

**WASHINGTON STATE
WORKFORCE TRAINING AND EDUCATION COORDINATING BOARD
MEETING NO. 166
NOVEMBER 15, 2012**

HIGH SKILLS, HIGH WAGES 2012: ACCOUNTABILITY CHAPTER

At the September meeting the Board reviewed the draft 2012 update to the *High Skills, High Wages (HSHW)* accountability chapter. The Board requested one change to the draft—that the examination of state core measures include exploring whether or not to expand the scope of covered programs. That addition is made on p. 2 of the draft chapter. The substantive changes from the 2008 chapter are shown by “track changes.”

The update to the chapter also includes an appendix that shows recent performance results for the state core measures and proposed targets. Workforce Board staff developed the proposed targets in collaboration with the affected programs. The targets for WIA Title I are based on regression models that take into account changes in the economy and participant demographics. For the other programs, since we do not have regression models, the targets are based on an average of the most recent two or three years of actual results.

This tab also includes background chapters on the economy and the workforce. Board staff presented information from the chapters to the Board near the beginning of the *HSHW* update process in March of this year. Staff has updated the information where new data is available. These background chapters will also be published as part of *HSHW 2012*.

Board Action Requested: Adoption of the Recommended Motion.

Recommended Motion

WHEREAS, The Workforce Investment Act (WIA) requires the state plan for the workforce investment system to include, “a description of the State performance accountability system developed for the workforce investment activities to be carried out through the statewide workforce investment system, that includes information identifying State performance measures,” and

WHEREAS, RCW 28C.18 and Executive Order 99-02 require that the accountability system established by the Workforce Training and Education Coordinating Board includes a broader scope of workforce programs than those required by WIA, and includes minimum standards for program evaluation, performance results, performance targets, and performance incentives, among other provisions, and

WHEREAS, *High Skills, High Wages: Washington’s Strategic Plan for Workforce Development*, includes a chapter that describes the state’s performance accountability system for workforce development, and

WHEREAS, the draft accountability chapter for *High Skills, High Wages 2012* has been updated to include changes since the 2008 plan;

THEREFORE BE IT RESOLVED, That the Workforce Training and Education Coordinating Board adopts the draft accountability chapter for *High Skills, High Wages: 2012*.

Performance Accountability

To meet the combined challenges of a competitive economy and changing labor force, and to make the best use of increasingly scarce resources, the workforce development system must continuously improve its performance. What counts are results in meeting the needs of our customers—students, job seekers, workers, and employers. The workforce development system must continuously measure results, identify areas to improve, and make the necessary improvements.

Prior to the creation of *High Skills, High Wages*, Washington did not have an accountability system for workforce development. What we had were separate accountability activities for many of our programs.

Because these accountability activities were developed to meet separate program missions and requirements, they did not reflect a consistent framework for systemwide accountability. There were no agreed upon measurable goals for the system as a whole, no common performance measures, and no standards for collecting consistent data from agency to agency. Often, data collection focused on inputs rather than results. Some programs did not evaluate what happened to their participants once they left their program, nor did they use program results to guide improvements. This has all changed.

Performance Management for Continuous Improvement

In January 1996, the Workforce Board adopted the design for a new accountability system, “Performance Management for Continuous Improvement.” (PMCI) Having a systemwide framework has many advantages, including increased accountability, improved strategic planning, better research, more efficient use of resources, and a sense of shared responsibility among workforce development programs. These advantages can improve the credibility of workforce programs and, in turn, enhance the support they receive and, ultimately, their ability to serve customers.

Based on Washington’s success with PMCI, in 2003 the U.S. Department of Labor (DOL) asked the Workforce Board to lead the 50 states in the design of the next generation performance management system. The result was *Integrated Performance Information for Workforce Development: A Blueprint for States* (IPI). Other states are implementing the IPI Blueprint, and Congress is considering the IPI performance measures as the standard for workforce development programs.

[Congress is currently working on reauthorizing the Workforce Investment Act \(WIA\). In 2013, Congress may consider reauthorizing both the Workforce Investment Act \(WIA\) and the Carl D. Perkins Career and Technical Education Act.](#) As part of reauthorization, Congress is reconsidering the measures to use for the federal core indicators. Options under consideration include the measures recommended in the IPI Blueprint; this would codify consistent measures across federal workforce programs. [At the same time, DOL is moving forward with changes in some of the measures required for DOL programs, changes that may be temporary depending on how Congress acts. How these things will play out remains uncertain at this time. *High Skills, High Wages: 2008–*](#)

~~2018 makes no changes to the workforce core measures pending the outcome of these federal developments. Following the reauthorization of WIA, the Workforce Board will join its partners in a full scale review of the workforce core measures to determine if any changes are warranted.~~

Washington has not adopted the IPI measures, waiting first to see what Congress did during reauthorization. It has, however, been nine years since WIA first came up for reauthorization. After *High Skills, High Wages 2012* is adopted, whether or not Congress acts, the Workforce Board will join its partners in a full scale examination of state core measures to ensure measures align with state goals. The examination will include exploring whether or not to expand the scope of covered programs.

