



# Regional Needs Analysis Report

**2011**

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# Regional Needs Analysis Report

## Table of Contents

Executive Summary .....	i
Introduction.....	1
New degree program approval.....	3
Relationship to other reports.....	3
Definition of Regions Used in Analysis .....	3
Higher Education Participation and Growth.....	4
Factors Driving Increased Student Demand Statewide .....	4
Statewide Enrollments and Degree Production Capacity .....	6
State Economic Development Priorities .....	20
Methodology for Identifying High Skill/Demand/Wage Occupations .....	21
Use of Self-Sufficiency Wages.....	21
Use of EMSI Forecasts .....	22
Identification of Demand/Supply Gaps in 2009 Joint Report.....	23
Regional Demand Summary: Top High Employer Demand Occupations .....	25
Central and Southeast Region.....	27
King Region .....	36
Northwest Region–Olympic Sub-Region .....	45
Northwest Region–Balance of Region.....	54
Pierce Region .....	62
Snohomish Region .....	70
South Sound to Coast Region .....	78
Southwest Region .....	86
Spokane and Northeast Region.....	94
Concluding Analysis.....	103
Appendix A: Higher Education Regions by County.....	105
Appendix B: State-Level High Employer Demand Occupations by Education and Training Requirements .....	106





March 2011

## **Regional Needs Analysis Report**

### **Executive Summary**

The Higher Education Coordinating Board (HECB) is required to develop a comprehensive and ongoing needs assessment process to analyze demand for additional degrees and programs [RCW 28B.76.230 (1)].

This report fulfills a portion of that mandate by focusing on employer demand on the regional level, but also includes additional information on forecast student demand and statewide employer demand.

The HECB also is required to determine whether certain major lines of study or types of degrees, including applied degrees or research-oriented degrees, shall be assigned uniquely to some institutions or institutional sectors in order to create centers of excellence that focus resources and expertise [RCW 28B.76.230 (4)]. This determination will rely on the needs assessment, the institutional program review process, and the fit between academic programs and institutional role and mission.

This report divides the state into eight higher education regions and looks at the enrollment and degree production capacity in each. It also identifies high employer demand occupations based on forecast new and replacement job openings between 2010 and 2020.

No attempt is made to match regional supply by field of study with forecast demand by occupation to identify regional gaps, as supply is assessed by the HECB on a statewide basis and not at the sub-state region level. This is because workers and students frequently travel long distances for jobs and education opportunities. Institutions are in the best position to identify regional supply gaps, in consultation with local employers and agencies.

Some of the findings of this report are:

- **College participation rates vary widely across the state.** Higher college participation rates are found in counties where institutions (especially institutions with resident students) are located.
- **The distribution of 2-year and 4-year capacity in each region varies widely.** One region has majority 4-year capacity, and some regions have virtually no 4-year capacity.
- **Higher education capacity is highly concentrated in King County, and to a lesser degree in Spokane and Pullman.** This is especially true for graduate-level capacity. Demographic, policy, and economic factors described in this report are all underscoring the need to expand higher education capacity outside of these regions.
- **Registered nurses, teachers, and business, management, and accounting occupations all appear near the top of each region's list of high-wage, high-demand occupations requiring postsecondary education.**
- **Institutions should focus on occupations that offer both high wages and either high job growth rates or total job openings when identifying programs for expansion.** A focus on wage levels will maximize the local economic development impact of education investments.

A new feature of this report is that information is presented about the wage levels for each occupation. Median wages for each occupation are compared to the self-sufficiency wage levels for three different family types in each region to guide institutions toward focusing on occupations that promote economic self-sufficiency.



March 2011

## Regional Needs Analysis Report

### Introduction

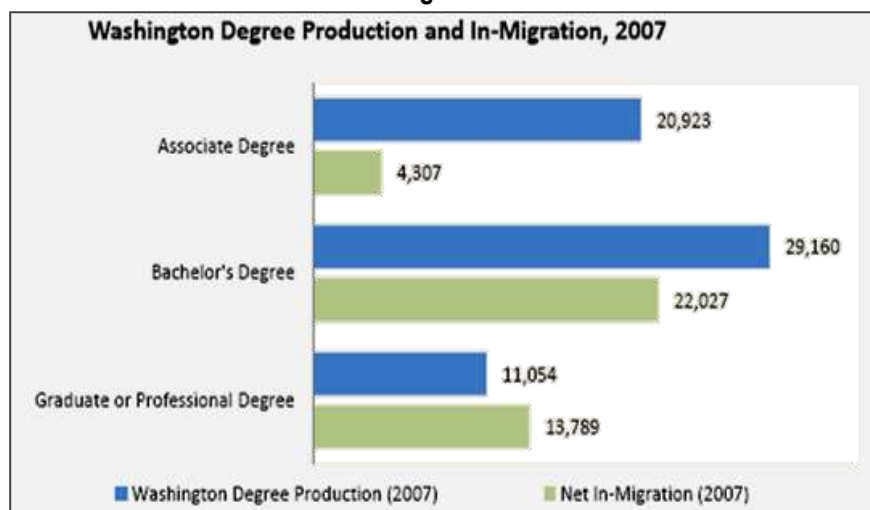
Employer demand for workers with postsecondary degrees and certificates is continuing to rise, and Washington's capacity to innovate is increasingly dependent on its employer's ability to find highly skilled talent. Population growth continues to drive up student demand and the need to increase enrollment capacity.

In the state's *Strategic Master Plan for Higher Education*, the HECB identified the policy goal of increasing higher education participation and degree attainment among young adults, which also will put upward pressure on enrollment capacity.

As we establish plans to grow higher education in Washington to meet student and employer demand and achieve our policy goals, it is important that we focus that growth on high employer demand fields of study – so our state may achieve the maximum benefit from additional public investment in system capacity.

Existing employer demand appears to be out of synch with current degree production in Washington. In 2007, Washington imported from other states and nations almost as many baccalaureate degree holders to work in the state as the total number of degrees it awarded. It imported more graduate degree holders than it produced. Inadequate degree production levels, and/or production of degrees not in demand by employers, are possible explanations for this extraordinary level of in-migration of highly-educated workers.

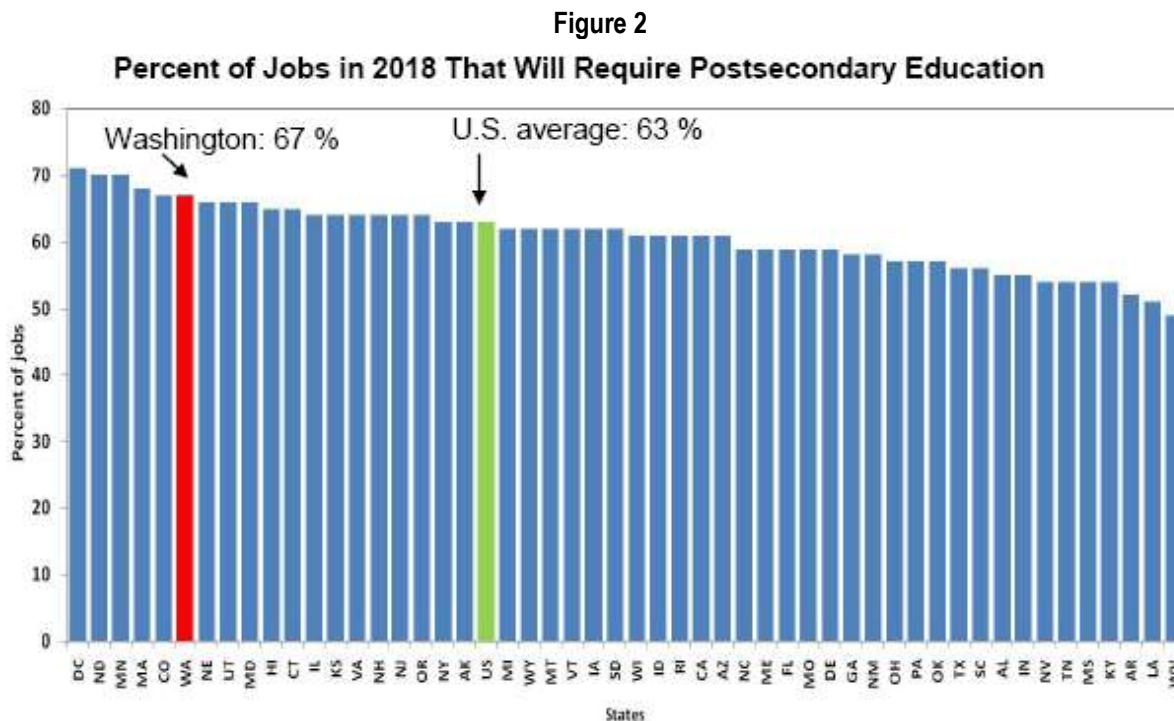
Figure 1



Source: HECB calculation based on NCHEMS analysis of Net In-migration and Postsecondary Education Opportunity compilation of state degree award data from IPEDS.

Recent forecasts of future employer demand show that about two-thirds of all job openings in Washington between now and 2018 will require some postsecondary education. About 20 percent will require some college but no degree. About 47 percent will require an Associate degree or higher.

The forecast for job openings at the graduate level exceeds Washington's 2009 graduate degree production level by 25 percent, even without taking into account the many graduate degree recipients who leave Washington after receiving their degree to take jobs elsewhere.<sup>1</sup>



Source: Projections of Jobs and Education Requirements through 2018, Georgetown University Center on Education and the Workforce (2010). <http://www9.georgetown.edu/grad/qppi/hpi/cew/pdfs/State-LevelAnalysis-web.pdf>.

The HECB is required to develop a comprehensive and ongoing needs assessment process to analyze the demand for additional degrees and programs, additional off-campus centers and sites for degree programs, and consolidation or elimination of programs by the four-year institutions [RCW 28B.76.230 (1)].

The legislation states that “as part of the needs assessment process, the HECB will examine projections of student, employer, and community demand for higher education and academic degrees, including liberal arts degrees, on a regional and statewide basis.” This report focuses primarily on employer demand on the regional level, but also includes additional information on forecast student demand and statewide employer demand.

<sup>1</sup> Carnevale, A.P., et. al., (2010). *Help Wanted: Projections of Jobs and Education Requirements Through 2018*, Georgetown University Center on Education and the Workforce, Washington, D.C. Also, additional data provided to the HECB by the Georgetown Center.



The HECB also is required to determine whether certain major lines of study or types of degrees, including applied degrees or research-oriented degrees, shall be assigned uniquely to some institutions or institutional sectors in order to create centers of excellence that focus resources and expertise [RCW 28B.76.230 (4)]. This determination will rely on the needs assessment, the institutional program review process, and the fit between academic programs and institutional role and mission.

### **New degree program approval**

The HECB considers employer, student, and community demand in its process for approving new degree programs at public 4-year institutions. This report is an important resource that higher education institutions should use when making their case for degree program approval. A full description of degree approval procedures and guidelines, as well as additional resources for documenting demand, can be found on the HECB website.<sup>2</sup>

### **Relationship to other reports**

The best source for information on employer demand for degrees and certificates in Washington on a statewide basis is the joint agency (Higher Education Coordinating Board, State Board for Community and Technical Colleges, and Workforce Training and Education Coordinating Board), report *A Skilled and Educated Workforce*, which was released in 2009, and is scheduled to be updated in 2011.

This report identifies statewide gaps between forecast employer demand and the supply of workers to fill this demand generated by our state's education and training institutions. The supply analysis is based on in-state degree and certificate production, discounted to allow for students that receive degrees but do not directly enter the Washington workforce.

This and other important sources of information regarding employer demand for degrees and certificates on the state and regional level are available on the HECB website.<sup>3</sup>

### **Definition of Regions Used in Analysis**

The HECB has identified eight higher education regions in Washington for the purpose of regional economic and demand analysis. The regions are comprised of one or more counties and have contiguous boundaries.

King, Pierce, and Snohomish Counties are single county regions, the rest are comprised of multiple counties. The Northwest region includes northern Puget Sound counties and the Olympic Peninsula. Because of its geographic separation, an Olympic sub-region is identified and some of the analysis in this report breaks out this sub-region. A listing of the counties in each region can be found in Appendix A.

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<sup>2</sup> See [www.hecb.wa.gov/autheval/dpr/dprindex.asp](http://www.hecb.wa.gov/autheval/dpr/dprindex.asp).

<sup>3</sup> See [www.hecb.wa.gov/research/Issues/NeedsAssessment.asp](http://www.hecb.wa.gov/research/Issues/NeedsAssessment.asp).

## Higher Education Participation and Growth

### Factors Driving Increased Student Demand Statewide

There are several factors that will be putting upward pressure on student demand for access to higher education over the next 10 years. These include:

- **Federal policy, programs, and incentives to increase degree attainment.** President Obama has established an education goals of making the United States the best educated nation in the world by 2020, and increasing baccalaureate degree production by 60 percent.
- **State policy**, as described in the HECB *Strategic Master Plan*<sup>4</sup> to increase annual degree and certificate production by 40 percent by 2018, and improve degree attainment among young adults age 25-34.
- **A growing state population and a growing economy** that requires more degreed workers.

### Policy Factors

Looking out to 2030, the combination of the state policy goals and the demographic trends results in system expansion that needs to create 31,000 additional degrees and certificates. Reaching the federal goals could add some additional demand.

**Table 1**  
Degree Production Projections through 2030

Level	Population Growth	Policy Growth	Total
Mid-level	5,100	5,200	10,300
Baccalaureate	2,600	7,900	11,400
Graduate	1,600	7,700	9,300
<b>Total</b>	<b>9,300</b>	<b>20,800</b>	<b>31,000</b>

Source: Higher Education Coordinating Board (2009), *The System Design Plan: A Statewide Plan for Moving the Blue Arrow*, see <http://www.hecb.wa.gov/research/issues/SystemDesignStudy.asp>.

Where might all these additional students come from? Some directly from high school, and adults who have stopped-out of higher education but may not have very far to go to achieve a bachelor's degree. Over the next 10 years, the pool of these potential degree-holders is likely to increase with population growth.

**Table 2**  
Target Groups of Potential Students

Potential Bachelor's Degree Graduates	2006-07 completers (rounded)	% of completers who do <i>not</i> continue to the next level	Potential additional students who may continue
High school graduates*	65,300	43%	28,100
GED completers	16,600	61%	10,100
Private vocational school degrees	12,700	n/a**	**
Technical degrees	7,350	87%	6,400
Transfer associate degrees	12,500	29%	3,600
<b>Total</b>	<b>114,450</b>		<b>48,200</b>

\*Total Graduates and estimated potential based on percentage of respondents who reported continuation to college.

\*\*Continuation Data for Private Career School Graduates is not currently available.

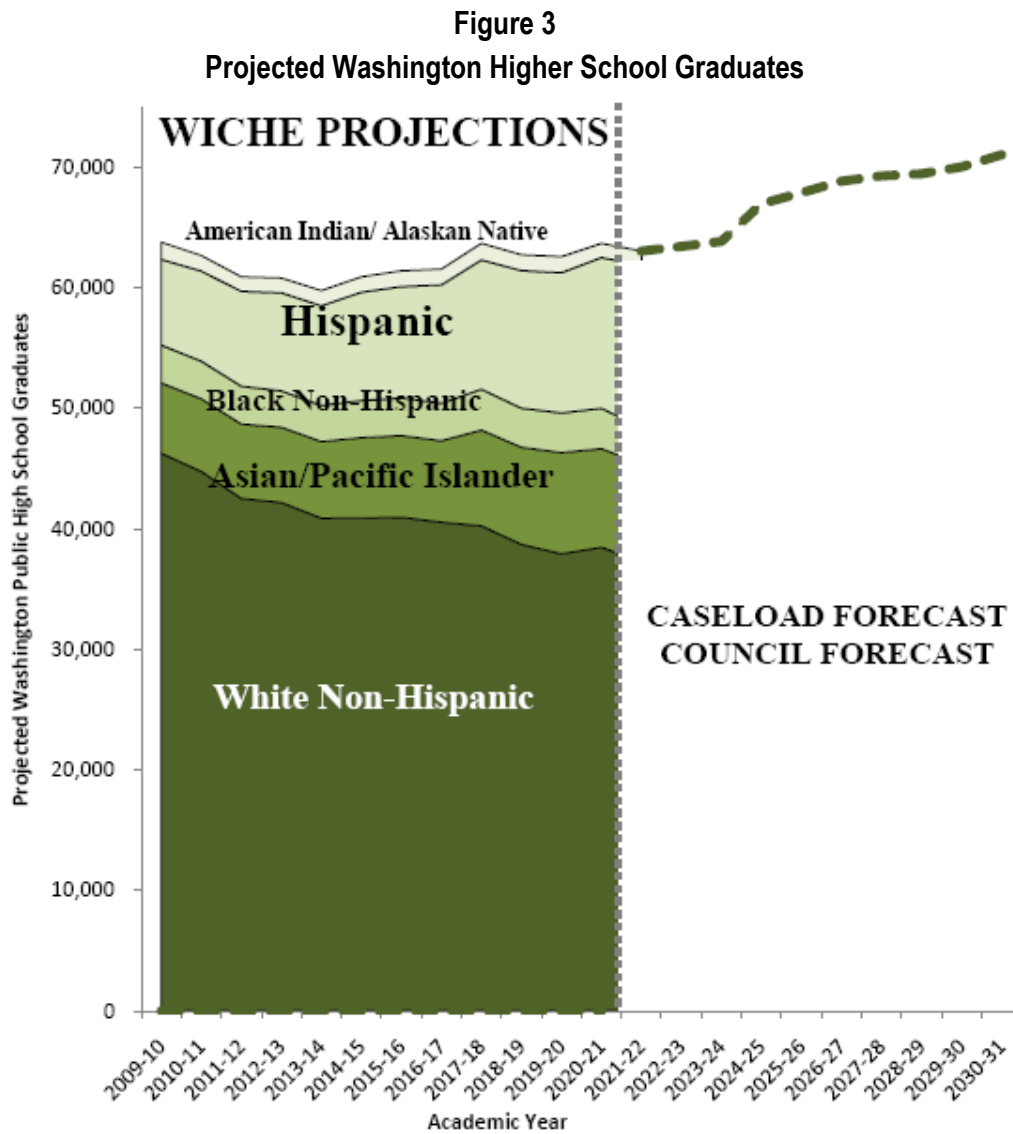
Sources: Office of the Superintendent of Public Instruction 2007 Graduate Follow-up Study (SESRC); State Board for Community and Technical Colleges (SBCTC) GED testing data; SBCTC Completions Files.

<sup>4</sup> See [www.hecb.wa.gov/research/masterplans/masterplansindex.asp](http://www.hecb.wa.gov/research/masterplans/masterplansindex.asp)

**Demographic Factors**

One of the biggest challenges we face in reaching our policy goals is demographic. Student groups with the lowest historic higher education participation rates (especially Hispanic and Pacific Islander students) are precisely the groups that are forecast to grow the fastest in our state.

Increasing overall education attainment rates will not be possible if we do not succeed in raising higher education participation among these groups. The forecast projections are summarized in the Figure 3.



Source: WICHE projections from *Knock, Knock Who's There. Findings from WICHE's Projections of High School Graduates by State and Race/Ethnicity*. Caseload Forecast Council forecasts are HECB calculations of high school graduates based on the Caseload Forecast Council's grade 12 case load forecasts.

### *Economic Factors*

The next table shows where the forecast growth in employment requiring postsecondary degrees is likely to occur based on EMSI employment forecasts. The table compares forecast job openings with current employment levels by region. The forecast predicts wider dispersion of jobs requiring postsecondary education beyond King County.

Currently, 46 percent of all jobs in Washington requiring postsecondary education are in King County, but the forecast is for only 41 percent of job openings to occur there. Pierce County has 8 percent of the current jobs, but 10 percent of the forecast job openings.

**Table 3**  
**New and Replacement Job Openings, by Region**  
**Requiring Postsecondary Education, 2010-2020**

Region	New and Replacement Job Openings 2010-2020	Job Openings % of Total	2009 Jobs % of Total
Central & Southeast	62,238	11%	10%
King	241,120	41%	46%
Northwest	62,733	11%	9%
Pierce	56,833	10%	8%
Snohomish	48,770	8%	8%
South Sound	28,401	5%	5%
Southwest	38,722	7%	6%
Spokane	48,130	8%	8%
<b>Washington</b>	<b>586,947</b>	<b>100%</b>	<b>100%</b>

Source: EMSI Complete Employment – 3<sup>rd</sup> Quarter 2010. (Percentages rounded)

Note: Data is for jobs requiring postsecondary education only.

### **Statewide Enrollments and Degree Production Capacity**

Table 4 shows fall 2009 enrollment by higher education region for degree-granting institutions, public and private, based on the location of the home campus of each institution. Off-campus teaching sites are not allocated to the appropriate region in this analysis due to data limitations.

The 2-year/4-year ratio in enrollment capacity varies considerably by region. The Central/Southeast region is the only region in which the 4-year undergraduate enrollments exceed the 2-year public enrollments.

Snohomish County has the lowest enrollment capacity with 4-year enrollments totaling only a small fraction of 2-year enrollments in the county. It also has the lowest capacity, based on its population, of any region. Even if you included some of the capacity at the nearby institutions in north King County that many Snohomish County residents attend, Snohomish County would still have the very low capacity based on its share of the population.

The Southwest region also shows up as under-capacity in relation to population, but these numbers do not include students who are enrolled in Oregon institutions.

Table 4

Region	Fall 2009 Enrollment in Washington, by Region					Enrollment % of Total	2010 18-64 Pop.
	2-year	4-year	Undergrad Total	Graduate	Total Enrollment		
Central and Southeast	25,065	37,555	62,620	5,995	68,615	15%	11%
King	92,231	53,597	145,828	22,791	168,619	38%	30%
Northwest-Peninsula	12,920		12,920		12,920	3%	12%
Northwest-Balance	17,267	13,500	30,767	1,179	31,946	7%	
Pierce	36,601	9,209	45,810	1,226	47,036	10%	12%
Snohomish	24,370	1,342	25,712		25,712	6%	11%
South Sound to Coast	14,863	5,910	20,773	653	21,426	5%	6%
Southwest	21,640	2,899	24,539	535	25,074	6%	8%
Spokane and Northeast	24,377	18,559	42,936	5,188	48,124	11%	9%
<b>Grand Total</b>	<b>269,334</b>	<b>142,571</b>	<b>411,905</b>	<b>37,567</b>	<b>449,472</b>	<b>100%</b>	<b>100%</b>

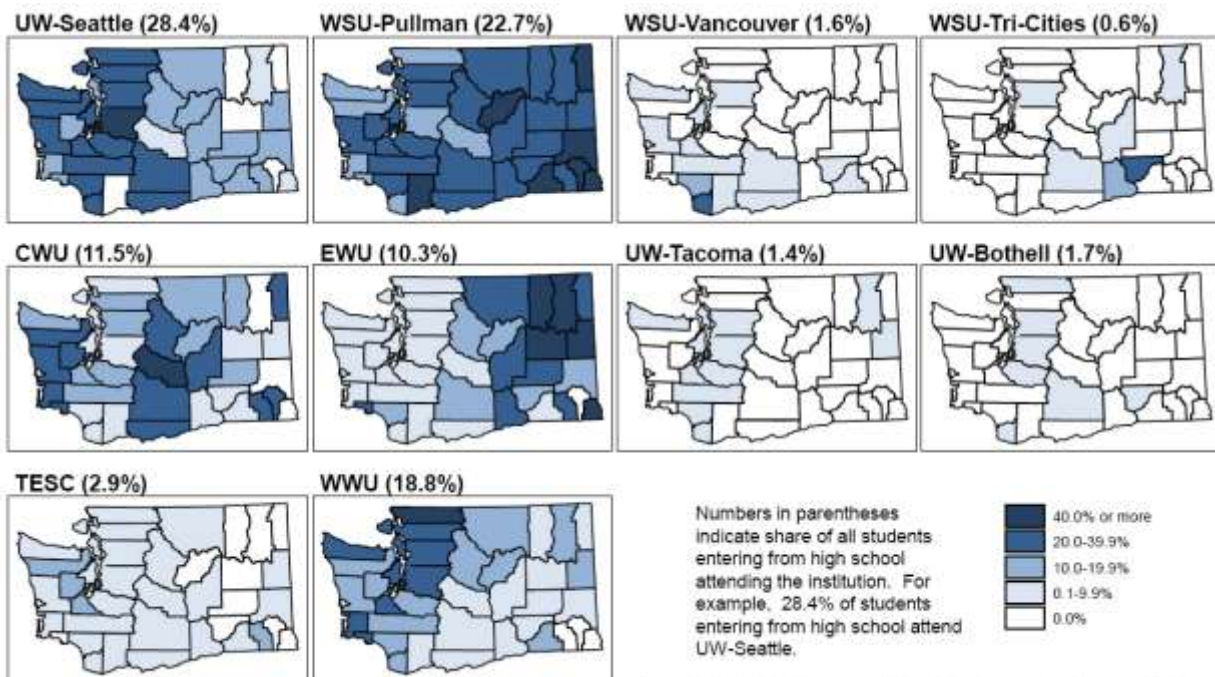
Sources: HECB compilation of NCES IPEDS data, OFM Higher Education Enrollment Reports, SBCTC Enrollment and Staffing Report and OFM Washington State Population Projections. Note: Title IV-eligible, degree-granting institutions only.

**Place-bound Students**

Figure 4 shows that, especially for high school students, place matters. Students tend to enroll in colleges and universities that are nearby. Not surprisingly, UW, WSU, and TESC have the most geographically diverse attendance patterns, but the branch campuses and regional institutions tend to draw more heavily from the counties in or close to where they are located.

To the extent that students find themselves place bound with regard to their college choices, they also may be more likely to seek employment locally after college. This is why regional employer demand is so important for institutions that draw their students from the local community in which they are situated.

**Figure 4**  
**Share of County Students Entering from High School Enrolled, Fall 2008**



Source: Fall 2008 Public Centralized Higher Education Enrollment System (PCHEES) Main campus numbers include enrollment at centers.

**Public-Private Mix**

The next table shows how dependent the state is on its public institutions for total degree production capacity. The bachelor's and Master's levels are the only levels where private institutions have degree production capacity that is comparable to the public sector.

Since private institutions receive most of their revenue through student tuition, they may be more inclined than public institutions to orient their program mix around student interest rather than employer demand for specific degrees.

**Table 5**  
**Degrees Awarded in Washington by Sector and Level, 2008-09**

Degrees Awarded in Washington by Sector and Level, 2008-09						
Education Sector	Associate degree	Bachelor's degree	Master's degree	First-Professional degree	Doctorate degree	Total
Public 4-Year Institutions	0	22,963	4,772	684	878	29,297
Private 4-Year Institutions	690	8,561	4,328	78	31	13,688
Public 2-Year Institutions	21,083	36	0	0	0	21,119
Private 2-Year Institutions	85	0	0	0	0	85
<b>Total Washington*</b>	<b>21,858</b>	<b>31,560</b>	<b>9,100</b>	<b>762</b>	<b>909</b>	<b>64,189</b>

\* Degree-granting institutions eligible to receive federal financial aid and are required to report data to IPEDS.

Source: HECB from IPEDS data.

**New Student Enrollment**

Review of OFM Higher Education Enrollment Reports shows how different Washington's public 4-year higher education institutions are from one another with regard to the type of students they serve and where their students come from. The table below shows wide variability among the different types of new students.

**Table 6**  
**Fall 2009 new Undergraduate Student Enrollments**

Fall 2009 New Undergraduate Student Enrollments												
	UW Seattle	UW Bothell	UW Tacoma	WSU Pullman	WSU Spokane	WSU Tri- Cities	WSU Vancouver	Central WA U.	Eastern WA U.	Evergreen State	Western WA U.	Total
<b>Total New Students</b>	8,583	789	861	5,866	283	482	931	3,138	2,964	1,561	3,951	29,409
Washington High School	33%	28%	15%	43%	0%	19%	16%	48%	38%	18%	51%	37%
WA HS Running Start	10%	6%	4%	5%	0%	3%	3%	0%	7%	4%	11%	7%
Out of State High School	12%	1%	1%	8%	0%	2%	1%	1%	3%	17%	6%	7%
Washington Transfers	17%	42%	62%	28%	79%	61%	57%	39%	38%	41%	25%	30%
From 2 YR College	13%	35%	52%	19%	27%	46%	47%	34%	24%	30%	17%	22%
From 4 YR College	3%	8%	10%	9%	52%	16%	11%	6%	13%	11%	8%	8%
Out of State Transfers	29%	22%	19%	14%	20%	12%	20%	0%	10%	21%	5%	16%
Unknown Source	0%	0%	0%	2%	1%	3%	4%	12%	3%	0%	2%	2%
<b>Non-Continuing Former Students ("stop-outs")</b>	2,486	335	306	581	65	120	205	235	230	85	266	4,914
as % of New Students	29%	42%	36%	10%	23%	25%	22%	7%	8%	5%	7%	17%

Source: OFM, Higher Education Enrollment Reports, Fall 2009



For example, the percentage of new students whose last education institution was a Washington high school varies from a high of 51 percent at Western Washington University to a low of 15 percent at UW-Tacoma. Community college transfer students make up the majority of new students there.

Transfer students make up a much higher portion of the new student population at the UW and WSU branch campuses, than at the other institutions. Overall, the system serves primarily Washington students. About three-fourths of all new enrollments came from Washington high schools or transfers from other Washington institutions. The rest came from out of state.

Similar data for graduate and first-professional students also show interesting differences between the institutions. The UW campuses and WSU Pullman are far more likely to accept out of state students into the graduate programs than the other institutions. The UW campuses and WSU Tri-Cities show high levels of non-continuing former students in their graduate programs compared to other institutions (this may be a result of a reporting inconsistency between the institutions). UW-Seattle's first-professional programs (law, medicine) serve a high percentage of UW graduates.

**Table 7a**  
**Fall 2009 New Graduate Student Enrollments**

Fall 2009 New Graduate Student Enrollments												
Graduate	UW Seattle	UW Bothell	UW Tacoma	WSU Pullman	WSU Spokane	WSU Tri-Cities	WSU Vancouver	Central WA U.	Eastern WA U.	Evergreen State	Western WA U.	Total
<b>Total New Students</b>	1,557	92	80	578	117	73	104	181	378	130	267	3,557
Washington Transfers	11%	27%	45%	35%	61%	71%	50%	51%	74%	76%	67%	36%
From 2 YR College	0%	0%	0%	0%	0%	1%	2%	28%	4%	0%	3%	2%
From 4 YR College	11%	27%	45%	35%	61%	70%	48%	23%	70%	76%	64%	33%
Out of State Transfers	89%	73%	55%	65%	39%	29%	50%	1%	25%	24%	31%	62%
Unknown Source	0%	0%	0%	0%	0%	0%	0%	48%	0%	0%	1%	3%
<b>Non-Continuing Former Students ("stop-outs")</b>	866	106	153	112	35	44	46	0	0	0	15	1,377
as % of New Students	56%	115%	191%	19%	30%	60%	44%	0%	0%	0%	6%	39%

Source: OFM, Higher Education Enrollment Reports, Fall 2009

**Table 7b**  
**Fall 2009 New First-Professional Student Enrollments**

Fall 2009 New First-Professional Student Enrollments				
Professional	UW Seattle	WSU Pullman	WSU Spokane	Total
<b>Total New Students</b>	238	151	21	410
Washington Transfers	23%	47%	100%	100%
From 2 YR College	1%	8%	0%	36%
From 4 YR College	22%	39%	100%	3%
Out of State Transfers	77%	53%	0%	32%
Unknown Source	0%	0%	0%	64%
<b>Non-Continuing Former Students ("stop-outs")</b>	193	5	1	199
as % of New Students	81%	3%	5%	49%

Source: OFM, Higher Education Enrollment Reports, Fall 2009

### *Operating Capacity*

Currently, public undergraduate institutions are substantially over-enrolled. This means they are serving more students than they are receiving institutional support from the state to serve. The public community and technical colleges, as a group, are nearly 16 percent over-enrolled, and the public baccalaureate institutions are more than 11 percent over-enrolled.

As Table 8 indicates, the branch campuses and The Evergreen State College remain considerably smaller than the other public 4-year institutions. Capacity in the CTC system is about 60 percent greater than public 4-year undergraduate capacity.

In fall 2009, 22 percent of new undergraduate enrollments at the public 4-year institutions were transfers from public 2-year colleges. The ability of the public 4-year institutions to accept community college transfer students is limited its relatively smaller size.

**Table 8**  
**Washington Public Undergraduate Enrollment Levels in 2010-11**

Institution/System	2010-11 Projected Annual Average FTE	State-Funded FTE	Percent Over- Enrolled
<b>All Public 4-Year Institutions</b>	<b>103,338</b>	<b>92,929</b>	<b>11.2%</b>
UW-Seattle	36,863	32,703	12.7%
UW-Bothell	2,780	2,045	35.9%
UW-Tacoma	2,845	2,414	17.9%
WSU-Pullman/Spokane	20,660	19,272	7.2%
WSU-Tri-Cities	1,137	865	31.4%
WSU-Vancouver	2,387	2,113	13.0%
Central Washington University	9,821	8,808	11.5%
Eastern Washington University	9,662	8,734	10.6%
The Evergreen State College	4,504	4,213	6.9%
Western Washington University	12,674	11,762	7.8%
<b>Community and Technical Colleges - Adult Students</b>	<b>165,431</b>	<b>143,046</b>	<b>15.7%</b>

Source: OFM Budget Driver Report, Fall 2010

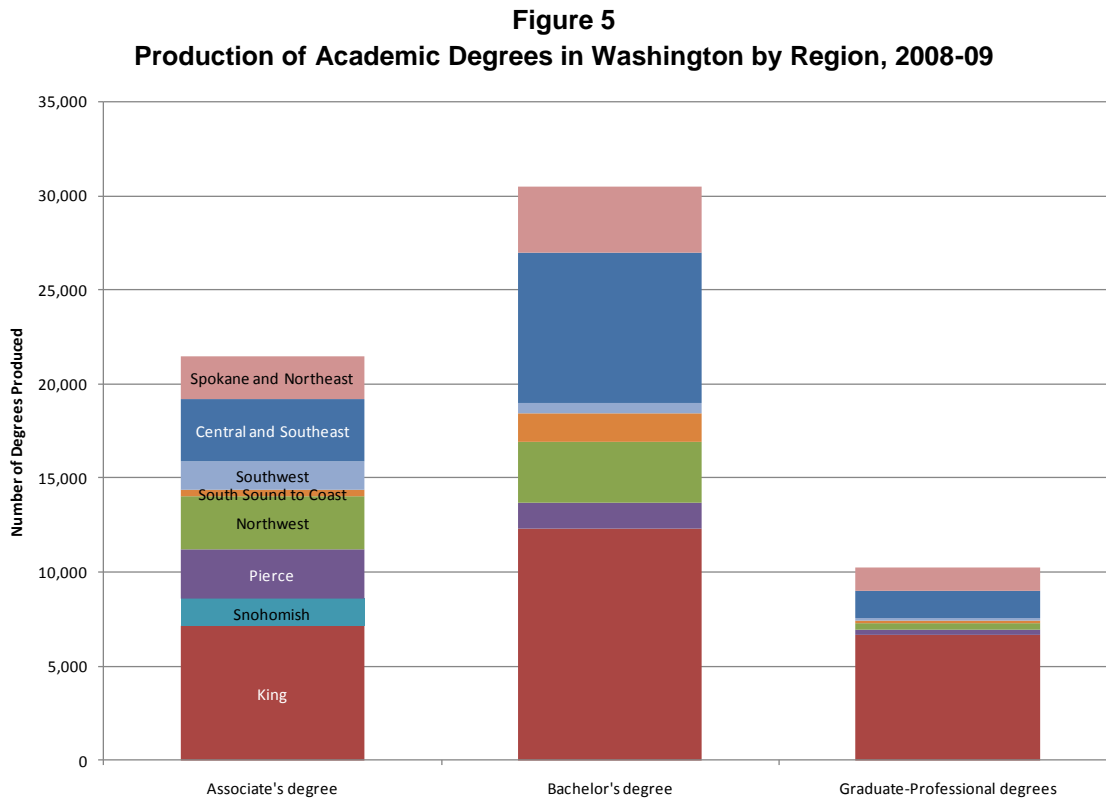
### *Degree Production by Region*

Figure 5 shows the public and private degree production capacity at each education level, by higher education region (see Appendix A). In this chart, branch campus degrees show up in the region where they are located.

Degrees awarded at University Centers (typically co-located on community college campuses) are attributed to the home campus region. The King and Central and Southeast regions, which host the UW and WSU main campuses, produce the largest share of baccalaureate and above academic degrees.



The distribution of Associate degree production capacity is more evenly distributed than the other two levels. Graduate capacity is the most concentrated, with most degrees conferred by UW and WSU.



Source: HECB analysis of IPEDS data, WSU institutional research reports (<http://ir.wsu.edu/Degrees>).

Tables 9a & 9b and subsequent chart (Figure 6), attempt to match 2009 degree production by region with 2009 employment by region and education requirements (based on Bureau of Labor Statistics entry training levels). The results are interesting in that they identify areas of the state where degree production capacity is out of synch with the location of jobs requiring that level of education.

- For associate degrees, King County and the South Sound to Coast region have insufficient capacity to support their share of employment at that level.
- For Bachelor's degrees, the central Puget Sound counties have insufficient capacity.
- For Master's degrees, the Northwest, Pierce, Snohomish, South Sound to Coast, and Southwest regions have insufficient capacity.
- For first-professional degrees and doctorates, all regions have insufficient capacity except Central and Southeast and King (WSU and UW).
- With regard to total degree production capacity, the Snohomish, South Sound to Coast, and Southwest region have the largest capacity deficits in comparison to current and forecast job openings.

The chart shows these distributions graphically. It is striking that the state's graduate-level capacity is so concentrated at UW and WSU, when demand for this level of skills is much more evenly distributed across the state.

**Table 9a**  
**Degrees Awarded in Washington by Region and Level, 2008-09**

Region	Associate's degree			Bachelor's degree			Master's degree			First-Professional degree	Doctorate degree			Regional Total		
	2008-09 Degrees	2009 Degrees	% of Total	2008-09 Degrees	2009 Degrees	% of Total	2008-09 Degrees	2009 Degrees	% of Total		2008-09 Degrees	2009 Degrees	% of Total			
Central and Southeast	3,277	15%	11%	7,954	26%	10%	1,063	12%	9%	180	24%	9%	190	21%	11%	<b>12,664</b>
King	7,127	33%	43%	12,276	40%	48%	5,364	63%	45%	571	75%	45%	710	78%	38%	<b>26,048</b>
Northwest	2,829	13%	9%	3,243	11%	9%	350	4%	9%	0	0%	10%	0	0%	10%	<b>6,422</b>
Pierce	2,637	12%	10%	1,433	5%	7%	260	3%	9%	0	0%	9%	0	0%	11%	<b>4,330</b>
Snohomish	1,466	7%	7%	0	0%	9%	0	0%	6%	0	0%	7%	0	0%	7%	<b>1,466</b>
South Sound to Coast	311	1%	4%	1,459	5%	5%	177	2%	5%	0	0%	5%	0	0%	7%	<b>1,947</b>
Southwest	1,543	7%	6%	605	2%	5%	116	1%	5%	0	0%	6%	4	0%	5%	<b>2,268</b>
Spokane and Northeast	2,292	11%	10%	3,513	12%	7%	1,216	14%	12%	11	1%	8%	1	0%	10%	<b>7,033</b>
<b>Washington Total</b>	<b>21,482</b>	<b>100%</b>	<b>100%</b>	<b>30,483</b>	<b>100%</b>	<b>100%</b>	<b>8,546</b>	<b>100%</b>	<b>100%</b>	<b>762</b>	<b>100%</b>	<b>100%</b>	<b>905</b>	<b>100%</b>	<b>100%</b>	<b>62,178</b>

Note: Degrees earned on line and at university centers and other off-campus locations are attributed to the home campus region. University of Phoenix campuses and small private institutions not included. Jobs percentages are the share of all Washington jobs requiring the specified level of education that are located in the region.

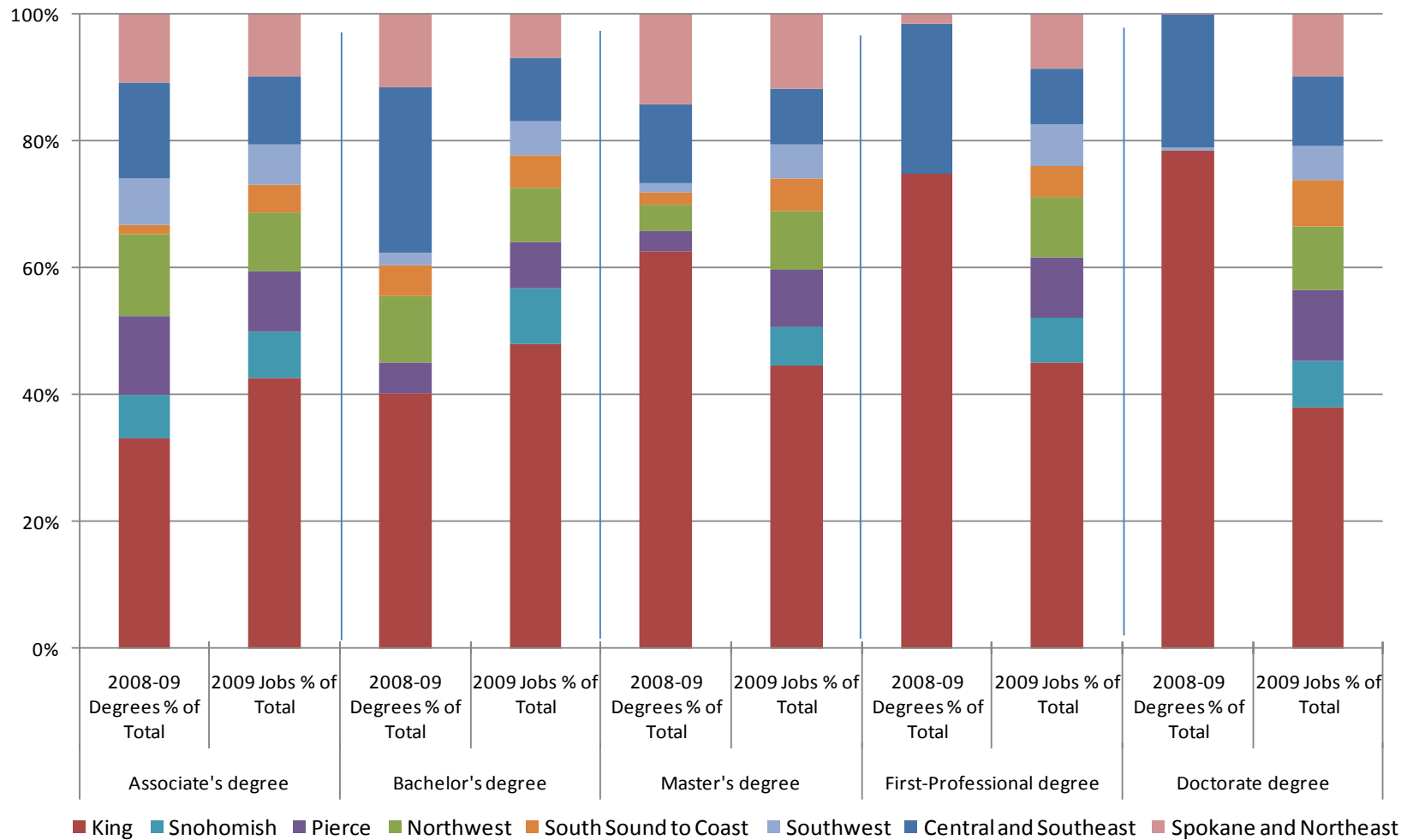
Source: HECB analysis of IPEDS data, WSU institutional research reports (<http://ir.wsu.edu/Degrees>) and employment data from EMSI, Inc.

**Table 9b**  
**Degree Production, Current, and Forecast Job Openings, by Region**

Region	2008-09 Degrees % of Total	2009 Jobs % of Total	2010-2020 Job Openings % of Total
Central and Southeast	20%	10%	11%
King	42%	46%	41%
Northwest	10%	9%	11%
Pierce	7%	8%	10%
Snohomish	2%	8%	8%
South Sound to Coast	3%	5%	5%
Southwest	4%	6%	7%
Spokane and Northeast	11%	8%	8%
<b>Washington Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: HECB analysis of IPEDS data, WSU institutional research reports (<http://ir.wsu.edu/Degrees>) and employment data from EMSI, Inc.

