

Ten-Year Occupational Forecast

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Health care dominates fast growth occupations; technology causes some occupations to decline

Change is a fact of life, and a vital factor in the economy. With advances in technology, shifts in demographics, and improvements in business practices, the mix of occupations that make up the economy is constantly evolving, and so too must the training and skills of Alaska's workforce. This article will paint a picture of the effects of these changes over the 2000 to 2010 decade, shedding light on where we are and where we're going.

Based on the Department of Labor and Workforce Development's (DLWD) most recent occupational forecast, employment in Alaska's many occupations, including both wage and salary and self-employment, is projected to grow by 16.7 percent from 2000 to 2010, adding approximately 50,400 jobs to the state's economy. As the workforce grows from 302,255 to a projected 352,693, the rate of increase for the state's employment will be slightly faster than the 15.2 percent increase projected for the nation as a whole.

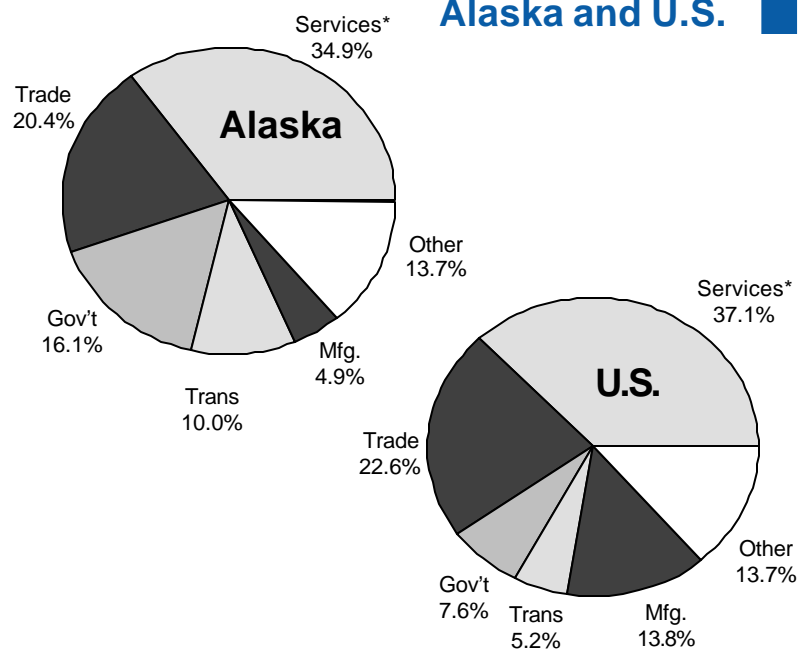
Industry outlook

Growth will occur in virtually all sectors of Alaska's economy, but the burgeoning services sector, which encompasses health care, education, and business services, will lead the way in creating new jobs. In keeping with the post-World War II national trend of goods producing sectors giving way to services producing, the industrial makeup

of Alaska's economy has become increasingly concentrated in the services sector. (See Exhibit 1.)

Industry projections for the 2000-2010 decade, completed in early 2002, lie at the heart of Alaska's occupational forecast for the period.¹ Several key assumptions underpin the industry forecast upon which this occupational forecast is

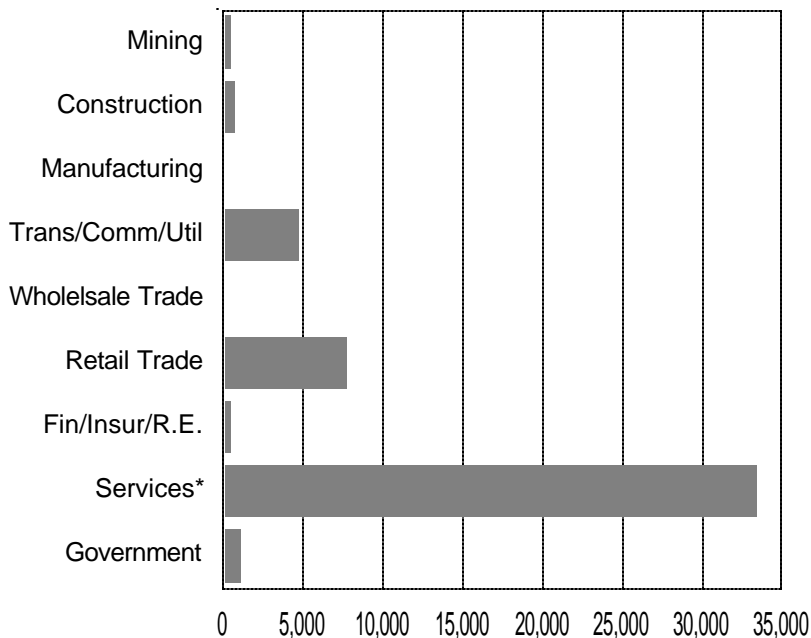
Industry Employment 2000 Alaska and U.S.