PMCI Overview

The PMCI accountability system consists of four parts:

- **Desired Outcomes and Performance Measures:** The results that we are continuously working to improve and the measures that indicate how well we are doing.
- **Performance Targets and Consequences:** Numerical targets for results and a combination of incentives and sanctions in response to achieving or not achieving the targets.
- **Data Collection and Reporting:** Standards for the data elements needed to measure and analyze performance, and a series of reports that present results.
- **Government Management Accountability and Performance (GMAP):** A system of management measures, reporting, and improvement.

Washington instituted the GMAP system consisting of performance measures for each executive agency, regularly and frequently reporting results, quickly identifying problem areas, and identifying and implementing solutions. GMAP employs real-time measures designed for the unique mission of each agency. This system enables managers to quickly spot near-term changes in their agency performance and make appropriate management changes.

PMCI has a different focus, one that complements GMAP: PMCI focuses on common measures across workforce development programs that share certain desired outcomes (and many of the same customers). Consistent with the Workforce Board's role as policy coordinating body, the measures are designed for policy leaders operating at the "30,000 foot level." The PMCI measures enable policy leaders to know the lasting results of programs so they can make appropriate policy decisions, as opposed to administrative changes and changes in practice to ensure accountability and a focus on results that managers can make at the ground level. Together the PMCI and GMAP accountability systems provide a full array of policy and management measures.

Operating agencies have responsibility for their GMAP measures. The state's Employment Security Department has GMAP responsibility for WorkSource, including establishing real-time measures (and targets) that can be reported frequently to the Governor. The Workforce Board has the responsibility to maintain strategic measures (and targets) of the results for the entire workforce development system, including WorkSource, the state's one-stop career center system. ~~In 2009, the Workforce Board and the Employment Security Department will reexamine the nexus of these two sets of measures—strategic and real time—for WorkSource.~~

DESIRED OUTCOMES AND PERFORMANCE MEASURES

Desired Outcomes

PMCI identifies five desired outcomes for the workforce development system as a whole. These outcomes focus on the difference workforce development makes in the lives of program participants, their families, and their communities. They are the outcomes that policy leaders want to see. They are not static targets, but conditions that should be increasingly true for all people. Results on indicators of these outcomes are measured for the population as a whole and separately for women, subgroups of people of color, and people with disabilities.

- **Employment:** Washington's workforce finds employment opportunities.
- **Earnings:** Washington's workforce achieves a family-wage standard of living from earned income.
- **Skills:** Washington's workforce possesses the skills and abilities required in the workplace.
- **Customer Satisfaction:** Workforce development participants and their employers are satisfied with workforce development services and results.

Performance Measures

Policy leaders are busy people and have to digest a tremendous amount of varied information. Measures are more useful if they are understood quickly and easily—the fewer the measures the better. Policy leaders do not have the time to understand a dozen different numerators and denominators for each program. The term "employment rate" should not mean many different things depending on the programs measured.

The PMCI performance measures, therefore, are designed around a small set of measures—the State Core Measures—that can be applied, for the most part, vertically and horizontally throughout the workforce development system.

What are the best performance measures for workforce development if the same measures are applied horizontally and vertically within the system? State core measures should address outcomes policymakers want to see and answer basic questions such as, "Do people get jobs?" and "What are they paid?" Beyond this, measures should meet certain quality criteria.

Criteria for Good Performance Measures

Other things being equal, performance measures are better to the extent they:

- **Are outcome measures:** Performance measures should be measures of the results for customers as opposed to process measures or measures of program outputs.
- **Promote desired results:** Because you get what you measure, measures should be carefully designed to promote behavior and results that are consistent with the desired outcomes.
- **Are easily explainable to a lay audience:** Policy leaders are lay people when it comes to the often arcane subject of performance measures. Keeping it simple is good advice.
- **Create a level playing field among programs and service strategies:** Measures should be designed so that they do not create a bias toward one program or strategy.
- **Are scaleable and divisible:** Measures should be applicable, to the extent possible, to local institutions, regional areas, and the state. Measures should also be divisible so that results can be understood for subpopulations and service strategies.
- **Are not easily “gamed”:** While there may be no measure that is completely impervious to manipulation, some measures are more susceptible than others.
- **Are inexpensive:** Performance measures are very important for ensuring taxpayer dollars are wisely used, but policy leaders very reasonably want to minimize the amount of money spent on activities other than direct service to customers, and those include performance measurement.

Based on the above criteria, and after a long consensus process, PMCI identifies the following as the state’s core measures for workforce development:

Washington’s State Core Measures

Employment or Further Education

- a. **Programs Serving Adults:** Percentage of former participants with employment recorded in UI and other administrative records during the third quarter after leaving the program.
- b. **Programs Serving Youth:** Percentage of former participants with employment or further education as recorded in UI, student, and other administrative records during the third quarter after leaving the program.

Earnings

Median annualized earnings of former participants with employment recorded in UI and other administrative records during the third quarter after leaving the program, measured

only among the former participants not enrolled in further education during the quarter.

Skills

Percentage or number of program participants leaving the program who achieved appropriate skill gains or were awarded the relevant educational or skill credential based on administrative records.

Customer Satisfaction

Former Participant Satisfaction: Percentage of former participants who report satisfaction with the program as evidenced by survey responses.

