

Insight into Alaska's future job market

Just about everyone wants a job they love, although many of us would settle for one that pays well. Ideally, we would find an occupation that gives us both: satisfying work and an equally satisfying paycheck. Some lucky people stumble into their dream job. Others spend years searching for it or just settle for something that pays the bills.

The economy, of course, has a lot to do with determining the available options. Job seekers need information about the economy to plan their future and school counselors need information to help students choose careers and educational routes. Equally as important, universities, vocational schools and policy-makers need information to make decisions about the

educational and training programs that will be most relevant to the future work force.

To provide some of that information, the Alaska Department of Labor & Workforce Development has completed the 2004-2014 occupational forecast for both payroll employment and self-employed workers.¹ Projected growth of 48,295 jobs will increase Alaska's job count 14.8 percent, from an estimated 327,376 in 2004 to 375,671 in 2014. Growth for the U.S., in comparison, is projected to be 13.0 percent over the same time period.

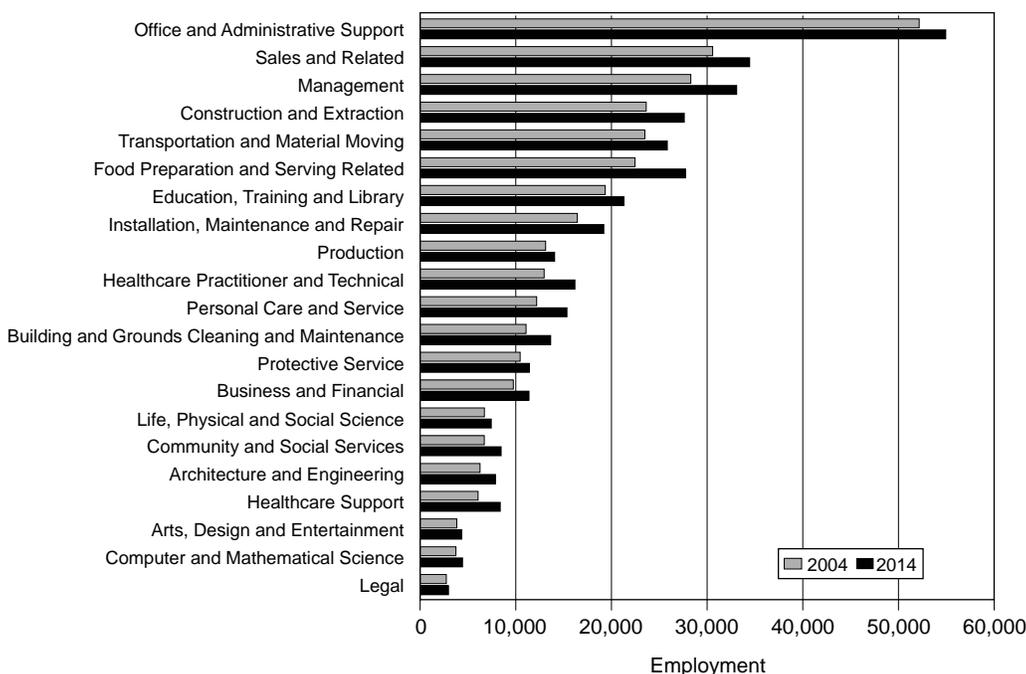
The process of projecting long-term growth by occupation begins by addressing the industrial makeup of Alaska's economy and anticipating how employment in the state's industries will change over the period. The preceding article

provides the 2004-2014 statewide industry forecast that is the foundation for the occupational projections analyzed here.

Occupational categories: employment and growth

Occupational categories, which are defined by the federal government and are the most broadly defined groupings of occupations, provide an overview of the occupational landscape. (See Exhibit 1.) They pro-

