

Occupational Employment Concentrations Analysis

Northwest Pennsylvania Workforce Investment Area



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INTRODUCTION

Acknowledgements

The *Occupational Employment Concentrations Analysis: Northwest Pennsylvania Workforce Investment Area* report was prepared by the Central Pennsylvania Workforce Development Corporation (CPWDC) for the Northwest Workforce Investment Area (WIA). Occupational employment concentrations are provided by Economic Modeling Specialists, Incorporated (EMSI), July 2008. The analysis presented in this report was conducted by the CPWDC on behalf of the Regional Center for Workforce Excellence as part of the Industry Cluster Research Partnership.

Disclaimer

The Central Pennsylvania Workforce Development Corporation (CPWDC) cannot guarantee the accuracy of the occupational employment concentrations provided by Economic Modeling Specialists, Inc. (EMSI) for the Northwest WIA. This analysis merely identifies occupations that have a high concentration in the Northwest WIA, those that have increased in concentration in recent history, and those that are expected to increase in concentration in the future, based on the database developed by EMSI. Employment concentrations are presented for 2-, 3-, 4-, and 5-digit SOC (Standard Occupation Code) occupations.

Occupational Employment Concentration

Occupational employment concentrations are measured through location quotients. A location quotient is a ratio that compares the concentration of employment in a defined area to that of a larger area or base. Mathematically, the location quotient for a particular occupation in a certain region is defined as the following:

$$\text{Location Quotient} = \frac{\left(\frac{\text{Occupation Employment}_{\text{region}}}{\text{Total Employment}_{\text{region}}} \right)}{\left(\frac{\text{Occupation Employment}_{\text{State}}}{\text{Total Employment}_{\text{State}}} \right)}$$

Location quotients are used to compare local employment values by occupation to those of the state or nation. This statistical measure compares the concentration of employment in a local occupation to the concentration of employment in the same occupation statewide (or nationally). **For this analysis, all local employment will be compared to the state.** Therefore, occupational employment concentrations are referred to as State Location Quotients (SLQs).

In general, location quotients calculations for employment concentrations have three results:

1. **LQ = 1:** a locale has the same concentration of employment in a given occupation as would be found in the larger geography.
2. **LQ > 1:** a locale has a greater concentration of employment in a given occupation suggesting that the locale has a relatively high demand for a certain skill set, representing the human capital competitive advantage.
3. **LQ < 1:** a locale has a below average concentration of employment in a given occupation suggesting that the locale does not have demand for a particular skill set.

RESULTS

As mentioned in the introduction, occupational employment concentration values are discussed for occupations at the 2-, 3-, 4-, and 5-digit SOC (Standard Occupation Code) levels. The State Location Quotient (SLQ) for each occupation is considered for 2002, 2007, and 2012.

It is important to focus on occupations that have a relatively high concentration of employment compared to the state (i.e., an SLQ of greater than 1.0). These occupations may be unique to an area, may form a significant portion of the workforce, and are referred to as the area's human capital competitive advantage.

Occupations with lower than average employment concentrations (i.e., an SLQ of less than 1.0) may warrant further attention in terms of training or education if there is a relatively high level of employer demand but a deficient workforce.

