



# Accessible Middle Wage Jobs in Seattle and the Puget Sound Region

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## Executive Summary

This report assesses the number of accessible middle wage jobs in King County and the other central Puget Sound counties of Snohomish, Pierce, and Kitsap. Accessible middle wage jobs are found in occupations that typically do not require workers to earn a bachelors degree, and they pay a wage or salary that can sustain the worker in a “middle class” standard of living—one that provides for the basic necessities but also allows a person or family to save for retirement or perhaps a down payment for a home.

This report provides information that can help us begin to answer a set of questions that have been given insufficient attention locally, given the dominance in economic news of the growth of extremely successful high technology companies and of the flood of new orders for Boeing. These questions include:

- Are there industries offering accessible and well-paying jobs that can offset the high quality jobs lost with the continuing structural decline in manufacturing jobs?
- Can we meet the training and employment needs of the majority of the area’s population that is not likely to earn a bachelor’s degree?
- Can we provide useful information for economic development and workforce professionals on growing sectors or clusters that will provide quality jobs in the future?
- Can we reverse trends of declining living standards for those with less than a Bachelor’s degree?

Occupational surveys conducted by the state and federal government, along with the long term industry and occupational forecasts prepared by state government, provide the data used in this analysis. This data allows us to look at current and projected jobs in both industries and industry clusters. We then use Census surveys to connect industry and occupation data with detailed information on wages and education requirements of the occupations within industries or clusters.

To identify “accessible middle wage jobs” we examine both wage and education characteristics of occupations. For purposes of this paper, we define Middle Wage jobs as those in occupations that have a median wage of at least \$17 per hour, and where 40 percent or fewer employees in that occupation have a bachelor’s degree. (See p. 2-3 of the main report for further discussion of definitions and methods used in this report). Using this definition, 20 to 25 percent of all jobs in the four Puget Sound counties qualify as middle wage jobs, as the table below shows.

**Middle Wage Jobs in Puget Sound Counties**

<i>County</i>	<i>Estimated Number of Middle Wage Jobs in 2004</i>	<i>Total Jobs in 2004</i>	<i>% Middle Wage</i>
King	247,735	1,109,248	22.3%
Kitsap	17,860	71,803	24.9%
Pierce	56,822	254,252	22.3%
Snohomish	42,397	209,693	20.2%

Some highlights of the findings of this report include:

- Industries supplying a large numbers of middle wage jobs include health care, government, and construction
- Some industries with a relatively low proportion of middle wage jobs nevertheless supply a large number of middle wage jobs given the large size of the workforce in these industries. An example is tourism.
- Reflecting the slow relative decline of manufacturing, only a few manufacturing industry sectors are among those supplying the largest number of middle wage jobs.
- Although there are still a large number of middle wage jobs in aerospace, slower hiring in response to new orders than was the case historically, coupled with local hiring patterns shifting toward design and management jobs that require a BA, mean the aerospace is losing its former role as the backbone of the area's middle income working class.

Accessible middle wage jobs are of particular interest to workforce development organizations such as community and technical colleges, public employment agencies, professional staffing firms, and non-profits assisting individuals looking for work. Most of the clients of these organizations have not earned bachelor's or graduate university degrees. Only 36 percent of the regional population has earned a bachelor's or higher degree; among workforce program clients, the percentage who are college educated is far lower. However, every worker aspires to a "living wage" job that pays enough to cover all necessities and provides for a lifestyle comparable to other individuals living in the area. By assessing the skills of jobseekers against the education and experience requirements of middle wage jobs, staff of workforce development organizations may be able to help their students and clients achieve their goals as participants in the regional workforce.

By calling for strengthened attention on accessible middle wage jobs we are not, however, calling for a weakened commitment to the achievement of higher levels of education and skills in the area population. In fact, the opposite is true. Currently, and even more so in the future, jobs that pay a decent salary while not requiring a BA will require relatively high entrance level skills and continuous skill upgrading if workers are to advance in these professions. Many of these jobs require technical certification and many require additional credentials for advancement. By helping to identify the most promising occupations or industrial sectors, this report can help planners within the workforce system ensure that a sufficient supply of high quality training courses are available to meet the needs of both students and employers. The availability of a strong technically trained workforce also helps encourage the growth of high skill, high wage industries generally, since a mid-level technical workforce is necessary to provide direct support for jobs requiring bachelors or graduate level education. For example, trained drafters support architects, and lab technicians assist various research scientists.

The data in this report may also be of use to economic development organizations as they write strategic plans for their activities. "More jobs" is not alone a sufficient goal for economic development, since workers want the opportunity to earn at least a living wage. Also, some residents of the region are not sufficiently educated to compete for

the high wage job opportunities associated with some high tech industries. And, although “traded industries”—those that export a substantial portion of their output—may be appropriate to target in a cluster approach to economic development, these industries alone are not likely to provide sufficient living wage jobs accessible to individuals who lack four-year college degrees. By ensuring that target industries for economic development include industries that provide a high proportion of accessible middle wage jobs, the region could improve its ability to shape the economy in directions that meet the workforce needs of all of its residents.

The report contains information on the number of middle wage jobs, the industries with the highest number of such jobs, and the number of middle wage jobs associated with the industry clusters that are the focus of economic development efforts at the regional level and in the City of Seattle. In addition, growth projections are provided for the top 20 middle wage occupations in each of the four counties in the region, and the distribution of middle wage jobs across broad occupational categories is shown to give readers a general sense of the types of jobs involved.

### **Next steps in this research**

This report is designed to provide a general roadmap of the location of middle wage jobs in area industries and in the industry clusters currently identified by area economic development agencies. Future research will examine the effects of including industry multipliers in the analysis, and will look at additional measures of job quality by sector or cluster. We will also conduct more in-depth research on those industries or clusters that look most promising for the creation of middle wage jobs, including an examination of the potential to create career pathways programs locally to strengthen available training for these industries or clusters.

## Table of Contents

Introduction	1
Methodology	2
Results: Where are the Middle Wage Jobs?	6
Conclusions	13
Appendix A: Middle Wage Jobs by County by Industry Sector	14
Appendix B: Occupations in King County with 1000 or More Jobs	18
Appendix C: Industry Cluster Definitions	20

## Data Tables

Table 1: Alternative Middle Wage Jobs Definitions	4
Table 2: Top 10 Industries by Percentage of Middle Wage Jobs	6
Table 3: Top 20 Industries by Number of Middle Wage Jobs	7
Table 4: Number and Percent of Middle Wage Jobs in Prosperity Partnership Clusters	9
Table 5: Number and Percent of Middle Wage Jobs in City of Seattle Clusters	11
Table 6: Number and Percent of Middle Wage Jobs by Occupational Group	12

## Introduction

The goal of this report is to assess the number and industry location of middle wage jobs in the Puget Sound region. The research is supported by the Seattle Jobs Initiative (SJI), a workforce intermediary working with individuals looking to improve their economic situation through better employment opportunities. In the experience of SJI and of other area workforce organizations working with low income populations, few clients have college degrees; in fact, many have not earned a high school diploma or GED. For these clients, it is very difficult to find a good job that can sustain their family's needs for the basic necessities and some of the comforts of a middle class life style. The region's economy seems to be marching away from a historical reliance on industries such as basic manufacturing and resource extraction that provided many job opportunities for people who have not earned college degrees. Many existing employers, such as Boeing or the large banks and insurance companies, are requiring that a higher percentage of their employees have 4 year college degrees due to the increasing technological sophistication of their workplaces as well as needs for adaptability and problem-solving that employers tend to associate with college degree holders.

New industries such as software development, internet-based commerce, and life sciences rely much more heavily on a college-educated population than traditional employers in this region. Many of these industries employ a substantial number of workers with graduate degrees. While the industry trend towards higher education requirements is clear, it is also important to meet the needs of the two-thirds of the residents of the Puget Sound region who have not earned a 4-year college degree. As of 2005, estimates from the Census Bureau's American Community Survey show that 91 percent of the Seattle/Tacoma/Bellevue metropolitan area's residents had graduated from high school, but only 36 percent had earned a bachelor's degree.<sup>1</sup> For many workers, a high school diploma is no longer a ticket to a satisfactory job; at least "some college," a term used in the higher education policy arena to describe anything from a few college courses to an associate degree, is necessary to get into occupations that can provide a sufficiently high wage or salary.

A variety of occupations remain in demand in the economy that do not require a 4-year college or graduate degree. The purpose of this report is to identify industries and industry clusters with accessible middle wage jobs and measure how rapidly those types of jobs are growing. The information in the report, including many detailed tables, provides a road map to a seemingly elusive goal: identifying the good jobs that do not require a college degree.

This information is useful in at least two complementary ways. First, by identifying those industries or clusters that have accessible, quality jobs, it can help a city, county, or region ensure that its economic development efforts target the right mix of jobs.

