.0	.0	1	1.4	17
Tool and die makers	130	132	.1	.1	3	2.2	35
Tool grinders, filers, and sharpeners	29	27	.0	.0	-2	-7.7	8
Welding, soldering, and brazing workers	521	618	.4	.4	97	18.7	244
Welders, cutters, solderers, and brazers	446	532	.3	.3	86	19.3	211

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Welding, soldering, and brazing machine setters, operators, and tenders	74	86	0.1	0.1	11	15.1	32
All other metal workers and plastic workers	150	174	.1	.1	25	16.4	54
Plant and system operators	368	384	.3	.2	16	4.4	133
Power plant operators, distributors, and dispatchers	55	55	.0	.0	0	-4	17
Nuclear power reactor operators	4	4	.0	.0	0	-3.4	1
Power distributors and dispatchers	15	14	.0	.0	-1	-5.1	4
Power plant operators	36	37	.0	.0	1	1.8	11
Stationary engineers and boiler operators	57	56	.0	.0	-1	-1.3	16
Water and liquid waste treatment plant and system operators	88	104	.1	.1	16	18.1	44
Miscellaneous plant and system operators	167	168	.1	.1	1	.6	56
Chemical plant and system operators	71	69	.0	.0	-2	-3.3	22
Gas plant operators	12	11	.0	.0	-1	-6.3	4
Petroleum pump system operators, refinery operators, and gaugers	35	34	.0	.0	-1	-4.1	11
All other plant and system operators	49	54	.0	.0	6	11.4	20
Printing occupations	534	543	.4	.3	8	1.6	160
Bookbinders and bindery workers	115	124	.1	.1	9	7.4	39
Bindery workers	105	113	.1	.1	8	7.3	36
Bookbinders	10	10	.0	.0	1	8.2	3
Job printers	56	59	.0	.0	4	6.4	18
Prepress technicians and workers	107	90	.1	.1	-17	-15.6	26
Printing machine operators	222	234	.2	.1	12	5.5	68
All other printing workers	34	35	.0	.0	1	2.0	9
Textile, apparel, and furnishings occupations	1,317	1,285	.9	.8	-32	-2.4	301
Extruding and forming machine setters, operators, and tenders, synthetic and glass fibers	41	44	.0	.0	2	5.7	13
Fabric and apparel patternmakers	15	14	.0	.0	-1	-5.4	5
Laundry and dry-cleaning workers	236	263	.2	.2	27	11.4	89
Pressers, textile, garment, and related materials	110	112	.1	.1	2	1.7	17
Sewing machine operators	399	348	.3	.2	-51	-12.9	42
Shoe and leather workers and repairers	19	15	.0	.0	-4	-21.4	7
Shoe machine operators and tenders	9	4	.0	.0	-5	-53.6	1
Tailors, dressmakers, and sewers	101	91	.1	.1	-9	-9.3	22
Sewers, hand	43	40	.0	.0	-3	-6.6	9
Tailors, dressmakers, and custom sewers	58	51	.0	.0	-7	-11.4	13
Textile bleaching and dyeing machine operators and tenders	37	41	.0	.0	4	10.8	11
Textile cutting machine setters, operators, and tenders	38	35	.0	.0	-2	-6.5	6
Textile knitting and weaving machine setters, operators, and tenders	70	68	.0	.0	-2	-2.4	11
Textile winding, twisting, and drawing out machine setters, operators, and tenders	90	86	.1	.1	-4	-4.4	19
Upholsterers	58	53	.0	.0	-6	-9.5	19
All other textile, apparel, and furnishings workers	95	112	.1	.1	17	18.0	36
Woodworkers	409	446	.3	.3	37	9.0	187
Cabinetmakers and bench carpenters	159	175	.1	.1	16	9.8	66
Furniture finishers	45	49	.0	.0	4	8.4	22
Model makers and patternmakers, wood	10	12	.0	.0	2	16.0	6
Sawing machine setters, operators, and tenders, wood	57	64	.0	.0	7	11.7	29
Woodworking machine setters, operators, and tenders, except sawing	103	108	.1	.1	5	5.3	47
All other woodworkers	35	38	.0	.0	4	10.6	18
Other production occupations	3,293	3,563	2.3	2.1	269	8.2	1,017
Cementing and gluing machine operators and tenders	36	38	.0	.0	2	6.7	11
Chemical processing machine setters, operators, and tenders	100	110	.1	.1	10	9.9	33
Chemical equipment operators and tenders	61	70	.0	.0	9	14.9	23
Separating, filtering, clarifying, precipitating, and still machine setters, operators, and tenders	39	40	.0	.0	1	2.2	10
Cleaning, washing, and metal pickling equipment operators and tenders	20	17	.0	.0	-3	-14.2	5
Cooling and freezing equipment operators and tenders	7	7	.0	.0	0	-1.3	1
Crushing, grinding, polishing, mixing, and blending workers	202	222	.1	.1	21	10.3	65
Crushing, grinding, and polishing machine setters, operators, and tenders	44	49	.0	.0	4	9.8	14
Grinding and polishing workers, hand	49	55	.0	.0	7	13.7	17
Mixing and blending machine setters, operators, and tenders	109	118	.1	.1	10	9.0	33
Cutting workers	115	117	.1	.1	2	1.8	23
Cutters and trimmers, hand	32	33	.0	.0	1	2.2	6
Cutting and slicing machine setters, operators, and tenders	83	84	.1	.1	1	1.7	16
Etchers and engravers	15	16	.0	.0	2	11.1	5

