

A Closer Look at Occupational Projections for Wyoming

2006-2016



**Research & Planning
Wyoming Department of Employment**

A Closer Look at Occupational Projections for Wyoming 2006-2016

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A Closer Look at Occupational Projections for Wyoming, 2006-2016

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Wyoming's economy has grown during much of the present decade, largely due to mineral extraction, especially energy resources (Ellsworth & Saulcy, 2008). This is in contrast to the 1990s, when Wyoming's economy grew more slowly than the nation's (Harris, 2004).

To learn how Wyoming workers may fare into the middle of the next decade, this publication focuses on projected occupational growth from 2006 to 2016. Growth is also examined in relation to wages and educational requirements. Lastly, this report shows how projections were applied to a study that Research & Planning (R&P) developed for Central Wyoming College in early 2008.

Road Map for the Future

Development of projections to show the direction of Wyoming's economy requires an assessment of the economy's direction prior to the projection period. Projections were developed using 2006 as the base year and projected to 2016. To describe the labor market condition in 2006, this report first examines employment

and wages from 2001 to 2006 before turning to the occupational projections themselves.

Occupational projections were developed from the 2006-2016 industry projections (see Bullard & Leonard, 2008) and data collected for the Occupational Employment Statistics (OES) survey. The occupational projections were then measured against the industry projections to ensure consistency. To provide a more complete view of projected occupational growth, additional data were attached from OES and other sources. These data included average annual and hourly wages, minimum education level required for entry into occupations, and comparisons of average wages against the federal poverty guideline for a family of four. The results demonstrate how the information can be applied to evaluate the quantity and quality of economic growth.

Industry projections use historical trends in employment within an industry to predict whether the

industry is expected to expand or contract over the next decade. OES collects data at the establishment level on the number of employees in an occupation within an industry. In every even-numbered year, long-term (10-year) occupational projections are updated, while short-term (2-year) occupational projections are brought up to date in odd-numbered years.

Due to data limitations, substate (i.e., regional) projections are constructed only for long-term projections. Each state develops industry and occupational projections using a similar methodology. Historical and current Wyoming industry and occupational projections may be found at <http://doe.state.wy.us/LMI/projections.htm>.

Industry Trends Influencing Occupational Growth, 2001 and 2006

In 2001 Wyoming's nonagricultural wage and salary employment was

**For the
difference
between an
industry and
an occupation,
see page 5.**

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What Is the Difference Between an Industry and an Occupation?

In general, an industry refers to the type of firm for which a person works. Rather than grouping according to the final product or service, the North American Industry Classification System categorizes firms based on production process. However, the final product or service is usually similar for establishments within an industry. On the other hand, an occupation refers to a specific task or set of tasks. Consider the occupation of roustabouts, oil & gas. The *Standard Occupational Classification manual* defines the occupation as follows: “Assemble or repair oil field equipment using hand and power tools. Perform other tasks as needed” (Office of Management & Budget, 2000, p. 173). A single occupation may be present in a variety of industries. For example, accountants, in addition to working in accounting firms, may also work for mining companies, hospitals, state or local government, and a host of other industries.

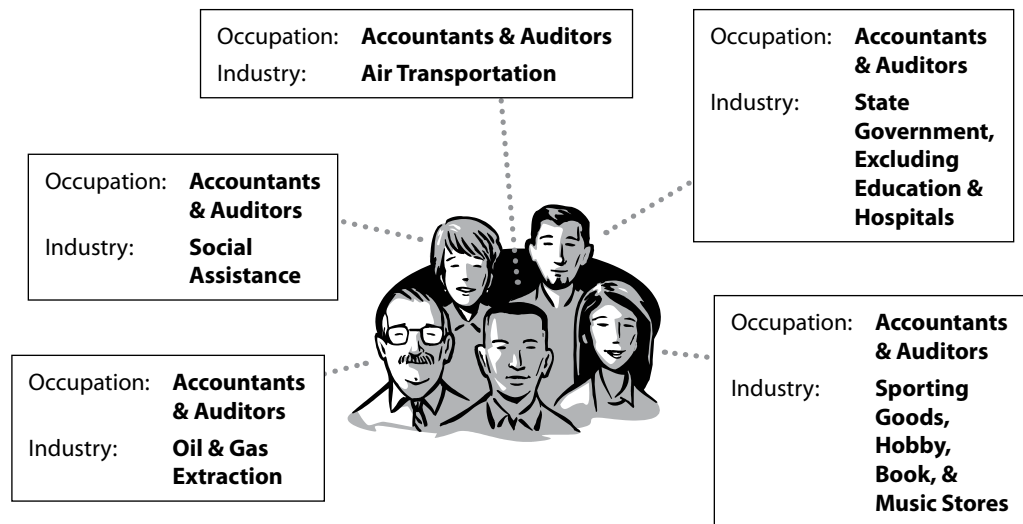
References

Office of Management & Budget. (2000, October). *Standard Occupational Classification manual*. Springfield, VA: National Technical Information Service and Berman Associates.

Occupations and Industries

Occupation: A set of activities or tasks that employees are paid to perform. Employees who perform essentially the same tasks are in the same occupation, whether or not they work in the same industry.

Industry: A group of establishments that produce similar products or provide similar services.



- Example 1. An IT specialist who works for a police agency would be counted under police agencies, not IT companies.
- Example 2. If a report shows 100,000 workers in the Electrical Contracting industry, this does not mean that there are 100,000 people who work as electrical contractors. These firms may employ accountants, receptionists, and other workers who would be included in the 100,000 total.

Source: Bureau of Labor Statistics.

Text continued from page 4

237,278; by 2006 it grew to 266,894, an increase of 29,616 (12.5%; see Table 1, page 7). The growth rate in goods-producing industries was more than double that of service-providing industries (25.2% compared to 10.8%). Mining had the largest net and percentage increases among goods-producing industries at 45.8% (8,319 jobs). It also led net and percentage growth across all sectors. Of the employment gains in mining, 76.5% (5,925 jobs) was due to support activities for mining. Net increases in service-providing industries were led by trade, transportation, & utilities (4,304) followed by educational & health services (3,054). Within health care & social assistance, ambulatory health care services added 1,354 jobs (21.5%), hospital employment rose by 48 jobs (1.7%), and nursing & residential care facilities added 317 jobs (7.7%).

Employment in health care firms is projected to increase substantially in the coming decades, largely due to the overall rise in the age of Wyoming's population. By 2015, the number of people 65 and older is projected to increase to nearly 89,000, while the population of individuals age 18-24 is projected to be less than half that number (just under 40,000; Census Bureau, 2005). Depending on

implemented policy changes, demand by health care firms for registered nurses in particular is expected to increase markedly between 2006 and 2014 (Leonard, 2008). Demand for other goods and services also will be affected by demographic changes (Gallagher, 2003).

Total payroll and average annual wages by industry are shown in Table 2 (see page 8). While goods-producing industries experienced the largest percentage increase in total payroll compared to service-providing industries (60.8% compared to 44.1%), service-providing industries had a slightly higher percentage gain in average annual wage relative to goods-producing industries (30.0% compared to 28.4%).

Total payroll for natural resources & mining rose 81.4%, most of which was the result of payroll gains in mining. Within mining, total payroll for support activities for mining rose substantially. Total payroll more than doubled in support activities for mining, from \$351 million in 2001 to \$854.9 million in 2006, a gain of \$503,871 (143.5%). Among service-providing industries, the largest percentage gain in total payroll was in leisure & hospitality, up 59.4% from 2001 to 2006.

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Frequently Used Terms and Acronyms

Average annual wage: Total payroll for the year divided by average employment for the year.

Classification of Instructional Programs (CIP): A standardized method of classifying postsecondary educational programs. More information about CIP is available from the U.S. Department of Education at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2002165>.

Federal poverty guideline: Sometimes referred to as the poverty line, the federal poverty guideline is established by the U.S. Department of Health and Human Services (<http://aspe.hhs.gov/poverty/08poverty.shtml>) as the baseline income required for families or households of varying sizes. This publication uses the 2008 federal poverty guideline of \$21,200 for a family of four.