*Services include public education and hospitals.

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

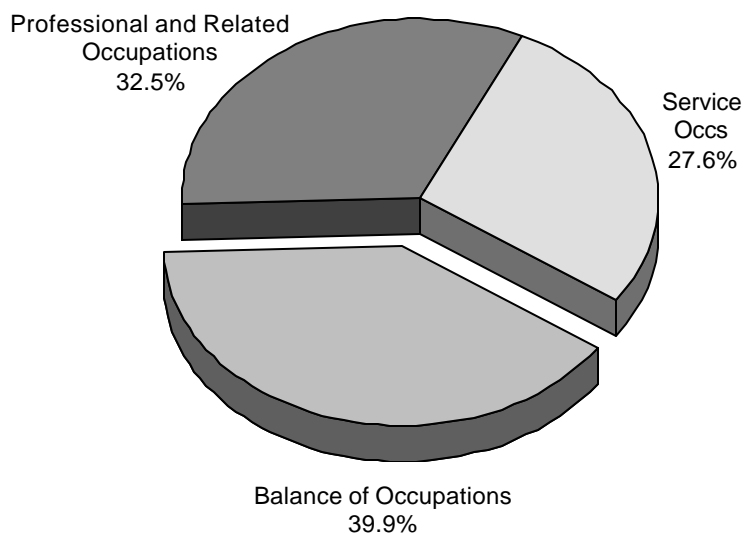
2 Industry Employment Growth 2000–2010



*Services includes public education and hospitals.

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

3 Source of Employment Growth Projected 2000–2010



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

based. They include: significant growth in the services industries, driven by both the aging and growth of Alaska's population; a continuation of retail expansion in urban areas; little change in metal mining activity as key projects such as Pogo and Kensington await permits; and moderate exploration and drilling activity in the National Petroleum Reserve. Neither the development of the Arctic National Wildlife Refuge nor a natural gas pipeline was considered probable during the forecast period. (See Exhibit 2.)

Given the time lag between the forecasts for industry and for occupations, some of the assumptions on which the industry forecast was based may not accurately reflect the current economic climate. (See the May 2002 issue of *Alaska Economic Trends* for a detailed discussion of the 2000-2010 industry forecast.) The 2002-2012 industry forecast is scheduled for completion in the fall of 2003.

Dramatic increases in health and social services employment account for nearly 70 percent of the projected growth in the services industry sector. These opportunities arise in large part from Alaska's aging population and that population's disproportionate consumption of health care services. Figures provided by the National Center for Health Statistics indicate that persons aged 55 and older, per capita, account for five times the days of care in hospitals when compared to the rest of the population.² As the 55 and older age group grows in Alaska from 13 percent to an estimated 20 percent this decade, the demand for health care services will grow with it.

Outside of the services industry, significant growth is projected in the retail trade and the combined transportation, communication, and utilities industries. Alaska's geographic importance for the movement of international cargo and increases in general merchandise stores and eating and drinking places should fuel growth in these industry sectors. While projected growth in construction is more restrained, growth in heavy construction may get a boost from the infrastructure development sought by the current administration.