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<sup>1</sup> See [http://factfinder.census.gov/servlet/DatasetMainPageServlet?\\_program=ACS&\\_submenuid=&\\_lang=en&\\_ts=](http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=ACS&_submenuid=&_lang=en&_ts=) (January 2007).

Second, by identifying sets of quality occupations associated with the growth of particular industries or clusters, it can provide local workforce training providers with strategic information to proactively plan for the needs both of students and emerging industries. The availability of training tailored to the needs of emerging sectors can in turn accelerate or at least help to maintain sector growth by helping employers avoid skill bottlenecks.

## **Methodology**

A precise definition of middle wage jobs is needed to drive this analysis. We use Bureau of Labor Statistics (BLS) and Washington State employment and wage data, coupled with national data on the characteristics of workers in various occupations from the U.S. Census Bureau, to provide a definition that simultaneously measures wages and accessibility of jobs for those at different education levels. The decennial census is the only source of state- or county-specific data on the educational attainment of incumbent workers. The 5% Public Use MicroSample (PUMS) files contain data on the occupation of respondents but the small sample size and the dated nature of the information, collected 7 years ago for the most recent data, limit its usefulness. This report relies instead on employment projection data from the federal BLS and the Labor Market and Economic Analysis (LMEA) unit of Washington's Employment Security Department, supplemented with national educational attainment data from the Census Bureau.

BLS's occupational projections program is operated within this state by LMEA. The LMEA program provides estimates of employment by occupation and industry for over 700 occupations classified by the Standard Occupational Classification (SOC), and over 240 industry categories classified by the North American Industry Classification System (NAICS). Base year (2004) employment and wage data are provided for both occupations and industries, and industry-by-occupation tables provide the distribution of base year employment by occupation statewide and in 12 Workforce Development Areas (WDAs) in the state.

King, Pierce and Snohomish counties are each separate WDAs, but Kitsap County is part of the Olympic Consortium WDA along with Jefferson and Clallam counties. Kitsap County industry-by-occupation employment distributions were estimated here using the Olympic Consortium WDA industry-by-occupation table, and adjusting the entries by estimates of industry employment in Kitsap County obtained from the BLS covered employment data series. Since Kitsap County's employment level constitutes over 60 percent of the Olympic Consortium regional employment total, these Kitsap County estimates should be valid.

BLS data on the educational attainment of incumbent workers in each occupation is derived from Census files, but uses a national sample to get more accurate estimates than is possible with small state samples. The BLS data show the percent of incumbent workers in each of 700+ occupations in three educational attainment categories: high school graduate or less, some college, and bachelor's degree and above. In this report, we define "accessible" jobs as those occupations in which no more than 40 percent of the incumbent workers nationally have attained a bachelor's or higher degree. The

rationale is that if 60 percent or more of the workers in the occupation have gained these positions with less than a bachelor's degree education level, then the occupation is relatively accessible to those with a high school diploma or some college. Using a cutoff of 60 percent or more without a BA helps correct for national educational levels within particular occupations that tend to be somewhat lower than Washington's levels, given higher average education attainment of residents of this state. Second, while this method may not identify all promising occupations that could be accessible with less than BA training, it should provide a robust method of selecting those sectors or clusters with a large proportion of employment in accessible occupations. Further research can drill down into specific occupations as needed for career and curriculum planning.

The second component of the middle wage jobs definition is a minimum wage level of \$17/hour. On an annual basis, assuming full-time work throughout the year, that is equivalent to annual earnings of \$35,600. In the industry tables for each county in Appendix 1, we include data on the number of jobs at or above \$17 per hour and, for comparison purposes, at a higher wage level of \$20 per hour. However, in practical terms the \$20 cutoff greatly reduces the number of occupations identified. Because of this, most of the tables in this report use the \$17 cutoff.

At \$17 per hour in 2004, a two-earner family with both workers employed in jobs at this wage would have family earnings at about the median family income for King County. While this wage is lower than that identified in some studies (e.g. the recently published Job Gap study) as a livable wage for a single earner with two children, it recognizes the fact that in high-cost areas of Washington, two earners are often necessary to reach an adequate income. Lastly, it is important to note that the \$17 per hour wage represents a minimum, and most occupations included as "accessible Middle Wage" occupations have higher median wages.

Unlike some studies looking at the growth of industries or occupations providing a middle class standard of living, we do not include an upper wage cutoff. However, in practical terms the presence of an education standard means that there are few jobs that meet both the education and wage standards that fall within the very highest reaches of the wage spectrum. Since the purpose of this research is to identify occupations and associated sectors or clusters offering good paying jobs to those with less than a BA, there is no practical reason to add an upper cutoff.

Because wage levels vary in response to living costs and labor market supply/demand conditions, county-specific wage data from LMEA are used in this report for all but approximately 30 occupations. In combining the BLS educational attainment and the LMEA wage and occupational projections files, a group of approximately 30 occupations was identified for which wage data was available but where there was no educational attainment information. However, other data from LMEA were available for these occupations showing the estimated level of educational attainment required to enter the occupation, and all of these 30 occupations had modest entry requirements (less than a bachelor's degree), and wages that met the \$17/hour criterion. Therefore, these 30 occupations were included in the list of accessible middle wage occupations. In



addition, one occupation was added to the list of middle wage occupations even though upwards of 60 percent of incumbent workers nationally have a bachelor's degree or higher: registered nurses. In this state, the registered nurse occupation can be entered with a 2-year college degree, but once hired, these nurses often keep studying to earn a bachelor's degree.

Most of the tables below use this two-part definition of middle wage jobs:

- No more than 40 percent of incumbent workers nationally have earned a bachelors degree or higher
- The median wage in that Washington county is at least \$17 per hour for a full-time year-round worker.

Table 1 shows the impact of alternative definitions of middle wage jobs. With the definition above, nearly 248 thousand jobs qualified as middle wage jobs in King County in 2004 -- 22 percent of total employment in that year. If a more relaxed definition is used -- up to 50 percent of total employment made up of workers with bachelor's degrees in each occupation -- the estimate of middle wage jobs grows to 330 thousand, or nearly 30 percent of employment in that year. If the 40 percent bachelor's degree or higher constraint is imposed, but a lower wage level is allowed--\$15 per hour instead of a minimum of \$17 per hour--the number of middle wage jobs in King County is estimated at 462 thousand in 2004, or nearly 42 percent of employment in that year.

One last variation was considered, counting all workers in occupations paying at least \$17 per hour who manage to enter an occupation with less than a bachelor's degree. This alternative definition yields an estimate of 276 thousand or about 25 percent of total employment in 2004. Microsoft's founder Bill Gates was a college drop-out, demonstrating that very determined and clever individuals can be successful without earning a bachelor's degree. The reality is that such exceptional people are not necessarily realistic role models for individuals seeking good jobs, and occupations with few workers lacking bachelors degrees are probably not good targets for workforce development organizations and their clients who have not earned a college degree.

**Table 1: Alternative Middle Wage Jobs Definitions**

<i>Definition</i>	<i>Qualifying Jobs in King County, 2004</i>	
	<i>Number</i>	<i>Percent of Total Empl.</i>
1. Occupations with no more than 40% of incumbents holding bachelor's or higher degrees, median pay at least \$17/hr	247,735	22.3%
2. Occupations with no more than 50% of incumbents holding bachelor's or higher degrees, median pay at least \$17/hr	330,311	29.8%
3. Estimated number of incumbent workers without a bachelors or higher degree, median pay at least \$17/hr	276,077	24.9%
4. Occupations with no more than 40% of incumbents holding bachelor's or higher degrees, median pay at least \$15/hr	462,441	41.7%

The definition of \$17 per hour or higher, and no more than 40 percent of incumbent workers with bachelor's degrees or higher, is a conservative estimate for identifying areas of the economy with relatively high proportions of accessible jobs that pay well. Use of this estimate should provide relatively robust results by focusing attention on jobs and industries with the greatest opportunities for workers lacking college degrees.

Estimates of the number of middle wage jobs are provided below for both industry and occupational clusters. Industry clusters have been defined by Michael Porter and other economists as geographically dense groupings of firms in related industries; agglomeration and urbanization economies cause certain types of firms to locate near suppliers and/or customers, attaining greater competitive strength and displaying higher rates of innovation than like firms located outside these clusters.<sup>2</sup> Many economic development organizations have become interested in the industry cluster concept as a way of organizing firms with similar interests or as a strategy to achieve higher rates of job and income growth. In the Puget Sound, the City of Seattle has defined a number of clusters to focus efforts of its Office of Economic Development, and the Puget Sound Regional Council uses a cluster concept in its Prosperity Partnership initiative to catalyze economic development efforts in the four-county Central Puget Sound region (King, Snohomish, Pierce, and Kitsap counties). In the tables below, middle wage employment estimates are provided for 2004 for employment within King County in the City of Seattle industry clusters, and for each of the four Puget Sound counties within the Prosperity Partnership industry clusters. The industry categories included in the two sets of cluster definitions are provided in an appendix to the report.