Major occupational group: A two-digit occupation from the

Text continued on page 9

Table 1: Wyoming Employment by Industry, 2001 and 2006

NAICS ^a Title	Employment		Change	
	2001	2006	Net	Percentage
Goods-Producing	50,225	62,902	12,677	25.2%
Natural Resources & Mining	20,585	28,815	8,230	40.0%
Agriculture, Forestry, Fishing, & Hunting	2,402	2,313	-89	-3.7%
Mining	18,183	26,502	8,319	45.8%
Oil & Gas Extraction	3,323	4,115	792	23.8%
Mining (Except Oil & Gas)	7,118	8,719	1,601	22.5%
Support Activities for Mining	7,742	13,667	5,925	76.5%
Construction	19,537	23,942	4,405	22.5%
Manufacturing	10,103	10,146	43	0.4%
Service-Providing	130,460	144,563	14,103	10.8%
Trade, Transportation & Utilities	45,548	49,852	4,304	9.4%
Wholesale Trade	6,807	8,197	1,390	20.4%
Retail Trade	30,261	30,875	614	2.0%
Transportation, Warehousing, & Utilities	8,480	10,780	2,300	27.1%
Information	ND	4,173	ND	ND
Financial Activities	9,470	11,117	1,647	17.4%
Professional & Business Services	15,639	17,048	1,409	9.0%
Educational & Health Services	18,507	21,561	3,054	16.5%
Educational Services	1,107	1,397	290	26.2%
Health Care & Social Assistance	17,400	20,164	2,764	15.9%
Ambulatory Health Care Services	6,288	7,642	1,354	21.5%
Hospitals	2,814	2,862	48	1.7%
Nursing & Residential Care Facilities	4,127	4,444	317	7.7%
Social Assistance	4,172	5,217	1,045	25.0%
Leisure & Hospitality	29,616	32,611	2,995	10.1%
Other Services (Except Public Administration)	ND	8,200	ND	ND
Total Private	180,685	207,465	26,780	14.8%
Public Administration	21,284	22,252	968	4.5%
Federal Government	3,715	3,712	-3	-0.1%
State Government	7,601	7,918	317	4.2%
Local Government	9,968	10,622	654	6.6%
Total, All Ownerships and Industries	237,278	266,894	29,616	12.5%

^aNorth American Industry Classification System.

ND: Not disclosable due to confidentiality of information.

Source: U.S. Department of Labor, Bureau of Labor Statistics. (n.d.). Quarterly Census of Employment and Wages. Retrieved September 22, 2008, from <http://data.bls.gov/PDQ/outside.jsp?survey=en>

Table 2: Wyoming Total Payroll and Average Annual Wage by Industry, 2001 and 2006

NAICS ^a Title	2001		2006		Net Change		Percentage Change	
	Total Payroll (in Thousands)	Average Annual Wage	Total Payroll (in Thousands)	Average Annual Wage	Total Payroll (in Thousands)	Average Annual Wage	Total Payroll	Average Annual Wage
Goods-Producing	\$2,016,615	\$40,152	\$3,242,029	\$51,541	\$1,225,414	\$11,389	60.8%	28.4%
Natural Resources & Mining	\$1,022,907	\$49,692	\$1,855,873	\$64,407	\$832,966	\$14,715	81.4%	29.6%
Agriculture, Forestry, Fishing, & Hunting	\$53,430	\$22,245	\$60,171	\$26,017	\$6,741	\$3,772	12.6%	17.0%
Mining	\$1,022,907	\$53,318	\$1,855,873	\$67,758	\$832,966	\$14,440	81.4%	27.1%
Oil & Gas Extraction	\$196,633	\$59,166	\$323,989	\$78,727	\$127,356	\$19,561	64.8%	33.1%
Mining (Except Oil & Gas)	\$421,800	\$59,258	\$616,798	\$70,738	\$194,998	\$11,480	46.2%	19.4%
Support Activities for Mining	\$351,044	\$45,345	\$854,915	\$62,553	\$503,871	\$17,208	143.5%	37.9%
Construction	\$623,249	\$31,902	\$955,002	\$39,888	\$331,753	\$7,986	53.2%	25.0%
Manufacturing	\$370,459	\$36,667	\$431,154	\$42,497	\$60,695	\$5,830	16.4%	15.9%
Service-Providing	\$2,975,774	\$22,810	\$4,287,688	\$29,660	\$1,311,914	\$6,850	44.1%	30.0%
Trade, Transportation & Utilities	\$1,136,231	\$24,946	\$1,599,382	\$32,083	\$463,151	\$7,137	40.8%	28.6%
Wholesale Trade	\$250,106	\$36,745	\$394,731	\$48,156	\$144,625	\$11,411	57.8%	31.1%
Retail Trade	\$566,407	\$18,718	\$707,450	\$22,913	\$141,043	\$4,195	24.9%	22.4%
Transportation, Warehousing, & Utilities	\$319,718	\$37,703	\$497,201	\$46,123	\$177,483	\$8,420	55.5%	22.3%
Information	ND	ND	\$138,627	\$33,221	ND	ND	ND	ND
Financial Activities	\$302,091	\$31,901	\$434,014	\$39,039	\$131,923	\$7,138	43.7%	22.4%
Professional & Business Services	\$433,503	\$27,719	\$647,655	\$37,991	\$214,152	\$10,272	49.4%	37.1%
Educational & Health Services	\$495,391	\$26,767	\$714,515	\$33,139	\$219,124	\$6,372	44.2%	23.8%
Educational Services	\$22,095	\$19,953	\$34,830	\$24,938	\$12,735	\$4,985	57.6%	25.0%
Health Care & Social Assistance	\$473,296	\$27,201	\$679,685	\$33,707	\$206,389	\$6,506	43.6%	23.9%
Ambulatory Health Care Services	\$244,452	\$38,879	\$360,329	\$47,151	\$115,877	\$8,272	47.4%	21.3%
Hospitals	\$89,206	\$31,701	\$115,660	\$40,416	\$26,454	\$8,715	29.7%	27.5%
Nursing & Residential Care Facilities	\$79,204	\$19,192	\$108,397	\$24,391	\$29,193	\$5,199	36.9%	27.1%
Social Assistance	\$60,433	\$14,487	\$95,298	\$18,268	\$34,865	\$3,781	57.7%	26.1%
Leisure & Hospitality	\$333,272	\$11,253	\$531,223	\$16,290	\$197,951	\$5,037	59.4%	44.8%
Other Services (Except Public Administration)	ND	ND	\$222,261	\$27,104	ND	ND	ND	ND
Total Private	\$4,992,389	\$27,630	\$7,529,716	\$36,294	\$2,537,327	\$8,664	50.8%	31.4%
Public Administration	\$663,115	\$31,156	\$895,433	\$40,241	\$232,318	\$9,085	35.0%	29.2%
Federal Government	\$163,901	\$44,114	\$205,815	\$55,442	\$41,914	\$11,328	25.6%	25.7%
State Government	\$256,805	\$33,787	\$342,367	\$43,241	\$85,562	\$9,454	33.3%	28.0%
Local Government	\$242,409	\$24,319	\$347,251	\$32,693	\$104,842	\$8,374	43.3%	34.4%
Total, All Ownerships and Industries	\$6,654,092	\$28,043	\$9,784,928	\$36,662	\$3,130,836	\$8,619	47.1%	30.7%

^aNorth American Industry Classification System.

ND: Not disclosable due to confidentiality of information.

Source: U.S. Department of Labor, Bureau of Labor Statistics. (n.d.). Quarterly Census of Employment and Wages. Retrieved September 22, 2008, from <http://data.bls.gov/PDQ/outside.jsp?survey=en>

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Average annual wage percentage increases for leisure & hospitality were the highest among all industries. The average annual wage for leisure & hospitality rose from \$11,253 in 2001 to \$16,290 in 2006 (44.8%). Over the same

period, support activities for mining had the second largest percentage increase in the average annual wage, from \$45,345 to \$62,553 (37.9%).

Total payroll in health care & social assistance rose by \$206.4 million (43.6%). Of the health care subsectors,

total payroll in ambulatory health care services had the greatest percentage (47.4%) and net (\$115.9 million) increases.

Although total payroll increased in health care & social assistance, gains in the average annual wage were

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Standard Occupational Classification (SOC) that groups common occupations; the highest level of aggregation in the SOC.