Occupation outlook

Occupational growth stems from the utilization of workers by industry. Occupations heavily concentrated in the services and retail trade industries will provide the greatest number of new job opportunities during the projection period. These opportunities fall largely in two occupational groups, professional and related occupations and service occupations. (See Exhibit 3.) While these two occupational clusters share the distinction of being the only two groups projected to increase their employment share by 2010, in terms of wages paid and educational levels required they contrast starkly with one another.

Another source of employment opportunity results from the need to replace workers who leave their occupation due to retirement, career change, or death. While these openings are significant, especially in industries such as construction where worker median age is high, this article will focus on those 50,400 projected openings resulting from economic growth and technological change.

Strongest growth for professional and related occupations

The professional and related occupational group encompasses a great variety of vocations, from computer programmers to lawyers, and social workers to zoologists, many of which require considerable education and training. Of the nearly 60,000 workers that comprised this group in 2000, about two-out-of-three worked in an occupation generally requiring at least a bachelor's degree. According to wage data that covers more than 95 percent of all Alaska wage earners, the relatively high educational level of these workers translates to a significant earnings premium. With an average hourly wage of \$23.68, employees in these occupations earn about 25 percent more than Alaskans as a whole.

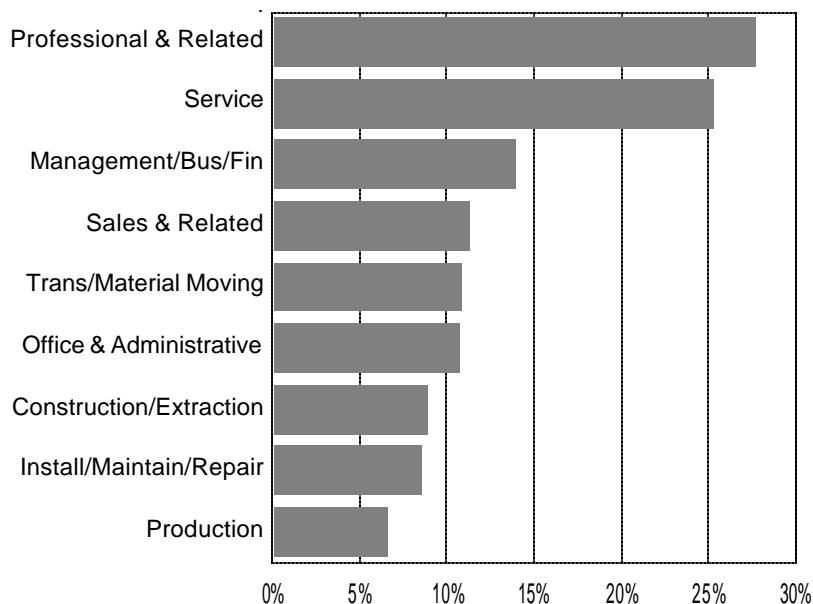
Of the 706 individual occupations that comprise the 2000 – 2010 occupational projections, the professional and related cluster accounts for 245 or just over one third. With the largest

employment of the nine occupational groups in both 2000 and 2010, these occupations are projected to add some 16,383 new jobs during the decade. This occupational group is projected to grow faster than any other. (See Exhibit 4.)

Healthcare practitioner and technical occupations will drive growth in the professional and related occupations, accounting for just over half the total increase for this major occupational group. Projected shortages of some healthcare professionals are raising concerns of an impending crisis in health care capacity, both in Alaska and nationally. Indeed, the University of Alaska School of Nursing has teamed with industry leaders to develop strategies to double the number of nursing graduates through 2006. Laws recently passed in a handful of states, including Washington and Oregon, have put limits on mandatory overtime for nurses, a practice bred by the shortage of qualified nursing personnel across the northwest.³

Another 30 percent of growth will come from community and social services occupations and education, training, and library occupations. The

Employment Growth Rate Alaska 2000–2010 projected **4**



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

former group will see robust growth, in part due to Alaska's higher than average incidence of alcohol related problems. The latter group is projected to grow at a much slower rate owing to budget tightening and a stabilizing of school enrollments over the decade. The much smaller computer and mathematical occupational group, while contributing a smaller share to new employment, should experience strong growth as continued efforts to increase productivity demand ever more computer support and network system specialists across all industries.