Several problems were encountered estimating industry cluster employment. The list of NAICS industry codes included in the Life Sciences cluster does not capture life sciences research employment at the University of Washington medical school, an integral part of the cluster as noted in reports by the Technology Alliance.<sup>3</sup> The Puget Sound Naval Shipyard is not included in the boatbuilding industry in Kitsap County, but appears to be included in the federal government employment category in LMEA reports. The shipyard is known to employ over 10,000 workers and is the single largest civilian employer in Kitsap County. Unfortunately, no occupational profile is available for the shipyard, and the boatbuilding industry profiles for other counties may not apply well to this facility due to the unique nature of Navy vessels, including nuclear power and weapons systems. No data are available on the military cluster at all. Pierce County is home to large Army and Air Force bases; Kitsap County is highly reliant on the Navy's several facilities at Bangor, Bremerton, and Poulsbo, and Snohomish County is the home of a smaller Navy base in Everett. No occupational data are available for these military bases or the military cluster in general.

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<sup>2</sup> Porter, Michael E. August/October 2003. *The Economic Performance of Regions*. *Regional Studies*, 37(6&7): 549-578 (559-60).

<sup>3</sup> Beyers, William, et al. *The economic impact of technology-based industries in Washington State*. Report for the Technology Alliance, Seattle, February, 2005 ([http://www.technology-alliance.com/documents/economic\\_impact\\_2005.pdf](http://www.technology-alliance.com/documents/economic_impact_2005.pdf)).

In addition to information presented by industry, a few of the tables below contain estimates of employment in each county in occupational clusters. The original occupational data contain information on over 700 occupational categories. To give readers some sense of the broad types of occupations that provide middle wage jobs, the data have been aggregated up to the “two digit” level of the Standard Occupational Classification system, and some two-digit categories have been combined to produce a manageable list of occupational types. In addition, a list of middle wage occupations providing jobs for over 1,000 King County workers is included in the report for readers who want to know exactly which job types qualify as middle wage jobs.

## Where are the Middle Wage Jobs?

### Middle Wage Jobs by Industry Sector

Table 2 shows the top 10 industries ranked by their proportion of middle wage jobs in each county. (See Appendix A for additional industry detail by county). Looking at the sectors with the highest proportion of middle wage jobs, we see many commonalities but also some differences across counties. In each of the 4 counties, at least half of the top ten industries are in construction, or in a construction-related industry (e.g. architectural and engineering services). In every county except Pierce, some level of government accounts for at least one industry. In every county except Kitsap, a health care-related industry appears among the top ten. Utility system construction appears for Pierce and Kitsap, and auto repair for Snohomish and Kitsap. It is also interesting to note that aerospace does not appear in the top ten list for any county.

<b>King</b>		<b>Snohomish</b>		<b>Pierce</b>		<b>Kitsap</b>	
Other Spec. Trade Contractors	84.7%	Offices of dentists	60.8%	Nonresidential building construction	74.4%	Building foundation and exterior contractors	75.4%
Building Finish Contractors	81.1%	Residential building construction	56.6%	Other specialty trade contractors	71.7%	Nonresidential building construction	71.1%
Building Foundation and Exterior Contractors	80.6%	Home health care services	55.8%	Building foundation and exterior contractors	71.4%	Residential building construction	68.6%
Building Equipment Contractors	79.1%	Nonresidential building construction	56.6%	Building equipment contractors	69.1%	Automotive repair and maintenance	46.4%
Nonresidential Building Construction	77.8%	Building equipment contractors	50.1%	Building finishing contractors	67.7%	Utility system construction	44.5%
General Freight Trucking	70%	Local Government (non-hospital)	46.9%	General freight trucking	66.4%	Federal Govt.	44.1%
Residential Building Construction	68%	State Government (non-hospital)	41.6%	Utility system construction	57.9%	State Govt. without hospitals	38.6%
Office of Dentists	61.4%	Building foundation and exterior contractors	41%	Residential building construction	50.5%	Building equipment contractors	37.9%
Local Government (non-hospital)	45.8%	Automotive repair and maintenance	37.7%	General medical and surgical hospitals	43.7%	Building finishing contractors	37.6%
Scheduled Air Transportation	44.1%	Other Specialty Trade Contractors	35.4%	Grocery and Related Product Wholesalers	43.1%	Architectural and engineering services	32.6%

If we look at absolute numbers of jobs, rather than proportions, the picture changes somewhat. In each county, government - either federal or local - accounts for the largest number of middle wage jobs. In all four counties, government employment accounts for at least two of the top ten sectors. In Kitsap, three levels of government make up the top three sectors—with the high proportion of federal employment likely the result of the large military presence in the county. Again, construction industries are heavily represented, with at least four construction-related industries appearing in each county’s top ten list. Health care appears as a top ten sector in every county but Kitsap, and hospitals are the second largest middle wage sector in King. Aerospace looms large in King and Snohomish. Aerospace, however, was not among the top ten by proportion, reflecting slow recovery in hiring by historical standards, coupled with an emerging local focus by Boeing on hiring engineering and design workers usually needing a BA.

**Table 3: Top Ten Industries by Number of Middle Wage Jobs by County**

<b>King</b>		<b>Snohomish</b>		<b>Pierce</b>		<b>Kitsap</b>	
Local Govt. without hospitals	20,862	Local Govt. without hospitals	5,663	Local Govt. without hospitals	5,084	Federal Govt.	6,792
General medical and surgical hospitals	12,502	Aerospace	4,152	General medical and surgical hospitals	3,367	Local Govt. without hospitals	2,069
Aerospace	12,000	Building equipment contractors	1,696	Federal Govt.	2,970	State Govt. without hospitals	966
Building equipment contractors	11,841	Building foundation and exterior contractors	1,337	Building equipment contractors	2,863	Building foundation and exterior contractors	772
Federal Govt.	8,736	State Govt. without hospitals	1,330	Building finishing contractors	2,165	Residential building construction	662
Building finishing contractors	8,465	Residential building construction	1,308	State Govt. without hospitals	1,932	Architectural and engineering services	606
Educational Services	6,624	Offices of dentists	1,158	Building foundation and exterior contractors	1,796	Building equipment contractors	352
Building foundation and exterior contractors	6,039	Building finishing contractors	1,040	General freight trucking	1,789	Employment services	340
Residential building construction	6,022	Automobile dealers	897	Offices of physicians	1,441	Automotive repair and maintenance	338
Nonresidential building construction	5,546	Offices of physicians	740	Residential building construction	1,382	Other specialty trade contractors	272

The appendix tables include additional detail on top industries for middle wage jobs. Broadening our view to examine the top 20 industries for middle wage jobs, we see that architectural and engineering services make the list of the top 20 industries in all four counties, as do employment services and automobile dealers. Grocery stores are included in Snohomish County; grocery wholesalers make the list in Kitsap and Pierce counties.

### **Middle Wage Jobs by Economic Development Cluster**

Turning to the Prosperity Partnership regional economic development clusters, the top three clusters for middle wage jobs vary considerably in the four counties. Looking at absolute numbers, the top three clusters in King County are Aerospace, Tourism, and Logistics/International Trade. The most surprising entry in this list is Tourism. Tourism is a very large cluster with nearly 94,000 workers and many jobs in this cluster are in low wage occupations. However, 12 percent of the jobs qualify as middle wage jobs, and the large size of the cluster places it on the top three list in King County with 11,400 middle wage jobs, only slightly below Aerospace's 12,000 and ahead of the Logistics/International Trade cluster's 10,600.

Aerospace is the largest middle wage cluster in Snohomish as well at 4,689 jobs, more than four times the size of the next largest cluster (life sciences at 1,006). The next two largest clusters are information technology, and clean technology. As in King County, the top three list in Snohomish reflects actual industry strengths and existing priorities of local development organizations. Conversely, Clean Tech was listed as a "wild card" or future development possibility in the Prosperity Partnership strategy. At present, Clean Tech is not really a cluster, but a collection of NAICS industry codes that could become a cluster if Clean Tech takes off with distinct products and services in the future. The cluster includes, for example, jobs in companies making pollution control technology. The relatively high proportion of middle wage employment in at least some of the counties may portend high potential for accessible jobs in that cluster, although further research would be necessary to understand its development trajectory.

In Kitsap and Pierce counties, missing data for employment related to the military bases severely hampers the utility of the cluster frame of middle wage jobs. Due to the problems with military employment noted in the methodology section, the regional cluster definitions do not capture very significant portions of the employment base in Kitsap and Pierce Counties. In Kitsap County, with the Puget Sound Naval Shipyard buried in the Federal Government "industry" and the military cluster occupational distribution unknown, the remaining PSRC regional clusters do not contain very many middle wage jobs. The top 3 clusters on the list are Logistics/International Trade, Clean Technology, and Boatbuilding (which does not include jobs in the Puget Sound Naval shipyard).