Return on Investment

- a. **Taxpayer Return on Investment:** The net impact on tax revenue and social welfare payments compared to the cost of the services.
- b. **Participant Return on Investment:** The net impact on participant earnings and employer provided benefits compared to the cost of the services.

Federal acts, such as the Carl Perkins Act and Workforce Investment Act, specify certain mandatory measures of program results. Mandatory federal core measures, unfortunately, include different measures for the same desired outcome. States have the discretion to identify additional state indicators. The above state core measures are additional indicators for Washington.

The methodology for the state core measures relies as much as possible on administrative records as opposed to program staff or participant self-reports. This data source is used to enable as much consistency and objectivity across programs as possible and because it is relatively inexpensive. To measure employment and earnings, the methodology takes advantage of the UI wage files maintained by the Employment Security Department (and the equivalent agency in other states). These files hold information on all employment covered by the UI system—approximately 90 percent of all employment. Where available, the UI records are supplemented by other administrative records of employment, such as Department of Defense records.

Another important feature of the methodology is the use of the time period of seven to nine months after a participant has left his or her program as the key period for measuring post-program results. The Workforce Board and its partner agencies reviewed the results for five of the state's largest workforce programs, analyzing results quarter by quarter for three and a half years following program exit. We found that the third quarter after exit is the best possible single representation of a program's relative and lasting results without waiting years to obtain long-term results.

Measures at Each Level of the System

Figure 1 shows the PMCI performance measures at each level of the workforce development system. The five levels are:

- **Systemwide:** The workforce development system as defined in statute and executive order.
- **Statewide Programs:** Workforce development programs, such as Secondary CTE and Vocational Rehabilitation, that are statewide in scope.
- **WorkSource:** WorkSource centers and affiliate sites providing one-stop services as required under WIA Title I-B.
- **Workforce Development Area:** The local geographical area defined under WIA Title I-B.
- **Providers:** Individual institutions and entities that provide workforce development services. Examples include high schools, community and technical colleges, and private career schools, among others.

As Figure 1 shows, PMCI uses the state core measures, for the most part, from local providers to the system as a whole. There are some exceptions, however, to minimize costs. PMCI does not require customer satisfaction surveys of every statewide program or each local provider, and return on investment is only measured at the statewide level. There are also some additional measures as explained below.

Figure 1 State Core Measures

Level	Employment or Further Education	Earnings	Skills	Customer Satisfaction	Return on Investment	Other Measures
Systemwide	X	X	X	X	X	X
WorkSource	X	X	X	X	X	X
Statewide Programs	X	X	X	X	X	X
Workforce Development Areas	X	X	X	X	X	
Providers	X	X	X			

While the state core measures provide the most fundamental information on the outcomes that policy leaders want to see, they do not by themselves paint a complete picture of program performance. PMCI has, therefore, identified a larger set of program measures to provide a more comprehensive look at statewide program results. The longer list of measures includes, for example, measures of poverty rates and results for subpopulations. The Workforce Board uses the longer list of program measures every two years in producing the report, *Workforce Training Results*. The longer list of measures may be seen in that report.

~~WorkSource is Washington's one-stop system for employment and training programs. WorkSource participants include individuals and employers who receive services through a WorkSource Center or an affiliate site providing services funded under WIA Title I, WIA Title III (Wagner-Peyser), or the state's WorkFirst program's employment-related services. Participants in other programs are counted for a particular service when the program dedicates resources for that service to WorkSource. Together, these populations are considered the WorkSource participant population for purposes of accountability.~~

~~For registered participants, the WorkSource measures include most of the Washington workforce core measures, except return on investment and the federally required measures for WIA Title I. To capture the performance of WorkSource in serving all participants, not just those who register, and to help measure how Washington is doing in creating a one-stop system, there are the following additional indicators:~~

- ~~• Percentage of employers using WorkSource services.~~
- ~~• Percentage of total workers using WorkSource services.~~
- ~~• Number of job openings filled among job orders placed with WorkSource.~~
- ~~• Customer perception of seamlessness.~~
- ~~• Staff perception of seamlessness.~~

~~In 2009, the state's Employment Security Department and the Workforce Board will examine the relationship between the measurements that each requires from WorkSource to determine how this measurement scheme can be simplified.~~

Systemwide Measures

To measure Washington's progress in achieving the desired outcomes for the workforce development system, PMCI includes systemwide indicators. Some of these are measures of the state's whole workforce, not just individuals who have gone through the programs. We want to know how well the whole state is doing, not just the part of our population who have been program participants. The Workforce Board reports the results each year in *Measuring Our Progress*. Below are the latest results, in many cases compared to the results for the year 2000—a year of very strong economic growth:

Systemwide Measures and Most Recently Available Result

Employment

- ~~• The number of new jobs created in Washington per year (does not include agricultural jobs, the count for which is unavailable): 62,600 in 2000; 72,200 in 2007.~~

- Percentage of workforce development program participants self-reporting employment seven to nine months after leaving their program: 79 percent for 2000 participants; 80 percent for 2006.