Service occupations follow close behind

Service occupations will see significant employment increases during the decade, adding a projected 13,917 new jobs to the state's economy. Second only to professional and related occupations in their rate of growth, service occupations will account for nearly one in five jobs by 2010. This is despite the fact that less than 13 percent of occupations are categorized under the service sector in 2000.

Many service occupations are characterized by relatively low pay and short job tenure. Turnover tends to be high in many of these occupations, owing to the greater proportion of young people utilizing them for entrance into the labor force. Aside from protective service occupations, which command relatively high wages, earnings for service occupation workers are below the average for all Alaskans. At an average of \$11.89 per hour in the most recent wage survey, these workers make about half as much as those in professional and related occupations. Not surprisingly, only one percent of these job opportunities required a bachelor's or more advanced degree in 2000.

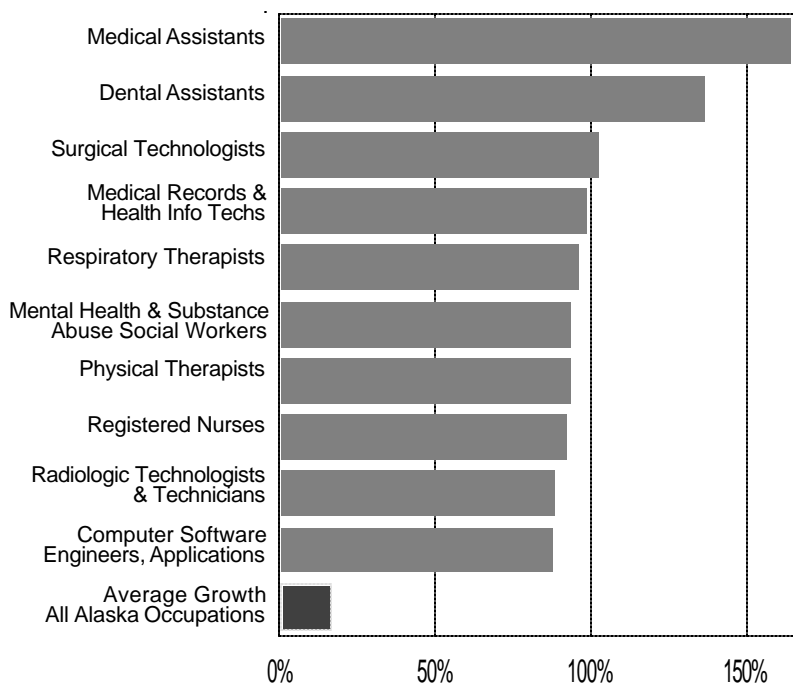
Growth in service occupations is led by large increases in food preparation and serving related workers, a group responsible for 40 percent of base year employment for all service occupation workers. Nearly one in three new opportunities are projected to derive from these hospitality occupations. Our culture's continued reliance on fast food and takeout meals in feeding an on-the-go population is behind the faster than average growth for this service occupation's large subgroup.

Health care support occupations will contribute better than one-in-four new service related jobs to Alaska's economy. As hospitals and clinics work to rein in escalating costs, responsibility and workloads will increase for Medical and Dental Assistants and other healthcare support workers, requiring additional personnel. Likewise, increased cost pressures in elderly care institutions will necessitate more Personal and Home Care Aides, driving growth in the personal care and service subgroup.

Slower, steady growth for the others...

The accelerated growth of the service and professional and related occupations, while significant in terms of projected job growth, should not overshadow the fact that the majority of Alaska's employment continues to be found in the remaining occupational groups. These jobs contain over half of the occupations included in

5 The Fastest Growing Occupations Alaska projected 2000–2010



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

this analysis, and offer some of the highest wages in Alaska, a great variety of work settings and duties, and many promising career opportunities.

Management, business, and financial occupations are projected to add over 4,600 jobs through 2010. With a growth rate of 14 percent, this occupational group is the third fastest growing and will nearly keep pace with the economy overall. Comprising just over 10 percent of total employment in both the base and projected year, jobs in these occupations hold the distinction of paying, at \$28.90 per hour, the highest average wage of the nine occupational groups. Though advanced degrees are generally not necessary in these occupations, 87 percent of new job opportunities in this broad classification will require at least a bachelor's degree.