North American Industry Classification System (NAICS): The lowest level of aggregation is a six-digit NAICS code; the highest aggregation level is a supersector (see below). Further information is available from the U.S. Census Bureau website at <http://www.census.gov/eos/www/naics/faqs/faqs.html>.

Occupational Employment Statistics (OES): A survey program conducted by the U.S. Department of Labor, Bureau of Labor Statistics. Wage and employment statistics are produced for more than 800 occupations for geographic areas including the U.S. and the 50 states.

Data from OES are used to develop occupational projections. Minimum education level and wages, which are also included in the OES data set, are used to expand the projections' usefulness. More information about the OES program is available at <http://www.bls.gov/oes>.

Replacement: Refers to the demand for workers created by retirement or other withdrawals from the labor market.

Residual occupation: A detailed category to which occupations not elsewhere classified within a major occupational group are assigned.

Sector: An aggregation of North American Industry Classification System code at the two-digit level.

Standard Occupational Classification (SOC): A standardized method for classifying occupations.

Occupations are classified from two to six digits, with six digits being the most detailed. More information is available at <http://stats.bls.gov/soc/socguide.htm>.

Subsector: An aggregation of North American Industry Classification System codes at the three-digit level.

Supersector: An aggregation of North American Industry Classification System sector codes. More information about BLS standards for sector aggregation is available at http://stats.bls.gov/bls/naics_aggregation.htm.

Total payroll: The sum of all wages paid to Unemployment Insurance-covered full- and part-time employees. More information about total payroll is available at <http://doe.state.wy.us/LMI/01202pub/intro.htm#glos>.

more modest. Overall, the average annual wage in health care & social assistance rose by 23.9% (\$6,506). While ambulatory health care services experienced the largest gain in total payroll, the average annual wage percentage increase in ambulatory health care services was the smallest among health care & social assistance subsectors (21.3%). The largest average annual wage increase was in hospitals (27.5%).

If current trends persist, it is possible that compensation (both total payroll and average annual wages) in health care & social assistance will continue to rise. Wages will likely increase in order to attract more entrants into health care fields as a result of the growing demand for health care services (Saulcy, 2008).

Projected Occupational Growth, 2006 and 2016

In this section projected occupational growth in Wyoming is evaluated from three perspectives:

- Largest net growth.
- Highest paying occupations, including comparisons with the federal poverty guideline for a family of four to help evaluate the quality of projected growth.
- Occupations based on the need for postsecondary education:

- » Those that typically require postsecondary education.
- » Occupations that typically do not require postsecondary education.
- » A comparison of occupations based on instructional programs.

The purpose of these perspectives is to demonstrate how the projections may be evaluated on the basis of employment growth, wages, and education. These data can be used by policy makers, employers, individuals entering or re-entering the labor market, and other stakeholders to make informed decisions.

Many additional occupations are shown in Appendix Tables 1 through 5. The details of the tables are described on page 27. The HTML tables, which may be copied and pasted into an Excel spreadsheet, are available at http://doe.state.wy.us/LMI/occ_proj_06_16/toc.htm.

Overall Growth

Of the 729 unique occupations, the top 25 occupations with the greatest net growth account for nearly 40% of total growth (see Table 3, page 11). The top 25 occupations are projected to add 22,846 of the 57,557 jobs (39.7%) from 2006 to 2016.

Heavy & tractor-trailer truck drivers are projected to have the highest net growth of all detailed occupations. The occupation is projected to add 184 jobs annually, while net growth in the occupation is projected to be 1,842 (29.9%). Among construction & extraction occupations, the highest projected net growth is for operating engineers & other construction equipment operators (1,314; 29.2%). Job duties for this occupation may include bulldozer, backhoe, and grader operation. This occupation is projected to increase by 131 jobs annually. In fact, 8 construction & extraction occupations are in the top 25 for net growth. The only occupation appearing in the top 25 from healthcare practitioner & technical occupations is registered nurses, which is projected to gain 1,278 jobs (29.2%). Jobs for registered nurses will grow by approximately 128 annually.

Table 4 (see page 13) shows projected occupational growth for the 25 occupations with the highest average annual wages. While few health care occupations are represented in the top 25 for net employment increases, 11 of the top 25 highest paying occupations are in health care. In fact, the eight highest paying occupations are in health care.

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Table 3: Wyoming Projected Detailed Occupational Growth for the Top 25 Highest Net Growth Occupations, 2006 and 2016 (Projected)

Rank	Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change				Wages ^a		
			2006	2016 (Projected)	Net	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^b
1	53-3032 Truck Drivers, Heavy & Tractor-Trailer	Moderate-term OJT	6,154	7,996	1,842	3.2%	29.9%	184	\$17.50	\$36,390	\$15,190
2	41-2031 Retail Salespersons	Short-term OJT	7,815	9,491	1,676	2.9%	21.4%	168	\$10.48	\$21,790	\$590
3	43-3031 Bookkeeping, Accounting, & Auditing Clerks	Moderate-term OJT	5,660	7,251	1,591	2.8%	28.1%	159	\$13.78	\$28,670	\$7,470
4	47-2073 Operating Engineers & Other Construction Equipment Operators	Moderate-term OJT	4,494	5,808	1,314	2.3%	29.2%	131	\$20.16	\$41,930	\$20,730
5	29-1111 Registered Nurses	Associate degree	4,371	5,649	1,278	2.2%	29.2%	128	\$25.38	\$52,800	\$31,600
6	49-9042 Maintenance & Repair Workers, General	Moderate-term OJT	3,686	4,768	1,082	1.9%	29.4%	108	\$17.35	\$36,090	\$14,890
7	37-2011 Janitors & Cleaners, Except Maids & Housekeeping Cleaners	Short-term OJT	4,397	5,408	1,011	1.8%	23.0%	101	\$11.07	\$23,020	\$1,820
8	47-1011 First-Line Supervisors/Managers of Construction Trades & Extraction Workers	Work experience in a related occupation	3,291	4,293	1,002	1.7%	30.4%	100	\$27.57	\$57,350	\$36,150
9	37-2012 Maids & Housekeeping Cleaners	Short-term OJT	4,125	5,122	997	1.7%	24.2%	100	\$8.46	\$17,590	-\$3,610
10	35-3021 Combined Food Preparation & Serving Workers, Including Fast Food	Short-term OJT	4,566	5,554	988	1.7%	21.6%	99	\$7.88	\$16,380	-\$4,820
11	47-2031 Carpenters	Long-term OJT	3,085	3,990	905	1.6%	29.3%	91	\$17.90	\$37,240	\$16,040
12	47-2061 Construction Laborers	Moderate-term OJT	2,465	3,280	815	1.4%	33.1%	82	\$13.12	\$27,290	\$6,090
13	35-3031 Waiters & Waitresses	Short-term OJT	5,487	6,267	780	1.4%	14.2%	78	\$7.39	\$15,380	-\$5,820
14	51-4121 Welders, Cutters, Solderers, & Brazers	Postsec. voc. training	2,192	2,950	758	1.3%	34.6%	76	\$19.44	\$40,440	\$19,240
15	43-6014 Secretaries, Except Legal, Medical, & Executive	Moderate-term OJT	6,462	7,207	745	1.3%	11.5%	75	\$11.79	\$24,510	\$3,310
16	31-1012 Nursing Aides, Orderlies, & Attendants	Postsec. voc. training	3,351	4,090	739	1.3%	22.1%	74	\$11.38	\$23,670	\$2,470
17	49-9041 Industrial Machinery Mechanics	Long-term OJT	1,632	2,351	719	1.2%	44.1%	72	\$24.66	\$51,280	\$30,080
18	47-5011 Derrick Operators, Oil & Gas	Moderate-term OJT	2,240	2,930	690	1.2%	30.8%	69	\$20.35	\$42,340	\$21,140
19	47-2111 Electricians	Long-term OJT	1,888	2,521	633	1.1%	33.5%	63	\$22.12	\$46,010	\$24,810

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Rank	Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change			Wages ^a			
			2006	2016 (Projected)	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^b	
20	11-1021 General & Operations Managers	Bachelor's or higher degree plus work experience	5,133	5,758	625	1.1%	12.2%	187	\$37.05	\$77,050	\$55,850
21	47-5071 Roustabouts, Oil & Gas	Moderate-term OJT	2,013	2,592	579	1.0%	28.8%	58	\$16.44	\$34,190	\$12,990
22	47-2152 Plumbers, Pipefitters, & Steamfitters	Long-term OJT	1,385	1,924	539	0.9%	38.9%	54	\$19.38	\$40,310	\$19,110
23	31-1011 Home Health Aides	Short-term OJT	948	1,464	516	0.9%	54.4%	52	\$10.33	\$21,480	\$280
24	25-2021 Elementary School Teachers, Except Special Education	Bachelor's degree	2,629	3,142	513	0.9%	19.5%	51	NA	\$48,960	\$27,760
25	43-4051 Customer Service Representatives	Moderate-term OJT	1,419	1,928	509	0.9%	35.9%	51	\$12.65	\$26,310	\$5,110
Total for 25 Occupations			90,888	113,734	22,846	39.7%	25.1%	2,411	NA	NA	NA

^a2008 wages from the Estimate Delivery System.

