

The 2004-2014 forecast: Expect 48,000 jobs

By 2014, the number of jobs in Alaska is expected to grow by more than 48,000, bringing the state's total to more than 349,000 wage and salary jobs. Overall employment growth is expected to be 1.5 percent per year through the forecast period, driven especially by population growth and the increased availability of in-state goods and services – including medical. Although the total number of jobs is expected to grow by 16 percent from 2004 to 2014, not every industry will grow at that rate.

The health care and social assistance industry category is expected to add the most jobs, followed by accommodations and food services, and retail trade. Those three combined are expected to add about half the jobs through 2014. (See Exhibits 1-4.) Others expected to add large numbers of jobs include construction and professional, scientific and technical services.

Health care and social assistance, and accommodations and food services are also among those expected to show the fastest rate of growth during the forecast period. The government sector, which does not include the uniformed military, is expected to show positive though below-average growth with federal government by itself slightly declining.

One of the most anticipated projects expected to begin during the forecast period is the construction of a gas pipeline. This forecast assumes the pipeline construction will be in the midst of construction by the end of the forecast period. Though employment gains due to a pipeline project will be significant, especially

to the construction industry, its impact on the state's total employment will be moderate.

This forecast does not assume development in the Arctic National Wildlife Refuge.

Mining including oil and gas

About 85 percent of the state's mining jobs in 2004 were in the oil and gas field. That includes more than 2,500 in oil and gas extraction and 99 percent of mining support activities' 5,850 jobs. Employment for oil and gas extraction is expected to stay flat through the forecast period, while support activities for mining is expected to add 1,100 jobs – an increase of almost 20 percent. Mineral mining – mining for Alaska's considerable deposits of gold, silver, zinc and other minerals – is projected to add 700 jobs, an increase of more than 50 percent. It is projected to grow more than three times as fast as the average for all industries.

High oil prices are currently putting money in the state's and the oil companies' coffers. Those high prices may or may not translate to added development or employment. Getting oil from Alaska is a high risk, expensive proposition and oil companies may first look elsewhere when considering new investments. Smaller independent companies will continue to be some of the major players in developing new fields.

The Alaska Department of Revenue projects an average decline in total oil production of more than 2 percent per year from 2004 to 2014. This anticipated decline takes into account new main and satellite fields expected to come on line during the forecast period.

Most gas pipeline related employment by 2014 will be counted in the construction industry.

Mineral prices have been strong for the past few years, creating an optimistic atmosphere for mineral miners. The Pogo gold mine northeast of Delta Junction came on line in 2006, joining the Red Dog zinc, lead and silver mine north of Kotzebue, the Fort Knox gold mine near Fairbanks, and the Greens Creek gold, zinc, silver and lead mine near Juneau as the Alaska mines with the most employment.

The Kensington gold mine north of Juneau is expected to begin operation during the forecast period and should add 200 jobs. Other large mines that may begin operations later in the forecast period include the Rock Creek gold mine near Nome, the Donlin Creek gold mine near Bethel, and the Chuitna coal project 50 miles west of Anchorage. Chuitna is scheduled to begin operation by about 2011. The Nixon Fork gold mine northeast of McGrath has received the necessary permits to restart.

The controversial Pebble mine near Iliamna would be a large employer in both the construction and mining industries, but as an open-pit gold and copper mining operation, it is perceived by some to be a threat to the important Bristol Bay fishing and visitor industries. Potential Pebble mine employment is not included in this forecast.

Gains in employment through 2014 will be partially offset by losses at the Fort Knox gold mine

Statewide Employment Forecast, 2004 to 2014 By industry



	2004	2014	Change from 2004 to 2014	Total Percentage Change
Total Employment ¹	301,300	349,550	48,250	16.0%
Agriculture, Forestry, Fishing and Hunting	1,050	1,050	0	0.0%
Mining	9,700	11,500	1,800	18.6%
Oil and Gas Extraction	2,500	2,500	0	0.0%
Mining without Oil and Gas	1,350	2,050	700	51.9%
Support activities for Mining	5,850	6,950	1,100	18.8%
Utilities	1,800	2,200	400	22.2%
Construction	17,650	21,400	3,750	21.2%
Manufacturing	12,300	12,500	200	1.6%
Seafood Product Preparation and Packaging	8,550	8,800	250	2.9%
Wood Product Manufacturing	350	350	0	0.0%
Wholesale Trade	6,350	6,550	200	3.1%
Retail Trade	34,900	39,750	4,850	13.9%
Transportation and Warehousing	19,100	20,200	1,100	5.8%
Information	6,850	7,600	750	10.9%
Finance and Insurance	8,550	10,450	1,900	22.2%
Real Estate, Rental and Leasing	4,850	5,850	1,000	20.6%
Professional, Scientific and Technical Services	11,200	14,250	3,050	27.2%
Management of Companies and Enterprises	1,150	1,450	300	26.1%
Administrative, Support, Waste Management and Remediation Services	11,050	11,650	600	5.4%
Educational Services ²	2,000	2,200	200	10.0%
Health Care and Social Assistance	32,700	43,650	10,950	33.5%
Arts, Entertainment and Recreation	3,900	5,000	1,100	28.2%
Accommodations and Food Services	26,250	34,700	8,450	32.2%
Other Services (except Public Administration)	10,750	13,000	2,250	20.9%
Federal Government ³	17,200	17,150	-50	-0.3%
State Government ⁴	24,050	26,800	2,750	11.4%
Local Government ⁵	37,850	40,650	2,800	7.4%