Office & administrative support; sales & related; and transportation & material moving occupations, each projected to grow about 11 percent over the decade, should account for about one-third of all employment by 2010. With a few exceptions including Airline Pilots, these occupations generally require no formal training or schooling beyond that provided on the job. The remaining occupations are found in the slower growing construction & extraction; installation, maintenance & repair; and production occupational clusters.

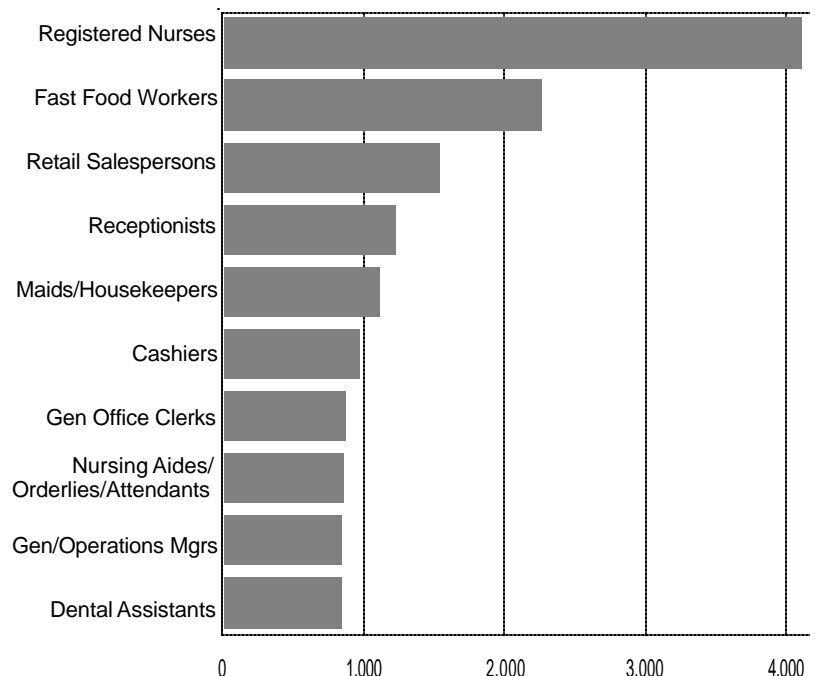
Detailed occupations

Occupational growth can be viewed two ways — by the rate of growth, the percentage change in employment between 2000 and 2010, or by numeric growth, the number of jobs created over the forecast period. In general, occupations with faster growth rates offer higher wages and better career advancement opportunities. Slow or moderately growing occupations with large employment can, however, offer good job opportunities because of their dominance in the labor market. Therefore, a look at both percent change and numeric change is important in identifying occupations having favorable employment prospects.

Based on the 2000-2010 projections, the growth rates for occupations with significant employment⁴ range from an increase of nearly 165 percent for Medical Assistants to a decline of 42 percent for Telephone Operators. Numeric growth over the forecast period ranges from over 4,100 additional Registered Nurse jobs to an employment loss of 164 for Tellers.