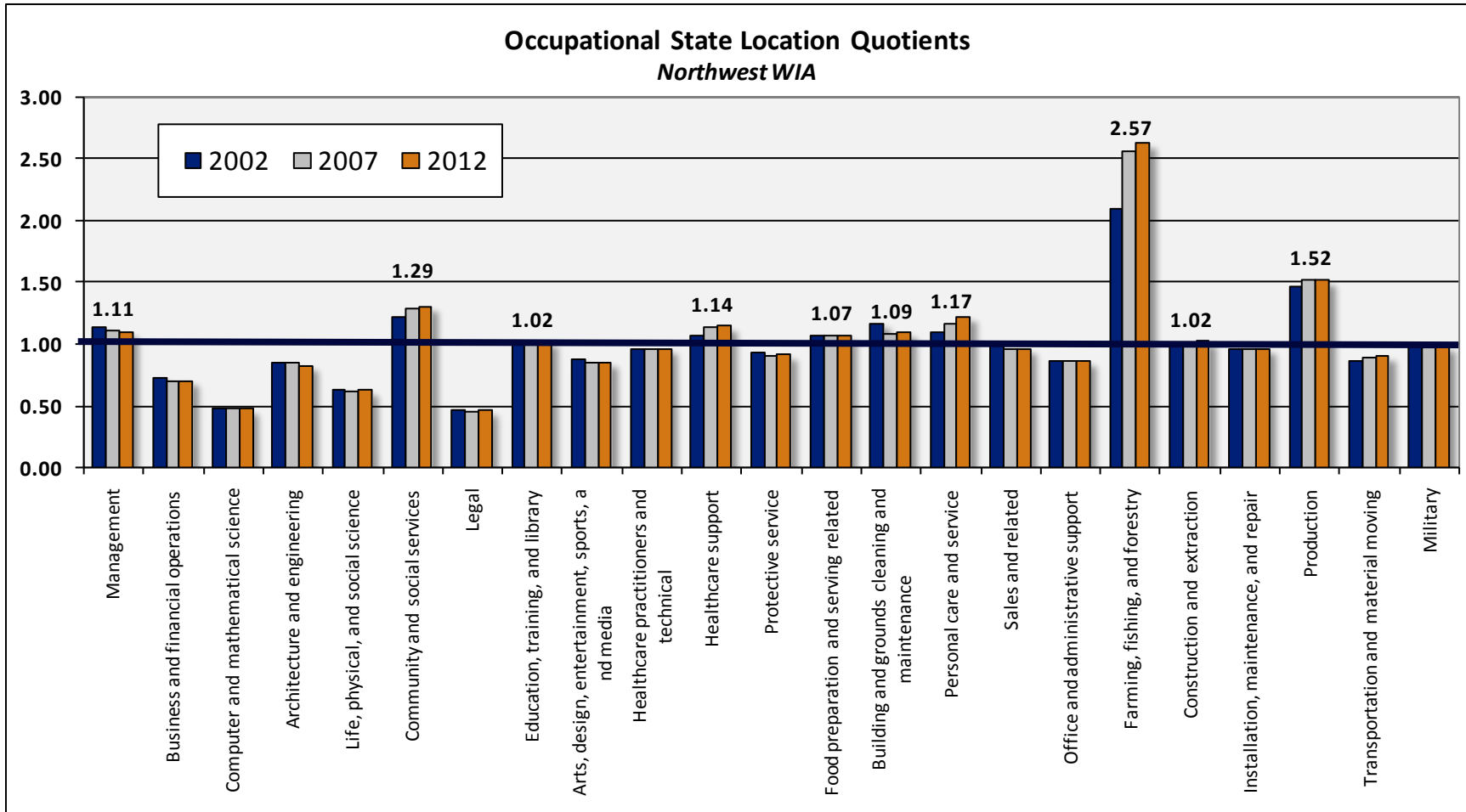
Occupations that have demonstrated an increase in concentration (i.e., an increase in SLQ values) from 2002 to 2007 are also important to consider. These occupations are possibly becoming a vital component of the local economy as the region begins to specialize in certain skill sets.

Occupations that are expected to increase in concentration (i.e., increase SLQ values) from 2007 to 2012 may provide ample job opportunities in the region.

Information presented in this report is useful for **education providers** (e.g., How is the concentration for occupations changing/expected to change?), **economic developers** (e.g., What types of jobs have a high concentration in the local economy?), and **CareerLink staff** (e.g., What job openings may become available as the concentration for various occupations increases in the future?).