Earnings

- Mean annual earnings of Washington workers (stated in constant 2007 dollars): \$43,653 in 2000; \$45,023 in 2007.
- Median annual earnings of workforce development program participants seven to nine months after leaving their program (stated in constant 2007 dollars): \$17,262 for 2004 participants; \$18,287 for 2006 participants.
- The number of Washington residents living in poverty for every 100 U.S. residents living in poverty: 2.01 in 2000; 1.77 in 2007.

Skills

- Percentage of students entering ninth grade class who graduate with their class: 66 percent in 2002; 70 percent in 2006.
- Percentage of the demand for workers with between one and four years of postsecondary training (the number of annual net job openings) that can be filled by the annual supply of community and technical college students, private career school students, and apprentices prepared for work: The supply was 77 percent of demand in 2000; 92 percent in 2006.
- Percentage of workforce training participants who report their job-specific skills improved a lot: 69 percent for 2000 participants; 72 percent for 2006.
- Percentage of employed former workforce training participants who report their training was related to the job held nine months after leaving their program: 83 percent for 2000 participants; 65 percent for 2006.

Customer Satisfaction

- Percentage of former workforce training participants satisfied overall with the program: 91 percent for 2000 participants; 88 percent for 2006.
- Percentage of Washington employers satisfied with the overall quality of former training participants' work: 89 percent in 2001; 95 percent in 2006.

Return on Investment

- The average ratio of training participants' net gain in earnings and benefits (projected to

age 65) to program public costs: \$3.57 to \$1 for 2004 participants.

PERFORMANCE TARGETS AND CONSEQUENCES

Performance Targets for State Core Measures

Statewide Programs

For statewide programs, the Workforce Board identifies expected levels of performance on each of the state and federal workforce core measures with the exception of return on investment. (Targets are not set for return on investment because the methodology is not sufficiently precise and is too costly to conduct frequently.) These expected levels of performance are for secondary and postsecondary Career and Technical Education (CTE), Workforce Investment Act (WIA) Title I-B, and WIA Title II Adult Education and Family Literacy. The Board also identifies performance targets on relevant state workforce core measures for Wagner-Peyser, WorkSource, the Department of Social and Health Services' Division of Vocational Rehabilitation, and Department of Services for the Blind.

The Workforce Board identifies performance targets based on past performance and expectations for future improvement. The expected level of performance is not the same for each program. Programs serve different populations for different purposes. Programs that serve youth, for example, should not be expected to have the same performance as programs serving adults. Also, the expected increase is not the same for each measure. Some areas of performance are more difficult to change than others. In some areas, programs are already performing at or near peak levels, so little if any improvement can be expected, while in other areas, substantial improvements can and should be made. The Workforce Board's performance targets emphasize improving employer satisfaction, participant earnings, and educational attainment.

The Workforce Board sets the targets for the state core measures and negotiates and reaches agreement on the targets for the federal indicators with the U.S. Department of Labor for WIA Title I and the U.S. Department of Education for Carl Perkins (CTE).

The appendix to this chapter shows the state core measures, targets, and results. (The operating plan for each program has the targets for the federally required measures.) Included in the appendix are the actual results for the last three years and the expected levels of performance for the next two years.

Performance, of course, is affected by the demographic characteristics of program participants, as well as economic conditions. Should the economic conditions and demographic characteristics change, the Workforce Board will revise the performance targets on the state indicators and negotiate revisions with the U.S. Department of Education and U.S. Department of Labor for Carl Perkins and WIA Title I-B, respectively.

Workforce Development Areas

The Workforce Board establishes performance targets for each of the state and federal core measures for WIA Title I-B for the state's 12 Workforce Development Councils. The expected levels of performance depend on local economic conditions and the demographic characteristics of participants served. To adjust for such factors, the Workforce Board applies multiple regression models to expected local levels of performance. For example, the Board lowers the performance targets for a local area to the extent that its program participants have demographic characteristics indicating that participants are harder to serve than the state average. The local council and Chief Local Elected Official(s) may request changes to the performance targets and may introduce data not considered by the models.

Providers

The Workforce Board maintains the state's Eligible Training Provider (ETP) list at www.careerbridge.wa.gov. This is the list of training programs that are eligible to train participants funded by Workforce Investment Act Individual Training Accounts or dislocated workers receiving extended UI benefits under the state's Training Benefits Program. To be on the list, a training program must satisfy the Workforce Board's performance criteria. Each year, the Workforce Board establishes minimum standards that programs must meet for completion rates, employment rates, and earnings of past participants. The ETP list identifies the training programs that meet the standards.

Performance-Based Consequences

At each level of the workforce development system, there are consequences if performance targets are not met, and incentives when they are.

Systemwide

The Workforce Investment Act (WIA) authorizes incentive funding for states that exceed the "adjusted levels of performance" in WIA Title I-B, Adult Education and Family Literacy, and Career and Technical Education (CTE). A state that achieves 100 percent on the average for all the federal core indicators for each program is considered to have exceeded the adjusted levels of performance, so long as performance does not fall below 80 percent on any indicator.

When Washington receives such an incentive award, the state allocates the funds to local areas that exceeded their expected level of performance in these programs, including performance on the state core measures, as well as on the federal core indicators. The Workforce Board identifies the size of the award for each year, and the state's Employment Security Department allocates the funds. The funds must be used for system building activities, not activities that pertain only to a particular program, such as WIA Title I-B, Adult Education and Family Literacy, or CTE.