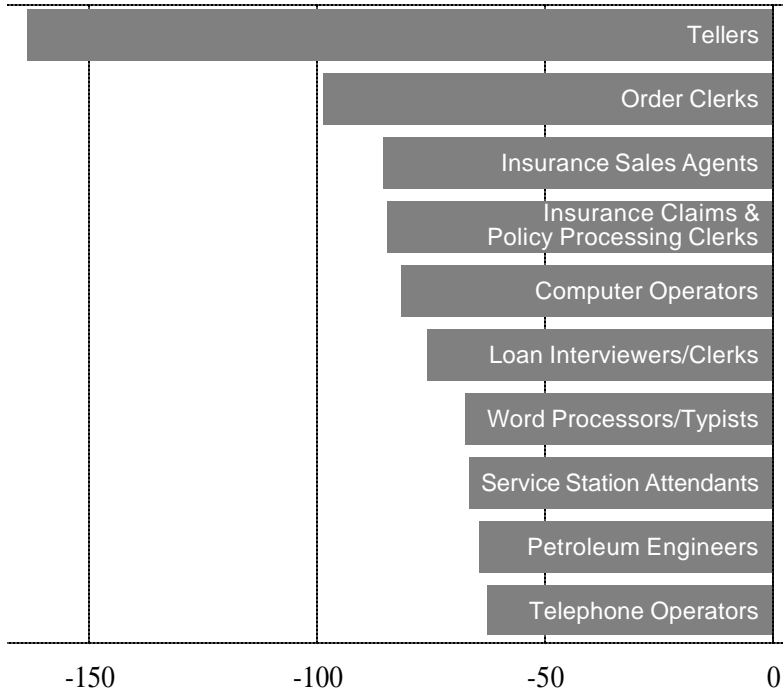
Nine of the ten fastest growing occupations are in health care fields. (See Exhibit 5.) The ten fastest growing occupations are projected to represent roughly four percent of total employment in 2010 and over 14 percent of the new jobs. The projected job growth in health services will result from multiple factors, including Alaska's aging population, and technological advances in medicine. The heightened demand for Surgical Technologists, for example, will result from both the increased surgical needs of an aging population and the demand for new technology-driven surgical procedures such as those using fiber

Largest Numeric Increases Projected for occupations 2000-2010 **6**



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

7 Occupations with Largest Decline In projected numbers 2000–2010



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

optics and laser technology. Continued efforts to curb health care costs will stimulate employment for health related aides and assistants as services formerly performed by specialists are shifted to lower paid workers. The demand for Medical Records & Health Information Technicians will climb, reflecting heightened medical records scrutiny by third-party payers, courts and consumers.

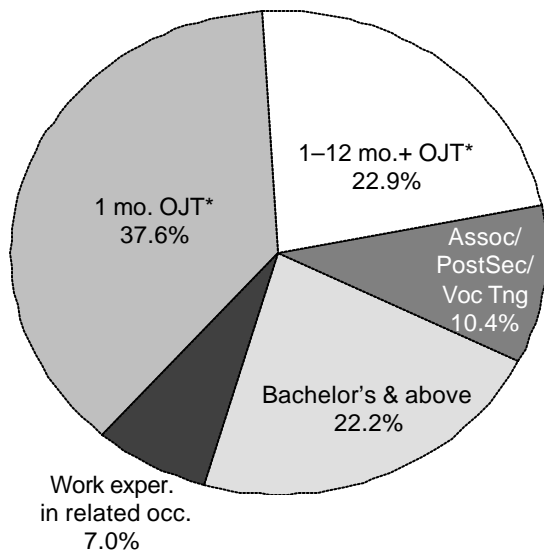
Among the 706 occupations for which projections were developed, the ten occupations with the largest numeric increase will account for more than 29 percent of total employment growth over the 2000-2010 period. Service occupations such as Fast Food Workers and Nursing Aides, Orderlies and Attendants dominate the list. Combined, the ten occupations included in Exhibit 6 will contribute nearly 15,000 new jobs over the forecast period. With the exception of Registered Nurses, General and Operations Managers and Dental Assistants, the occupations on this list are entry level, requiring little training or experience.

Occupations with declining employment

Not all occupations will show positive employment growth over the forecast period. Combined, the ten occupations with the largest projected numeric decline will shed over 850 jobs, reducing their total employment to 3,300 in 2010. Technological changes or organizational shifts will be the primary factors contributing to these losses. For example, the continued shift from mainframe computers to PCs will account for the declining demand for Computer Operators. (See Exhibit 7.) Over the forecast period, the occupation of Bank Teller is expected to have the largest numeric decrease in total employment as the trend to automated banking functions continues.

Even occupations with declining employment can offer excellent employment opportunities. For example, the aging of Alaska's workforce may result in significant employment opportunities as employers replace retiring workers. (See the March 2002 issue of *Alaska Economic Trends* for an analysis of Alaska's aging workforce.)