**Figure 6**  
**Comparison of Degree Production and Employment by Region and Degree Type in Washington, 2008-09**



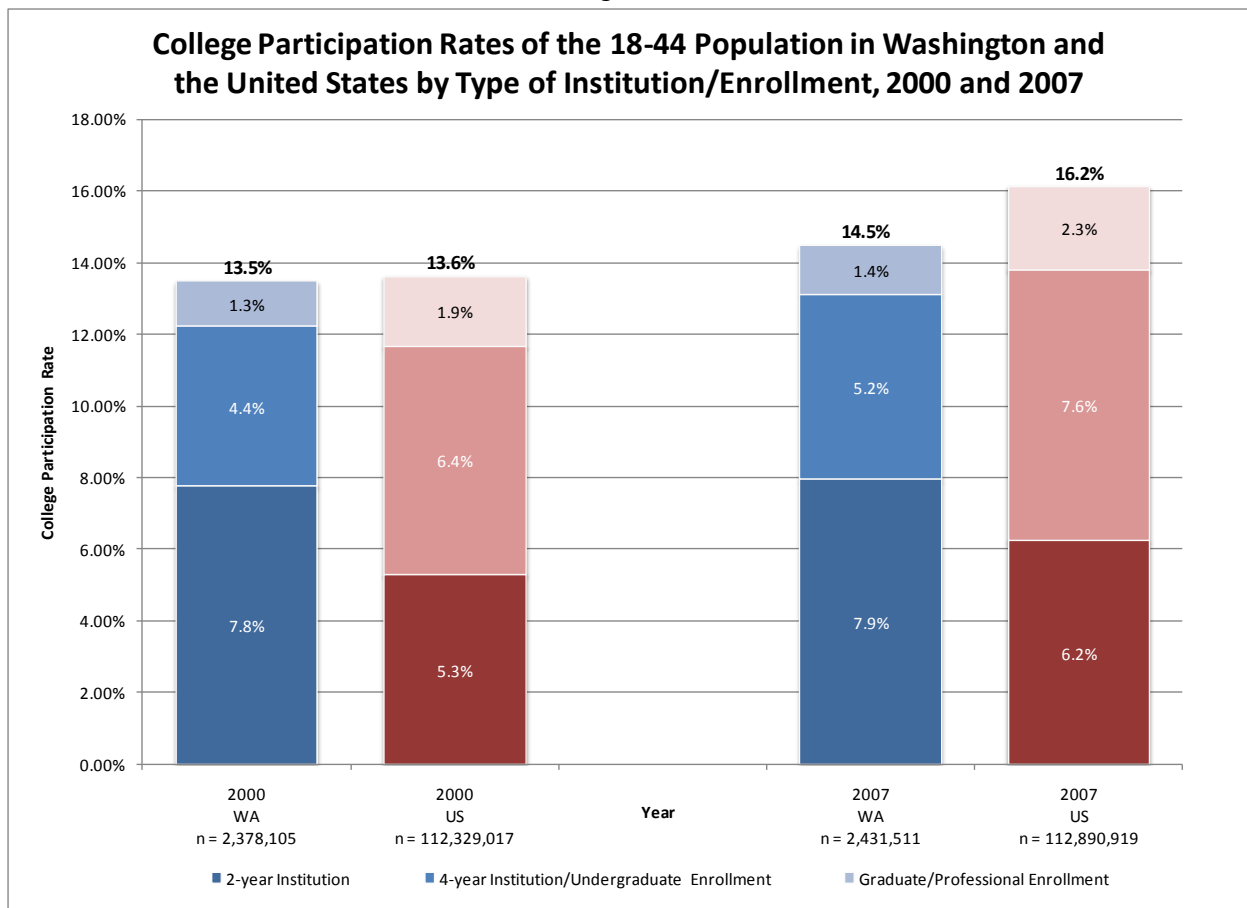
Source: HECB analysis of IPEDS data, WSU institutional research reports (<http://ir.wsu.edu/Degrees>) and employment data from EMSI, Inc.

**Participation Rates**

Depending on what and how you measure it, Washington’s higher education participation rate is generally low, compared to the nation as a whole. For example, the college continuation rate, the percentage of students who go on to college the fall after graduating from high school was about 51 percent in 2008, giving Washington a ranking of 46<sup>th</sup> among states in this statistic and well below the national average.<sup>5</sup> The overall 18-24 college participation rate is 30 percent giving the state a ranking of 47<sup>th</sup>. However, Washington is right about at the national average in higher education participation rates of adult students 25-49 years old (2009).<sup>6</sup>

Figure 7 shows overall, Washington’s total participation rate is slipping in comparison to the national rate. Participation at 2-year colleges is higher than the national rate, but participation at the baccalaureate and graduate levels is much lower than national rates. Of course, this is mitigated somewhat by the fact that unlike other states, our state relies heavily on community colleges to augment the lower division of its baccalaureate capacity.

**Figure 7**



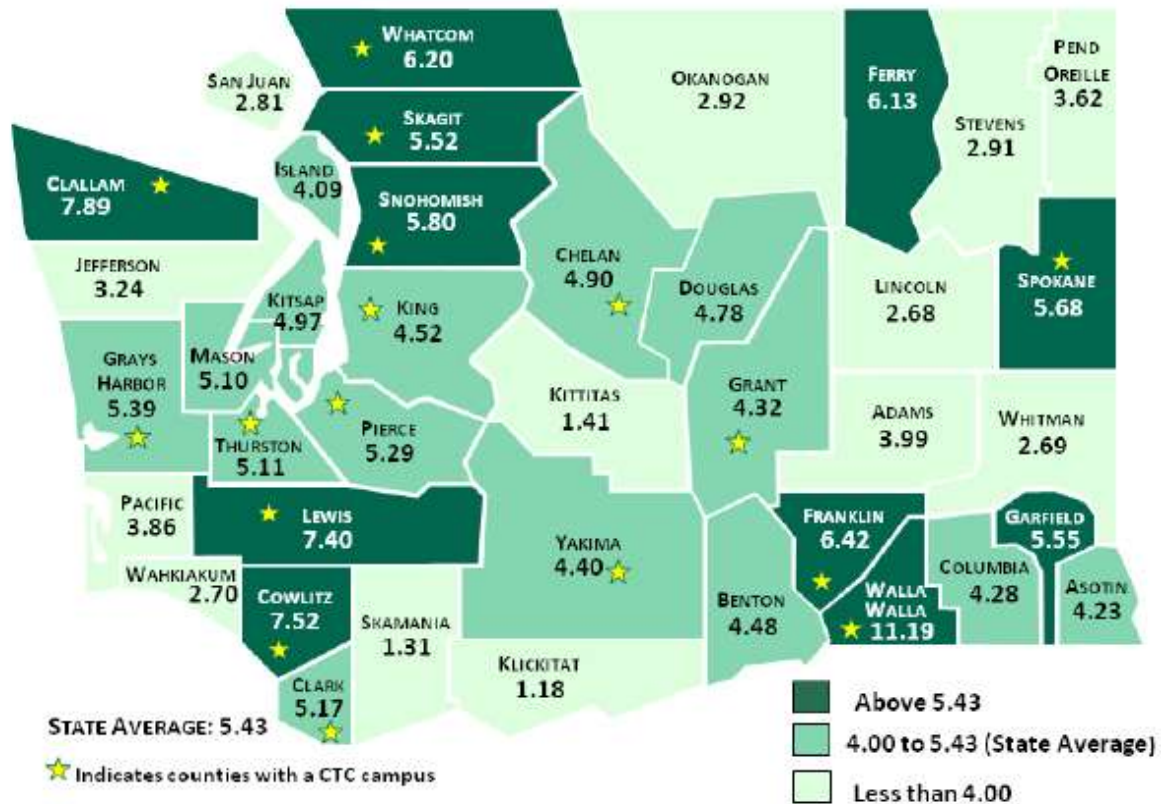
<sup>5</sup> Mortensen, Tom, Post-Secondary Opportunity (2010). See <http://www.postsecondary.org/spreadslist.asp>.

<sup>6</sup> NCHEMS Information Center, see <http://www.higheredinfo.org/dbrowser/index.php?measure=104> and <http://www.higheredinfo.org/dbrowser/index.php?measure=105>.

Higher education participation rates vary substantially across the state. They tend to be lowest in the parts of the state where there are few or no institutions – the southwestern coastal counties and the north central and northeastern counties.

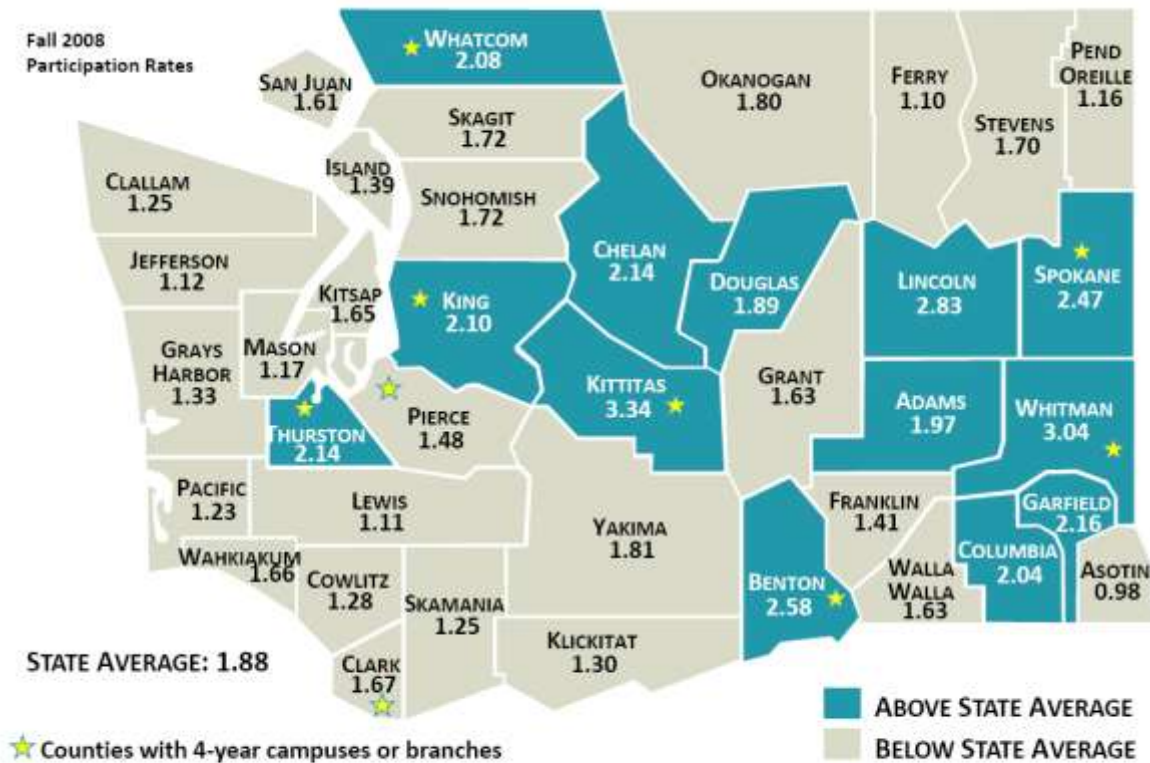
All of the counties where an institution is present have participation rates at or above the state average, with two exceptions, Pierce County and Clark County for bachelor’s degrees (Clark County’s participation rate would be higher if enrollment in Oregon institutions were included in the analysis).

**Figure 8**  
**Community and Technical College Participation Rates**  
**by County, Percent of Population 17-64, Fall 2009**



Sources: State Board for Community and Technical College’s Management Information System Reports; Office of Financial Management’s county population estimates.

**Figure 9**  
**Baccalaureate Participation Rates by County,**  
**Percent of Population 17-64, Fall 2008**



Sources: OFM Higher Education Enrollment Reports (HEER), OFM County Population Estimates.

***Educational Attainment of the Not Enrolled Population***

The HECB looked at Census data to zero in on who is not enrolled in each region by looking at the 17-44 population by education attainment level. The results of that analysis are found in Table 10 below. The data show 1.8 million Washington residents in this age bracket not enrolled in college. This number does not include residents who do not have a high school diploma or are currently enrolled in high school.

We can consider this the total number of primary targets for further education in college, recognizing that about one-fourth of graduate students in Washington are age 45 or older and would not be included in this total. The total also does not include adults without a high school diploma who would be appropriate targets for college adult basic education and workforce education programs. Nearly 60 percent of the target population are residents of Snohomish, King, or Pierce Counties.

The composition of the not enrolled population varies substantially by region. In King County, a not enrolled resident is much more likely to hold a Bachelor's or Masters degree than in the other regions. In the Central and Southeast region, the not enrolled resident is much more likely to have a high school diploma or some college than in the other regions.

Similarly, there is substantial variation by region in the percentage of each region's population by education level that is not enrolled. For example, on the Olympic Peninsula, about half of the residents with a high school diploma or some college are not enrolled in college, but in Snohomish County 79 percent of these residents are not enrolled.

**Table 10**  
**17-44 Population by Education Attainment Level Who Are Not Enrolled in College, 2009**

Higher Education Region	HS/Some College	Associate Degree	Bachelors Degree	Masters Degree	Graduate Degree	Total
	No Degree					
Central and Southeast	115,140	16,230	23,221	7,551	3,501	<b>165,643</b>
<i>% of Total Not Enrolled</i>	70%	10%	14%	5%	2%	100%
<i>% of Pop. Ed. Level Not Enrolled</i>	57%	71%	79%	84%	95%	76%
King	243,938	50,178	201,373	62,839	26,349	<b>584,677</b>
<i>% of Total Not Enrolled</i>	42%	9%	34%	11%	5%	100%
<i>% of Pop. Ed. Level Not Enrolled</i>	67%	77%	88%	89%	91%	83%
NW Olympic	54,501	8,883	11,367	3,301	1,366	<b>79,418</b>
<i>% of Total Not Enrolled</i>	69%	11%	14%	4%	2%	100%
<i>% of Pop. Ed. Level Not Enrolled</i>	49%	68%	79%	82%	94%	72%
NW Balance	76,125	12,391	19,329	4,581	1,512	<b>113,938</b>
<i>% of Total Not Enrolled</i>	67%	11%	17%	4%	1%	100%
<i>% of Pop. Ed. Level Not Enrolled</i>	82%	82%	92%	93%	95%	88%
Pierce	157,749	24,555	33,831	8,417	3,207	<b>227,759</b>
<i>% of Total Not Enrolled</i>	69%	11%	15%	4%	1%	100%
<i>% of Pop. Ed. Level Not Enrolled</i>	76%	79%	86%	88%	85%	85%
Snohomish	123,437	22,315	42,284	9,854	3,301	<b>201,191</b>
<i>% of Total Not Enrolled</i>	61%	11%	21%	5%	2%	100%
<i>% of Pop. Ed. Level Not Enrolled</i>	79%	81%	90%	91%	94%	87%
South Sound to Coast	70,575	10,069	16,333	5,302	1,800	<b>104,079</b>
<i>% of Total Not Enrolled</i>	68%	10%	16%	5%	2%	100%
<i>% of Pop. Ed. Level Not Enrolled</i>	76%	76%	87%	92%	93%	85%
Southwest	98,831	15,759	24,754	6,828	2,170	<b>148,342</b>
<i>% of Total Not Enrolled</i>	67%	11%	17%	5%	1%	100%
<i>% of Pop. Ed. Level Not Enrolled</i>	77%	83%	90%	92%	95%	87%
Spokane and Northeast	103,612	19,505	26,464	7,591	2,818	<b>159,990</b>
<i>% of Total Not Enrolled</i>	65%	12%	17%	5%	2%	100%
<i>% of Pop. Ed. Level Not Enrolled</i>	68%	79%	83%	87%	91%	81%
<b>Total</b>	<b>1,043,908</b>	<b>179,885</b>	<b>398,956</b>	<b>116,264</b>	<b>46,024</b>	<b>1,785,037</b>
<i>% of Total Not Enrolled</i>	58%	10%	22%	7%	3%	100%
<i>% of Pop. Ed. Level Not Enrolled</i>	70%	78%	87%	89%	92%	83%

Source: HECB analysis of Census ACS data, 2005-2009 data set.

Note: Population age 17-44 in each region with less than a high school diploma or who are enrolled in high school are not included.

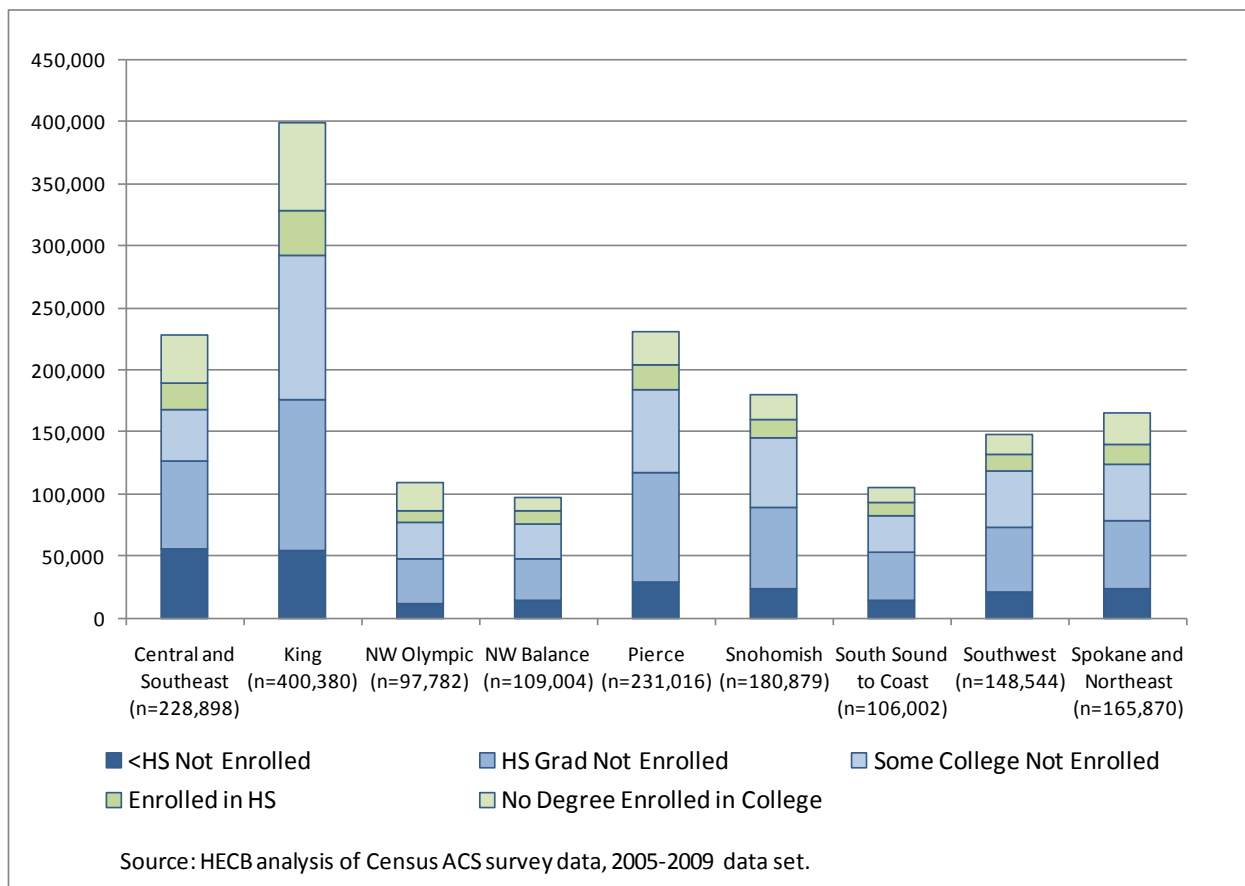


The figures below focus on the 17-44 population by region that does not currently hold a college degree (the first column in the table above, this time separating out the population with less than a high school diploma from the some college no degree group).

The non-degree holders are separated into five unique groups corresponding to their educational attainment level and school enrollment status (high school or college) — less than high school and not enrolled in school, high school diploma and not enrolled in school, some college and not enrolled in school, enrolled in high school, and enrolled in college (but not holding a degree).

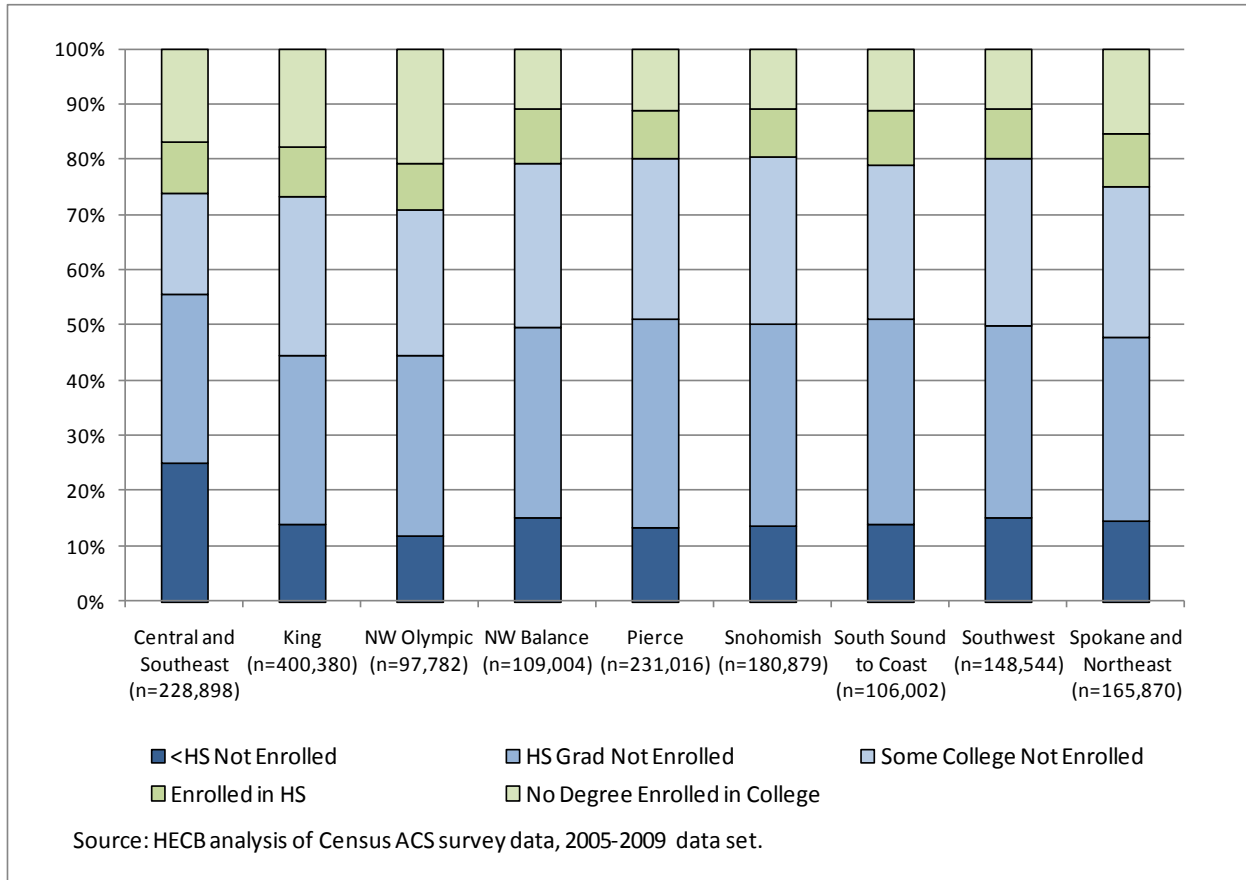
The first chart (Tab110a) shows the absolute size of these groups for each region, the second shows their relative size as a percentage of the 17-44 population in each region that does not hold a college degree.

**Table 10a**  
**17-44 Population without College Degrees by**  
**School Enrollment Status and Education Attainment Level, 2009**





**Table 10b**  
**17-44 Population without College Degrees by**  
**College Enrollment Status and Education Attainment Level, 2009**



Overall, the largest numbers of non-degree holders are in the King, Pierce, and Central and Southeast regions. In most regions, high school graduates not enrolled in school make up the largest share of the age cohort. Non-high school graduates are a larger share of the Central and Southeast region’s non-degree holding 17-44 population than the other regions.

## State Economic Development Priorities

One of Washington's primary economic development strategies is based on support and development of technology-based industry clusters. Industry clusters are locally-based regional innovation ecosystems comprised of researchers, companies, economic development councils, education organizations, funders, and governments.

Toward that end, the Department of Commerce has designated **Innovation Partnership Zones** that are required to have linkages with research and education institutions.

- **Bellingham** - [Waterfront Innovation Zone](#) (Port of Bellingham) - For low-wake, fast ferry vessel prototypes, hydroscience and engineering and design, wake wash energy studies, advanced composite and aluminum alloy techniques.
- **Bothell** - [Bothell Biomedical Manufacturing Corridor](#) (City of Bothell) - For the establishment of a University of Washington Biotechnology and Biomedical Technology Institute, principally to support medical device/ultra-sound manufacturing.
- **Ellensburg** - Central Washington Resource Energy Collaborative (Economic Development Group of Kittitas County) - For the development of renewable energy technologies, particularly wind and solar.
- **Everett** - Aerospace Convergence Zone (Workforce Development Council Snohomish County) - For research in new materials and processes for aircraft production.
- **Grays Harbor** - [Grays Harbor Sustainable Industries Innovation Partnership Zone](#) (Port of Grays Harbor) - For research and development of bioenergy, bio-based product manufacturing, particularly high-value byproducts from bio-based energy production.
- **Pullman** - [Pullman Innovation Partnership Zone](#) (Port of Whitman County) - For clean information technology and datacenter technologies, such as energy efficient technologies, and power and cooling infrastructure.
- **Seattle** - South Lake Union Global Health Innovation Partnership Zone (City of Seattle) - For research, development and commercialization of global health technologies.
- **Sequim** - North Olympic Innovation Partnership Zone (Clallam Economic Development Council) - For marine biotechnology, coastal assessment and restoration, forecasting stressors on marine and estuarine systems.
- **Spokane** - [Spokane University District Innovation Partnership Zone](#) (Greater Spokane Inc.) - For biomedical research such as computational biology, bioinformatics, systems biology, epigenetics, genomics, chromosomal biology, and drug discovery.
- **Richland** - [Tri-Cities Innovation Zone](#) (Port of Benton) - For research in sustainable development, with focus on integrated electrical-thermal production, solar dish generating systems, and commercial-scale fuel cells.
- **Vancouver** - [Discovery Corridor Innovation Zone/Steinmueller Innovation Park](#) (Columbia River Economic Development Council) - For semiconductor and micro-device design, IC manufacturing and processing, display technology and multimedia.
- **Walla Walla** - Walla Walla Valley Innovation Partnership Zone (City of Walla Walla) - For agricultural innovation with a focus on enology/viticulture and water/environmental studies.

In 2010, Governor Gregoire announced the Washington Export Initiative to complement President Obama's National Export Initiative. Washington announced a series of strategies and investments it would be undertaking to increase the number of exporting companies in Washington by 30 percent within five years – helping 5,000 businesses to achieve \$600 million in new export sales.

The emphasis on exports is designed to increase company revenues and wealth creation by bringing extra-regional dollars into the Washington economy.<sup>7</sup>

## Methodology for Identifying High Skill/Demand/Wage Occupations

### Use of Self-Sufficiency Wages

In 2009, the Workforce Development Council of Seattle-King County commissioned a self-sufficiency wage study by Diana Pearce, Director of the Center for Women's Welfare (CWW) at the University of Washington School of Social Work.<sup>8</sup>

The purpose of the study was to determine how much income is enough to allow for economic self-sufficiency. Static charts listing family size and various percentages of the HHS Federal Poverty Level are not helpful in this regard. They fail to account for differences in consumer prices and social program eligibility guidelines that change on a county by county basis.

The CWW self-sufficiency wage is a much more dynamic and locally-specific model for determining what level of income is required for economic self-sufficiency. Unlike poverty-level standards, the self-sufficiency wage is market-based, includes costs incurred by working adults, varies costs by local area, accounts for family composition and age, and includes taxes and tax credits.

Because the self-sufficiency wage is such a powerful and useful policy tool, the HECB decided to incorporate self-sufficiency wage information into the analysis of high demand occupations in this report. This information will allow higher education institutions to focus on high employer demand fields of study that offer wages in their local area that promote family economic self-sufficiency.

The self-sufficiency wage reported by CWW is an annual level of income. Since the occupational data available is expressed as a median hourly wage, the annual self-sufficiency wage was converted into an hourly wage by simply dividing by 52 weeks and then 40 hours of work per week.

In the analysis that follows, three common family types were presented: (1 adult and 1 preschool child; 1 adult); (1 preschool child, and 1 school age child; and 2 adults); (1 preschool child and 1 school age child). The two-adult self-sufficiency wage was then divided by two to indicate the amount that each parent would need to earn to achieve family self-sufficiency.

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<sup>7</sup> See [www.governor.wa.gov/news/news-view.asp?pressRelease=1517&newsType=1](http://www.governor.wa.gov/news/news-view.asp?pressRelease=1517&newsType=1).

<sup>8</sup> See [www.selfsufficiencystandard.org/docs/Washington2009.pdf](http://www.selfsufficiencystandard.org/docs/Washington2009.pdf). Additional information on self-sufficiency wages is available at [www.selfsufficiencystandard.org/standard.html](http://www.selfsufficiencystandard.org/standard.html). Detailed data by family type and Washington county/region can be found at [www.selfsufficiencystandard.org/docs/WA2009%20All%20Families.xls](http://www.selfsufficiencystandard.org/docs/WA2009%20All%20Families.xls).

The county with the lowest self-sufficiency wage that was used in the median wage comparisons are highlighted (see discussion below in Section 6) and the self-sufficiency wages used in each regional analysis are summarized in Table 11.

Table 11

Self-Sufficiency Wage Standards by Region			
Region	1 Adult 1 Preschooler	1 Adult 1 Preschooler 1 Schoolage	2 Adults 1 Preschooler 1 Schoolage (each adult)
Central & East	\$13.06	\$15.32	\$9.38
King	\$19.42	\$24.12	\$13.06
Northwest	\$17.26	\$19.96	\$11.55
Olympic	\$14.84	\$18.13	\$10.80
Pierce	\$18.55	\$22.53	\$12.94
Snohomish	\$20.01	\$24.46	\$13.92
South Sound	\$13.55	\$15.66	\$9.70
Southwest	\$12.33	\$14.10	\$8.87
Spokane	\$12.62	\$15.40	\$9.49
Washington Avg. Area	\$15.80	\$18.99	\$11.20

Note: Region standards are the lowest county/area standard comprising the region.  
Washington standards are the average of all county/area standards for that family size.  
The two adults standard represents one-half of the hourly wage needed to support a family of that size.

### Use of EMSI Forecasts

The HECB used data from EMSI, (Economic Modeling Specialists, Inc.) for the occupational forecast employment data in this report. EMSI was used because it is more complete than using a single source and the data is easily aggregated by higher education region. Unlike other publicly available forecasts, EMSI attempts to capture sole proprietors and self-employed workers. Self-employment and proprietorship is important for analysis of employment patterns at higher levels of worker education.

EMSI's occupation data are based on EMSI's industry data and regional staffing patterns taken from the Occupational Employment Statistics program (U.S. Bureau of Labor Statistics). Wage information is partially derived from the American Community Survey.

The industry data upon which the occupation data is based combines covered employment data from Quarterly Census of Employment and Wages produced by the Department of Labor with total employment data in Regional Economic Information System published by the Bureau of Economic Analysis, augmented with County Business Patterns and Non-employer Statistics published by the U.S. Census Bureau.

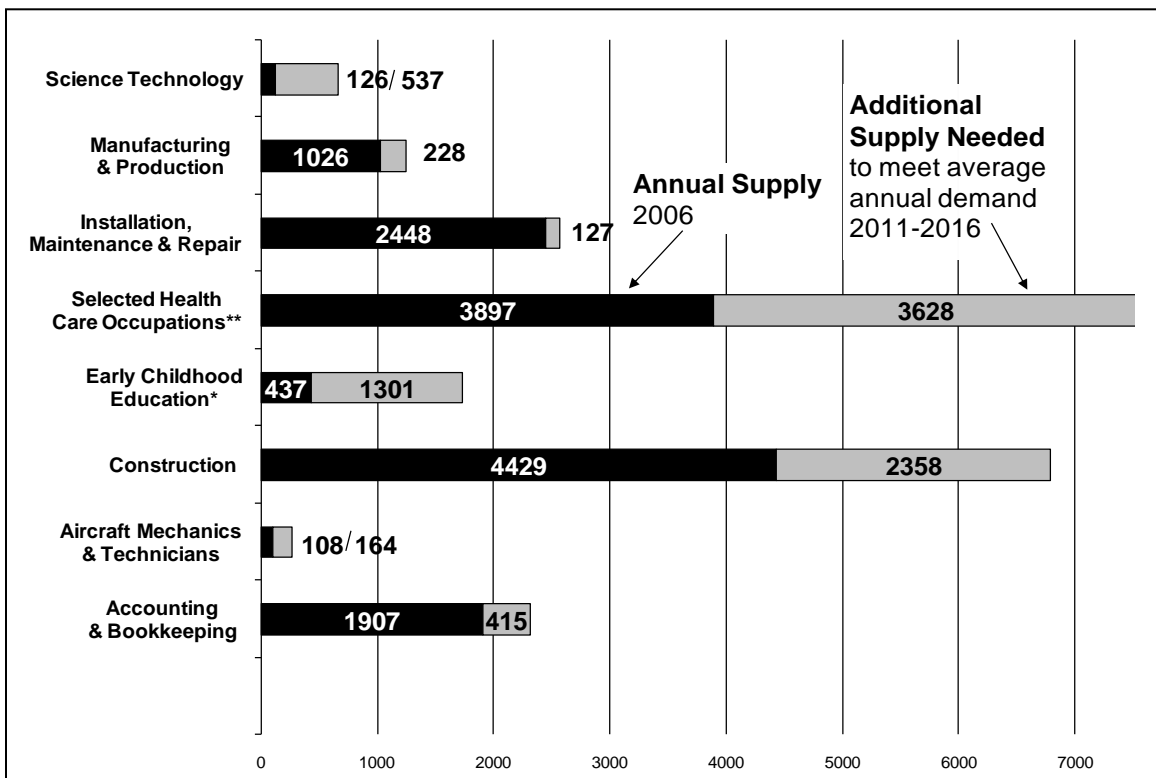
Projections are based on the latest available EMSI industry data, 15-year past local trends in each industry, growth rates in statewide and sub-state area industry projections published by the Washington Employment Security Department, and growth rates in national projections from the Bureau of Labor Statistics.

### Identification of Demand/Supply Gaps in 2009 Joint Report

The 2009 joint agency report on statewide supply/demand gaps identified occupations where the supply of workers coming out of Washington’s higher education system was substantially less than employer demand.

This gap analysis was done at the mid-level (occupations requiring more than high school but less than a baccalaureate degree) and at the baccalaureate level and above. The occupations with the largest gaps were science technology occupations, health occupations, early childhood education, and construction (at the mid-level), and computer science and engineering occupations at the baccalaureate level and above.

**Figure 11**  
**High Demand Programs of Study and Supply Gaps at the Mid-Level**

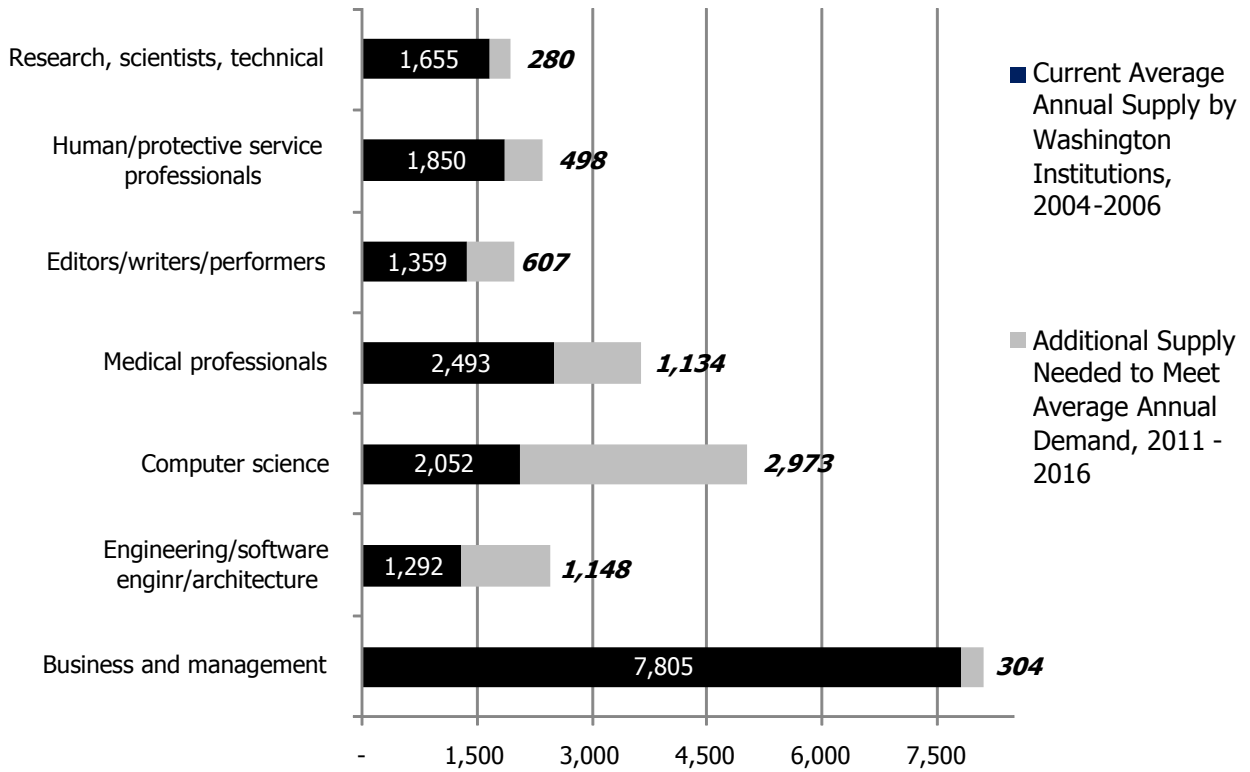


\*Data from 2007 analysis of Health Care Occupations

\*\*Calculation of additional supply needed derived from 2009-2014 workforce gap analysis forecast

Source: WTECB 2009 Major Occupation Group Supply and Demand Analysis

**Figure 12**  
**Comparison of Current Supply with Future Demand for**  
**Baccalaureate and Graduate Degrees**



**Source:** Openings: Washington ESD June 2008 Long Term Employment Forecast

**Supply:** HECB Analysis of IPEDS data. Current supply is a 3 year average of degree awards, 2006-2008 adjusted for entry into the labor market.

## Regional Demand Summary: Top High Employer Demand Occupations

Table 12, on the next page, shows the top 10 occupations in each higher education region by total job openings. Only occupations that require postsecondary education or apprenticeship, and that offer median wages that exceed the self-sufficiency wage for all three family types, are indicated in the table. **The table also shows the top 10 occupations for the state as a whole based on education requirements.**

Near the top of each region's list are registered nurses and elementary school teachers. Registered nurses are in high demand due to both forecast employment growth in employment (25 percent growth between 2010 and 2020) and high levels of attrition due to an aging nursing workforce. The EMSI forecast is for more than 23,000 registered nurse job openings statewide over this 10 year period. The potential exists for policy changes associated with health care reform legislation to substantially increase demand for nurses above forecast levels.

The total number of elementary school teachers is forecast to grow by 13 percent by 2020, due primarily to population growth and replacement job openings. Total job openings over the 10 year period will exceed 10,000. Most of the job openings will replace teachers leaving their positions due to high turnover and retirements.

The three shaded columns on the right side of the table show the highest employer demand occupations statewide, by education level. At the mid-level are nurses, carpenters, and computer support specialists. At the baccalaureate level are business and financial services occupations, sole proprietors, computer specialists and teachers. At the graduate level are postsecondary instructors, medical professionals, lawyers, and scientists.

More detailed information about state-level high demand occupations by education and training requirement level can be found in the tables in Appendix B. Because students are so mobile and move to go to school and to take jobs across regions, no attempt is made to assess the supply of workers in relation to demand, and to identify supply gaps at the regional level.

Not all of these high demand occupations are appropriate candidates for program expansion, and further analysis of supply is essential to determine if there is a supply shortage in these fields. Furthermore, many academic programs are focused on satisfying statewide and multi-state demand for a particular occupation, and not on satisfying regional demand.

The forthcoming update of the joint agency report (due in 2011) will attempt to quantify these supply gaps on a statewide basis.

**Table 12**  
**Top Self-Sufficiency Wage Occupations Requiring Postsecondary Education (by Total Job Openings)**  
**by Region and Statewide Degree Level, 2010-2020**

Top Self-Sufficiency Wage Occupations Requiring Post-Secondary Education (by Total Job Openings) by Region and Statewide Degree Level, 2010-2020												
Rank (by Job Openings)	Central and Southeast	King	Northwest-Olympic	Northwest-Balance	Pierce	Snohomish	South Sound	Southwest	Spokane and Northeast	Washington Mid-Level	Washington Baccalaureate	Washington Graduate
1	Farm, ranch, and other ag. managers	Registered nurses	Registered nurses	Registered nurses	Registered nurses	Registered nurses	Registered nurses	Registered nurses	Registered nurses	Registered nurses	Management analysts	Postsecondary teachers
2	Registered nurses	Management analysts	Elementary school teachers, except special education	Elementary school teachers, except special education	Elementary school teachers, except special education	Elementary school teachers, except special education	Chief executives and sole proprietors	Chief executives and sole proprietors	Accountants and auditors	Carpenters	Accountants and auditors	Physicians and surgeons
3	Elementary school teachers, except special education	Computer software engineers, applications	Business operation specialists, all other	Postsecondary teachers	Physicians and surgeons	General and operations managers	Accountants and auditors	Accountants and auditors	Postsecondary teachers	Computer support specialists	Chief executives and sole proprietors	Lawyers
4	Accountants and auditors	Accountants and auditors	Fire fighters	General and operations managers	Electricians	Business operation specialists, all other	Management analysts	Elementary school teachers, except special education	Elementary school teachers, except special education	Licensed practical and vocational nurses	Elementary school teachers, except special education	Medical scientists, except epidemiologists
5	Chief executives or sole proprietors	Network systems and data comm. analysts	Teachers and instructors, all other	Secondary school teachers, except special and vocational education	Carpenters	Postsecondary teachers	General and operations managers	Medical secretaries	Chief executives and sole proprietors	Electricians	Securities, commodities, and financial services sales agents	Pharmacists
6	Postsecondary teachers	Chief executives or sole proprietors	Electricians	Farm, ranch, and other agricultural managers	Postsecondary teachers	Fire fighters	Elementary school teachers, except special education	General and operations managers	Farm, ranch, and other ag. managers	Fire fighters	Business operation specialists, all other	Clinical, counseling, and school psychologists
7	Civil engineers	Business operation specialists, all other	Carpenters	Physicians and surgeons	Business operation specialists, all other	Network systems and data comm. analysts	Network and computer systems administrators	Management analysts	Licensed practical and vocational nurses	Automotive service technicians and mechanics	General and operations managers	Physical therapists
8	Teachers and instructors, all other	Computer software engineers, systems software	Secondary school teachers, except special and vocational education	Fire fighters	General and operations managers	Aerospace engineers	Medical secretaries	Physicians and surgeons	Teachers and instructors, all other	Computer specialists, all other	Computer software engineers, applications	Educational, vocational, and school counselors
9	Carpenters	Securities, commodities, and financial services sales agents	Lawyers	Electricians	Secondary school teachers, except special and vocational education	Secondary school teachers, except special and vocational education	Computer software engineers, systems software	Postsecondary teachers	Insurance sales agents	Police and sheriff's patrol officers	Network systems and data comm. analysts	Environmental scientists and specialists, including health
10	General and operations managers	Market research analysts	Postsecondary teachers	Compliance officers, except ag., constr., health & safety, and trans.	Middle school teachers, except special and vocational education	Physicians and surgeons	Teachers and instructors, all other	Secondary school teachers, except special and vocational education	Carpenters	Plumbers, pipefitters, and steamfitters	Teachers and instructors, all other	Mental health counselors

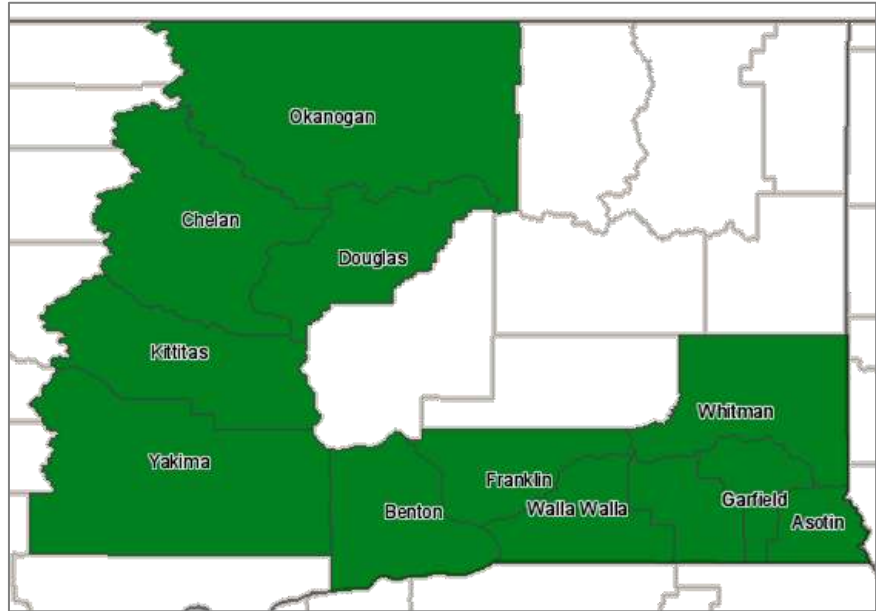
Source: Higher Education Coordinating Board analysis based on EMSI employment forecasts (3rd Quarter 2010) and Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," University of Washington School of Social Work.  
 Note: Chart shows only those occupations requiring post-secondary education with median wages that exceed the self-sufficiency wage standard for the region, for three common family compositions.