Figure 2 Performance-Based Consequences

Level	Performance-based Consequences
Systemwide	WIA Section 503 Incentive Awards
Statewide Programs	U.S. DOL and DOE Required Improvement Plans and Sanctions
Workforce Development Area	WIA State Incentive Awards, Improvement Plans, Sanctions, Reorganization
Providers	ETP Eligibility, DOE Required Improvement Plans, Carl Perkins Sanctions, and Market-Based Reactions

Statewide Programs

If the state fails to meet the adjusted levels of performance on the federal core indicators for WIA Title I-B for two consecutive years, DOL can withhold up to 5 percent of the state’s WIA Title I-B funds. DOL considers states to have failed to meet the levels if performance falls below 80 percent of the target levels.

Under the Carl Perkins Act, if the state fails to meet the “adjusted levels of performance” the “state eligible agency” (the Workforce Board), must develop and implement a program improvement plan in consultation with the state’s Office of Superintendent of Public Instruction (OSPI), State Board for Community and Technical Colleges (SBCTC), and other partners. If the state fails to meet the levels of performance for a second consecutive year, DOE may withhold all or a portion of Carl Perkins Act funds from the state.

If the state is sanctioned by DOE for poor performance, the Workforce Board will reduce the allocation of funds to the secondary and/or postsecondary systems proportional to the sanction and to the extent that the secondary and/or postsecondary systems contributed to the poor results.

Workforce Development Areas

For WIA Title I-B, the Governor may earmark a portion of the state set-aside to reward local areas that exceed 100 percent of the average of the expected levels of performance for the state and federal core measures. The Workforce Board establishes the policy for incentive awards, and the Employment Security Department (ESD) allocates these funds to local areas.

If a local area fails to achieve 80 percent average performance across the state and federal core indicators for WIA Title I-B, ESD will require the local council to submit either a performance improvement plan or a modified local plan to the state. If such failure continues for a second consecutive year, the Governor may require the development of a reorganization plan. If the state is sanctioned by DOL for poor performance, ESD will withhold a proportional amount of funds from local areas based on their average performance across the state and federal core indicators.

Providers

To be eligible to receive funding under WIA Title I-B or to train dislocated workers under the state's Training Benefits Program, all training providers must meet the performance standards established by the Workforce Board. If a training provider fails to meet the standards for any one year, the provider will not be an eligible provider for the year beginning the first quarter after the substandard performance is reported.

Under the Carl Perkins Act if a college or school district is not making substantial progress in achieving the expected levels of performance, SBCTC or OSPI, on behalf of the Workforce Board, will assess what is needed to overcome the performance deficiencies, approve a local improvement plan, and conduct regular evaluations of progress.

If the Workforce Board allocation of the Carl Perkins Act funds to the secondary or postsecondary system is reduced due to federal sanctions, OSPI and SBCTC will determine the resulting impact on school districts and colleges respectively, and allocate the funds accordingly.

SBCTC/Office of Adult Literacy has identified similar performance-based interventions for Adult and Family Literacy applications.

The Workforce Board operates a consumer report system of training provider results, as well as course descriptions and other key information for potential students at www.careerbridge.wa.gov. This online consumer report system helps Washington residents make market-based decisions, moving their dollars from lesser to better performing providers.

DATA COLLECTION AND REPORTING

Data Collection

The Workforce Board provides information on the results of secondary and postsecondary CTE; WIA Title I-B; work-related Adult Education and Family Literacy and other workforce development programs; and the WorkSource one-stop system to the appropriate federal agencies, state policymakers, and the state's 12 Workforce Development Councils. To accomplish this, the Workforce Board ensures that participant data from each of these programs and from WorkSource are collected and matched with administrative records for the purpose of measuring the common and core indicators. The Workforce Board also conducts participant and employer surveys for these programs and for WorkSource.

The specific data source(s) for participant records for each program is identified in the program's operating plan. For WorkSource participants, the Services, Knowledge and Information Exchange System (SKIES) collects and maintains data. The following figure shows the data elements, at a minimum, that are to be collected and recorded for all WorkSource participants who request services other than self-service or information only services.

Figure 3 Common Data Elements That are Collected at Intake on Program Participants

1. Date	2. First Name	3. Last Name
4. Phone/FAX/E-Mail	5. Address	6. Social Security #
7. Services Requested	8. Gender	9. Limited English
10. Date of Birth	11. Disability Status	12. Highest grade
13. Highest level of certification or degree achieved		
14. Racial group, as defined by U.S. Census, most closely identified with.		
15. Intake Location	16. Currently Employed	
17. U.S. Veteran	18. Displaced Homemaker	
19. Out-of-School Youth	20. Family Size	21. Public Cash Assistance

Data Matching

The Workforce Board, SBCTC, ESD, and OSPI oversee a shared system for matching participant records with other administrative records, including UI wage records and college and university student enrollment records. Washington uses this process for measuring the performance indicators that are based on administrative record matches. Using the shared matching system ensures common methodological protocols are applied in calculating the results of workforce development programs.

Training providers that want to offer training funded through Individual Training Accounts authorized under WIA Title I-B are required to submit cost and participant data to the Workforce Board. The Workforce Board uses the data matching system to match the participant records against other administrative records in order to measure provider performance.