^bThe 2008 federal poverty guideline as established by the U.S. Department of Health and Human Services is \$21,200 for a family of four.

NA: Not available. OJT: On-the-job training.

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The decision of which occupation or career to pursue is, in part, a question of whether to train for a high-paying occupation with fewer projected employment opportunities or enter a lower-paying occupation with greater expected net job growth. This distinction is explored in the next section.

Education and Occupational Growth

Tables 5 and 6 show projected

net occupational growth based on minimum education or experience requirements. Table 5 (see page 15) ranks in descending order the 25 occupations with the highest projected net growth that also typically require postsecondary education. In comparison, Table 6 (see page 17) ranks net occupational growth in descending order for the 25 occupations with the highest projected net growth that ordinarily do not require postsecondary education. Net growth among the top 25 highest growth occupations

requiring postsecondary education is highest for registered nurses (1,278 jobs). The projected total annual change is nearly 60% greater for registered nurses than for the next occupation, welders, cutters, solderers, & brazers (128 compared to 76 annually).

For occupations that typically do not require postsecondary education, net growth is projected to be highest for heavy & tractor-trailer truck

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Table 4: Wyoming Projected Detailed Occupational Growth for the Top 25 Highest Annual Wage Occupations, 2006 and 2016 (Projected)

Rank	Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change				Wages ^a		
			2006	2016 (Projected)	Net	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^b
1	29-1064 Obstetricians & Gynecologists	First professional degree	40	53	13	0.0%	32.5%	1	\$90.79	\$188,850	\$167,650
2	29-1069 Physicians & Surgeons, All Other	First professional degree	201	249	48	0.1%	23.9%	5	\$88.88	\$184,860	\$163,660
3	29-1061 Anesthesiologists	First professional degree	33	41	8	0.0%	24.2%	1	\$84.04	\$174,810	\$153,610
4	29-1062 Family & General Practitioners	First professional degree	223	266	43	0.1%	19.3%	4	\$83.72	\$174,130	\$152,930
5	29-1063 Internists, General	First professional degree	98	119	21	0.0%	21.4%	2	\$76.27	\$158,650	\$137,450
6	29-1021 Dentists, General	First professional degree	169	192	23	0.0%	13.6%	2	\$61.80	\$128,530	\$107,330
7	29-1199 Health Diagnosing & Treating Practitioners, All Other	Bachelor's degree	129	165	36	0.1%	27.9%	4	\$58.69	\$122,070	\$100,870
8	29-1066 Psychiatrists	First professional degree	62	76	14	0.0%	22.6%	1	\$50.18	\$104,370	\$83,170
9	11-1011 Chief Executives	Bachelor's or higher degree plus work experience	299	322	23	0.0%	7.7%	10	\$46.57	\$96,860	\$75,660
10	13-2052 Personal Financial Advisors	Bachelor's degree	178	242	64	0.1%	36.0%	8	\$45.38	\$94,390	\$73,190
11	29-1051 Pharmacists	First professional degree	466	595	129	0.2%	27.7%	13	\$43.90	\$91,320	\$70,120
12	11-3071 Transportation, Storage, & Distribution Managers	Work experience in a related occupation	90	102	12	0.0%	13.3%	4	\$42.76	\$88,940	\$67,740
13	11-9033 Education Administrators, Postsecondary	Bachelor's or higher degree plus work experience	182	220	38	0.1%	20.9%	9	\$41.73	\$86,800	\$65,600
14	11-9041 Engineering Managers	Bachelor's or higher degree plus work experience	247	315	68	0.1%	27.5%	12	\$41.62	\$86,570	\$65,370
15	11-3051 Industrial Production Managers	Work experience in a related occupation	221	266	45	0.1%	20.4%	13	\$41.47	\$86,250	\$65,050
16	29-1041 Optometrists	First professional degree	77	96	19	0.0%	24.7%	2	\$39.76	\$82,690	\$61,490
17	17-2151 Mining & Geological Engineers, Including Mining Safety Engineers	Bachelor's degree	137	177	40	0.1%	29.2%	7	\$39.27	\$81,680	\$60,480
18	23-1011 Lawyers	First professional degree	693	877	184	0.3%	26.6%	31	\$38.95	\$81,030	\$59,830

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Table continued from previous page

Rank	Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change				Wages ^a		
			2006	2016 (Projected)	Net	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^b
19	11-3031 Financial Managers	Bachelor's or higher degree plus work experience	590	690	100	0.2%	16.9%	19	\$38.59	\$80,260	\$59,060
20	29-1011 Chiropractors	First professional degree	71	93	22	0.0%	31.0%	2	\$38.34	\$79,740	\$58,540
21	11-1021 General & Operations Managers	Bachelor's or higher degree plus work experience	5,133	5,758	625	1.1%	12.2%	187	\$37.05	\$77,050	\$55,850
22	25-1051 Atmospheric, Earth, Marine, & Space Sciences Teachers, Postsecondary	Doctoral degree	46	60	14	0.0%	30.4%	1	NA	\$76,880	\$55,680
23	13-2051 Financial Analysts	Bachelor's degree	111	144	33	0.1%	29.7%	4	\$36.50	\$75,920	\$54,720
24	11-2021 Marketing Managers	Bachelor's or higher degree plus work experience	63	83	20	0.0%	31.7%	3	\$36.35	\$75,620	\$54,420
25	17-2041 Chemical Engineers	Bachelor's degree	79	108	29	0.1%	36.7%	5	\$36.23	\$75,350	\$54,150
Total for 25 Occupations		Not applicable	9,518	11,198	1,680	2.9%	17.7%	350	NA	NA	NA

^a2008 wages from the Estimate Delivery System.

^bThe 2008 federal poverty guideline as established by the U.S. Department of Health and Human Services is \$21,200 for a family of four.

NA: Not available.

Text continued from page 12

drivers (1,842 jobs). As noted earlier, this occupation is also projected to have the highest net growth overall. The occupation with the next highest projected net growth is retail salespersons (1,676 jobs). In Table 6, wages range from \$15,380 for waiters & waitresses to \$57,350 for first-line supervisors/managers of construction

trades & extraction workers.

While occupational growth is lower for occupations requiring at least postsecondary vocational training than for occupations that generally do not require it (14.1% of net growth versus 37.1%), wages are higher for these occupations. The highest net growth is for registered nurses, with an average annual wage of \$52,800. Of the 25

occupations with the highest projected net growth that also typically require postsecondary education, pharmacists earn the highest wages (\$91,320).