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Extruding, forming, pressing, and compacting machine setters, operators, and tenders	73	80	0.1	0.0	7	9.0	24
Furnace, kiln, oven, drier, and kettle operators and tenders	33	34	.0	.0	1	3.2	10
Helpers-Production workers	525	587	.4	.3	62	11.9	194
Inspectors, testers, sorters, samplers, and weighers	602	591	.4	.4	-11	-1.9	133
Jewelers and precious stone and metal workers	43	44	.0	.0	1	1.3	12
Medical, dental, and ophthalmic laboratory workers	88	95	.1	.1	7	7.9	31
Dental laboratory technicians	43	46	.0	.0	3	6.3	14
Medical appliance technicians	13	15	.0	.0	2	19.0	6
Ophthalmic laboratory technicians	32	34	.0	.0	2	5.7	11
Molders, shapers, and casters, except metal and plastic	42	45	.0	.0	3	7.4	14
Packaging and filling machine operators and tenders	379	433	.3	.3	54	14.4	138
Painting workers	195	223	.1	.1	28	14.5	72
Coating, painting, and spraying machine setters, operators, and tenders	108	121	.1	.1	13	11.9	37
Painters, transportation equipment	49	57	.0	.0	9	17.5	19
Painting, coating, and decorating workers	38	45	.0	.0	7	17.9	15
Paper goods machine setters, operators, and tenders	123	116	.1	.1	-7	-5.4	24
Photographic process workers and processing machine operators	76	77	.1	.0	2	2.2	23
Photographic process workers	26	24	.0	.0	-2	-8.2	7
Photographic processing machine operators	50	53	.0	.0	4	7.6	17
Semiconductor processors	52	69	.0	.0	17	32.4	26
Tire builders	18	20	.0	.0	2	8.6	5
All other production workers	549	619	.4	.4	70	12.7	168
Transportation and material moving occupations	10,088	11,618	6.9	6.9	1,530	15.2	3,949
Supervisors, transportation and material moving workers	357	427	.2	.3	70	19.7	147
Aircraft cargo handling supervisors	10	13	.0	.0	3	27.7	5
First-line supervisors/managers of helpers, laborers, and material movers, hand	153	182	.1	.1	29	18.9	62
First-line supervisors/managers of transportation and material-moving machine and vehicle operators	194	233	.1	.1	39	19.9	80
Air transportation occupations	166	186	.1	.1	20	12.2	68
Aircraft pilots and flight engineers	117	129	.1	.1	11	9.8	38
Airline pilots, copilots, and flight engineers	98	104	.1	.1	6	6.4	29
Commercial pilots	19	24	.0	.0	5	26.9	10
Air traffic controllers and airfield operations specialists	31	35	.0	.0	3	10.2	17
Air traffic controllers	27	29	.0	.0	2	7.2	13
Airfield operations specialists	5	6	.0	.0	1	27.1	3
All other air transportation workers	17	22	.0	.0	5	32.2	13
Motor vehicle operators	4,237	4,982	2.9	3.0	745	17.6	1,398
Ambulance drivers and attendants, except emergency medical technicians	15	20	.0	.0	5	33.7	6
Bus drivers	666	754	.5	.4	88	13.2	257
Bus drivers, school	481	537	.3	.3	56	11.6	178
Bus drivers, transit and intercity	185	217	.1	.1	32	17.4	79
Driver/sales workers and truck drivers	3,268	3,857	2.2	2.3	589	18.0	1,038
Driver/sales workers	402	430	.3	.3	29	7.1	84
Truck drivers, heavy and tractor-trailer	1,749	2,095	1.2	1.2	346	19.8	586
Truck drivers, light or delivery services	1,117	1,331	.8	.8	215	19.2	368
Taxi drivers and chauffeurs	176	219	.1	.1	43	24.4	57
All other motor vehicle operators	112	132	.1	.1	20	18.2	39
Rail transportation occupations	115	94	.1	.1	-21	-18.5	52
Locomotive engineers and firers	37	38	.0	.0	1	2.3	18
Railroad brake, signal, and switch operators	22	9	.0	.0	-13	-60.8	10
Railroad conductors and yardmasters	45	36	.0	.0	-8	-18.9	20
Rail yard engineers, dinky operators, and hostlers	4	4	.0	.0	0	-4.5	2
All other rail transportation workers	7	7	.0	.0	0	-4.1	3
Water transportation occupations	70	74	.0	.0	3	4.4	27
Sailors and marine oilers	32	33	.0	.0	2	4.9	12
Ship and boat captains and operators	25	26	.0	.0	1	3.4	9
Ship engineers	9	9	.0	.0	0	5.8	3
All other water transportation workers	5	5	.0	.0	0	4.2	2
Related transportation occupations	309	341	.2	.2	32	10.4	139
Bridge and lock tenders	4	4	.0	.0	-1	-19.1	2
Parking lot attendants	117	140	.1	.1	23	19.8	43
Service station attendants	112	110	.1	.1	-2	-1.7	57
Traffic technicians	4	5	.0	.0	1	14.1	2

