



ALASKA ECONOMIC
TRENDS

OCTOBER 2016

FORECAST
for **INDUSTRIES**
and **OCCUPATIONS**

2014 to 2024

ALASKA DEPARTMENT OF LABOR
& WORKFORCE DEVELOPMENT

ALASKA ECONOMIC **TRENDS**

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INDUSTRY FORECAST OCCUPATIONAL FORECAST

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2014 to 2024 By PAUL MARTZ

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ON THE COVER: Workers weld temporary scaffold supports onto pilings for downtown Juneau's future Bridge Park/Seawalk. Photo by Sam Dapceвич

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We're aiming high to strengthen Alaska's economy



Heidi Drygas
Commissioner

With continued low oil prices and state budget problems, many Alaskans are wondering if economic conditions might get worse. I share those concerns. But let's aim high, and not merely attempt to avoid disaster.

It isn't enough to avoid the worst economic outcomes that might result from low oil prices. Let's work to build the kind of state in which there is more economic opportunity and security than anywhere else.

Did you know that Alaska has the seventh-highest per capita income of any state? That we're second in the nation for income equality? Or that our incomes have grown steadily over the last decade?

Our nation is grappling with decades-long wage stagnation and worsening inequality. At the national level, inequality and lack of opportunity is the worst it's been since the Gilded Age. Not so for Alaska: Good public policies and strong institutions have sustained our economic security and opportunity.

My department is focused on sustaining and strengthening that legacy on behalf of Alaska's working families. I'd like to think that we can and should be a model for other states, and perhaps for the country. When people think about Alaska, I want them to think about the best place in the country to work and raise a family.

Here are some of the policies and programs we're pursuing to improve economic security and opportunity for Alaska's working families:

1. We're expanding training opportunities through Registered Apprenticeship in partnership with employers, labor unions, and other partners. I appreciate the hard work of many organizations such as the Alaska Health

Care Apprenticeship Consortium, Alaska Native Tribal Health Consortium, Southcentral Foundation, Alaska Apprenticeship Training Coordinators Association, Alaska Primary Care Association, Alaska Air Carriers Association, Calista Corporation, and others who are expanding apprenticeship. I also appreciate the partnership of educational groups like the Alaska Commission on Postsecondary Education that are working to establish smooth transitions between apprenticeship and college.

2. We're cracking down on wage theft. Stealing wages from hard-working Alaskans is unacceptable, so our Wage and Hour investigators are working with other department's staff to ensure forestry, construction, home care, and other workers receive the wages they have earned. If unscrupulous employers try to cheat the system, they may be subject to treble damages for wage theft, and we will pursue cases to the maximum extent allowed by the law.
3. We're collaborating to prevent worker misclassification. A few dishonest employers attempt to classify employees as independent contractors to avoid paying workers' compensation, unemployment insurance, and health benefits. That's unethical, immoral, and it's against the law. Our Workers Compensation Division investigates and stops misclassification in partnership with other state departments and the U.S. Department of Labor.

Alaska is a great place to live and work right now, and much of our success stems from strong labor laws and strong institutions that defend Alaskans' rights on the job. Let's keep building on that tradition, and work to make Alaska the best state for working families.



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Alaska INDUSTRY FORECAST

2014 to 2024

Strong growth likely in health care, others expected to lose ground

By PAUL MARTZ

The oil price drop that began two years ago has dampened Alaska's economic outlook, but the state is still projected to add 19,652 jobs between 2014 and 2024, equating to 5.8 percent growth. While we expect most industries to grow over the 10-year period, several that are linked to oil and gas are projected to lose ground.

Low oil prices and ongoing declines in production have a direct effect on state government and on capital budgets in particular. The continuation of reduced spending by oil companies and government will be especially damaging to heavy and civil construction jobs, which are projected to fall by 15.7 percent. (See Exhibit 1.)

Other industries with big projected losses are oil and gas extraction at -10 percent and mining support activities at -7.2 percent. Losses are also likely for state government, manufacturing, utilities, financial activities, and educational services.

On the up side, health care is expected to continue its three-decade trend of strong growth. From 2014 to 2024, health care jobs are projected to increase by 15.8 percent, largely driven by the aging of Alaska's population plus a modest increase in the overall population. Notable job growth is also projected for accommodation and food service, retail, and transportation.

Oil-related construction categories will be hit hardest

The construction industry will have a mix of projected losses and gains over the decade, for net growth of

Why this forecast differs so much from the last one

Our last set of projections, which preceded the start of the drop in oil prices, predicted growth of about 10 percent between 2012 and 2022 — a picture that has changed considerably. And while projections are not able to predict business cycles or foresee economic shocks, especially those caused by a single commodity's price, the timing of the price plunge allowed us to infer some of the effects on not just future oil and gas employment but also many of the industries linked to it.

However, the projections can't gauge the long-term magnitude of the overall losses or estimate unseen secondary effects on other industries. Similarly, the projections can't figure in possible future projects, such as a gas line, that haven't yet broken ground or completed the permitting process.

While we've modeled industries with as much relevant information as possible, it's important to remember any future changes in the price of oil will mean changes in future employment levels. That's largely why we update our long-term projections every two years.

just 1.7 percent, or 285 jobs, by 2024.

Within the heavy and civil construction sector, the biggest projected loss will be in oil and gas pipeline and related structures construction, at 372 jobs (-38.9 percent). Those jobs wax and wane with the availability of pipeline projects, and while a loss of 372 jobs would be substantial, current employment is at a high not seen since the early 1990s. With that loss, employment would settle at a level slightly above its 25-year average.

Other projected construction losses include:

1

Alaska Employment Forecast by Industry 2014 to 2024

Industry ¹	2014 estimated jobs ²	2024 projected jobs	Change from 2014 to 2024	Total % change ³
Total Employment, All Jobs ⁴	336,659	356,311	19,652	5.8%
Goods-Producing	50,597	49,615	-982	-1.9%
Natural Resources and Mining	19,127	18,148	-979	-5.1%
Agriculture, Forestry, Fishing and Hunting	1,029	1,116	88	8.5%
Mining	18,098	17,032	-1,067	-5.9%
Oil and Gas Extraction	4,203	3,785	-419	-10.0%
Mining (except Oil and Gas)	2,766	2,918	152	5.5%
Support Activities for Mining	11,128	10,329	-800	-7.2%
Construction	16,904	17,189	285	1.7%
Construction of Buildings	4,603	5,065	462	10.0%
Heavy and Civil Engineering Construction	3,909	3,294	-615	-15.7%
Specialty Trade Contractors	8,392	8,830	438	5.2%
Manufacturing	14,567	14,278	-288	-2.0%
Food Manufacturing	10,953	10,653	-300	-2.7%
Seafood Product Preparation and Packaging	10,575	10,186	-389	-3.7%
Manufacturing, All Other	3,614	3,626	12	0.3%
Services-Providing	285,368	306,337	20,969	7.3%
Trade, Transportation, and Utilities	66,209	71,304	5,095	7.7%
Wholesale Trade	6,454	6,775	321	5.0%
Retail Trade	36,168	38,912	2,744	7.6%
Transportation and Warehousing ⁵	21,398	23,465	2,067	9.7%
Air Transportation	5,918	6,439	522	8.8%
Water Transportation	1,377	1,573	196	14.2%
Truck Transportation	2,831	3,099	268	9.5%
Transportation and Warehousing, All Other	11,273	12,354	1,081	9.6%
Utilities	2,189	2,152	-37	-1.7%
Information	6,200	6,332	132	2.1%
Financial Activities	12,833	12,677	-155	-1.2%
Finance and Insurance	6,935	6,903	-32	-0.5%
Real Estate and Rental and Leasing	5,898	5,775	-123	-2.1%
Professional and Business Services	29,432	31,456	2,025	6.9%
Professional, Scientific, and Technical Services	14,863	15,458	595	4.0%
Management of Companies and Enterprises	2,582	3,160	578	22.4%
Administrative and Support and Waste Management and Remediation Services	11,987	12,838	851	7.1%
Education and Health Services	76,030	84,130	8,101	10.7%
Educational Services, Public and Private ⁶	30,642	31,567	925	3.0%
Elementary and Secondary Schools, Public and Private	20,899	21,945	1,046	5.0%
Educational Services, Public and Private, All Other	9,743	9,622	-121	-1.2%

Table continues on next page

- Power and communication line and related structures construction (loss of 140 jobs, or -25.6 percent). This loss would come from the completion of power plant construction projects in the Anchorage/Matanuska-Susitna area. Although the rate of decline has begun to taper, we expect employment to fall to historic lows after the remaining projects are complete.
- Highway, street, and bridge construction (loss of 74 jobs, or -4.7 percent). These jobs are likely to be hit hard by state capital budget cuts, but the availability of federal funding for these types of projects will moderate the loss.