2-Digit SOC Occupations

The following chart identifies the state location quotient value for all 2-digit occupational groupings in the Northwest WIA (Clarion, Crawford, Erie, Forest, Venango, and Warren Counties) in 2002, 2007, and 2012 (**Note: Location quotient values are presented for occupations with LQ values of greater than 1.0 in 2007**):



Source: Economic Modeling Specialists, Inc., July 2008

Most occupational groupings in the Northwest WIA have an average employment concentration as compared to the state (i.e., a State Location Quotient value of approximately 1.0).

The highest SLQ values are apparent in occupational groupings of:

- ✓ Farming, fishing, and forestry
- ✓ Production
- ✓ Community and social services

Most occupations experienced little or no change in their respective employment concentrations from 2002 to 2007. Similar trends are expected in the future.

Despite such trends, it is important to note which occupations currently have a higher concentration of employment in the Northwest WIA than the statewide average. Such occupations may represent the human capital competitive advantage in the region.

The following table identifies the 2-digit SOC occupational groupings that have a larger concentration of employment (i.e., SLQ > 1.0) in the Northwest WIA compared to the state as of 2007 with corresponding employment values and median hourly occupational wages (**Note: the median hourly wage for all occupations in the Northwest WIA is \$15.70. Occupational wages do not include benefits. Employment and wage estimates are based on second quarter 2007 data.**):

Occupational Groupings 2007 SLQ > 1			
SOC	Occupation	Employment	Median Hourly Wage
11-0000	Management	19,290	\$26.54
21-0000	Community and social services	6,782	\$14.47
25-0000	Education, training, and library	16,100	\$24.38
31-0000	Healthcare support	8,736	\$10.63
35-0000	Food preparation and serving related	20,629	\$7.97
37-0000	Building and grounds cleaning and maintenance	10,910	\$8.14
39-0000	Personal care and service	10,493	\$8.96
45-0000	Farming, fishing, and forestry	1,361	\$15.69
47-0000	Construction and extraction	14,664	\$15.15
51-0000	Production	30,222	\$15.45

Source: Economic Modeling Specialists, Inc., July 2008

These 10 occupational groupings may offer the most job opportunities in the Northwest WIA due to their higher-than-average employment concentrations.

About half (48.8%) of the Northwest WIA's 285,000 jobs are found in these occupational groupings.

Even though occupational groupings may have lower-than-average concentrations of employment, the demand for a particular occupation can also be measured by changes in the state location quotient values over a certain time period.

The following charts identify the 2-digit SOC occupational groupings that experienced a positive change in employment concentrations (i.e., change in SLQ > 0.0) from 2002 through 2007 in the Northwest WIA and those that are expected to have a positive change from 2007 to 2012 (**Note: occupational groupings common to both charts are highlighted**):

Occupational Groupings SLQ Change > 0 (2002 - 2007)			
SOC	Occupation	Employment	Median Hourly Wage
21-0000	Community and social services	6,782	\$14.47
31-0000	Healthcare support	8,736	\$10.63
39-0000	Personal care and service	10,493	\$8.96
45-0000	Farming, fishing, and forestry	1,361	\$15.69
47-0000	Construction and extraction	14,664	\$15.15
49-0000	Installation, maintenance, and repair	10,517	\$15.66
51-0000	Production	30,222	\$15.45
53-0000	Transportation and material moving	17,279	\$13.29

Source: Economic Modeling Specialists, Inc., July 2008

Occupational Groupings SLQ Change > 0 (2007 - 2012)			
SOC	Occupation	Employment	Median Hourly Wage
19-0000	Life, physical, and social science	1,820	\$21.82
21-0000	Community and social services	6,782	\$14.47
23-0000	Legal	1,060	\$30.11
25-0000	Education, training, and library	16,100	\$24.38
31-0000	Healthcare support	8,736	\$10.63
33-0000	Protective service	4,176	\$18.39
37-0000	Building and grounds cleaning and maintenance	10,910	\$8.14
39-0000	Personal care and service	10,493	\$8.96
45-0000	Farming, fishing, and forestry	1,361	\$15.69
47-0000	Construction and extraction	14,664	\$15.15
53-0000	Transportation and material moving	17,279	\$13.29
55-0000	Military	1,584	\$8.88

Source: Economic Modeling Specialists, Inc., July 2008.