[The state's Education Data and Research Center is in the process of developing a P-20 longitudinal data system. Once that system is fully in place, the Workforce Board in collaboration with its partners will consider using that new system for matching records.](#)

Survey Data

For survey-based research, the Workforce Board and its partner agencies have identified a pool of common survey questions. There are two pools of questions: one for individual participants and one for employers. The questions form the content of the Workforce Board's survey research. The questions are also a pool from which other workforce development programs and agencies may draw when surveying individuals or employers about their program experience or outcomes. The use of the common questions helps to ensure consistency in survey-based research throughout the system

Performance Reports

The following figure shows the schedule of Workforce Board reports on the performance of the workforce development system and programs.

Figure 4 Workforce Board Performance Reports

Name of Report	Frequency	Subject
<i>WIA Title I-B Quarterly Report</i>	Quarterly	WIA Title I-B: Report to DOL on the performance of the state and local workforce development areas on WIA Title I-B on federal and state core indicators.
<i>WIA Title I-B Annual Report</i>	Annual	WIA Title I-B: Report to DOL on the performance of the state and local workforce development areas on WIA Title I-B.
<i>Consolidated Annual Report</i>	Annual	Career and Technical Education: Report to DOE on the performance of secondary and postsecondary CTE.
<i>Workforce Training Results</i>	Biennial	Major Program Results: Report on the performance of the major workforce development programs. See: www.wtb.wa.gov/WorkforceTrainingResults.asp

In addition, as mentioned before, the Workforce Board maintains an online consumer report system of training provider results at www.careerbridge.wa.gov.

GOVERNMENT MANAGEMENT ACCOUNTABILITY AND PERFORMANCE

In 2005, Executive Order 05-02 established a comprehensive Government Management Accountability and Performance system (GMAP). GMAP is a management system that focuses on measuring performance, regularly and frequently reporting results, quickly identifying problem areas, and identifying and implementing solutions. As stated in the Executive Order, GMAP calls upon the Governor and other agency leaders to:

1. Take personal responsibility and hold the agency and its management accountable for results.
2. Use strategies that work, and make corrections when they don't.
3. Base decisions not on guesswork or preference, but on accurate, up-to-date information.
4. Make timely decisions.
5. Follow up to make sure there's implementation after a decision has been made.
6. Take risks and learn from mistakes.
7. Communicate clearly to citizens about results.

GMAP requires each agency to:

1. Develop clear, relevant, and easy-to-understand measures that show whether or not programs are successful.
2. Demonstrate how programs contribute to the priorities that are important to citizens.
3. Gather, monitor, and analyze program data.
4. Evaluate the effectiveness of programs.

5. Hold regular problem-solving sessions within the agency to improve performance.
6. Allocate resources based on strategies that work.
7. Regularly report to the Governor on their performance.

HB 1970 codified GMAP in state statutes and extends its coverage to all state agencies, including higher education institutions and agencies headed by other elected officials. As a result, all agencies that are part of the workforce development system have implemented GMAP. Agencies have identified key performance measures, are tracking the results, and holding regular management meetings to fix problems. Local WDCs are a part of this process in collaboration with ESD.

The GMAP measures and the measures in this chapter are complementary. The measures in the PMCI system provide consistent information across programs on long-term results. This is very useful information to elected officials and agency leaders for policy initiatives, strategic planning, and other efforts. GMAP, on the other hand, provides measures that are more real-time and more useful to the managers on the ground as they make day-to-day decisions on program operations.

HB 1970 also continued and expanded upon earlier efforts earlier by Governor Locke to bring Malcolm Baldrige Criteria for Performance Excellence to state government. HB 1970 requires each agency, no later than 2008, to apply at least once every three years to the "Washington State Quality Award, or a similar organization, for an independent assessment of its quality management, accountability and performance system." The assessment will evaluate the Baldrige categories of: leadership, strategic planning, customer focus, analysis and information, employee performance management, and process improvement. "The purpose of the assessment is to recognize best practices and identify improvement opportunities." (See http://www.wtb.wa.gov/AboutUs_GMAP.asp.)

Consistent with HB 1970 and WIA's call for continuous quality improvement, the WorkSource system has widely implemented quality principles. To be initially certified during 1999, the state required each WorkSource center and affiliate site to complete a self-assessment based upon the quality categories of the Malcolm Baldrige criteria. In addition to the self-assessment, WorkSource operators were required to sign a statement that confirms a commitment to continuous quality improvement and focus on priority areas of need.

Such quality efforts are expected to continue in the future. Under WIA, each local area must provide in its local WIA Title I-B plan "a description of how the local board will ensure the continuous improvement of eligible providers of services through the system (the one-stop delivery system) and ensure that such providers meet the employment needs of local employers and participants."

To meet this requirement, local councils are encouraged to continue to conduct annual self-assessments using a tool that uses the Malcolm Baldrige Quality Criteria. The self-assessment process should involve all partner programs staff involved in WorkSource

centers.

Measurements of the business results should include the state and federal core measures for WIA Title I-B.