¹ Excludes self-employed workers, fishermen, domestic workers, unpaid family workers and nonprofit volunteers

² Private education only

³ Excludes uniformed military

⁴ Includes University of Alaska

⁵ Includes public school systems

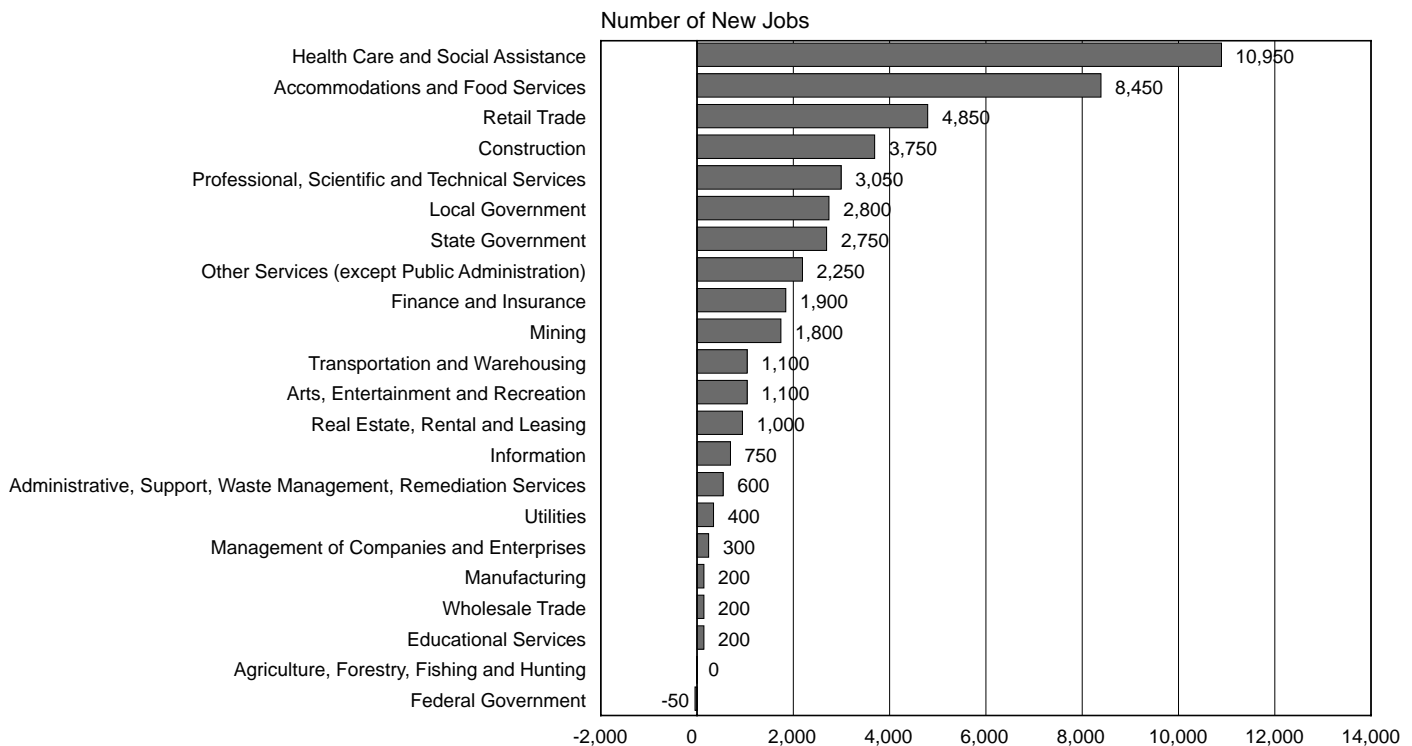
Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section

as it nears the end of its expected life in 2012.