Other construction sectors are projected to add jobs. Residential and nonresidential building construction and the specialty trade contractors industry in particular are projected to buoy overall construction employment.

- Residential building construction, which is projected to lose jobs in the short term, is set to recover by the end of the forecast period with projected 12 percent growth between 2014 and 2024 — a gain of 182 jobs.
- Nonresidential building construction's growth rate will be an estimated 9 percent, or 280 added jobs. That growth would still leave the sector well below the employment peak it reached in 2007.

1

Alaska Employment Forecast by Industry, continued 2014 to 2024

Industry ¹	2014 estimated jobs ²	2024 projected jobs	Change from 2014 to 2024	Total % change ³
Health Care and Social Assistance, Public and Private ⁷	45,387	52,563	7,176	15.8%
Ambulatory Health Care Services	18,017	22,018	4,000	22.2%
Hospitals	13,131	14,219	1,088	8.3%
Health Care and Social Assistance, All Other	14,239	16,326	2,087	14.7%
Leisure and Hospitality	34,438	38,149	3,711	10.8%
Arts, Entertainment, and Recreation	4,626	5,132	506	10.9%
Accommodation and Food Services	29,812	33,017	3,205	10.8%
Accommodation	8,208	8,985	777	9.5%
Food Services and Drinking Places	21,604	24,032	2,428	11.2%
Other Services (Except Government)	12,279	13,385	1,106	9.0%
Total Government	47,947	48,903	956	2.0%
Total Federal Government ⁸	13,048	13,861	813	6.2%
Total State Government ⁹	18,071	17,451	-620	-3.4%
Total Local Government ¹⁰	16,829	17,592	763	4.5%
Unreported	694	359	-	-

¹Several industry categories are not consistent with others we publish, as detailed in the other footnotes below.

²Industry sector numbers may not sum to total employment because of rounding.

³Percent change may be inconsistent with employment change due to rounding of the employment numbers.

⁴Excludes self-employed workers, fishermen, domestic workers, unpaid family workers, and nonprofit volunteers.

⁵Includes U.S. Postal Service employment.

⁶Includes local and state government educational service employment.

⁷Includes public sector hospital employment.

⁸Excludes uniformed military, postal, and hospital employment.

⁹Excludes university, railroad, and hospital employment.

¹⁰Excludes public school and hospital employment.

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

- The specialty trade contractors sector is projected to gain 438 jobs by 2024, or 5.2 percent. Employment has picked up after heavy recession-related losses between 2008 and 2010, but we still expect declines in the short term. Long-term growth numbers will put the industry closer to the peak job levels it hit before the national recession.

Oil and gas projected to shed jobs

This round of projections comes on the heels of the oil and gas industry's highest employment since the early 1990s, and the drop in oil prices is quickly eroding that peak. Prices are expected to rebound somewhat, but we expect the effects of short-run declines to last well into the projections period.

By 2024, the oil and gas extraction industry is projected to lose 419 net jobs, or 10 percent. The vast majority of oil and gas jobs are classified under support activities for mining, which consists mostly of drilling oil and gas wells and support activities for oil and gas operations. Drilling jobs are projected to fall by 232 (-18.9 percent), and the support activities by 530 jobs (-5.5 percent). Again, while we expect oil prices to rebound toward the end of the projection period, the short-term losses are likely to be larger than subsequent gains.

Minor growth for hard rock mining

Nonoil mining is projected to add 152 jobs from 2014 to 2024, or 5.5 percent. Any major development prospects will likely be slowed by lower mineral commodity prices.

New mines are unlikely in the current climate. Planned expansion projects for currently operating Alaska mines will likely generate most of the growth.

Corporate management to grow

Alaska isn't known for large, national corporate offices, which is what the sector "management of companies and enterprises" might imply — but the state does have a number of employers that fall into this category.

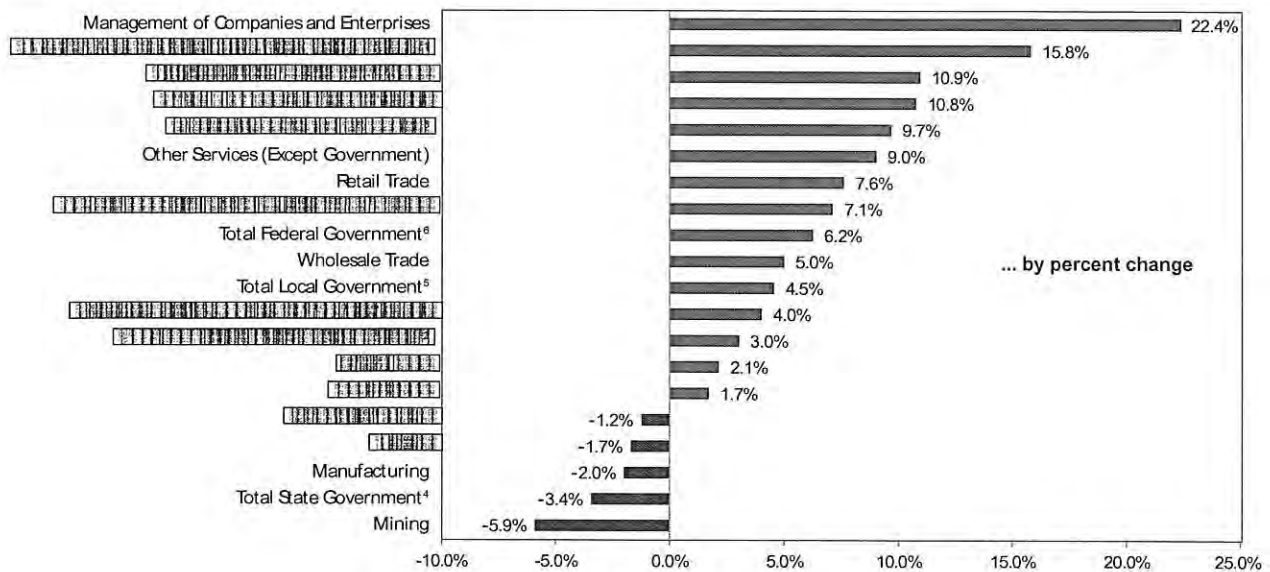
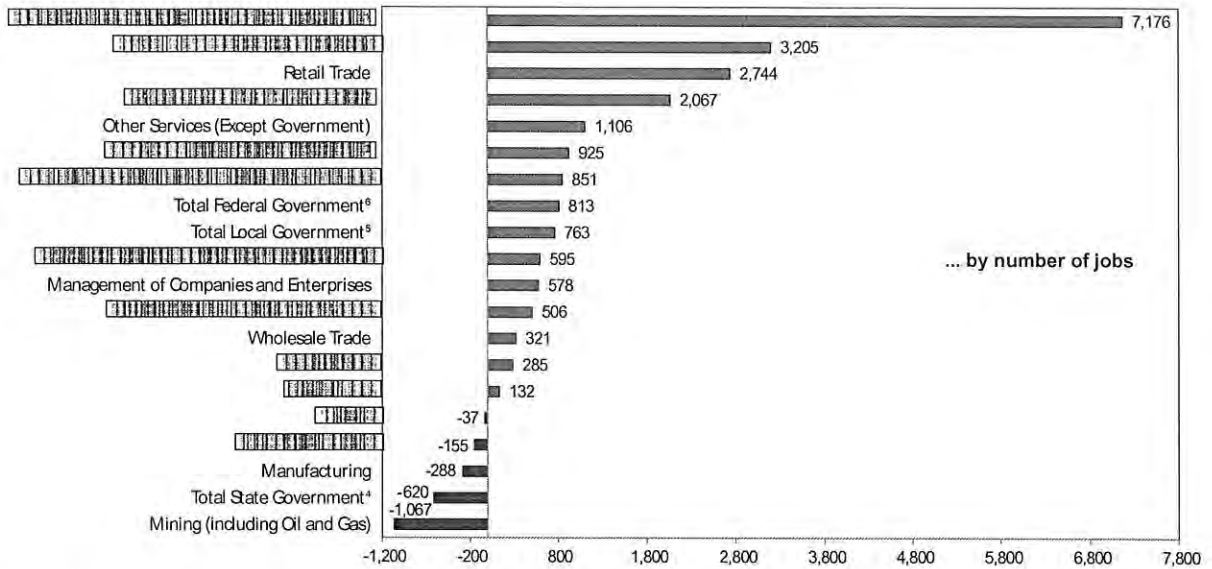
Almost 90 percent of these jobs are in Alaska Native corporations, although it's important to note these aren't all the jobs in Native corporations — just in their corporate offices. Many Native corporations have subsidiaries operating in Alaska and across the United States that are managed by Alaska corporate offices.