1 Occupational Category Employment Alaska, 2004 to 2014¹

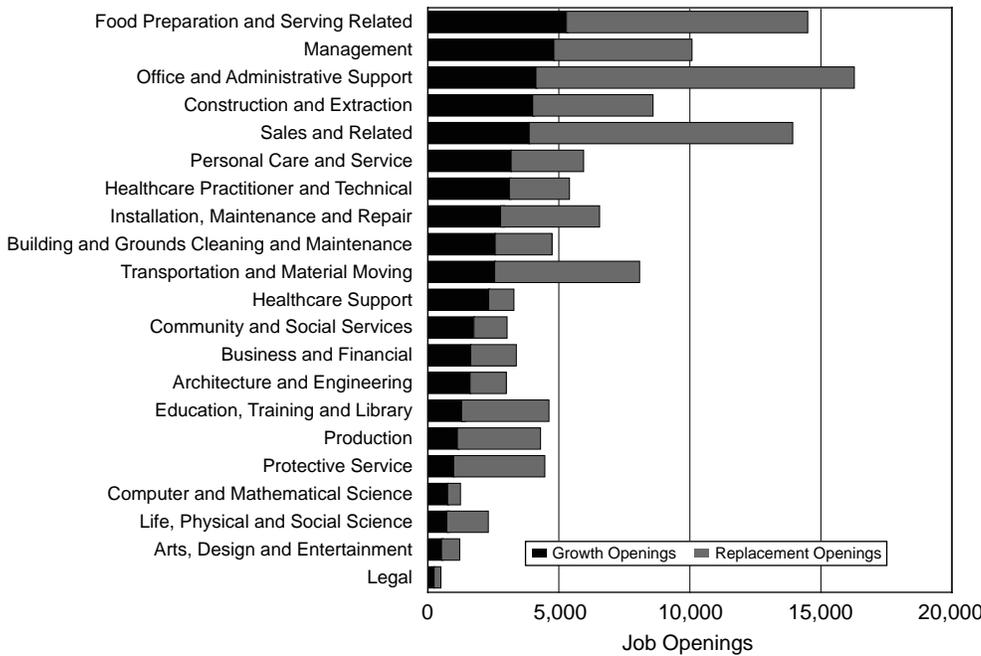


¹ The occupational categories are based on the federal Standard Occupational Classification Manual.

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section

¹ Unlike the 2004-2014 industry forecast in the preceding article, this analysis includes estimates of self-employed people. Therefore, the overall base and projected employment totals are greater than those in the industry forecast.

2 Occupational Category Openings Alaska, 2004 to 2014



Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section

vide insight into expectations for related fields but are broad enough to understand the economy at large.

Categories can also reflect industry movements, and because knowledge and skills gained in education and training are typically applicable across many related occupations, categories are a good guide for understanding needed skill sets.

In looking at how employment in an occupational category grows over time, it is useful to look at two numbers: the increase in the number of jobs – numerical growth – along with the percentage growth.

In 2004, the five occupational categories with the most employment were office and administrative support, sales and related occupations, management, construction and extraction, and transportation and material moving. (See Exhibit 1.) The occupational categories projected to be the top five in 2014 will change slightly: office and administrative support (55,148 jobs), sales and related occupations (34,640 jobs), management (33,294 jobs), food preparation and serving re-

lated occupations (27,949 jobs), and construction and extraction (27,863 jobs).

Job openings: growth and replacement

There are two types of job openings: growth openings and replacement openings.

Growth openings, which often get the most media attention, are newly created jobs. Replacement openings, which are often overlooked, are job vacancies that occur when workers leave an occupation – for example, when they leave the state, change careers or retire. Their jobs are still there for other people to enter the occupation.²

In terms of new jobs created, the food preparation and serving related occupations category leads all occupational categories. (See growth openings in Exhibit 2.) It is projected to provide 5,293 new jobs by 2014.³ Management is next with a projected 4,808 new jobs, followed by office and administrative support (4,123), construction and extraction (4,001), then sales and related occupations (3,869). These are all large occupational categories, so it is not surprising that they will create the greatest number of new jobs. They also represent categories that are fundamental in a service economy and are broadly dispersed across many industries.

Some small occupational categories will show high percentage growth but add a relatively small number of actual jobs. For instance, healthcare support is expected to have the highest percentage growth. Fueled by a growing demand due to an aging population, it will grow 37 percent over the forecast period. Yet, because the category is small, it is expected to add only 2,321 new jobs by 2014.

² Turnover is when a worker leaves a job for any reason; a replacement is when the person not only changes jobs, but actually leaves the occupation. Job turnover that is not the result of replacement openings is not addressed in this article.

³ In this forecast, all references to openings are openings that will occur over the 10-year period.

Occupations in healthcare support include nurse's aides, dental assistants and home health aides.