Table 2. Continued—Employment by occupation, 2000 and projected 2010

[Numbers in thousands of jobs]

Occupation	Employment				Change		Total job openings due to growth and net replacements, 2000-10 ¹
	Number		Percent distribution		Number	Percent	
	2000	2010	2000	2010			
Transportation inspectors	25	28	0.0	0.0	3	11.3	9
All other related transportation workers	46	54	.0	.0	8	17.9	26
Material moving occupations	4,833	5,514	3.3	3.3	681	14.1	2,118
Cleaners of vehicles and equipment	322	382	.2	.2	60	18.8	183
Conveyor operators and tenders	63	71	.0	.0	8	13.3	26
Crane and tower operators	55	59	.0	.0	5	8.6	21
Excavating and loading machine and dragline operators	76	88	.1	.1	11	14.8	34
Hoist and winch operators	9	10	.0	.0	1	8.3	3
Industrial truck and tractor operators	635	707	.4	.4	72	11.3	160
Laborers and freight, stock, and material movers, hand	2,084	2,373	1.4	1.4	289	13.9	985
Machine feeders and offbearers	182	159	.1	.1	-22	-12.3	63
Packers and packagers, hand	1,091	1,300	.7	.8	210	19.3	488
Pumping station operators	32	32	.0	.0	0	0.0	10
Gas compressor and gas pumping station operators	7	7	.0	.0	0	4.8	2
Pump operators, except wellhead pumpers	14	15	.0	.0	1	4.8	5
Wellhead pumpers	12	11	.0	.0	-1	-8.5	3
Refuse and recyclable material collectors	124	145	.1	.1	21	16.6	75
Tank car, truck, and ship loaders	19	21	.0	.0	3	13.5	8
All other material moving workers	142	165	.1	.1	23	16.4	62

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

clerks, general, with employment of 2.7 million, is projected to experience only average growth.

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 very small and, consequently, the resulting employment declines are not very significant in terms of the total economy. (See table 5.) Fourteen of the occupations with the largest declines are office and administrative support, seven are production, and three are service—two, food service and one, barbers. Two are sales and two are railroad transportation; others are wholesale and retail buyers, except farm products and farmers and ranchers. Changes in technology or business practices will reduce the demand for most of the 30 occupations.

The use of computer technology will reduce demand for word processors and typists; tellers; loan interviewers and clerks; secretaries, except legal, medical, and executive; switchboard operators, including answering service; and other office and administrative support occupations. Machine feeders and offbearers, prepress technicians and workers, electrical and electronic equipment assemblers, and most other production occupations on this list also are affected by advances in technology, such as faster machines, more automated pro-

cesses, and better product designs that simplify assembly. Parts salespersons; procurement clerks; order clerks; wholesale and retail buyers, except farm products; and postal service mail sorters, processors, and processing machine operators should decline, as electronic business automates some of the functions they perform.⁶

Farmers and ranchers; dishwashers; railroad brake, signal, and switch operators; and meter readers, utilities also will decline as a result of improved technology. Farmers and ranchers also will be affected by farm consolidation. Declining industry employment is the major cause of projected employment declines for sewing machine operators and railroad conductors and yardmasters, while butchers and meatcutters continues to decline, as work is shifted from retail trade, where most meatcutters are employed, to food processing plants. Dining room and cafeteria attendants and bartenders' helpers are expected to decline, as waiters and waitresses and bartenders assume more of their duties. Barbers will probably decline because of the large number of retirements and the small number of cosmetology graduates seeking barbers' licenses.