Oil and gas extraction plays a big role in many Native

2

Health Care Still Leads, Some Industries Face Declines

ALASKA INDUSTRIES' PROJECTED GROWTH, 2014 TO 2024



¹Includes public sector hospital employment.
²Includes local and state government educational service employment.
³Includes U.S. Postal Service employment.
⁴Excludes university, railroad, and hospital employment.
⁵Excludes public school and hospital employment.
⁶Excludes uniformed military, postal service, and hospital employment.

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

corporations, but because they invest in a diverse set of industries, the management of these corporations will likely escape long-run losses.

We also expect contract opportunities available through the Small Business Administration's 8(a) Business Development Program to provide a continued source of expansion as well as an additional buffer against the oil

price shocks affecting their oil operations in Alaska. As a result, this sector is projected to add 578 jobs over the period, or 22.4 percent.

Health care will continue to grow

From 2014 to 2024, Alaska's population is projected to

How we create these projections

The Alaska Department of Labor and Workforce Development's Research and Analysis Section creates 10-year industry and occupational forecasts for Alaska every other year. These projections are the product of four steps:

Step 1: Project industry employment

We use data from the Quarterly Census of Employment and Wages to determine the number of jobs for each industry during the first year, or "base year," of the projection period. Estimates and projections do not include self-employed workers, private household workers, most agricultural workers and fishermen, and others who are not covered by the state's unemployment insurance program. Certain types of public-sector employment — such as education, hospitals, rail transportation, and U.S. Postal Service — are combined with employment in private-sector industries.

We create projections for each industry based primarily on historical trends, Alaska and U.S. population projections, and other industry-specific variables. The projections also take into account any knowledge of specific projects and observations of the current economic climate.

Step 2: Determine the occupational makeup, or "staffing pattern," of each industry

To estimate base year employment for each occupation, we determine the occupational "staffing pattern" of each industry. Most industries have a variety of occupations. The staffing pattern is the breakdown of each occupation's share of the industry's total employment, referred to as "staffing ratios."

Employers in Alaska report their workers' occupations when they submit unemployment insurance quarterly contribution reports, which form the basis of Alaska's Occupational Database. We use an analysis of the three most recent years of ODB data to calculate occupational staffing ratios for the majority of industries.

Step 3: Calculate base year and projected occupational employment

For each occupation, we multiply each industry's estimated base year employment by the staffing ratio, then sum the results to get the base year estimate.

For the projections, adjustments to staffing ratios within an industry are called "change factors." Change factors are multipliers that increase or decrease an occupation's estimated share of industry employment based on factors other than an industry's projected employment change. Some examples are changes in consumer demand, technology, or business practices.

We then multiply each industry's projected employment by the adjusted staffing ratio for each occupation, with the results summed by each occupation to get the projections.

Step 4: Estimate job openings

Job openings for an occupation result from both job growth and replacements of workers who leave. An occupation's growth openings are equal to its positive change over the projection period. Estimates of replacement openings use a combination of Bureau of Labor Statistics formulas and formulas derived from an analysis of historical ODB data.

grow by 8 percent, which is modest by historical standards. During the same period, the number of senior citizens is expected to increase by a whopping 68 percent. This will require a substantial increase in health and social assistance jobs, particularly those that care for seniors. These jobs are projected to increase by 7,176, or 15.8 percent.

The era of rapid hospital job growth appears to be winding down, though, with hospitals projected to add 1,088 jobs (8.3 percent). Between 2012 and 2015, hospitals generated just 51 new jobs, which included a slight loss

between 2013 and 2014. This was a big change from 2001 to 2012, when hospitals added an average of 295 jobs per year. We still expect the increase in seniors and the population overall to produce job growth in hospitals, but the rate will likely be slightly less than half of what it was in recent history.

In contrast, the ambulatory health care category — which encompasses physician's offices, outpatient care centers, and home health care services — is expected to grow by 22.2 percent (4,000 jobs). The growing number of seniors and resulting increased demand for home

health care services will drive growth for these facilities, which provide medical care to patients at home rather than in a clinical setting.

Related growth is projected in the social assistance category from more nursing care facilities and retirement communities. That industry will add a projected 611 jobs (38.3 percent) over the 10-year period.

Tourism, population growth will boost leisure and hospitality

The leisure and hospitality sector is projected to add 3,711 jobs from 2014 to 2024, a growth rate of 10.8 percent, mostly through increases in the number of tourists as well as overall population growth.

- Traveler accommodations are projected to grow by 8 percent (almost 600 jobs).
- Restaurants are projected to grow by 14 percent (2,406 jobs). Although job losses in high-wage industries could put a damper on restaurant growth, there are no signs of that yet in the data and we don't expect it would counteract growth from the increases in population and tourists.
- The "other" amusement and recreation industry is projected to add 375 jobs, or 14 percent. In Alaska, these are mostly tourist-oriented guide services.

The only projected decline for the leisure and hospitality sector is in bars, which will lose 272 jobs (-17 percent), a continuation of a downward trend that began in the late 1990s. That decline isn't because people are drinking less, but because they are moving away from establishments that serve only drinks in favor of places that also serve food and are categorized as restaurants.

Mixed projected growth in retail

The projected growth rate for retail trade is 7.6 percent, or 2,744 jobs, mainly through general merchandise stores. These retail juggernauts alone are expected to generate 1,394 jobs, a 14.7 percent increase. Consumers are transitioning from traditional specialized retailers to larger stores that sell appliances, clothing, and groceries under one roof. However, while the long-term outlook for these stores is positive, the short-term outlook is bumpy. The reality of oil and gas losses and an expected dip in consumer confidence as the state adjusts to those consequences could temporarily reverse the strong growth of the past few years.

Health and personal care stores are set to grow steadily throughout the projections period, adding 266 jobs (23.2 percent). Drug stores, optical goods stores, and beauty supply stores are all expanding, and we expect this trend

to continue with the growth in the state's population, especially senior citizens.

Electronics and appliance stores, department stores, and food and beverage stores are expected to lose jobs, but most of these losses will be a flattening-out or continuation of historical declines. Food and beverage stores will lose a projected 110 jobs (-2 percent), which would put it at the same level it's been skirting since 2002. Department stores are projected to shed 120 jobs (-13.8 percent), a continuation of losses that began in 2010.

Air will lead for transportation

The transportation and warehousing sector is projected to net 2,067 new jobs, or 9.7 percent growth, mostly in air transportation:

- Scheduled air transportation is projected to add 451 jobs (8.9 percent), driven by an increase in tourism and overall population growth.
- Couriers and express delivery services are projected to add 409 jobs (17.8 percent). This industry mostly consists of air cargo employers operating out of the Anchorage airport.
- Support activities for air transportation will add a projected 261 jobs, for 23 percent growth.

Oil and gas and construction declines are anticipated to slow support activities for road transportation, resulting in a slight loss of 23 jobs (-14.9 percent).

Truck transportation and water transportation are both projected to grow, by 9.5 percent and 14.2 percent respectively. Water transportation did lose jobs in 2014, but that appears to have stemmed from a merger of two large barge companies in Southeast. Truck transportation has continued to grow, but we project some employment drops in the short-term with a rebound to similar levels by 2024.

Information increasingly digital

While traditional media are expected to continue shrinking in the coming years, the information sector as a whole is expected to generate 132 new jobs (2.1 percent), mainly in telecommunications, which is made up of companies that provide Internet, cell phone, and cable television service. Telecommunication jobs are expected to increase by 340 (8.2 percent).

Newspaper, periodical, book, and directory publishers will continue to cut jobs, at an expected loss of 105 (-16.5 percent). Broadcasting, which doesn't include Internet, is projected to lose 113 jobs (-13.7 percent).