Clean Technology is big in Pierce also, having the largest number of total jobs among all clusters. This is surprising given that the cluster is relatively new and underdeveloped. Pierce County may have the requisite skills among its workers and entrepreneurs to create a Clean Technology cluster, although the products and services implied by this label are probably not the current focus of the firms in these industries. This cluster is followed by Logistics/International Trade and Specialty Foods. Military and civilian employment at McChord Airforce Base and Ft. Lewis are not available. In fact, the military cluster should be listed as the top cluster in both Kitsap and Pierce counties.

Examining the proportions of middle wage jobs across counties, it is striking that the Prosperity Partnership clusters seem to perform better for targeting middle wage jobs in

Kitsap and Pierce, but the percentages of middle wage jobs are quite low in King and Snohomish compared to the more generic industrial sectors identified in the previous section. For example, in King County the highest proportion of middle wage jobs in the Prosperity partnership clusters is found in aerospace at 36.8% of all jobs, which would not place it among the top ten among the more traditional industrial sectors. Conversely, the identified clusters perform better in Pierce, with boatbuilding having 70% middle wage jobs, and clean tech 46.5%. The same two clusters look good in Kitsap as well. Life sciences also looks relatively good in Pierce at 34.3% of jobs, and 25% in Kitsap. These are much higher than the King or Snohomish proportions.

**Table 4: Number and Percent of Middle Wage Jobs in Prosperity Partnership Clusters, by County**

<i>Cluster</i>	<i>Middle Wage Jobs17+</i>	<i>Total Jobs</i>	<i>% Middle Wage</i>	<i>Middle Wage Jobs17+</i>	<i>Total Jobs</i>	<i>% Middle Wage</i>
	<b>KING</b>			<b>SNOHOMISH</b>		
Aerospace	12,000	32,621	36.8%	4,689	25,214	18.6%
Boatbuilding	158	813	19.4%	230	1,156	19.9%
Business Services	4,996	33,198	15.0%	238	1,320	18.0%
Clean Technology	621	3,481	17.9%	730	2,210	33.0%
Electronic Shopping	188	2,033	9.2%	204	1,962	10.4%
Head Offices	506	5,124	9.9%	52	326	15.9%
Information Technology	6,722	29,696	22.6%	845	5,272	16.0%
Life Sciences	1,495	6,613	22.6%	1,006	5,894	17.1%
Logistics & Int'l Trade	10,591	67,999	15.6%	377	2,694	14.0%
Long Term Care	2,077	11,322	18.3%	167	1,480	11.3%
Military	<i>unknown</i>	<i>unknown</i>	<i>unknown</i>	<i>unknown</i>	<i>unknown</i>	<i>unknown</i>
Sound Recording	1,483	41,930	3.5%	41	520	7.9%
Specialty Food	2,673	14,762	18.1%	719	3,242	22.2%
Tourism	11,408	93,819	12.2%	677	5,175	13.1%
Wood Products	584	2,983	19.6%	198	1,226	16.1%
	<b>PIERCE</b>			<b>KITSAP</b>		
Aerospace	542	1,374	39.4%	5	22	23.9%
Boatbuilding	259	370	70.0%	115*	249*	46.2%
Business Services	756	3,326	22.7%	47	1,253	3.8%
Clean Technology	1,363	2,934	46.5%	160	429	37.3%
Electronic Shopping	318	2,583	12.3%	85	848	10.0%
Head Offices	78	420	18.6%	12	186	6.2%
Information Technology	29	105	27.6%	17	352	4.7%
Life Sciences	217	633	34.3%	121	469	25.7%
Logistics & Int'l Trade	962	3,287	29.3%	254	1,065	23.8%
Long Term Care	361	867	41.6%	60	366	16.3%
Military	<i>unknown</i>	<i>unknown</i>	<i>unknown</i>	<i>unknown</i>	<i>unknown</i>	<i>unknown</i>
Sound Recording	120	721	16.6%	0	0	0.0%
Specialty Food	678	3,952	17.2%	11	47	23.4%
Tourism	589	5,891	10.0%	90	803	11.2%
Wood Products	625	1,956	32.0%	9	45	18.9%

\*Boatbuilding estimate for Kitsap does not include Puget Sound Naval Shipyard with approximately 10,000 civilian workers; this facility is included in the Federal Government industry category in the occupational statistics.

Table 5 on page 11 provides 2004 data on King County accessible middle wage jobs within the City of Seattle's lengthy list of industry clusters. Each of these clusters contain a number of sub-clusters. Two clusters stand out with very large middle wage employment totals: Basic Industries and Sustainable Building. However, the "Basic Industries" cluster, as defined by the city, combines traditional manufacturing with transportation and construction. Construction accounts for almost half the accessible middle wage jobs in the cluster, with transport providing the next largest total.

Sustainable Building is the next largest at over 50,000 jobs, but this total is largely shared with the construction and contracting subset of Basic Industries. And, the job totals listed in the table below are for all construction-related NAICS codes. Arriving at some subset of all construction jobs deployed in sustainable building requires the use of an adjustment factor to reflect the proportion of construction accounted for by Sustainable Building. A study by Berk and Associates for the City of Seattle put the upward proportion of all construction employment devoted to Sustainable Building at 12 percent of all construction jobs<sup>4</sup> - which if applied to the numbers in the table below would reduce the current total to about 6,500 jobs. However, given the rapid rate of growth in building construction requiring new techniques, Sustainable Building will undoubtedly represent a growing proportion of all construction jobs.

The healthcare cluster provides the third highest number of middle wage jobs in the City of Seattle clusters at 26,000. Surprisingly, retail is next at 23,000 - a reflection of that cluster's large local share of total jobs, given that the percent of total jobs in that cluster that are middle wage stands at only 13 percent. It is worth noting that, in contract to the Prosperity Partnership's tourism cluster, the City of Seattle's definition of tourism contains a much smaller number of middle wage jobs. This is explained by Seattle's much narrower definition of tourism than used by the Prosperity Partnership.

The clusters where middle wage jobs account for the highest percentage of total employment are Sustainable Building at 46%, Basic Industries at 41%, Maritime at 39%, and Healthcare at 30%. The variation of the proportions of middle wage jobs by subcluster within the various clusters is also instructive. Within Basic Industries, Construction, Transport, and Machinery and Fabricated Metals have the highest proportion of middle wage jobs. Within Biotech, Medical Devices have a much higher proportion than biotechnology. Hospitals is the leading subcluster within healthcare. Within Sustainable Building, construction subclusters have the highest proportion of Middle Wage jobs.

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<sup>4</sup> Berk and Associates, *Sustainable Building Cluster Study*, Report for the City of Seattle Office of Sustainability and Environment and Office of Economic Development, February 2005.

**Table 5: Number and Percent of Middle Wage Jobs in King County  
by City of Seattle Cluster and Sub-Cluster**

Cluster	Sub-Cluster	Empl-2004	MWJobs	% MW
<b>Basic Industries</b>		200,382	93,807	47%
	Aerospace	32,621	12,000	37%
	Communications	16,690	5,376	32%
	Construction and Contracting	53,831	41,330	77%
	Food and Beverage (not incl. agric.)	12,093	2,365	20%
	Machinery and Fabricated Metal	16,260	6,278	39%
	Office and Home Furnishings	3,321	984	30%
	Printing and Publishing	11,501	2,573	22%
	Seafood	8,890	1,855	21%
	Stone Clay and Glass	9,906	2,850	29%
	Transport	35,269	18,196	52%
<b>Biotech</b>		15,459	3,017	20%
	Biotechnology	9,486	1,324	14%
	Medical Devices	5,972	1,693	28%
<b>Film</b>		4,292	537	13%
	Commercial Photography	n/a	n/a	n/a
	Motion Picture/Video/Teleprod.	2,146	269	13%
<b>Healthcare</b>		87,048	26,416	30%
	Ambulatory	37,283	10,706	29%
	Hospitals	31,781	12,502	39%
	Nursing & residential care	16,050	3,012	19%
	Services and support	1,934	197	10%
<b>Info./Computer Tech.</b>		82,668	9,183	11%
	Computers and Software	58,526	3,060	5%
	Internet	6,868	657	10%
	Telecommunications	17,274	5,466	32%
<b>Maritime</b>		13,137	5,177	39%
	Seafood (not incl. fishing)	n/a	n/a	n/a
	Transport	n/a	n/a	n/a
	Vessel Building & Repair	3,286	1,834	56%
<b>Music</b>		11,596	1,630	14%
	Fine Arts Schools	n/a	n/a	n/a
	Musical Inst. Mfg. & Sales	8,939	1,262	14%
	Musical Media	92	17	18%
	Performers	2,340	277	12%
	Recording and Production	224	75	33%
<b>Retail</b>		183,551	23,078	13%
	Dining and Drinking	69,811	4,969	7%
	Non-store retail	5,965	929	16%
	Retail trade	107,776	17,180	16%
<b>Sustainable Building</b>	<i>(note: All jobs in construction are listed here. see text for discussion).</i>	118,334	54,370	46%
	Bldg Materials/Garden Supply Retail	11,923	1,923	16%
	Engineering/Architecture	28,305	4,649	16%
	General Bldg Contractors	15,988	11,568	72%
	Primary Metals	411	135	33%
	Real Estate	18,483	4,545	25%
	Specialty Contractors	36,942	29,762	81%
<b>Tourism</b>		82,441	6,540	8%
	Accommodation	12,631	1,571	12%
	Food Service/Drinking Places	69,811	4,969	7%