## Central and Southeast Region

### Total Enrollment of Institutions in Region

The Central and Southeast region is geographically the largest higher education region encompassing the central rural counties of the state, including the cities of Wenatchee and Yakima, and the southeaster counties, including the Tri-Cities, Pullman, and Walla Walla.



- The main campus of Washington State University and the Tri-Cities campus are in this region, as well as Central Washington University.
- Private institutions make up a small portion of enrollments at degree-granting institutions in this region.
- The Central and Southeast region is one of two sub-state regions in which a majority of postsecondary enrollments are at 4-year institutions.

Figure 13

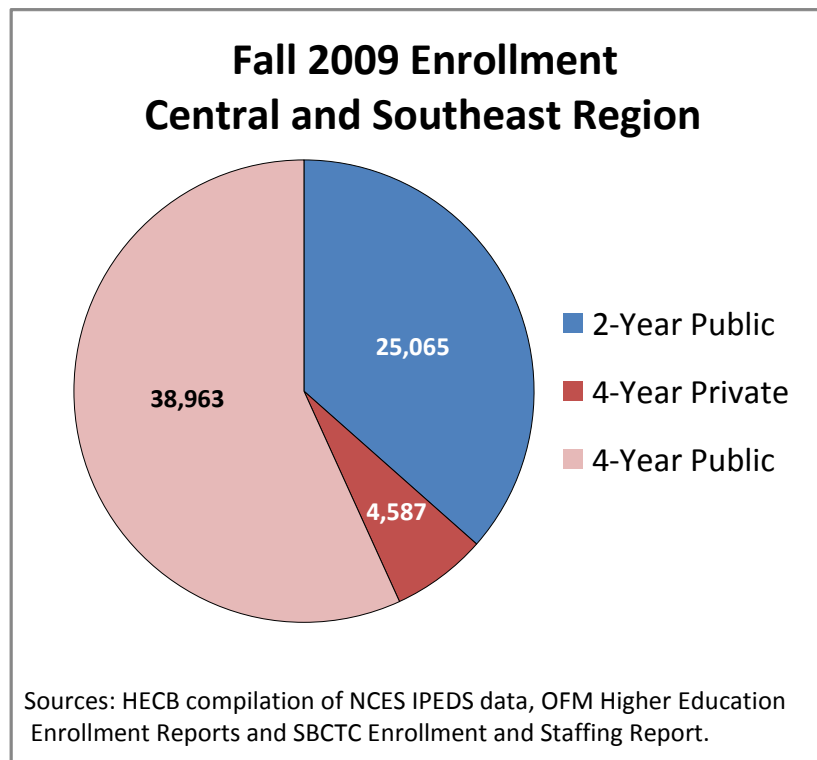


Table 13

Fall 2009 Enrollment in Central and Southeast Region			Total Enrollment
Institutions	Undergraduate	Graduate	
<b>2-Year Public</b>	<b>25,065</b>		<b>25,065</b>
Columbia Basin College	7,824		7,824
Walla Walla Community College	6,567		6,567
Wenatchee Valley College	4,239		4,239
Yakima Valley Community College	6,435		6,435
<b>4-Year Private</b>	<b>3,862</b>	<b>725</b>	<b>4,587</b>
Heritage University	777	338	1,115
Pacific Northwest University of Health Sciences	0	149	149
Walla Walla University	1,570	238	1,808
Whitman College	1,515	0	1,515
<b>4-Year Public</b>	<b>33,693</b>	<b>5,270</b>	<b>38,963</b>
Central Washington University	10,765	592	11,357
Washington State University	21,726	4,375	26,101
Washington State University Tri-Cities	1,202	303	1,505
<b>Grand Total</b>	<b>62,620</b>	<b>5,995</b>	<b>68,615</b>

Sources: HECB compilation of NCES IPEDS data, OFM Higher Education Enrollment Reports and SBCTC Enrollment and Staffing Report.

### New Student Enrollment

There are three public 4-year institutions in the region: WSU Pullman and Tri-Cities and Central Washington University. WSU Pullman and CWU both rely heavily on high school graduates for their new student enrollments with nearly half of their fall 2009 new enrollments coming from this group. WSU Tri-Cities is more transfer focused, with nearly three-fourths of its new student enrollments coming from in-state and out-of-state transfers.

Because of the presence of WSU-Pullman in the region, graduate education capacity is much higher than most of the other regions, and exceeds the region's employment demand for graduate-level workers.

### Higher Education Participation Rates

Participation rates in this large rural region are generally low, and the patterns suggest that many potential students are place-bound (see Figures 8 and 9 above). The counties that are home to public higher education institutions are all at or above state average participation rates. Counties farthest from these institutions are below the state average. Klickitat and Asotin County have some of the lowest higher education participation rates in the state.

## Regional Economic Forecast

### Occupational Profile as Compared to the State

The chart and table below compare the Central and Southeast regional occupational profile to the state as a whole. The occupational categories which vary the most from the state profile are farming, fishing, and forestry occupations (higher), and military occupations (lower).

Figure 14 – Central and Southeast Region

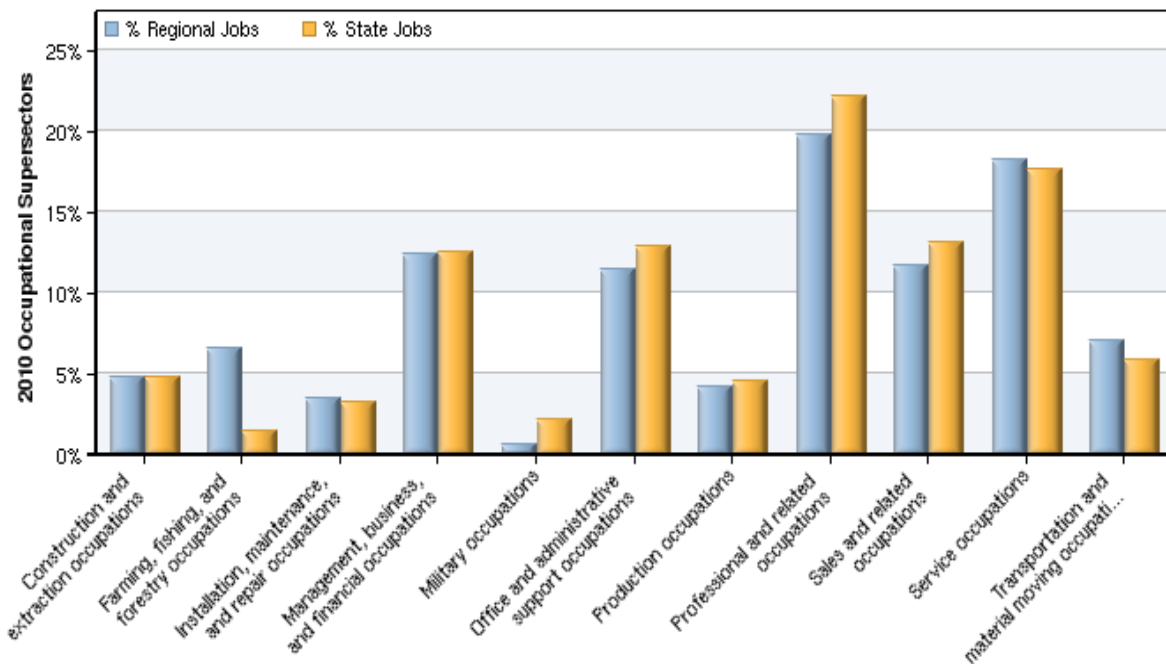


Table 14  
Central and Southeast Region

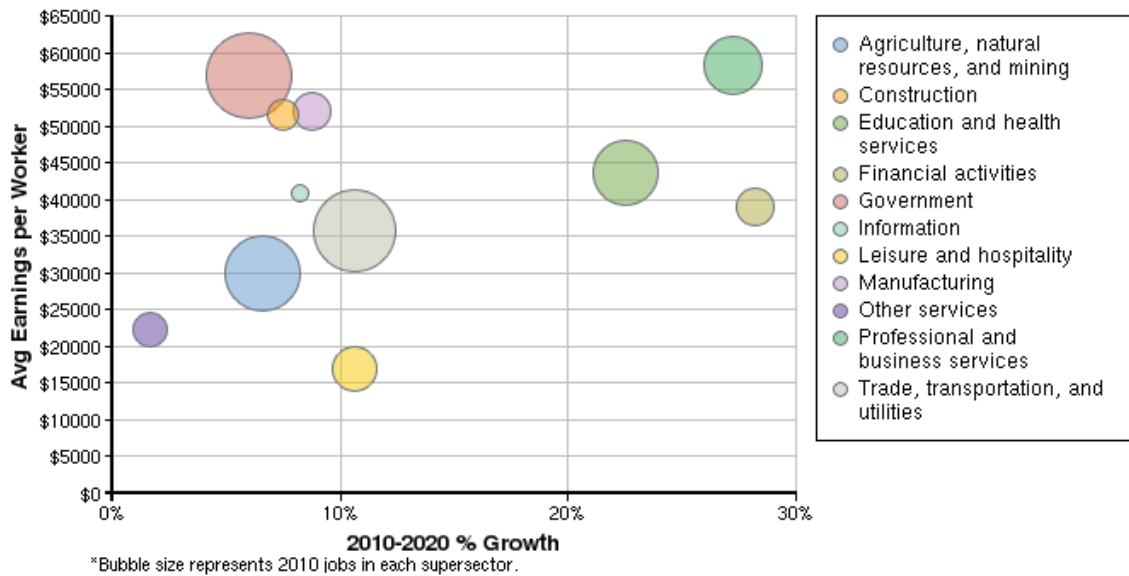
Description/Occupations	2010 Regional Jobs	% Regional Jobs	2010 State Jobs	% State Jobs
Construction and extraction	20,665	4.7%	183,042	4.8%
Farming, fishing, and forestry	28,373	6.5%	54,923	1.4%
Installation, maintenance, and repair	15,018	3.4%	121,785	3.2%
Management, business, and financial	54,166	12.4%	473,768	12.5%
Military	2,820	0.6%	82,385	2.2%
Office and administrative support	49,543	11.4%	486,007	12.8%
Production	18,082	4.2%	169,730	4.5%
Professional and related	86,258	19.8%	838,804	22.1%
Sales and related	50,639	11.6%	495,411	13.0%
Service	79,293	18.2%	671,312	17.7%
Transportation and material moving	30,823	7.1%	220,445	5.8%

Source: EMSI Complete Employment - 3rd Quarter 2010

**Industry Size, Earnings, and Forecast Growth Rates**

The bubble chart and related table below show regional earnings and forecast job growth information for the period 2010 to 2020. The highest wage industry sectors are professional and business services, government, manufacturing, and construction. The highest growth industry sectors are financial activities, professional and business services, and education and health services.

**Figure 15 - Central and Southeast Region**



**Table 15  
Central and Southeast Region**

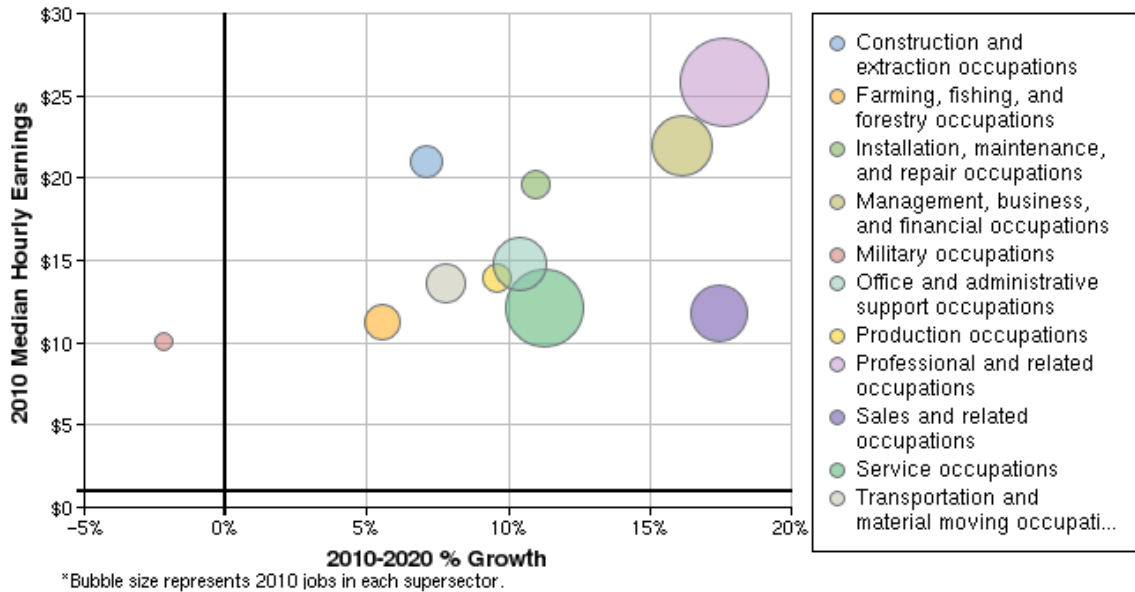
Description	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Earnings/ Worker
Agriculture, natural resources, and mining	63,019	67,153	4,134	7%	\$29,924
Construction	20,058	21,556	1,498	7%	\$51,471
Education and health services	52,515	64,328	11,813	22%	\$43,679
Financial activities	27,066	34,704	7,638	28%	\$38,994
Government	73,268	77,656	4,388	6%	\$56,795
Information	3,987	4,314	327	8%	\$40,842
Leisure and hospitality	33,181	36,708	3,527	11%	\$16,857
Manufacturing	24,599	26,754	2,155	9%	\$52,054
Other services	21,663	22,018	355	2%	\$22,317
Professional and business services	45,061	57,342	12,281	27%	\$58,237
Trade, transportation, and utilities	71,264	78,816	7,552	11%	\$35,707
<b>Total</b>	<b>435,680</b>	<b>491,347</b>	<b>55,667</b>	<b>13%</b>	<b>\$41,507</b>

Source: EMSI Complete Employment - 3rd Quarter 2010

**Occupation Size, Earnings, and Forecast Growth Rates**

The same type of analysis is presented below for occupational clusters in the region. The highest wage occupational clusters are professional and related occupations, management, business, and financial occupations, and construction and extraction occupations. The highest growth occupations are professional and related occupations, management, sales and related occupations, and business and financial occupations.

**Figure 16 - Central and Southeast Region**



**Table 16  
Central and Southeast Region**

Description/Occupations	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Median Hourly Earnings
Construction and extraction	20,665	22,130	1,465	7%	\$20.96
Farming, fishing, and forestry	28,373	29,942	1,569	6%	\$11.23
Installation, maintenance, and repair	15,018	16,661	1,643	11%	\$19.62
Management, business, and financial	54,166	62,899	8,733	16%	\$21.98
Military	2,820	2,758	-62	-2%	\$10.07
Office and administrative support	49,543	54,705	5,162	10%	\$14.77
Production	18,082	19,820	1,738	10%	\$13.97
Professional and related	86,258	101,479	15,221	18%	\$25.87
Sales and related	50,639	59,480	8,841	17%	\$11.79
Service	79,293	88,252	8,959	11%	\$12.06
Transportation and material moving	30,823	33,221	2,398	8%	\$13.58
<b>Total</b>	<b>435,680</b>	<b>491,347</b>	<b>55,667</b>	<b>13%</b>	<b>\$17.11</b>

Source: EMSI Complete Employment - 3rd Quarter 2010

## Identification of High Demand Occupations Paying Self-Sufficiency Wages

The HECB analyzed EMSI, Inc. employment forecast data and combined them with information about self-sufficiency wages for the region. The objective was to identify specific occupations that

- 1) require a postsecondary credential or apprenticeship;
- 2) are forecast to have a large number of job openings over the next 10 years; and
- 3) offer median wages that are at least higher than the county/area with the lowest self-sufficiency wage in the region for each of three common family types. These criteria zero in on the occupations that are the first place to look for program expansion and economic development opportunities.

### *Self-Sufficiency Wages by County and Family Type*

Table 17 shows the self-sufficiency wages for three common family types for each county in the region. Benton County is divided into two areas and separate calculations were made for each. Franklin County has the lowest self-sufficiency wage for the first and third family type and Okanogan has the lowest wage for the second family type. These lowest wages made up the thresholds for the analysis of occupations that follows.

**Table 17**  
**Central and Southeast Region**

Self-Sufficiency Wages and High Growth Occupations						
Self-Sufficiency Wages by County	<u>Annual Self-Sufficiency Standard</u>			<u>Computed Self-Sufficiency Hourly Wage</u>		
	1 Adult 1 Preschool	1 Adult 1 Preschl 1 School age	2 Adults 1 Preschl 1 School age (each adult)	1 Adult 1 Preschl	1 Adult 1 Preschl 1 School age	2 Adults 1 Preschl 1 School age (each adult)
County						
Asotin	\$28,489	\$35,498	\$21,851	\$13.70	\$17.07	\$10.51
Benton (Excluding Kennewick/Richland)	\$28,070	\$33,625	\$20,414	\$13.50	\$16.17	\$9.81
Benton (Kennewick/Richland)	\$31,065	\$36,890	\$22,188	\$14.94	\$17.74	\$10.67
Chelan	\$30,620	\$36,238	\$22,174	\$14.72	\$17.42	\$10.66
Columbia	\$29,898	\$35,332	\$21,792	\$14.37	\$16.99	\$10.48
Douglas	\$30,450	\$36,360	\$22,166	\$14.64	\$17.48	\$10.66
Franklin	\$27,173	\$31,950	\$19,500	\$13.06	\$15.36	\$9.38
Garfield	\$29,459	\$35,675	\$21,915	\$14.16	\$17.15	\$10.54
Kittitas	\$31,360	\$37,476	\$22,586	\$15.08	\$18.02	\$10.86
Okanogan	\$27,859	\$31,872	\$19,699	\$13.39	\$15.32	\$9.47
Walla Walla	\$31,373	\$33,878	\$20,796	\$15.08	\$16.29	\$10.00
Whitman	\$33,003	\$40,735	\$23,740	\$15.87	\$19.58	\$11.41
Yakima	\$29,312	\$34,182	\$20,912	\$14.09	\$16.43	\$10.05

Source: Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

### ***Analysis of the Top 50 Growth Occupations in Region that Require Postsecondary Education, and Wage Levels***

The following table (18) shows the top 50 occupations in the region by the total number of job openings forecast between 2010 and 2020. Job openings represent new jobs due to increased demand and replacement jobs due to retirements and job turnover. Only those occupations that require postsecondary education or apprenticeships are listed.

Also indicated is whether the median wage for each occupation exceeds the lowest self-sufficiency wage among the counties/areas that comprise the region. The HECB encourages institutions to focus program expansion efforts on those occupations that exceed this wage threshold for all three family types.

Agricultural managers, registered nurses, teachers, accountants and auditors, sole proprietors and civil engineers are all occupations showing 1,000 or more job openings and that pay in excess of the self-sufficiency wage for all three family types.

As indicated in Table 9b above, this region will be home to 11 percent of all Washington job openings requiring postsecondary education between 2010 and 2020. This exceeds the region's 10 percent share of Washington's college-level jobs in 2009.

Table 18

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Central and Southeast Region by Number of Jobs											Exceeds Franklin/Okanogan County Standards		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult, 1 Preschooler	1 Adult, 1 Preschooler, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)	
1 Farm, ranch, and other agricultural managers	11-9011	9,035	9,948	913	10%	2,753	30%	\$23.29	Degree plus work experience	✓	✓	✓	
2 Registered nurses	29-1111	6,332	7,952	1,620	26%	2,727	43%	\$29.88	Associate's degree	✓	✓	✓	
3 Real estate sales agents	41-9022	3,979	5,592	1,613	41%	2,265	57%	\$9.01	Postsecondary vocational				
4 Elementary school teachers, except special education	25-2021	4,442	4,964	522	12%	1,532	34%	\$32.96	Bachelor's degree	✓	✓	✓	
5 Property, real estate, and community association managers	11-9141	2,503	3,441	938	37%	1,370	55%	\$10.02	Bachelor's degree			✓	
6 Accountants and auditors	13-2011	2,897	3,615	718	25%	1,208	42%	\$20.92	Bachelor's degree	✓	✓	✓	
7 Chief executives and sole proprietors	11-1011	2,216	2,724	508	23%	1,130	51%	\$23.30	Degree plus work experience	✓	✓	✓	
8 Postsecondary teachers	25-1099	3,786	4,230	444	12%	1,104	29%	\$31.41	Doctoral degree	✓	✓	✓	
9 Farmers and ranchers	11-9012	9,714	9,844	130	1%	1,096	11%	\$8.94	Long-term on-the-job training				
10 Civil engineers	17-2051	2,554	3,165	611	24%	1,042	41%	\$39.10	Bachelor's degree	✓	✓	✓	
11 Teachers and instructors, all other	25-3099	3,216	3,671	455	14%	950	30%	\$19.49	Bachelor's degree	✓	✓	✓	
12 Nursing aides, orderlies, and	31-1012	3,328	3,889	561	17%	902	27%	\$11.18	Postsecondary vocational			✓	
13 Carpenters	47-2031	3,915	4,138	223	6%	809	21%	\$19.49	Long-term on-the-job training	✓	✓	✓	
14 General and operations managers	11-1021	2,287	2,391	104	5%	784	34%	\$40.40	Degree plus work experience	✓	✓	✓	
15 Secondary school teachers, except special and vocational education	25-2031	2,242	2,356	114	5%	775	35%	\$34.45	Bachelor's degree	✓	✓	✓	
16 Medical secretaries	43-6013	2,095	2,587	492	23%	775	37%	\$14.58	Postsecondary vocational	✓		✓	
17 Management analysts	13-1111	1,533	2,031	498	32%	761	50%	\$16.11	Degree plus work experience	✓	✓	✓	
18 Middle school teachers, except special and vocational education	25-2022	2,109	2,350	241	11%	721	34%	\$33.31	Bachelor's degree	✓	✓	✓	
19 Securities, commodities, and financial services sales agents	41-3031	1,070	1,460	390	36%	718	67%	\$19.00	Bachelor's degree	✓	✓	✓	
20 Photographers	27-4021	1,729	2,098	369	21%	716	41%	\$9.78	Long-term on-the-job training			✓	
21 Physicians and surgeons	29-1069	1,691	2,091	400	24%	697	41%	\$70.06	First professional degree	✓	✓	✓	
22 Cooks, restaurant	35-2014	2,127	2,242	115	5%	694	33%	\$11.10	Long-term on-the-job training			✓	
23 Insurance sales agents	41-3021	1,415	1,753	338	24%	670	47%	\$15.52	Bachelor's degree	✓	✓	✓	
24 Business operation specialists, all	13-1199	1,933	2,172	239	12%	669	35%	\$29.10	Bachelor's degree	✓	✓	✓	
25 Personal financial advisors	13-2052	1,225	1,756	531	43%	663	54%	\$14.39	Bachelor's degree	✓		✓	



Table 18 (Continued)

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Central and Southeast Region by Number of Jobs											Exceeds Franklin/Okanogan County Standards		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	2 Adults, 1 Preschooler, 1 Schoolage (each adult)			
										1 Adult, 1 Preschooler	1 Adult, 1 Schoolage	1 Preschooler, 1 Schoolage	
26 Gaming dealers	39-3011	788	970	182	23%	524	66%	\$11.13	Postsecondary vocational			✓	
27 Coaches and scouts	27-2022	1,202	1,493	291	24%	521	43%	\$18.78	Long-term on-the-job training	✓	✓	✓	
28 Licensed practical and licensed vocational nurses	29-2061	1,056	1,238	182	17%	514	49%	\$19.56	Postsecondary vocational award	✓	✓	✓	
29 Automotive service technicians and mechanics	49-3023	1,915	2,042	127	7%	512	27%	\$18.59	Postsecondary vocational award	✓	✓	✓	
30 Appraisers and assessors of real estate	13-2021	948	1,283	335	35%	508	54%	\$11.65	Postsecondary vocational award			✓	
31 Preschool teachers, except special education	25-2011	1,130	1,403	273	24%	501	44%	\$10.72	Postsecondary vocational award			✓	
32 Electricians	47-2111	1,551	1,479	(72)	(5%)	461	30%	\$25.23	Long-term on-the-job training	✓	✓	✓	
33 Industrial machinery mechanics	49-9041	1,092	1,389	297	27%	455	42%	\$22.31	Long-term on-the-job training	✓	✓	✓	
34 Plumbers, pipefitters, and steamfitters	47-2152	1,298	1,405	107	8%	446	34%	\$25.07	Long-term on-the-job training	✓	✓	✓	
35 Fire fighters	33-2011	929	1,085	156	17%	441	47%	\$23.67	Long-term on-the-job training	✓	✓	✓	
36 Financial managers	11-3031	1,199	1,424	225	19%	441	37%	\$34.03	Degree plus work experience	✓	✓	✓	
37 Network systems and data communications analysts	15-1081	620	932	312	50%	423	68%	\$20.52	Bachelor's degree	✓	✓	✓	
38 Lawyers	23-1011	979	1,210	231	24%	416	42%	\$27.09	First professional degree	✓	✓	✓	
39 Occupational health and safety specialists	29-9011	699	825	126	18%	359	51%	\$35.32	Bachelor's degree	✓	✓	✓	
40 Police and sheriff's patrol officers	33-3051	1,063	1,135	72	7%	347	33%	\$28.59	Long-term on-the-job training	✓	✓	✓	
41 Computer support specialists	15-1041	871	971	100	11%	344	39%	\$19.45	Associate's degree	✓	✓	✓	
42 Computer systems analysts	15-1051	747	924	177	24%	337	45%	\$31.45	Bachelor's degree	✓	✓	✓	
43 Forest and conservation technicians	19-4093	683	711	28	4%	334	49%	\$14.25	Associate's degree	✓	✓	✓	
44 Construction managers	11-9021	1,242	1,476	234	19%	332	27%	\$24.31	Bachelor's degree	✓	✓	✓	
45 Environmental scientists and specialists, including health	19-2041	702	827	125	18%	324	46%	\$33.60	Master's degree	✓	✓	✓	
46 Human resources, training, and labor relations specialists, all other	13-1079	611	756	145	24%	305	50%	\$25.96	Bachelor's degree	✓	✓	✓	
47 Writers and authors	27-3043	647	802	155	24%	291	45%	\$9.26	Bachelor's degree				
48 Dental hygienists	29-2021	544	721	177	33%	287	53%	\$41.56	Associate's degree	✓	✓	✓	
49 Pharmacists	29-1051	673	806	133	20%	285	42%	\$49.75	First professional degree	✓	✓	✓	
50 Welders, cutters, solderers, and brazers	51-4121	732	757	25	3%	278	38%	\$17.49	Long-term on-the-job training	✓	✓	✓	

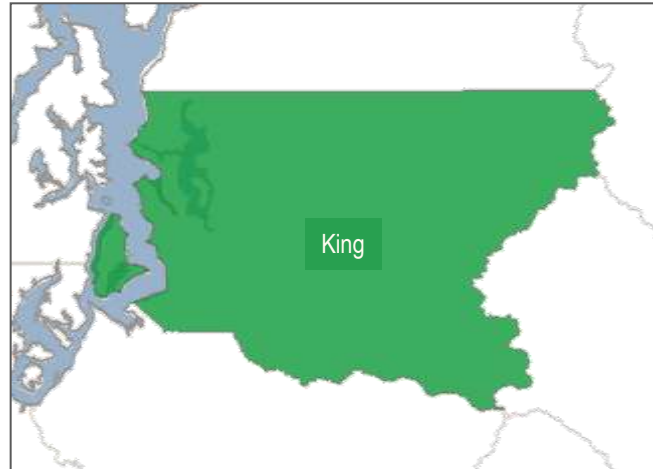
Source: EMSI Complete Employment - 3rd Quarter 2010

Note: The Franklin and Okanogan County Self-Sufficiency Standards are the lowest living wage standards for the counties that comprise this region, based on calculations found in Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

## King Region

### Total Enrollment of Institutions in Region

The King region includes just King County and is home to the densest population areas, including the City of Seattle, and the largest share of degree production capacity of any region.



Washington’s largest institution, the University of Washington, is in King County along with the Bothell campus, which is on the region’s northern border.

One-third of Washington’s public community and technical colleges and two-thirds of the private degree-granting institutions are in King County. Like most of the other regions, King’s 2-year public enrollments exceed those at 4-year institutions.

The share of fall 2009 state higher education enrollments in King County (38%) exceeds the county’s share of the 18-64 population (30%).

Figure 17

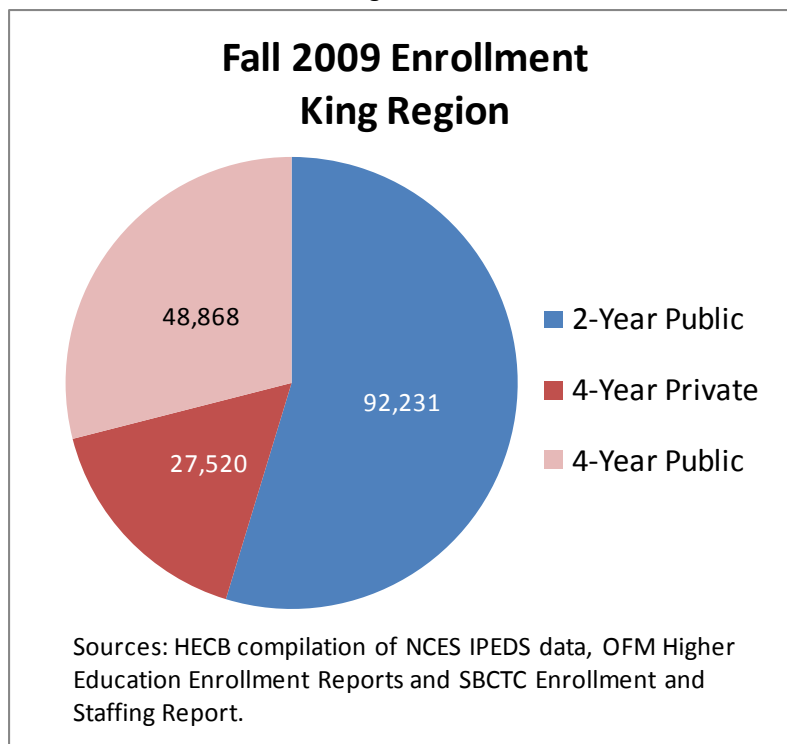


Table 19

Fall 2009 Enrollment in King Region			Total
Institutions	Undergraduate	Graduate	Enrollment
<b>2-Year Public</b>	<b>92,231</b>		<b>92,231</b>
Bellevue Community College	19,399		19,399
Cascadia Community College	3,238		3,238
Green River Community College	10,543		10,543
Highline Community College	10,828		10,828
Lake Washington Technical College	5,612		5,612
North Seattle Community College	8,869		8,869
Renton Technical College	6,204		6,204
Seattle Central Community College	10,563		10,563
Seattle Vocational Institute	546		546
Shoreline Community College	7,769		7,769
South Seattle Community College	8,660		8,660
<b>4-Year Private</b>	<b>18,472</b>	<b>9,048</b>	<b>27,520</b>
Antioch University Seattle	245	751	996
Argosy University-Seattle	73	414	487
Art Institute of Seattle	2,282		2,282
Bastyr University	190	727	917
City University of Seattle	1,445	1,759	3,204
Cornish College of the Arts	794		794
DeVry University-Washington	759	244	1,003
DigiPen Institute of Technology	839	51	890
International Academy of Design and Technology	482		482
ITT Technical Institute-Seattle	593		593
Kaplan College-Renton	127		127
Mars Hill Graduate School		273	273
Northwest University	1,146	237	1,383
Pima Medical Institute-Renton	776		776
Pima Medical Institute-Seattle	728		728
Seattle Institute of Oriental Medicine		36	36
Seattle Pacific University	3,016	984	4,000
Seattle University	4,306	3,445	7,751
Trinity Lutheran College	113		113
University of Phoenix-Western Washington Campus	558	127	685
<b>4-Year Public</b>	<b>35,125</b>	<b>13,743</b>	<b>48,868</b>
University of Washington	32,718	13,225	45,943
University of Washington Bothell Campus	2,407	518	2,925
<b>Grand Total</b>	<b>145,828</b>	<b>22,791</b>	<b>168,619</b>

Sources: HECB compilation of NCES IPEDS data, OFM Higher Education Enrollment Reports and SBCTC Enrollment and Staffing Report.

### New Student Enrollment

Based on the data in Table 6, both UW campuses’ new enrollments are comprised of a similar share of Washington high school graduates – about 30 percent. However, the Bothell campus enrolls a much higher share of transfer students than the Seattle campus, and a much lower share of out-of-state students.

At the graduate level, the Bothell campus enrolls a greater share of in-state students than the Seattle campus. As Figure 6 shows, King County 4-year institutions produce 60 percent of the state’s Master’s degrees and nearly 80 percent of the state’s first-professional and doctorate degrees.

### Higher Education Participation Rates

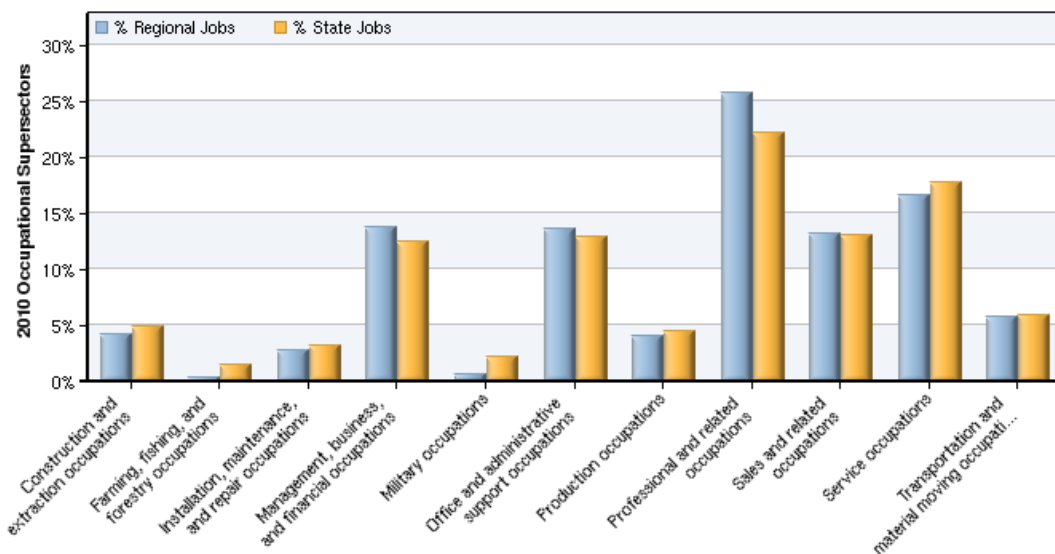
Most of the region’s population lives in the urban Seattle area, so there are relatively few place-bound students in the region. Participation rates in the region are at or above the state average (see Figures 8 and 9, above). Two-year college participation rates are at the state average and lower than many other counties in the state. Four-year participation is above the state average but below several other counties.

### Regional Economic Forecast

#### *Occupational Profile as Compared to the State*

The following chart and table compare the regional occupational profile to the state as a whole. The occupational categories which vary the most from the state profile are farming, fishing, and forestry occupations (lower), Management, business, and financial occupations (higher) and professional and related services (higher).

Figure 18 – King Region



**Table 20  
King Region**

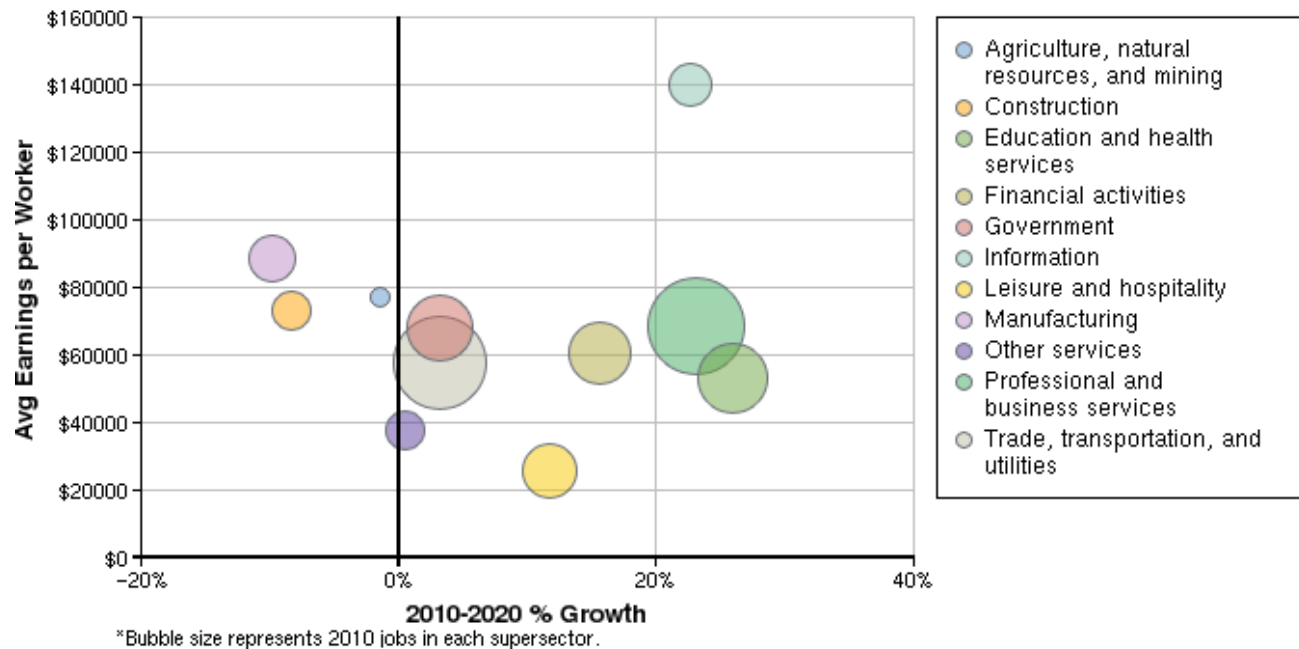
Description/Occupations	2010 Regional Jobs	% Regional Jobs	2010 State Jobs	% State Jobs
Construction and extraction	60,771	4.1%	183,042	4.8%
Farming, fishing, and forestry	3,939	0.3%	54,923	1.4%
Installation, maintenance, and repair	40,379	2.8%	121,785	3.2%
Management, business, and financial	199,968	13.7%	473,768	12.5%
Military	7,358	0.5%	82,385	2.2%
Office and administrative support	198,645	13.6%	486,007	12.8%
Production	59,143	4.0%	169,730	4.5%
Professional and related	376,028	25.7%	838,804	22.1%
Sales and related	192,109	13.1%	495,411	13.0%
Service	243,301	16.6%	671,312	17.7%
Transportation and material moving	82,843	5.7%	220,445	5.8%

Source: EMSI Complete Employment-3rd Quarter 2010

**Industry Size, Earnings, and Forecast Growth Rates**

The bubble chart and related table below show regional earnings and forecast job growth information for the period 2010 to 2020. The highest wage industry sector is information. The highest growth industry sectors are education and health services, professional and business services, and information.

**Figure 19 – King Region**



**Table 21  
King Region**

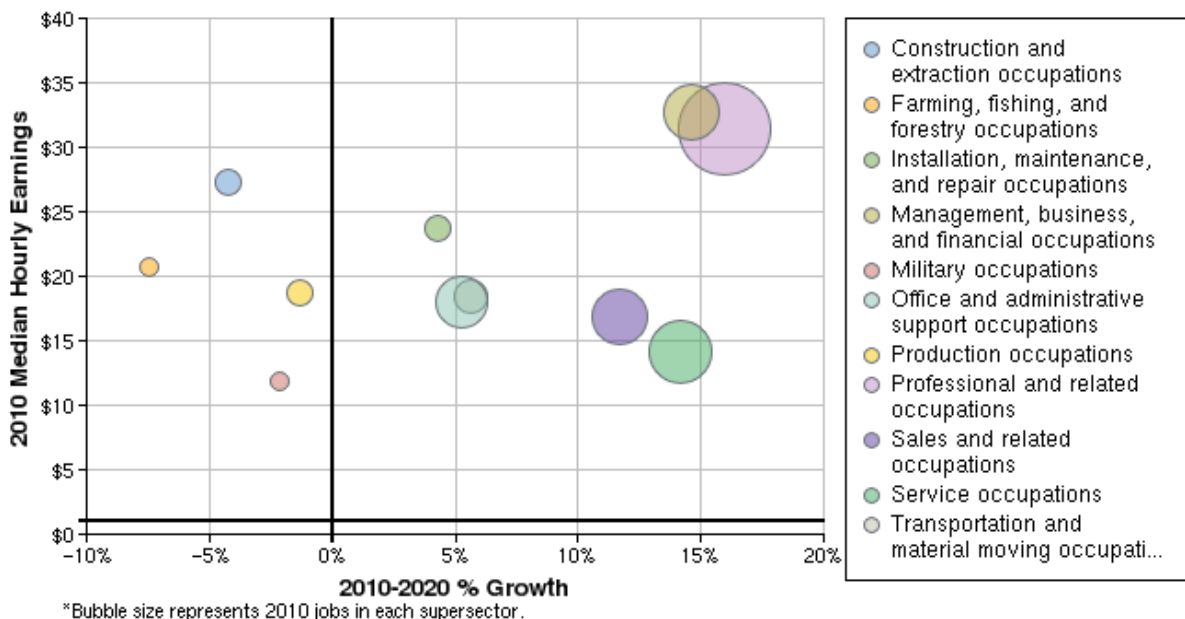
Description	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Earnings Per Worker
Agriculture, natural resources, mining	6,509	6,418	-91	-1%	\$76,979
Construction	69,894	64,092	-5,802	-8%	\$73,009
Education and health services	172,513	217,206	44,693	26%	\$53,346
Financial activities	147,390	170,352	22,962	16%	\$60,733
Government	166,911	172,238	5,327	3%	\$68,195
Information	84,555	103,654	19,099	23%	\$139,781
Leisure and hospitality	128,253	143,369	15,116	12%	\$25,979
Manufacturing	103,254	93,128	-10,126	-10%	\$88,357
Other services	73,702	74,124	422	1%	\$37,636
Professional and business services	259,151	318,991	59,840	23%	\$68,533
Trade, transportation, and utilities	252,352	260,261	7,909	3%	\$57,773
<b>Total</b>	<b>1,464,485</b>	<b>1,623,832</b>	<b>159,347</b>	<b>11%</b>	<b>\$64,547</b>

Source: EMSI Complete Employment - 3rd Quarter 2010

**Occupation Size, Earnings, and Forecast Growth Rates**

The same type of analysis is presented below for occupational clusters in the region. The highest wage occupational clusters are management, business, and financial occupations, professional and related occupations, and construction and extraction occupations. The highest forecast growth occupations are professional and related occupations, management, sales and related occupations, and service occupations.