Education to grow modestly

The public and private education sector is projected to net 3 percent growth, or 925 total jobs. Elementary and secondary schools are likely to gain about 1,046 jobs (5 percent) because the school-age population is expected to increase by 6.5 percent over that time, from 144,964 to 154,419 students. The number of teachers and other staff members isn't likely to increase at quite the same rate due to constrained state education funding.

The slight offset to the sector's growth will be a loss of 121 jobs (-1.2 percent) in business, technical, trade, and other schools category, which is mostly the University of Alaska. It also contains jobs at Alaska Pacific University, trade schools, and training organizations combined with private sports and recreational instructors. Continued declines in state funding and enrollment are expected to result in job losses well into the projection period.

Some gains in professional, scientific, and technical services

A mix of losses and gains are projected for the eclectic professional, scientific, and technical services sector, for net growth of 4.0 percent, which equates to 595 jobs.

Five of the sector's 17 industries will likely lose jobs, mostly confined to oil-related industries such as geophysical surveying and mapping services. The total loss for four of those five will be just 150 jobs, with most of the loss in the fifth category, legal services. Legal services is projected to shrink by 19 percent (247 jobs). The long-term trend appears to be more lawyers becoming self-employed, and self-employment isn't included in the wage and salary data we use. (See the sidebars on pages 4 and 8 for more about the data and methods.)

The engineering and drafting services industry will add a projected 285 jobs over the forecast period, which would put it back in the black after what we expect to be large short-to-mid-term losses. If the price of oil doesn't rebound as expected, however, those losses will continue throughout the period.

Other notable subcategories that are expected to add jobs include:

- Research and development in the physical, engineering, and life sciences (gain of 91 jobs, or 13.9 percent)
- Testing laboratories (gain of 106 jobs, or 23.2 percent)
- Other professional, scientific, and technical services, except veterinary services (gain of 123 jobs, or 11.8 percent)
- Veterinary services (gain of 99 jobs, or 13.5 percent)
- Accounting, tax preparation, bookkeeping, and payroll services (gain of 119 jobs, or 8.6 percent)

Federal and local government will offset state losses

Government employment, excluding education and hospitals, is projected to increase by 2 percent (956 net jobs) from 2014 to 2024.

- The federal declines of the recent past have rebounded, and we expect a gain of 813 jobs (6 percent), which would put federal employment at just under its 25-year average.
- State government (excluding education) is projected to lose 620 jobs (3.4 percent) due to continuing pressure on budgets by low oil prices and declining production. State government losses will be biggest in the near future, but losses will likely continue well into the projections period.
- Local government is projected to grow slightly, adding 763 jobs (4.5 percent), but state budget cuts' effects on local government aren't yet clear. We expect short-term losses as less state money circulates into communities, but so far municipal employment levels are still rising. Sales and property taxes may be part of that stability, and we expect those revenues plus population growth and federal money to drive small municipal job gains.

Alaska OCCUPATIONAL FORECAST

2014 to 2024

Some growth, but replacements will create large number of openings

By PAUL MARTZ

Although the plunge in oil prices has muted the 10-year projections outlook, there will still be job opportunities in a range of occupations, especially through replacements as people retire, change occupations, or leave the state. Slower-than-normal growth is expected to produce only about 20,000 new positions between 2014 and 2024, but an additional 83,000 openings will be created by the need for replacements.

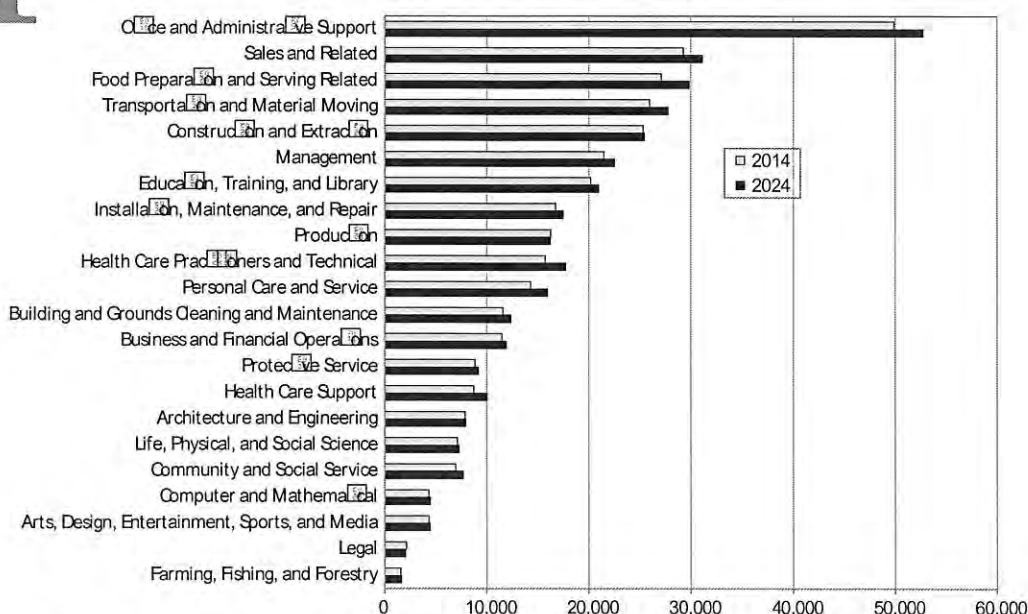
Health care continues to lead with 14 of the 25 top occupations, although its growth will likely slow. On the other end of the spectrum, production occupations have slipped into negative-to-slow growth territory, but replacements will still provide some opportunities there.

Health care will stay on top

Health care's continued strength is due to overall

1 Highest Total Jobs in Office Work

PROJECTED TOTAL JOBS BY OCCUPATIONAL CATEGORY, 2014 TO 2024

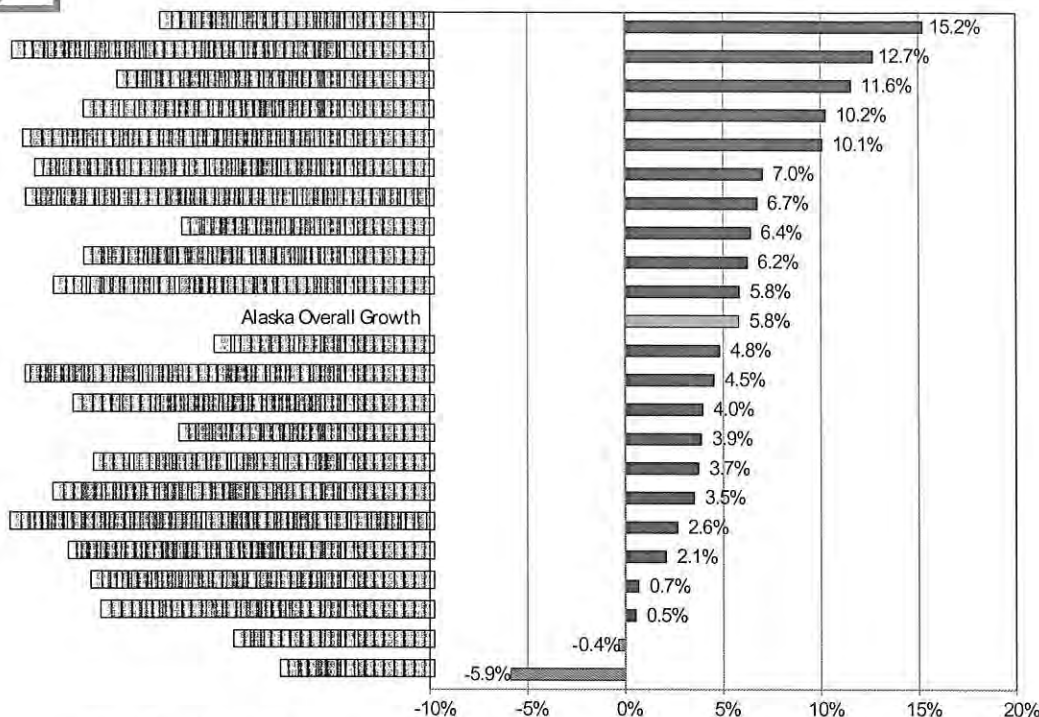


Note: Occupational categories are based on the federal Standard Occupational Classification Manual.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

2

Health Care Support to Grow the Most

FIGURE 2: Projected Growth of Occupations in Alaska, 2014 to 2024



Note: Occupational categories are based on the federal Standard Occupational Classification Manual.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

population growth and especially the increase in senior citizens. The Alaska population between 0 and 64 years old is projected to grow by a minimal 1.6 percent from 2014 to 2024, while the 65-plus population is projected to boom, increasing 67.7 percent. Seniors will make up 15 percent of Alaska's population by 2024, up from 10 percent in 2014.