Construction

The construction industry has been trending more-or-less steadily upward for the past decade. This trend should continue, and overall construction should enjoy faster than average growth through 2014. Most of the growth will be in heavy and civil engineering construction, which will gain more than 2,700 jobs by 2014.

2 Projected Changes in Employment By industries in Alaska, 2004 to 2014



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

Once the assumed construction of a gas pipeline begins, about 4,200 jobs per year are expected to be directly involved in its completion. There will be nearly as many indirect jobs found in other sectors, including trade and services.

For the past decade, most of Alaska's public construction has been paid for with federal dollars secured by Alaska's delegation in Washington, D.C. (Federal spending in Alaska in 2004 was nearly \$13,000 per person – the highest of any state and nearly twice the national average.) Alaska Sen. Ted Stevens has indicated that federal funding has likely peaked and that the state will need to pick up more of these costs. The Alaska Legislature has shown a willingness to do so, as its 2007 capital budget of \$2.4 billion was up 40 percent over 2006's.

An increased military presence in the state is one type of public spending that would encourage construction on bases. According to the University of Alaska's Institute of Social and Economic

Research, the military will spend \$730 million in Alaska in 2006. Military spending in the next decade will depend on the role Alaska is expected to play in the nation's defense strategy.

Residential construction depends on population growth, a strong economy, construction costs and interest rates. The Matanuska-Susitna Borough is the fastest growing area in the state, largely because of its convenient commute to Anchorage and its favorable supply of affordable land and housing. Mat-Su's growth should continue.

However, interest rates remain low relative to historical averages, but they are rising. This along with high materials and construction costs could moderate growth.

Manufacturing

Seafood processing, which now makes up almost 70 percent of Alaska's total manufactur-

Employment by Industry Alaska, 2004 and projected 2014

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ing employment, should show a slight increase through 2014. Employment in wood product manufacturing in 2004 was barely half of what it was 10 years ago, and employment is expected to remain flat over the next decade.

Though seafood processing employment in 2004 showed significant gains from the previous three years, it is still only three-quarters of what it was at its height in the early 1990s. As companies strive to compete for market share, they will look for ways to increase efficiency, including consolidation, newer processing methods and a better utilization of their work force.

One of seafood processing's positive aspects is its groundfish fishery. It is the largest in the world with more than two billion pounds harvested annually.

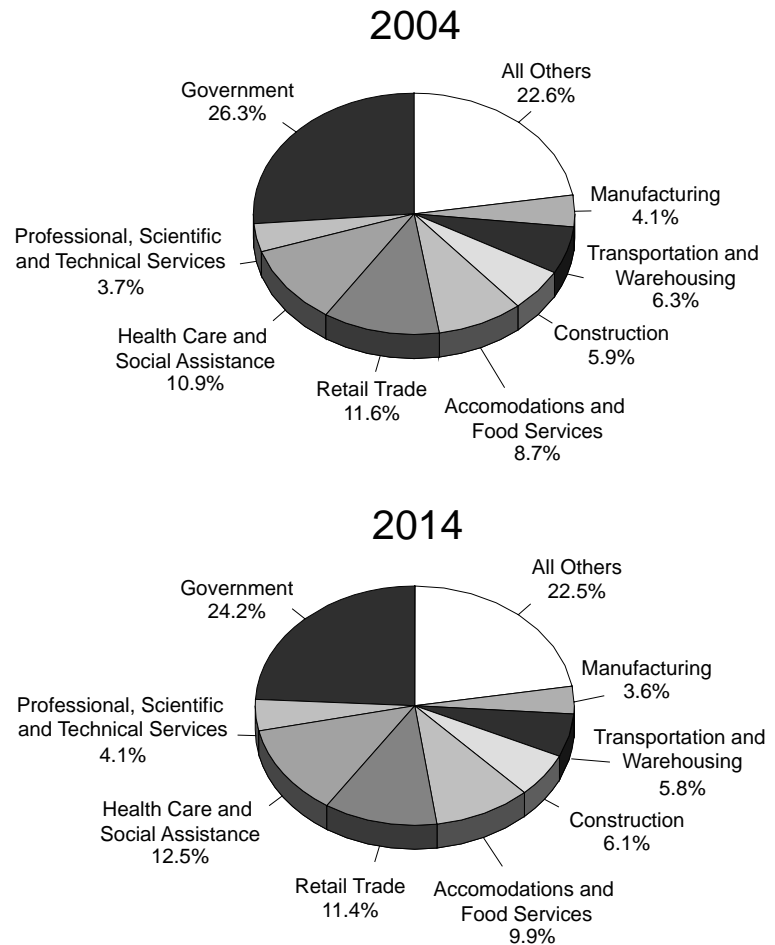
Healthy Asian markets should increase demand and the price for all Alaska-caught fish. Processors continue to improve the quality of their products, find new ways to add value to their products and launch creative and aggressive marketing campaigns.