**Figure 20 – King Region**



**Table 22**  
**King Region**

Description/Occupations	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Median Hourly Earnings
Construction and extraction	60,771	58,194	-2,577	-4%	\$27.27
Farming, fishing, and forestry	3,939	3,644	-295	-7%	\$20.71
Installation, maintenance, and repair	40,379	42,096	1,717	4%	\$23.67
Management, business, and financial	199,968	229,258	29,290	15%	\$32.72
Military	7,358	7,198	-160	-2%	\$11.90
Office and administrative support	198,645	209,087	10,442	5%	\$18.01
Production	59,143	58,368	-775	-1%	\$18.74
Professional and related	376,028	436,058	60,030	16%	\$31.49
Sales and related	192,109	214,561	22,452	12%	\$16.82
Service	243,301	277,835	34,534	14%	\$14.20
Transportation and material moving	82,843	87,533	4,690	6%	\$18.48
<b>Total</b>	<b>1,464,485</b>	<b>1,623,832</b>	<b>159,347</b>	<b>11%</b>	<b>\$23.26</b>

Source: EMSI Complete Employment - 3rd Quarter 2010

### Identification of High Demand Occupations Paying Self-Sufficiency Wages

The HECB analyzed EMSI, Inc. employment forecast data and combined them with information about self-sufficiency wages for the region. The objective was to identify specific occupations that

- 1) require a postsecondary credential or apprenticeship;
- 2) are forecast to have a large number of job openings over the next 10 years; and
- 3) offer median wages that are at least higher than the county/area with the lowest self-sufficiency wage in the region for each of three common family types. These criteria zero in on the occupations that are the first place to look for program expansion and economic development opportunities.

### *Self-Sufficiency Wages by County and Family Type*

Table 23 shows the self-sufficiency wages for three common family types for each county in the region. The King region is separated into the four areas indicated with self-sufficiency wages calculated for each area. The King (South) area has the lowest self-sufficiency wage for all three family types. These wages made up the thresholds for the analysis of occupations that follows.

**Table 23**  
**King Region**

<b>Self-Sufficiency Wages and High Growth Occupations</b>						
<b>Self-Sufficiency Wages by County</b>	<i>Annual Self-Sufficiency Standard</i>			<i>Computed Self-Sufficiency Hourly Wage</i>		
	<b>1 Adult</b>	<b>1 Adult, 1 Preschlr</b>	<b>2 Adults 1 Preschlr</b>	<b>1 Adult</b>	<b>1 Adult, 1 Preschlr</b>	<b>2 Adults 1 Preschlr</b>
	<b>Area</b>	<b>1 Preschooler</b>	<b>1 School age</b>	<b>(each adult)</b>	<b>1 Preschlr</b>	<b>1 School age</b>
King (City of Seattle)	\$40,485	\$50,268	\$27,213	\$19.46	\$24.17	\$13.08
King (East)	\$48,060	\$57,766	\$30,962	\$23.11	\$27.77	\$14.89
King (North)	\$44,398	\$54,104	\$29,130	\$21.35	\$26.01	\$14.00
King (South)	\$40,388	\$50,172	\$27,164	\$19.42	\$24.12	\$13.06

Source: Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

***Analysis of the Top 50 Growth Occupations in Region that Require Postsecondary Education, and Wage Levels***

The following tables show the top 50 occupations in the region by the total number of job openings forecast between 2010 and 2020. Job openings represent new jobs due to increased demand and replacement jobs due to retirements and job turnover. Only those occupations that require postsecondary education or apprenticeships are listed.

Also indicated is whether the median wage for each occupation exceeds the lowest self-sufficiency wage among the counties/areas that comprise the region. The HECB encourages institutions to focus program expansion efforts on those occupations that exceed this wage threshold for all three family types.

Registered nurses, management analysts, computer software engineers, accountants and auditors, network systems analysts, sole proprietors, and business operations specialists are among the occupations with 4,000 or more job openings and that pay in excess of the self-sufficiency wage for all three family types.

As indicated in Table 9b above, this region will be home to 41 percent of all Washington job openings requiring postsecondary education between 2010 and 2020. This is less the region's 46 percent share of Washington's college-level jobs in 2009, indicating dispersal of jobs requiring postsecondary education to other regions of the state.



Table 24

Top 50 Growth Occupations Requiring a Post-Secondary Credential in King Region by Number of Jobs											<i>Exceeds South King County Standard</i>		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult, 1 Preschooler	1 Adult, 1 Preschooler, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)	
1 Real estate sales agents	41-9022	18,962	25,357	6,395	34%	9,501	50%	\$9.22	Postsecondary vocational award				
2 Registered nurses	29-1111	20,917	26,064	5,147	25%	8,801	42%	\$37.54	Associate's degree	✓	✓	✓	
3 Management analysts	13-1111	16,177	19,974	3,797	23%	6,574	41%	\$27.99	Degree plus work experience	✓	✓	✓	
4 Computer software engineers, applications	15-1031	19,922	24,286	4,364	22%	6,040	30%	\$45.13	Bachelor's degree	✓	✓	✓	
5 Property, real estate, and community association managers	11-9141	11,895	15,533	3,638	31%	5,688	48%	\$11.86	Bachelor's degree				
6 Accountants and auditors	13-2011	15,464	18,026	2,562	17%	5,176	33%	\$26.42	Bachelor's degree	✓	✓	✓	
7 Network systems and data communications analysts	15-1081	8,021	11,288	3,267	41%	4,709	59%	\$37.63	Bachelor's degree	✓	✓	✓	
8 Photographers	27-4021	10,400	12,538	2,138	21%	4,218	41%	\$16.30	Long-term on-the-job training			✓	
9 Chief executives or sole proprietors	11-1011	9,559	11,079	1,520	16%	4,206	44%	\$32.39	Degree plus work experience	✓	✓	✓	
10 Business operation specialists, all other	13-1199	13,844	14,787	943	7%	4,017	29%	\$32.35	Bachelor's degree	✓	✓	✓	
11 Computer software engineers, systems software	15-1032	13,695	16,513	2,818	21%	3,969	29%	\$47.43	Bachelor's degree	✓	✓	✓	
12 Securities, commodities, and financial services sales agents	41-3031	7,294	8,921	1,627	22%	3,862	53%	\$26.28	Bachelor's degree	✓	✓	✓	
13 Market research analysts	19-3021	7,139	9,053	1,914	27%	3,834	54%	\$43.05	Bachelor's degree	✓	✓	✓	
14 Cooks, restaurant	35-2014	9,310	10,692	1,382	15%	3,764	40%	\$13.28	Long-term on-the-job training			✓	
15 Computer systems analysts	15-1051	9,720	11,300	1,580	16%	3,674	38%	\$39.54	Bachelor's degree	✓	✓	✓	
16 Personal financial advisors	13-2052	7,723	10,422	2,699	35%	3,533	46%	\$18.52	Bachelor's degree			✓	
17 Postsecondary teachers	25-1099	11,718	13,159	1,441	12%	3,482	30%	\$34.11	Doctoral degree	✓	✓	✓	
18 Computer support specialists	15-1041	7,495	8,826	1,331	18%	3,406	45%	\$24.12	Associate's degree	✓	✓	✓	
19 General and operations managers	11-1021	10,754	10,709	(45)	0%	3,281	31%	\$56.70	Degree plus work experience	✓	✓	✓	
20 Elementary school teachers, except special education	25-2021	8,436	9,642	1,206	14%	3,124	37%	\$32.51	Bachelor's degree	✓	✓	✓	
21 Lawyers	23-1011	9,378	10,498	1,120	12%	2,872	31%	\$44.42	First professional degree	✓	✓	✓	
22 Network and computer systems administrators	15-1071	6,905	8,499	1,594	23%	2,746	40%	\$38.39	Bachelor's degree	✓	✓	✓	
23 Nursing aides, orderlies, and attendants	31-1012	7,305	9,069	1,764	24%	2,491	34%	\$14.68	Postsecondary vocational award			✓	
24 Physicians and surgeons	29-1069	7,079	8,280	1,201	17%	2,447	35%	\$73.57	First professional degree	✓	✓	✓	
25 Teachers and instructors, all other	25-3099	7,408	8,666	1,258	17%	2,397	32%	\$19.07	Bachelor's degree			✓	

Table 24 (Continued)

Top 50 Growth Occupations Requiring a Post-Secondary Credential in King Region by Number of Jobs											Exceeds South King County Standard		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	Exceeds South King County Standard			
										1 Adult, 1 Preschooler	1 Adult, 1 Preschooler, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)	
26 Medical secretaries	43-6013	6,718	8,103	1,385	21%	2,291	34%	\$18.63	Postsecondary vocational award			✓	
27 Carpenters	47-2031	13,866	13,132	(734)	(5%)	2,249	16%	\$27.08	Long-term on-the-job training	✓	✓	✓	
28 Financial managers	11-3031	7,649	8,476	827	11%	2,203	29%	\$47.74	Degree plus work experience	✓	✓	✓	
29 Appraisers and assessors of real estate	13-2021	4,041	5,335	1,294	32%	2,030	50%	\$11.91	Postsecondary vocational award				
30 Computer specialists, all other	15-1099	6,004	6,705	701	12%	1,995	33%	\$39.41	Associate's degree	✓	✓	✓	
31 Computer programmers	15-1021	9,429	9,056	(373)	(4%)	1,983	21%	\$42.55	Bachelor's degree	✓	✓	✓	
32 Computer and information systems managers	11-3021	6,098	6,999	901	15%	1,892	31%	\$60.24	Degree plus work experience	✓	✓	✓	
33 Sales managers	11-2022	4,753	5,590	837	18%	1,861	39%	\$54.07	Degree plus work experience	✓	✓	✓	
34 Secondary school teachers, except special and vocational education	25-2031	4,955	5,346	391	8%	1,831	37%	\$33.84	Bachelor's degree	✓	✓	✓	
35 Writers and authors	27-3043	4,577	5,412	835	18%	1,794	39%	\$11.55	Bachelor's degree				
36 Human resources, training, and labor relations specialists, all other	13-1079	4,083	4,802	719	18%	1,784	44%	\$29.55	Bachelor's degree	✓	✓	✓	
37 Civil engineers	17-2051	5,936	6,712	776	13%	1,778	30%	\$36.29	Bachelor's degree	✓	✓	✓	
38 Employment, recruitment, and placement specialists	13-1071	2,782	3,795	1,013	36%	1,740	63%	\$27.47	Bachelor's degree	✓	✓	✓	
39 Military Occupations	55-9999	7,358	7,198	(160)	(2%)	1,701	23%	\$11.90	N/A				
40 Medical scientists, except epidemiologists	19-1042	3,074	4,101	1,027	33%	1,648	54%	\$28.66	Doctoral degree	✓	✓	✓	
41 Financial analysts	13-2051	3,599	4,540	941	26%	1,595	44%	\$26.59	Bachelor's degree	✓	✓	✓	
42 Public relations specialists	27-3031	3,634	4,302	668	18%	1,529	42%	\$26.96	Bachelor's degree	✓	✓	✓	
43 Graphic designers	27-1024	3,364	3,779	415	12%	1,449	43%	\$22.61	Bachelor's degree	✓		✓	
44 Middle school teachers, except special and vocational education	25-2022	3,798	4,341	543	14%	1,406	37%	\$32.15	Bachelor's degree	✓	✓	✓	
45 Licensed practical and licensed vocational nurses	29-2061	2,706	3,250	544	20%	1,390	51%	\$22.75	Postsecondary vocational award	✓		✓	
46 Fire fighters	33-2011	3,145	3,565	420	13%	1,385	44%	\$34.98	Long-term on-the-job training	✓	✓	✓	
47 Preschool teachers, except special education	25-2011	3,403	4,005	602	18%	1,284	38%	\$13.09	Postsecondary vocational award			✓	
48 Fitness trainers and aerobics instructors	39-9031	3,028	3,761	733	24%	1,278	42%	\$18.27	Postsecondary vocational award			✓	
49 Marketing managers	11-2021	3,474	3,948	474	14%	1,222	35%	\$54.08	Degree plus work experience	✓	✓	✓	
50 Electricians	47-2111	5,005	4,252	(753)	(15%)	1,210	24%	\$33.47	Long-term on-the-job training	✓	✓	✓	

Source: EMSI Complete Employment - 3rd Quarter 2010

Note: The South King County Self-Sufficiency Standard is the lowest living wage standard for the counties that comprise this region, based on calculations found in Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

## Northwest - Olympic Sub-Region

### Total Enrollment of Institutions in Region

The Northwest region includes the northern the counties comprising the northern Puget Sound and Olympic Peninsula. Because the Olympic Peninsula is geographically isolated from much of the rest of the region, employer demand analysis was separated into the Olympic and Balance of Region Sub-Regions.

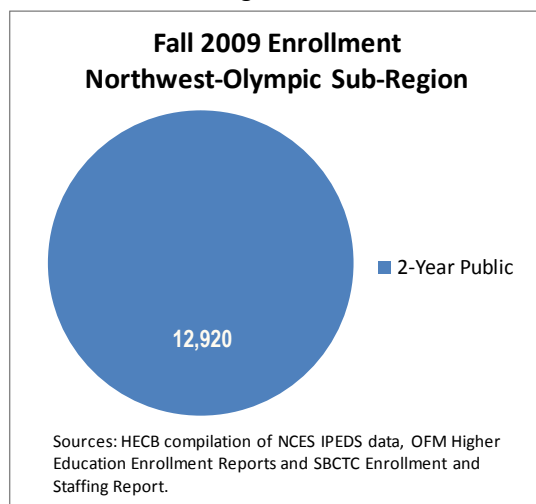


The region is divided by Kitsap County, which is tied closely to the urban economy of the central Puget Sound area and is home to several Navy installations, and the remaining rural counties which are more natural resource and tourism-based. The Olympic National Park and surrounding national forests occupy much of the peninsula's land space.

The Olympic Sub-Region is home to two community colleges, Olympic and Peninsula Colleges, but no public or private degree-granting 4-year institutions. In addition to lower division programs, Olympic and Peninsula Colleges offer baccalaureate programs in nursing and applied technology. Each of the community colleges has agreements with 4-year universities to provide baccalaureate and graduate program offerings on or near their campuses.

A June 2008 assessment counted 958 baccalaureate-graduate enrollments on the peninsula, many of which were distance learning enrollments. About 40 percent of the total is offered by the two public community colleges, Washington State University, and Western Washington University.<sup>9</sup>

**Figure 21**



Note: Chart does not include the estimated 1,000 baccalaureate and additional graduate enrollments in the region through distance learning and extended learning programs offered by institutions based in other regions of the state.

<sup>9</sup> Higher Education Coordinating Board, *Kitsap Region Higher Education Center* (November 2008). See [www.hecb.wa.gov/news/newsreports/documents/KitsapRegionReportinBrief.pdf](http://www.hecb.wa.gov/news/newsreports/documents/KitsapRegionReportinBrief.pdf).

Table 25

Fall 2009 Enrollment in Northwest-Olympic Sub-Region			
Institutions	Undergraduate	Graduate	Total Enrollment
<b>2-Year Public</b>	<b>12,920</b>		<b>12,920</b>
Olympic College	8,440		8,440
Peninsula College	4,480		4,480
<b>Grand Total</b>	<b>12,920</b>	<b>1,179</b>	<b>12,920</b>

Sources: HECB compilation of NCES IPEDS data, OFM Higher Education Enrollment Reports and SBCTC Enrollment and Staffing Report.

### New Student Enrollment

Analysis of new student enrollment is not applicable to this sub-region due to a lack of resident 4-year institutions and available data.

### Higher Education Participation Rates

Participation rates in the region are fairly high at the two-year level and very low at the baccalaureate level (see Figures 8 and 9, above). Two-year college participation rates are at the state average and over for all of the counties in the region except Jefferson.

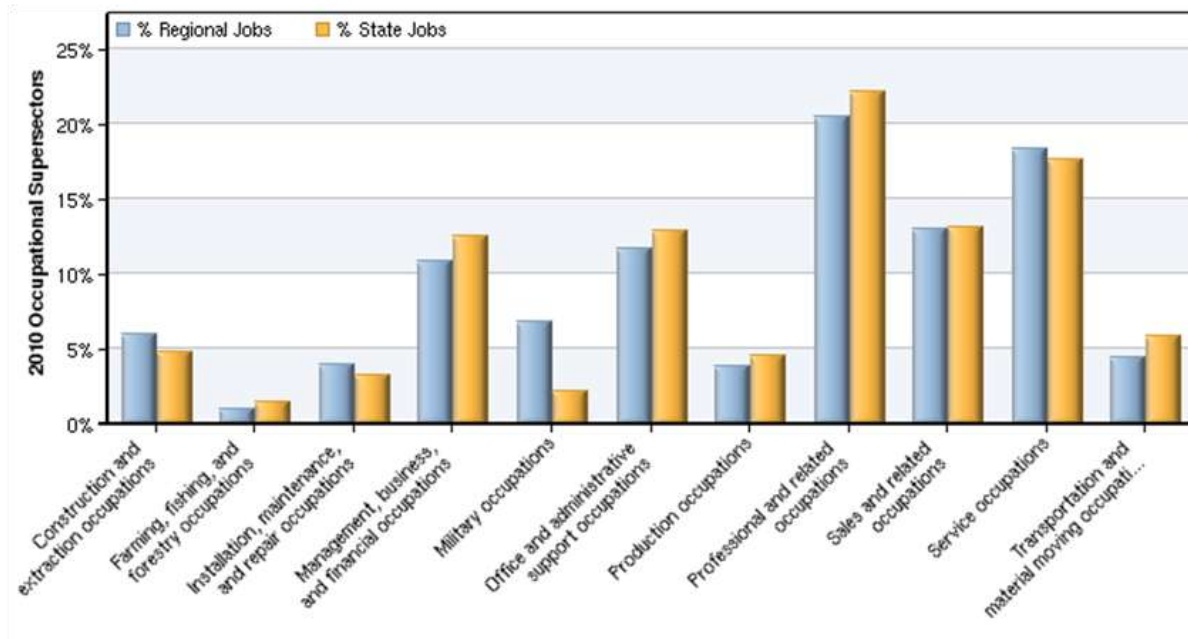
Clallam County has the second highest 2-year participation rate for any county in the state. Four-year participation is below the state average in all of the region's counties. Clallam, Jefferson, and Mason counties show 4-year participation rates among the lowest in the state.

### Regional Economic Forecast

#### *Occupational Profile as Compared to the State*

The following chart and table below compare the regional occupational profile to the state as a whole. Because this sub-region has two distinctly different economies within it, the profiles for Clallam Jefferson and Mason Counties would likely look different than the profile of Kitsap County. The occupational category which varies the most from the state profile is military occupations (higher).

**Figure 22**  
Northwest–Olympic Sub-Region



**Table 26**  
Northwest–Olympic Sub-Region

Description/Occupations	2010 Regional Jobs	% Regional Jobs	2010 State Jobs	% State Jobs
Construction and extraction	11,496	5.9%	183,042	4.8%
Farming, fishing, and forestry	1,781	0.9%	54,923	1.4%
Installation, maintenance, and repair	7,662	3.9%	121,785	3.2%
Management, business, and financial	20,971	10.8%	473,768	12.5%
Military occupations	13,288	6.8%	82,385	2.2%
Office and administrative support	22,640	11.6%	486,007	12.8%
Production occupations	7,359	3.8%	169,730	4.5%
Professional and related occupations	39,760	20.4%	838,804	22.1%
Sales and related occupations	25,309	13.0%	495,411	13.0%
Service occupations	35,772	18.4%	671,312	17.7%
Transportation and material moving	8,522	4.4%	220,445	5.8%

Source: EMSI Complete Employment - 3rd Quarter 2010

### *Industry Size, Earnings, and Forecast Growth Rates*

The bubble chart and related table show regional earnings and forecast job growth information for the period 2010 to 2020. The highest wage industry sector is government (which includes employment at Navy installations). The highest growth industry sectors are financial activities, education and health services, and professional and business services.

Figure 23 - Northwest–Olympic Sub-Region

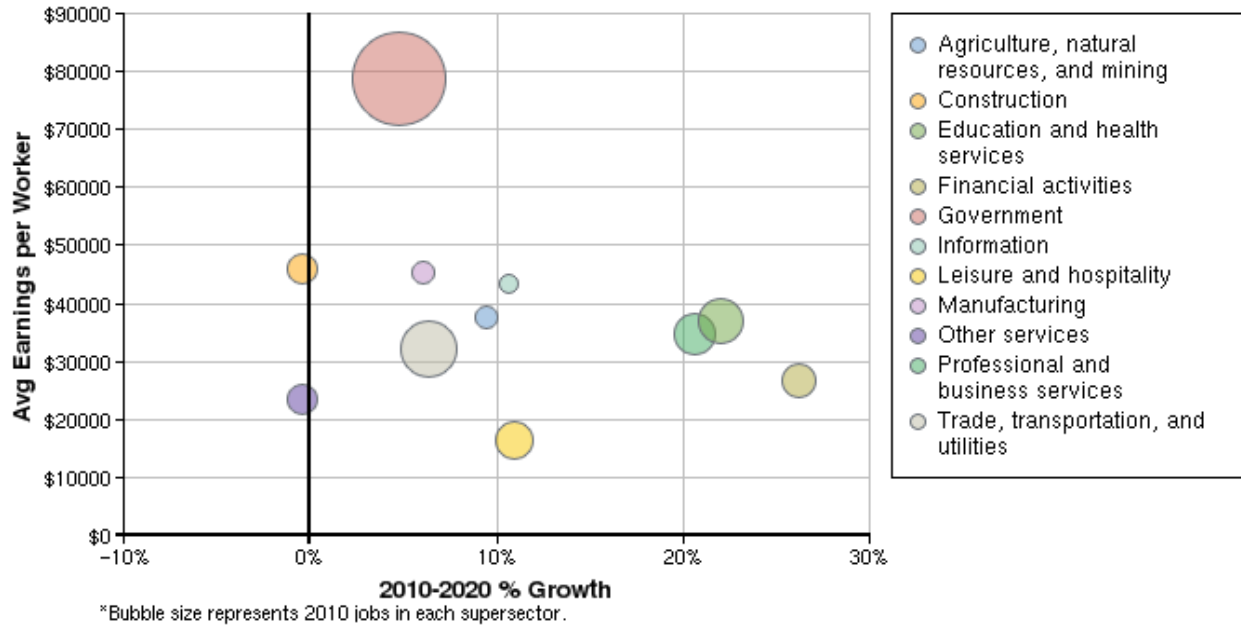


Table 27  
Northwest–Olympic Sub-Region

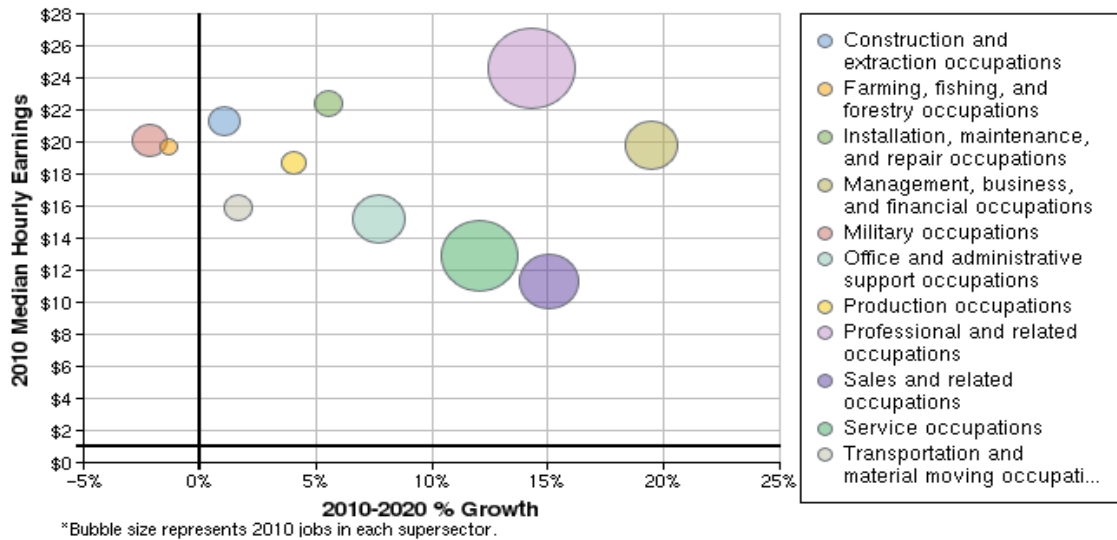
Description	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Earnings Per Worker
Agriculture, natural resources, and mining	4,550	4,980	430	9%	\$37,759
Construction	10,424	10,376	-48	0%	\$45,904
Education and health services	21,929	26,747	4,818	22%	\$36,835
Financial activities	15,122	19,081	3,959	26%	\$26,696
Government	56,750	59,454	2,704	5%	\$78,599
Information	2,428	2,687	259	11%	\$43,296
Leisure and hospitality	16,000	17,744	1,744	11%	\$16,514
Manufacturing	7,127	7,558	431	6%	\$45,370
Other services	10,582	10,541	-41	0%	\$23,353
Professional and business services	20,217	24,389	4,172	21%	\$34,561
Trade, transportation, and utilities	29,431	31,307	1,876	6%	\$32,189
<b>Total</b>	<b>194,560</b>	<b>214,866</b>	<b>20,306</b>	<b>10%</b>	<b>\$45,786</b>

Source: EMSI Complete Employment - 3rd Quarter 2010

**Occupation Size, Earnings, and Forecast Growth Rates**

The same type of analysis is presented below for occupational clusters in the region. The highest wage occupational clusters are professional and related occupations, installation, maintenance, and repair occupations, and construction and extraction occupations. The highest forecast growth occupations are management, business and financial occupations, sales and related occupations, and professional and related occupations.

**Figure 24 - Northwest-Olympic Sub-Region**



**Table 28  
Northwest-Olympic Sub-Region**

Description/Occupations	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Median Hourly Earnings
Construction and extraction	11,496	11,615	119	1%	\$21.28
Farming, fishing, and forestry	1,781	1,757	-24	-1%	\$19.70
Installation, maintenance, and repair	7,662	8,086	424	6%	\$22.44
Management, business, and financial	20,971	25,060	4,089	19%	\$19.77
Military occupations	13,288	12,998	-290	-2%	\$20.11
Office and administrative support	22,640	24,387	1,747	8%	\$15.17
Production occupations	7,359	7,655	296	4%	\$18.68
Professional and related occupations	39,760	45,443	5,683	14%	\$24.57
Sales and related occupations	25,309	29,125	3,816	15%	\$11.26
Service occupations	35,772	40,079	4,307	12%	\$12.87
Transportation and material moving	8,522	8,662	140	2%	\$15.87
<b>Total</b>	<b>194,560</b>	<b>214,866</b>	<b>20,306</b>	<b>10%</b>	<b>\$17.84</b>

Source: EMSI Complete Employment - 3rd Quarter 2010



**Identification of High Demand Occupations Paying Self-Sufficiency Wages**

The HECB analyzed EMSI, Inc. employment forecast data and combined them with information about self-sufficiency wages for the region. The objective was to identify specific occupations that

- 1) require a postsecondary credential or apprenticeship;
- 2) are forecast to have a large number of job openings over the next 10 years: and
- 3) offer median wages that are at least higher than the county/area with the lowest self-sufficiency wage in the region for each of three common family types. These criteria zero in on the occupations that are the first place to look for program expansion and economic development opportunities.

**Self-Sufficiency Wages by County and Family Type**

Table 29 shows the self-sufficiency wages for three common family types for each county in the region. The Olympic sub-region is separated into the five count/areas indicated with self-sufficiency wages calculated for each county/area. The Mason County area has the lowest self-sufficiency wage for all three family types. These wages made up the thresholds for the analysis of occupations that follows.

**Table 29  
Olympic Sub-region Self-sufficiency Wages and High Growth Occupations**

Olympic Sub-Region Self-Sufficiency Wages and High Growth Occupations						
Self-Sufficiency Wages by County	Annual Self-Sufficiency Standard			Computed Self-Sufficiency Hourly Wage		
	2 Adults, 1 Adult, 1 Preschooler, 1 School age			2 Adults, 1 Adult, 1 Preschooler, 1 School age		
County	1 Adult, 1 Preschooler	1 School age	(each adult)	1 Adult, 1 Preschooler	1 School age	(each adult)
Clallam	\$33,538	\$39,719	\$23,222	\$16.12	\$19.10	\$11.16
Jefferson	\$33,777	\$39,908	\$23,291	\$16.24	\$19.19	\$11.20
Kitsap (Bainbridge Island)	\$38,703	\$45,427	\$26,083	\$18.61	\$21.84	\$12.54
Kitsap (Excluding Bainbridge Island)	\$32,866	\$40,011	\$23,492	\$15.80	\$19.24	\$11.29
Mason	\$30,863	\$37,700	\$22,454	\$14.84	\$18.13	\$10.80

Source: Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

**Analysis of the Top 50 Growth Occupations in Region that Require Postsecondary Education, and Wage Levels**

The tables below show the top 50 occupations in the region by the total number of job openings forecast between 2010 and 2020. Job openings represent new jobs due to increased demand and replacement jobs due to retirements and job turnover. Only those occupations that require postsecondary education or apprenticeships are listed.



Also indicated is whether the median wage for each occupation exceeds the lowest self-sufficiency wage among the counties/areas that comprise the region. The HECB encourages institutions to focus program expansion efforts on those occupations that exceed this wage threshold for all three family types.

Registered nurses, teachers, business operations specialists, firefighters, and electricians are among the occupations with 400 or more job openings and that pay in excess of the self-sufficiency wage for all three family types.

As indicated in Table 9b, the Northwest region as a whole will be home to 11 percent of all Washington job openings requiring postsecondary education between 2010 and 2020. This is more than the region's nine percent share of Washington's college-level jobs in 2009, indicating relatively higher growth of jobs requiring postsecondary education in this region.

Table 30

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Olympic Region by Number of Jobs

*Exceeds Mason County Standard*

	Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult, 1 Preschooler	1 Adult, 1 Preschooler, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)
1	Real estate sales agents	41-9022	2,481	3,362	881	36%	1,287	52%	\$8.75	Postsecondary vocational award			
2	Registered nurses	29-1111	2,424	2,908	484	20%	907	37%	\$31.25	Associate's degree	✓	✓	✓
3	Property, real estate, and community association managers	11-9141	1,498	2,020	522	35%	780	52%	\$9.31	Bachelor's degree			
4	Chief executives and sole proprietors	11-1011	1,392	1,692	300	22%	691	50%	\$14.26	Degree plus work experience			✓
5	Management analysts	13-1111	1,406	1,805	399	28%	640	46%	\$18.10	Degree plus work experience	✓		✓
6	Elementary school teachers, except special education	25-2021	1,733	1,922	189	11%	587	34%	\$35.21	Bachelor's degree	✓	✓	✓
7	Business operation specialists, all other	13-1199	1,596	1,725	129	8%	506	32%	\$34.78	Bachelor's degree	✓	✓	✓
8	Personal financial advisors	13-2052	881	1,282	401	46%	496	56%	\$10.07	Bachelor's degree			
9	Accountants and auditors	13-2011	1,313	1,566	253	19%	474	36%	\$17.61	Bachelor's degree	✓		✓
10	Photographers	27-4021	1,230	1,453	223	18%	471	38%	\$9.10	Long-term on-the-job training			
11	Securities, commodities, and financial services sales agents	41-3031	642	910	268	42%	465	72%	\$11.92	Bachelor's degree			✓
12	Fire fighters	33-2011	897	1,060	163	18%	438	49%	\$30.38	Long-term on-the-job training	✓	✓	✓
13	Nursing aides, orderlies, and attendants	31-1012	1,500	1,787	287	19%	436	29%	\$13.13	Postsecondary vocational award			✓
14	Teachers and instructors, all other	25-3099	1,566	1,743	177	11%	419	27%	\$19.99	Bachelor's degree	✓	✓	✓
15	Electricians	47-2111	1,352	1,367	15	1%	400	30%	\$25.78	Long-term on-the-job training	✓	✓	✓
16	Cooks, restaurant	35-2014	1,089	1,189	100	9%	381	35%	\$11.01	Long-term on-the-job training			✓
17	Medical secretaries	43-6013	1,042	1,274	232	22%	373	36%	\$16.75	Postsecondary vocational award	✓		✓
18	Carpenters	47-2031	2,102	2,065	-37	-2%	368	18%	\$19.66	Long-term on-the-job training	✓	✓	✓
19	Secondary school teachers, except special and vocational education	25-2031	968	1,010	42	4%	335	35%	\$34.95	Bachelor's degree	✓	✓	✓
20	Lawyers	23-1011	834	1,002	168	20%	324	39%	\$22.84	First professional degree	✓	✓	✓
21	Postsecondary teachers	25-1099	1,023	1,148	125	12%	304	30%	\$30.81	Doctoral degree	✓	✓	✓
22	General and operations managers	11-1021	887	922	35	4%	301	34%	\$35.76	Degree plus work experience	✓	✓	✓
23	Appraisers and assessors of real estate	13-2021	568	750	182	32%	285	50%	\$10.58	Postsecondary vocational award			
24	Licensed practical and licensed vocational nurses	29-2061	587	680	93	16%	276	47%	\$19.56	Postsecondary vocational award	✓	✓	✓
25	Physicians and surgeons	29-1069	787	921	134	17%	273	35%	\$52.62	First professional degree	✓	✓	✓

Table 30 (Continued)

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Olympic Region by Number of Jobs											Exceeds Mason County Standard		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult, 1 Preschooler	1 Adult, 1 Preschooler, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)	
26	Engineering technicians, except drafters, all other	17-3029	928	1,000	72	8%	268	29%	\$37.28	Associate's degree	✓	✓	✓
27	Middle school teachers, except special and vocational education	25-2022	775	857	82	11%	261	34%	\$35.20	Bachelor's degree	✓	✓	✓
28	Welders, cutters, solderers, and brazers	51-4121	768	727	-41	-5%	253	33%	\$24.58	Long-term on-the-job training	✓	✓	✓
29	Writers and authors	27-3043	583	698	115	20%	238	41%	\$9.13	Bachelor's degree			
30	Dental hygienists	29-2021	385	524	139	36%	218	57%	\$46.76	Associate's degree	✓	✓	✓
31	Police and sheriff's patrol officers	33-3051	648	692	44	7%	216	33%	\$28.74	Long-term on-the-job training	✓	✓	✓
32	Gaming dealers	39-3011	345	399	54	16%	209	61%	\$11.67	Postsecondary vocational award			✓
33	Plumbers, pipefitters, and steamfitters	47-2152	927	820	-107	-12%	194	21%	\$24.21	Long-term on-the-job training	✓	✓	✓
34	Financial managers	11-3031	495	593	98	20%	187	38%	\$28.64	Degree plus work experience	✓	✓	✓
35	Farmers and ranchers	11-9012	1,404	1,503	99	7%	186	13%	\$8.55	Long-term on-the-job training			
36	Automotive service technicians and mechanics	49-3023	861	846	-15	-2%	184	21%	\$19.19	Postsecondary vocational award	✓	✓	✓
37	Rehabilitation counselors	21-1015	469	544	75	16%	180	38%	\$17.19	Master's degree	✓		✓
38	Farm, ranch, and other agricultural managers	11-9011	420	512	92	22%	177	42%	\$14.01	Degree plus work experience			✓
39	Construction managers	11-9021	860	957	97	11%	173	20%	\$18.89	Bachelor's degree	✓	✓	✓
40	Mechanical engineers	17-2141	512	547	35	7%	172	34%	\$38.97	Bachelor's degree	✓	✓	✓
41	Human resources, training, and labor relations specialists, all other	13-1079	374	446	72	19%	171	46%	\$29.19	Bachelor's degree	✓	✓	✓
42	Insurance sales agents	41-3021	514	537	23	4%	171	33%	\$17.41	Bachelor's degree	✓		✓
43	Civil engineers	17-2051	567	636	69	12%	165	29%	\$30.69	Bachelor's degree	✓	✓	✓
44	Financial analysts	13-2051	252	366	114	45%	160	63%	\$11.32	Bachelor's degree			✓
45	Tax examiners, collectors, and revenue agents	13-2081	301	348	47	16%	158	52%	\$23.37	Bachelor's degree	✓	✓	✓
46	Clinical, counseling, and school psychologists	19-3031	304	360	56	18%	142	47%	\$19.39	Doctoral degree	✓	✓	✓
47	Fitness trainers and aerobics instructors	39-9031	318	401	83	26%	140	44%	\$16.80	Postsecondary vocational award	✓		✓
48	Computer support specialists	15-1041	375	399	24	6%	129	34%	\$20.46	Associate's degree	✓	✓	✓
49	Computer specialists, all other	15-1099	408	442	34	8%	129	32%	\$35.76	Associate's degree	✓	✓	✓
50	Network systems and data communications analysts	15-1081	263	335	72	27%	120	46%	\$20.33	Bachelor's degree	✓	✓	✓

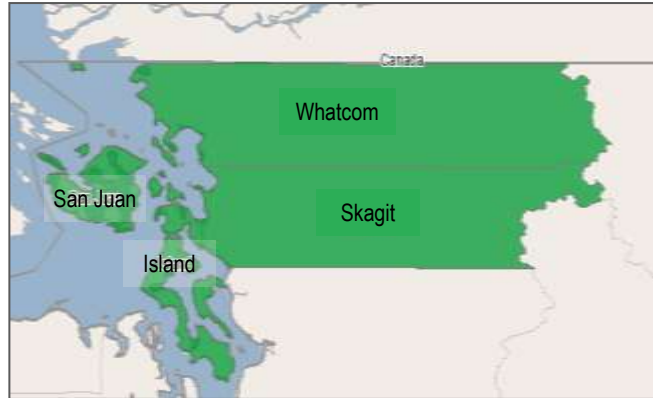
Source: EMSI Complete Employment - 3rd Quarter 2010

Note: The Mason County Self-Sufficiency Standard is the lowest living wage standard for the counties that comprise this region, based on calculations found in Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

## Northwest Region–Balance of Region

### Total Enrollment of Institutions in Region

The Northwest region includes the northern counties comprising the northern Puget Sound and Olympic Peninsula. Because the Olympic Peninsula is geographically isolated from much of the rest of the region, employer demand analysis was separated into the Olympic and Balance of Region Sub-Regions. The Northwest Sub-region is a four-county area that includes Mount Baker National Park and surrounding national forests, the cities of Bellingham and Mount Vernon, and many Puget Sound islands.



The Northwest Sub-Region is dominated by a handful of public institutions including two community colleges, a technical college, and a 4-year regional university, Western Washington University. There is very little private degree-granting capacity based in the sub-region. As one of the largest institutions in the state, Western Washington University has over twice the enrollments as the next largest institution in the sub-region.

Figure 25

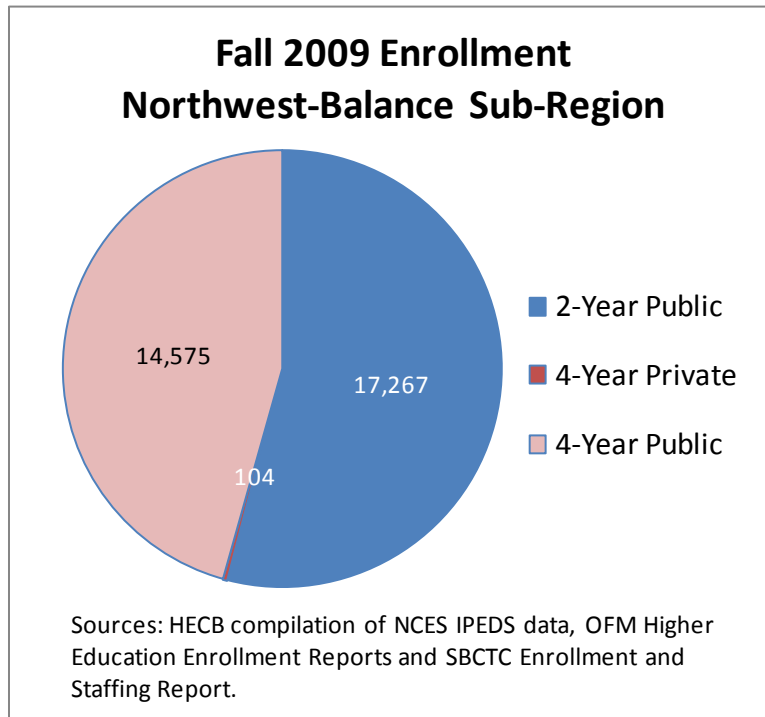


Table 31

Fall 2009 Enrollment in Northwest-Balance Sub-Region			Total
Institutions	Undergraduate	Graduate	Enrollment
<b>2-Year Public</b>	<b>17,267</b>		<b>17,267</b>
Bellingham Technical College	3,581		3,581
Skagit Valley Community College	6,806		6,806
Whatcom Community College	6,880		6,880
<b>4-Year Private</b>	<b>104</b>		<b>104</b>
Northwest College of Art	104		104
<b>4-Year Public</b>	<b>13,396</b>	<b>1,179</b>	<b>14,575</b>
Western Washington University	13,396	1,179	14,575
<b>Grand Total</b>	<b>30,767</b>	<b>1,179</b>	<b>31,946</b>

Sources: HECB compilation of NCES IPEDS data, OFM Higher Education Enrollment Reports and SBCTC Enrollment and Staffing Report.

### New Student Enrollment

As shown in Table 6, Western Washington University serves a larger share (62%) of Washington high school and Running Start graduates than any other public 4-year institution.

Just 11 percent of WWU's new enrollments come from out of state. However, the percentage of new student enrollments that are transfer students (17%) is lower than the other regional institutions and branch campuses, suggesting limited in-region transfer opportunities for community college graduates.

### Higher Education Participation Rates

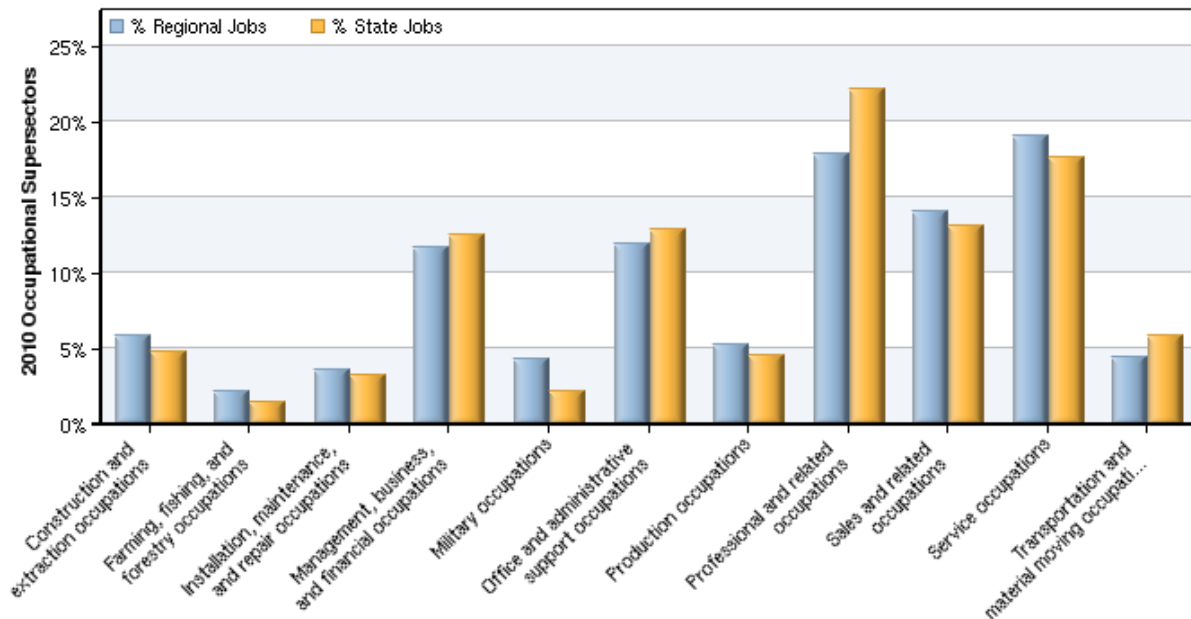
Participation rates in the region are fairly high at the two-year level and low at the baccalaureate level (see Figures 8 and 9, above). Two-year college participation rates are at or above the state average for all of the counties in the region except San Juan. Four-year participation is below the state average in all of the region's counties, except Whatcom, where WWU is located.