Six (6) occupational groupings have demonstrated an increase in employment concentrations in the Northwest region compared to the state from 2002 to 2007 and are likely to continue to increase by 2012.

3-Digit SOC Occupations

This section follows the same format as the results for the 2-digit SOC occupational groupings. However, because of the sheer number of occupations - 94 3-digit SOC occupations versus 23 2-digit SOC occupational groupings - only the top 15 occupations are identified for each chart.

The following table identifies the top 15 3-digit SOC occupations that have a larger concentration of employment (i.e., SLQ > 1.0) in the Northwest WIA compared to the state as of 2007 with corresponding employment values and median hourly occupational wages (**Note: the median hourly wage for all occupations in the Northwest WIA is \$15.70. Occupational wages do not include benefits. Employment and wage estimates are based on second quarter 2007 data.**):

Occupations 2007 SLQ > 1				
Occupational Grouping	SOC	Occupation	Employment	Median Hourly Wage
Community and social services	21-1000	Counselors, social workers, and other community and social service specialists	6,128	\$15.14
Protective service	33-1000	First-line supervisors/managers, protective service workers	403	\$31.99
Personal care and service	39-9000	Other personal care and service workers	6,753	\$8.82
Office and administrative support	43-2000	Communications equipment operators	492	\$11.19
Farming, fishing, and forestry	45-1000	Supervisors, farming, fishing, and forestry workers	193	\$18.78
	45-3000	Fishing and hunting workers	61	\$7.21
	45-4000	Forest, conservation, and logging workers	830	\$17.95
Construction and extraction	47-4000	Other construction and related workers	1,123	\$15.59
	47-5000	Extraction workers	568	\$19.13
Production	51-1000	Supervisors, production workers	1,968	\$26.37
	51-2000	Assemblers and fabricators	4,384	\$12.97
	51-4000	Metal workers and plastic workers	10,947	\$16.17
	51-6000	Textile, apparel, and furnishings occupations	1,992	\$10.82
	51-7000	Woodworkers	987	\$19.04
	51-9000	Other production occupations	6,941	\$13.51

Source: Economic Modeling Specialists, Inc. July 2008

About 15% of the Northwest region's 285,000 jobs are found in these occupations.

Seven (7) unique occupational groupings (i.e., 2-digit SOC occupations) are represented in this chart, with six (6) occupations belonging to production (SOC 51-0000).

The following charts identify the top 15 3-digit SOC occupations that experienced a positive change in employment concentrations (i.e., change in SLQ > 0.0) from 2002 through 2007 in the Northwest WIA and those that are expected to have a positive change from 2007 to 2012 (**Note: occupations common to both charts are highlighted**):

Occupations SLQ Change > 0 (2002 - 2007)				
Occupational Grouping	SOC	Occupation	Employment	Median Hourly Wage
Community and social services	21-1000	Counselors, social workers, and other community and social service specialists	6,128	\$15.14
Healthcare support	31-1000	Nursing, psychiatric, and home health aides	6,193	\$10.04
Personal care and service	39-3000	Entertainment attendants and related workers	910	\$7.56
	39-6000	Transportation, tourism, and lodging attendants	267	\$12.77
	39-9000	Other personal care and service workers	6,753	\$8.82
Office and administrative support	43-2000	Communications equipment operators	492	\$11.19
Farming, fishing, and forestry	45-1000	Supervisors, farming, fishing, and forestry workers	193	\$18.78
	45-4000	Forest, conservation, and logging workers	830	\$17.95
Construction and extraction	47-5000	Extraction workers	568	\$19.13
Production	51-1000	Supervisors, production workers	1,968	\$26.37
	51-5000	Printing occupations	857	\$13.43
	51-8000	Plant and system operators	748	\$23.54
	51-9000	Other production occupations	6,941	\$13.51
Transportation and material moving	53-2000	Air transportation occupations	220	\$46.61
	53-5000	Water transportation occupations	46	\$15.33