Growth and the Federal Poverty Guideline

Tables 7 and 8 list occupations with

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Table 5: Wyoming Projected Detailed Occupational Growth for the 25 Highest Growth Occupations Requiring Postsecondary Education, 2006 and 2016 (Projected)

Rank	Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change				Wages ^a		
			2006	2016 (Projected)	Net	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^b
1	29-1111 Registered Nurses	Associate degree	4,371	5,649	1,278	2.2%	29.2%	128	\$25.38	\$52,800	\$31,600
2	51-4121 Welders, Cutters, Solderers, & Brazers	Postsecondary vocational training	2,192	2,950	758	1.3%	34.6%	76	\$19.44	\$40,440	\$19,240
3	31-1012 Nursing Aides, Orderlies, & Attendants	Postsecondary vocational training	3,351	4,090	739	1.3%	22.1%	74	\$11.38	\$23,670	\$2,470
4	11-1021 General & Operations Managers	Bachelor's or higher degree plus work experience	5,133	5,758	625	1.1%	12.2%	187	\$37.05	\$77,050	\$55,850
5	25-2021 Elementary School Teachers, Except Special Education	Bachelor's degree	2,629	3,142	513	0.9%	19.5%	51	NA	\$48,960	\$27,760
6	13-2011 Accountants & Auditors	Bachelor's degree	1,530	1,970	440	0.8%	28.8%	71	\$25.93	\$53,930	\$32,730
7	49-3031 Bus & Truck Mechanics & Diesel Engine Specialists	Postsecondary vocational training	1,318	1,708	390	0.7%	29.6%	39	\$20.45	\$42,540	\$21,340
8	49-3023 Automotive Service Technicians & Mechanics	Postsecondary vocational training	1,478	1,860	382	0.7%	25.8%	38	\$16.15	\$33,590	\$12,390
9	13-1199 Business Operations Specialists, All Other	Bachelor's degree	1,218	1,584	366	0.6%	30.0%	50	\$26.04	\$54,170	\$32,970
10	17-2171 Petroleum Engineers	Bachelor's degree	676	912	236	0.4%	34.9%	42	ND	ND	ND
11	17-2051 Civil Engineers	Bachelor's degree	737	954	217	0.4%	29.4%	41	\$29.12	\$60,570	\$39,370
12	25-2022 Middle School Teachers, Except Special & Vocational Education	Bachelor's degree	1,233	1,443	210	0.4%	17.0%	21	NA	\$49,210	\$28,010
13	39-9031 Fitness Trainers & Aerobics Instructors	Postsecondary vocational training	649	855	206	0.4%	31.7%	21	\$11.18	\$23,260	\$2,060
14	23-1011 Lawyers	First professional degree	693	877	184	0.3%	26.6%	31	\$38.95	\$81,030	\$59,830
15	25-2031 Secondary School Teachers, Except Special & Vocational Education	Bachelor's degree	1,648	1,832	184	0.3%	11.2%	18	NA	\$47,460	\$26,260

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Rank	Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change				Wages ^a		
			2006	2016 (Projected)	Net	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^b
16	23-2011 Paralegals & Legal Assistants	Associate degree	428	583	155	0.3%	36.2%	22	\$14.56	\$30,290	\$9,090
17	25-2041 Special Education Teachers, Preschool, Kindergarten, & Elementary School	Bachelor's degree	606	758	152	0.3%	25.1%	15	NA	\$45,050	\$23,850
18	15-1051 Computer Systems Analysts	Bachelor's degree	365	514	149	0.3%	40.8%	25	\$25.95	\$53,970	\$32,770
19	19-2042 Geoscientists, Except Hydrologists & Geographers	Master's degree	274	416	142	0.2%	51.8%	21	\$31.53	\$65,570	\$44,370
20	29-2021 Dental Hygienists	Associate degree	356	490	134	0.2%	37.6%	13	\$24.80	\$51,590	\$30,390
21	21-1023 Mental Health & Substance Abuse Social Workers	Master's degree	327	459	132	0.2%	40.4%	20	\$15.12	\$31,440	\$10,240
22	29-1051 Pharmacists	First professional degree	466	595	129	0.2%	27.7%	13	\$43.90	\$91,320	\$70,120
23	21-1021 Child, Family, & School Social Workers	Bachelor's degree	690	819	129	0.2%	18.7%	28	\$17.65	\$36,720	\$15,520
24	17-2081 Environmental Engineers	Bachelor's degree	247	368	121	0.2%	49.0%	19	\$30.18	\$62,770	\$41,570
25	21-1099 Community & Social Service Specialists, All Other	Bachelor's degree	377	497	120	0.2%	31.8%	16	\$14.80	\$30,790	\$9,590
Total for 25 Occupations		Not applicable	32,992	41,083	8,091	14.1%	24.5%	1,080	NA	NA	NA

^a2008 wages from the Estimate Delivery System.
^bThe 2008 federal poverty guideline as established by the U.S. Department of Health and Human Services is \$21,200 for a family of four.
 NA: Not available. ND: Not disclosable due to confidentiality of information.

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wages at or above the federal poverty guideline, with education differentiating the two. Table 7 (see page 19) shows

in ascending order by wages the first 25 occupations that pay at least the federal poverty guideline for a family of four and do not require postsecondary education. In comparison, Table 8 (see

page 21) shows in ascending order the first 25 occupations that pay at or above the federal poverty guideline

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Table 6: Wyoming Projected Detailed Occupational Growth for the 25 Highest Growth Occupations That Typically Do Not Require Postsecondary Education, 2006 and 2016 (Projected)

Rank	Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change				Wages ^a		
			2006	2016 (Projected)	Net	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^b
1	53-3032 Truck Drivers, Heavy & Tractor-Trailer	Moderate-term OJT	6,154	7,996	1,842	3.2%	29.9%	184	\$17.50	\$36,390	\$15,190
2	41-2031 Retail Salespersons	Short-term OJT	7,815	9,491	1,676	2.9%	21.4%	168	\$10.48	\$21,790	\$590
3	43-3031 Bookkeeping, Accounting, & Auditing Clerks	Moderate-term OJT	5,660	7,251	1,591	2.8%	28.1%	159	\$13.78	\$28,670	\$7,470
4	47-2073 Operating Engineers & Other Construction Equipment Operators	Moderate-term OJT	4,494	5,808	1,314	2.3%	29.2%	131	\$20.16	\$41,930	\$20,730
5	49-9042 Maintenance & Repair Workers, General	Moderate-term OJT	3,686	4,768	1,082	1.9%	29.4%	108	\$17.35	\$36,090	\$14,890
6	37-2011 Janitors & Cleaners, Except Maids & Housekeeping Cleaners	Short-term OJT	4,397	5,408	1,011	1.8%	23.0%	101	\$11.07	\$23,020	\$1,820
7	47-1011 First-Line Supervisors/Managers of Construction Trades & Extraction Workers	Work experience in a related occupation	3,291	4,293	1,002	1.7%	30.4%	100	\$27.57	\$57,350	\$36,150
8	37-2012 Maids & Housekeeping Cleaners	Short-term OJT	4,125	5,122	997	1.7%	24.2%	100	\$8.46	\$17,590	-\$3,610
9	35-3021 Combined Food Preparation & Serving Workers, Including Fast Food	Short-term OJT	4,566	5,554	988	1.7%	21.6%	99	\$7.88	\$16,380	-\$4,820
10	47-2031 Carpenters	Long-term OJT	3,085	3,990	905	1.6%	29.3%	91	\$17.90	\$37,240	\$16,040
11	47-2061 Construction Laborers	Moderate-term OJT	2,465	3,280	815	1.4%	33.1%	82	\$13.12	\$27,290	\$6,090
12	35-3031 Waiters & Waitresses	Short-term OJT	5,487	6,267	780	1.4%	14.2%	78	\$7.39	\$15,380	-\$5,820
13	43-6014 Secretaries, Except Legal, Medical, & Executive	Moderate-term OJT	6,462	7,207	745	1.3%	11.5%	75	\$11.79	\$24,510	\$3,310
14	49-9041 Industrial Machinery Mechanics	Long-term OJT	1,632	2,351	719	1.2%	44.1%	72	\$24.66	\$51,280	\$30,080
15	47-5011 Derrick Operators, Oil & Gas	Moderate-term OJT	2,240	2,930	690	1.2%	30.8%	69	\$20.35	\$42,340	\$21,140
16	47-2111 Electricians	Long-term OJT	1,888	2,521	633	1.1%	33.5%	63	\$22.12	\$46,010	\$24,810
17	47-5071 Roustabouts, Oil & Gas	Moderate-term OJT	2,013	2,592	579	1.0%	28.8%	58	\$16.44	\$34,190	\$12,990

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Rank	Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change				Wages ^a		
			2006	2016 (Projected)	Net	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^b
18	47-2152 Plumbers, Pipefitters, & Steamfitters	Long-term OJT	1,385	1,924	539	0.9%	38.9%	54	\$19.38	\$40,310	\$19,110
19	31-1011 Home Health Aides	Short-term OJT	948	1,464	516	0.9%	54.4%	52	\$10.33	\$21,480	\$280
20	43-4051 Customer Service Representatives	Moderate-term OJT	1,419	1,928	509	0.9%	35.9%	51	\$12.65	\$26,310	\$5,110
21	41-2021 Counter & Rental Clerks	Short-term OJT	906	1,413	507	0.9%	56.0%	51	\$8.29	\$17,230	-\$3,970
22	53-3033 Truck Drivers, Light or Delivery Services	Short-term OJT	1,991	2,472	481	0.8%	24.2%	48	\$13.86	\$28,830	\$7,630
23	25-9041 Teacher Assistants	Short-term OJT	3,596	4,077	481	0.8%	13.4%	48	NA	\$21,260	\$60
24	49-3042 Mobile Heavy Equipment Mechanics, Except Engines	Long-term OJT	1,205	1,672	467	0.8%	38.8%	47	\$21.31	\$44,320	\$23,120
25	43-9061 Office Clerks, General	Short-term OJT	2,426	2,893	467	0.8%	19.2%	47	\$11.50	\$23,920	\$2,720
Total for 25 Occupations		Not applicable	83,336	104,672	21,336	37.1%	25.6%	2,136	NA	NA	NA

^a2008 wages from the Estimate Delivery System.