The 25 occupations projected to have the highest percent growth reflect a related increase in demand for services. (See Exhibit 6). Eleven are in the health care practitioners and technical occupations category and three are in health care support. The two categories combined are expected to generate 3,305 new jobs and 5,538 additional openings by 2024. (See exhibits 1, 2, and 3.)

Two other high-growth occupations that aren't in health care but still critical to meeting the needs of older Alaskans also made the list. Personal care aides are expected to grow by 17 percent (1,026 jobs). These workers help the elderly or disabled with daily tasks such as cooking, cleaning, and hygiene and may also provide limited medical assistance under the direction of a registered nurse. Social and human service assistants, while not explicitly limited to elder care, will have an estimated 125 new openings (15 percent).

Medicaid expansion is almost certain to affect health care employment, but we have yet to see any sharp increases outside of the normal rate of growth.

High growth outside health care

The other high-growth occupations are an atypical mix for Alaska, as some of the state's more prominent industries are expected to decline or hold steady.

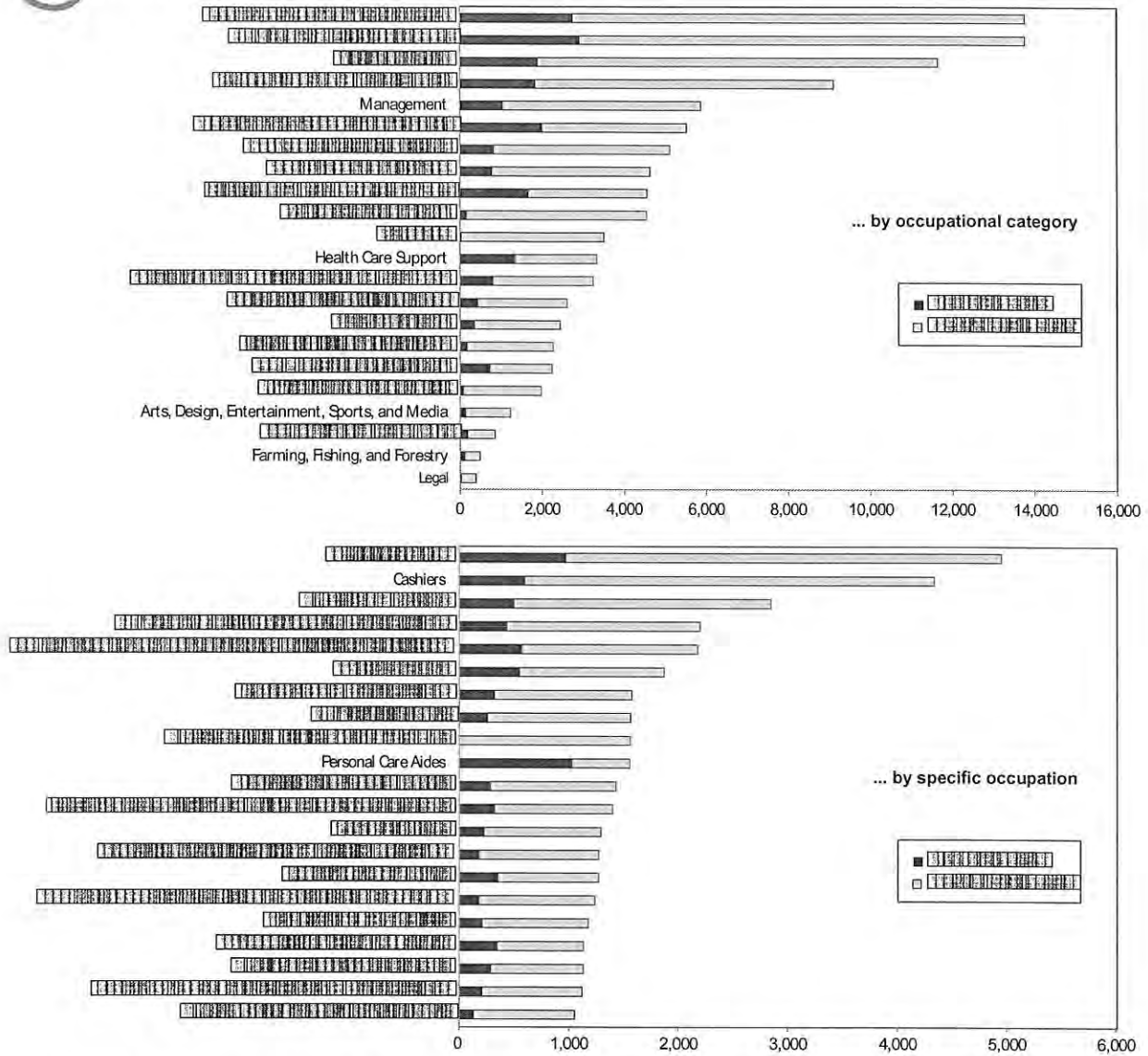
17.7% With the recent legalization of commercial marijuana in Alaska, farm workers and laborers (crop, nursery, and greenhouses), and inspectors (testers, sorters, samplers, and weighers) are expected to increase, but projecting marijuana-related jobs is especially uncertain. The industry is new and we don't yet know how many of its workers will be self-employed, among a variety of other unknowns.

12.7% Referees and other sports officials are expected to increase by 17.7 percent, or 58 jobs. Most of the growth will come from youth sports, but a handful of new jobs will be professional sports referees and officials.

11.6% Nonfarm animal caretakers will add a projected 51

3

Growth vs. Replacements TWO YEAR CHANGES, 2014 to 2024



Notes: Growth openings are new jobs. Replacement openings result from vacancies left by workers who rehire or permanently leave an occupation. Occupational categories are based on the federal Standard Occupational Classification Manual. Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

jobs, or 16.1 percent. These workers are mostly dog sitters and employees at dog boarding facilities. (See Exhibit 6.)

Occupations in decline

Ninety-four occupations are likely to shrink over the 10-year projection horizon. The long term downward trend will likely continue for occupations in broadcasting, newspapers, and legal services. Low oil prices and

the long-term effects on oil and gas extraction, support services, construction, and state government are reducing job counts in occupations that have shown strong growth in the last decade.

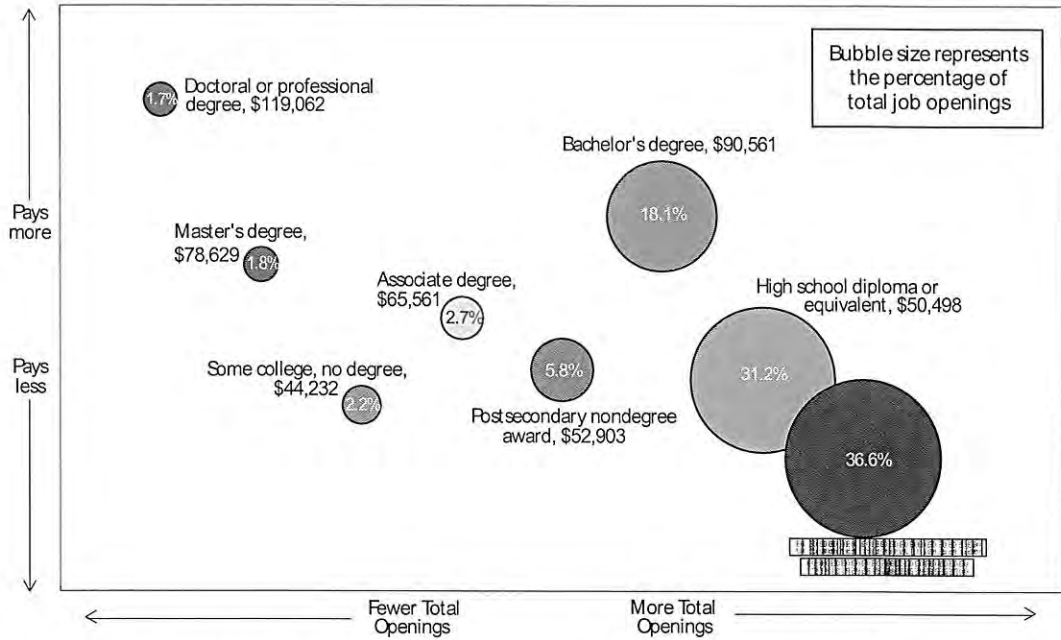
EG ON The oil and gas related occupations expected to decline most include derrick operators, rotary drill operators, roustabouts, and petroleum engineers.