## Regional Economic Forecast

### *Occupational Profile as Compared to the State*

The following chart and table compare the regional occupational profile to the state as a whole. The occupational categories which vary the most from the state profile are military occupations (much higher due to the presence of the Naval Air Station on Whidbey Island) and professional and related services (lower).

**Figure 26 – Northwest-Balance Sub-Region**



**Table 32**

### Northwest-Balance Sub-Region

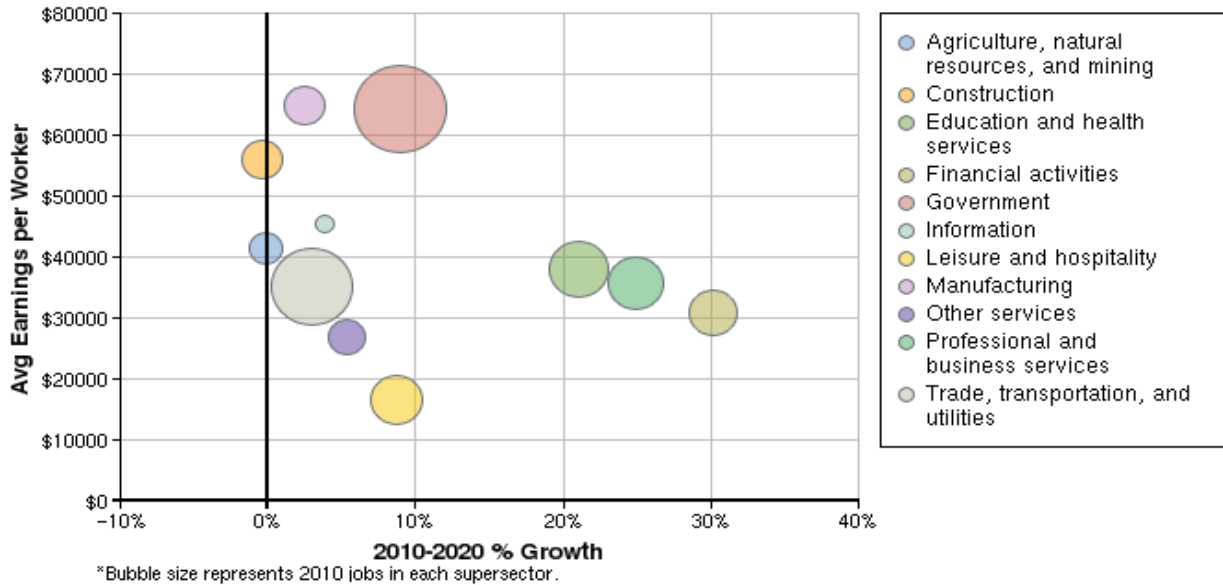
Description/Occupations	2010 Regional Jobs	% Regional Jobs	2010 State Jobs	% State Jobs
Construction and extraction	12,676	5.9%	183,042	4.8%
Farming, fishing, and forestry	4,651	2.2%	54,923	1.4%
Installation, maintenance, and repair occupations	7,754	3.6%	121,785	3.2%
Management, business, and financial	25,023	11.6%	473,768	12.5%
Military occupations	9,359	4.3%	82,385	2.2%
Office and administrative support	25,600	11.9%	486,007	12.8%
Production occupations	11,175	5.2%	169,730	4.5%
Professional and related occupations	38,513	17.9%	838,804	22.1%
Sales and related occupations	30,164	14.0%	495,411	13.0%
Service occupations	41,028	19.0%	671,312	17.7%
Transportation and material moving	9,608	4.5%	220,445	5.8%

Source: EMSI Complete Employment - 3rd Quarter 2010

**Industry Size, Earnings, and Forecast Growth Rates**

The bubble chart and related table below show regional earnings and forecast job growth information for the period 2010 to 2020. The highest wage industry sectors are manufacturing, government, and construction. The highest growth industry sectors are financial activities, professional and business services, education and health services.

**Figure 27 – Northwest-Balance Sub-Region**



**Table 33**

**Northwest-Balance Sub-Region**

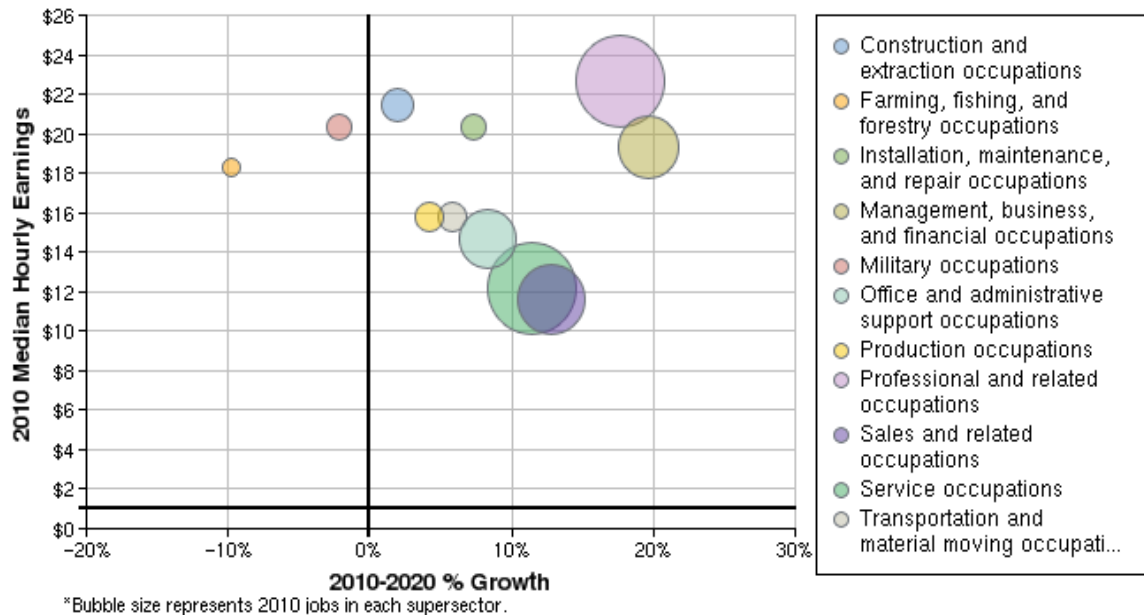
Description	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Earnings Per Worker
Agriculture, natural resources, and mining	10,551	10,539	-12	0%	\$41,388
Construction	14,874	14,808	-66	0%	\$56,122
Education and health services	23,419	28,337	4,918	21%	\$38,086
Financial activities	19,027	24,771	5,744	30%	\$30,826
Government	39,886	43,457	3,571	9%	\$64,420
Information	2,830	2,938	108	4%	\$45,358
Leisure and hospitality	20,475	22,264	1,789	9%	\$16,623
Manufacturing	14,900	15,269	369	2%	\$64,941
Other services	11,910	12,549	639	5%	\$26,762
Professional and business services	21,993	27,466	5,473	25%	\$35,750
Trade, transportation, and utilities	35,685	36,725	1,040	3%	\$35,265
<b>Total</b>	<b>215,551</b>	<b>239,124</b>	<b>23,573</b>	<b>11%</b>	<b>\$42,306</b>

Source: EMSI Complete Employment - 3rd Quarter 2010

**Occupation Size, Earnings, and Forecast Growth Rates**

The same type of analysis is presented below for occupational clusters in the region. The highest wage occupational clusters are professional and related occupations, construction and extraction occupations, military occupations, and installation, maintenance, and repair occupations. The highest forecast growth occupations are management, business and financial occupations, and professional and related occupations.

**Figure 28 – Northwest-Balance Sub-Region**



**Table 34**

Description/Occupations	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Median Hourly Earnings
Construction and extraction	12,676	12,916	240	2%	\$21.49
Farming, fishing, and forestry	4,651	4,199	-452	-10%	\$18.31
Installation, maintenance, and repair	7,754	8,324	570	7%	\$20.35
Management, business, and financial	25,023	29,948	4,925	20%	\$19.32
Military occupations	9,359	9,155	-204	-2%	\$20.38
Office and administrative support	25,600	27,710	2,110	8%	\$14.70
Production occupations	11,175	11,644	469	4%	\$15.80
Professional and related occupations	38,513	45,334	6,821	18%	\$22.68
Sales and related occupations	30,164	34,013	3,849	13%	\$11.60
Service occupations	41,028	45,712	4,684	11%	\$12.14
Transportation and material moving	9,608	10,169	561	6%	\$15.76
<b>Total</b>	<b>215,551</b>	<b>239,124</b>	<b>23,573</b>	<b>11%</b>	<b>\$16.77</b>

Source: EMSI Complete Employment - 3rd Quarter 2010



## Identification of High Demand Occupations Paying Self-Sufficiency Wages

The HECB analyzed EMSI, Inc. employment forecast data and combined them with information about self-sufficiency wages for the region. The objective was to identify specific occupations that 1) require a postsecondary credential or apprenticeship; 2) are forecast to have a large number of job openings over the next 10 years; and 3) offer median wages that are at least higher than the county/area with the lowest self-sufficiency wage in the region for each of three common family types. These criteria zero in on the occupations that are the first place to look for program expansion and economic development opportunities.

### *Self-Sufficiency Wages by County and Family Type*

The table below shows the self-sufficiency wages for three common family types for each county in the region. The four counties that comprise the sub-region show little variation in self-sufficiency wage levels. Whatcom County has the lowest self-sufficiency wage for all three family types. These wages made up the thresholds for the analysis of occupations that follows.

Table 35

Northwest-Balance Region Self-Sufficiency Wages and High Growth Occupations						
Self-Sufficiency Wages by County	Annual Self-Sufficiency Standard			Computed Self-Sufficiency Hourly Wage		
	2 Adults			2 Adults,		
County	1 Adult,	1 Adult	1 Preschooler	1 Adult,	1 Adult	1 Preschooler
	1 Preschooler	1 School age (each adult)	1 School age (each adult)	1 Preschooler	1 School age (each adult)	1 School age (each adult)
Island	\$35,892	\$41,527	\$24,022	\$17.26	\$19.96	\$11.55
San Juan	\$37,717	\$45,689	\$26,100	\$18.13	\$21.97	\$12.55
Skagit	\$35,714	\$42,687	\$24,639	\$17.17	\$20.52	\$11.85
Whatcom	\$35,449	\$42,454	\$24,578	\$17.04	\$20.41	\$11.82

Source: Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

### *Analysis of the Top 50 Growth Occupations in Region that Require Postsecondary Education, and Wage Levels*

The tables below show the top 50 occupations in the region by the total number of job openings forecast between 2010 and 2020. Job openings represent new jobs due to increased demand and replacement jobs due to retirements and job turnover. Only those occupations that require postsecondary education or apprenticeships are listed. Also indicated is whether the median wage for each occupation exceeds the lowest self-sufficiency wage among the counties/areas that comprise the region. The HECB encourages institutions to focus program expansion efforts on those occupations that exceed this wage threshold for all three family types.

In comparison to the other regions, this region has few occupations that offer both high levels of forecast job openings and self-sufficiency wages. Registered nurses, teachers, teachers, carpenters, and general and operations managers are occupations with 400 or more job openings and that pay in excess of the self-sufficiency wage for all three family types. As indicated in Table 9b, the Northwest region as a whole will be home to 11 percent of all Washington job openings requiring postsecondary education between 2010 and 2020. This is more than the region's 9 percent share of Washington's college-level jobs in 2009, indicating relatively higher growth of jobs requiring postsecondary education in this region.

Table 36

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Northwest-Balance Region by Number of Jobs											<i>Exceeds Whatcom/Island County Standard</i>		
Rank	Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	Exceeds Whatcom/Island County Standard		
											1 Adult, 1 Preschooler	1 Adult, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)
1	Real estate sales agents	41-9022	3,183	4,413	1,230	39%	1,752	55%	\$8.72	Postsecondary vocational award			
2	Property, real estate, and community association managers	11-9141	1,986	2,716	730	37%	1,072	54%	\$9.97	Bachelor's degree			
3	Registered nurses	29-1111	2,553	3,133	580	23%	1,027	40%	\$28.92	Associate's degree	✓	✓	✓
4	Chief executives and sole proprietors	11-1011	1,570	1,919	349	22%	790	50%	\$16.26	Degree plus work			✓
5	Elementary school teachers, except special education	25-2021	1,597	1,874	277	17%	640	40%	\$32.56	Bachelor's degree	✓	✓	✓
6	Accountants and auditors	13-2011	1,634	1,983	349	21%	625	38%	\$18.03	Bachelor's degree	✓		✓
7	Securities, commodities, and financial services sales agents	41-3031	864	1,170	306	35%	571	66%	\$16.65	Bachelor's degree			✓
8	Postsecondary teachers	25-1099	1,584	1,866	282	18%	558	35%	\$30.90	Doctoral degree	✓	✓	✓
9	Personal financial advisors	13-2052	1,018	1,464	446	44%	556	55%	\$12.68	Bachelor's degree			✓
10	Management analysts	13-1111	1,104	1,470	366	33%	556	50%	\$15.55	Degree plus work			✓
11	Carpenters	47-2031	2,859	2,753	-106	-4%	513	18%	\$21.90	Long-term on-the-job	✓	✓	✓
12	Cooks, restaurant	35-2014	1,523	1,563	40	3%	464	30%	\$11.89	Long-term on-the-job			✓
13	Photographers	27-4021	1,267	1,474	207	16%	460	36%	\$9.08	Long-term on-the-job			
14	Nursing aides, orderlies, and attendants	31-1012	1,514	1,792	278	18%	429	28%	\$11.43	Postsecondary vocational award			
15	Teachers and instructors, all other	25-3099	1,251	1,486	235	19%	427	34%	\$19.25	Bachelor's degree	✓		✓
16	Appraisers and assessors of real estate	13-2021	726	985	259	36%	391	54%	\$10.50	Postsecondary vocational award			
17	General and operations managers	11-1021	1,089	1,136	47	4%	381	35%	\$38.16	Degree plus work	✓	✓	✓
18	Medical secretaries	43-6013	1,072	1,287	215	20%	360	34%	\$16.47	Postsecondary vocational award			✓
19	Secondary school teachers, except special and vocational education	25-2031	901	997	96	11%	358	40%	\$32.64	Bachelor's degree	✓	✓	✓
20	Licensed practical and licensed vocational nurses	29-2061	744	863	119	16%	352	47%	\$18.95	Postsecondary vocational award	✓		✓
21	Farm, ranch, and other agricultural managers	11-9011	1,369	1,442	73	5%	351	26%	\$21.18	Degree plus work experience	✓	✓	✓
22	Farmers and ranchers	11-9012	2,498	2,602	104	4%	340	14%	\$9.96	Long-term on-the-job			
23	Physicians and surgeons	29-1069	939	1,108	169	18%	335	36%	\$60.25	First professional degree	✓	✓	✓
24	Fire fighters	33-2011	573	706	133	23%	309	54%	\$22.18	Long-term on-the-job	✓	✓	✓
25	Electricians	47-2111	1,142	1,053	-89	-8%	301	26%	\$23.61	Long-term on-the-job	✓	✓	✓

Table 36 (Continued)

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Northwest-Balance Region by Number of Jobs											<i>Exceeds Whatcom/Island County Standard</i>		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	<i>Exceeds Whatcom/Island County Standard</i>			
										1 Adult, 1 Preschooler	1 Adult, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)	
26 Middle school teachers, except special and vocational education	25-2022	701	821	120	17%	279	40%	\$33.60	Bachelor's degree	✓	✓	✓	
27 Writers and authors	27-3043	609	734	125	21%	252	41%	\$9.10	Bachelor's degree				
28 Compliance officers, except agriculture, construction, health and safety, and transportation	13-1041	624	806	182	29%	248	40%	\$30.42	Long-term on-the-job training	✓	✓	✓	
29 Coaches and scouts	27-2022	526	670	144	27%	245	47%	\$16.29	Long-term on-the-job			✓	
30 Welders, cutters, solderers, and	51-4121	700	697	-3	0%	245	35%	\$19.60	Long-term on-the-job	✓		✓	
31 Financial managers	11-3031	652	774	122	19%	240	37%	\$30.29	Degree plus work	✓	✓	✓	
32 Automotive service technicians and mechanics	49-3023	884	946	62	7%	231	26%	\$20.61	Postsecondary vocational award	✓	✓	✓	
33 Construction managers	11-9021	1,071	1,203	132	12%	230	21%	\$22.56	Bachelor's degree	✓	✓	✓	
34 Business operation specialists, all	13-1199	695	766	71	10%	228	33%	\$24.77	Bachelor's degree	✓	✓	✓	
35 Fitness trainers and aerobics instructors	39-9031	420	560	140	33%	216	51%	\$14.71	Postsecondary vocational award			✓	
36 Insurance sales agents	41-3021	566	637	71	13%	215	38%	\$15.57	Bachelor's degree			✓	
37 Gaming dealers	39-3011	281	369	88	31%	207	74%	\$12.61	Postsecondary vocational award			✓	
38 Plumbers, pipefitters, and	47-2152	828	764	-64	-8%	202	24%	\$24.40	Long-term on-the-job	✓	✓	✓	
39 Lawyers	23-1011	574	664	90	16%	197	34%	\$23.24	First professional degree	✓	✓	✓	
40 Civil engineers	17-2051	519	615	96	18%	187	36%	\$28.50	Bachelor's degree	✓	✓	✓	
41 Network systems and data communications analysts	15-1081	347	470	123	35%	185	53%	\$18.74	Bachelor's degree	✓		✓	
42 Financial analysts	13-2051	308	437	129	42%	185	60%	\$14.76	Bachelor's degree			✓	
43 Police and sheriff's patrol officers	33-3051	450	509	59	13%	175	39%	\$31.37	Long-term on-the-job	✓	✓	✓	
44 Clinical, counseling, and school psychologists	19-3031	385	451	66	17%	175	45%	\$19.83	Doctoral degree	✓		✓	
45 Computer support specialists	15-1041	429	467	38	9%	156	36%	\$18.71	Associate's degree	✓		✓	
46 Dental hygienists	29-2021	295	386	91	31%	152	52%	\$43.63	Associate's degree	✓	✓	✓	
47 Clergy	21-2011	416	478	62	15%	145	35%	\$9.33	Master's degree				
48 Preschool teachers, except special education	25-2011	401	461	60	15%	141	35%	\$10.22	Postsecondary vocational award				
49 Musicians and singers	27-2042	367	433	66	18%	140	38%	\$9.33	Long-term on-the-job				
50 Rehabilitation counselors	21-1015	359	419	60	17%	137	38%	\$17.49	Master's degree	✓		✓	

Source: EMSI Complete Employment - 3rd Quarter 2010

Note: The Whatcom and Island County Self-Sufficiency Standards are the lowest living wage standard for the counties that comprise this region, based on calculations found in Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

## Pierce Region

### Total Enrollment of Institutions in Region

The Pierce region includes Pierce County only, including the City of Tacoma, Joint Base Lewis-McChord, Mount Rainier National Park and the surrounding national forests.



The Pierce region has relatively little baccalaureate and above capacity in relation to its 2-year capacity. Private 4-year capacity is more than twice the public capacity, which is limited to the UW Tacoma campus.

Pierce County is served by five community and technical college campuses. The share of total state enrollment (fall 2009) by Pierce County degree-granting institutions (10%) is less than its share of the 18-64 population (12%).

Figure 29

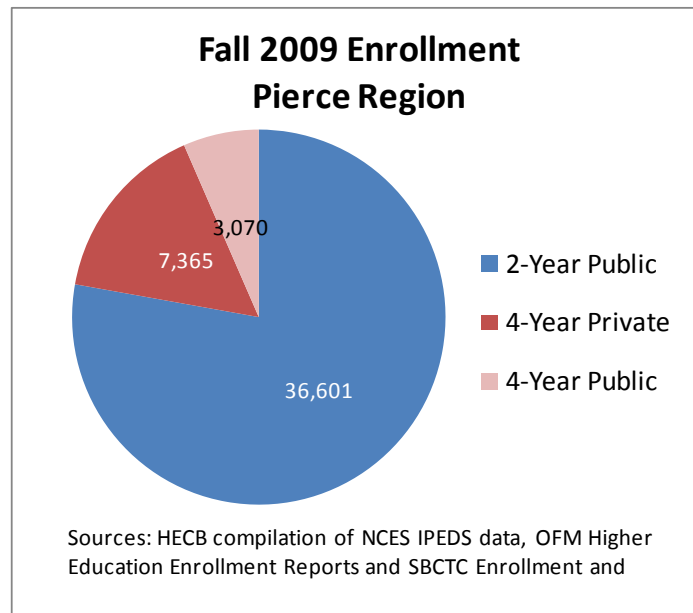


Table 37

Fall 2009 Enrollment in Pierce Region			
Institutions	Undergraduate	Graduate	Total Enrollment
<b>2-Year Public</b>	<b>36,601</b>		<b>36,601</b>
Bates Technical College	6,399		6,399
Clover Park Technical College	7,316		7,316
Pierce College Fort Steilacoom	10,392		10,392
Pierce College Puyallup	3,985		3,985
Tacoma Community College	8,509		8,509
<b>4-Year Private</b>	<b>6,681</b>	<b>684</b>	<b>7,365</b>
Everest College-Tacoma	708		708
Faith Evangelical Seminary	62	135	197
Pacific Lutheran University	3,305	276	3,581
University of Puget Sound	2,606	273	2,879
<b>4-Year Public</b>	<b>2,528</b>	<b>542</b>	<b>3,070</b>
University of Washington Tacoma Campus	2,528	542	3,070
<b>Grand Total</b>	<b>45,810</b>	<b>1,226</b>	<b>47,036</b>

Sources: HECB compilation of NCES IPEDS data, OFM Higher Education Enrollment Reports and SBCTC Enrollment and Staffing Report.

### New Student Enrollment

As shown in Table 6 above, UW Tacoma is primarily a transfer institution (62 percent of new student enrollments) with just 19 percent of its new enrollments coming from Washington high schools or Running Start. Most of UW Tacoma's baccalaureate students are from Washington, with just 20 percent from out of state. Less than half (45 percent) of UW-Tacoma's graduate students last attended a Washington institution.

### Higher Education Participation Rates

Participation rates in the region are low—just under the state average participation rate at the two-year level and well below the state average at the baccalaureate level (see Figures 8 and 9, above). The presence of large numbers of military personnel in the region makes these numbers difficult to interpret, since active duty military and their families typically have low higher education participation rates.

## Regional Economic Forecast

### Occupational Profile as Compared to the State

The chart and table below compare the regional occupational profile to the state as a whole. The occupational categories which vary the most from the state profile are farming, fishing, and forestry occupations (lower), management, business, and financial occupations (lower) military occupations (much higher) and professional and related services (lower).

Figure 30 – Pierce Region

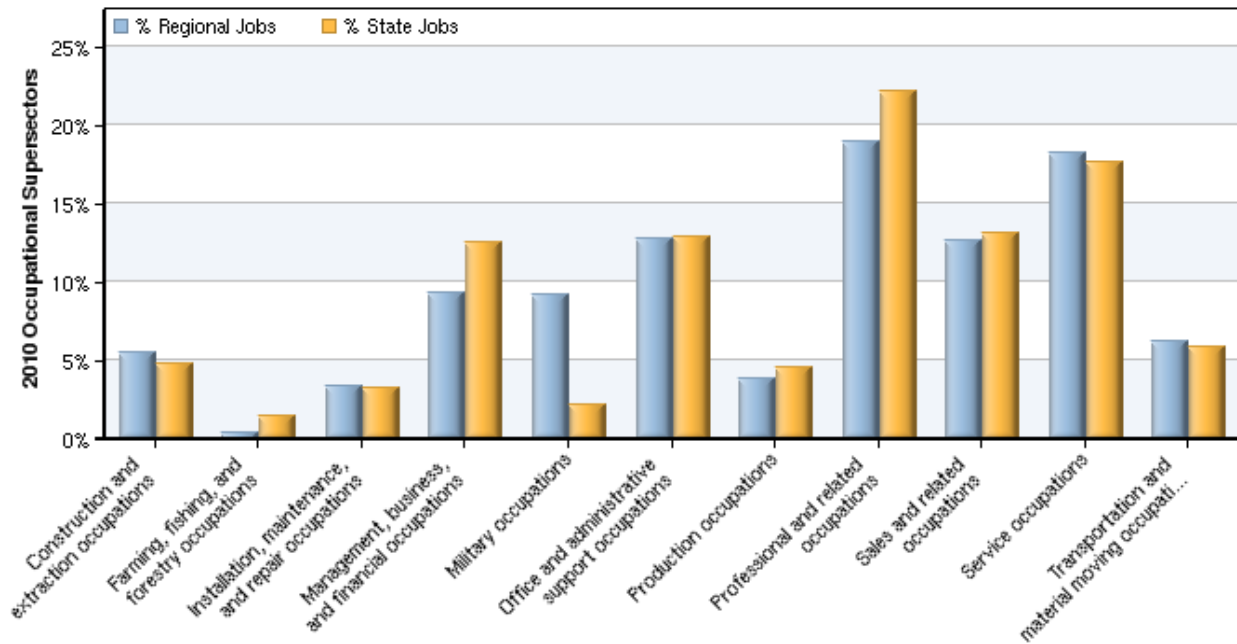


Table 38 – Pierce Region

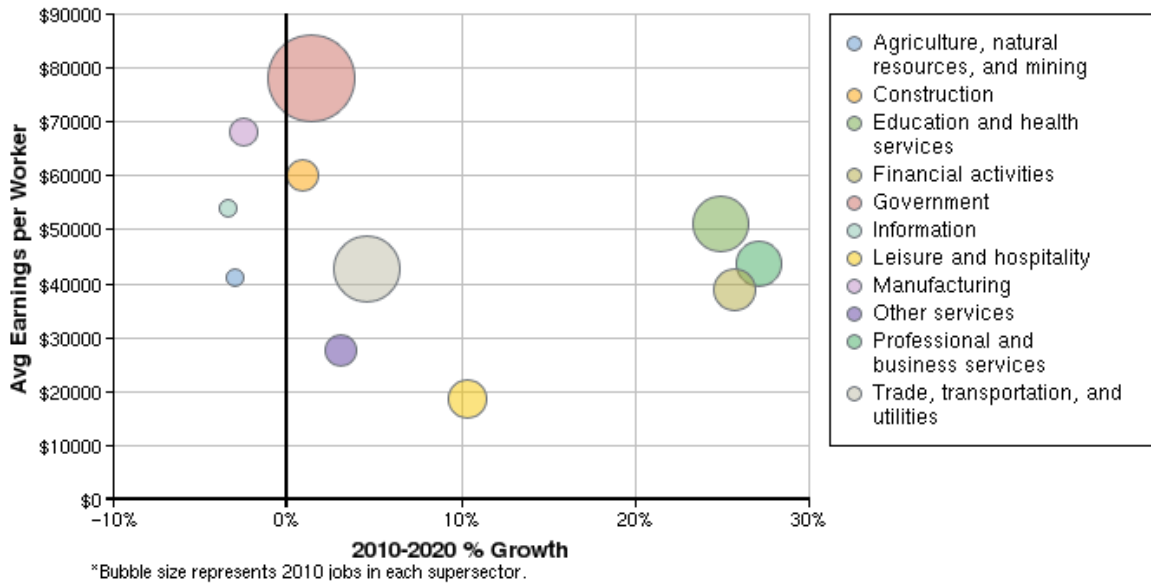
Description/Occupations	2010 Regional Jobs	% Regional Jobs	2010 State Jobs	% State Jobs
Construction and extraction	20,487	5.5%	183,042	4.8%
Farming, fishing, and forestry	1,146	0.3%	54,923	1.4%
Installation, maintenance, and repair	12,673	3.4%	121,785	3.2%
Management, business, and financial	34,728	9.2%	473,768	12.5%
Military occupations	34,633	9.2%	82,385	2.2%
Office and administrative support	47,852	12.7%	486,007	12.8%
Production occupations	14,389	3.8%	169,730	4.5%
Professional and related occupations	70,934	18.9%	838,804	22.1%
Sales and related occupations	47,318	12.6%	495,411	13.0%
Service occupations	68,377	18.2%	671,312	17.7%
Transportation and material moving	23,321	6.2%	220,445	5.8%

Source: EMSI Complete Employment - 3rd Quarter 2010

**Industry Size, Earnings, and Forecast Growth Rates**

The bubble chart and related table below show regional earnings and forecast job growth information for the period 2010 to 2020. Unfortunately, the chart shows that the highest wage industry sectors—government (including military), manufacturing, and construction—are not forecast to grow. The highest growth industry sectors are professional and business services, financial activities<sup>10</sup>, and education and health services.

**Figure 31 – Pierce Region**



**Table 39 – Pierce Region**

Description	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Earnings Per Worker
Agriculture, natural resources, and mining	3,057	2,965	-92	-3%	\$41,150
Construction	23,246	23,441	195	1%	\$59,967
Education and health services	51,071	63,801	12,730	25%	\$50,967
Financial activities	32,601	40,968	8,367	26%	\$38,752
Government	89,722	90,918	1,196	1%	\$78,055
Information	3,671	3,544	-127	-3%	\$54,013
Leisure and hospitality	29,306	32,328	3,022	10%	\$18,600
Manufacturing	17,648	17,202	-446	-3%	\$68,116
Other services	22,316	23,007	691	3%	\$27,777
Professional and business services	37,151	47,230	10,079	27%	\$43,586
Trade, transportation, and utilities	66,070	69,118	3,048	5%	\$42,728
<b>Total</b>	<b>375,859</b>	<b>414,522</b>	<b>38,663</b>	<b>10%</b>	<b>\$51,607</b>

Source: EMSI Complete Employment - 3rd Quarter 2010

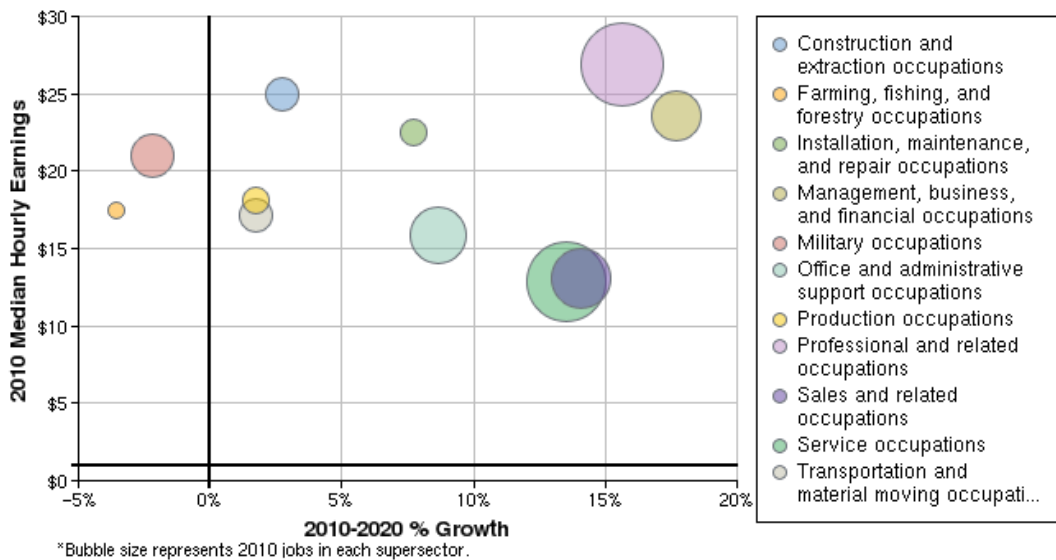
<sup>10</sup> This may be in error as the forecast may not have taken into account the recent move of Russell Investments from Tacoma to Seattle.

**Occupation Size, Earnings, and Forecast Growth Rates**

The same type of analysis is presented below for occupational clusters in the region. Here, the chart is more encouraging, since two of the highest paying occupational clusters are also the highest growth clusters.

The highest wage occupational clusters are professional and related occupations, construction and extraction occupations, and installation, maintenance, and repair occupations. The highest forecast growth occupations are installation, maintenance, and repair occupations, professional and related occupations, and sales and related occupations.

**Figure 32**



**Table 40**

Description/Occupations	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Median Hourly Earnings
Construction and extraction	20,487	21,047	560	3%	\$24.92
Farming, fishing, and forestry	1,146	1,105	-41	-4%	\$17.46
Installation, maintenance, and repair	12,673	13,649	976	8%	\$22.50
Management, business, and financial	34,728	40,876	6,148	18%	\$23.61
Military occupations	34,633	33,878	-755	-2%	\$20.97
Office and administrative support	47,852	51,987	4,135	9%	\$15.89
Production occupations	14,389	14,639	250	2%	\$18.10
Professional and related occupations	70,934	82,029	11,095	16%	\$26.93
Sales and related occupations	47,318	53,971	6,653	14%	\$13.02
Service occupations	68,377	77,607	9,230	13%	\$12.88
Transportation and material moving	23,321	23,732	411	2%	\$17.15
<b>Total</b>	<b>375,859</b>	<b>414,522</b>	<b>38,663</b>	<b>10%</b>	<b>\$19.13</b>

Source: EMSI Complete Employment - 3rd Quarter 2010



## Identification of High Demand Occupations Paying Self-Sufficiency Wages

The HECB analyzed EMSI, Inc. employment forecast data and combined them with information about self-sufficiency wages for the region. The objective was to identify specific occupations that 1) require a postsecondary credential or apprenticeship, 2) are forecast to have a large number of job openings over the next 10 years, and 3) offer median wages that are at least higher than the county/area with the lowest self-sufficiency wage in the region for each of three common family types. These criteria zero in on the occupations that are the first place to look for program expansion and economic development opportunities.

### *Self-Sufficiency Wages by County and Family Type*

The table below shows the self-sufficiency wages for three common family types for the region. The County is divided into two areas—west county cities and the balance of county. These balance of county wages made up the thresholds for the analysis of occupations that follows.

**Table 41**

Pierce Region Self-Sufficiency Wages and High Growth Occupations						
Self-Sufficiency Wages by County Area	Annual Self-Sufficiency Standard			Computed Self-Sufficiency Hourly Wage		
	2 Adults			2 Adults		
	1 Adult	1 Adult	1 Preschooler	1 Adult	1 Adult	1 Preschooler
	1 Preschooler	1 School age	1 School age (each adult)	1 Preschooler	1 School age	1 School age (each adult)
Pierce County (Excluding West County Cities)	\$38,593	\$46,853	\$26,922	\$18.55	\$22.53	\$12.94
Pierce County (West County Cities)	\$39,743	\$47,965	\$27,478	\$19.11	\$23.06	\$13.21

Source: Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

### *Analysis of the Top 50 Growth Occupations in Region that Require Postsecondary Education, and Wage Levels*

The tables below show the top 50 occupations in the region by the total number of job openings forecast between 2010 and 2020. Job openings represent new jobs due to increased demand and replacement jobs due to retirements and job turnover. Only those occupations that require postsecondary education or apprenticeships are listed. Also indicated is whether the median wage for each occupation exceeds the lowest self-sufficiency wage among the counties/areas that comprise the region. The HECB encourages institutions to focus program expansion efforts on those occupations that exceed this wage threshold for all three family types.

In comparison to some of the other regions, this region has few occupations that offer both high levels of forecast job openings and self-sufficiency wages. Registered nurses, teachers, physicians and surgeons, electricians, and carpenters are occupations with 700 or more job openings and that pay in excess of the self-sufficiency wage for all three family types. As indicated in Table 9b above, the Pierce region as a whole will be home to 10% of all Washington job openings requiring postsecondary education between 2010 and 2020. This is more than the region's eight percent share of Washington's college-level jobs in 2009, indicating relatively higher growth of jobs requiring postsecondary education in this region.

Table 42

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Pierce Region by Number of Jobs											Exceeds Pierce County (Exc. Cities) Standard		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult, 1 Preschooler	1 Adult, 1 Preschooler, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)	
1 Registered nurses	29-1111	6,600	8,462	1,862	28%	3,016	46%	\$36.23	Associate's degree	✓	✓	✓	
2 Real estate sales agents	41-9022	4,696	6,543	1,847	39%	2,616	56%	\$8.87	Postsecondary vocational award				
3 Property, real estate, and community association managers	11-9141	2,958	4,054	1,096	37%	1,606	54%	\$10.09	Bachelor's degree				
4 Elementary school teachers, except special education	25-2021	3,750	4,041	291	8%	1,143	30%	\$34.23	Bachelor's degree	✓	✓	✓	
5 Licensed practical and licensed vocational nurses	29-2061	1,814	2,191	377	21%	944	52%	\$21.23	Postsecondary vocational award	✓		✓	
6 Chief executives and sole proprietors	11-1011	1,918	2,297	379	20%	918	48%	\$17.13	Degree plus work experience			✓	
7 Medical secretaries	43-6013	2,171	2,762	591	27%	884	41%	\$16.18	Postsecondary vocational award			✓	
8 Accountants and auditors	13-2011	2,256	2,685	429	19%	810	36%	\$20.11	Bachelor's degree	✓		✓	
9 Securities, commodities, and financial services sales agents	41-3031	1,297	1,708	411	32%	808	62%	\$16.30	Bachelor's degree			✓	
10 Physicians and surgeons	29-1069	1,865	2,311	446	24%	774	42%	\$85.28	First professional degree	✓	✓	✓	
11 Electricians	47-2111	2,243	2,421	178	8%	761	34%	\$28.41	Long-term on-the-job training	✓	✓	✓	
12 Personal financial advisors	13-2052	1,460	2,063	603	41%	760	52%	\$11.59	Bachelor's degree				
13 Carpenters	47-2031	3,933	3,830	-103	-3%	725	18%	\$23.74	Long-term on-the-job training	✓	✓	✓	
14 Postsecondary teachers	25-1099	2,815	3,041	226	8%	716	25%	\$29.58	Doctoral degree	✓	✓	✓	
15 Management analysts	13-1111	1,553	1,997	444	29%	710	46%	\$18.74	Degree plus work experience	✓		✓	
16 Nursing aides, orderlies, and attendants	31-1012	2,189	2,665	476	22%	694	32%	\$12.61	Postsecondary vocational award				
17 Business operation specialists, all other	13-1199	2,066	2,235	169	8%	628	30%	\$28.88	Bachelor's degree	✓	✓	✓	
18 General and operations managers	11-1021	1,851	1,905	54	3%	620	33%	\$46.22	Degree plus work experience	✓	✓	✓	
19 Teachers and instructors, all other	25-3099	2,458	2,685	227	9%	605	25%	\$20.34	Bachelor's degree	✓		✓	
20 Rehabilitation counselors	21-1015	1,370	1,685	315	23%	592	43%	\$16.56	Master's degree			✓	
21 Secondary school teachers, except special and vocational education	25-2031	1,786	1,810	24	1%	576	32%	\$33.33	Bachelor's degree	✓	✓	✓	
22 Appraisers and assessors of real estate	13-2021	1,029	1,412	383	37%	570	55%	\$10.49	Postsecondary vocational award				
23 Cooks, restaurant	35-2014	1,641	1,772	131	8%	551	34%	\$12.25	Long-term on-the-job training				
24 Photographers	27-4021	1,484	1,712	228	15%	525	35%	\$9.83	Long-term on-the-job training				
25 Middle school teachers, except special and vocational education	25-2022	1,655	1,775	120	7%	496	30%	\$34.30	Bachelor's degree	✓	✓	✓	

Table 42 (Continued)

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Pierce Region by Number of Jobs											Exceeds Pierce County (Exc. Cities) Standard		
Rank	Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	2 Adults, 1 Adult, 1 Preschooler, 1 Schoolage (each adult)		
											1 Adult, 1 Preschooler, 1 Schoolage	1 Adult, 1 Preschooler, 1 Schoolage	1 Adult, 1 Preschooler, 1 Schoolage
26	Fire fighters	33-2011	1,086	1,233	147	14%	481	44%	\$30.86	Long-term on-the-job training	✓	✓	✓
27	Insurance sales agents	41-3021	1,276	1,422	146	11%	443	35%	\$16.09	Bachelor's degree			✓
28	Financial managers	11-3031	1,219	1,442	223	18%	442	36%	\$34.09	Degree plus work experience	✓	✓	✓
29	Preschool teachers, except special education	25-2011	1,068	1,274	206	19%	420	39%	\$10.34	Postsecondary vocational award			
30	Gaming dealers	39-3011	674	784	110	16%	395	59%	\$9.62	Postsecondary vocational award			
31	Network systems and data communications analysts	15-1081	636	887	251	39%	366	58%	\$24.81	Bachelor's degree	✓	✓	✓
32	Fitness trainers and aerobics instructors	39-9031	931	1,123	192	21%	359	39%	\$9.86	Postsecondary vocational award			
33	Hairdressers, hairstylists, and cosmetologists	39-5012	1,491	1,629	138	9%	357	24%	\$17.09	Postsecondary vocational award			✓
34	Lawyers	23-1011	1,098	1,247	149	14%	354	32%	\$32.38	First professional degree	✓	✓	✓
35	Automotive service technicians and mechanics	49-3023	1,508	1,547	39	3%	330	22%	\$19.92	Postsecondary vocational award		✓	
36	Financial analysts	13-2051	704	903	199	28%	327	46%	\$23.61	Bachelor's degree	✓	✓	✓
37	Writers and authors	27-3043	694	859	165	24%	310	45%	\$9.33	Bachelor's degree			
38	Mental health counselors	21-1014	887	1,010	123	14%	302	34%	\$19.59	Master's degree	✓		✓
39	Human resources, training, and labor relations specialists, all other	13-1079	667	787	120	18%	294	44%	\$26.42	Bachelor's degree	✓	✓	✓
40	Plumbers, pipefitters, and steamfitters	47-2152	1,138	1,096	-42	-4%	290	25%	\$29.37	Long-term on-the-job training	✓	✓	✓
41	Computer support specialists	15-1041	765	835	70	9%	282	37%	\$21.36	Associate's degree	✓		✓
42	Police and sheriff's patrol officers	33-3051	920	951	31	3%	279	30%	\$31.01	Long-term on-the-job training	✓	✓	✓
43	Construction managers	11-9021	1,392	1,539	147	11%	273	20%	\$28.46	Bachelor's degree	✓	✓	✓
44	Civil engineers	17-2051	863	958	95	11%	240	28%	\$35.09	Bachelor's degree	✓	✓	✓
45	Computer systems analysts	15-1051	619	726	107	17%	240	39%	\$33.83	Bachelor's degree	✓	✓	✓
46	Medical records and health information technicians	29-2071	561	684	123	22%	238	42%	\$15.91	Associate's degree			✓
47	Coaches and scouts	27-2022	635	747	112	18%	233	37%	\$16.72	Long-term on-the-job training			✓
48	Dental hygienists	29-2021	376	530	154	41%	231	61%	\$43.10	Associate's degree	✓	✓	✓
49	Paralegals and legal assistants	23-2011	688	840	152	22%	230	33%	\$20.14	Associate's degree	✓		✓
50	Sales managers	11-2022	600	700	100	17%	230	38%	\$38.16	Degree plus work experience	✓	✓	✓

Source: EMSI Complete Employment - 3rd Quarter 2010

Note: The Pierce County (excluding west county cities) Self-Sufficiency Standard is the lowest living wage standard for the counties that comprise this region, based on calculations found in Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

## Snohomish Region

### Total Enrollment of Institutions in Region

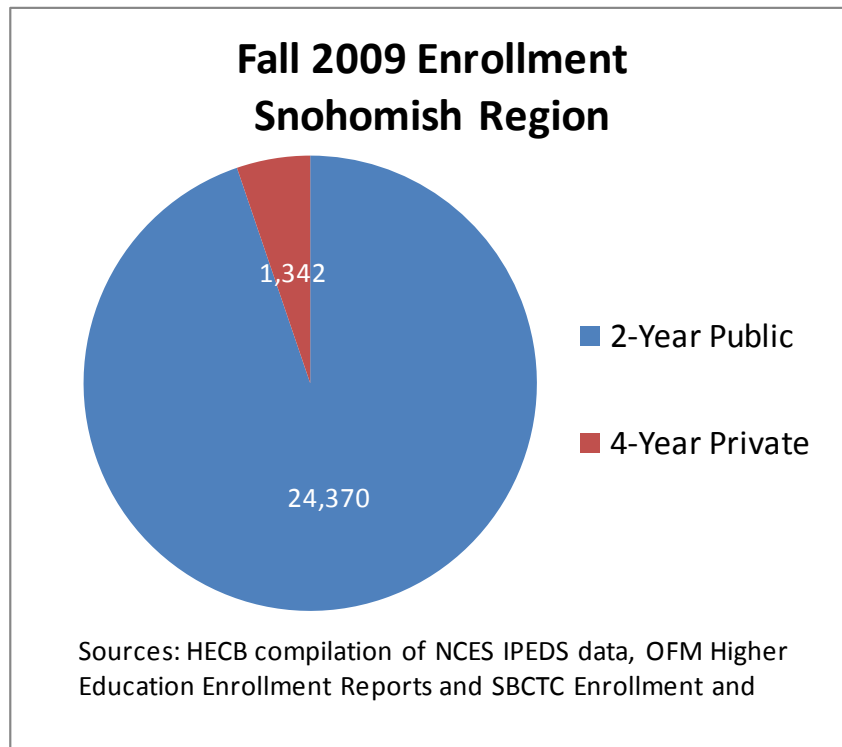
The Snohomish region includes Snohomish County only, including the cities of Everett, Edmonds, Lynnwood and Marysville and Naval Station Everett. Nearly 70 percent of the county’s land area is forest land.