^bThe 2008 federal poverty guideline as established by the U.S. Department of Health and Human Services is \$21,200 for a family of four.

NA: Not available. OJT: On-the-job training.

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with minimum requirements of at least postsecondary vocational training. In 2008 the federal poverty guideline as established by the U.S. Department of Health and Human Services for a family of four was \$21,200 (U.S. Department of Health and Human Services, 2008).

The occupations listed in Table 7

are projected to yield 7.5% of total net employment growth. Wages range from \$0 to \$1,820 above the federal poverty guideline. Wide variations are seen in the projected number of jobs. The occupation of all other personal care & service workers is expected to lose 10 jobs, while a gain of 1,676 is projected for retail salespersons.

The first 25 occupations that pay at or above the federal poverty guideline

and require postsecondary education are projected to grow by 22.4% (see Table 8), whereas occupations not requiring postsecondary education are projected to increase by 19.4%. The range of wages above the federal poverty guideline for the top 25 occupations requiring postsecondary vocational training is substantially higher than for those that do

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Table 7: Wyoming Projected Detailed Occupational Growth for the First 25 Occupations That Do Not Require Postsecondary Education by Wages At or Above the Federal Poverty Guideline for a Family of Four, 2006 and 2016 (Projected)

Rank	Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change				Wages ^a		
			2006	2016 (Projected)	Net	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^b
1	49-9091 Coin, Vending, & Amusement Machine Servicers & Repairers	Moderate-term OJT	130	235	105	0.2%	80.8%	11	\$10.19	\$21,200	\$0
2	43-9021 Data Entry Keyers	Moderate-term OJT	171	186	15	0.0%	8.8%	2	\$10.21	\$21,230	\$30
3	51-6031 Sewing Machine Operators	Moderate-term OJT	66	60	-6	0.0%	-9.1%	-1	\$10.21	\$21,240	\$40
4	51-9022 Grinding & Polishing Workers, Hand	Moderate-term OJT	85	97	12	0.0%	14.1%	1	\$10.22	\$21,250	\$50
5	43-3071 Tellers	Short-term OJT	1,230	1,398	168	0.3%	13.7%	17	\$10.23	\$21,280	\$80
6	39-3091 Amusement & Recreation Attendants	Short-term OJT	430	517	87	0.2%	20.2%	9	\$10.23	\$21,280	\$80
7	43-4171 Receptionists & Information Clerks	Short-term OJT	1,345	1,663	318	0.6%	23.6%	32	\$10.26	\$21,340	\$140
8	31-1011 Home Health Aides	Short-term OJT	948	1,464	516	0.9%	54.4%	52	\$10.33	\$21,480	\$280
9	39-9099 Personal Care & Service Workers, All Other	Short-term OJT	80	70	-10	0.0%	-12.5%	-1	\$10.34	\$21,510	\$310
10	47-3016 Helpers – Roofers	Short-term OJT	100	136	36	0.1%	36.0%	4	\$10.39	\$21,600	\$400
11	39-4021 Funeral Attendants	Short-term OJT	59	73	14	0.0%	23.7%	1	\$10.39	\$21,610	\$410
12	43-4181 Reservation & Transportation Ticket Agents & Travel Clerks	Short-term OJT	146	167	21	0.0%	14.4%	2	\$10.42	\$21,670	\$470
13	51-3011 Bakers	Long-term OJT	226	237	11	0.0%	4.9%	1	\$10.44	\$21,710	\$510
14	37-3019 Grounds Maintenance Workers, All Other	Short-term OJT	129	168	39	0.1%	30.2%	4	\$10.46	\$21,760	\$560
15	41-2031 Retail Salespersons	Short-term OJT	7,815	9,491	1,676	2.9%	21.4%	168	\$10.48	\$21,790	\$590
16	39-2021 Nonfarm Animal Caretakers	Short-term OJT	235	311	76	0.1%	32.3%	8	\$10.64	\$22,130	\$930
17	43-2011 Switchboard Operators, Including Answering Service	Short-term OJT	316	317	1	0.0%	0.3%	0	\$10.67	\$22,190	\$990
18	39-6032 Transportation Attendants, Except Flight Attendants & Baggage Porters	Short-term OJT	63	79	16	0.0%	25.4%	2	\$10.73	\$22,310	\$1,110

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Rank	Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change				Wages ^a		
			2006	2016 (Projected)	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^b	
19	13-2082 Tax Preparers	Moderate-term OJT	96	104	8	0.0%	8.3%	3	\$10.73	\$22,320	\$1,120
20	45-2092 Farmworkers & Laborers, Crop, Nursery, & Greenhouse	Short-term OJT	136	161	25	0.0%	18.4%	3	\$10.79	\$22,450	\$1,250
21	31-2022 Physical Therapist Aides	Short-term OJT	122	164	42	0.1%	34.4%	4	\$10.88	\$22,640	\$1,440
22	53-3022 Bus Drivers, School	Moderate-term OJT	1,055	1,185	130	0.2%	12.3%	13	\$10.97	\$22,820	\$1,620
23	31-9095 Pharmacy Aides	Short-term OJT	61	60	-1	0.0%	-1.6%	0	\$10.98	\$22,850	\$1,650
24	49-9094 Locksmiths & Safe Repairers	Moderate-term OJT	45	70	25	0.0%	55.6%	3	\$10.99	\$22,860	\$1,660
25	37-2011 Janitors & Cleaners, Except Maids & Housekeeping Cleaners	Short-term OJT	4,397	5,408	1,011	1.8%	23.0%	101	\$11.07	\$23,020	\$1,820
Total for 25 Occupations		Not applicable	19,486	23,821	4,335	7.5%	19.4%	439	NA	NA	NA

^a2008 wages from the Estimate Delivery System.
^bThe 2008 federal poverty guideline as established by the U.S. Department of Health and Human Services is \$21,200 for a family of four.
 NA: Not available. OJT: On-the-job training.

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not. For occupations that require postsecondary education, wages range from \$970 to \$9,580 above the poverty guideline. Comparing the two tables illustrates that education raises the average annual wage considerably. However, the net growth for the 25 occupations requiring at least postsecondary vocational training is approximately half of the growth for occupations that typically do not

require postsecondary education.

Occupation and Education Program

While it is useful to consider education and training required for a particular occupation in general terms, the view is incomplete. Growth in the various occupations relies on experience or education in a wide range of fields. To demonstrate, Classification of Instructional Programs (CIP) categories are

examined in conjunction with the related education level and occupations related to the field of study.