EG ON Downward pressure on state government jobs, including the University of Alaska, are expected to

4

Openings by Educational Level and Wages

Alaska Department of Labor and Workforce Development, 2014-2024

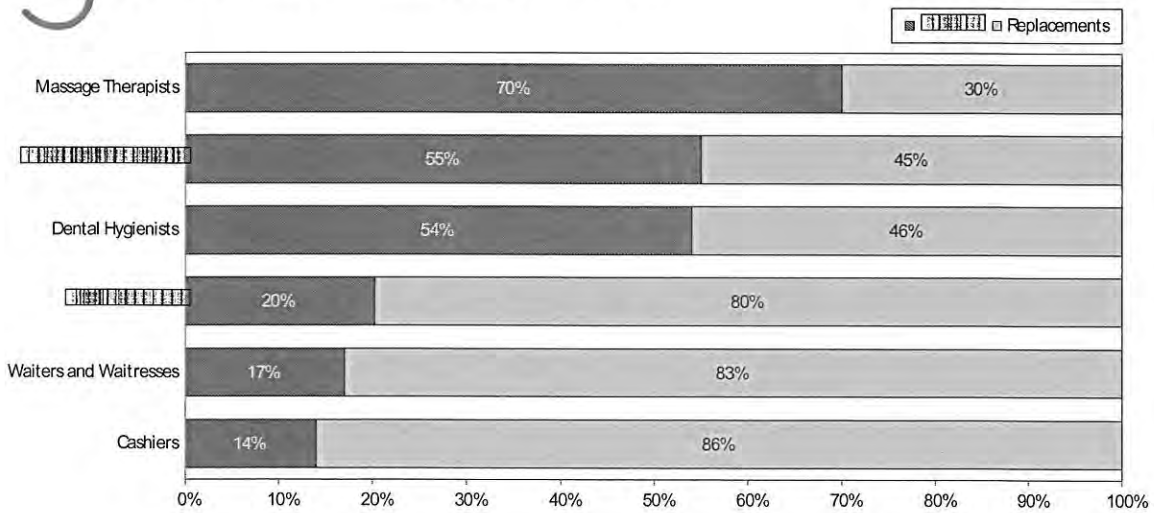


Notes: Includes openings from growth and replacements. Annual wage estimates are based on employment-weighted averages of 2015 Occupational Employment Statistics data.
 Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

5

Percent New Jobs vs. Replacement Openings

Alaska Department of Labor and Workforce Development, 2014-2024



Notes: Growth openings are new jobs. Replacement openings result from vacancies left by workers who retire or permanently leave an occupation.
 Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

6

Highest Projected Growth

TOP 25 OCCUPATIONS, 2014 TO 2024

Occupation	Percent growth
Dental Hygienists	21.6%
Dental Assistants	20.9%
Opticians, Dispensing	20.3%
Dentists, General	20.2%
Farmworkers/Laborers, Crop, Nursery, and Greenhouse	20.2%
Recreational Therapists	19.8%
Medical Assistants	19.4%
Nurse Practitioners	18.9%
Massage Therapists	18.7%
Umpires, Referees, and Other Sports Officials	17.7%
Mental Health and Substance Abuse Social Workers	17.3%
Personal Care Aides	17.0%
Substance Abuse and Behavioral Disorder Counselors	16.2%
Nonfarm Animal Caretakers	16.1%
Physician Assistants	16.1%
Medical and Clinical Laboratory Technicians	15.9%
Family and General Practitioners	15.6%
Physical Therapists	15.4%
Social and Human Service Assistants	15.0%
Inspectors, Testers, Sorters, Samplers, and Weighers	14.9%
Medical Secretaries	14.7%
Labor Relations Specialists	14.4%
Licensed Practical and Licensed Vocational Nurses	14.2%
Aircraft Cargo Handling Supervisors	13.8%
Psychiatric Technicians	13.4%

Highest Projected Loss

BOTTOM 25 OCCUPATIONS, 2014 TO 2024

Occupation	Percent loss
Reporters and Correspondents	-14.3%
Boilermakers	-13.2%
Helpers — Extraction Workers	-12.8%
Derrick Operators, Oil and Gas	-12.2%
Radio and Television Announcers	-12.0%
Logging Equipment Operators	-11.8%
Legal Secretaries	-11.8%
Broadcast Technicians	-11.4%
Advertising Sales Agents	-10.9%
Woodworkers, All Other	-10.8%
Printing Press Operators	-10.7%
Editors	-10.6%
Print Binding and Finishing Workers	-9.6%
Helpers — Pipelayers, Plumbers, Pipefitters, Steamfitters	-9.5%
Rotary Drill Operators, Oil and Gas	-9.3%
Petroleum Pump Sys Opers, Refinery Opers, Gaugers	-8.9%
Paralegals and Legal Assistants	-8.9%
Roustabouts, Oil and Gas	-8.4%
Dancers	-7.9%
Petroleum Engineers	-7.8%
Producers and Directors	-7.8%
Machine Feeders and Offbearers	-7.0%
Title Examiners, Abstractors, and Searchers	-6.8%
Legal Support Workers, All Other	-6.2%
Team Assemblers	-6.2%

Note: These lists only include occupations with at least 50 workers. For the growing occupations it includes only those with growth of at least 20 jobs, and excludes residual occupations ending with "all other" and a small number with incomplete or unreliable data.

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

cause losses in most postsecondary instructor and teacher occupations, correctional officers and jailers, and several administrative occupations.

- Construction job losses will be evident in fewer jobs for equipment operators, earth drillers, surveyors, and crane operators. (See Exhibit 6.)

Growth vs. replacements

Replacement openings are just as important as new jobs from the perspective of someone planning a career or assessing workforce training needs. Because of projected low growth this cycle, replacement openings will likely generate nearly four times more job openings than new positions.

It's important to note that a worker who moves from one employer to another in the same occupation creates turnover rather than a replacement opening, and this is more common. Although replacement openings don't include turnover, many occupations with high turnover also generate high numbers of replacement openings, because many are low-wage and frequently

filled by young workers who are likely to change careers as they age. For example, many cashiers are young seasonal workers who won't return to a cashiering job after the season ends. This leaves a large number of openings — in fact, 86 percent of openings for cashiers will be replacements. (See Exhibit 5.)

On the opposite end, more permanent and high-wage jobs typically have higher percentages of growth openings. Seventy percent of openings for massage therapists, for example, will be from growth and just 30 percent will be replacements.

Highest total openings in lower-paying occupations

The highest total openings will be in office and administrative support, food preparation and serving, and sales. (See Exhibit 3.) These categories are typically high-replacement, but food service slightly edges out administrative occupations in terms of replacements. In percentage terms, openings for all three will be approximately 80 percent replacements and 20 percent growth.

Openings by education level

Over the projection period, 67.8 percent of the available job openings will require a high school diploma or less, though many still require significant postsecondary training and, in some cases, years of vocational education through apprenticeships.

Jobs that require more education typically pay more. (See exhibits 4 and 8.) The average annual wage for a job requiring a diploma is about \$50,498, and for those that don't require a diploma, it's \$31,357. These wage estimates are based on a 40-hour work week year-round, so many that are seasonal or part-time will pay considerably less.

The remaining 32.2 percent of openings will be in occupations that require some college, a degree, or a certificate (known as a postsecondary nondegree award). Nursing assistants, automotive mechanics, and telecommunications equipment installers and repairers are common postsecondary nondegree award jobs. About 21.5 percent of openings will require at least a bachelor's degree or higher, meaning generally higher wages and a greater likelihood of full-time, year-round work.

What makes a 'top job'

Long-term occupation projections can be a powerful tool for workforce development agencies, job placement and counseling professionals, job seekers, and education and training providers, but it can be difficult for these stakeholders to determine which occupations should get the most attention.

To help, we developed Alaska's Top Jobs list. (See Exhibit 8.) The list focuses on occupations expected to grow and pay well over the projections period. To make the top jobs list, an occupation must meet two criteria:

1. Its average wage must rank in the top 50 percent of all occupations, and
2. It must either: a) have projected growth of at least 75 jobs and percentage growth that's higher than the overall growth rate, or b) be among the 50 occupations with the most projected openings.