Like healthcare support, both community and social services, and architecture and engineering are small occupational categories. They will remain small throughout the 2004-2014 period, but they will grow nearly twice as fast as the state's 14.8 percent average during the same period (26 percent and 25 percent, respectively). Community and social services includes educational, vocational, family and mental health counselors. The category's growth in part will be from government expenditures for programs targeting at-risk groups – ranging from alcohol and drug rehabilitation to preschool programs in low-income areas – as well as from the demographic changes associated with an aging population.

Yet it is important to look beyond projected employment growth for job opportunities and training focus, since in most occupational categories, more openings occur due to replacement openings than growth openings. (See replacement openings in Exhibit 2.)

Office and administrative support will provide the largest number of replacement openings over the forecast period (12,223), followed by sales and related occupations (10,127) and food preparation and serving related occupations (9,278).

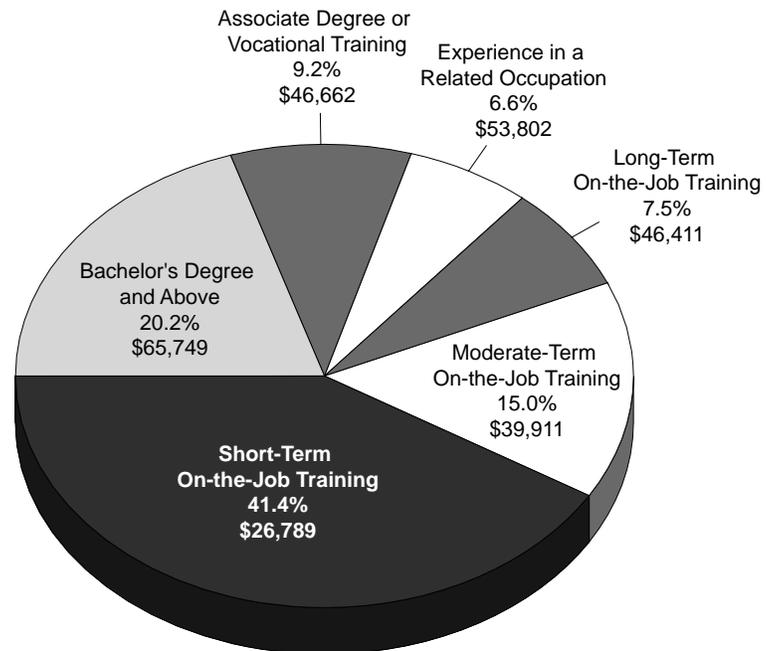
It is also important to note that projected openings show the demand side of the labor equation – the number of job openings that are expected – but provide no information about the supply side of that equation – how many people in the labor pool will be available and qualified to fill those job openings. A complete picture would include projections on the labor supply, which is not analyzed here.

Education and training

Education and training requirements⁴ are also important factors for assessing future job op-

⁴ The U.S. Bureau of Labor Statistics places each occupation into an education or training category that best describes the education or training needed by most workers to become fully qualified. The BLS assignments, which are used for this forecast, are not saying that a particular pathway is the only way to an occupation.

Educational and Training Levels Total openings in Alaska, 2004 to 2014^{1,2}



¹ The dollar amounts are May 2005 average annual wages.

² Short-term on-the-job training is training of less than a month. Moderate-term on-the-job training is one to 12 months of training. Long-term on-the-job training is more than 12 months of training, including classroom time.

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section

portunities. There are various ways to look at those requirements.

One way is to look at the openings that will occur over the 2004-2014 period. The vast majority – 64 percent – of the 128,930 job openings in Alaska through 2014 will be in jobs that require only some type of on-the-job training.

In fact, 41 percent of the job openings (53,520) will require only short-term on-the-job training of less than a month. Twenty percent (26,043 openings) will require at least a bachelor's degree and 9 percent (11,861 openings) will require an associate degree or vocational training.