## Middle Wage Jobs by Occupational Group

Table 6 shows the distribution of middle wage jobs across major occupational groupings. The top three occupational groups vary by county. In King County, the top three groups by number of jobs are Construction, Clerical, and Health. In Snohomish County, Construction is the largest group, followed by Mechanical/Repair occupations and Healthcare occupations. In Pierce County, Construction again leads the list, followed by Healthcare and Transportation occupations. Finally, In Kitsap County, Construction is followed by Mechanical/Repair and Clerical occupations.

<b>Table 6: Number and Percent of Middle Wage Jobs by Occupational Group</b>						
<b>KING</b>				<b>SNOHOMISH</b>		
<i>Occupational Cluster</i>	<i>Middle Wage Jobs \$17 plus</i>	<i>Total Jobs in Cluster</i>	<i>Percent Middle Wage</i>	<i>Middle Wage Jobs</i>	<i>Total Jobs in Cluster</i>	<i>Percent Middle Wage</i>
Management	4,134	42,334	9.8%	664	6,429	10.3%
Business and financial	8,010	68,051	11.8%	3,512	10,228	34.3%
Science and computers	6,294	124,362	5.1%	1,946	17,058	11.4%
Social Service/Clergy	0	15,614	0.0%	0	3,717	0.0%
Legal	529	11,293	4.7%	37	920	4.0%
Teaching	0	57,150	0.0%	0	12,752	0.0%
Media/Arts	966	21,686	4.5%	22	2,089	1.0%
Health	30,955	72,107	42.9%	5,341	10,576	50.5%
Corrections/Public Safety	6,947	19,743	35.2%	2,930	4,629	63.3%
Service	10,470	157,300	6.7%	1,681	30,863	5.4%
Sales	23,633	120,525	19.6%	3,112	22,747	13.7%
Clerical	41,312	192,136	21.5%	5,174	30,445	17.0%
Natural resource	401	1,060	37.9%	74	1,443	5.1%
Construction	45,969	49,854	92.2%	7,261	15,037	48.3%
Mechanical & repair	29,721	34,023	87.4%	5,743	9,128	62.9%
Production	14,075	46,053	30.6%	3,375	17,256	19.6%
Transportation	24,218	75,956	31.9%	1,526	14,377	10.6%
<b>PIERCE</b>				<b>KITSAP</b>		
Management	975	6,526	14.9%	166	2,087	8.0%
Business and financial	2,863	9,089	31.5%	373	3,542	10.5%
Science and computers	1,152	7,112	16.2%	537	6,385	8.4%
Social Service/Clergy	0	5,896	0.0%	0	1,422	0.0%
Legal	109	1,272	8.5%	0	1,422	0.0%
Teaching	0	18,548	0.0%	0	761	0.0%
Media/Arts	41	2,024	2.0%	0	497	0.0%
Health	9,332	21,988	42.4%	1,462	4,827	30.3%
Corrections/Public Safety	2,389	4,974	48.0%	1,607	2,382	67.5%
Service	999	47,206	2.1%	181	12,815	1.4%
Sales	3,621	25,393	14.3%	788	7,032	11.2%
Clerical	5,471	41,245	13.3%	1,975	11,335	17.4%
Natural resource	60	1,718	3.5%	35	191	18.2%
Construction	12,573	16,899	74.4%	4,341	6,263	69.3%
Mechanical & repair	6,318	10,925	57.8%	3,486	4,613	75.6%
Production	3,987	12,567	31.7%	1,726	3,252	53.1%
Transportation	6,932	20,871	33.2%	1,184	3,883	30.5%

In terms of proportions, construction occupational groups again show a very high proportion of middle wage jobs, similar to the picture in the construction industrial sector. Mechanical and repair occupations also have a high proportion of accessible middle wage jobs.

## **Conclusions**

The middle wage jobs construct may provide useful guidance to workforce development and economic development organizations in the four county Central Puget Sound region. By targeting education and training programs and economic development efforts on the industries and clusters that have relatively high numbers of middle wage jobs, we can help ensure that residents of the region who have not earned university degrees have access to good jobs. As with any workforce or economic development strategy, a focus on middle wage jobs is not the “one size fits all” answer for all purposes. However, an explicit focus on middle wage jobs could complement other efforts to meet workforce needs of high tech employers.

Major technology industry employers and trade associations have increasingly dominated discussions of workforce and economic development policy due to the rapid growth and high wage characteristics of such industries as software publishing, internet-based commerce and services, and life sciences. An added focus on middle wage jobs directs attention back to basic industries, long-term and substantial employers in industries such as aerospace, construction, logistics/international trade, and the maritime cluster of fishing vessels, shipbuilding, and marine transportation. It also helps identify promising new industries or clusters whose growth can be encouraged. A more balanced workforce and economic development strategy including a focus on middle wage jobs would help meet the employment needs of a broad segment of the population in the Puget Sound region.

## Appendix A: Middle Wage Jobs by County by Industry Cluster

**Table A1: Top 20 Industries for Middle Wage Jobs, King County**

<i>NAICS</i>	<i>Industry</i>	<i>Middle Wage Jobs Paying \$17+</i>	<i>Middle Wage Jobs Paying \$20+</i>	<i>Total Jobs in Industry, 2004</i>	<i>Percent Middle Wage \$17+</i>	<i>Percent Middle Wage \$20+</i>	<i>Avg. Annual Growth Rate 2004-2009</i>	<i>Avg. Annual Growth Rate 2009-2014</i>
2361	Residential building construction	6,022	4,913	8,859	68.0%	55.4%	3.3%	1.7%
2362	Nonresidential building construction	5,546	4,011	7,128	77.8%	56.3%	1.7%	0.5%
2381	Building foundation and exterior contractors	6,039	5,092	7,491	80.6%	68.0%	3.7%	1.7%
2382	Building equipment contractors	11,841	11,428	14,977	79.1%	76.3%	2.5%	1.4%
2383	Building finishing contractors	8,465	5,935	10,437	81.1%	56.9%	3.7%	1.7%
2389	Other specialty trade contractors	3,418	1,913	4,037	84.7%	47.4%	2.2%	1.9%
3364	Aerospace	12,000	10,748	32,621	36.8%	32.9%	5.3%	-1.1%
4238	Machinery and supply merchant wholesalers	2,993	2,080	6,868	43.6%	30.3%	-0.4%	0.9%
4411	Automobile dealers	3,020	471	7,839	38.5%	6.0%	1.4%	1.1%
4811	Scheduled air transportation	5,057	3,916	11,457	44.1%	34.2%	0.7%	1.1%
4841	General freight trucking	3,991	648	5,703	70.0%	11.4%	1.8%	1.2%
5413	Architectural and engineering services	3,638	2,557	15,799	23.0%	16.2%	3.9%	2.3%
5511	Management of companies and enterprises	4,158	1,920	22,692	18.3%	8.5%	1.0%	0.4%
5613	Employment services	5,180	2,804	27,871	18.6%	10.1%	5.2%	2.9%
6110	Educational Services	6,624	4,999	95,733	6.9%	5.2%	1.3%	1.5%
6212	Offices of dentists	5,178	1,822	8,434	61.4%	21.6%	1.7%	1.3%
6221	General medical and surgical hospitals	12,502	11,405	31,781	39.3%	35.9%	2.1%	1.8%
9991	Federal Govt.	8,736	7,770	22,530	38.8%	34.5%	-0.5%	0.0%
9992	State Govt. without hospitals	2,805	1,422	9,333	30.1%	15.2%	0.5%	0.7%
9993	Local Govt. without hospitals	20,862	12,765	45,532	45.8%	28.0%	0.4%	1.0%
	Total, All Industries	247,735	157,761	1,109,248	22.3%	14.2%		