Earnings and the most significant source of education or training differ considerably among occupations in the three groups just discussed. (See exhibit 1 for a description of the education or training categories used in this article.) Of the

Table 3. Fastest growing occupations, 2000–2010

[Numbers in thousands of jobs]

Occupation	Employment		Change		Quartile rank by 2000 median annual earnings ¹	Most significant source of education or training
	2000	2010	Number	Percent		
Computer software engineers, applications	380	760	380	100	1	Bachelor's degree
Computer support specialists	506	996	490	97	2	Associate degree
Computer software engineers, systems software	317	601	284	90	1	Bachelor's degree
Network and computer systems administrators	229	416	187	82	1	Bachelor's degree
Network systems and data communications analysts	119	211	92	77	1	Bachelor's degree
Desktop publishers	38	63	25	67	2	Postsecondary vocational award
Database administrators	106	176	70	66	1	Bachelor's degree
Personal and home care aides	414	672	258	62	4	Short-term on-the-job training
Computer systems analysts	431	689	258	60	1	Bachelor's degree
Medical assistants	329	516	187	57	3	Moderate-term on-the-job training
Social and human service assistants	271	418	147	54	3	Moderate-term on-the-job training
Physician assistants	58	89	31	53	1	Bachelor's degree
Medical records and health information technicians	136	202	66	49	3	Associate degree
Computer and information systems managers	313	463	150	48	1	Bachelor's or higher degree, plus work experience
Home health aides	615	907	291	47	4	Short-term on-the-job training
Physical therapist aides	36	53	17	46	3	Short-term on-the-job training
Occupational therapist aides	9	12	4	45	3	Short-term on-the-job training
Physical therapist assistants	44	64	20	45	2	Associate degree
Audiologists	13	19	6	45	1	Master's degree
Fitness trainers and aerobics instructors	158	222	64	40	3	Postsecondary vocational award
Computer and information scientists, research	28	39	11	40	1	Doctoral degree
Veterinary assistants and laboratory animal caretakers	55	77	22	40	4	Short-term on-the-job training
Occupational therapist assistants	17	23	7	40	2	Associate degree
Veterinary technologists and technicians	49	69	19	39	3	Associate degree
Speech-language pathologists	88	122	34	39	1	Master's degree
Mental health and substance abuse social workers	83	116	33	39	2	Master's degree
Dental assistants	247	339	92	37	2	Moderate-term on-the-job training
Dental hygienists	147	201	54	37	1	Associate degree
Special education teachers, preschool, kindergarten, and elementary school	234	320	86	37	1	Bachelor's degree
Pharmacy technicians	190	259	69	36	3	Moderate-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 (\$39,700 and over), 2=high (\$25,760 to \$39,660), 3=low (\$18,500 to \$25,760), and 4=very low (up to \$18,490). The rankings were based on quartiles using one-fourth of total employment to define each quartile. Earnings are for wage and salary workers.

30 fastest growing occupations, 21 generally require a postsecondary degree or other award, compared with 11 of those with the largest numerical job growth and 2 of those with the largest numerical declines. Of the fastest growing occupations, 13 are concentrated in the first earnings quartile and 8 in the third earnings quartile; of those with the largest numeric increases, 10 are in the first and 11 in the fourth quartile; and of the largest declines, 10 are in the second and 14 are in the third quartile.

Total job openings

In addition to occupational employment growth, another aspect of the demand for workers is the need to replace workers who leave their jobs to enter other occupations, retire, or leave the labor force for other reasons. Job openings result-

ing from replacement needs are very important, because, in most occupations, they exceed those that are the result of employment growth. Even occupations that are projected to decline provide some job openings, for example, farmers and ranchers and wholesale and retail buyers, except farm products. (See table 2, pp. 64–78.)