A critical part of quality improvement is customer focus. WorkSource centers and affiliates should measure customer satisfaction during the time of service and at the time of exit from service. This information should be used to improve the day-to-day operation of WorkSource.

Finally, the state's 12 Workforce Development Councils should include a description of their quality efforts in their local plan.

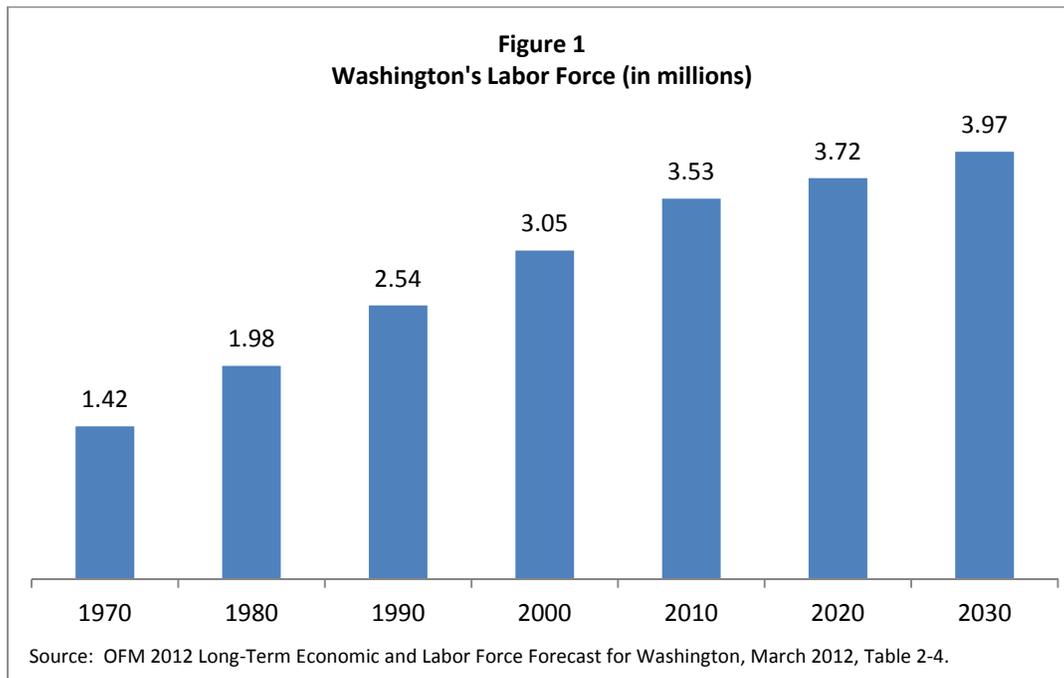
TOMORROW'S WORKFORCE

Challenges and Opportunities

Compared to Washington's labor force of today, tomorrow's labor force will be older, more racially and ethnically diverse, and will grow at a slower rate.¹ This changing workforce and the changing needs of a knowledge-based economy pose new challenges for Washington's workforce development system. As our population growth slows and an increasing number of jobs call for higher skill levels, we need to provide new arrivals and historically underutilized populations with the education and training to participate more successfully in tomorrow's economy.

Workforce Growth Slows

While Washington's workforce has grown over the years, more than doubling from 1.4 million workers in 1970 to about 3.5 million today, the faster growth rate of the previous century has slowed. The state's workforce is projected to grow by just over 500,000 workers to 3.9 million in 2030, but this incremental growth barely tops one-fourth of 1 percent per year as we approach 2020. Compared to the 1980s, when Washington's labor force regularly expanded by 2.5 percent each year, our economy in the coming years cannot rely on a rapid injection of workers to fill jobs. Put another way, the rate of growth during the next two decades will be just one-third as fast when compared to the previous 30 years.



¹ In this report, the term *labor force* is used synonymously with the term *workforce* and refers to the civilian labor force, which is composed of individuals age 16 or over who are currently employed (either part-time or full time) or who are actively seeking employment. Individuals who are in nursing homes, prison, or the military are not considered to be either in the civilian labor force or part of the base population from which the labor force is drawn. Other individuals who are not in the civilian labor force are those who are not employed and not seeking employment. Common reasons for not being in the labor force include retirement, ill health or injury, attending school, or doing housework at home.

The Migration Factor in Population and Labor Force Growth

Washington's labor force growth rate, while slowing, is higher than labor force growth rates expected for the United States as a whole. Some of the growth in Washington's population and labor force results from in-migration from other states and from overseas. According to a U.S. Census Bureau 2010 report based on American Community Survey data, 47 percent of Washington residents were born here (well below the 59 percent average for the nation).² Between 2000 and 2010, nearly 55 percent of Washington's population growth came from net in-migration,³ the amount by which the number of people entering the state exceeded the number who left.⁴ This is down from 63 percent for the period from 1990 to 2000.