Source: Economic Modeling Specialists, Inc., July 2008

Occupations SLQ Change > 0 (2007 - 2012)				
Occupational Grouping	SOC	Occupation	Employment	Median Hourly Wage
Life, physical, and social science	19-2000	Physical scientists	334	\$27.12
Personal care and service	39-1000	Supervisors, personal care and service workers	395	\$9.20
	39-2000	Animal care and service workers	700	\$7.65
	39-3000	Entertainment attendants and related workers	910	\$7.56
	39-4000	Funeral service workers	60	\$10.92
	39-6000	Transportation, tourism, and lodging attendants	267	\$12.77
	39-9000	Other personal care and service workers	6,753	\$8.82
Office and administrative support	43-2000	Communications equipment operators	492	\$11.19
Farming, fishing, and forestry	45-1000	Supervisors, farming, fishing, and forestry workers	193	\$18.78
	45-4000	Forest, conservation, and logging workers	830	\$17.95
Construction and extraction	47-1000	Supervisors, construction and extraction workers	1,594	\$17.61
	47-4000	Other construction and related workers	1,123	\$15.59
	47-5000	Extraction workers	568	\$19.13
Production	51-6000	Textile, apparel, and furnishings occupations	1,992	\$10.82
Transportation and material moving	53-2000	Air transportation occupations	220	\$46.61

Source: Economic Modeling Specialists, Inc., July 2008

Eight (8) occupations at the 3-digit SOC level have demonstrated relatively large increases in employment concentrations in the Northwest region compared to the state from 2002 to 2007 and are likely to continue to increase at a rapid pace through 2012.

4-Digit SOC Occupations

This section follows the same format as the results for the 3-digit SOC occupations. However, because of the sheer number of occupations - 436 4-digit SOC occupations versus 94 3-digit SOC occupations - only the top 20 occupations are identified for each chart.

The following table identifies the top 20 4-digit SOC occupations that have a larger concentration of employment (i.e., SLQ > 1.0) in the Northwest WIA compared to the state as of 2007 with corresponding employment values and median hourly occupational wages (**Note: the median hourly wage for all occupations in the Northwest WIA is \$15.70. Occupational wages do not include benefits. Employment and wage estimates are based on second quarter 2007 data.**):

Occupations 2007 SLQ > 1				
Occupational Grouping	SOC	Occupation	Employment	Median Hourly Wage
Management	11-9010	Agricultural managers	4,376	\$7.16
Architecture and engineering	17-2170	Petroleum engineers	21	\$29.23
Protective service	33-3010	Bailiffs, correctional officers, and jailers	1,274	\$19.55
	33-3030	Fish and game wardens	17	\$23.48
	33-3040	Parking enforcement workers	40	\$11.70
Office and administrative support	43-9110	Statistical assistants	75	\$10.18
Farming, fishing, and forestry	45-1090	Supervisors, farming, fishing, and forestry workers	193	\$18.78
	45-4020	Logging workers	819	\$17.96
Construction and extraction	47-5070	Roustabouts, oil and gas	151	\$13.49
	47-5090	Extraction workers, all other	22	\$26.35
Production	51-4010	Computer control programmers and operators	1,231	\$16.32
	51-4030	Machine tool cutting setters, operators, and tenders, metal and plastic	1,985	\$13.13
	51-4040	Machinists	2,042	\$19.09
	51-4070	Molders and molding machine setters, operators, and tenders, metal and plastic	1,281	\$10.96
	51-4110	Tool and die makers	826	\$21.79
	51-4120	Welding, soldering, and brazing workers	1,903	\$17.61
	51-4190	Miscellaneous metalworkers and plastic workers	586	\$16.36
	51-7040	Woodworking machine setters, operators, and tenders	654	\$16.20
Transportation and material moving	53-3090	Motor vehicle operators, all other	193	\$12.72
	53-7070	Pumping station operators	362	\$28.57

Source: Economic Modeling Specialists, Inc., July 2008

About 6% of the Northwest region's 285,000 jobs are found in these occupations.