**Table A2: Top 20 Industries for Middle Wage Jobs, Snohomish County**

NAICS	Industry	Middle Wage Jobs Paying\$17+	Middle Wage Jobs Paying\$20+	Total Jobs in Industry, 2004	Percent Middle Wage\$17+	Percent Middle Wage\$20+	Avg. Annual Growth Rate 2004- 2009	Avg. Annual Growth Rate 2009- 2014
2361	Residential building construction	1,308	1,258	2,309	56.60%	54.50%	2.40%	1.60%
2362	Nonresidential building construction	651	596	1,172	55.60%	50.90%	1.40%	0.00%
	Building foundation and exterior							
2381	contractors	1,337	953	3,265	41.00%	29.20%	4.40%	1.90%
2382	Building equipment contractors	1,696	513	3,388	50.10%	15.10%	3.50%	1.30%
2383	Building finishing contractors	1,040	930	3,669	28.30%	25.30%	5.20%	1.20%
2389	Other specialty trade contractors	596	525	1,687	35.40%	31.10%	2.80%	1.20%
3364	Aerospace	4,152	2,568	21,679	19.20%	11.80%	n/a	n/a
4411	Automobile dealers	897	282	2,667	33.60%	10.60%	2.00%	1.50%
4451	Grocery stores	540	353	4,965	10.90%	7.10%	1.80%	0.10%
5241	Insurance carriers	653	645	3,632	18.00%	17.80%	0.90%	0.80%
5413	Architectural and engineering services	627	384	1,918	32.70%	20.00%	5.20%	2.40%
5613	Employment services	666	465	3,432	19.40%	13.50%	4.70%	3.00%
6110	Educational Services	664	422	17,944	3.70%	2.40%	1.50%	1.70%
6211	Offices of physicians	740	731	3,204	23.10%	22.80%	2.00%	1.70%
6212	Offices of dentists	1,158	1,132	1,903	60.80%	59.50%	2.10%	1.60%
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6216	Home health care services	539	539	966	55.80%	55.80%	2.50%	1.20%
6231	Nursing care facilities	633	603	2,539	24.90%	23.70%	2.30%	1.50%
8111	Automotive repair and maintenance	729	53	1,933	37.70%	2.70%	1.10%	1.10%
9992	State Govt. without hospitals	1,330	1,199	3,198	41.60%	37.50%	0.80%	1.10%
9993	Local Govt. without hospitals	5,663	3,760	12,073	46.90%	31.10%	1.80%	1.50%
	Total, All Industries	40,783	27,691	209,693	19.40%	13.20%		

**Table A3: Top 20 Industries for Middle Wage Jobs, Pierce County**

NAICS	Industry	Middle Wage Jobs Paying\$17+	Middle Wage Jobs Paying\$20+	Total Jobs in Industry, 2004	Percent Middle Wage\$17+	Percent Middle Wage\$20+	Avg. Annual Growth Rate 2004-2009	Avg. Annual Growth Rate 2009-2014
2361	Residential building construction	1,382	1,289	2,739	50.5%	47.1%	2.6%	1.7%
2362	Nonresidential building construction	1,223	1,164	1,644	74.4%	70.8%	3.3%	0.2%
2371	Utility system construction	1,153	1,027	1,992	57.9%	51.6%	1.1%	0.9%
2381	Building foundation and exterior contractors	1,796	1,731	2,516	71.4%	68.8%	4.1%	2.0%
2382	Building equipment contractors	2,863	2,777	4,141	69.1%	67.1%	3.3%	1.4%
2383	Building finishing contractors	2,165	2,154	3,197	67.7%	67.4%	4.3%	1.8%
2389	Other specialty trade contractors	1,074	615	1,499	71.7%	41.0%	3.4%	1.6%
4244	Grocery and Related Product Wholesalers	765	105	1,777	43.1%	5.9%	-1.5%	0.3%
4411	Automobile dealers	974	145	3,264	29.9%	4.4%	2.1%	1.3%
4841	General freight trucking	1,789	191	2,695	66.4%	7.1%	3.7%	1.8%
5413	Architectural and engineering services	768	535	1,863	41.2%	28.7%	2.1%	1.3%
5613	Employment services	1,378	1,242	4,097	33.6%	30.3%	5.8%	3.4%
6110	Educational Services	914	770	27,227	3.4%	2.8%	1.5%	1.7%
6211	Offices of physicians	1,441	1,060	5,289	27.2%	20.1%	2.2%	1.8%
6221	General medical and surgical hospitals	3,367	3,057	7,707	43.7%	39.7%	2.2%	1.1%
6222	Psychiatric and substance abuse hospitals	675	377	2,022	33.4%	18.7%	0.8%	0.6%
8111	Automotive repair and maintenance	950	295	2,667	35.6%	11.0%	1.9%	1.4%
9991	Federal Govt.	2,970	2,423	9,791	30.3%	24.8%	1.3%	0.2%
9992	State Govt. without hospitals	1,932	844	5,714	33.8%	14.8%	0.9%	1.1%
9993	Local Govt. without hospitals	5,084	3,704	14,001	36.3%	26.5%	1.3%	1.2%
	<b>Total, All Industries</b>	<b>56,822</b>	<b>41,999</b>	<b>254,252</b>	<b>22.3%</b>	<b>16.2%</b>		

**Table A4: Top 20 Industries for Middle Wage Jobs, Kitsap County**

<i>NAICS</i>	<i>Industry</i>	<i>Middle Wage Jobs Paying\$17+</i>	<i>Middle Wage Jobs Paying\$20+</i>	<i>Total Jobs in Industry, 2004</i>	<i>Percent Middle Wage\$17+</i>	<i>Percent Middle Wage\$20+</i>	<i>Avg. Annual Growth Rate 2004-2009</i>	<i>Avg. Annual Growth Rate 2009-2014</i>
2361	Residential building construction	662	658	965	68.6%	68.2%	2.1%	1.6%
2362	Nonresidential building construction	158	155	222	71.1%	69.7%	1.1%	0.1%
2371	Utility system construction	162	152	363	44.5%	42.0%	2.3%	1.2%
2381	Building foundation and exterior contractors	772	712	1,024	75.4%	69.6%	2.0%	1.3%
2382	Building equipment contractors	352	330	929	37.9%	35.5%	2.4%	1.1%
2383	Building finishing contractors	129	83	342	37.6%	24.4%	1.8%	0.9%
2389	Other specialty trade contractors	272	38	1,009	27.0%	3.8%	1.8%	1.3%
4244	Grocery and Related Product Wholesalers	210	27	1,031	20.4%	2.7%	3.0%	0.6%
4411	Automobile dealers	147	40	1,897	7.8%	2.1%	1.5%	-0.1%
4841	General freight trucking	152	43	1,504	10.1%	2.9%	3.1%	0.8%
5413	Architectural and engineering services	606	530	1,862	32.6%	28.5%	6.3%	2.4%
5613	Employment services	340	266	1,374	24.7%	19.4%	3.2%	1.8%
6110	Educational Services	201	183	864	23.3%	21.1%	2.8%	1.8%
6211	Offices of physicians	136	113	814	16.7%	13.9%	3.8%	1.4%
6221	General medical and surgical hospitals	251	142	1,384	18.2%	10.2%	2.7%	1.5%
6222	Psychiatric and substance abuse hospitals	162	100	1,021	15.8%	9.8%	2.6%	1.8%
8111	Automotive repair and maintenance	338	71	728	46.4%	9.7%	1.8%	1.1%
9991	Federal Govt.	6,792	6,336	15,411	44.1%	41.1%	-0.1%	0.0%
9992	State Govt. without hospitals	966	435	2,503	38.6%	17.4%	0.8%	0.9%
9993	Local Govt. without hospitals	2,069	1,507	7,796	26.5%	19.3%	1.4%	1.4%
<b>Total, All Industries</b>		<b>17,860</b>	<b>13,258</b>	<b>71,803</b>	<b>24.9%</b>	<b>18.5%</b>		