Table 9 (see page 23) shows the typical occupations available for graduates with a degree in other health & medical administrative services. Also included are the minimum education level required,

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Table 8: Wyoming Projected Detailed Occupational Growth for the First 25 Occupations Requiring Postsecondary Education by Wages At or Above the Federal Poverty Guideline for a Family of Four, 2006 and 2016 (Projected)

Rank	Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change				Wages ^a		
			2006	2016 (Projected)	Net	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^b
1	39-5094 Skin Care Specialists	Postsecondary vocational training	35	50	15	0.0%	42.9%	2	\$10.66	\$22,170	\$970
2	51-5022 Prepress Technicians & Workers	Postsecondary vocational training	112	105	-7	0.0%	-6.3%	-1	\$10.78	\$22,430	\$1,230
3	25-4031 Library Technicians	Postsecondary vocational training	435	486	51	0.1%	11.7%	5	\$10.87	\$22,620	\$1,420
4	29-2051 Dietetic Technicians	Postsecondary vocational training	34	39	5	0.0%	14.7%	1	\$11.18	\$23,250	\$2,050
5	39-9031 Fitness Trainers & Aerobics Instructors	Postsecondary vocational training	649	855	206	0.4%	31.7%	21	\$11.18	\$23,260	\$2,060
6	31-1012 Nursing Aides, Orderlies, & Attendants (includes Certified Nursing Assistants)	Postsecondary vocational training	3,351	4,090	739	1.3%	22.1%	74	\$11.38	\$23,670	\$2,470
7	25-2011 Preschool Teachers, Except Special Education	Postsecondary vocational training	458	550	92	0.2%	20.1%	9	\$11.81	\$24,550	\$3,350
8	39-5012 Hairdressers, Hairstylists, & Cosmetologists	Postsecondary vocational training	635	746	111	0.2%	17.5%	11	\$12.26	\$25,490	\$4,290
9	31-9094 Medical Transcriptionists	Postsecondary vocational training	287	345	58	0.1%	20.2%	6	\$12.72	\$26,460	\$5,260
10	27-3022 Reporters & Correspondents	Bachelor's degree	510	609	99	0.2%	19.4%	10	\$13.00	\$27,040	\$5,840
11	51-4122 Welding, Soldering, & Brazing Machine Setters, Operators, & Tenders	Postsecondary vocational training	50	70	20	0.0%	40.0%	2	\$13.50	\$28,090	\$6,890
12	41-3041 Travel Agents	Postsecondary vocational training	ND	ND	ND	ND	ND	ND	\$13.56	\$28,210	\$7,010
13	49-2011 Computer, Automated Teller, & Office Machine Repairers	Postsecondary vocational training	212	274	62	0.1%	29.2%	6	\$13.81	\$28,720	\$7,520
14	29-2053 Psychiatric Technicians	Postsecondary vocational training	40	38	-2	0.0%	-5.0%	0	\$14.06	\$29,240	\$8,040
15	39-4011 Embalmers	Postsecondary vocational training	31	38	7	0.0%	22.6%	1	\$14.09	\$29,310	\$8,110

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Rank	Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change				Wages ^a		
			2006	2016 (Projected)	Net	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^b
16	29-2041 Emergency Medical Technicians & Paramedics	Postsecondary vocational training	435	521	86	0.1%	19.8%	9	\$14.10	\$29,330	\$8,130
17	23-2092 Law Clerks	Bachelor's degree	41	43	2	0.0%	4.9%	1	\$14.26	\$29,670	\$8,470
18	29-2071 Medical Records & Health Information Technicians	Associate degree	364	458	94	0.2%	25.8%	9	\$14.38	\$29,920	\$8,720
19	27-4012 Broadcast Technicians	Associate degree	71	69	-2	0.0%	-2.8%	0	\$14.40	\$29,960	\$8,760
20	23-2011 Paralegals & Legal Assistants	Associate degree	428	583	155	0.3%	36.2%	22	\$14.56	\$30,290	\$9,090
21	27-1024 Graphic Designers	Bachelor's degree	229	281	52	0.1%	22.7%	5	\$14.61	\$30,380	\$9,180
22	29-2056 Veterinary Technologists & Technicians	Associate degree	141	218	77	0.1%	54.6%	8	\$14.65	\$30,460	\$9,260
23	13-1121 Meeting & Convention Planners	Bachelor's degree	82	101	19	0.0%	23.2%	4	\$14.70	\$30,580	\$9,380
24	25-4012 Curators	Master's degree	182	189	7	0.0%	3.8%	1	\$14.79	\$30,770	\$9,570
25	25-9099 Education, Training, & Library Workers, All Other	Bachelor's degree	280	325	45	0.1%	16.1%	5	\$14.80	\$30,780	\$9,580
Total for 25 Occupations		Not applicable	9,011	11,030	2,019	3.5%	22.4%	218	NA	NA	NA

^a2008 wages from the Estimate Delivery System.
^bThe 2008 federal poverty guideline as established by the U.S. Department of Health and Human Services is \$21,200 for a family of four.
 NA: Not available. ND: Not disclosable due to confidentiality of information.

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projected employment growth, and wages. Of the seven occupations shown, the highest net growth is projected for first-line supervisors/managers of office & administrative support workers (268 jobs). The minimum education level for the occupation is work experience in a related occupation, with average wages

paying \$19,040 above the poverty guideline.

The highest paying occupation, medical & health services managers, pays \$49,370 above the poverty guideline. Minimum education requirements are a bachelor's degree or higher plus work experience. However, projected net job growth for medical & health services managers is

approximately 40% less than for first-line supervisors/managers of office & administrative support workers (105 compared to 268).

With two exceptions, the table illustrates the progression of wages for various education and training levels alone. A bachelor's or higher degree plus work experience is the highest education level while short-term

Table 9: Occupations Available with Attainment of a Degree in Health & Medical Administrative Services, Other (Classification of Instructional Programs 51.0799) by Minimum Required Education Level

Standard Occupational Classification Code and Title	Minimum Education Level ^a	Employment		Projected Change			Wages ^b			
		2006	2016 (Projected)	Net	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^c
11-9111 Medical & Health Services Managers	Bachelor's or higher degree plus work experience	515	620	105	0.2%	20.4%	21	\$33.93	\$70,570	\$49,370
29-2071 Medical Records & Health Information Technicians	Associate degree	364	458	94	0.2%	25.8%	9	\$14.38	\$29,920	\$8,720
31-9094 Medical Transcriptionists	Postsecondary vocational training	287	345	58	0.1%	20.2%	6	\$12.72	\$26,460	\$5,260
43-1011 First-Line Supervisors/Managers of Office & Administrative Support Workers	Work experience in a related occupation	1,979	2,247	268	0.5%	13.5%	27	\$19.35	\$40,240	\$19,040
31-9092 Medical Assistants	Moderate-term OJT	418	603	185	0.3%	44.3%	19	\$11.31	\$23,520	\$2,320
43-6013 Medical Secretaries	Moderate-term OJT	732	903	171	0.3%	23.4%	17	\$13.17	\$27,400	\$6,200
31-9099 Healthcare Support Workers, All Other	Short-term OJT	272	333	61	0.1%	22.4%	6	\$14.88	\$30,950	\$9,750

^aMinimum education level and the associated hierarchy are determined by the U.S. Department of Labor, Bureau of Labor Statistics. For example, see Braddock, D. (1999, November). Occupational employment projections to 2008. *Monthly Labor Review*. Retrieved December 31, 2008, from <http://www.bls.gov/opub/mlr/1999/11/art5full.pdf>

^b2008 wages from the Estimate Delivery System.

^cThe 2008 federal poverty guideline as established by the U.S. Department of Health and Human Services is \$21,200 for a family of four.

OJT: On-the-job training.

Degree to Occupation Source: Pennsylvania Workforce Development. (2007, October 9). CIP to SOC Crosswalk File. Retrieved October 10, 2008, from <http://www.paworkforce.state.pa.us/professionals/cwp/view.asp?a=467&q=158469>

on-the-job training is the lowest level. The highest education level corresponds to the highest paying occupation, medical & health services managers; the lowest education level is for all other healthcare support workers.

The two exceptions for the educational order are all other healthcare support workers and first-

line supervisors/managers of office & administrative support workers. Although all other healthcare support workers has the lowest minimum education level, the average wages for the occupation are higher than for medical assistants, which requires moderate-term on-the-job training. The other exception, first-line supervisors/managers

of office & administrative support workers, requires a minimum of work experience in a related occupation. Yet wages for this supervisory occupation are higher than for those with minimum educational requirements of postsecondary vocational training (medical transcriptionists) or an associate's degree (medical records & health information technicians).