The Snohomish Region has very little baccalaureate and above capacity in comparison to its 2-year capacity.



There are no public 4-year institutions in Snohomish County, however UW Bothell is just over the border in King County and serves many Snohomish County residents (28 percent of total enrollment<sup>11</sup>).

Figure 33



<sup>11</sup> See <http://www.bothell.washington.edu/about/facts>.

Snohomish County is served by two community colleges and two private 4-year institutions. The University Center of North Puget Sound in Everett serves about 500 FTE with baccalaureate and graduate programs offered by several public and private institutions. The share of total state enrollment (fall 2009) by Snohomish County degree-granting institutions (6%) is much less than its share of the 18-64 population (11%).

Table 43

Fall 2009 Enrollment in Snohomish Region			
Institutions	Undergraduate	Graduate	Total Enrollment
<b>2-Year Public</b>	<b>24,370</b>		<b>24,370</b>
Edmonds Community College	12,732		12,732
Everett Community College	11,638		11,638
<b>4-Year Private</b>	<b>1,342</b>		<b>1,342</b>
Everest College-Everett	836		836
ITT Technical Institute-Everett	506		506
<b>Grand Total</b>	<b>25,712</b>	<b>0</b>	<b>25,712</b>

Sources: HECB compilation of NCES IPEDS data, OFM Higher Education Enrollment Reports and SBCTC Enrollment and Staffing Report.

### New Student Enrollment

Analysis of new student enrollment is not applicable to this sub-region due to a lack of resident public 4-year institutions and available data.

### Higher Education Participation Rates

The community college participation rate in Snohomish exceeds the state average, and the baccalaureate participation rate is below the state average (see Figures 8 and 9, above). Although just below the state average, the baccalaureate participation rate is higher than many counties in the state and higher than one might expect for a heavily populated region with no resident public institution. This may be a result of Snohomish students commuting to King County institutions, private college enrollment, and the University Center of North Puget Sound.

## Regional Economic Forecast

### Occupational Profile as Compared to the State

The following chart and table compare the regional occupational profile to the state as a whole. The occupational categories which vary the most from the state profile are farming, fishing, and forestry occupations (lower) and production occupations (higher).

Figure 34 – Snohomish Region

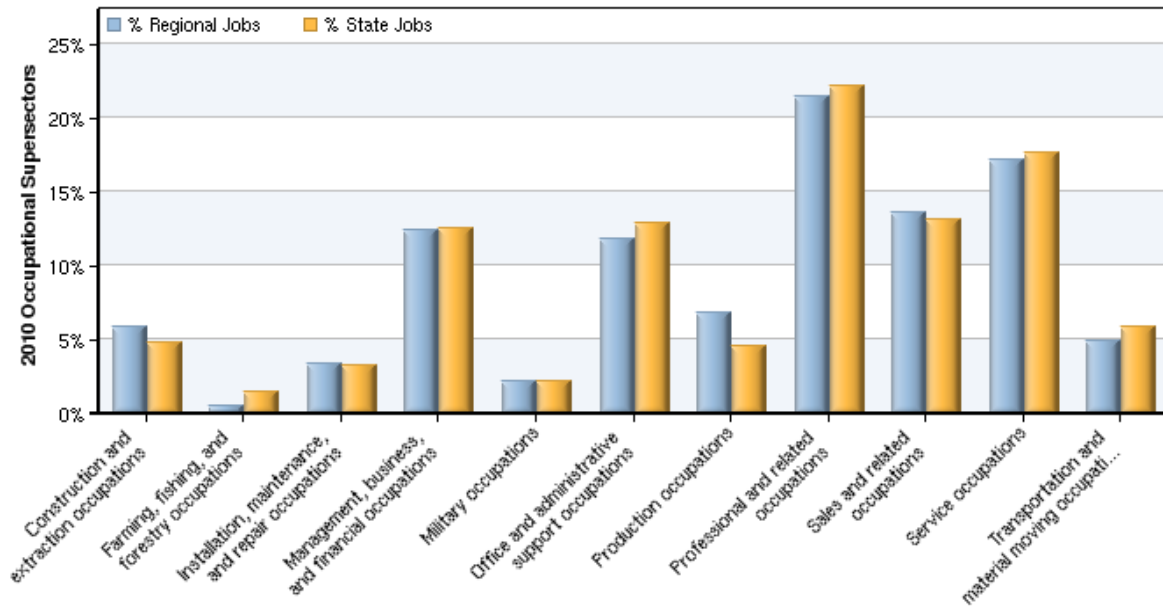


Table 44  
Snohomish Region

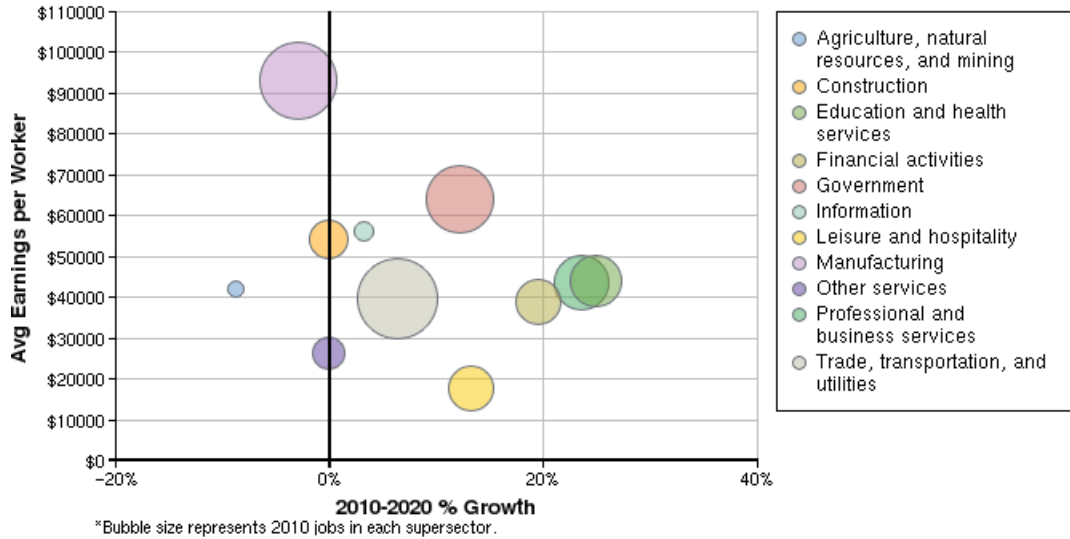
Description/Occupations	2010 Regional Jobs	% Regional Jobs	2010 State Jobs	% State Jobs
<b>Construction and extraction</b>	18,819	5.9%	183,042	4.8%
<b>Farming, fishing, and forestry</b>	1,451	0.5%	54,923	1.4%
<b>Installation, maintenance, and repair</b>	10,833	3.4%	121,785	3.2%
<b>Management, business, and financial</b>	39,815	12.4%	473,768	12.5%
<b>Military occupations</b>	6,993	2.2%	82,385	2.2%
<b>Office and administrative support</b>	38,065	11.8%	486,007	12.8%
<b>Production occupations</b>	21,785	6.8%	169,730	4.5%
<b>Professional and related occupations</b>	68,838	21.4%	838,804	22.1%
<b>Sales and related occupations</b>	43,718	13.6%	495,411	13.0%
<b>Service occupations</b>	55,216	17.2%	671,312	17.7%
<b>Transportation and material moving</b>	15,873	4.9%	220,445	5.8%

Source: EMSI Complete Employment - 3rd Quarter 2010

**Industry Size, Earnings, and Forecast Growth Rates**

The bubble chart and related table below show regional earnings and forecast job growth information for the period 2010 to 2020. The highest earnings industry sectors are manufacturing, government, and information. The highest growth industry sectors are education and health services, professional and business services, and financial activities.

**Figure 35 – Snohomish Region**



**Table 45  
Snohomish Region**

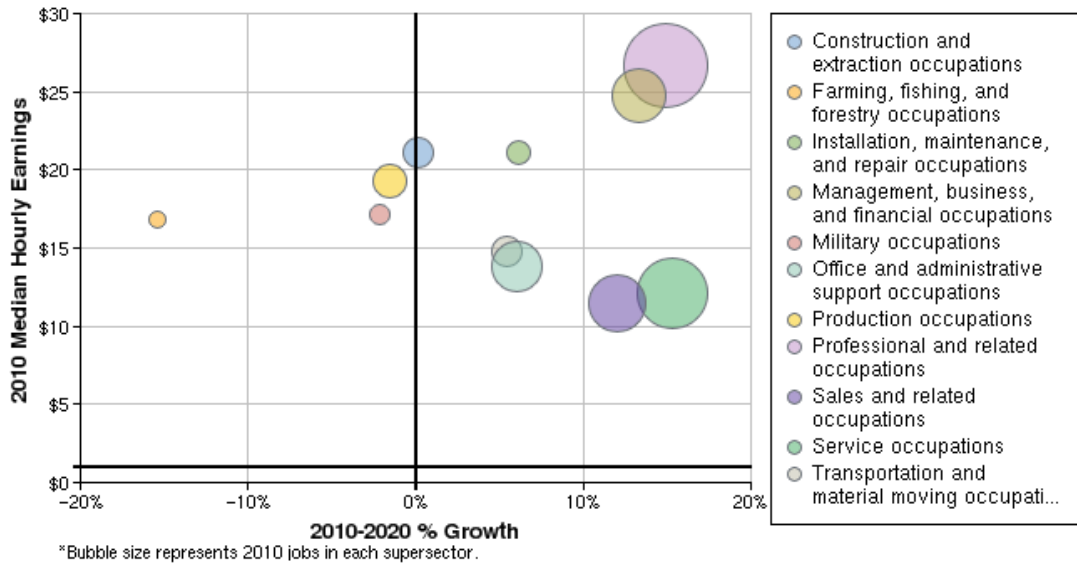
Description	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Earnings Per Worker
Agriculture, natural resources, and mining	3,406	3,106	-300	-9%	\$41,853
Construction	22,071	22,046	-25	0%	\$54,156
Education and health services	32,424	40,501	8,077	25%	\$43,916
Financial activities	27,830	33,268	5,438	20%	\$38,827
Government	44,965	50,410	5,445	12%	\$64,116
Information	5,728	5,907	179	3%	\$56,104
Leisure and hospitality	25,934	29,372	3,438	13%	\$17,851
Manufacturing	52,872	51,305	-1,567	-3%	\$93,111
Other services	16,172	16,154	-18	0%	\$26,426
Professional and business services	35,111	43,389	8,278	24%	\$43,639
Trade, transportation, and utilities	54,890	58,341	3,451	6%	\$39,514
<b>Total</b>	<b>321,405</b>	<b>353,798</b>	<b>32,393</b>	<b>10%</b>	<b>\$51,527</b>

Source: EMSI Complete Employment - 3rd Quarter 2010

**Occupation Size, Earnings, and Forecast Growth Rates**

The same type of analysis is presented below for occupational clusters in the region. The highest wage occupational clusters are professional and related occupations and management, business, and financial occupations. The highest forecast growth occupations are professional and related occupations, sales and related occupations, and management, business, and financial occupations.

**Figure 36**



**Table 46**

Description/Occupations	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Median Hourly Earnings
Construction and extraction	18,819	18,845	26	0%	\$21.08
Farming, fishing, and forestry	1,451	1,227	-224	-15%	\$16.79
Installation, maintenance, and repair	10,833	11,495	662	6%	\$21.06
Management, business, and financial	39,815	45,108	5,293	13%	\$24.77
Military occupations	6,993	6,840	-153	-2%	\$17.18
Office and administrative support	38,065	40,375	2,310	6%	\$13.87
Production occupations	21,785	21,442	-343	-2%	\$19.27
Professional and related occupations	68,838	79,085	10,247	15%	\$26.73
Sales and related occupations	43,718	48,979	5,261	12%	\$11.52
Service occupations	55,216	63,662	8,446	15%	\$12.12
Transportation and material moving	15,873	16,741	868	5%	\$14.81
<b>Total</b>	<b>321,405</b>	<b>353,798</b>	<b>32,393</b>	<b>10%</b>	<b>\$18.51</b>

Source: EMSI Complete Employment - 3rd Quarter 2010



### Identification of High Demand Occupations Paying Self-Sufficiency Wages

The HECB analyzed EMSI, Inc. employment forecast data and combined them with information about self-sufficiency wages for the region. The objective was to identify specific occupations that 1) require a postsecondary credential or apprenticeship, 2) are forecast to have a large number of job openings over the next 10 years, and 3) offer median wages that are at least higher than the county/area with the lowest self-sufficiency wage in the region for each of three common family types. These criteria zero in on the occupations that are the first place to look for program expansion and economic development opportunities.

#### Self-Sufficiency Wages by County and Family Type

The table below shows the self-sufficiency wages for three common family types for the region. The County is divided into two areas—west county cities and the balance of county. These balance of county wages made up the thresholds for the analysis of occupations that follows.

Table 47

Snohomish Region						
Self-Sufficiency Wages and High Growth Occupations						
Self-Sufficiency Wages by County	Annual Self-Sufficiency Standard			Computed Self-Sufficiency Hourly Wage		
	County	1 Adult, 1 Preschooler, 1 Schoolage 1 Preschooler	2 Adults, 1 Preschooler, 1 Schoolage (each adult)	1 Adult, 1 Preschooler, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage	1 Adult, 1 Preschooler, 1 Schoolage
Snohomish (Excluding West County Cities)	\$41,619	\$50,878	\$28,947	\$20.01	\$24.46	\$13.92
Snohomish (West County Cities)	\$43,123	\$52,344	\$29,680	\$20.73	\$25.17	\$14.27

Source: Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

#### Analysis of the Top 50 Growth Occupations in Region that Require Postsecondary Education, and Wage Levels

The following tables show the top 50 occupations in the region by the total number of job openings forecast between 2010 and 2020. Job openings represent new jobs due to increased demand and replacement jobs due to retirements and job turnover. Only those occupations that require postsecondary education or apprenticeships are listed. Also indicated is whether the median wage for each occupation exceeds the lowest self-sufficiency wage among the counties/areas that comprise the region. The HECB encourages institutions to focus program expansion efforts on those occupations that exceed this wage threshold for all three family types.

In comparison to some of the other regions, this region has few occupations that offer both high levels of forecast job openings and self-sufficiency wages. Registered nurses, teachers, general operations managers, business operation specialists are occupations with 600 or more job openings and that pay in excess of the self-sufficiency wage for all three family types. As indicated in Table 9b, the Snohomish region as a whole will be home to 8 percent of all Washington job openings requiring postsecondary education between 2010 and 2020. This is the same as the region’s eight percent share of Washington’s college-level jobs in 2009, so the region’s overall share of postsecondary employment is forecast to remain constant.

Table 48

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Snohomish Region by Number of Jobs											Exceeds Sno. County (Exc. West Cities) Standard			
Rank	Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	2 Adults, 1 Adult, 1 Preschooler, 1 Schoolage (each adult)			
											1 Adult, 1 Preschooler	1 Schoolage	1 Schoolage	
1	Real estate sales agents	41-9022	3,775	5,180	1,405	37%	2,024	54%	\$8.72	Postsecondary vocational award				
2	Registered nurses	29-1111	3,857	4,806	949	25%	1,622	42%	\$30.60	Associate's degree	✓	✓	✓	
3	Property, real estate, and community association managers	11-9141	2,307	3,121	814	35%	1,212	53%	\$10.09	Bachelor's degree				
4	Aircraft structure, surfaces, rigging, and systems assemblers	51-2011	3,637	3,861	224	6%	993	27%	\$22.50	Long-term on-the-job training	✓		✓	
5	Management analysts	13-1111	2,609	3,126	517	20%	964	37%	\$22.88	Degree plus work experience	✓		✓	
6	Elementary school teachers, except special education	25-2021	2,254	2,686	432	19%	944	42%	\$32.76	Bachelor's degree	✓	✓	✓	
7	Chief executives and sole proprietors	11-1011	1,916	2,284	368	19%	907	47%	\$21.91	Degree plus work experience	✓		✓	
8	Accountants and auditors	13-2011	2,849	3,268	419	15%	900	32%	\$18.00	Bachelor's degree			✓	
9	Carpenters	47-2031	3,985	3,828	-157	-4%	706	18%	\$20.37	Long-term on-the-job training	✓		✓	
10	Photographers	27-4021	1,678	2,019	341	20%	676	40%	\$8.56	Long-term on-the-job training				
11	Personal financial advisors	13-2052	1,159	1,704	545	47%	670	58%	\$9.52	Bachelor's degree				
12	General and operations managers	11-1021	2,077	2,062	-15	-1%	664	32%	\$41.32	Degree plus work experience	✓	✓	✓	
13	Securities, commodities, and financial services sales agents	41-3031	1,002	1,355	353	35%	660	66%	\$14.87	Bachelor's degree			✓	
14	Business operation specialists, all other	13-1199	2,422	2,532	110	5%	649	27%	\$27.81	Bachelor's degree	✓	✓	✓	
15	Cooks, restaurant	35-2014	1,831	2,011	180	10%	648	35%	\$10.98	Long-term on-the-job training				
16	Medical secretaries	43-6013	1,528	1,941	413	27%	618	40%	\$16.89	Postsecondary vocational award			✓	
17	Postsecondary teachers	25-1099	1,581	1,896	315	20%	590	37%	\$32.08	Doctoral degree	✓	✓	✓	
18	Fire fighters	33-2011	1,061	1,321	260	25%	585	55%	\$31.74	Long-term on-the-job training	✓	✓	✓	
19	Teachers and instructors, all other	25-3099	1,621	1,950	329	20%	578	36%	\$19.02	Bachelor's degree			✓	
20	Network systems and data communications analysts	15-1081	1,040	1,402	362	35%	550	53%	\$25.18	Bachelor's degree	✓	✓	✓	
21	Aerospace engineers	17-2011	2,428	2,450	22	1%	545	22%	\$41.33	Bachelor's degree	✓	✓	✓	
22	Secondary school teachers, except special and vocational education	25-2031	1,313	1,473	160	12%	541	41%	\$34.33	Bachelor's degree	✓	✓	✓	
23	Physicians and surgeons	29-1069	1,134	1,440	306	27%	506	45%	\$78.26	First professional degree	✓	✓	✓	
24	Nursing aides, orderlies, and attendants	31-1012	1,748	2,046	298	17%	471	27%	\$11.63	Postsecondary vocational award	✓	✓	✓	
25	Industrial engineers	17-2112	1,271	1,417	146	11%	470	37%	\$37.94	Bachelor's degree	✓	✓	✓	

Table 48 (Continued)

	Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult, 1 Preschooler, 2 Adults, 1 Preschooler, 1 Schoolage (each adult)		
											1 Adult, 1 Preschooler	1 Schoolage	1 Schoolage
26	Electricians	47-2111	1,501	1,565	64	4%	464	31%	\$26.25	Long-term on-the-job training	✓	✓	✓
27	Appraisers and assessors of real estate	13-2021	817	1,108	291	36%	440	54%	\$10.43	Postsecondary vocational award			
28	Insurance sales agents	41-3021	1,171	1,331	160	14%	432	37%	\$14.29	Bachelor's degree			✓
29	Financial managers	11-3031	1,405	1,577	172	12%	424	30%	\$32.59	Degree plus work experience	✓	✓	✓
30	Fitness trainers and aerobics instructors	39-9031	684	983	299	44%	422	62%	\$14.19	Postsecondary vocational award			✓
31	Engineers, all other	17-2199	1,997	1,935	-62	-3%	419	21%	\$43.61	Bachelor's degree	✓	✓	✓
32	Computer software engineers, applications	15-1031	2,078	2,320	242	12%	417	20%	\$29.51	Bachelor's degree	✓	✓	✓
33	Middle school teachers, except special and vocational education	25-2022	996	1,183	187	19%	413	41%	\$32.83	Bachelor's degree	✓	✓	✓
34	Gaming dealers	39-3011	615	732	117	19%	379	62%	\$11.48	Postsecondary vocational award			
35	Police and sheriff's patrol officers	33-3051	851	977	126	15%	345	41%	\$31.30	Long-term on-the-job training	✓	✓	✓
36	Lawyers	23-1011	996	1,154	158	16%	344	35%	\$27.40	First professional degree	✓	✓	✓
37	Market research analysts	19-3021	791	915	124	16%	337	43%	\$27.56	Bachelor's degree	✓	✓	✓
38	Computer systems analysts	15-1051	1,102	1,192	90	8%	327	30%	\$26.57	Bachelor's degree	✓	✓	✓
39	Computer software engineers, systems software	15-1032	2,125	2,268	143	7%	321	15%	\$33.64	Bachelor's degree	✓	✓	✓
40	Automotive service technicians and mechanics	49-3023	1,446	1,490	44	3%	320	22%	\$18.34	Postsecondary vocational award			✓
41	Mechanical engineers	17-2141	1,132	1,154	22	2%	316	28%	\$40.12	Bachelor's degree	✓	✓	✓
42	Licensed practical and licensed vocational nurses	29-2061	605	716	111	18%	300	50%	\$19.23	Postsecondary vocational award			✓
43	Civil engineers	17-2051	946	1,080	134	14%	293	31%	\$34.24	Bachelor's degree	✓	✓	✓
44	Preschool teachers, except special education	25-2011	781	913	132	17%	289	37%	\$11.41	Postsecondary vocational award			
45	Human resources, training, and labor relations specialists, all other	13-1079	703	808	105	15%	289	41%	\$25.85	Bachelor's degree	✓	✓	✓
46	Construction managers	11-9021	1,456	1,613	157	11%	285	20%	\$24.45	Bachelor's degree	✓		✓
47	Sales managers	11-2022	802	913	111	14%	283	35%	\$35.48	Degree plus work experience	✓	✓	✓
48	Writers and authors	27-3043	651	797	146	22%	282	43%	\$9.57	Bachelor's degree			
49	Financial analysts	13-2051	571	736	165	29%	268	47%	\$17.79	Bachelor's degree			✓
50	Coaches and scouts	27-2022	520	677	157	30%	256	49%	\$16.40	Long-term on-the-job training			✓

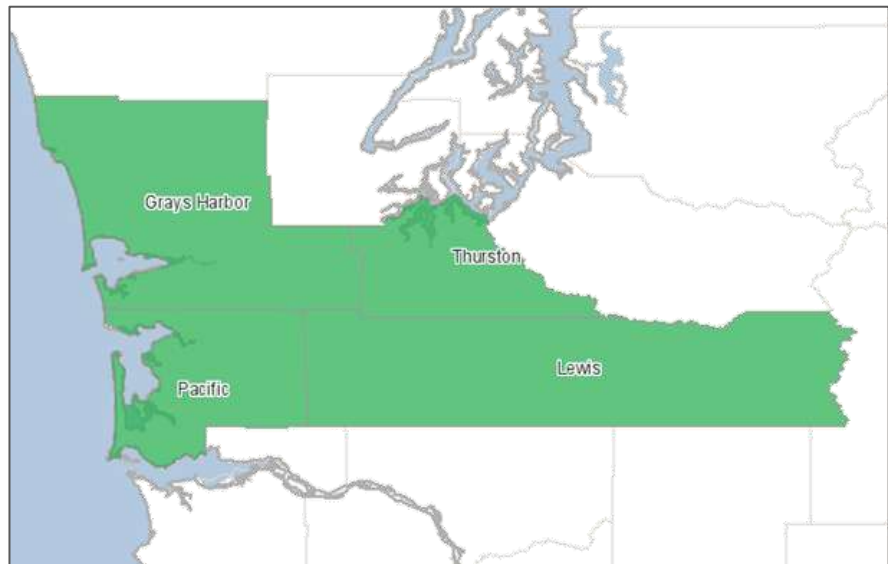
Source: EMSI Complete Employment - 3rd Quarter 2010

Note: The Snohomish County (excluding west county cities) Self-Sufficiency Standard is the lowest living wage standard for the counties that comprise this region, based on calculations found in Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

## South Sound to Coast Region

### Total Enrollment of Institutions in Region

The South Sound to Coast region includes Thurston, Grays Harbor, Pacific, and Lewis Counties and the cities of Olympia, Centralia, Aberdeen, and Hoquiam.



Much of the region is rural and contains both mountainous areas and seashore beaches and recreation sites. The South Sound Region has relatively little baccalaureate and above capacity in comparison to some other regions, and all of it is located in the Olympia area.

The next closest degree granting baccalaureate institution is WSU in Vancouver, Washington. As Table 4, above, indicates, the share of total state enrollment (fall 2009) by the region's degree-granting institutions (5%) is just below its share of the 18-64 population (6%).

### New Student Enrollment

The region's largest 4-year institution, The Evergreen State College in Olympia, is in many ways a specialty institution, offering a unique instructional model for inter-disciplinary liberal arts education.

For this reason, its enrollments show a much lower share of Washington high school graduates (22%) and a much higher share of out-of-state students (38%) than the public regional comprehensive institutions (Eastern, Western, and Central Washington universities). Its graduate enrollment profile is similar to the comprehensive institutions, serving recent attendees of Washington colleges and universities (76%).

Figure 37

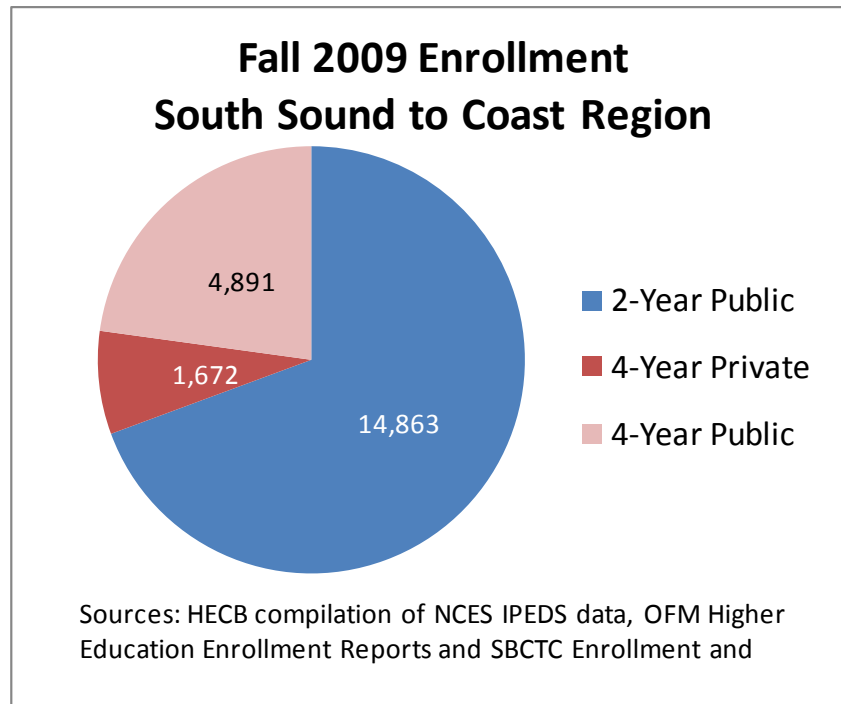


Table 49

Fall 2009 Enrollment in South Sound to Coast Region			
Institutions	Undergraduate	Graduate	Total Enrollment
<b>2-Year Public</b>	<b>14,863</b>		<b>14,863</b>
Centralia College	4,486		4,486
Grays Harbor College	3,459		3,459
South Puget Sound Community College	6,918		6,918
<b>4-Year Private</b>	<b>1,359</b>	<b>313</b>	<b>1,672</b>
Saint Martin's University	1,359	313	1,672
<b>4-Year Public</b>	<b>4,551</b>	<b>340</b>	<b>4,891</b>
The Evergreen State College	4,551	340	4,891
<b>Grand Total</b>	<b>20,773</b>	<b>653</b>	<b>21,426</b>

Sources: HECB compilation of NCES IPEDS data, OFM Higher Education Enrollment Reports and SBCTC Enrollment and Staffing Report.

### Higher Education Participation Rates

The community college participation rate in the South Sound region exceeds the state average, rate in all of the region's counties except Pacific County where it is below average. The baccalaureate participation rate is below the state average (and among the lowest in the state) in every county in the region except Thurston, where the region's two 4-year institutions are located (see Figures 8 and 9). The very low 4-year participation rates suggest that students in Grays Harbor, Pacific, and Lewis Counties may be place-bound and under-served.

## Regional Economic Forecast

### *Occupational Profile as Compared to the State*

The chart and table below show the regional occupational profile is similar to the state as a whole. The occupational category which varies the most from the state profile is military occupations (lower).

Figure 38 – South Sound to Coast Region

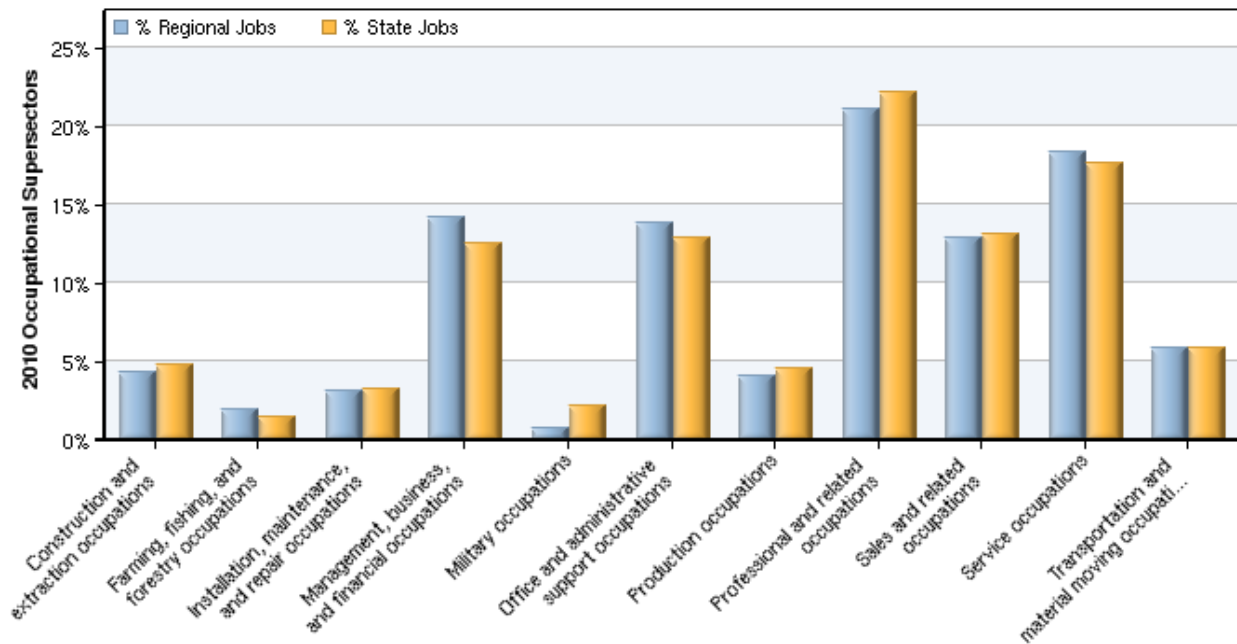


Table 50  
South Sound to Coast Region

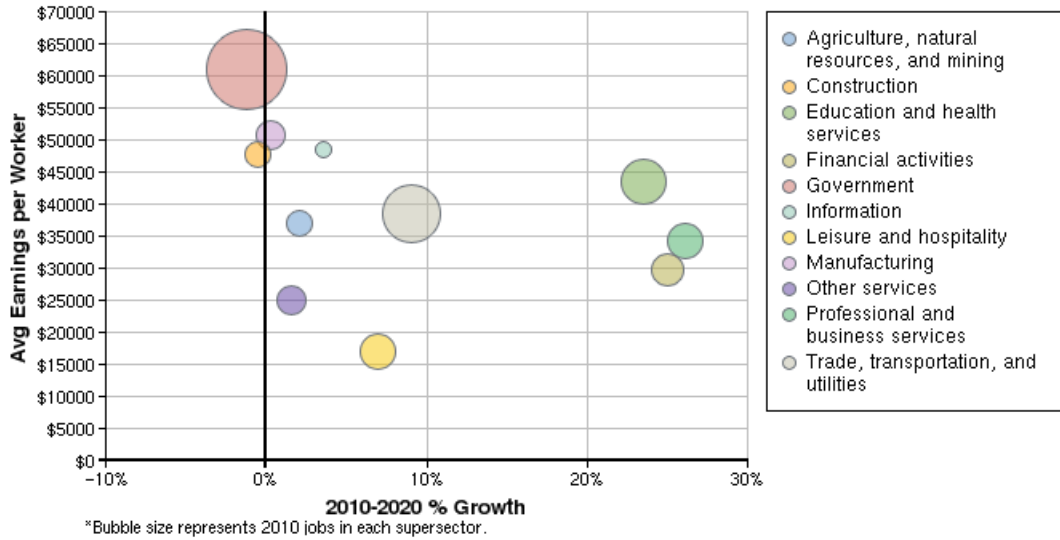
Description/occupations	2010 Regional Jobs	% Regional Jobs	2010 State Jobs	% State Jobs
<b>Construction and extraction</b>	8,835	4.3%	183,042	4.8%
<b>Farming, fishing, and forestry</b>	3,858	1.9%	54,923	1.4%
<b>Installation, maintenance, and repair</b>	6,356	3.1%	121,785	3.2%
<b>Management, business, and financial</b>	29,010	14.2%	473,768	12.5%
<b>Military occupations</b>	1,495	0.7%	82,385	2.2%
<b>Office and administrative support</b>	28,122	13.8%	486,007	12.8%
<b>Production occupations</b>	8,216	4.0%	169,730	4.5%
<b>Professional and related occupations</b>	42,998	21.0%	838,804	22.1%
<b>Sales and related occupations</b>	26,184	12.8%	495,411	13.0%
<b>Service occupations</b>	37,462	18.3%	671,312	17.7%
<b>Transportation and material moving</b>	11,889	5.8%	220,445	5.8%

Source: EMSI Complete Employment - 3rd Quarter 2010

**Industry Size, Earnings, and Forecast Growth Rates**

The bubble chart and related table show regional earnings and forecast job growth information for the period 2010 to 2020. The highest earnings industry sectors are government, manufacturing, information, and construction. The highest growth industry sectors are professional and business services, financial activities, and education and health services.

**Figure 39 – South Sound to Coast Region**



**Table 51  
South Sound to Coast Region**

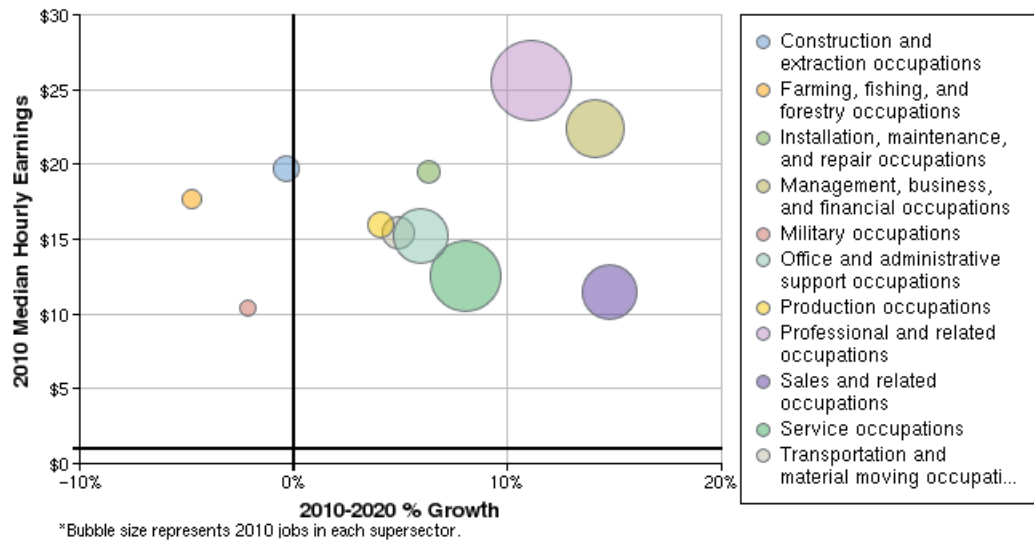
Description	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Earnings Per Worker
Agriculture, natural resources, and mining	9,442	9,640	198	2%	\$37,046
Construction	9,333	9,287	-46	0%	\$47,708
Education and health services	23,896	29,516	5,620	24%	\$43,414
Financial activities	15,390	19,242	3,852	25%	\$29,644
Government	50,471	49,870	-601	-1%	\$61,049
Information	2,054	2,128	74	4%	\$48,565
Leisure and hospitality	17,087	18,275	1,188	7%	\$16,921
Manufacturing	11,206	11,232	26	0%	\$50,845
Other services	11,969	12,154	185	2%	\$24,980
Professional and business services	18,256	23,031	4,775	26%	\$34,294
Trade, transportation, and utilities	35,321	38,511	3,190	9%	\$38,459
<b>Total</b>	<b>204,425</b>	<b>222,888</b>	<b>18,463</b>	<b>9%</b>	<b>\$42,128</b>

Source: EMSI Complete Employment - 3rd Quarter 2010

**Occupation Size, Earnings, and Forecast Growth Rates**

The same type of analysis is presented below for occupational clusters in the region. The highest wage occupational clusters are professional and related occupations and management, business, and financial occupations, and construction. The highest forecast growth occupations are sales and related occupations, professional and related occupations, and management, business, and financial occupations.

**Figure 40 – South Sound to Coast Region**



**Table 52  
South Sound to Coast Region**

Description/Occupations	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Median Hourly Earnings
Construction and extraction	8,835	8,801	-34	0%	\$19.73
Farming, fishing, and forestry	3,858	3,673	-185	-5%	\$17.72
Installation, maintenance, and repair	6,356	6,758	402	6%	\$19.53
Management, business, and financial	29,010	33,097	4,087	14%	\$22.42
Military occupations	1,495	1,463	-32	-2%	\$10.44
Office and administrative support	28,122	29,792	1,670	6%	\$15.24
Production occupations	8,216	8,552	336	4%	\$16.00
Professional and related occupations	42,998	47,758	4,760	11%	\$25.57
Sales and related occupations	26,184	30,057	3,873	15%	\$11.41
Service occupations	37,462	40,463	3,001	8%	\$12.58
Transportation and material moving	11,889	12,474	585	5%	\$15.40
<b>Total</b>	<b>204,425</b>	<b>222,888</b>	<b>18,463</b>	<b>9%</b>	<b>\$17.83</b>

Source: EMSI Complete Employment - 3rd Quarter 2010



### Identification of High Demand Occupations Paying Self-Sufficiency Wages

The HECB analyzed EMSI, Inc. employment forecast data and combined them with information about self-sufficiency wages for the region. The objective was to identify specific occupations that 1) require a postsecondary credential or apprenticeship, 2) are forecast to have a large number of job openings over the next 10 years, and 3) offer median wages that are at least higher than the county/area with the lowest self-sufficiency wage in the region for each of three common family types. These criteria zero in on the occupations that are the first place to look for program expansion and economic development opportunities.

#### *Self-Sufficiency Wages by County and Family Type*

The table below shows the self-sufficiency wages for three common family types for the region. The region is divided into four counties, each with calculated self-sufficiency wages. The lowest wages are found in Pacific County. These Pacific County wages made up the thresholds for the analysis of occupations that follows.

**Table 53**

South Sound to Coast Region Self-Sufficiency Wages and High Growth Occupations						
County	Annual Self-Sufficiency Standard			Computed Self-Sufficiency Hourly Wage		
	2 Adults, 1 Adult, 1 Preschooler			2 Adults, 1 Adult, 1 Preschooler		
	1 Adult, 1 Preschooler	1 Schoolage (each adult)	1 Schoolage (each adult)	1 Adult, 1 Preschooler	1 Schoolage (each adult)	1 Schoolage (each adult)
Grays Harbor	\$28,393	\$32,909	\$20,379	\$13.65	\$15.82	\$9.80
Lewis	\$30,332	\$37,518	\$22,450	\$14.58	\$18.04	\$10.79
Pacific	\$28,178	\$32,571	\$20,180	\$13.55	\$15.66	\$9.70
Thurston	\$35,691	\$42,463	\$24,682	\$17.16	\$20.41	\$11.87

Source: Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

#### *Analysis of the Top 50 Growth Occupations in Region that Require Postsecondary Education, and Wage Levels*

The following tables show the top 50 occupations in the region by the total number of job openings forecast between 2010 and 2020. Job openings represent new jobs due to increased demand and replacement jobs due to retirements and job turnover. Only those occupations that require postsecondary education or apprenticeships are listed. Also indicated is whether the median wage for each occupation exceeds the lowest self-sufficiency wage among the counties/areas that comprise the region. The HECB encourages institutions to focus program expansion efforts on those occupations that exceed this wage threshold for all three family types.

In comparison to some of the other regions, this region has few occupations that offer both high levels of forecast job openings and self-sufficiency wages. Registered nurses, chief executives and sole proprietors, accountants and auditors, and management analysts are occupations with 500 or more job openings and that pay in excess of the self-sufficiency wage for all three family types. As indicated in Table 9b, the South Sound to Coast region as a whole will be home to five percent of all Washington job openings requiring postsecondary education between 2010 and 2020. This is the same as the region's five percent share of Washington's college-level jobs in 2009, so the region's overall share of postsecondary employment is forecast to remain constant.