Transportation and warehousing

Transportation and warehousing grew more than 17 percent between 1994 and 2004. That growth is projected to slow over the forecast period to a more modest 5.8 percent, which equates to about 1,100 jobs from 2004 to 2014.

Ted Stevens Anchorage International Airport is the second largest U.S. cargo airport – behind Tennessee's Memphis International Airport – and is the nation's major hub for cargo flown between North America and Asia. Expanding markets in Asia, especially China, should provide opportunities for growth in air transportation.

Employment in pipeline transportation includes those working on the current trans-Alaska oil pipeline, and since this forecast assumes a gas pipeline will be in the midst of construction, those hired in anticipation of gas line operation.



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

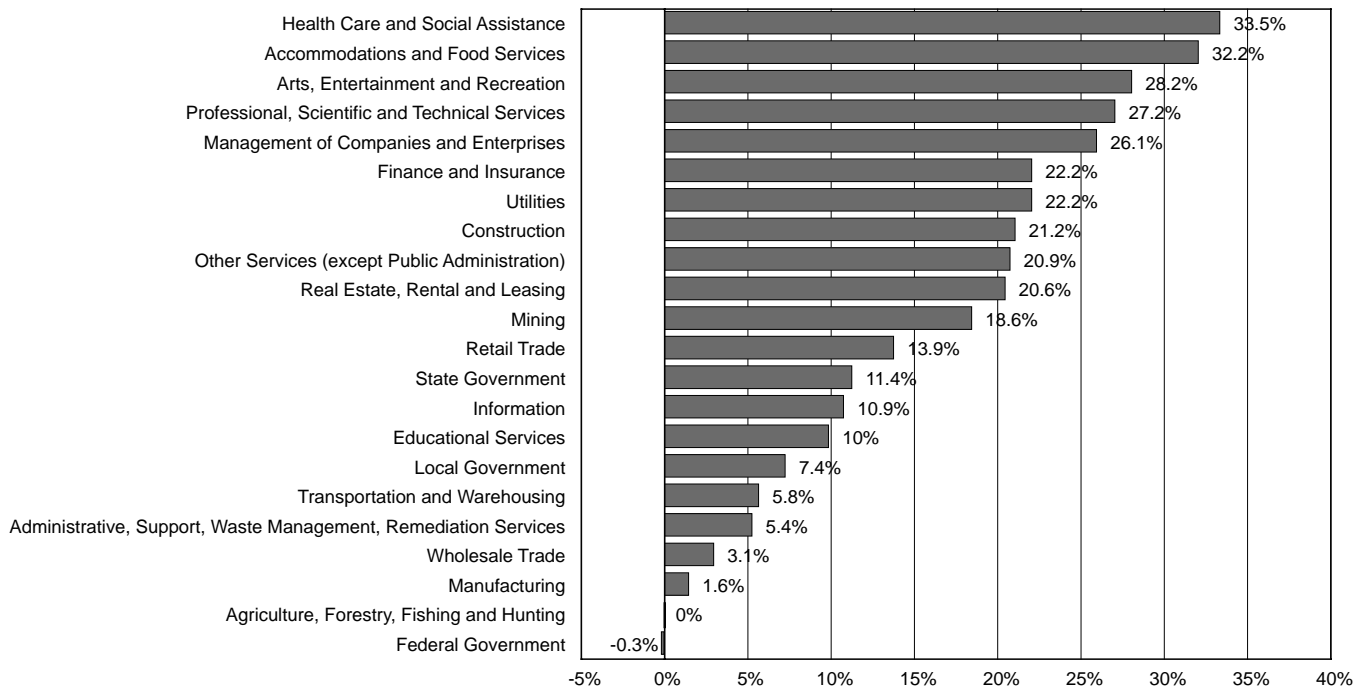
Overall, a decline in pipeline transportation employment is expected through 2014, as decreases due to planned layoffs and increased efficiency are expected to more than offset any anticipated employment gains for gas pipeline companies.

Warehousing and storage jobs are projected to grow faster than average through 2014. This relatively small category is expected to add about 275 jobs.