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.⁷

Over the 2000–10 period, more job openings are expected

Table 4. Occupations with the largest job growth, 2000–2010

[Numbers in thousands of jobs]

Occupation	Employment		Change		Quartile rank by 2000 median annual earnings ¹	Most significant source of education or training
	2000	2010	Number	Percent		
Combined food preparation and serving workers, including fast food	2,206	2,879	673	30	4	Short-term on-the-job training
Customer service representatives	1,946	2,577	631	32	3	Moderate-term on-the-job training
Registered nurses	2,194	2,755	561	26	1	Associate degree
Retail salespersons	4,109	4,619	510	12	4	Short-term on-the-job training
Computer support specialists	506	996	490	97	2	Associate degree
Cashiers, except gaming	3,325	3,799	474	14	4	Short-term on-the-job training
Office clerks, general	2,705	3,135	430	16	3	Short-term on-the-job training
Security guards	1,106	1,497	391	35	4	Short-term on-the-job training
Computer software engineers, applications	380	760	380	100	1	Bachelor's degree
Waiters and waitresses	1,983	2,347	364	18	4	Short-term on-the-job training
General and operations managers	2,398	2,761	363	15	1	Bachelor's or higher degree, plus work experience
Truck drivers, heavy and tractor-trailer	1,749	2,095	346	20	2	Moderate-term on-the-job training
Nursing aides, orderlies, and attendants	1,373	1,697	323	24	3	Short-term on-the-job training
Janitors and cleaners, except maids and housekeeping cleaners	2,348	2,665	317	13	4	Short-term on-the-job training
Postsecondary teachers	1,344	1,659	315	23	1	Doctoral degree
Teacher assistants	1,262	1,562	301	24	4	Short-term on-the-job training
Home health aides	615	907	291	47	4	Short-term on-the-job training
Laborers and freight, stock, and material movers, hand	2,084	2,373	289	14	3	Short-term on-the-job training
Computer software engineers, systems software	317	601	284	90	1	Bachelor's degree
Landscaping and groundskeeping workers	894	1,154	260	29	4	Short-term on-the-job training
Personal and home care aides	414	672	258	62	4	Short-term on-the-job training
Computer systems analysts	431	689	258	60	1	Bachelor's degree
Receptionists and information clerks	1,078	1,334	256	24	3	Short-term on-the-job training
Truck drivers, light or delivery services	1,117	1,331	215	19	3	Short-term on-the-job training
Packers and packagers, hand	1,091	1,300	210	19	4	Short-term on-the-job training
Elementary school teachers, except special education	1,532	1,734	202	13	1	Bachelor's degree
Medical assistants	329	516	187	57	3	Moderate-term on-the-job training
Network and computer systems administrators	229	416	187	82	1	Bachelor's degree
Secondary school teachers, except special and vocational education	1,004	1,190	187	19	1	Bachelor's degree
Accountants and auditors	976	1,157	181	19	1	Bachelor's degree

¹ The quartile rankings of Occupational Employment Statistics annual earnings data are presented in the following categories: 1=very high (\$39,700 and over), 2=high (\$25,760 to \$39,660), 3=low (\$18,500 to \$25,760), and 4=very low (up to \$18,490). The rankings were based on quartiles using one-fourth of total employment to define each quartile. Earnings are for wage and salary workers.

to result from replacement needs (35.8 million) than from employment growth in the economy (22.2 million). Service occupations are projected to have the largest number of total job openings, 13.5 million. Large occupations characterized by relatively low pay and limited training requirements, such as food preparation and service occupations, generate numerous job openings due to replacement needs. Even within service occupations, however, rapidly growing healthcare support occupations should generate more openings from job growth than from replacement needs.

The only major group with fewer openings from replacement needs than from employment growth is professional and related occupations, the fastest growing. Even within professional and related occupations, however, replacement

openings should exceed growth openings in the three slowest growing groups—architecture and engineering occupations; education, training, and library occupations; and life, physical, and social science occupations.

Education or training categories and earnings

While the education and training requirements of the workforce continue to increase, in 2000, only 21 percent of jobs were in occupations generally requiring a bachelor's degree or more education. (See table 6.) However, these jobs will account for 29 percent of total job growth from 2000 to 2010. Occupations generally requiring a postsecondary vocational award or an associate degree, which accounted for 8

Table 5. Occupations with the largest job decline, 2000–2010

[Numbers in thousands of jobs]