8 Alaska's Future Jobs By education level required—2010



*On-the-Job Training

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

Occupations by education and training requirements⁵

While the education and training requirements of the workforce continue to increase, only 22 percent of the jobs in 2010 will require a bachelor's degree or more. (See Exhibit 8.) Occupations requiring significant postsecondary vocational training or an associate degree, such as Registered Nurses⁶ and Aircraft Mechanics, will account for over 10 percent of all jobs in 2010. Occupations generally requiring short-term work related training of less than one month are projected to account for nearly 38 percent of employment in 2010. Roughly 23 percent of the jobs in 2010 will require longer term on-the-job training lasting one to 12 months or more.

Better education improves opportunity

Workers who have the most education and training will have the best opportunity for high paying jobs in growing occupations, because shifts in the occupational composition of the workforce and the structure of work within occupations favor 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 significant postsecondary education and training. (See Exhibit 9.)

Of the 706 occupations included in the 2000-2010 projections, 51 were identified as "best bets" – occupations with higher than average wages and good job prospects, based on projected employment growth and number of positions. Employment in Alaska's best-bet occupations is projected to reach nearly 45,000, or roughly 13 percent of total employment in 2010. (See Exhibit 10.) Although dominated by health-related occupations, the list of best bets includes jobs as diverse as Computer System Analysts and Sheet Metal Workers.

Footnotes

1. While other industry data is increasingly being presented using the North American Industrial Classification System (NAICS), due to the dependence on historical data to construct both the industry projection and the occupational staffing pattern, all industry data in this analysis utilize the outgoing Standard Industrial Classification (SIC).
2. Annual Hospital Discharge Survey, 2000, *National Center for Health Statistics*, Series 13, No. 153, Table 2.
3. See Richard R. Nelson, "State labor legislation enacted in 2002," *Monthly Labor Review*, January 2003, pp.3-6.
4. For the majority of this analysis, only occupations with year 2000 employment of 75 or more are included. Catch-all occupational categories, such as "All Other Managers" are excluded.
5. The U.S. Bureau of Labor Statistics' (BLS) occupational education and training categories are used in this analysis.
6. Based on the BLS classification, all RNs are grouped under the Associate Degree category.

Alaska's Best Bet Occupations 9 By education level



*On-the-Job Training

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

10 Best Bet Occupations 2000–2010

By education, wages, employment

Wage \$\$\$ \$16.72 - \$23.83 Wage Employment Numeric Percent
 Quartile \$\$\$\$ \$23.84 & higher Quartile 2000 2010 Change Change