## Appendix B: Occupations in King County with 1000 or More Jobs

SOC	Occupation	No. Jobs in All Industries	Entry Wages	Experience Wages	25th Percentile Wages	Median Wages	75th Percentile Wages
291111	Registered Nurses	18,518	\$49,572	\$72,509	\$54,353	\$64,927	\$74,877
431011	FirstLine Supervisors/Managers of Office and Administrative Support Workers	11,341	\$35,507	\$61,034	\$39,800	\$49,684	\$61,975
533032	Truck Drivers, Heavy and TractorTrailer	10,339	\$29,614	\$42,863	\$32,723	\$38,841	\$44,330
472031	Carpenters	9,213	\$37,029	\$52,961	\$39,971	\$46,619	\$56,418
436011	Executive Secretaries and Administrative Assistants	8,811	\$32,504	\$48,596	\$35,848	\$42,322	\$49,661
499042	Maintenance and Repair Workers, General	8,590	\$24,566	\$44,160	\$28,007	\$36,641	\$45,496
411011	FirstLine Supervisors/Managers of Retail Sales Workers	8,279	\$29,517	\$55,034	\$32,448	\$39,415	\$52,494
472061	Construction Laborers	6,672	\$21,088	\$48,020	\$25,406	\$38,182	\$53,666
413099	Sales Representatives, Services, All Other	6,478	\$28,959	\$67,249	\$34,147	\$46,747	\$69,960
351012	FirstLine Supervisors/Managers of Food Preparation and Serving Workers	4,931	\$28,844	\$43,420	\$31,459	\$38,468	\$44,733
471011	FirstLine Supervisors/Managers of Construction Trades and Extraction Workers	4,701	\$50,465	\$77,853	\$55,770	\$67,632	\$79,291
411012	FirstLine Supervisors/Managers of NonRetail Sales Workers	4,069	\$48,409	\$103,917	\$57,480	\$80,090	\$98,900
472111	Electricians	3,759	\$40,840	\$72,758	\$47,639	\$65,420	\$78,384
131023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	3,697	\$39,652	\$64,037	\$44,366	\$54,353	\$66,574
319091	Dental Assistants	3,675	\$31,763	\$40,268	\$34,254	\$38,171	\$42,296
533021	Bus Drivers, Transit and Intercity	3,267	\$28,505	\$43,173	\$33,659	\$40,959	\$45,448
472152	Plumbers, Pipefitters, and Steamfitters	3,237	\$42,716	\$70,315	\$49,029	\$63,613	\$75,170
511011	FirstLine Supervisors/Managers of Production and Operating Workers	3,174	\$37,735	\$64,202	\$42,247	\$52,330	\$67,048
419099	Sales and Related Workers, All Other	3,087	\$23,071	\$59,804	\$27,074	\$41,136	\$61,378
491011	FirstLine Supervisors/Managers of Mechanics, Installers, and Repairers	2,867	\$37,545	\$70,583	\$42,203	\$56,607	\$72,645
472141	Painters, Construction and Maintenance	2,772	\$30,186	\$45,243	\$33,231	\$40,153	\$47,995
493023	Automotive Service Technicians and Mechanics	2,698	\$24,388	\$47,852	\$28,052	\$40,193	\$48,852
333051	Police and Sheriff's Patrol Officers	2,611	\$49,624	\$64,505	\$54,031	\$61,591	\$67,802
292061	Licensed Practical and Licensed Vocational Nurses	2,591	\$34,947	\$44,560	\$37,103	\$41,271	\$45,427
396031	Flight Attendants	2,537	\$33,894	\$87,767	\$38,057	\$76,341	\$86,714
436012	Legal Secretaries	2,508	\$35,932	\$48,976	\$38,722	\$44,640	\$52,201
434031	Court, Municipal, and License Clerks	2,485	\$30,658	\$42,195	\$34,279	\$39,590	\$43,597
472073	Operating Engineers and Other Construction Equipment Operators	2,442	\$48,121	\$61,733	\$51,636	\$57,945	\$64,221
531031	FirstLine Supervisors/Managers of Transportation and MaterialMoving Machine and Vehicle Operators	2,403	\$36,763	\$71,780	\$42,216	\$54,308	\$71,343
492011	Computer, Automated Teller, and Office Machine Repairers	2,341	\$29,396	\$43,718	\$31,819	\$37,457	\$45,584
493031	Bus and Truck Mechanics and Diesel Engine Specialists	2,230	\$34,256	\$52,565	\$37,928	\$47,217	\$55,321
131022	Wholesale and Retail Buyers, Except Farm Products	2,069	\$27,609	\$61,505	\$33,382	\$44,392	\$63,529
131051	Cost Estimators	2,034	\$44,985	\$68,153	\$49,592	\$57,418	\$71,063

<b>SOC</b>	<b>Occupation</b>	<b>No. Jobs in All Industries</b>	<b>Entry Wages</b>	<b>Experience Wages</b>	<b>25th Percentile Wages</b>	<b>Median Wages</b>	<b>75th Percentile Wages</b>
536099	Transportation Workers, All Other	1,978	\$21,341	\$51,862	\$22,531	\$38,329	\$62,929
292021	Dental Hygienists	1,929	\$70,218	\$80,633	\$71,496	\$77,594	\$85,215
435061	Production, Planning, and Expediting Clerks	1,897	\$28,399	\$45,634	\$31,633	\$38,128	\$47,284
472081	Drywall and Ceiling Tile Installers	1,855	\$45,333	\$68,335	\$53,163	\$64,310	\$71,832
512011	Aircraft structure, surfaces, rigging, and systems assemblers	1,855	\$50,647	\$55,759	\$49,358	\$53,319	\$57,280
514121	Welders, Cutters, Solderers, and Brazers	1,784	\$31,295	\$43,360	\$33,912	\$39,535	\$44,728
119021	Construction Managers	1,781	\$52,224	\$99,962	\$58,779	\$77,469	\$101,032
412022	Parts Salespersons	1,720	\$27,764	\$45,969	\$30,546	\$38,756	\$47,782
433051	Payroll and Timekeeping Clerks	1,700	\$28,575	\$40,484	\$31,404	\$35,874	\$42,216
434161	Human Resources Assistants, Except Payroll and Timekeeping	1,582	\$28,747	\$41,330	\$31,137	\$36,106	\$42,935
493011	Aircraft mechanics and service technicians	1,547	\$39,732	\$61,005	\$43,418	\$55,893	\$65,391
435032	Dispatchers, Except Police, Fire, and Ambulance	1,495	\$28,419	\$47,201	\$32,893	\$41,785	\$47,184
499052	Telecommunications Line Installers and Repairers	1,478	\$30,481	\$49,635	\$34,826	\$43,226	\$52,747
332011	Fire Fighters	1,443	\$48,915	\$56,576	\$49,499	\$53,876	\$58,414
492022	Telecommunications Equipment Installers and Repairers, Except Line Installers	1,373	\$43,273	\$54,541	\$47,538	\$52,624	\$56,910
435011	Cargo and Freight Agents	1,300	\$25,373	\$46,583	\$29,001	\$36,258	\$50,118
472211	Sheet Metal Workers	1,293	\$34,176	\$58,681	\$38,456	\$53,729	\$60,882
515023	Printing Machine Operators	1,197	\$26,020	\$48,554	\$29,121	\$39,853	\$50,986
391021	FirstLine Supervisors/Managers of Personal Service Workers	1,176	\$27,201	\$47,473	\$31,012	\$39,203	\$50,464
439011	Computer Operators	1,130	\$25,783	\$41,747	\$29,601	\$36,004	\$43,525
292034	Radiologic Technologists and Technicians	1,111	\$38,598	\$59,809	\$42,020	\$51,500	\$62,362
173011	Architectural and Civil Drafters	1,102	\$26,821	\$45,670	\$28,023	\$37,707	\$48,805
535011	Sailors and Marine Oilers	1,079	\$28,712	\$43,458	\$35,020	\$39,535	\$43,613
472181	Roofers	1,078	\$35,326	\$57,452	\$39,066	\$45,929	\$62,237
499041	Industrial Machinery Mechanics	1,070	\$37,836	\$57,905	\$41,864	\$50,469	\$62,144
113071	Transportation, Storage, and Distribution Managers	1,066	\$51,538	\$123,726	\$59,507	\$83,747	\$122,253
499021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	1,021	\$37,639	\$55,281	\$42,383	\$50,563	\$56,553



## Appendix C: Industry Cluster Definitions

Puget Sound Regional Council Clusters for the four county Prosperity Partnership strategy  
(Cluster name and 4-digit NAICS industries included in the cluster)

<b>Aerospace</b> 3345 3364	<b>Boatbuilding</b> 3366	<b>Business Services</b> 5222 5324 5412 5414 5415	<b>Clean Tech</b> 2362 2629 3133 3334 5315 5412	<b>Electronic Shopping</b> 4529
<b>Head Offices</b> 5416	<b>Information Technology</b> 3254 3342 3344 3345 3346 3346 4214 4911 5133 5141 5142 5411	<b>Life Sciences</b> 3254 3345 3391 4214 5417 6215	<b>Logistics &amp; Int'l Trade</b> 4532 4533 4539 4541 4811 4831 4832 4842 4853 4859 4883 4884 4889 5172 5182	<b>Long Term Care</b> 5222 6219
<b>Long Term Care</b> 5222 6219	<b>Sound Recording</b> 3343 4921 5122	<b>Specialty Food</b> 1139 3119 3141 3149 3211 3212 3219 4237 4242	<b>Tourism</b> 4821 7112 4871 7113 4879 7114 5511 7115 6242 7121 6243 7132 6244 7212 7111	<b>Wood Products</b> 1131 1132 1133 3256 3261 3271 3335 3362 3363 4212 4213