The occupations in the top jobs list are a select group, representing 51 out of 782 occupations found in

7 Wages by Category

ALASKA, 2015

Category	Average wages
Management Occupations	\$108,080
Architecture and Engineering Occupations	\$100,945
Legal Occupations	\$92,444
Health Care Practitioners and Technical Occupations	\$89,477
Computer and Mathematical Occupations	\$80,055
Business and Financial Operations Occupations	\$78,528
Life, Physical, and Social Science Occupations	\$73,282
Construction and Extraction Occupations	\$63,003
Education, Training, and Library Occupations	\$62,980
Installation, Maintenance, and Repair Occupations	\$59,255
Protective Service Occupations	\$55,023
Arts, Design, Entertainment, Sports, and Media Occs	\$52,633
Community and Social Service Occupations	\$52,387
Transportation and Material Moving Occupations	\$52,004
Office and Administrative Support Occupations	\$43,115
Health Care Support Occupations	\$40,477
Production Occupations	\$39,053
Farming, Fishing, and Forestry Occupations	\$36,870
Sales and Related Occupations	\$33,853
Building and Grounds Cleaning and Maint Occs	\$30,811
Personal Care and Service Occupations	\$30,730
Food Preparation and Serving Related Occupations	\$27,618

Note: Wages are based on 2015 Occupational Employment Statistics occupation wage estimates for Alaska, weighted by base year (2014) employment.

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

Alaska, or 6.5 percent. Twenty-four require at least a bachelor's degree, and nine more require an associate degree or some form of postsecondary award such as a vocational certificate or some college. Fifteen out of the eighteen occupations requiring a high school diploma or less require some form of additional on-the-job training.

A high percentage of these top jobs, about 12 percent, are related to health care, but construction and extraction along with management make up 9.8 percent and 17.6 percent, respectively.

Even jobs with no projected growth can make the list if they have high replacement openings combined with high wages. For example, geoscientists are expected to decline by 3.8 percent, but the occupation has 166 projected openings and pays \$111,650 a year.

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Alaska's Top Jobs

PROJECTED, 2014 TO 2024

		Employment			Openings 2014-2024			Wage quartile ¹
		2014	2024	Percent change	New	Repla- cement	Total openings	
		Doctoral or Professional Degree						
Internship or residency	Physical Therapists	446	515	15.5%	69	129	198	\$\$\$\$
	Family and General Practitioners	372	430	15.6%	58	108	166	\$\$\$\$
		Master's Degree						
	Physician Assistants	423	491	16.1%	68	103	171	\$\$\$\$
	Education Administrators, Elementary and Secondary School	491	515	4.9%	24	146	170	\$\$\$\$
		Bachelor's Degree						
Internship or residency	Elementary School Teachers, Except Special Education	2,474	2,600	5.1%	126	561	687	\$\$\$
	Secondary School Teachers, Exc Spec and Career/Technical	1,978	2,076	5.0%	98	481	579	\$\$\$\$
Long-term OJT* Moderate-term on-the-job training*	Middle School Teachers, Exc Spec and Career/Technical Education	690	724	4.9%	34	156	190	\$\$\$\$
	Purchasing Agents, Except Wholesale, Retail, and Farm Products	604	613	1.5%	9	167	176	\$\$\$
	Airline Pilots, Copilots, and Flight Engineers	1,717	1,914	11.5%	197	442	639	\$\$\$\$
	Construction Managers	1,216	1,223	0.6%	7	171	178	\$\$\$\$
	Registered Nurses	5,358	5,903	10.2%	545	1,328	1,873	\$\$\$\$
	General and Operations Managers	4,397	4,676	6.3%	279	1,148	1,427	\$\$\$\$
	Accountants and Auditors	1,728	1,814	5.0%	86	473	559	\$\$\$\$
	Chief Executives	1,478	1,592	7.7%	114	261	375	\$\$\$\$
	Medical and Health Services Managers	883	996	12.8%	113	237	350	\$\$\$\$
	Civil Engineers	1,063	1,088	2.4%	25	318	343	\$\$\$\$
	Financial Managers	1,124	1,184	5.3%	60	273	333	\$\$\$\$
	Zoologists and Wildlife Biologists	1,022	1,056	3.3%	34	278	312	\$\$\$
	Administrative Services Managers	1,159	1,232	6.3%	73	224	297	\$\$\$\$
	Environmental Scientists and Specialists, Including Health	672	680	1.2%	8	208	216	\$\$\$\$
	Sales Managers	693	731	5.5%	38	168	206	\$\$\$\$
	Human Resources Specialists	627	651	3.8%	24	156	180	\$\$\$
	Human Resources Managers	439	472	7.5%	33	133	166	\$\$\$\$
	Geoscientists, Except Hydrologists and Geographers	550	529	-3.8%	0	166	166	\$\$\$\$
		Associate Degree or Postsecondary Nondegree Award or Some College, No Degree						
Long-term OJT	Firefighters	1,422	1,487	4.6%	65	422	487	\$\$\$
	Air Traffic Controllers	480	512	6.7%	32	153	185	\$\$\$\$
	Geological and Petroleum Technicians	529	499	-5.7%	0	190	190	\$\$\$
	Aircraft Mechanics and Service Technicians	1,204	1,333	10.7%	129	302	431	\$\$\$
	Captains, Mates, and Pilots of Water Vessels	614	658	7.2%	44	247	291	\$\$\$
	Dental Hygienists	607	738	21.6%	131	110	241	\$\$\$\$
	Computer User Support Specialists	999	1,053	5.4%	54	132	186	\$\$\$
	Civil Engineering Technicians	643	646	0.5%	3	158	161	\$\$\$
	Massage Therapists	449	533	18.7%	84	36	120	\$\$\$\$
		High School Diploma or Equivalent						
Apprenticeship	Carpenters	2,616	2,750	5.1%	134	308	442	\$\$\$
	Electricians	2,139	2,161	1.0%	22	328	350	\$\$\$\$
	Plumbers, Pipefitters, and Steamfitters	1,509	1,521	0.8%	12	200	212	\$\$\$
Long-term on-the-job training	Mobile Heavy Equipment Mechanics, Except Engines	1,049	1,063	1.3%	14	250	264	\$\$\$
	Water and Wastewater Treatment Plant and System Operators	659	682	3.5%	23	170	193	\$\$\$
	Bus and Truck Mechanics and Diesel Engine Specialists	795	824	3.6%	29	139	168	\$\$\$
Moderate-term on-the-job training	Power Plant Operators	463	471	1.7%	8	160	168	\$\$\$
	Operating Engineers and Other Construction Equipment Operators	3,489	3,390	-2.8%	0	573	573	\$\$\$
	Police and Sheriff's Patrol Officers	1,369	1,402	2.4%	33	457	490	\$\$\$
	Correctional Officers and Jailers	1,331	1,294	-2.8%	0	361	361	\$\$\$
	Sales Reps, Wholesale and Manufacturing, Exc Tech/Sci Products	984	1,024	4.1%	40	207	247	\$\$\$
	Commercial Pilots	610	673	10.3%	63	156	219	\$\$\$
	Welders, Cutters, Solderers, and Brazers	725	709	-2.2%	0	206	206	\$\$\$
	Inspectors, Testers, Sorters, Samplers, and Weighers	457	525	14.9%	68	123	191	\$\$\$
	Executive Secretaries and Executive Administrative Assistants	3,226	3,383	4.9%	157	348	505	\$\$\$
First-Line Supervisors of Office and Administrative Support Workers	1,854	1,954	5.4%	100	288	388	\$\$\$	
First-Line Supervisors of Mechanics, Installers, and Repairers	686	726	5.8%	40	141	181	\$\$\$\$	
		No Formal Educational Credential						
Mod-term OJT	Service Unit Operators, Oil, Gas, and Mining	1,349	1,267	-6.1%	0	447	447	\$\$\$

Note: To rank as a "top job," the occupation must: 1) rank in the top two wage quartiles; AND 2) have projected growth of at least 75 jobs and greater percentage growth than all occupations combined OR be one of the 50 occupations with the most projected openings (of those in the top two quartiles).

*Moderate-term on-the-job training is one to 12 months, and long-term on-the-job training is more than 12 months.

¹\$\$\$ = \$57,410 - \$78,450 annually (\$27.60 - \$37.72 hourly), \$\$\$\$ = More than \$78,450 annually (\$37.72 hourly).

Based on 2015 Occupational Employment Statistics wage estimates for Alaska.