Bachelor's and above						
Medical and Health Services Managers	\$\$\$\$	662	1,185	523	79%	
Network and Computer Systems Administrators	\$\$\$\$	420	749	329	78%	
Substance Abuse/Behavioral Disorder Counselors	\$\$\$	425	749	324	76%	
Mental Health Counselors	\$\$\$	337	604	267	79%	
Physical Therapists	\$\$\$\$	276	535	259	94%	
Medical and Public Health Social Workers	\$\$\$	265	481	216	82%	
Pharmacists	\$\$\$\$	332	535	203	61%	
Management Analysts	\$\$\$\$	534	726	192	36%	
Clinical, Counseling, and School Psychologists	\$\$\$\$	326	517	191	59%	
Administrative Services Managers	\$\$\$	1,072	1,259	187	17%	
Medical and Clinical Laboratory Technologists	\$\$\$\$	270	452	182	67%	
Property/Real Est./Community Assoc. Mgr.	\$\$\$	979	1,159	180	18%	
Computer Systems Analysts	\$\$\$\$	513	693	180	35%	
Special Ed. Teachers, Preschool/Kindergtn/Elem.	\$\$\$\$	627	803	176	28%	
Child, Family, and School Social Workers	\$\$\$	660	824	164	25%	
Computer and Information Systems Managers	\$\$\$\$	386	544	158	41%	
Sales Managers	\$\$\$\$	525	672	147	28%	
Dentists	\$\$\$\$	346	490	144	42%	
Purchasing Agents, exc. Wholesale/Retail/Farm	\$\$\$\$	575	703	128	22%	
Computer Software Engineers, Applications	\$\$\$\$	136	256	120	88%	
Social and Community Service Managers	\$\$\$	603	719	116	19%	
Family and General Practitioners	\$\$\$\$	217	331	114	53%	
Educational, Vocational, and School Counselors	\$\$\$	579	693	114	20%	
Internists, General	\$\$\$\$	136	244	108	79%	
Occupational Therapists	\$\$\$\$	138	243	105	76%	
Environmental Engineers	\$\$\$\$	354	444	90	25%	
Network Systems/Data Comm Analysts	\$\$\$\$	115	193	78	68%	
Securities/Commodities/Fin Svcs Sales Agents	\$\$\$\$	205	281	76	37%	
Physician Assistants	\$\$\$\$	157	233	76	48%	
Health Educators	\$\$\$	145	220	75	52%	
Associate Degree or Postsecondary vocational training						
Registered Nurses ⁶	\$\$\$\$	4,439	8,556	4117	93%	
Computer Support Specialists	\$\$\$	1,019	1,755	736	72%	
Dental Hygienists	\$\$\$\$	403	753	350	87%	
Licensed Practical and Licensed Vocational Nurses	\$\$\$	487	750	263	54%	
Radiologic Technologists and Technicians	\$\$\$	289	545	256	89%	
Medical Transcriptionists	\$\$\$	241	439	198	82%	
Commercial Pilots	\$\$\$\$	591	767	176	30%	
Respiratory Therapists	\$\$\$	108	212	104	96%	
Medical and Clinical Laboratory Technicians	\$\$\$	141	242	101	72%	
Surgical Technologists	\$\$\$	96	195	99	103%	
Work experience in a related occupation						
First-Line Supvrs/Mgrs Ofc/Admin Support Wkrs	\$\$\$	3,017	3,589	572	19%	
Transportation, Storage, and Distribution Mgrs	\$\$\$\$	622	744	122	20%	
Lodging Managers	\$\$\$	421	529	108	26%	
First-Line Supvrs/Mgrs of Housekp/Janitor Wkrs	\$\$\$	401	506	105	26%	
Long-or medium-term on-the-job training						
Correctional Officers and Jailers	\$\$\$	776	1,017	241	31%	
Painters, Construction and Maintenance	\$\$\$	786	933	147	19%	
Water/Liquid Waste Treatment Plant/System Oprs	\$\$\$	588	706	118	20%	
Hazardous Materials Removal Workers	\$\$\$	253	339	86	34%	
Sheet Metal Workers	\$\$\$\$	386	467	81	21%	
Telecommunications Line Installers and Repairers	\$\$\$	421	501	80	19%	
Opticians, Dispensing	\$\$\$	182	257	75	41%	

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

Methodology

Occupational forecasts are the end product of a three-part system: employer surveys, construction of a matrix of industries and occupations, and industry employment forecasts.

Employer Surveys: The foundation of this forecast is the Occupational Employment Statistics (OES) program, operated jointly by Alaska DLWD/R&A and the U.S. Bureau of Labor Statistics. The OES program surveys occupational employment through a random sample of employers who do business in Alaska. OES employer surveys form the basis for profiles of the occupational makeup of 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 (2000) employment estimates are made by multiplying the proportion of employment for each occupation in an industry by the current (2000) estimate of employment for that industry and then summing across industries.

Future occupational employment required 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 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 decennial census are used to determine the self-employment ratios.

Industry Employment Forecasts: Industry forecasts are constructed by statistical techniques and adjusted based on assumptions about the probability of future events. A detailed description of the methodology used in producing the 2000-2010 industry forecast is available upon request.

Earnings Quartiles: Earnings quartiles were determined by sorting the total number of Alaska employees by their wage from the lowest to the highest. One fourth of total employment is placed in each quartile. A single \$ represents occupations with employee earnings of less than \$12.35 per hour. \$\$ represents earnings between \$12.35 and \$16.71 per hour, \$\$\$ between \$16.72 and \$23.83 per hour, and \$\$\$\$ greater than \$23.83. Wage information is from the 1999, 2000 and 2001 OES surveys and includes wage and salary employment only.