Retail trade

Statewide population growth of 70,000 by 2014 and expanded opportunities for spending mon-

4 Projected Job Growth By industries in Alaska, 2004 to 2014



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

ey in-state rather than Outside should support growth in retail trade through the next decade. Statewide, retail trade grew 14.9 percent from 1994 to 2004 and is expected to grow 13.9 percent through this forecast period.

With almost 12 percent of the state's total jobs in retail trade, it has been a solid performer for the past 10 years. Anchorage has about 40 percent of the state's population and 50 percent of the state's retail trade employment.

Accommodations and food services

Nearly 1.5 million tourists visited the state in the summer of 2005, and indications are that Alaska will continue to be a popular travel destination. (See Sidebar.) Visitors impact a number of Alaska businesses, but none more than the ones that provide them places to stay and food to eat. Accommodations and food services is expected to grow 32.2 percent over the next decade, more than twice the average of all industries. Roughly 7-in-10 of these jobs are in food services, 3-in-10 in accommodations.

Health care and social assistance

The employment category that combines health care and social assistance employers – social assistance includes everything from food banks to day care providers and vocational rehabilitation services – will add more jobs than any other category and will supplant retail trade with the most total jobs. The health care and social assistance category was among the fastest growing in the state from 1994 to 2004 and both components should enjoy faster than average growth through 2014. Over 43,600 jobs are projected in this industry in Alaska in 2014, up 33.5 percent from the 32,700 in 2004. Three-quarters of the employment is expected to be in the health care component and about a quarter in the social assistance component.

Alaska's significant health care investments over the past decade are paying off. As more facilities are built, equipped and staffed, Alaskans are finding they can get most of their health care needs taken care of in-state. This not only saves on expensive trips to Outside specialists and

providers, but it offers good-paying jobs to health care professionals and support staff within Alaska. As facilities become fully staffed, employment growth may stabilize and slow slightly.

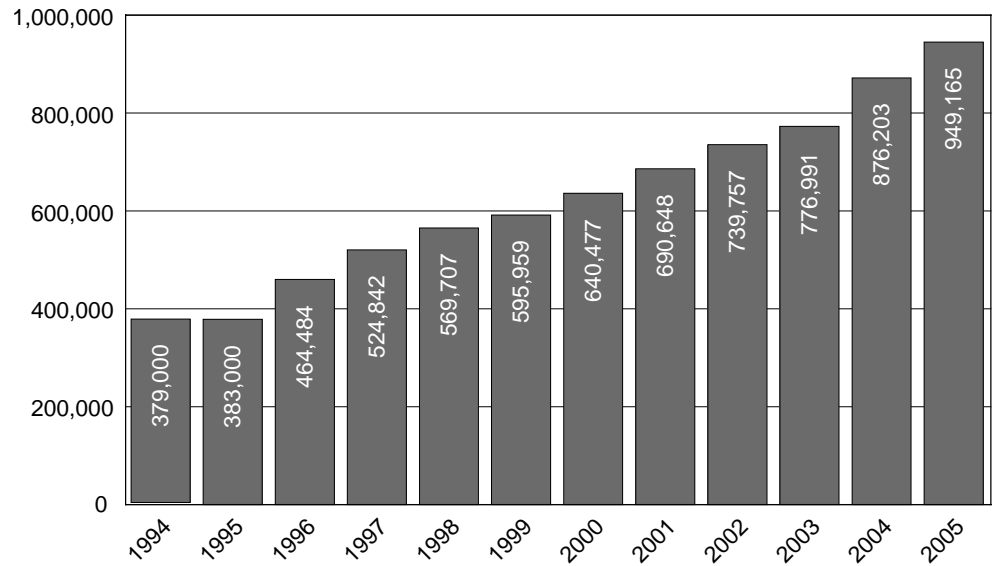
Alaska has a lower median age than that of the nation as a whole, but the state still has an aging population that will require more and specialized care in the future. While much of the infrastructure needed to provide that care is in place, more will be needed. That need is likely to spur growth in both health care and social assistance jobs.

One factor that could work to moderate growth is funding. In

Growth in Cruise Ship Passenger Numbers Alaska, 1994 to 2005

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Cruise Ship Passengers



Source: Cruise Line Agencies of Alaska

Alaska's visitors: "Provide the feast, father, and bid the guests..."

— William Shakespeare, *The Taming of the Shrew*

It's no secret that visitors to the state are important contributors to the state's economy. They pay Alaskans to transport them, put them up and feed them. They buy souvenirs, rent cars and pay Alaskans to show them where the fish are and how to catch them.