Occupation	Employment		Change		Quartile rank by 2000 median annual earnings ¹	Most significant source of education or training
	2000	2010	Number	Percent		
Farmers and ranchers	1,294	965	-328	-25	2	Long-term on-the-job training
Order clerks	348	277	-71	-20	3	Short-term on-the-job training
Tellers	499	440	-59	-12	3	Short-term on-the-job training
Insurance claims and policy processing clerks	289	231	-58	-20	2	Moderate-term on-the-job training
Word processors and typists	297	240	-57	-19	3	Moderate-term on-the-job training
Sewing machine operators	399	348	-51	-13	4	Moderate-term on-the-job training
Dishwashers	525	483	-42	-8	4	Short-term on-the-job training
Switchboard operators, including answering service	259	218	-41	-16	3	Short-term on-the-job training
Loan interviewers and clerks	139	101	-38	-28	2	Short-term on-the-job training
Computer operators	194	161	-33	-17	2	Moderate-term on-the-job training
Dining room and cafeteria attendants and bartender helpers	431	402	-29	-7	4	Short-term on-the-job training
Electrical and electronic equipment assemblers	379	355	-24	-6	3	Short-term on-the-job training
Machine feeders and offbearers	182	159	-22	-12	3	Short-term on-the-job training
Telephone operators	54	35	-19	-35	2	Short-term on-the-job training
Secretaries, except legal, medical, and executive	1,864	1,846	-18	-1	3	Moderate-term on-the-job training
Prepress technicians and workers	107	90	-17	-16	2	Long-term on-the-job training
Office machine operators, except computer	84	68	-16	-19	3	Short-term on-the-job training
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	372	357	-15	-4	3	Moderate-term on-the-job training
Postal service mail sorters, processors, and processing machine operators	289	275	-14	-5	2	Short-term on-the-job training
Railroad brake, signal, and switch operators	22	9	-13	-61	2	Work experience in a related occupation
Wholesale and retail buyers, except farm products	148	135	-13	-9	2	Bachelor's degree
Meter readers, utilities	49	36	-13	-26	2	Short-term on-the-job training
Butchers and meat cutters	141	128	-13	-9	3	Long-term on-the-job training
Parts salespersons	260	248	-12	-4	3	Moderate-term on-the-job training
Inspectors, testers, sorters, samplers, and weighers	602	591	-11	-2	3	Moderate-term on-the-job training
Eligibility interviewers, government programs	117	106	-11	-9	2	Moderate-term on-the-job training
Door-to-door sales workers, news and street vendors, and related workers	166	156	-10	-6	3	Short-term on-the-job training
Procurement clerks	76	67	-9	-12	2	Short-term on-the-job training
Railroad conductors and yardmasters	45	36	-8	-19	2	Work experience in a related occupation
Barbers	73	64	-8	-12	4	Postsecondary vocational award

¹ The quartile rankings of Occupational Employment Statistics annual earnings data are presented in the following categories: 1=very high (\$39,700 and over), 2=high (\$25,760 to \$39,660), 3=low (\$18,500 to \$25,760), and 4=very low (up to \$18,490). The

rankings were based on quartiles using one-fourth of total employment to define each quartile. Earnings are for wage and salary workers.

percent of all jobs in 2000, will account for 13 percent of the job growth over the 2000–10 period. Occupations generally requiring only work-related training, which accounted for 71 percent of all jobs in 2000, will account for 58 percent of the job growth over the 2000–10 period. (See exhibit 1 for definitions of categories.)

All seven categories generally requiring a postsecondary award are projected to have faster-than-average employment growth over the 2000–10 period. These categories are made up mostly of professional and related occupations, projected to grow the fastest, along with a number of faster-than-average growing management, business, and financial occupations. All four work-related training categories are expected

to have slower growth. These categories include many slow growing or declining production, office and administrative support, and other occupations.

The largest education and training category, short-term on-the job training, with 53 million workers in 2000, accounted for 37 percent of total employment and is projected to account for 35 percent of job growth. It is the fastest growing of the four categories requiring work-related training, and includes large faster-than-average-growing occupations such as security guards, teacher assistants, and combined food preparation and serving workers, including fast food. More than half of the 30 occupations with the largest numerical job growth fall into this category. These workers had the low-

Exhibit 1. Most significant source of education or training

Occupations are classified into one of eleven categories listed below according to these principles:

- An occupation is placed into the category that best describes the education or training needed by most workers to become fully qualified.
- Postsecondary awards, if generally needed for entry into the occupation, take precedence over work-related training even though additional skills or experience may be needed for a worker to become fully qualified.
- The length of time an average worker generally needs to become fully qualified through a combination of on-the-job training and experience is used to categorize occupations in which a postsecondary award generally is not needed for entry.

Postsecondary awards

First professional degree. Completion of the degree usually requires at least 3 years of full-time academic study beyond a bachelor's degree.