Another way to look at education and training is by looking at the employment projected for the year 2014. The biggest group – 38 percent of the employment in 2014 – will be in occupations requiring only short-term

4 Occupational Summaries

Alaska, 2004 to 2014

Fastest Growing Occupations		Declining Occupations	
	Percent		Percent
Home health aides	60.2%	File clerks	-40.2%
Securities, commodities and financial services sales agents	58.6%	Photographic processing machine operators	-28.2%
Personal and home care aides	51.5%	Telephone operators	-27.2%
Computer software engineers, applications	47.9%	Word processors and typists	-24.5%
Bartenders	41.9%	Switchboard operators, including answering services	-10.0%
Health and safety engineers, except mining safety engineers	41.3%	Eligibility interviewers, government programs	-9.5%
Crushing, grinding and polishing machine setters, operators	39.6%	Cargo and freight agents	-9.1%
Emergency medical technicians and paramedics	37.8%	Couriers and messengers	-8.3%
Mental health and substance abuse social workers	36.2%		
Medical assistants	35.6%		

Wages for the Occupational Categories			
	2005 Average Annual Wages		2005 Average Annual Wages
Management	\$69,802	Production	\$38,658
Architecture and Engineering	\$67,760	Arts, Design and Entertainment	\$38,656
Legal	\$67,608	Community and Social Services	\$38,651
Healthcare Practitioner and Technical	\$66,847	Protective Service	\$35,833
Computer and Mathematical Science	\$59,738	Office and Administrative Support	\$34,377
Business and Financial	\$58,369	Healthcare Support	\$30,424
Life, Physical and Social Science	\$53,919	Sales and Related	\$29,560
Construction and Extraction	\$53,042	Personal Care and Service	\$26,639
Installation, Maintenance and Repair	\$48,963	Building and Grounds Cleaning and Maintenance	\$26,137
Education, Training and Library	\$44,938	Food Preparation and Serving Related	\$21,979
Transportation and Material Moving	\$42,989		

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section

on-the-job training. Eighteen percent will be in occupations requiring a bachelor's degree and 16 percent will be in occupations requiring moderate on-the-job training (one to 12 months).

Adding pay into the mix

Workers who have the most education and training traditionally have had the best opportunities for high-paying jobs in growing occupations, in part because shifts in the occupational composition of the work force and the structure of work within occupations have generally favored higher levels of education. Although the projections indicate that jobs will be available for those without formal training beyond high school, prospects for high-paying jobs will increasingly be better for workers who undertake postsecondary education and training.

Using 2005 wage data, the most recent available,⁵ the general rule that more education equals more money continues to hold true. (See Exhibit 3.)

Similar to the education and training levels, the occupational categories show distinct differences in wages. The management occupational category had the highest average annual wage with \$69,802. (See Exhibit 4.) Other categories that followed include architecture and engineering (\$67,760), legal (\$67,608) and healthcare practitioner and technical (\$66,847).

The food preparation and serving related occupational category had the lowest average annual wage with \$21,979. It is followed by the building and grounds cleaning and maintenance category (\$26,137), personal care and service (\$26,639); sales and related occupations (\$29,560) and

⁵ The Department of Labor does not forecast wages. (See the Methodology section for details on how it collects earnings information.)

healthcare support (\$30,424).

Occupations with the Most Projected Openings Alaska, 2004 to 2014 **5**

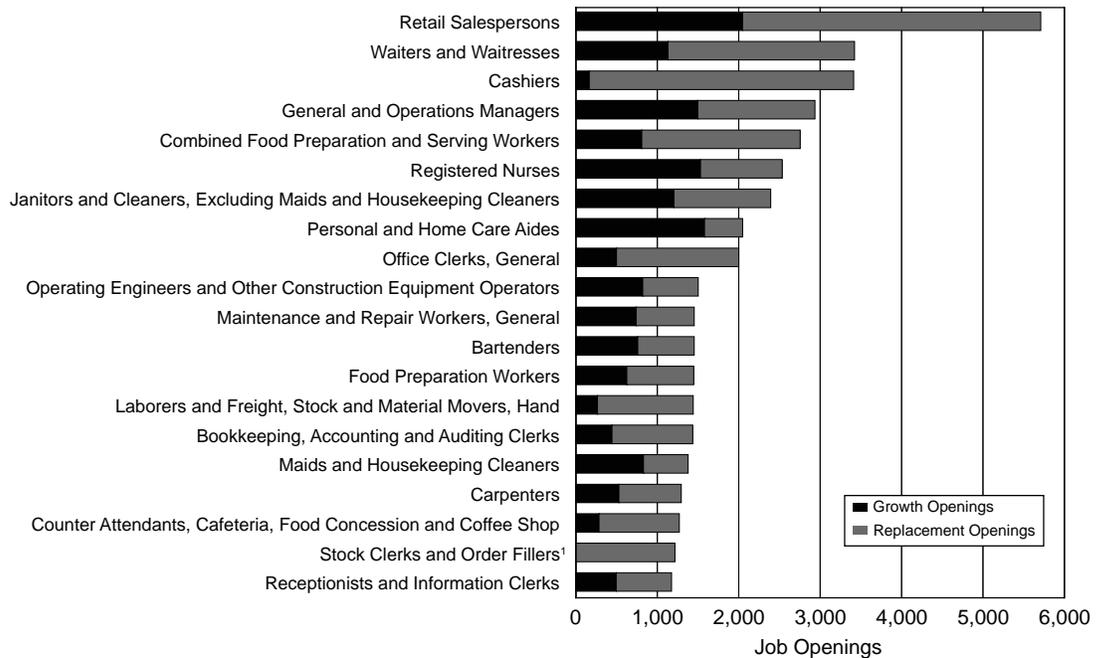
Where the jobs are: specific occupations