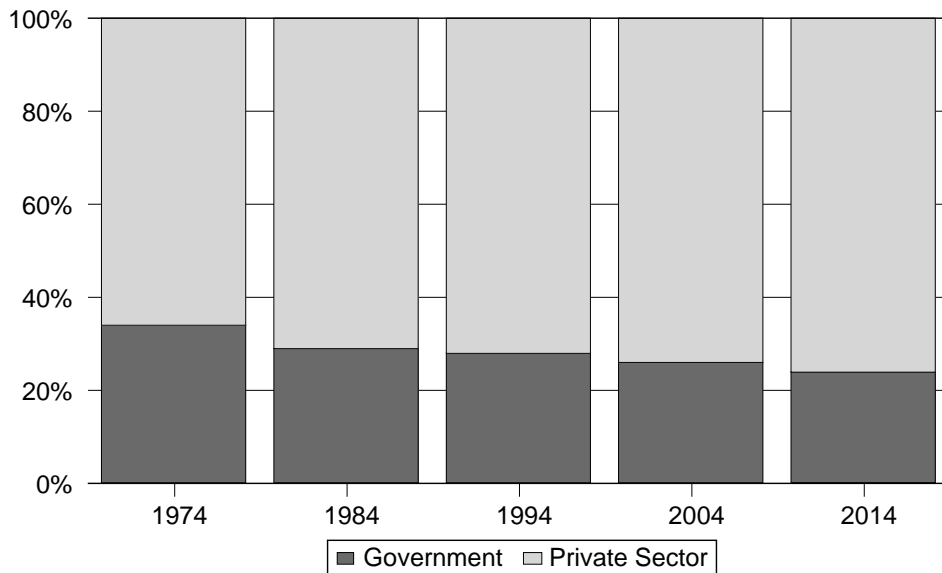
- Most of the growth over the last decade in visitors coming to the state has been from cruise ship passengers. Affordable fares, large ships and more frequent sailings have made this method of visiting the state attractive to the traditional 61-and-over population as well as to a growing number of younger couples with families. A record high 950,000 visitors arrived by cruise ship in 2005, (see Exhibit 5), but there are some signs that the strong growth may be flattening.

Growth will increasingly be dependent on whether cruise ship companies add more ships and whether they continue to switch out smaller ships for larger ones. The lack of deepwater ports in some places could influence cruise lines' decisions to make the switchover. At this point, it is still too early to tell if a statewide cruise ship passenger head tax that voters approved in August will survive likely court challenges, and if it does, how it might impact the number of travelers coming into the state.

- About 42 percent of the state's summer visitors in 2004 arrived by domestic air, according to a 2005 study commissioned by the Alaska Department of Commerce and Economic Development. That figure jumps to nearly 50 percent for the entire year when fall/winter numbers are included.
- Transportation-related companies are obviously not the only ones to profit from visitor spending. The World Tourism Organization has developed the Tourism Satellite Account standard as a consistent measure of tourist impact. The measure identifies more than 26,000 full-time equivalency jobs in Alaska in 2002 in core tourism industries.

According to the World Tourism Organization's measurement, those tourism-related jobs accounted for 9.1 percent of all employment in the state that year.

6 Government Jobs as a Percent of Employment Alaska, 1974 to 2014



Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section: *Employment and Earnings Report*

recent years, Alaska has been the recipient of substantial federal money directed at satisfying health care needs in the state. Future growth could be impacted if those funds are not available.

Government

Federal employment is expected to stay flat to slightly decline through 2014. Jobs may be added to meet needs such as homeland security, but those gains will likely be offset by pressures to decrease the nation's budget by outsourcing and by transferring some federal government functions to state and local governments.

State employment will depend on oil prices, revisions to the Petroleum Production Tax and the prospects of a gas line. Revenues from high oil prices and a revised PPT could offset expected

declines in oil production. Though this forecast assumes a gas pipeline will come on line after 2014, there will likely be some state jobs created to directly work with the project within the forecast period.

School employment is a major component of local government. The total population of school-age children in the state is expected to increase slightly by the end of the forecast period. The loss of the state's revenue sharing program affected municipalities and has been reflected in job cutbacks, but if oil prices stay high, some of that money could find its way back to the communities.

Potential increases in retirement fund contributions by state and local governments could limit available funds and thus negatively impact employment in both state and local governments.

The military is one of the largest employers in Alaska. In 2005, about 20,000 uniform military and their dependents were stationed in the state. About 40 percent live off-base, creating and supporting additional jobs within their local communities. Employment for these jobs will depend on how many and where troops are stationed through the next decade.

Conclusion

Alaska is expected to continue its steady growth during the next 10 years. New mineral development, gas pipeline construction, population growth, expanded health care needs and continuing interest in Alaska as a visitor destination will fuel the growth during the coming decade.