Eight (8) unique occupational groupings (i.e., 2-digit SOC occupations) are represented in this chart, with eight (8) occupations belonging to production (SOC 51-0000).

The following charts identify the top 20 4-digit SOC occupations that experienced a positive change in employment concentrations (i.e., change in SLQ > 0.0) from 2002 through 2007 in the Northwest WIA and those that are expected to have a positive change from 2007 to 2012 (**Note: occupations common to both charts are highlighted**):

Occupations SLQ Change > 0 (2002 - 2007)				
Occupational Grouping	SOC	Occupation	Employment	Median Hourly Wage
Healthcare practitioners and technical	29-1010	Chiropractors	116	\$23.49
Personal care and service	39-6030	Transportation attendants	74	\$20.89
Office and administrative support	43-2020	Telephone operators	151	\$13.60
	43-3040	Gaming cage workers	21	\$12.35
	43-4180	Reservation and transportation ticket agents and travel clerks	132	\$12.55
	43-5010	Cargo and freight agents	269	\$17.18
	43-9070	Office machine operators, except computer	206	\$11.19
Farming, fishing, and forestry	45-1090	Supervisors, farming, fishing, and forestry workers	193	\$18.78
	45-4020	Logging workers	819	\$17.96
Construction and extraction	47-4040	Hazardous materials removal workers	26	\$21.47
	47-5060	Roof bolters, mining	32	\$24.48
	47-5080	Helpers, extraction workers	84	\$15.63
Production	51-5010	Bookbinders and bindery workers	130	\$13.32
	51-6040	Shoe and leather workers	33	\$8.19
	51-6060	Textile machine setters, operators, and tenders	221	\$13.51
	51-8010	Power plant operators, distributors, and dispatchers	168	\$27.08
	51-8090	Miscellaneous plant and system operators	335	\$25.51
	51-9050	Furnace, kiln, oven, drier, and kettle operators and tenders	99	\$15.75
	51-9140	Semiconductor processors	54	\$32.95
Transportation and material moving	53-2010	Aircraft pilots and flight engineers	196	\$48.86

Source: Economic Modeling Specialists, Inc., July 2008

Occupations SLQ Change > 0 (2007 - 2012)				
Occupational Grouping	SOC	Occupation	Employment	Median Hourly Wage
Architecture and engineering	17-2150	Mining and geological engineers, including mining safety engineers	38	\$27.90
	17-2170	Petroleum engineers	21	\$29.23
Building and grounds cleaning and maintenance	37-2020	Pest control workers	67	\$9.10
Personal care and service	39-2010	Animal trainers	140	\$7.53
	39-6030	Transportation attendants	74	\$20.89
	39-9010	Child care workers	3,471	\$7.34
Sales and related	41-3010	Advertising sales agents	267	\$18.35
	41-9040	Telemarketers	1,330	\$10.98
Office and administrative support	43-4180	Reservation and transportation ticket agents and travel clerks	132	\$12.55
Farming, fishing, and forestry	45-1090	Supervisors, farming, fishing, and forestry workers	193	\$18.78
	45-4020	Logging workers	819	\$17.96
Construction and extraction	47-4020	Elevator installers and repairers	45	\$23.17
	47-5060	Roof bolters, mining	32	\$24.48
	47-5080	Helpers, extraction workers	84	\$15.63
	47-5090	Extraction workers, all other	22	\$26.35
Production	51-6030	Sewing machine operators	620	\$11.94
	51-6060	Textile machine setters, operators, and tenders	221	\$13.51
	51-9140	Semiconductor processors	54	\$32.95
Transportation and material moving	53-2010	Aircraft pilots and flight engineers	196	\$48.86
	53-7070	Pumping station operators	362	\$28.57

Source: Economic Modeling Specialists, Inc., July 2008

Nine (9) occupations at the 4-digit SOC level have demonstrated relatively large increases in employment concentrations in the Northwest region compared to the state from 2002 to 2007 and are likely to continue to increase at a rapid pace through 2012.