The list of occupations projected to grow the fastest is diverse. (See Exhibit 4.)

The occupation with the greatest growth is home health aides, which is projected to grow 60 percent. Health occupations, as expected, are prominent on the list due to the growth of the healthcare and social assistance sector. Some others that are projected to grow fast include the securities, commodities and financial services sales agents occupation (59 percent), computer software engineers, applications (48 percent) and health and safety engineers (41 percent). These occupations point to the growing population and critical economic base necessary for a variety of services.

Growth in the health, dental and personal care occupations overall is expected to follow changing demographics. Alaska's aging population, combined with parallel developments in health care, will fuel faster-than-average growth in various health care occupations: home health aides, personal and home care aides, emergency medical technicians and paramedics, and medical assistants. Even the occupations of health and safety engineers, and mental health and substance abuse social workers will be influenced by a greater number of Alaskans growing older.

Occupations with rapid growth rates create new job opportunities and provide insight into changes in the economy. However, if an occupation is small, its number of job openings might be low compared to larger but slower-growing occupa-



¹ Negative employment change means that no growth openings are projected over the 10-year forecast period. However, all occupations will still experience job openings through replacement.

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section

tions. Job seekers should investigate opportunities in high-growth occupations, but they should also consider occupations that generate large numbers of job openings based purely on their large size.

The occupations with the most projected openings are retail salespersons, waiters and waitresses, cashiers, general and operations managers, and combined food preparation and serving workers, among others. (See Exhibit 5.) Those five account for 16 percent of all projected openings while the top 20 account for 37 percent.

Occupations in service-providing sectors, such as food preparation workers and retail salespersons, will have significant numbers of openings in the 2004-2014 period, but the majority will come from replacement openings. Factors that contribute to a high number of replacement openings include low pay, limited opportunities and the traditional entry level nature of the occupations.

Some occupations projected to have the most openings will be negatively affected by techno-