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.

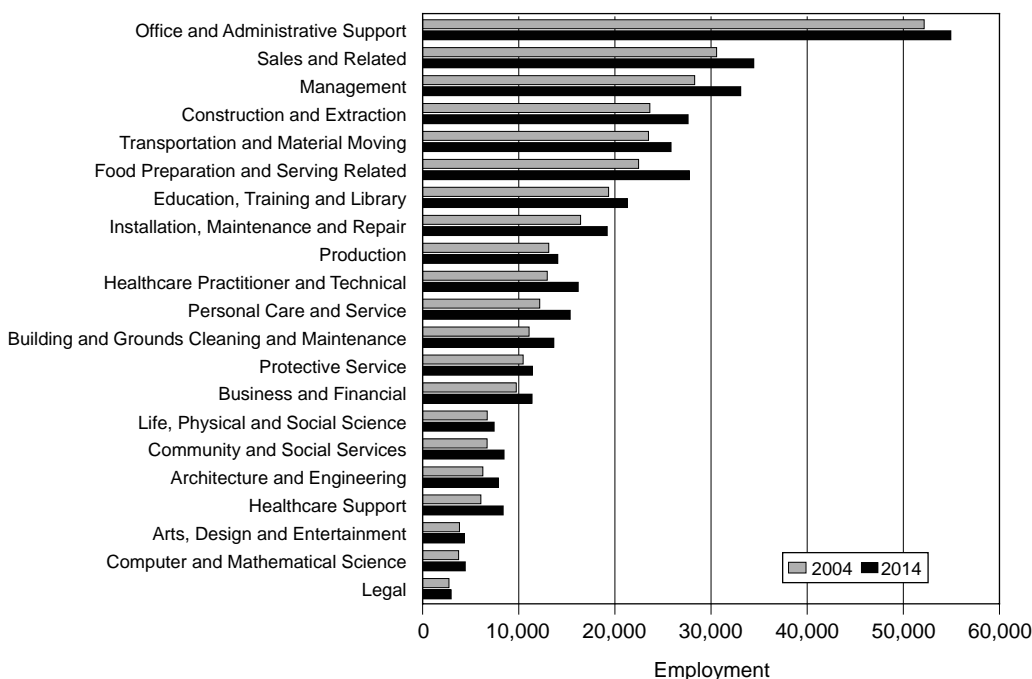
The process of projecting long-term growth by occupation begins by addressing the industrial makeup of Alaska's economy and anticipating how employment in the state's industries will change over the period. The preceding article

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

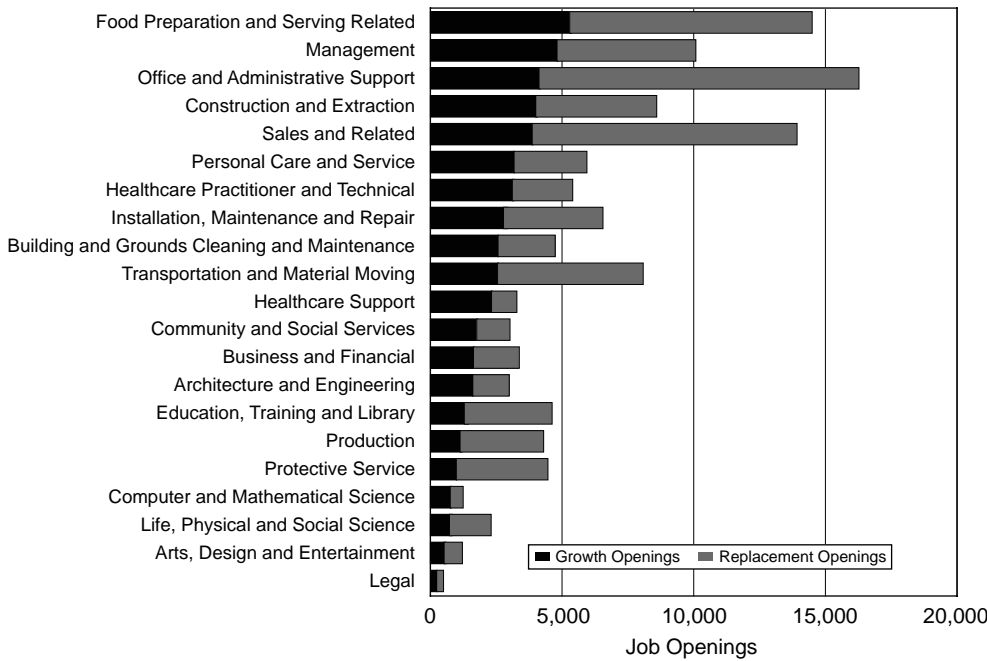


¹ The occupational categories are based on the federal Standard Occupational Classification Manual.