Doctoral degree. Completion of a Ph.D. or other doctoral degree usually requires at least 3 years of full-time academic study beyond a bachelor's degree.

Master's degree. Completion of the degree usually requires 1 or 2 years of full-time academic study beyond a bachelor's degree.

Bachelor's or higher degree, plus work experience. Most occupations in this category are management occupations. All require experience in a related non-management position for which a bachelor's or higher degree is usually required.

Bachelor's degree. Completion of the degree generally requires at least 4 years, but not more than 5 years, of full-time academic study.

Associate degree. Completion of the degree usually requires at least 2 years of full-time academic study.

Postsecondary vocational award. Some programs last only a few weeks while others may last more than a year. Programs lead to a certificate or other award but not a degree.

Work-related training

Work experience in a related occupation. Many occupations requiring work experience are first-line supervisors/managers of service, sales and related, production, or other occupations, or are management occupations.

Long-term on-the-job training. More than 12 months of on-the-job training or combined work experience and formal classroom instruction are needed for workers to develop the skills necessary to be fully qualified. This category includes formal and informal apprenticeships that may last up to 5 years. Long-term on-the-job training also includes intensive occupation-specific, employer-sponsored programs that workers must successfully complete. These include fire and police academies and schools for air traffic controllers and flight attendants. In other occupations—insurance sales and securities sales, for example—trainees take formal courses, often provided on the job site, to prepare for the required licensing exams. Individuals undergoing training generally are considered to be employed in the occupation. Also included in this category is the development of a natural ability—such as that possessed by musicians, athletes, actors, and other entertainers—that must be cultivated over several years, frequently in a nonwork setting.

Moderate-term on-the-job training. Skills needed to be fully qualified can be acquired during 1 to 12 months of combined on-the-job experience and informal training.

Short-term on-the-job training. Skills needed to be fully qualified can be acquired during a short demonstration of job duties or during 1 month or less of on-the-job experience or instruction.

Table 6. Employment and total job openings, 2000–2010, and 2000 average annual earnings by education or training category

[Numbers in thousands of jobs]

Most significant source of education or training	Employment				Change			Total job openings due to growth and net replacements, 2000-10 ¹		2000 mean annual earnings ²
	Number		Percent distribution		Number	Percent distribution	Percent	Number	Percent distribution	
	2000	2010	2000	2010						
Total, all occupations	145,594	167,754	100.0	100.0	22,160	100.0	15.2	57,932	100.0	\$33,089
Bachelor's or higher degree	30,072	36,556	20.7	21.8	6,484	29.3	21.6	12,130	20.9	56,553
First professional degree	2,034	2,404	1.4	1.4	370	1.7	18.2	691	1.2	91,424
Doctoral degree	1,492	1,845	1.0	1.1	353	1.6	23.7	760	1.3	52,146
Master's degree	1,426	1,759	1.0	1.0	333	1.5	23.4	634	1.1	43,842
Bachelor's or higher degree, plus work experience	7,319	8,741	5.0	5.2	1,422	6.4	19.4	2,741	4.7	69,967
Bachelor's degree	17,801	21,807	12.2	13.0	4,006	18.1	22.5	7,304	12.6	48,440
Associate degree or postsecondary vocational award	11,761	14,600	8.1	8.7	2,839	12.8	24.1	5,383	9.3	35,701
Associate degree	5,083	6,710	3.5	4.0	1,626	7.3	32.0	2,608	4.5	41,488
Postsecondary vocational award	6,678	7,891	4.6	4.7	1,213	5.5	18.2	2,775	4.8	31,296
Work-related training	103,760	116,597	71.3	69.5	12,837	57.9	12.4	40,419	69.8	25,993
Work experience in a related occupation	10,456	11,559	7.2	6.9	1,102	5.0	10.5	3,180	5.5	40,881
Long-term on-the-job training	12,435	13,373	8.5	8.0	938	4.2	7.5	3,737	6.5	33,125
Moderate-term on-the-job training	27,671	30,794	19.0	18.4	3,123	14.1	11.3	8,767	15.1	29,069
Short-term on-the-job training	53,198	60,871	36.5	36.3	7,673	34.6	14.4	24,735	42.7	19,799

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 Earnings are for wage and salary workers.
NOTE: Detail may not equal total or 100 percent due to rounding.

est earnings of any education and training group in 2000—60 percent as much as the mean for all wage and salary workers.

Occupations generally requiring moderate-term on-the-job training, including medical assistants and painters, construction and maintenance, accounted for 28 million workers, or 19 percent of total employment in 2000, and are projected to account for 14 percent of new jobs. These workers earned 88 percent as much as the mean for all wage and salary workers in 2000.