6 Focus Jobs Alaska, 2004 to 2014

Occupational Title	Wage Quartile	2004 Employment	2014 Employment	Change	Percentage Change	Total Openings 2004 to 2014
Bachelor's Degree and Above						
General and operations managers	\$\$\$\$	7,757	9,254	1,497	19.3%	2,960
Elementary school teachers, except special education	\$\$\$	3,330	3,586	256	7.7%	990
Construction managers	\$\$\$\$	1,681	2,066	385	22.9%	690
Accountants and auditors	\$\$\$\$	1,702	2,028	326	19.2%	650
Secondary school teachers, except special and vocational education	\$\$\$	1,931	2,035	104	5.4%	650
Chief executives	\$\$\$\$	1,386	1,716	330	23.8%	590
Financial managers	\$\$\$\$	1,542	1,886	344	22.3%	570
Airline pilots, co-pilots and flight engineers	\$\$\$\$	1,399	1,564	165	11.8%	540
Administrative services managers	\$\$\$\$	1,523	1,755	232	15.2%	530
Associate Degree or Vocational Training						
Registered nurses	\$\$\$\$	4,902	6,432	1,530	31.2%	2,560
Automotive service technicians and mechanics	\$\$\$	1,620	2,101	481	29.7%	910
Aircraft mechanics and service technicians	\$\$\$	1,513	1,632	119	7.9%	480
Work Experience in a Related Occupation						
First-line supervisors/managers of office and administrative	\$\$\$	3,189	3,429	240	7.5%	920
First-line supervisors/managers of retail sales workers	\$\$\$	3,526	3,708	182	5.2%	820
First-line supervisors/managers of construction trades and extraction workers	\$\$\$\$	2,013	2,467	454	22.6%	800
First-line supervisors/managers of mechanics, installers and repairers	\$\$\$\$	1,089	1,285	196	18.0%	470
Long-Term On-the-Job Training						
Carpenters	\$\$\$\$	4,855	5,383	528	10.9%	1,320
Electricians	\$\$\$\$	2,164	2,471	307	14.2%	740
Plumbers, pipefitters and steamfitters	\$\$\$\$	1,492	1,716	224	15.0%	570
Police and sheriff's patrol officers	\$\$\$	1,208	1,374	166	13.7%	480
Moderate-Term On-the-Job Training						
Operating engineers and other construction equipment operators	\$\$\$	2,741	3,561	820	29.9%	1,530
Maintenance and repair workers, general	\$\$\$	3,826	4,566	740	19.3%	1,480
Construction laborers	\$\$\$	3,605	4,232	627	17.4%	1,110
Truck drivers, heavy and tractor-trailer	\$\$\$	3,380	3,781	401	11.9%	950
Sales representatives, wholesale and manufacturing, except technical and scientific products	\$\$\$	1,652	1,822	170	10.3%	600

The \$\$\$ symbol represents average annual wages between \$37,850 and \$53,700; the \$\$\$\$ symbol represents average annual wages greater than \$53,700.

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section

logical changes. For example, cashiers, general office clerks, accounting clerks⁶ and the stock clerks and order fillers occupation are all projected to have little or no growth; all or nearly all the openings will be replacement openings. In fact, the stock clerks and order fillers occupation is projected to actually decline in employment.

The importance of replacement openings is highlighted in the list of the 20 occupations

⁶ The formal title of the occupation is bookkeeping, accounting and auditing clerks.

with the most projected openings: 13 of the 20 will have more openings from replacement than growth. Also, five occupations on the list will grow less than 10 percent during the 2004-2014 period; the fact that they made the top-20 list is due to their high numbers of replacement openings.

The occupations with the most growth openings are projected to be personal and home care aides, registered nurses, home health aides, bartenders, and hotel, motel and resort desk clerks. They reflect the significant future growth

in the health fields, as well as expected growth in tourism-related fields. Tourism is another part of the economy that should receive a boost from aging – and retiring – baby boomers.

Declining occupations

Only eight occupations are expected to decline during the 2004-2014 period (see Exhibit 4), and all eight are in occupations that are moving toward obsolescence. File clerks (-40 percent), photographic processing machine operators (-28 percent) and telephone operators (-27 percent) are a few that fall into this category.

However, it is important to note that even with declining occupations where there are no growth openings, there are still replacement openings, and therefore, opportunities.

Focus Jobs

All the preceding information begs the question: What occupations offer the best employment opportunities and, at the same time, above-average wage potential over the next 10 years? To address that question, we created a Focus Jobs list: the 25 occupations that will have the most openings during the 2004-2014 period and that currently have higher-than-average wages.⁷ (See Exhibit 6.) The occupations are sorted first by education and training levels, and then by the number of openings.

In total, the Focus Jobs account for more than 65,000 jobs of the total 2004 employment and nearly 76,000 jobs of the projected 375,671 employment in 2014. Also, of the 128,930 total openings anticipated during the 2004-2014 period, 23,910 – nearly one in five – are in these 25 occupations.

The occupations on the list do not include any with requirements for graduate or professional degrees, though nine occupations require a bachelor's degree. Only three require at least an associate degree or vocational training. Thirteen occupations rely on on-the-job training of various lengths or related work experience.

⁷ See the Methodology section for information about how these occupations were selected.

Occupations in the bachelor's degree and above category on the list are professional in nature with a heavy emphasis on a variety of management fields. There are also teaching, accounting and pilot occupations.

Management positions, usually among the best paid in any organization, appear nine times on the list (including chief executives), in both the bachelor's degree and above, and work experience in a related occupation sections. That makes an important point: that there is more than one way to become a manager. And all the management positions on the list are projected to have an ample number of openings in the 10-year period.