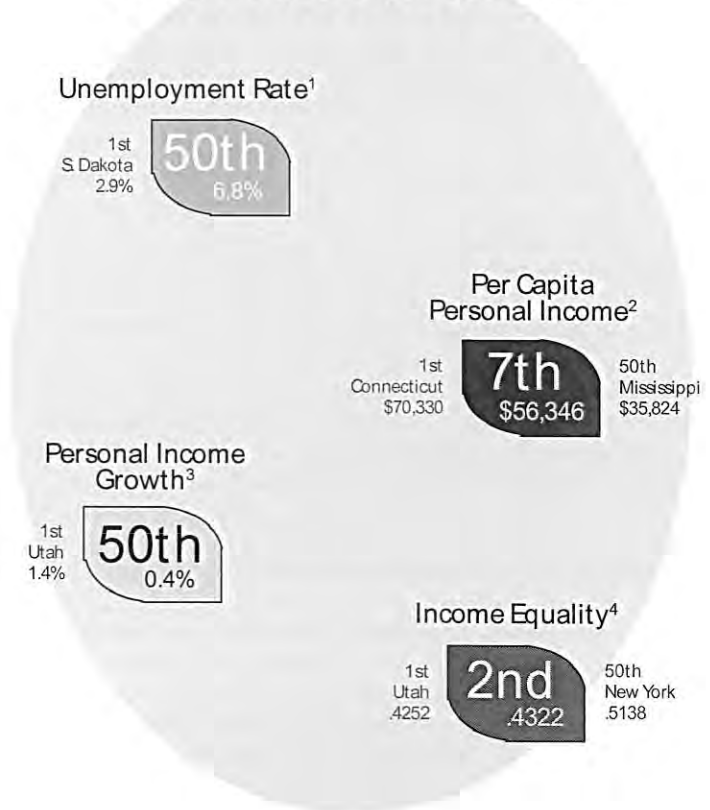
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

The Month in Numbers

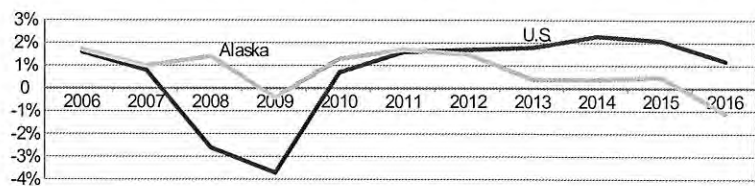
Unemployment Rates

	Prelim.	Revised	
	8/16	7/16	8/15
SEASONALLY ADJUSTED			
United States	4.9	4.9	5.1
Alaska Statewide	6.8	6.7	6.5
NOT SEASONALLY ADJUSTED			
United States	5.0	5.1	5.2
Alaska Statewide	5.9	6.1	5.6
Anchorage/Mat-Su Region			
Municipality of Anchorage	5.0	5.2	4.6
Matanuska-Susitna Borough	7.4	7.7	6.8
Gulf Coast Region			
Kenai Peninsula Borough	6.9	7.0	6.4
Kodiak Island Borough	4.8	4.7	3.9
Valdez-Cordova Census Area	5.4	5.7	5.3
Interior Region			
Denali Borough	3.1	3.5	3.7
Fairbanks North Star Borough	4.9	5.3	4.6
Southeast Fairbanks CA	8.9	9.1	9.1
Yukon-Koyukuk Census Area	16.3	16.4	16.9
Northern Region			
Nome Census Area	13.8	14.5	11.1
North Slope Borough	6.9	6.9	5.7
Northwest Arctic Borough	17.1	16.9	14.5
Southeast Region			
Haines Borough	5.7	5.9	5.1
Hoonah-Angoon Census Area	7.3	8.0	10.0
Juneau, City and Borough	3.7	3.9	4.0
Ketchikan Gateway Borough	4.5	4.6	4.8
Petersburg Borough	5.2	5.3	6.2
Prince of Wales-Hyder CA	9.8	10.4	10.0
Sitka, City and Borough	3.0	3.1	3.3
Skagway, Municipality	3.0	3.3	4.2
Wrangell, City and Borough	5.4	5.4	5.6
Yakutat, City and Borough	5.8	6.2	6.1
Southwest Region			
Aleutians East Borough	1.9	2.2	2.3
Aleutians West Census Area	2.2	2.4	2.7
Bethel Census Area	14.7	13.8	14.1
Bristol Bay Borough	5.2	2.2	6.3
Dillingham Census Area	8.7	7.8	8.4
Kusilvak Census Area	22.1	24.5	23.0
Lake and Peninsula Borough	9.6	9.6	9.2

How Alaska Ranks



Job Growth in Alaska and the Nation⁵



All data sources are U.S. Bureau of Labor Statistics and Alaska Department of Labor and Workforce Development, Research and Analysis Section, unless otherwise noted.

¹August seasonally adjusted unemployment rates

²U.S. Bureau of Economic Analysis, Compound Annual Growth Rate, 2nd Quarter 2016 annualized

³U.S. Bureau of Economic Analysis, Compound Annual Growth Rate, First Quarter 2015 to Second Quarter 2016

⁴U.S. Census Bureau, 2015 American Community Survey, GINI Index

⁵Annual average percent change; 2016 data are for January to August compared to the same months in 2015

Employer Resources

Veterans Job Fair scheduled for Nov. 11 in Anchorage

For many years, Alaska and the nation have honored veterans during November. Veterans Day, observed on Nov. 11, is the anniversary of the World War I armistice that ended hostilities in the 11th hour of the 11th day of the 11th month of 1918.

To help support Alaska's veterans, the Alaska Department of Labor and Workforce Development will host its annual Alaska Veterans Job Fair on Nov. 18 from 10 a.m. to 2 p.m. at Anchorage's University Center Mall, 3801 Old Seward Hwy. More than 120 employers and 1,000 highly qualified job seekers, including many veterans, are expected to attend. This is one of the largest hiring fairs in Alaska, and every year many Alaska employers use this event to find valuable and profitable military talent. Employers can register at: <https://veteransjobfair-employers.eventbrite.com>.

Did you know...the Society for Human Resource Management conducted multiple studies to identify the top critical skills and resources needed for businesses in the changing workforce? Ninety percent of survey

respondents said their recent veteran hires possessed some of the most highly desired skill sets, including adaptability, dependability, problem solving, leadership, follow-through, the ability to work as part of a team, and a strong sense of responsibility. According to SHRM, these skill sets make candidates with a military background "highly desirable contributors to an organization's performance."¹

We encourage employers who want to learn more about the numerous reasons to hire veterans to contact their nearest Alaska Job Center or call (877) 724-2539. For more information about Alaska's Veteran Services, go to: <http://jobs.alaska.gov/veterans/employer/>.

¹Society for Human Resource Management (2012). Support from Behind the Lines: 10 Steps to Becoming a Military-Ready Employer. Retrieved on October 5, 2015, from http://www.shrm.org/templatestools/toolkits/documents/12-0177%20behind_the_lines_toolkit_fnl.pdf.

Employer Resources is written by the Employment and Training Services Division of the Alaska Department of Labor and Workforce Development.

Safety Minute

Workplace violence is a common, costly occupational hazard

Workplace violence is the act or threat of violence against workers, but it can happen outside the workplace as well as on the job. Nearly two million Americans are victims of workplace violence each year, ranging from threats and verbal abuse to assaults and homicides. Workplace violence can strike anywhere, and according to the Workplace Violence Institute, it costs an average of \$3.5 billion a year.

Although there is no standard for workplace violence, Occupational Safety and Health recognizes it as an occupational hazard. OSHA Instruction Directive: CPL 02-01-052, September 8, 2011 states, "... States should utilize the general duty clause in an at-least-as-effective manner to address hazards in the workplace associated with workplace violence."

What can employers do to help protect their employees?

- Establish a zero-tolerance policy toward workplace violence.

- Provide safety education for employees so they know what conduct is unacceptable and what to do if they are victimized.
- Instruct employees not to enter any location where they feel unsafe. Establish a "buddy system" or seek police assistance when necessary.
- Develop policies and procedures for employees who work directly with volatile or hostile patients and clients.

Alaska Occupational Safety and Health, or AKOSH, offers Workplace Violence Prevention training, which covers basic prevention and the safety of employees who encounter workplace violence. Employers interested in scheduling a training session can visit <http://labor.alaska.gov/lss/training.htm>.

For more information on workplace violence, visit <https://www.osha.gov/SLTC/workplaceviolence/>.

Safety Minute is written by the Labor Standards and Safety Division of the Alaska Department of Labor and Workforce Development.