Table 54

Top 50 Growth Occupations Requiring a Post-Secondary Credential in South Sound Region by Number of Jobs											<i>Exceeds Pacific County Standard</i>		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult, 1 Preschooler	1 Adult, 1 Preschooler, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)	
1 Real estate sales agents	41-9022	2,283	3,182	899	39%	1,273	56%	\$8.75	Postsecondary vocational award				
2 Registered nurses	29-1111	2,331	2,764	433	19%	844	36%	\$34.34	Associate's degree	✓	✓	✓	
3 Property, real estate, and community association managers	11-9141	1,455	1,985	530	36%	780	54%	\$10.90	Bachelor's degree			✓	
4 Chief executives and sole proprietors	11-1011	1,260	1,530	270	21%	624	50%	\$16.98	Degree plus work experience	✓	✓	✓	
5 Accountants and auditors	13-2011	1,923	2,205	282	15%	607	32%	\$21.02	Bachelor's degree	✓	✓	✓	
6 Management analysts	13-1111	1,170	1,474	304	26%	505	43%	\$19.11	Degree plus work experience	✓	✓	✓	
7 General and operations managers	11-1021	1,462	1,471	9	1%	476	33%	\$39.97	Degree plus work experience	✓	✓	✓	
8 Personal financial advisors	13-2052	790	1,168	378	48%	463	59%	\$10.61	Bachelor's degree			✓	
9 Securities, commodities, and financial services sales agents	41-3031	632	889	257	41%	451	71%	\$13.67	Bachelor's degree	✓		✓	
10 Elementary school teachers, except special education	25-2021	1,548	1,589	41	3%	427	28%	\$33.50	Bachelor's degree	✓	✓	✓	
11 Network and computer systems administrators	15-1071	1,543	1,695	152	10%	410	27%	\$31.50	Bachelor's degree	✓	✓	✓	
12 Medical secretaries	43-6013	1,041	1,306	265	25%	405	39%	\$16.74	Postsecondary vocational award	✓	✓	✓	
13 Computer software engineers, systems software	15-1032	1,261	1,558	297	24%	404	32%	\$40.05	Bachelor's degree	✓	✓	✓	
14 Farmers and ranchers	11-9012	2,948	3,136	188	6%	381	13%	\$8.70	Long-term on-the-job training				
15 Cooks, restaurant	35-2014	1,054	1,116	62	6%	370	35%	\$11.92	Long-term on-the-job training			✓	
16 Teachers and instructors, all other	25-3099	1,672	1,765	93	6%	367	22%	\$20.09	Bachelor's degree	✓	✓	✓	
17 Human resources, training, and labor relations specialists, all other	13-1079	847	982	135	16%	365	43%	\$25.23	Bachelor's degree	✓	✓	✓	
18 Postsecondary teachers	25-1099	1,563	1,625	62	4%	352	23%	\$32.38	Doctoral degree	✓	✓	✓	
19 Farm, ranch, and other agricultural managers	11-9011	958	1,110	152	16%	347	36%	\$14.60	Degree plus work experience	✓		✓	
20 Photographers	27-4021	922	1,077	155	17%	339	37%	\$8.76	Long-term on-the-job training				
21 Lawyers	23-1011	909	1,061	152	17%	322	35%	\$29.48	First professional degree	✓	✓	✓	
22 Physicians and surgeons	29-1069	749	921	172	23%	307	41%	\$60.57	First professional degree	✓	✓	✓	
23 Carpenters	47-2031	1,876	1,804	-72	-4%	289	15%	\$18.28	Long-term on-the-job training	✓	✓	✓	
24 Secondary school teachers, except special and vocational education	25-2031	907	880	-27	-3%	285	31%	\$34.61	Bachelor's degree	✓	✓	✓	
25 Appraisers and assessors of real estate	13-2021	567	746	179	32%	282	50%	\$11.67	Postsecondary vocational award			✓	

Table 54 (Continued)

Top 50 Growth Occupations Requiring a Post-Secondary Credential in South Sound Region by Number of Jobs											Exceeds Pacific County Standard		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult, 1 Preschooler	1 Adult, 1 Preschooler, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)	
26	Financial managers	11-3031	966	1,073	107	11%	281	29%	\$34.51	Degree plus work experience	✓	✓	✓
27	Nursing aides, orderlies, and attendants	31-1012	1,182	1,329	147	12%	278	24%	\$11.77	Postsecondary vocational award			✓
28	Public relations specialists	27-3031	661	767	106	16%	263	40%	\$27.93	Bachelor's degree	✓	✓	✓
29	Licensed practical and licensed vocational nurses	29-2061	563	643	80	14%	260	46%	\$20.30	Postsecondary vocational award	✓	✓	✓
30	Insurance sales agents	41-3021	690	768	78	11%	240	35%	\$14.22	Bachelor's degree	✓		✓
31	Business operation specialists, all other	13-1199	869	904	35	4%	237	27%	\$27.35	Bachelor's degree	✓	✓	✓
32	Compliance officers, except agriculture, construction, health and safety, and transportation	13-1041	734	892	158	22%	236	32%	\$27.77	Long-term on-the-job training	✓	✓	✓
33	Claims adjusters, examiners, and investigators	13-1031	816	828	12	1%	233	29%	\$24.24	Long-term on-the-job training	✓	✓	✓
34	Middle school teachers, except special and vocational education	25-2022	812	839	27	3%	226	28%	\$33.11	Bachelor's degree	✓	✓	✓
35	Fitness trainers and aerobics instructors	39-9031	485	621	136	28%	223	46%	\$15.80	Postsecondary vocational award	✓		✓
36	Computer and information systems managers	11-3021	867	942	75	9%	218	25%	\$40.61	Degree plus work experience	✓	✓	✓
37	Computer support specialists	15-1041	678	684	6	1%	218	32%	\$22.06	Associate's degree	✓	✓	✓
38	Coaches and scouts	27-2022	616	711	95	15%	214	35%	\$15.97	Long-term on-the-job training	✓	✓	✓
39	Preschool teachers, except special education	25-2011	528	628	100	19%	207	39%	\$10.35	Postsecondary vocational award			✓
40	Civil engineers	17-2051	894	938	44	5%	204	23%	\$33.20	Bachelor's degree	✓	✓	✓
41	Tax examiners, collectors, and revenue agents	13-2081	498	503	5	1%	194	39%	\$19.25	Bachelor's degree	✓	✓	✓
42	Environmental scientists and specialists, including health	19-2041	544	566	22	4%	184	34%	\$29.24	Master's degree	✓	✓	✓
43	Gaming dealers	39-3011	322	365	43	13%	182	57%	\$10.13	Postsecondary vocational award			✓
44	Writers and authors	27-3043	398	488	90	23%	173	43%	\$9.33	Bachelor's degree			
45	Electricians	47-2111	646	615	-31	-5%	173	27%	\$22.27	Long-term on-the-job training	✓	✓	✓
46	Police and sheriff's patrol officers	33-3051	610	589	-21	-3%	171	28%	\$29.66	Long-term on-the-job training	✓	✓	✓
47	Social and community service managers	11-9151	473	526	53	11%	162	34%	\$30.37	Bachelor's degree	✓	✓	✓
48	Financial analysts	13-2051	272	382	110	40%	160	59%	\$15.79	Bachelor's degree	✓		✓
49	Automotive service technicians and mechanics	49-3023	703	721	18	3%	155	22%	\$19.35	Postsecondary vocational award	✓	✓	✓
50	Clinical, counseling, and school psychologists	19-3031	351	402	51	15%	151	43%	\$24.93	Doctoral degree	✓	✓	✓

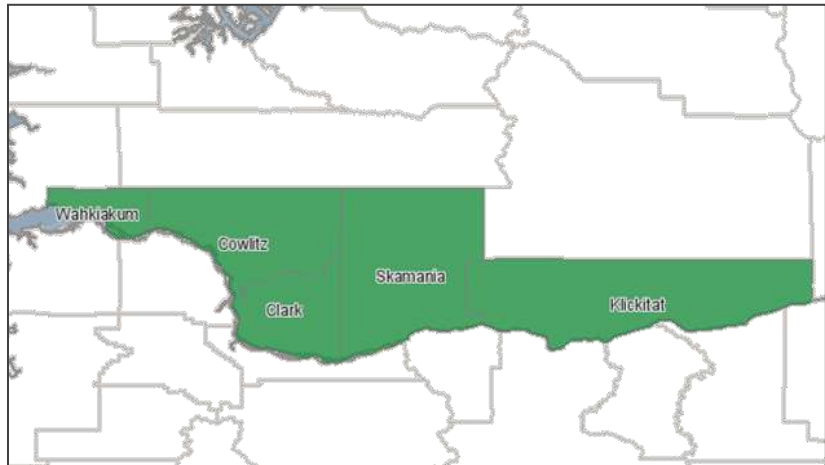
Source: EMSI Complete Employment - 3rd Quarter 2010

Note: The Pacific County Self-Sufficiency Standard is the lowest living wage standard for the counties that comprise this region, based on calculations found in Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

## Southwest Region

### Total Enrollment of Institutions in Region

The Southwest Region includes five counties along the Columbia River comprised of Wahkiakum, Cowlitz, Clark, Skamania, and Klickitat Counties, and including the cities of Vancouver and Longview.



Much of the region is rural and contains both forests and riverside recreation areas. There are only four degree-granting institutions in the region. The Southwest Region is much like the South Sound to Coast Region, in that it has relatively little baccalaureate and above capacity, and all of it is located in the region's largest city, Vancouver.

As Table 4 indicates, share of total state enrollment (fall 2009) by the region's degree-granting institutions (6%) is below its share of the 18-64 population (8%). These figures do not include residents that may be enrolled in and receiving degrees from nearby Oregon colleges and universities. In 2009-10, 780 Washington community and technical college students transferred to Portland State University.<sup>12</sup> Presumably, most of these students came from counties in this nearby region.

### New Student Enrollment

WSU-Vancouver is the largest 4-year institution in the region. It serves primarily in-state transfer students (57% of fall 2009 new enrollments) and relatively few Washington high school graduates (19%). Twenty-one percent of its new enrollments come from out of state. Half of WSU-Vancouver's graduate enrollments come from Washington institutions, the rest from out-of-state institutions.

### Higher Education Participation Rates

The community college participation rate in the Southwest Region exceeds the state average rate in Clark and Cowlitz counties where the two community colleges are located. The participation rates in the region's remaining counties are all below the state average. The baccalaureate participation rate is below the state average in every county in the region, including Clark County where the region's two 4-year institutions are located. These participation rates don't consider residents who cross the border to attend institutions in Oregon.

<sup>12</sup> SBCTC, *Academic Year Report, 2009-10, Student Progress and Success*. See [http://www.sbctc.edu/college/documents/4prog\\_0910.pdf](http://www.sbctc.edu/college/documents/4prog_0910.pdf).

Figure 41

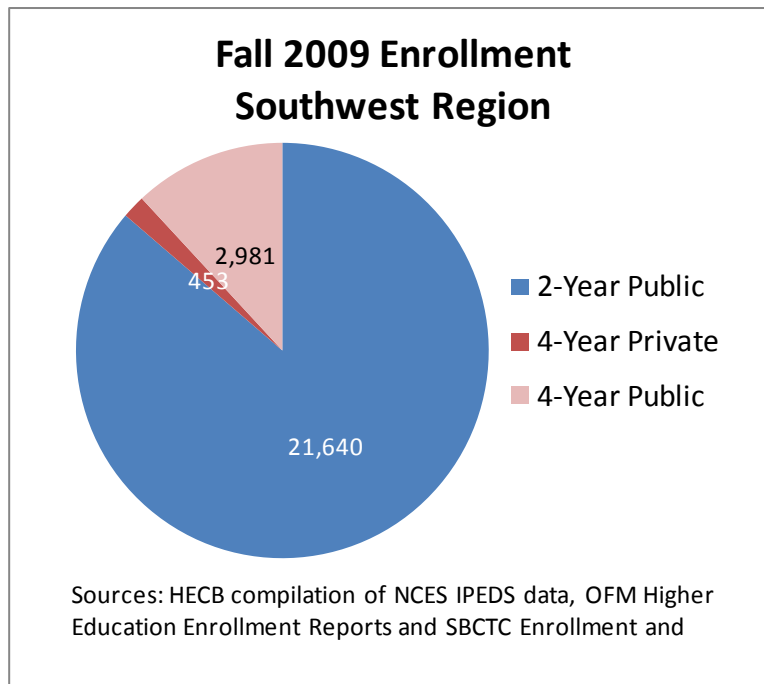


Table 55

Fall 2009 Enrollment in Southwest Region			
Institutions	Undergraduate	Graduate	Total Enrollment
<b>2-Year Public</b>	<b>21,640</b>		<b>21,640</b>
Clark College	16,406		16,406
Lower Columbia College	5,234		5,234
<b>4-Year Private</b>	<b>453</b>	<b>0</b>	<b>453</b>
Everest College-Vancouver	453	0	453
<b>4-Year Public</b>	<b>2,446</b>	<b>535</b>	<b>2,981</b>
Washington State University Vancouver	2,446	535	2,981
<b>Grand Total</b>	<b>24,539</b>	<b>535</b>	<b>25,074</b>

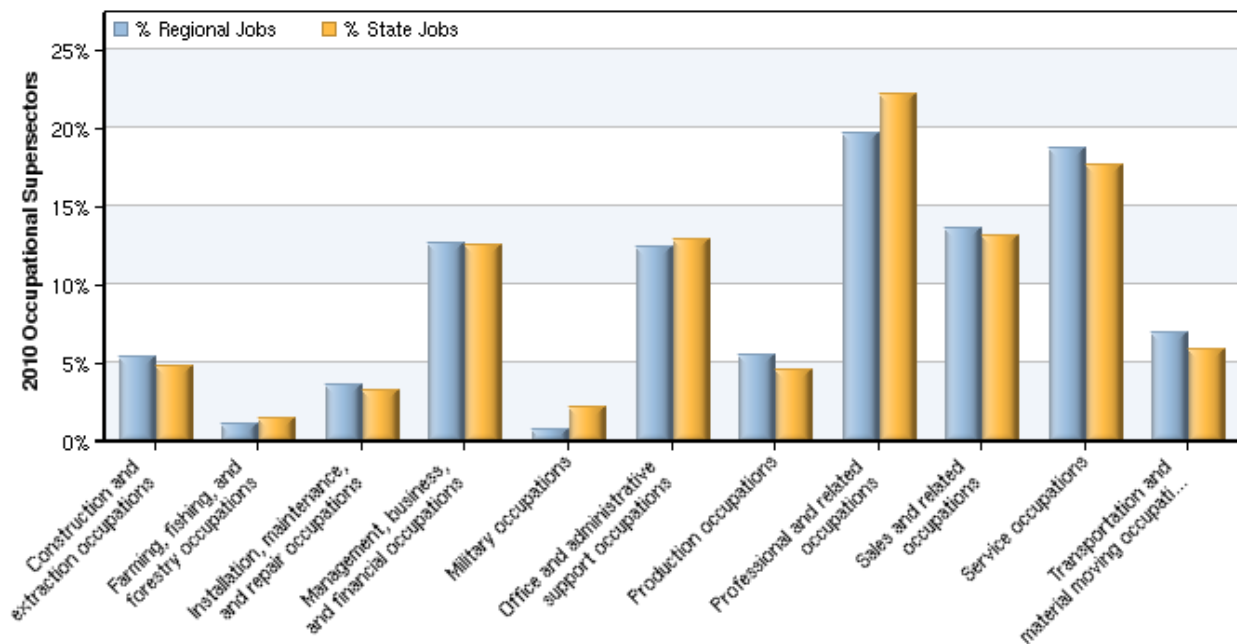
Sources: HECB compilation of NCES IPEDS data, OFM Higher Education Enrollment Reports and SBCTC Enrollment and Staffing Report.

## Regional Economic Forecast

### *Occupational Profile as Compared to the State*

The chart and table below compare the regional occupational profile to the state as a whole. The occupational categories which vary the most from the state profile are military occupations (lower) and professional and related occupations (slightly lower).

**Figure 42 – Southwest Region**



**Table 56 – Southwest Region**

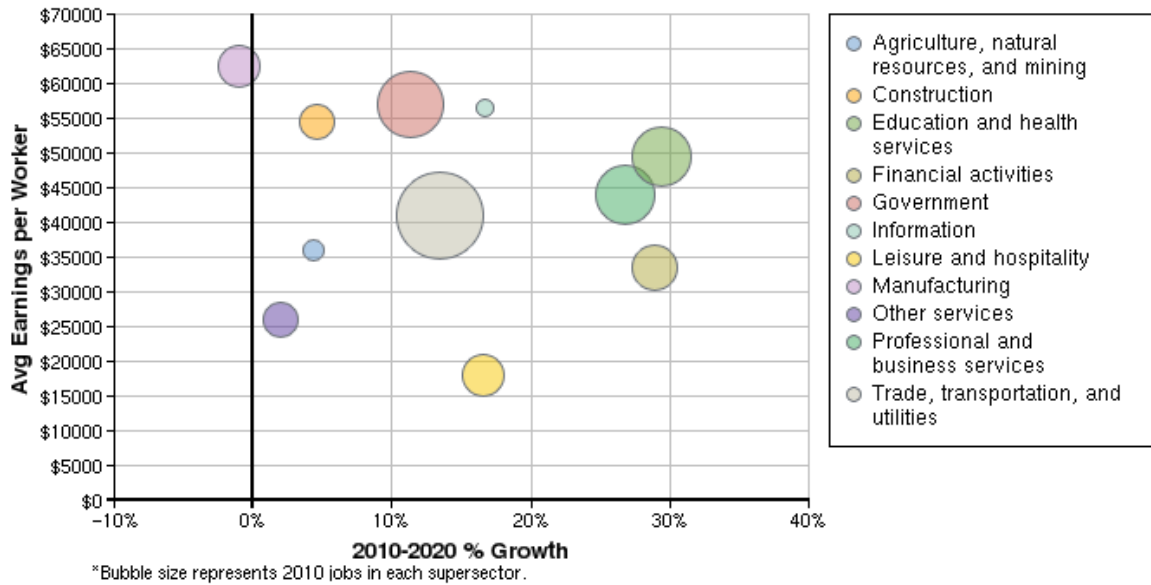
Description/Occupations	2010 Regional Jobs	% Regional Jobs	2010 State Jobs	% State Jobs
Construction and extraction	13,023	5.4%	183,042	4.8%
Farming, fishing, and forestry	2,655	1.1%	54,923	1.4%
Installation, maintenance, and repair	8,815	3.6%	121,785	3.2%
Management, business, and financial	30,520	12.6%	473,768	12.5%
Military occupations	1,773	0.7%	82,385	2.2%
Office and administrative support	30,175	12.4%	486,007	12.8%
Production occupations	13,322	5.5%	169,730	4.5%
Professional and related occupations	47,613	19.6%	838,804	22.1%
Sales and related occupations	32,826	13.5%	495,411	13.0%
Service occupations	45,280	18.6%	671,312	17.7%
Transportation and material moving	16,787	6.9%	220,445	5.8%

Source: EMSI Complete Employment - 3rd Quarter 2010

**Industry Size, Earnings, and Forecast Growth Rates**

The bubble chart and related table below shows regional earnings and forecast job growth information for the period 2010 to 2020. The highest earnings industry sectors are government, manufacturing, government, information, and construction. The highest growth industry sectors are education and health services, financial activities, and professional and business services.

**Figure 43**



**Table 57 – Southwest Region**

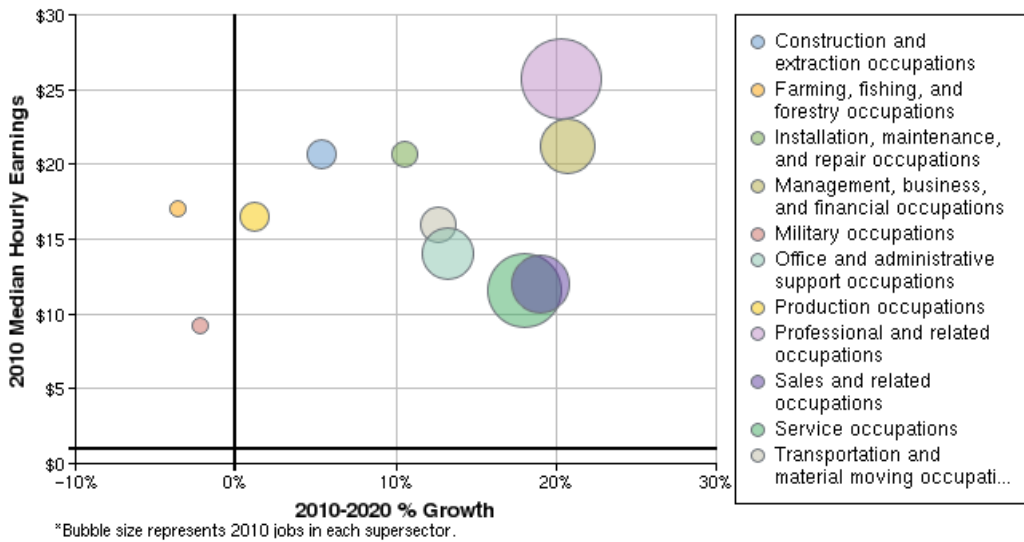
Description	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Earnings Per Worker
Agriculture, natural resources, mining	7,534	7,865	331	4%	\$36,054
Construction	15,717	16,437	720	5%	\$54,386
Education and health services	30,207	39,084	8,877	29%	\$49,436
Financial activities	21,930	28,263	6,333	29%	\$33,427
Government	33,745	37,547	3,802	11%	\$57,063
Information	3,928	4,582	654	17%	\$56,481
Leisure and hospitality	19,879	23,183	3,304	17%	\$18,089
Manufacturing	19,810	19,601	-209	-1%	\$62,459
Other services	14,689	14,981	292	2%	\$25,916
Professional and business services	29,680	37,611	7,931	27%	\$44,070
Trade, transportation, and utilities	45,672	51,811	6,139	13%	\$41,022
<b>Total</b>	<b>242,790</b>	<b>280,965</b>	<b>38,175</b>	<b>16%</b>	<b>\$43,903</b>

Source: EMSI Complete Employment - 3rd Quarter 2010

**Occupation Size, Earnings, and Forecast Growth Rates**

The same type of analysis is presented below for occupational clusters in the region. The highest wage occupational clusters are professional and related occupations, management, business, and financial occupations, construction occupations, and installation, maintenance, and repair occupations. The highest forecast growth occupations are management, business, and financial occupations, professional and related occupations, sales and related occupations, and service occupations.

**Figure 44 – Southwest Region**



**Table 58  
Southwest Region**

Description/Occupations	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Median Hourly Earnings
Construction and extraction	13,023	13,717	694	5%	\$20.70
Farming, fishing, and forestry	2,655	2,558	-97	-4%	\$17.04
Installation, maintenance, and repair	8,815	9,741	926	11%	\$20.71
Management, business, and financial	30,520	36,834	6,314	21%	\$21.17
Military occupations	1,773	1,734	-39	-2%	\$9.19
Office and administrative support	30,175	34,173	3,998	13%	\$14.08
Production occupations	13,322	13,475	153	1%	\$16.52
Professional and related occupations	47,613	57,298	9,685	20%	\$25.76
Sales and related occupations	32,826	39,071	6,245	19%	\$12.00
Service occupations	45,280	53,459	8,179	18%	\$11.55
Transportation and material moving	16,787	18,905	2,118	13%	\$15.93
<b>Total</b>	<b>242,790</b>	<b>280,965</b>	<b>38,175</b>	<b>16%</b>	<b>\$17.36</b>

Source: EMSI Complete Employment - 3rd Quarter 2010



## Identification of High Demand Occupations Paying Self-Sufficiency Wages

The HECB analyzed EMSI, Inc. employment forecast data and combined them with information about self-sufficiency wages for the region. The objective was to identify specific occupations that 1) require a postsecondary credential or apprenticeship; 2) are forecast to have a large number of job openings over the next 10 years; and 3) offer median wages that are at least higher than the county/area with the lowest self-sufficiency wage in the region for each of three common family types. These criteria zero in on the occupations that are the first place to look for program expansion and economic development opportunities.

### *Self-Sufficiency Wages by County and Family Type*

The table below shows the self-sufficiency wages for three common family types for the region. The region is comprised by five counties, each with calculated self-sufficiency wages. The lowest wages are found in Wahkiakum County. Note that Clark County self-sufficiency wages are substantially higher. The Wahkiakum wages made up the thresholds for the analysis of occupations that follows.

**Table 59 – Southwest Region**

Self-Sufficiency Wages and High Growth Occupations						
Self-Sufficiency Wages by County	Annual Self-Sufficiency Standard			Computed Self-Sufficiency Hourly Wage		
	2 Adults, 1 Adult, 1 Preschooler			2 Adults, 1 Adult, 1 Preschooler		
	County	1 Adult, 1 Preschooler	1 Adult, 1 School age (each adult)	1 Adult, 1 Preschooler	1 Adult, 1 School age (each adult)	1 Adult, 1 Preschooler
Clark	\$37,429	\$45,455	\$25,853	\$17.99	\$21.85	\$12.43
Cowlitz	\$29,176	\$35,793	\$22,037	\$14.03	\$17.21	\$10.59
Klickitat	\$30,509	\$39,512	\$23,234	\$14.67	\$19.00	\$11.17
Skamania	\$29,429	\$33,168	\$20,362	\$14.15	\$15.95	\$9.79
Wahkiakum	\$25,655	\$29,324	\$18,450	\$12.33	\$14.10	\$8.87

Source: Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

### *Analysis of the Top 50 Growth Occupations in Region that Require Postsecondary Education, and Wage Levels*

The tables below show the top 50 occupations in the region by the total number of job openings forecast between 2010 and 2020. Job openings represent new jobs due to increased demand and replacement jobs due to retirements and job turnover. Only those occupations that require postsecondary education or apprenticeships are listed. Also indicated is whether the median wage for each occupation exceeds the lowest self-sufficiency wage among the counties/areas that comprise the region. The HECB encourages institutions to focus program expansion efforts on those occupations that exceed this wage threshold for all three family types.

Registered nurses, chief executives and sole proprietors, accountants and auditors, teachers, medical secretaries, general and operations managers, management analysts, physicians and surgeons, and postsecondary teachers are all occupations with 600 or more forecast job openings and that pay in excess of the self-sufficiency wage for all three family types. As indicated in Table 9b, the Southwest Region will be home to 7 percent of all Washington job openings requiring postsecondary education between 2010 and 2020. This is slightly more than the region's 6 percent share of all Washington jobs in 2009.

Table 60

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Southwest Region by Number of Jobs											<i>Exceeds Wahkiakum County Standard</i>		
Rank	Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult,	1 Adult,	1
											Preschooler	1 Schoolage	Preschooler, 1 Schoolage (each adult)
1	Registered nurses	29-1111	3,687	4,843	1,156	31%	1,800	49%	\$35.79	Associate's degree	✓	✓	✓
2	Real estate sales agents	41-9022	3,048	4,213	1,165	38%	1,664	55%	\$8.73	Postsecondary vocational award			
3	Property, real estate, and community association managers	11-9141	1,977	2,680	703	36%	1,044	53%	\$10.54	Bachelor's degree			✓
4	Chief executives and sole proprietors	11-1011	1,781	2,211	430	24%	931	52%	\$19.61	Degree plus work experience	✓	✓	✓
5	Accountants and auditors	13-2011	2,096	2,539	443	21%	798	38%	\$17.21	Bachelor's degree	✓	✓	✓
6	Elementary school teachers, except special education	25-2021	1,930	2,255	325	17%	764	40%	\$30.53	Bachelor's degree	✓	✓	✓
7	Personal financial advisors	13-2052	1,260	1,865	605	48%	741	59%	\$10.96	Bachelor's degree			✓
8	Securities, commodities, and financial services sales agents	41-3031	1,010	1,437	427	42%	736	73%	\$13.72	Bachelor's degree	✓		✓
9	Medical secretaries	43-6013	1,592	2,060	468	29%	683	43%	\$15.76	Postsecondary vocational award	✓	✓	✓
10	General and operations managers	11-1021	1,920	2,026	106	6%	676	35%	\$37.21	Degree plus work experience	✓	✓	✓
11	Management analysts	13-1111	1,296	1,727	431	33%	653	50%	\$17.64	Degree plus work experience	✓	✓	✓
12	Nursing aides, orderlies, and attendants	31-1012	1,657	2,109	452	27%	617	37%	\$13.12	Postsecondary vocational award	✓		✓
13	Photographers	27-4021	1,392	1,726	334	24%	615	44%	\$10.04	Long-term on-the-job training			✓
14	Physicians and surgeons	29-1069	1,347	1,712	365	27%	602	45%	\$77.59	First professional degree	✓	✓	✓
15	Postsecondary teachers	25-1099	1,711	2,014	303	18%	601	35%	\$37.35	Doctoral degree	✓	✓	✓
16	Secondary school teachers, except special and vocational education	25-2031	1,405	1,552	147	10%	558	40%	\$31.23	Bachelor's degree	✓	✓	✓
17	Business operation specialists, all other	13-1199	1,470	1,642	172	12%	499	34%	\$25.91	Bachelor's degree	✓	✓	✓
18	Farmers and ranchers	11-9012	2,803	3,077	274	10%	497	18%	\$8.92	Long-term on-the-job training			✓
19	Carpenters	47-2031	2,528	2,549	21	1%	491	19%	\$19.00	Long-term on-the-job training	✓	✓	✓
20	Insurance sales agents	41-3021	981	1,182	201	20%	432	44%	\$11.22	Bachelor's degree			✓
21	Cooks, restaurant	35-2014	1,200	1,299	99	8%	417	35%	\$10.65	Long-term on-the-job training			✓
22	Teachers and instructors, all other	25-3099	1,183	1,404	221	19%	404	34%	\$22.10	Bachelor's degree	✓	✓	✓
23	Electricians	47-2111	1,057	1,163	106	10%	389	37%	\$27.32	Long-term on-the-job training	✓	✓	✓
24	Financial managers	11-3031	877	1,104	227	26%	385	44%	\$30.13	Degree plus work experience	✓	✓	✓
25	Middle school teachers, except special and vocational education	25-2022	982	1,143	161	16%	384	39%	\$30.72	Bachelor's degree	✓	✓	✓

Table 60 (Continued)

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Southwest Region by Number of Jobs											Exceeds Wahkiakum County Standard		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult, 1 Schoolage			
										1 Adult, 1 Schoolage	1 Adult, 1 Schoolage	2 Adults, 1 Schoolage (each adult)	
26 Appraisers and assessors of real estate	13-2021	710	958	248	35%	376	53%	\$11.11	Postsecondary vocational award			✓	
27 Preschool teachers, except special education	25-2011	777	951	174	22%	329	42%	\$10.01	Postsecondary vocational award			✓	
28 Farm, ranch, and other agricultural managers	11-9011	878	983	105	12%	305	35%	\$15.31	Degree plus work experience	✓	✓	✓	
29 Network systems and data communications analysts	15-1081	483	677	194	40%	281	58%	\$19.45	Bachelor's degree	✓	✓	✓	
30 Lawyers	23-1011	727	864	137	19%	274	38%	\$25.40	First professional degree	✓	✓	✓	
31 Financial analysts	13-2051	437	622	185	42%	264	60%	\$16.44	Bachelor's degree	✓	✓	✓	
32 Writers and authors	27-3043	527	672	145	28%	256	49%	\$9.35	Bachelor's degree			✓	
33 Computer support specialists	15-1041	656	723	67	10%	249	38%	\$17.87	Associate's degree	✓	✓	✓	
34 Police and sheriff's patrol officers	33-3051	626	711	85	14%	247	39%	\$27.76	Long-term on-the-job training	✓	✓	✓	
35 Education, training, and library workers, all other	25-9099	588	699	111	19%	241	41%	\$16.57	Bachelor's degree	✓	✓	✓	
36 Automotive service technicians and mechanics	49-3023	972	1,010	38	4%	237	24%	\$18.82	Postsecondary vocational award	✓	✓	✓	
37 Computer software engineers, applications	15-1031	786	957	171	22%	237	30%	\$34.64	Bachelor's degree	✓	✓	✓	
38 Dental hygienists	29-2021	402	557	155	39%	237	59%	\$37.33	Associate's degree	✓	✓	✓	
39 Fire fighters	33-2011	439	537	98	22%	233	53%	\$26.76	Long-term on-the-job training	✓	✓	✓	
40 Fitness trainers and aerobics instructors	39-9031	426	573	147	35%	224	53%	\$15.60	Postsecondary vocational award	✓	✓	✓	
41 Industrial machinery mechanics	49-9041	903	976	73	8%	221	24%	\$27.64	Long-term on-the-job training	✓	✓	✓	
42 Biological technicians	19-4021	420	483	63	15%	210	50%	\$20.91	Associate's degree	✓	✓	✓	
43 Construction managers	11-9021	1,077	1,188	111	10%	207	19%	\$22.91	Bachelor's degree	✓	✓	✓	
44 Welders, cutters, solderers, and brazers	51-4121	617	610	-7	-1%	206	33%	\$18.30	Long-term on-the-job training	✓	✓	✓	
45 Licensed practical and licensed vocational nurses	29-2061	366	453	87	24%	202	55%	\$20.73	Postsecondary vocational award	✓	✓	✓	
46 Civil engineers	17-2051	635	728	93	15%	201	32%	\$30.27	Bachelor's degree	✓	✓	✓	
47 Computer systems analysts	15-1051	521	607	86	17%	199	38%	\$30.48	Bachelor's degree	✓	✓	✓	
48 Plumbers, pipefitters, and steamfitters	47-2152	665	679	14	2%	194	29%	\$23.61	Long-term on-the-job training	✓	✓	✓	
49 Coaches and scouts	27-2022	422	533	111	26%	192	45%	\$17.83	Long-term on-the-job training	✓	✓	✓	
50 Gaming dealers	39-3011	318	371	53	17%	192	60%	\$9.68	Postsecondary vocational award			✓	

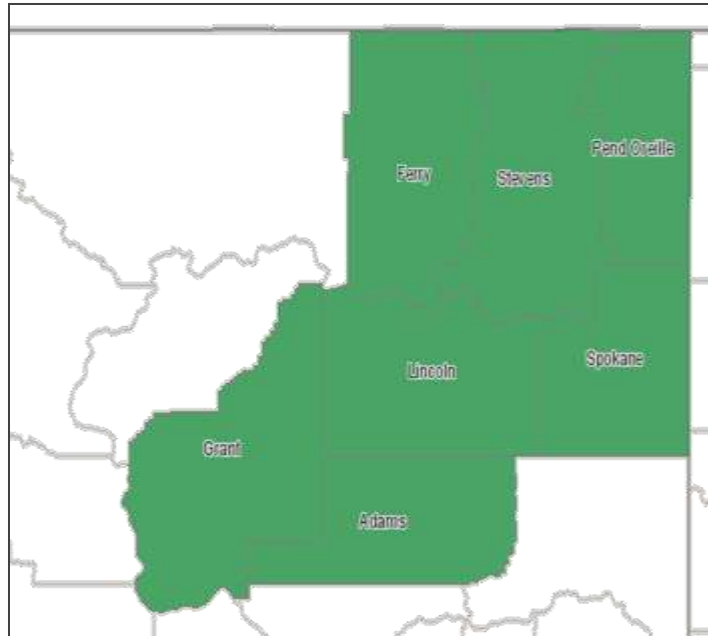
Source: EMSI Complete Employment - 3rd Quarter 2010

Note: The Wahkiakum County Self-Sufficiency Standard is the lowest living wage standard for the counties that comprise this region, based on calculations found in Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

## Spokane and Northeast Region

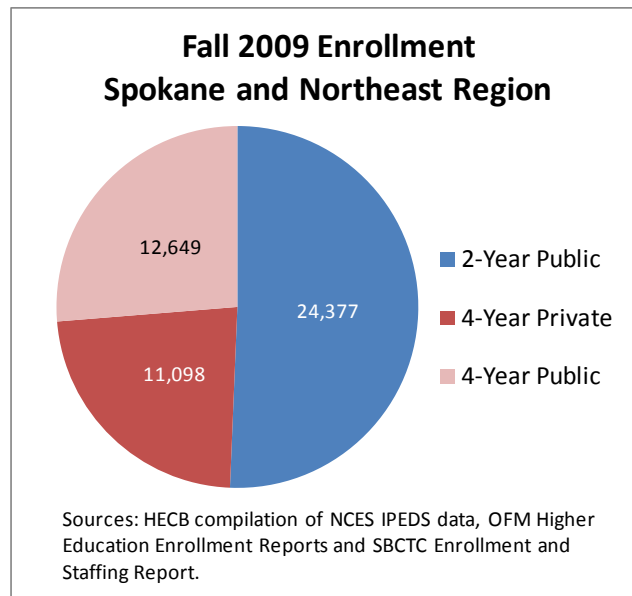
### Total Enrollment of Institutions in Region

The Spokane/Northeast Region includes seven mostly rural counties in the eastern part of the state, and the City of Spokane and Fairchild Air Force Base. Much of the region is rural and contains both forests and semi-arid land.



The region has three community colleges and six degree-granting 4-year institutions. As Table 4 indicates, the share of total state enrollment by the region’s degree-granting institutions (11%) is above its share of the 18-64 population (9%). However, all but one of the region’s higher education institutions are located in Spokane County, so many of the region’s residents must access higher education through distance learning and remote teaching sites.

Figure 45



### New Student Enrollment

WSU’s Spokane campus and Eastern Washington University both serve mostly Washington students, with just 20 percent of WSU and 13 percent of EWU students coming from out of state. The remaining students at WSU Spokane are all transfer students from Washington institutions, since the campus only offers upper division nursing and health sciences programs for undergraduates.

EWU's new enrollments are split primarily between high school graduates (45%) and transfer students (38%). With nearly 400 students (fall 2009) EWU has the largest graduate enrollment among the public regional comprehensive institutions, 74 percent of which last attended Washington institutions. At WSU in Spokane, 61 percent of graduate students come from Washington institutions.

**Table 61**  
**Fall 2009 Enrollment in Spokane and Northeast Region**

Institutions	Undergraduate	Graduate	Total Enrollment
<b>2-Year Public</b>	<b>24,377</b>		<b>24,377</b>
Big Bend Community College	2,813		2,813
Spokane Community College	8,110		8,110
Spokane Falls Community College	13,454		13,454
<b>4-Year Private</b>	<b>7,866</b>	<b>3,232</b>	<b>11,098</b>
Gonzaga University	4,729	2,904	7,633
Interface College-Spokane	189	0	189
ITT Technical Institute-Spokane Valley	495	0	495
Whitworth University	2,453	328	2,781
<b>4-Year Public</b>	<b>10,693</b>	<b>1,956</b>	<b>12,649</b>
Eastern Washington University	9,919	1,381	11,300
Washington State University Spokane	774	575	1,349
<b>Grand Total</b>	<b>42,936</b>	<b>5,188</b>	<b>48,124</b>

Sources: HECB compilation of NCES IPEDS data, OFM Higher Education Enrollment Reports and SBCTC Enrollment and Staffing Report.

### Higher Education Participation Rates

College participation rates in this region are mixed, as many students in rural counties are place-bound. At the 2-year level, Spokane (where two community colleges are located) and Ferry Counties are the only counties with higher than state average participation rates, and Grant County (where Big Bend Community College is located) is at the state rate. Ferry County's high rate may be a statistical anomaly due to its small population. Many of the county's 7,500 residents may be going to college in nearby Colville where the Spokane Colleges' Institute for Extended Learning is located. At the 4-year level, Spokane, Lincoln, and Adams Counties have higher than state average participation rates, but the three northeastern counties in the region and Grant County are below the state average.

## Regional Economic Forecast

### Occupational Profile as Compared to the State

The chart and table below compare the regional occupational profile to the state as a whole. The occupational categories which vary the most from the state profile are professional and related occupations (slightly lower) and service occupations (slightly higher).

Figure 46

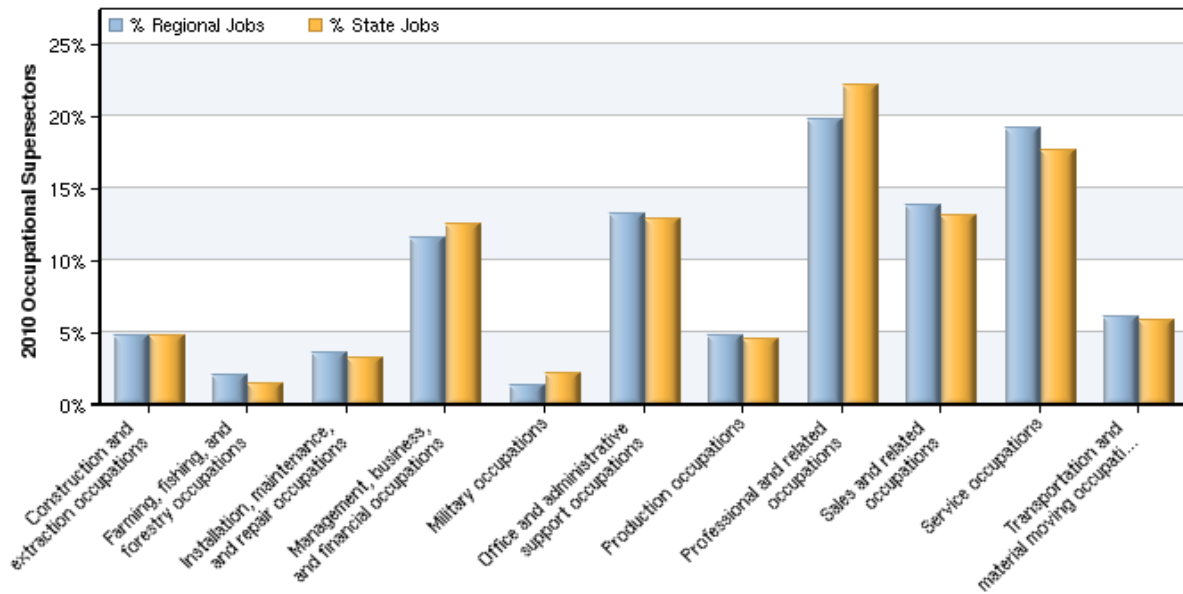


Table 62

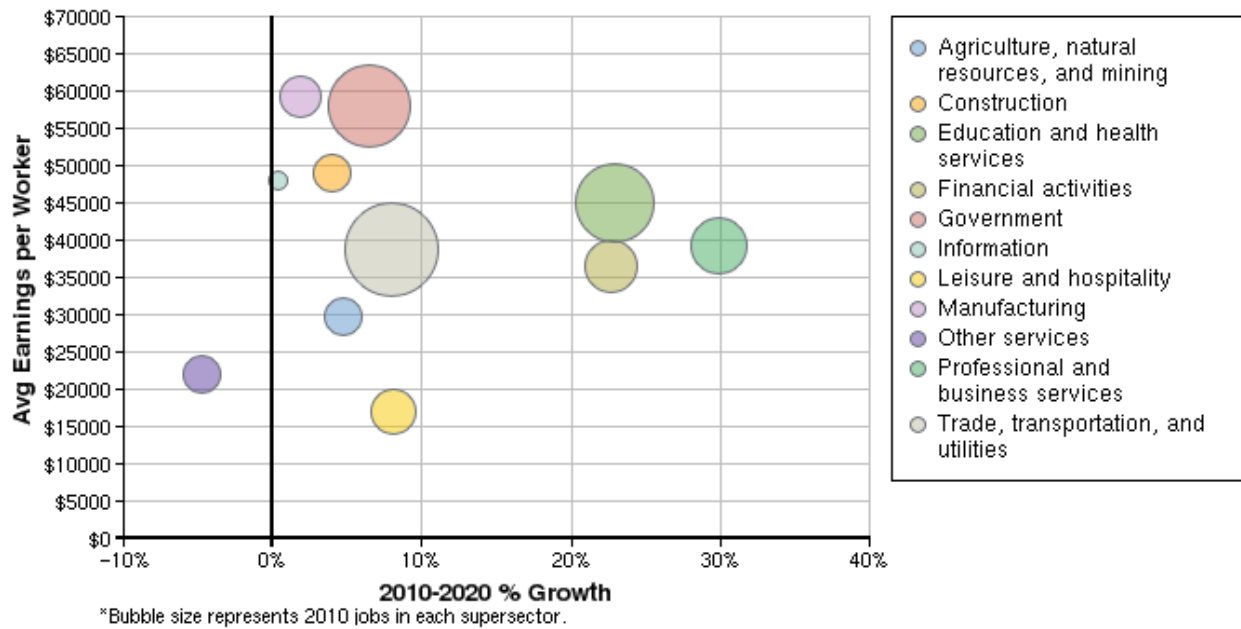
Description/Occupations	2010 Regional Jobs	% Regional Jobs	2010 State Jobs	% State Jobs
Construction and extraction occupations	16,269	4.7%	183,042	4.8%
Farming, fishing, and forestry	7,069	2.1%	54,923	1.4%
Installation, maintenance, and repair	12,294	3.6%	121,785	3.2%
Management, business, and financial	39,568	11.5%	473,768	12.5%
Military occupations	4,666	1.4%	82,385	2.2%
Office and administrative support	45,365	13.2%	486,007	12.8%
Production occupations	16,259	4.7%	169,730	4.5%
Professional and related occupations	67,862	19.8%	838,804	22.1%
Sales and related occupations	47,143	13.8%	495,411	13.0%
Service occupations	65,582	19.1%	671,312	17.7%
Transportation and material moving	20,779	6.1%	220,445	5.8%

Source: EMSI Complete Employment - 3rd Quarter 2010

**Industry Size, Earnings, and Forecast Growth Rates**

The bubble chart and related table below show regional earnings and forecast job growth information for the period 2010 to 2020. The highest earnings industry sectors are manufacturing, and government. The highest growth industry sectors are professional and business services, education and health services, and financial activities.