5-Digit SOC Occupations

This section follows the same format as the results for the 4-digit SOC occupations. However, because of the sheer number of occupations - 754 5-digit SOC occupations versus 436 4-digit SOC occupations - only the top 25 occupations are identified for each chart.

The following table identifies the top 25 5-digit SOC occupations that have a larger concentration of employment (i.e., SLQ > 1.0) in the Northwest region compared to the state as of 2007 with corresponding employment values and median hourly occupational wages (**Note: the median hourly wage for all occupations in the Northwest WIA is \$15.70. Occupational wages do not include benefits. Employment and wage estimates are based on second quarter 2007 data.**):

Occupations 2007 SLQ > 1				
Occupational Grouping	SOC	Occupation	Employment	Median Hourly Wage
Life, physical, and social science	19-1032	Foresters	88	\$23.91
	19-2043	Hydrologists	51	\$29.57
	19-4093	Forest and conservation technicians	32	\$14.65
Farming, fishing, and forestry	45-1099	Supervisors, farming, fishing, and forestry workers	193	\$18.78
	45-4021	Fallers	221	\$17.29
	45-4022	Logging equipment operators	250	\$16.38
	45-4023	Log graders and scalers	175	\$19.11
	45-4029	Logging workers, all other	173	\$19.92
Construction and extraction	47-5011	Derrick operators, oil and gas	27	\$20.34
	47-5071	Roustabouts, oil and gas	151	\$13.49
	47-5099	Extraction workers, all other	22	\$26.35
Production	51-2099	Assemblers and fabricators, all other	713	\$14.90
	51-4011	Computer-controlled machine tool operators, metal and plastic	1113	\$16.01
	51-4012	Numerical tool and process control programmers	118	\$19.22
	51-4022	Forging machine setters, operators, and tenders, metal and plastic	171	\$14.62
	51-4032	Drilling and boring machine tool setters, operators, and tenders, metal and plastic	175	\$15.57
	51-4041	Machinists	2042	\$19.09
	51-4072	Molding, coremaking, and casting machine setters, operators, and tenders, metal and plastic	1221	\$10.51
	51-4111	Tool and die makers	826	\$21.79
	51-4121	Welders, cutters, solderers, and brazers	1797	\$16.83
	51-4191	Heat treating equipment setters, operators, and tenders, metal and plastic	187	\$14.76
Transportation and material moving	51-7041	Sawing machine setters, operators, and tenders, wood	324	\$19.19
	53-7071	Gas compressor and gas pumping station operators	121	\$29.11
	53-7072	Pump operators, except wellhead pumpers	119	\$28.38
	53-7073	Wellhead pumpers	122	\$28.21

Source: Economic Modeling Specialists, Inc., July 2008

About 4% of the Northwest region's 285,000 jobs are found in these occupations.

Five (5) unique occupational groupings (i.e., 2-digit SOC occupations) are represented in this chart, with eleven (11) occupations belonging to production (SOC 51-0000).