**City of Seattle Clusters – Office of Economic Development**

<b>NAICS</b>	<b>Cluster</b>	<b>Sub-Cluster</b>
1111	Basic Industries	Food and Beverage
1112	Basic Industries	Food and Beverage
1113	Basic Industries	Food and Beverage
1114	Basic Industries	Food and Beverage
1119	Basic Industries	Food and Beverage
1121	Basic Industries	Food and Beverage
1122	Basic Industries	Food and Beverage
1123	Basic Industries	Food and Beverage
1125	Basic Industries	Seafood
1125	Maritime	Seafood
1141	Basic Industries	Seafood
1141	Maritime	Seafood
2123	Basic Industries	Stone Clay and Glass
2123	Sustainable Building	Stone Clay and Glass
2361	Basic Industries	Construction and Contracting
2361	Sustainable Building	General Bldg Contractors
2362	Basic Industries	Construction and Contracting
2362	Sustainable Building	General Bldg Contractors
2381	Basic Industries	Construction and Contracting
2381	Sustainable Building	Specialty Contractors
2382	Basic Industries	Construction and Contracting
2382	Sustainable Building	Specialty Contractors
2383	Basic Industries	Construction and Contracting
2383	Sustainable Building	Specialty Contractors
2389	Basic Industries	Construction and Contracting
2389	Sustainable Building	Specialty Contractors
3112	Basic Industries	Food and Beverage
3113	Basic Industries	Food and Beverage
3114	Basic Industries	Food and Beverage
3115	Basic Industries	Food and Beverage
3116	Basic Industries	Food and Beverage
3117	Basic Industries	Food and Beverage
3117	Basic Industries	Seafood
3117	Maritime	Seafood
3118	Basic Industries	Food and Beverage
3119	Basic Industries	Food and Beverage
3121	Basic Industries	Food and Beverage
3219	Basic Industries	Construction and Contracting
3221	Basic Industries	Machinery and Fabricated Metal
3221	Basic Industries	Printing and Publishing
3221	Basic Industries	Stone Clay and Glass
3222	Basic Industries	Printing and Publishing
3231	Basic Industries	Printing and Publishing
3254	Biotech	Biotechnology
3271	Basic Industries	Stone Clay and Glass
3272	Basic Industries	Stone Clay and Glass

<b>NAICS</b>	<b>Cluster</b>	<b>Sub-Cluster</b>
3273	Basic Industries	Stone Clay and Glass
3274	Basic Industries	Stone Clay and Glass
3279	Basic Industries	Stone Clay and Glass
3311	Basic Industries	Machinery and Fabricated Metal
3311	Sustainable Building	Primary Metals
3312	Basic Industries	Machinery and Fabricated Metal
3312	Sustainable Building	Primary Metals
3313	Basic Industries	Machinery and Fabricated Metal
3313	Sustainable Building	Primary Metals
3314	Basic Industries	Machinery and Fabricated Metal
3314	Sustainable Building	Primary Metals
3315	Basic Industries	Machinery and Fabricated Metal
3315	Sustainable Building	Primary Metals
3321	Basic Industries	Machinery and Fabricated Metal
3322	Basic Industries	Machinery and Fabricated Metal
3323	Basic Industries	Machinery and Fabricated Metal
3324	Basic Industries	Machinery and Fabricated Metal
3325	Basic Industries	Machinery and Fabricated Metal
3326	Basic Industries	Machinery and Fabricated Metal
3327	Basic Industries	Machinery and Fabricated Metal
3328	Basic Industries	Machinery and Fabricated Metal
3329	Basic Industries	Machinery and Fabricated Metal
3331	Basic Industries	Machinery and Fabricated Metal
3332	Basic Industries	Machinery and Fabricated Metal
3333	ICT	Computers and Software
3334	Basic Industries	Machinery and Fabricated Metal
3335	Basic Industries	Machinery and Fabricated Metal
3336	Basic Industries	Machinery and Fabricated Metal
3339	Basic Industries	Machinery and Fabricated Metal
3341	ICT	Computers and Software
3342	ICT	Telecommunications
3343	Music	Musical Media
3344	ICT	Computers and Software
3345	Basic Industries	Machinery and Fabricated Metal
3345	Biotech	Medical Devices
3346	ICT	Computers and Software
3346	Music	Musical Media
3353	Basic Industries	Machinery and Fabricated Metal
3364	Basic Industries	Aerospace
3366	Maritime	Vessel Building & Repair
3371	Basic Industries	Office and Home Furnishings
3372	Basic Industries	Office and Home Furnishings
3391	Biotech	Medical Devices
3391	Basic Industries	Office and Home Furnishings
3399	Music	Musical Inst. Mfg. & Sales
4233	Sustainable Building	Stone Clay and Glass
4237	Sustainable Building	Stone Clay and Glass

<b>NAICS</b>	<b>Cluster</b>	<b>Sub-Cluster</b>
4411	Retail	Retail trade
4412	Retail	Retail trade
4412	Maritime	Vessel Building & Repair
4413	Retail	Retail trade
4421	Retail	Retail trade
4422	Sustainable Building	Bldg Materials/Garden Supply Retail
4422	Retail	Retail trade
4431	Retail	Retail trade
4441	Sustainable Building	Bldg Materials/Garden Supply Retail
4441	Retail	Retail trade
4442	Sustainable Building	Bldg Materials/Garden Supply Retail
4442	Retail	Retail trade
4451	Retail	Retail trade
4452	Retail	Retail trade
4452	Maritime	Seafood
4453	Retail	Retail trade
4461	Retail	Retail trade
4471	Retail	Retail trade
4481	Retail	Retail trade
4482	Retail	Retail trade
4483	Retail	Retail trade
4511	Music	Musical Inst. Mfg. & Sales
4511	Retail	Retail trade
4512	Retail	Retail trade
4521	Retail	Retail trade
4529	Retail	Retail trade
4531	Retail	Retail trade
4532	Retail	Retail trade
4533	Retail	Retail trade
4539	Retail	Retail trade
4541	ICT	Internet
4541	Retail	Non-store retail
4542	Retail	Non-store retail
4543	Retail	Non-store retail
4811	Basic Industries	Transport
4812	Basic Industries	Transport
4821	Basic Industries	Transport
4831	Basic Industries	Transport
4831	Maritime	Transport
4832	Basic Industries	Transport
4832	Maritime	Transport
4841	Basic Industries	Transport
4842	Basic Industries	Transport
4843	Basic Industries	Transport

<b>NAICS</b>	<b>Cluster</b>	<b>Sub-Cluster</b>
4881	Basic Industries	Transport
4882	Basic Industries	Transport
4883	Basic Industries	Transport
4885	Basic Industries	Transport
5111	Basic Industries	Printing and Publishing
5112	ICT	Computers and Software
5121	Film	Motion Picture/Video
5121	Film	Teleproduction/Postproduction
5122	Music	Recording and Production
5161	ICT	Internet
5171	Basic Industries	Communications
5171	ICT	Telecommunications
5172	Basic Industries	Communications
5172	ICT	Telecommunications
5173	Basic Industries	Communications
5173	ICT	Telecommunications
5174	Basic Industries	Communications
5174	ICT	Telecommunications
5175	Basic Industries	Communications
5175	ICT	Telecommunications
5179	Basic Industries	Communications
5179	ICT	Telecommunications
5181	ICT	Internet
5182	ICT	Computers and Software
5311	Sustainable Building	Real Estate
5312	Sustainable Building	Real Estate
5313	Sustainable Building	Real Estate
5324	Maritime	Transport
5413	Sustainable Building	Engineering/Architecture
5415	ICT	Computers and Software
5417	Biotech	Biotechnology
5491	Film	Commercial Photography
5617	Sustainable Building	Engineering/Architecture
6116	Music	Fine Arts Schools
6211	Healthcare	Ambulatory
6212	Healthcare	Ambulatory
6213	Healthcare	Ambulatory
6214	Healthcare	Ambulatory
6215	Healthcare	Ambulatory
6215	Healthcare	Services and support
6219	Healthcare	Ambulatory
6221	Healthcare	Hospitals
6222	Healthcare	Hospitals
6223	Healthcare	Hospitals
6231	Healthcare	Nursing & residential care
6232	Healthcare	Nursing & residential care
6233	Healthcare	Nursing & residential care

<b>NAICS</b>	<b>Cluster</b>	<b>Sub-Cluster</b>
6239	Healthcare	Nursing & residential care
7111	Music	Performers
7211	Tourism	Accommodation
7212	Tourism	Accommodation
7213	Tourism	Accommodation
7221	Retail	Dining and Drinking
7221	Tourism	Food Service/Drinking Places
7222	Retail	Dining and Drinking
7222	Tourism	Food Service/Drinking Places
7223	Retail	Dining and Drinking
7223	Tourism	Food Service/Drinking Places
7224	Retail	Dining and Drinking
7224	Tourism	Food Service/Drinking Places