**Figure 47 – Spokane and Northeast Region**



**Table 63 – Spokane and Northeast Region**

Description	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Earnings Per Worker
Agriculture, natural resources, mining	18,617	19,506	889	5%	\$29,789
Construction	18,037	18,755	718	4%	\$48,992
Education and health services	51,909	63,802	11,893	23%	\$44,996
Financial activities	31,200	38,257	7,057	23%	\$36,615
Government	54,230	57,740	3,510	6%	\$57,940
Information	3,794	3,807	13	0%	\$47,974
Leisure and hospitality	26,346	28,490	2,144	8%	\$17,050
Manufacturing	22,553	22,964	411	2%	\$59,178
Other services	18,890	17,995	-895	-5%	\$21,890
Professional and business services	34,321	44,604	10,283	30%	\$39,142
Trade, transportation, and utilities	62,960	67,967	5,007	8%	\$38,859
<b>Total</b>	<b>342,857</b>	<b>383,889</b>	<b>41,032</b>	<b>12%</b>	<b>\$41,498</b>

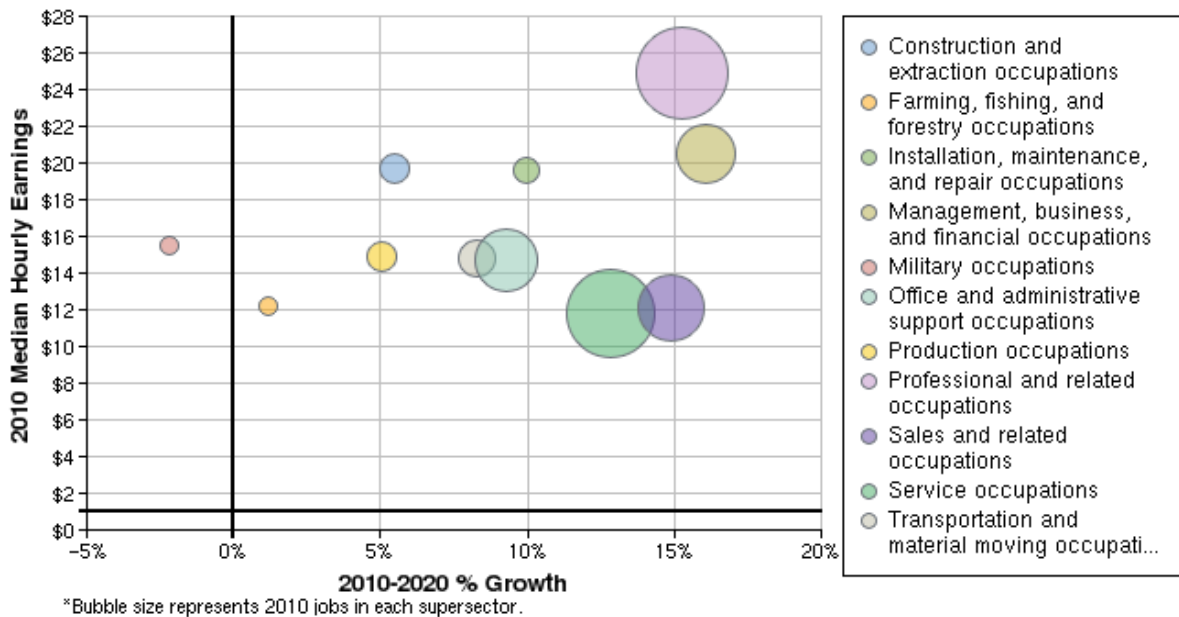
Source: EMSI Complete Employment - 3rd Quarter 2010



**Occupation Size, Earnings, and Forecast Growth Rates**

The same type of analysis is presented below for occupational clusters in the region. The highest wage occupational clusters are professional and related occupations, management, business, and financial occupations, construction occupations, and installation, maintenance, and repair occupations. The highest forecast growth occupations are management, business, and financial occupations, professional and related occupations, sales and related occupations, and service occupations.

**Figure 48 – Spokane and Northeast Region**



**Table 64  
Spokane and Northeast Region**

Description/Occupations	2010 Jobs	2020 Jobs	Growth	% Growth	2010 Median Hourly Earnings
Construction and extraction	16,269	17,164	895	6%	\$19.74
Farming, fishing, and forestry	7,069	7,152	83	1%	\$12.17
Installation, maintenance, and repair	12,294	13,515	1,221	10%	\$19.58
Management, business, and financial	39,568	45,918	6,350	16%	\$20.48
Military occupations	4,666	4,565	-101	-2%	\$15.50
Office and administrative support	45,365	49,586	4,221	9%	\$14.73
Production occupations	16,259	17,079	820	5%	\$14.89
Professional and related occupations	67,862	78,236	10,374	15%	\$24.90
Sales and related occupations	47,143	54,163	7,020	15%	\$12.12
Service occupations	65,582	74,009	8,427	13%	\$11.82
Transportation and material moving	20,779	22,502	1,723	8%	\$14.76
<b>Total</b>	<b>342,857</b>	<b>383,889</b>	<b>41,032</b>	<b>12%</b>	<b>\$16.87</b>

Source: EMSI Complete Employment - 3rd Quarter 2010



## Identification of High Demand Occupations Paying Self-Sufficiency Wages

The HECB analyzed EMSI, Inc. employment forecast data and combined them with information about self-sufficiency wages for the region. The objective was to identify specific occupations that 1) require a postsecondary credential or apprenticeship; 2) are forecast to have a large number of job openings over the next 10 years; and 3) offer median wages that are at least higher than the county/area with the lowest self-sufficiency wage in the region for each of three common family types. These criteria zero in on the occupations that are the first place to look for program expansion and economic development opportunities.

### *Self-Sufficiency Wages by County and Family Type*

The table below shows the self-sufficiency wages for three common family types for the region. The region is comprised by five counties, each with calculated self-sufficiency wages. The lowest wages are found in Adams (for the one adult, two children family) and Pend Oreille (for the remaining two family types) counties. These wages made up the thresholds for the analysis of occupations that follows.

**Table 65**

Spokane and Northeast Region Self-Sufficiency Wages and High Growth Occupations						
Self-Sufficiency Wages by County	Annual Self-Sufficiency Standard			Computed Self-Sufficiency Hourly Wage		
	1 Adult 1 Preschooler	1 Adult 1 Preschooler 1 School age	2 Adults 1 Preschl 1 School age (each adult)	1 Adult, 1 Preschooler	1 Adult 1 Preschl 1 School age (each adult)	2 Adults 1 Preschl 1 School age
County						
Adams	\$27,445	\$32,025	\$19,739	\$13.19	\$15.40	\$9.49
Ferry	\$28,245	\$34,866	\$21,699	\$13.58	\$16.76	\$10.43
Grant	\$28,744	\$35,261	\$21,766	\$13.82	\$16.95	\$10.46
Lincoln	\$27,913	\$35,249	\$21,761	\$13.42	\$16.95	\$10.46
Pend Oreille	\$26,249	\$32,332	\$19,967	\$12.62	\$15.54	\$9.60
Spokane	\$31,059	\$38,562	\$22,592	\$14.93	\$18.54	\$10.86
Stevens	\$28,483	\$34,488	\$21,122	\$13.69	\$16.58	\$10.15

Source: Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

### *Analysis of the Top 50 Growth Occupations in Region that Require Postsecondary Education, and Wage Levels*

The following tables show the top 50 occupations in the region by the total number of job openings forecast between 2010 and 2020. Job openings represent new jobs due to increased demand and replacement jobs due to retirements and job turnover. Only those occupations that require postsecondary education or apprenticeships are listed.

Also indicated is whether the median wage for each occupation exceeds the lowest self-sufficiency wage among the counties/areas that comprise the region. The HECB encourages institutions to focus program expansion efforts on those occupations that exceed this wage threshold for all three family types.

Registered nurses, accountants and auditors, teachers, chief executives and sole proprietors, farm, ranch, and other agricultural managers, and licensed practical and vocational nurses are all occupations with 700 or more forecast job openings and that pay in excess of the self-sufficiency wage for all three family types.

As indicated in Table 9b, the Spokane and Northeast Region will comprise the same share of all Washington job openings requiring postsecondary education between 2010 and 2020 as its current share of total employment (8%). This implies forecast stability in the relative importance of postsecondary education to the region's labor market.

Table 66

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Spokane and Northeast Region by Number of Jobs											Exceeds Adams/Pend Oreille County Standard		
1	Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult,	1 Adult,	1
											1	1 Schoolage	Preschooler, Schoolage (each adult)
1	Registered nurses	29-1111	6,429	7,810	1,381	21%	2,504	39%	\$30.90	Associate's degree	✓	✓	✓
2	Real estate sales agents	41-9022	3,868	5,404	1,536	40%	2,169	56%	\$8.79	Postsecondary vocational award			
3	Property, real estate, and community association managers	11-9141	2,417	3,326	909	38%	1,325	55%	\$9.94	Bachelor's degree			✓
4	Accountants and auditors	13-2011	2,872	3,552	680	24%	1,165	41%	\$21.55	Bachelor's degree	✓	✓	✓
5	Postsecondary teachers	25-1099	3,525	4,043	518	15%	1,132	32%	\$29.99	Doctoral degree	✓	✓	✓
6	Elementary school teachers, except special education	25-2021	2,807	3,176	369	13%	1,008	36%	\$32.98	Bachelor's degree	✓	✓	✓
7	Chief executives and sole proprietors	11-1011	1,895	2,283	388	20%	920	49%	\$17.27	Degree plus work experience	✓	✓	✓
8	Securities, commodities, and financial services sales agents	41-3031	1,481	1,942	461	31%	915	62%	\$15.31	Bachelor's degree	✓		✓
9	Personal financial advisors	13-2052	1,586	2,270	684	43%	856	54%	\$11.66	Bachelor's degree			✓
10	Farm, ranch, and other agricultural managers	11-9011	2,645	2,890	245	9%	850	32%	\$19.69	Degree plus work experience	✓	✓	✓
11	Nursing aides, orderlies, and attendants	31-1012	2,614	3,189	575	22%	835	32%	\$11.46	Postsecondary vocational award			✓
12	Licensed practical and licensed vocational nurses	29-2061	1,498	1,801	303	20%	772	52%	\$21.06	Postsecondary vocational award	✓	✓	✓
13	Medical secretaries	43-6013	1,929	2,419	490	25%	750	39%	\$15.35	Postsecondary vocational award	✓		✓
14	Teachers and instructors, all other	25-3099	2,340	2,678	338	14%	698	30%	\$18.34	Bachelor's degree	✓	✓	✓
15	Insurance sales agents	41-3021	1,550	1,828	278	18%	646	42%	\$15.43	Bachelor's degree	✓	✓	✓
16	Cooks, restaurant	35-2014	2,040	2,117	77	4%	623	31%	\$10.39	Long-term on-the-job training			✓
17	Carpenters	47-2031	3,114	3,183	69	2%	619	20%	\$20.00	Long-term on-the-job training	✓	✓	✓
18	General and operations managers	11-1021	1,852	1,914	62	3%	618	33%	\$40.44	Degree plus work experience	✓	✓	✓
19	Secondary school teachers, except special and vocational education	25-2031	1,689	1,795	106	6%	607	36%	\$33.74	Bachelor's degree	✓	✓	✓
20	Physicians and surgeons	29-1069	1,524	1,851	327	21%	598	39%	\$91.30	First professional degree	✓	✓	✓
21	Photographers	27-4021	1,389	1,689	300	22%	578	42%	\$9.30	Long-term on-the-job training			
22	Middle school teachers, except special and vocational education	25-2022	1,573	1,779	206	13%	564	36%	\$34.61	Bachelor's degree	✓	✓	✓
23	Management analysts	13-1111	1,180	1,503	323	27%	526	45%	\$15.05	Degree plus work experience	✓		✓
24	Appraisers and assessors of real estate	13-2021	948	1,264	316	33%	488	51%	\$11.58	Postsecondary vocational award			✓
25	Lawyers	23-1011	1,338	1,552	214	16%	465	35%	\$30.89	First professional degree	✓	✓	✓

Table 66 (Continued)

Top 50 Growth Occupations Requiring a Post-Secondary Credential in Spokane and Northeast Region by Number of Jobs											Exceeds Adams/Pend Oreille County Standard		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult, 1 Preschooler	1 Adult, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)	
26 Business operation specialists, all other	13-1199	1,530	1,650	120	8%	459	30%	\$26.04	Bachelor's degree	✓	✓	✓	
27 Financial managers	11-3031	1,237	1,450	213	17%	435	35%	\$33.21	Degree plus work experience	✓	✓	✓	
28 Farmers and ranchers	11-9012	5,297	5,385	88	2%	433	8%	\$8.61	Long-term on-the-job training				
29 Electricians	47-2111	1,280	1,286	6	0%	419	33%	\$23.02	Long-term on-the-job training	✓	✓	✓	
30 Fire fighters	33-2011	771	912	141	18%	378	49%	\$26.65	Long-term on-the-job training	✓	✓	✓	
31 Gaming dealers	39-3011	568	696	128	23%	368	65%	\$12.70	Postsecondary vocational award	✓		✓	
32 Automotive service technicians and mechanics	49-3023	1,467	1,547	80	5%	362	25%	\$18.40	Postsecondary vocational award	✓	✓	✓	
33 Rehabilitation counselors	21-1015	888	1,046	158	18%	341	38%	\$19.51	Master's degree	✓	✓	✓	
34 Coaches and scouts	27-2022	815	993	178	22%	334	41%	\$16.58	Long-term on-the-job training	✓	✓	✓	
35 Financial analysts	13-2051	524	725	201	38%	296	56%	\$15.08	Bachelor's degree	✓		✓	
36 Computer support specialists	15-1041	882	928	46	5%	292	33%	\$19.96	Associate's degree	✓	✓	✓	
37 Network systems and data communications analysts	15-1081	550	733	183	33%	282	51%	\$21.23	Bachelor's degree	✓	✓	✓	
38 Construction managers	11-9021	1,194	1,351	157	13%	259	22%	\$21.95	Bachelor's degree	✓	✓	✓	
39 Preschool teachers, except special education	25-2011	691	802	111	16%	252	36%	\$10.95	Postsecondary vocational award			✓	
40 Police and sheriff's patrol officers	33-3051	737	796	59	8%	251	34%	\$28.76	Long-term on-the-job training	✓	✓	✓	
41 Radiologic technologists and technicians	29-2034	689	839	150	22%	250	36%	\$26.19	Associate's degree	✓	✓	✓	
42 Writers and authors	27-3043	584	707	123	21%	247	42%	\$9.43	Bachelor's degree				
43 Fitness trainers and aerobics instructors	39-9031	611	746	135	22%	245	40%	\$11.05	Postsecondary vocational award			✓	
44 Adult literacy, remedial education, and GED teachers and instructors	25-3011	790	913	123	16%	245	31%	\$13.69	Bachelor's degree	✓		✓	
45 Welders, cutters, solderers, and brazers	51-4121	706	707	1	0%	242	34%	\$17.34	Long-term on-the-job training	✓	✓	✓	
46 Travel agents	41-3041	307	518	211	69%	236	77%	\$15.72	Postsecondary vocational award	✓	✓	✓	
47 Sales managers	11-2022	611	714	103	17%	235	38%	\$33.63	Degree plus work experience	✓	✓	✓	
48 Pharmacists	29-1051	615	708	93	15%	230	37%	\$50.63	First professional degree	✓	✓	✓	
49 Industrial machinery mechanics	49-9041	650	780	130	20%	224	34%	\$22.29	Long-term on-the-job training	✓	✓	✓	
50 Physical therapists	29-1123	604	746	142	24%	215	36%	\$30.39	Master's degree	✓	✓	✓	

Source: EMSI Complete Employment - 3rd Quarter 2010

Note: The Pend Oreille and Adams County Self-Sufficiency Wages are the lowest living wage standard for the counties that comprise this region, based on calculations found in Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

## Concluding Analysis

The data presented show that Washington has much work to do to improve access to higher education across the state. The participation rate data tells us that some students are place-bound and lack easy (nearby) or sufficient (capacity) access to higher education. Uneven quality across the state of K-12 schools, and a college-going culture, may be other factors contributing to variation in participation rates.

We also see that many of our higher education resources are not well-dispersed geographically. The 34 community and technical colleges are spread out and cover much of the state. But here too, we see some counties like Kittitas, Skamania, and Klickitat with very low two-year participation rates. At the four-year level, much of our capacity is concentrated in King County, Spokane and Pullman (especially graduate-level education).

With the exception of Central Washington University, the regional institutions and branch campuses struggle to draw in students in substantial numbers from beyond the counties where they are located. As a result, some areas of the state go under-served or are exclusively reliant on distance learning.

The data presented also show that these problems are likely to worsen, not improve. The forecast growth of student groups with historically low participation rates, particularly African Americans, Native Americans/Alaska Natives, Hispanics, and Pacific Islanders. Much of this population growth will occur in areas of the state with already low participation rates.

In addition, we see in the employment forecast dispersion of job openings requiring postsecondary education from King County to other areas of the state. King County currently accounts for 46 percent of all jobs in the state requiring postsecondary education, but it will account for just 41 percent of the forecast job openings between now and 2020. The rest of those jobs will be located in other areas of the state.

Putting these two trends together, we may expect to see growing gaps in areas outside of King County between employer demand for college-educated workers and the available supply.

In selecting which fields of study to focus on for college program expansion, institutions would do well to focus on the highest wage, highest growth occupations (sectors in the upper-right corner of the bubble charts). Sectors with large bubbles (high levels of employment) also are important – the occupations that consistently top the list meeting these criteria in each region of the state include registered nurses, business operation specialists, and general and operations managers. Also high on the lists are teachers (although job growth is forecast to be modest, there are many replacement job openings forecast) and chief executives and sole proprietors (high rate of business start-ups and self-employed workers).

The industry sector/occupational cluster analysis for each region shows that analysts can miss opportunities if focused exclusively on industries. In most of the regions' industry bubble charts, the high wage industry sectors showed lower forecast growth rates.

But in most of those same regions, we found occupational clusters that cut across the industry sectors that were both high wage and high growth clusters, especially professional and related occupations, and management, business, and financial occupations. This finding underscores the importance of looking across industries to find high employer demand occupations.

Finally, it is important that institutions use the forecast employer demand information in this report as only one side of a two-sided equation—the other side being the supply side. No attempt was made in this report to identify gaps between forecast demand and existing supply by occupation for each region.

This analysis is done on the statewide level, not the regional level, and new demand/supply gap information will be available in 2011, with the forthcoming update of the joint agency report, *A Skilled and Educated Workforce*. Institutions can best identify supply shortages by talking to area employers, industry organizations, and local labor market analysts.

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## Appendix A

## Higher Education Regions by County

Table 67

<b>WA Higher Education Regions</b>	
<b>Region</b>	<b>County</b>
<b>Central &amp; East</b>	Asotin
	Benton
	Chelan
	Columbia
	Douglas
	Franklin
	Garfield
	Kittitas
	Okanogan
	Walla Walla
	Whitman
Yakima	
<b>King</b>	King
<b>Northwest</b>	Island
	San Juan
	Skagit
	Whatcom
<b>Northwest (Olympic Sub-region)</b>	Clallam
	Jefferson
	Kitsap
	Mason
<b>Pierce</b>	Pierce
<b>Snohomish</b>	Snohomish
<b>South Sound</b>	Grays Harbor
	Lewis
	Pacific
<b>Southwest</b>	Thurston
	Clark
	Cowlitz
	Klickitat
	Skamania
<b>Spokane</b>	Wahkiakum
	Adams
	Ferry
	Grant
	Lincoln
	Pend Oreille
	Spokane
Stevens	

Appendix B

State-Level High Employer Demand Occupations, by Education and Training Requirements

Table 68  
Mid-Level Analysis

Top 50 Growth Occupations Requiring a Mid-Level Credential in Washington by Number of Jobs											<i>Exceeds Average Area Standard</i>		
Rank	Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	Exceeds Average Area Standard		
											1 Adult, 1 Preschooler	1 Adult, 1 Preschooler, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)
1	Real estate sales agents	41-9022	46,274	63,246	16,972	37%	24,551	53%	\$8.98	Postsecondary vocational award			
2	Registered nurses	29-1111	55,129	68,742	13,613	25%	23,249	42%	\$34.31	Associate's degree	✓	✓	✓
3	Photographers	27-4021	21,492	25,785	4,293	20%	8,597	40%	\$12.70	Long-term on-the-job training			✓
4	Cooks, restaurant	35-2014	21,815	24,001	2,186	10%	7,913	36%	\$12.11	Long-term on-the-job training			✓
5	Nursing aides, orderlies, and attendants	31-1012	23,037	27,876	4,839	21%	7,154	31%	\$12.80	Postsecondary vocational award			✓
6	Medical secretaries	43-6013	19,187	23,740	4,553	24%	7,139	37%	\$16.88	Postsecondary vocational award	✓		✓
7	Carpenters	47-2031	38,179	37,282	-897	-2%	6,768	18%	\$22.91	Long-term on-the-job training	✓	✓	✓
8	Appraisers and assessors of real estate	13-2021	10,354	13,842	3,488	34%	5,371	52%	\$11.36	Postsecondary vocational award			✓
9	Computer support specialists	15-1041	12,907	14,608	1,701	13%	5,313	41%	\$22.05	Associate's degree	✓	✓	✓
10	Licensed practical and licensed vocational nurses	29-2061	9,938	11,834	1,896	19%	5,011	50%	\$20.98	Postsecondary vocational award	✓	✓	✓
11	Electricians	47-2111	15,777	15,201	-576	-4%	4,578	29%	\$28.16	Long-term on-the-job training	✓	✓	✓
12	Fire fighters	33-2011	9,295	10,836	1,541	17%	4,397	47%	\$30.46	Long-term on-the-job training	✓	✓	✓
13	Gaming dealers	39-3011	5,894	6,936	1,042	18%	3,563	60%	\$12.12	Postsecondary vocational award			✓
14	Preschool teachers, except special education	25-2011	9,092	10,791	1,699	19%	3,528	39%	\$11.54	Postsecondary vocational award			
15	Fitness trainers and aerobics instructors	39-9031	7,425	9,438	2,013	27%	3,351	45%	\$15.36	Postsecondary vocational award			✓
16	Automotive service technicians and mechanics	49-3023	14,033	14,591	558	4%	3,323	24%	\$20.06	Postsecondary vocational award	✓	✓	✓
17	Farmers and ranchers	11-9012	28,298	29,019	721	3%	3,173	11%	\$9.21	Long-term on-the-job training			
18	Coaches and scouts	27-2022	7,641	9,335	1,694	22%	3,157	41%	\$17.86	Long-term on-the-job training	✓		✓
19	Computer specialists, all other	15-1099	9,191	10,160	969	11%	2,963	32%	\$35.80	Associate's degree	✓	✓	✓
20	Police and sheriff's patrol officers	33-3051	8,640	9,187	547	6%	2,832	33%	\$31.06	Long-term on-the-job training	✓	✓	✓
21	Plumbers, pipefitters, and steamfitters	47-2152	10,553	9,925	-628	-6%	2,630	25%	\$26.33	Long-term on-the-job training	✓	✓	✓
22	Hairdressers, hairstylists, and cosmetologists	39-5012	12,895	13,065	170	1%	2,350	18%	\$17.97	Postsecondary vocational award	✓		✓
23	Dental hygienists	29-2021	4,653	6,052	1,399	30%	2,349	50%	\$43.86	Associate's degree	✓	✓	✓
24	Welders, cutters, solderers, and brazers	51-4121	6,782	6,515	-267	-4%	2,243	33%	\$20.55	Long-term on-the-job training	✓	✓	✓
25	Compliance officers, except agriculture, construction, health and safety, and transportation	13-1041	6,177	7,707	1,530	25%	2,188	35%	\$25.56	Long-term on-the-job training	✓	✓	✓



Table 68 (Continued)

Top 50 Growth Occupations Requiring a Mid-Level Credential in Washington by Number of Jobs											Exceeds Average Area Standard		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult, 1 Preschooler	1 Adult, 1 Preschooler, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)	
26 Musicians and singers	27-2042	5,797	6,720	923	16%	2,093	36%	\$10.80	Long-term on-the-job training				
27 Aircraft structure, surfaces, rigging, and systems assemblers	51-2011	8,474	8,138	-336	-4%	2,071	24%	\$23.57	Long-term on-the-job training	✓	✓	✓	
28 Paralegals and legal assistants	23-2011	6,203	7,494	1,291	21%	1,999	32%	\$22.52	Associate's degree	✓	✓	✓	
29 Biological technicians	19-4021	3,804	4,322	518	14%	1,851	49%	\$18.37	Associate's degree	✓		✓	
30 Media and communication workers, all other	27-3099	4,614	5,357	743	16%	1,834	40%	\$17.33	Long-term on-the-job training	✓		✓	
31 Interpreters and translators	27-3091	4,101	4,956	855	21%	1,830	45%	\$15.69	Long-term on-the-job training			✓	
32 Legal secretaries	43-6012	6,314	7,262	948	15%	1,801	29%	\$19.03	Postsecondary vocational award	✓	✓	✓	
33 Medical records and health information technicians	29-2071	4,464	5,329	865	19%	1,777	40%	\$16.55	Associate's degree	✓		✓	
34 Bus and truck mechanics and diesel engine specialists	49-3031	6,381	6,657	276	4%	1,774	28%	\$22.59	Postsecondary vocational award	✓	✓	✓	
35 Industrial machinery mechanics	49-9041	5,486	6,347	861	16%	1,672	30%	\$25.06	Long-term on-the-job training	✓	✓	✓	
36 Claims adjusters, examiners, and investigators	13-1031	5,648	5,564	-84	-1%	1,615	29%	\$26.38	Long-term on-the-job training	✓	✓	✓	
37 Heating, air conditioning, and refrigeration mechanics and installers	49-9021	5,774	6,137	363	6%	1,520	26%	\$24.34	Long-term on-the-job training	✓	✓	✓	
38 Radiologic technologists and technicians	29-2034	4,256	5,066	810	19%	1,426	34%	\$28.97	Associate's degree	✓	✓	✓	
39 Travel agents	41-3041	2,483	3,658	1,175	47%	1,392	56%	\$15.76	Postsecondary vocational award			✓	
40 Library technicians	25-4031	2,468	2,606	138	6%	1,269	51%	\$16.42	Postsecondary vocational award	✓		✓	
41 Emergency medical technicians and paramedics	29-2041	3,084	3,696	612	20%	1,252	41%	\$16.19	Postsecondary vocational award	✓		✓	
42 Massage therapists	31-9011	3,549	4,267	718	20%	1,195	34%	\$24.17	Postsecondary vocational award	✓	✓	✓	
43 Fine artists, including painters, sculptors, and illustrators	27-1013	2,715	3,271	556	20%	1,167	43%	\$9.54	Long-term on-the-job training				
44 Healthcare technologists and technicians, all other	29-2099	2,811	3,388	577	21%	1,151	41%	\$20.84	Postsecondary vocational award	✓	✓	✓	
45 Artists and related workers, all other	27-1019	2,673	3,220	547	20%	1,143	43%	\$9.08	Long-term on-the-job training				
46 Electrical power-line installers and repairers	49-9051	2,062	2,464	402	19%	1,141	55%	\$33.35	Long-term on-the-job training	✓	✓	✓	
47 Craft artists	27-1012	2,672	3,215	543	20%	1,133	42%	\$8.85	Long-term on-the-job training				
48 Telecommunications equipment installers and repairers, except line installers	49-2022	3,966	4,307	341	9%	1,102	28%	\$28.51	Long-term on-the-job training	✓	✓	✓	
49 Interior designers	27-1025	2,277	2,665	388	17%	1,087	48%	\$16.23	Associate's degree	✓		✓	
50 Veterinary technologists and technicians	29-2056	1,693	2,336	643	38%	1,074	63%	\$13.91	Associate's degree			✓	

Source: EMSI Complete Employment - 3rd Quarter 2010

Note: The statewide Self-Sufficiency Wages are derived by averaging the county/area standards, based on calculations found in Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

**Table 69**  
**Baccalaureate Level Analysis**

Top 50 Growth Occupations Requiring a Baccalaureate Degree in Washington by Number of Jobs											Exceeds Average Area Standard		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	1 Adult, 1 Preschooler	1 Adult, 1 Preschooler, 1 Schoolage	2 Adults, 1 Preschooler, 1 Schoolage (each adult)	
1 Property, real estate, and community association managers	11-9141	28,995	38,875	9,880	34%	14,876	51%	\$10.82	Bachelor's degree				
2 Management analysts	13-1111	28,029	35,107	7,078	25%	11,889	42%	\$23.97	Degree plus work experience	✓	✓	✓	
3 Accountants and auditors	13-2011	33,304	39,437	6,133	18%	11,764	35%	\$22.72	Bachelor's degree	✓	✓	✓	
4 Chief executives and sole proprietors	11-1011	23,508	28,021	4,513	19%	11,117	47%	\$24.27	Degree plus work experience	✓	✓	✓	
5 Elementary school teachers, except special education	25-2021	28,497	32,148	3,651	13%	10,169	36%	\$32.96	Bachelor's degree	✓	✓	✓	
6 Securities, commodities, and financial services sales agents	41-3031	15,292	19,791	4,499	29%	9,186	60%	\$20.62	Bachelor's degree	✓	✓	✓	
7 Personal financial advisors	13-2052	17,102	23,994	6,892	40%	8,739	51%	\$14.68	Bachelor's degree			✓	
8 Business operation specialists, all other	13-1199	26,424	28,412	1,988	8%	7,892	30%	\$30.49	Bachelor's degree	✓	✓	✓	
9 General and operations managers	11-1021	24,179	24,535	356	1%	7,800	32%	\$47.63	Degree plus work experience	✓	✓	✓	
10 Computer software engineers, applications	15-1031	25,105	30,445	5,340	21%	7,452	30%	\$42.38	Bachelor's degree	✓	✓	✓	
11 Network systems and data communications analysts	15-1081	12,254	17,112	4,858	40%	7,061	58%	\$32.32	Bachelor's degree	✓	✓	✓	
12 Teachers and instructors, all other	25-3099	22,714	26,048	3,334	15%	6,845	30%	\$19.49	Bachelor's degree	✓	✓	✓	
13 Secondary school teachers, except special and vocational education	25-2031	16,167	17,218	1,051	7%	5,866	36%	\$33.71	Bachelor's degree	✓	✓	✓	
14 Computer systems analysts	15-1051	14,063	16,264	2,201	16%	5,232	37%	\$36.52	Bachelor's degree	✓	✓	✓	
15 Computer software engineers, systems software	15-1032	18,757	22,400	3,643	19%	5,221	28%	\$43.98	Bachelor's degree	✓	✓	✓	
16 Farm, ranch, and other agricultural managers	11-9011	16,629	18,255	1,626	10%	5,113	31%	\$21.18	Degree plus work experience	✓	✓	✓	
17 Market research analysts	19-3021	9,690	12,186	2,496	26%	5,103	53%	\$37.87	Bachelor's degree	✓	✓	✓	
18 Financial managers	11-3031	15,701	17,914	2,213	14%	5,038	32%	\$40.01	Degree plus work experience	✓	✓	✓	
19 Middle school teachers, except special and vocational education	25-2022	13,400	15,088	1,688	13%	4,750	35%	\$33.14	Bachelor's degree	✓	✓	✓	
20 Insurance sales agents	41-3021	12,676	13,989	1,313	10%	4,345	34%	\$18.49	Bachelor's degree	✓	✓	✓	
21 Civil engineers	17-2051	13,586	15,588	2,002	15%	4,310	32%	\$35.30	Bachelor's degree	✓	✓	✓	
22 Network and computer systems administrators	15-1071	11,838	14,143	2,305	19%	4,279	36%	\$34.46	Bachelor's degree	✓	✓	✓	
23 Writers and authors	27-3043	9,269	11,168	1,899	20%	3,844	41%	\$10.42	Bachelor's degree				
24 Human resources, training, and labor relations specialists, all other	13-1079	8,396	9,881	1,485	18%	3,687	44%	\$27.76	Bachelor's degree	✓	✓	✓	
25 Financial analysts	13-2051	7,099	9,316	2,217	31%	3,506	49%	\$22.21	Bachelor's degree	✓	✓	✓	

Table 69 (Continued)

Top 50 Growth Occupations Requiring a Baccalaureate Degree in Washington by Number of Jobs											Exceeds Average Area Standard		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	2 Adults, 1 Preschooler, 1 Schoolage (each adult)			
										1 Adult, 1 Preschooler	1 Adult, 1 Preschooler, 1 Schoolage	1 Adult, 1 Preschooler, 1 Schoolage	
26 Sales managers	11-2022	8,441	9,919	1,478	18%	3,296	39%	\$45.74	Degree plus work experience	✓	✓	✓	
27 Public relations specialists	27-3031	6,664	7,945	1,281	19%	2,860	43%	\$25.07	Bachelor's degree	✓	✓	✓	
28 Construction managers	11-9021	13,864	15,336	1,472	11%	2,767	20%	\$28.13	Bachelor's degree	✓	✓	✓	
29 Computer and information systems managers	11-3021	9,284	10,539	1,255	14%	2,765	30%	\$53.43	Degree plus work experience	✓	✓	✓	
30 Computer programmers	15-1021	12,773	12,366	-407	-3%	2,733	21%	\$38.01	Bachelor's degree	✓	✓	✓	
31 Employment, recruitment, and placement specialists	13-1071	4,420	5,925	1,505	34%	2,659	60%	\$24.34	Bachelor's degree	✓	✓	✓	
32 Graphic designers	27-1024	5,774	6,541	767	13%	2,541	44%	\$19.56	Bachelor's degree	✓	✓	✓	
33 Adult literacy, remedial education, and GED teachers and instructors	25-3011	7,380	8,656	1,276	17%	2,417	33%	\$14.46	Bachelor's degree			✓	
34 Marketing managers	11-2021	5,645	6,405	760	13%	1,975	35%	\$45.32	Degree plus work experience	✓	✓	✓	
35 Training and development specialists	13-1073	3,902	4,787	885	23%	1,903	49%	\$28.51	Bachelor's degree	✓	✓	✓	
36 Industrial engineers	17-2112	4,890	5,500	610	12%	1,867	38%	\$38.26	Bachelor's degree	✓	✓	✓	
37 Music directors and composers	27-2041	4,870	5,726	856	18%	1,839	38%	\$8.92	Degree plus work experience	✓	✓	✓	
38 Engineers, all other	17-2199	7,648	7,571	-77	-1%	1,837	24%	\$42.41	Bachelor's degree	✓	✓	✓	
39 Medical and health services managers	11-9111	4,961	5,844	883	18%	1,828	37%	\$41.96	Degree plus work experience	✓	✓	✓	
40 Multi-media artists and animators	27-1014	3,994	4,886	892	22%	1,786	45%	\$16.02	Bachelor's degree	✓		✓	
41 Education administrators, elementary and secondary school	11-9032	4,794	5,100	306	6%	1,776	37%	\$53.55	Degree plus work experience	✓	✓	✓	
42 Mechanical engineers	17-2141	5,857	6,029	172	3%	1,755	30%	\$38.72	Bachelor's degree	✓	✓	✓	
43 Tax examiners, collectors, and revenue agents	13-2081	3,366	3,650	284	8%	1,498	45%	\$21.37	Bachelor's degree	✓	✓	✓	
44 Probation officers and correctional treatment specialists	21-1092	3,817	4,432	615	16%	1,428	37%	\$25.78	Bachelor's degree	✓	✓	✓	
45 Medical and public health social workers	21-1022	3,062	3,694	632	21%	1,401	46%	\$24.31	Bachelor's degree	✓	✓	✓	
46 Administrative services managers	11-3011	4,274	4,773	499	12%	1,394	33%	\$40.41	Degree plus work experience	✓	✓	✓	
47 Aerospace engineers	17-2011	6,137	5,782	-355	-6%	1,389	23%	\$42.70	Bachelor's degree	✓	✓	✓	
48 Loan officers	13-2072	7,919	8,258	339	4%	1,360	17%	\$33.25	Bachelor's degree	✓	✓	✓	
49 Art directors	27-1011	3,211	3,848	637	20%	1,354	42%	\$14.75	Degree plus work experience			✓	
50 Social and community service managers	11-9151	3,672	4,165	493	13%	1,344	37%	\$26.08	Bachelor's degree	✓	✓	✓	

Source: EMSI Complete Employment - 3rd Quarter 2010

Note: The statewide Self-Sufficiency Wages are derived by averaging the county/area standards, based on calculations found in Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.

**Table 70**  
**Graduate/Professional Level Analysis**

Top 50 Growth Occupations Requiring a Graduate/Professional Degree in Washington by Number of Jobs													<i>Exceeds Average Area Standard</i>		
Rank	Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	2 Adults, 1 Preschooler, 1 Schoolage (each adult)				
											1 Adult, 1 Preschooler	1 Schoolage	1 Schoolage		
1	Postsecondary teachers	25-1099	29,304	33,022	3,718	13%	8,840	30%	\$32.53	Doctoral degree	✓	✓	✓		
2	Physicians and surgeons	29-1069	17,117	20,636	3,519	21%	6,538	38%	\$74.44	First professional degree	✓	✓	✓		
3	Lawyers	23-1011	16,834	19,252	2,418	14%	5,567	33%	\$37.12	First professional degree	✓	✓	✓		
4	Rehabilitation counselors	21-1015	7,611	8,970	1,359	18%	2,918	38%	\$17.54	Master's degree	✓		✓		
5	Medical scientists, except epidemiologists	19-1042	4,475	6,004	1,529	34%	2,433	54%	\$30.00	Doctoral degree	✓	✓	✓		
6	Pharmacists	29-1051	6,038	6,882	844	14%	2,194	36%	\$51.83	First professional degree	✓	✓	✓		
7	Clinical, counseling, and school psychologists	19-3031	4,772	5,595	823	17%	2,176	46%	\$25.31	Doctoral degree	✓	✓	✓		
8	Clergy	21-2011	6,618	7,181	563	9%	1,950	29%	\$10.15	Master's degree					
9	Physical therapists	29-1123	4,951	6,257	1,306	26%	1,904	38%	\$32.38	Master's degree	✓	✓	✓		
10	Educational, vocational, and school counselors	21-1012	5,375	6,049	674	13%	1,767	33%	\$23.62	Master's degree	✓	✓	✓		
11	Environmental scientists and specialists, including health	19-2041	4,013	4,539	526	13%	1,675	42%	\$30.03	Master's degree	✓	✓	✓		
12	Mental health counselors	21-1014	4,552	5,298	746	16%	1,668	37%	\$19.07	Master's degree	✓	✓	✓		
13	Psychologists, all other	19-3039	3,124	3,812	688	22%	1,572	50%	\$23.97	Master's degree	✓	✓	✓		
14	Industrial-organizational psychologists	19-3032	2,869	3,537	668	23%	1,541	54%	\$20.17	Master's degree	✓	✓	✓		
15	Librarians	25-4021	3,801	3,975	174	5%	1,210	32%	\$27.80	Master's degree	✓	✓	✓		
16	Speech-language pathologists	29-1127	3,204	3,805	601	19%	1,184	37%	\$26.92	Master's degree	✓	✓	✓		
17	Computer and information scientists, research	15-1011	2,868	3,411	543	19%	1,159	40%	\$36.24	Doctoral degree	✓	✓	✓		
18	Mental health and substance abuse social workers	21-1023	2,795	3,236	441	16%	1,144	41%	\$18.33	Master's degree	✓		✓		
19	Instructional coordinators	25-9031	2,599	3,125	526	20%	1,099	42%	\$26.75	Master's degree	✓	✓	✓		
20	Veterinarians	29-1131	2,042	2,753	711	35%	1,074	53%	\$29.70	First professional degree	✓	✓	✓		
21	Substance abuse and behavioral disorder counselors	21-1011	2,615	3,110	495	19%	1,024	39%	\$15.69	Master's degree			✓		
22	Urban and regional planners	19-3051	2,963	3,345	382	13%	957	32%	\$31.90	Master's degree	✓	✓	✓		
23	Occupational therapists	29-1122	2,224	2,747	523	24%	927	42%	\$30.42	Master's degree	✓	✓	✓		
24	Dentists, general	29-1021	2,054	2,372	318	15%	893	43%	\$80.70	First professional degree	✓	✓	✓		
25	Chiropractors	29-1011	1,601	2,133	532	33%	814	51%	\$30.91	First professional degree	✓	✓	✓		

Table 70 (Continued)

Top 50 Growth Occupations Requiring a Graduate/Professional Degree in Washington by Number of Jobs													<i>Exceeds Average Area Standard</i>		
Description	SOC Code	2010 Jobs	2020 Jobs	Change	% Change	Job Openings	% New & Rep.	Current Median Hourly Earnings	BLS Entry Education Level	2 Adults, 1 Adult, 1 Preschooler, 1 Schoolage (each adult)					
										1 Adult, 1 Preschooler	1 Schoolage	1 Schoolage			
26 Social scientists and related workers, all other	19-3099	936	1,099	163	17%	632	68%	\$30.48	Master's degree	✓	✓	✓			
27 Geoscientists, except hydrologists and geographers	19-2042	1,220	1,416	196	16%	546	45%	\$30.30	Master's degree	✓	✓	✓			
28 Optometrists	29-1041	962	1,153	191	20%	515	54%	\$37.05	First professional degree	✓	✓	✓			
29 Health educators	21-1091	1,373	1,530	157	11%	450	33%	\$21.10	Master's degree	✓	✓	✓			
30 Operations research analysts	15-2031	918	1,066	148	16%	415	45%	\$35.43	Master's degree	✓	✓	✓			
31 Podiatrists	29-1081	1,070	1,295	225	21%	409	38%	\$25.27	First professional degree	✓	✓	✓			
32 Marriage and family therapists	21-1013	813	957	144	18%	308	38%	\$14.45	Master's degree			✓			
33 Counselors, all other	21-1019	751	903	152	20%	305	41%	\$14.69	Master's degree			✓			
34 Biochemists and biophysicists	19-1021	406	547	141	35%	272	67%	\$25.39	Doctoral degree	✓	✓	✓			
35 Hydrologists	19-2043	612	703	91	15%	265	43%	\$30.09	Master's degree	✓	✓	✓			
36 Audiologists	29-1121	594	723	129	22%	250	42%	\$26.14	First professional degree	✓	✓	✓			
37 Statisticians	15-2041	647	693	46	7%	239	37%	\$32.66	Master's degree	✓	✓	✓			
38 Physicists	19-2012	493	567	74	15%	214	43%	\$37.54	Doctoral degree	✓	✓	✓			
39 Microbiologists	19-1022	461	505	44	10%	193	42%	\$26.77	Doctoral degree	✓	✓	✓			
40 Anthropologists and archeologists	19-3091	230	282	52	23%	168	73%	\$23.97	Master's degree	✓	✓	✓			
41 Orthodontists	29-1023	330	395	65	20%	157	48%	\$54.94	First professional degree	✓	✓	✓			
42 Museum Technicians and Conservators	25-4013	348	400	52	15%	156	45%	\$18.15	Master's degree	✓		✓			
43 Economists	19-3011	455	475	20	4%	153	34%	\$31.56	Master's degree	✓	✓	✓			
44 Oral and maxillofacial surgeons	29-1022	308	370	62	20%	148	48%	\$62.97	First professional degree	✓	✓	✓			
45 Dentists, all other specialists	29-1029	263	318	55	21%	130	49%	\$46.32	First professional degree	✓	✓	✓			
46 Political scientists	19-3094	166	191	25	15%	107	64%	\$28.35	Master's degree	✓	✓	✓			
47 Epidemiologists	19-1041	319	359	40	13%	106	33%	\$28.11	Master's degree	✓	✓	✓			
48 Curators	25-4012	257	285	28	11%	106	41%	\$24.21	Master's degree	✓	✓	✓			
49 Prosthodontists	29-1024	198	245	47	24%	90	45%	\$37.69	First professional degree	✓	✓	✓			
50 Sociologists	19-3041	169	211	42	25%	76	45%	\$24.09	Master's degree	✓	✓	✓			

Source: EMSI Complete Employment - 3rd Quarter 2010

Note: The statewide Self-Sufficiency Wages are derived by averaging the county/area standards, based on calculations found in Pearce, Diana (2009), "The Self-Sufficiency Standard for Washington State," UW School of Social Work.