The long-term on-the-job training category is projected to grow the slowest. It accounted for 8.5 percent of total employment in 2000, but should account for only 4.2 percent of new jobs. It includes slow growing occupations, such as carpenters, and declining ones, such as butchers and meatcutters, and farmers and ranchers. These workers earned the mean for all workers in 2000. An additional 7.2 percent were employed in occupations requiring experience in another occupation that generally did not require postsecondary education or training; these are projected to account for 5 percent of new jobs. Most workers in these occupations are first-line supervisors or managers, so it is not surprising that they earned 24 percent more than the mean for all workers.

The postsecondary vocational award category accounted

for 4.6 percent of total employment in 2000 and should account for 5.5 percent of new jobs. This group includes automobile service technicians and mechanics; licensed practical nurses; and hairdressers, hairstylists, and cosmetologists. They earned 95 percent as much as the mean for all workers in 2000. Occupations generally requiring an associate degree is the fastest growing group; it includes computer support specialists, paralegals and legal assistants, and many fast-growing health occupations. It accounted for 3.5 percent of all jobs in the base year but is expected to account for 7.3 percent of total growth. More than two-fifths of the workers in this group are registered nurses.⁸

The bachelor's degree category accounted for 12 percent of all workers in 2000 and is projected to account for 18 percent of job growth. Most computer occupations are in this group. In addition, jobs in which workers generally need experience in another occupation requiring at least a bachelor's degree before getting their current job accounted for another 5 percent of all workers in 2000 and should account for 6.4 percent of job growth. Almost all workers in this category were in management, business, and financial occupations. Many of the fastest growing occupations and those with the largest projected numerical increases require

a bachelor's degree. Mean earnings of occupations generally requiring a bachelor's degree were 46 percent more than the mean for all wage and salary workers and for those in occupations generally requiring work experience plus a bachelor's or higher degree, 111 percent more.

About 3.4 percent of workers are employed in occupations that generally require more education than a bachelor's degree, including those requiring a first professional degree (1.4 percent), doctoral degree (1 percent), or master's degree (1 percent). Together, these three categories are projected to account for 4.8 percent of job growth. The first professional degree category, which includes lawyers, physicians and surgeons, and pharmacists, had the highest average earnings of any group in 2000—2.8 times as much as the mean for all wage and salary workers. The doctoral degree category earned 58 percent more than the mean; most workers in this group are postsecondary teachers. Those in the master's

degree category earned 32 percent more than the mean, not as much as occupations requiring a bachelor's. This group includes librarians and several counseling occupations.

The share of total job openings resulting from both employment growth and net replacement needs in each of the education and training categories differs from job openings resulting from employment growth alone. In general, occupations requiring the least amount of education and training account for a greater share of net replacement needs—and total job openings—because workers in them have less job attachment than workers in other occupations. While occupations requiring a postsecondary vocational award or an academic degree should generate 42 percent of jobs from growth alone, they should generate only 30 percent of total job openings. Occupations requiring work-related training should generate 58 percent of openings due to growth, but 70 percent of total openings. □

Notes

These projections were completed prior to the tragic events of September 11. BLS will continue to review its projections and, as the long-term economic consequences of September 11 become clearer, will incorporate these effects in subsequent releases of the occupational outlook. (See box on page 3.)

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 2002–03 *Occupational Outlook Handbook*. The Internet version of this edition of the *Handbook*, which will be accessible at <http://www.bls.gov/emp>, is expected to be available in December 2001; the print version of the 2002–03 *Handbook*, BLS Bulletin 2540, should be available in early 2002. Job outlook information in the 2002–03 *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 Service industries include health, engineering and management, social, and computer and data processing services. Services industries, with businesses that supply services to a wide variety of other businesses and to individuals, are projected to grow by 27.1 percent, overall, and account for 61.9 percent of all new jobs over the 2000–10 period.

³ Services industries in this article include State and local government hospitals and public education. In the article on industry employment by Jay Berman (this issue, pp. 39–56), workers in State and local government hospitals and public education are included in the estimates of government employment.

⁴ See Daniel E. Hecker, “Employment impact of electronic business,” *Monthly Labor Review*, May 2001, p. 6.

⁵ *Ibid.*, p. 5.

⁶ *Ibid.*

⁷ 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 2542 (Bureau of Labor Statistics, forthcoming).

⁸ While most nurses currently get their training in associate degree programs, a considerable number have a bachelor's degree, which indicates that there is some overlapping of educational requirements among the groups.