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).

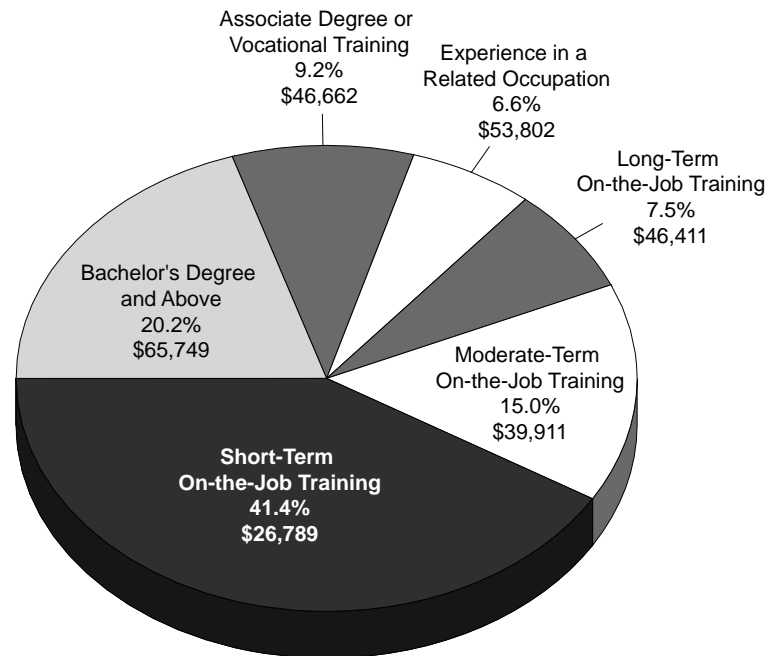
It is also important to note that projected openings show the demand side of the labor equation – the number of job openings that are expected – but provide no information about the supply side of that equation – how many people in the labor pool will be available and qualified to fill those job openings. 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**

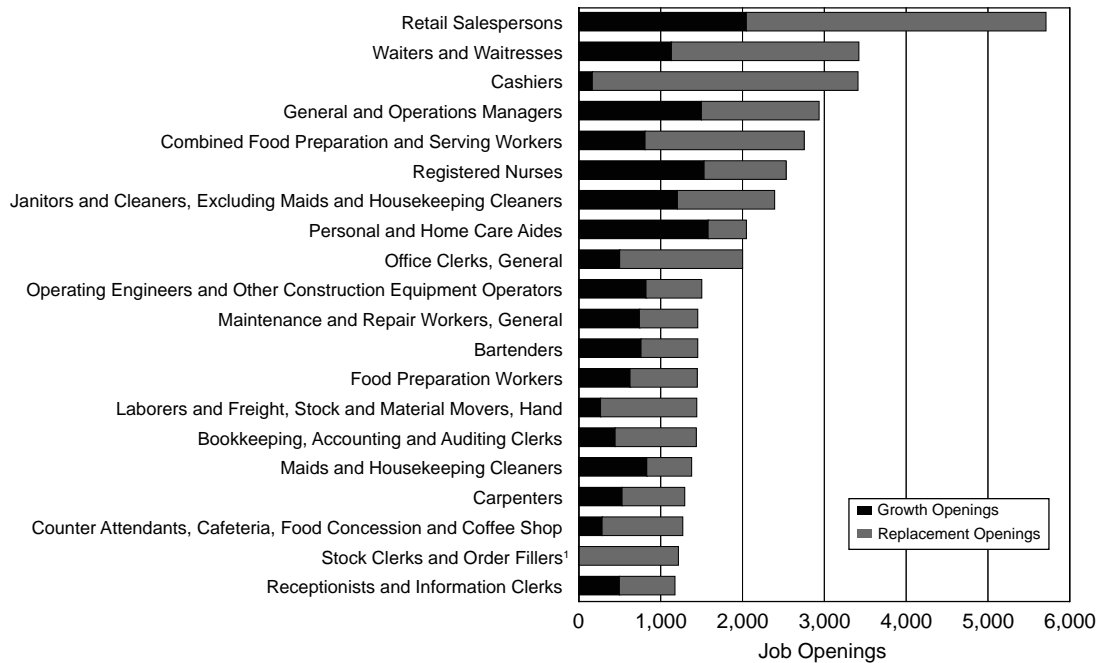
Where the jobs are: specific occupations

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.