The following charts identify the top 25 5-digit SOC occupations that experienced a positive change in employment concentrations (i.e., change in SLQ > 0.0) from 2002 through 2007 in the Northwest WIA and those that are expected to have a positive change from 2007 to 2012 (**Note: occupations common to both charts are highlighted**):

Occupations SLQ Change > 0 (2002 - 2007)				
Occupational Grouping	SOC	Occupation	Employment	Median Hourly Wage
Personal care and service	39-6031	Flight attendants	66	\$22.35
Office and administrative support	43-2021	Telephone operators	151	\$13.60
	43-3041	Gaming cage workers	21	\$12.35
	43-4181	Reservation and transportation ticket agents and travel clerks	132	\$12.55
	43-5011	Cargo and freight agents	269	\$17.18
	43-9071	Office machine operators, except computer	206	\$11.19
Farming, fishing, and forestry	45-1099	Supervisors, farming, fishing, and forestry workers	193	\$18.78
	45-4021	Fallers	221	\$17.29
	45-4022	Logging equipment operators	250	\$16.38
	45-4023	Log graders and scalers	175	\$19.11
	45-4029	Logging workers, all other	173	\$19.92
Construction and extraction	47-4041	Hazardous materials removal workers	26	\$21.47
	47-5061	Roof bolters, mining	32	\$24.48
	47-5081	Helpers, extraction workers	84	\$15.63
Production	51-5012	Bookbinders	21	\$17.68
	51-6061	Textile bleaching and dyeing machine operators and tenders	20	\$15.76
	51-6063	Textile knitting and weaving machine setters, operators, and tenders	117	\$13.66
	51-6064	Textile winding, twisting, and drawing out machine setters, operators, and tenders	51	\$13.37
	51-8011	Nuclear power reactor operators	11	\$42.50
	51-8012	Power distributors and dispatchers	25	\$30.16
	51-8013	Power plant operators	131	\$25.13
	51-8091	Chemical plant and system operators	217	\$26.86
	51-9051	Furnace, kiln, oven, drier, and kettle operators and tenders	99	\$15.75
51-9141	Semiconductor processors	54	\$32.95	
Transportation and material moving	53-2011	Airline pilots, copilots, and flight engineers	169	\$52.82

Source: Economic Modeling Specialists, Inc., July 2008

Occupations SLQ Change > 0 (2007 - 2012)				
Occupational Grouping	SOC	Occupation	Employment	Median Hourly Wage
Architecture and engineering	17-2151	Mining and geological engineers, including mining safety engineers	38	\$27.90
	17-2171	Petroleum engineers	21	\$29.23
Healthcare practitioners and technical	29-2053	Psychiatric technicians	60	\$12.83
Personal care and service	39-2011	Animal trainers	140	\$7.53
	39-6031	Flight attendants	66	\$22.35
Sales and related	41-9041	Telemarketers	1330	\$10.98
Office and administrative support	43-4181	Reservation and transportation ticket agents and travel clerks	132	\$12.55
Farming, fishing, and forestry	45-4021	Fallers	221	\$17.29
	45-4022	Logging equipment operators	250	\$16.38
	45-4023	Log graders and scalers	175	\$19.11
	45-4029	Logging workers, all other	173	\$19.92
Construction and extraction	47-4021	Elevator installers and repairers	45	\$23.17
	47-5061	Roof bolters, mining	32	\$24.48
	47-5081	Helpers, extraction workers	84	\$15.63
	47-5099	Extraction workers, all other	22	\$26.35
Production	51-6031	Sewing machine operators	620	\$11.94
	51-6062	Textile cutting machine setters, operators, and tenders	32	\$11.78
	51-6063	Textile knitting and weaving machine setters, operators, and tenders	117	\$13.66
	51-6064	Textile winding, twisting, and drawing out machine setters, operators, and tenders	51	\$13.37
	51-6092	Fabric and apparel patternmakers	24	\$14.52
	51-6099	Textile, apparel, and furnishings workers, all other	46	\$11.13
	51-8091	Chemical plant and system operators	217	\$26.86
Transportation and material moving	53-2011	Airline pilots, copilots, and flight engineers	169	\$52.82
	53-7071	Gas compressor and gas pumping station operators	121	\$29.11

Source: Economic Modeling Specialists, Inc., July 2008

Twelve (12) occupations at the 5-digit SOC level have demonstrated relatively large increases in employment concentrations in the Northwest region compared to the state from 2002 to 2007 and are likely to continue to increase at a rapid pace through 2012.