Occupations in the long-term on-the-job training category (more than 12 months of training, including classroom time) and the associate degree or vocational training category on the list are mostly skilled trades. Occupations that are more oriented toward construction or building maintenance, such as carpenters, require moderate- or long-term on-the-job training.

Occupations that need an associate degree or vocational training are more mechanical; examples are the automotive and aircraft mechanics occupations.⁸ Two exceptions are registered nurses – who have at least an associate degree – and police and sheriff's patrol officers – who have long-term on-the-job training. There will be a high number of openings for nurses during the 10-year period; the number for police and sheriff's patrol officers will be significant as well.

Finally, moderate on-the-job training occupations include heavy equipment operators, laborers, truck drivers, maintenance and repair workers and sales representatives. Like all the others on the list, they are notable for their above-average wages and number of projected openings.

In summary

The Alaska economy is forecasted to grow considerably in the 2004-2014 period with an em-

⁸ See Exhibit 6 for the formal titles of the occupations.

ployment growth rate tracking or even slightly exceeding the national rate.

Job opportunities are projected to abound during the period. Roughly 70 percent of the openings will require less than an associate degree or vocational training and 30 percent will require a post-secondary degree or vocational training.

Occupations with large employment are projected to grow slower, but they will generate the most openings. Other occupations stand out for their growth rate, but because they are smaller, they will generate far fewer job opportunities.

About Occupational Forecasts

Occupational forecasts are used by different types of customers to help them make informed decisions about job prospects, careers or school curriculum. There are numerous ways to organize the data produced in an occupational forecast. For example, the analysis used in this article leads users toward occupations where the most projected job openings are likely to occur within the forecast period. The Focus Jobs list was developed by identifying occupations having the most total openings during the 10-year period and current higher-than-average wages. In previous occupational forecast articles, the analysis highlighted faster-growing occupations with higher-than-average wages and labeled them "Hot Jobs." For the Hot Jobs analysis or for a full listing of the 2004-2014 projections for Alaska's 312 specific occupations, go to Research and Analysis' Web site at almis.labor.state.ak.us. Click on "Occupation Information" on the left, then "Occupational Forecast."

Methodology

Every two years, each state – and the U.S. Bureau of Labor Statistics for the nation – analyzes both industry and occupational employment and develops 10-year forecasts to help address questions from job seekers, career and school counselors and policy-makers. Occupational forecasts are the end product of a three-part system: employer surveys, a matrix of industries and occupations, and industry employment forecasts.

Employer Surveys: This forecast uses the Occupational Employment Statistics program, conducted jointly by the Alaska Department of Labor & Workforce Development and the U.S. Bureau of Labor Statistics.

The OES program surveys occupational employment through a random sample of employers that do business in Alaska. The results of the OES employer surveys produce profiles of the occupational makeup for surveyed industries and estimates of wage rates by occupation.

Industry/Occupation Matrix: The occupational profile of each industry is arranged into a matrix of occupations and industries.

Base year employment estimates (2004) are made by multiplying the proportion of employment for each occupation in an industry by the current (2004) estimate of employment for that industry and then summing across industries.

Future occupational employment requires the use of "change factors" to indicate shifts in industry staffing patterns as employers respond to changes in both technology and the marketplace.

Estimates of the number of self-employed workers are made by applying ratios of self-employed workers in each occupation to estimates of wage and salary workers in the same occupation. Self-reported occupational data from the U.S. Census Bureau's Current Population Survey are used to determine the self-employment ratios.

Earnings: Wage information is from the May 2005 OES survey wage estimates, which include wage and salary employment only. All wages are mean annual wages. Earnings quartiles were determined by sorting the total number of Alaska employees by their wage, from

the lowest to highest. One-fourth of total employment was placed in each quartile. In the Focus Jobs list, only the occupations in the two highest wage quartiles were considered. Those wage quartiles are represented by the \$\$\$ symbol and the \$\$\$\$ symbol.

Note about occupations: In Alaska, 312 occupations met the confidentiality and statistical requirements to be publishable, out of a total 821 occupations identified in the federal Standard Occupational Classification Manual. Because many of those occupations not published employ only a few people, the 312 represent 89 percent of Alaska's total employment and job openings.