Various factors may influence the compensation received for a given education level. First, because all other healthcare support workers is a residual occupation, the nature of the work performed is unclear, except that it relates to health care. The occupations included in the residual category may be new or emerging and not sufficiently distinct to warrant separate classification. The average wage for this residual occupation is greater than for all but two of the occupations

shown in Table 9. In addition, because of the new or emerging status, there may be only a few workers employed in all other healthcare support workers; consequently, limited useful information may be available (Hecker, Pikulinski, & Saunders, 2001). Also, to some degree, the minimum education level is subjective. Some employers view experience as more important than education, while others consider education as the more valuable human capital asset (Chapman, 2003). This

element of subjectivity may help explain, in part, why first-line supervisors/managers of office & administrative support workers earn more on average than either medical transcriptionists or medical records & health information technicians, despite higher minimum education requirements for the latter two occupations.

Table 10 shows the occupations available to workers with varying levels of education in physical education

Table 10: Occupations Available with Attainment of a Degree in Physical Education Teaching & Coaching (Classification of Instructional Programs 13.1314) by Minimum Required Education Level

Standard Occupational Classification Code and Title	Minimum Education Level ^a	Employment		Projected Change			Wages ^b			
		2006	2016 (Projected)	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Average Annual	Amount Above/Below Poverty Line ^c	
25-1193 Recreation & Fitness Studies Teachers, Postsecondary	Master's degree	29	38	9	0.0%	31.0%	1	NA	\$56,730	\$35,530
25-2022 Middle School Teachers, Except Special & Vocational Education	Bachelor's degree	1,233	1,443	210	0.4%	17.0%	21	NA	\$49,210	\$28,010
25-2031 Secondary School Teachers, Except Special & Vocational Education	Bachelor's degree	1,648	1,832	184	0.3%	11.2%	18	NA	\$47,460	\$26,260
39-9031 Fitness Trainers & Aerobics Instructors	Postsecondary vocational training	649	855	206	0.4%	31.7%	21	\$11.18	\$23,260	\$2,060
27-2022 Coaches & Scouts	Long-term OJT	551	682	131	0.2%	23.8%	13	NA	\$25,610	\$4,410

^aMinimum education level and the associated hierarchy are determined by the U.S. Department of Labor, Bureau of Labor Statistics. For example, see Braddock, D. (1999, November). Occupational employment projections to 2008. *Monthly Labor Review*. Retrieved December 31, 2008, from <http://www.bls.gov/opub/mlr/1999/11/art5full.pdf>

^b2008 wages from the Estimate Delivery System.

^cThe 2008 federal poverty guideline as established by the U.S. Department of Health and Human Services is \$21,200 for a family of four.

NA: Not available. OJT: On-the-job training.

Degree to Occupation Source: Pennsylvania Workforce Development. (2007, October 9). CIP to SOC Crosswalk File. Retrieved October 10, 2008, from <http://www.paworkforce.state.pa.us/professionals/cwp/view.asp?a=467&q=158469>

teaching & coaching. Compare fitness trainers & aerobics instructors with postsecondary recreation & fitness studies teachers. The former occupation typically requires postsecondary vocational training, while the latter typically requires a master's degree. Although the number of jobs for fitness trainers & aerobics instructors is projected to grow by 206, the average annual wage was less than half of the wages for postsecondary recreation & fitness studies teachers, which is projected to have the lowest net growth of the five occupations in Table 10 (nine jobs). The average annual wage for fitness trainers & aerobics instructors is \$23,260. In contrast, recreation & fitness studies teachers, postsecondary earn an average annual wage of \$56,730.

As Tables 9 and 10 demonstrate, the reward for additional education or experience is higher wages. However, this is not always true, as shown by the occupations in Table 9. Despite the exceptions, however, education usually pays off. The National Center for Education Statistics estimates that in 2006, young adults age 25 to 34 with a bachelor's degree earned 28% more than those with an associate's degree and 50% more than high school completers. On average, an associate's degree translated to an average of \$5,000 more per year than a high school diploma (Planty et al., 2008).

Projections: An Application

In early 2008, R&P received a request from Central Wyoming College to assist with a needs assessment for adding training programs associated with environmental health and safety occupations. R&P's role was to provide information on projected total growth in these occupations. Twenty-nine occupations were determined to be relevant to environmental health and safety. It was estimated that the 29 occupations would grow by 2,094 jobs from 2007 to 2014. In addition, R&P estimated there would be 512 total annual openings resulting from both growth and replacement in environmental health and safety occupations in Wyoming. The largest number of annual openings is projected to occur for operating engineers & other construction equipment operators (169 annual openings; Gallagher et al., 2008).

Based on this research, Central Wyoming College determined that there was sufficient demand for environmental health and safety occupations to create training programs to meet the knowledge, skills, and abilities required (L. McAuliffe, Assistant Dean of Workforce and Community Education, Central Wyoming College, personal communication, December 10, 2008). The use of R&P research by Central

Wyoming College demonstrates how projections can be applied with tangible outcomes resulting from the analysis.

Summary

Wyoming's economic fortunes are strongly linked to natural resources extraction. Workers preparing to enter the labor market or considering a career change should decide whether to enter an occupation with higher wages but potentially lower job growth, or one with stronger job prospects but possibly lower wages. Given the volatility of economies that rely on natural resources (Cuddington & Liang, 2003), the best course of action for those who seek to stay in Wyoming long-term would be to acquire training or experience for occupations in which the skills can be transferred to a range of industries and occupations. Occupations that provide goods and services (and, specifically, health care) to an increasingly older population likely will provide solid employment options regardless of economic conditions.

In addition to the tables included in this report, five tables available online include occupations not discussed here. These tables, which may be pasted into an Excel spreadsheet and sorted in a variety of ways, are available at http://doe.state.wy.us/LMI/occ_proj_06_16/toc.htm.

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Notes on Appendix Tables

Appendix Tables 1 through 5 are designed to help data users evaluate projected occupational growth. Each of the tables, which are in HTML format, may be copied and pasted into an Excel spreadsheet and sorted in a variety of ways.

Appendix Table 1 is sorted by Standard Occupational Classification (SOC) code and includes SOC major occupational groups. Appendix Table 2 is sorted in alphabetical order by SOC title and excludes SOC major occupational groups. Appendix Tables 1 and 2 were developed using a one-to-many match. That is, one occupation may have many different educational programs associated with it because of specialized training, or gradations of the occupation not captured by the SOC system. For example, the occupation of registered nurses has 19 unique associated instructional programs,

Appendix Table 4: Wyoming Projected Occupational Growth Alphabetical by Standard Occupational Classification Title and Typical Education/Training Required, 2006 and 2016 (Projected)

Standard Occupational Classification Code and Title	Minimum Education Level	Employment		Projected Change			Wages ^a			
		2006	2016 (Projected)	% of Total Net Growth	% Change	Total Annual Change	Mean Hourly	Mean Annual	Amount Above/Below Poverty Guideline ^b	
13-2011 Accountants & Auditors	Bachelor's degree	1,530	1,970	440	0.8%	28.8%	71	\$25.93	\$53,930	\$32,730
23-1021 Administrative Law Judges, Adjudicators, & Hearing Officers	Bachelor's or higher degree plus work experience	ND	ND	ND	ND	ND	ND	ND	ND	ND
11-3011 Administrative Services Managers	Bachelor's or higher degree plus work experience	299	340	41	0.1%	13.7%	12	\$25.66	\$53,380	\$32,180
25-3011 Adult Literacy, Remedial Education, & GED Teachers & Instructors	Bachelor's degree	104	124	20	0.0%	19.2%	2	\$21.20	\$44,100	\$22,900

All Appendix Tables are available online at http://doe.state.wy.us/LMI/occ_proj_06_16/toc.htm.

with specialties such as critical care nurses and nurse anesthetists that are not developed as unique occupations within the SOC system. Consequently, a single occupation may be listed multiple times because of different educational programs associated with it.

For a simpler version of the projections, Appendix Tables 3 and 4 exclude instructional programs. Like Appendix Table 1, Appendix Table 3 is sorted by SOC code and includes

major occupational groups. Appendix Table 4 mirrors Appendix Table 2 in that it is sorted alphabetically by occupational title and does not include major occupational groups.

The last table, Appendix Table 5, shows occupational growth only for major occupational groups. This table is intended for data users who desire a summary of projected occupational growth for broad categories of related occupations.

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