In the past, in-migration has been dependent on how well Washington's economy is doing relative to the rest of the country and especially neighboring states such as Oregon and California. Net in-migration ranged from 70,000 to 80,000 per year in the early 1990s, dropped below 30,000 per year in 2000, and again in 2003 during the Boeing and dot.com downturn, and rebounded to over 80,000 in 2005. The last several years have witnessed slowed in-migration, with 24,000 in 2009 and 28,000 in 2010. The state's Office of Financial Management's (OFM) long-term projections anticipate net in-migration of 48,100 new residents per year beyond 2025—far higher than the state's natural increase of approximately 30,000 workers during the same period.⁵

New residents move here from other states and other countries. Among existing U.S. residents, nearly half move from California and Oregon. However, nearly the same number of non-U.S. residents move here (55,000) as do from those two states (67,000).⁶ Regardless of origin, new residents have relatively high levels of education and contribute directly to our prosperity. Of the new residents over the age of 25 arriving in 2011, 41 percent had a bachelor's degree or professional degree, compared with just 32 percent of Washington's population.⁷

Although they make up less than one percent of Washington's workforce, H-1B visa workers—who are required to have a bachelor's degree or above—are a source of highly skilled employees primarily working in the technology sector. Since 2001, annual averages of nearly 16,500 foreign workers have entered the state. As of 2010, the per capita rate of 26.3 H-1B workers per 10,000 residents is sixth highest in the nation, and well above the overall U.S. rate of 16 workers per 10,000 residents. Further, as of 2010 over 75 percent of the H-1B workers in Washington were employed in computer and math occupations, which contributes to Washington having the second highest median annual income among H-1B workers in the nation at over 90,000 dollars.⁸

Much of Washington's net in-migration is centered on the Seattle and Portland (which includes Vancouver, Washington) metropolitan areas, which as of 2011 are the 15th and 23rd largest

² American Community Survey Briefs, November 2011. Lifetime Mobility in the United States: 2010. <http://www.census.gov/prod/2011pubs/acsbr10-07.pdf>

³ Migration is movement that crosses jurisdictional boundaries, according to the U.S. Census. In-migration is movement into an area, such as the State of Washington, during a given period. Out-migration is movement out of an area during a specific period. Net in-migration occurs when there is more in-migration than out-migration during a specific period. We have hyphenated in-migration and out-migration to conform to usage by OFM.

⁴ OFM, 2012 Long-Term Economic and Labor Force Forecast for Washington, Table1-1. http://www.ofm.wa.gov/economy/longterm/2012/data_tables_2012.pdf

⁵ Natural increase refers to the number of live births versus deaths each year.

⁶ U.S. Census Bureau, American Community Survey Public Use Micro Sample Data, 2011.

⁷ U.S. Census Bureau's American Community Survey 2011, Table B07009 Geographic Mobility by Selected Characteristics.

⁸ Workforce Training and Education Coordinating Board, H-1B Workers in Washington: Helping Fill an IT Skills Gap. December 2011. http://wtb.wa.gov/Documents/H1B_2011_Report.pdf

metropolitan areas in the nation.⁹ These rankings are even higher when looking at the destinations among in-migrants with a bachelor's degree or higher, where Seattle and Portland metropolitan areas rank 12th and 15th in the nation. Accordingly, in both areas the percentage of in-migrants with a bachelor's degree or higher is greater than for the entirety of the metropolitan area's population. In the Seattle metropolitan area, 48 percent of in-migrants have a bachelor's degree or higher, compared to 37 percent among the entire population. These numbers are slightly lower in the Portland metropolitan area, at 44 percent and 34 percent.¹⁰

Between 2006 and 2011, 1,231,000 new residents arrived to Washington from another U.S. state, 332,000 new residents arrived from outside of the U.S., and 1,221,000 left Washington for another state. Overall, between 2006 and 2011 approximately 79 percent of the in-migrants were from other states, and 21 percent were from other countries.¹¹ In-migration rates were highest for the 18 to 34 age group. Among those moving to the state from within the U.S. or another country, 21 percent were ages 18 to 24, while 26 percent were ages 25 to 34.

Population and Labor Force Growth from Natural Sources

The state's labor force also grows because of natural increase – the number of native Washington residents who enter the work force each year, minus the residents who retire. Some 40 to 45 percent of labor force growth through 2030 will come from natural increase. However, this source of labor force growth is slowing due to the aging of the baby-boom generation and the lower birth rates of subsequent generations.¹² Women in Washington have an average of 2 children over their lifetimes, which is equal to replacement (i.e., each parent is replaced by a child).¹³ Projections indicate that birth rates are likely to decrease as labor force participation rates for women continue to increase, with working women delaying or choosing not to have children.

An aging baby boom population is expected to retire later than prior generations. Because of lower birth rates and delayed retirement among those beyond age 65, the most active labor force participants, aged 25-54, will comprise a smaller proportion of the labor force in 2040 (37.2 percent) than they did in 2000 (45.2 percent).¹⁴

These factors affect all industrialized nations, most of which have lower birth rates and less immigration than the United States. Western Europe, for example, should see its population increase by only 2 percent in total (one-tenth of one percent per year) between 2005 and 2030 and see its working age population (ages 15-64) decline by 7 percent over that time period. In only three Western European countries are working age populations expected to be as large in 2030 as they are today: France, Ireland, and Norway.¹⁵

⁹ U.S. Census Bureau's American Community Survey 2011, Table B07009 Geographic Mobility by Selected Characteristics.

¹⁰ U.S. Census Bureau's American Community Survey 2011, Table B07009 Geographic Mobility by Selected Characteristics.

¹¹ U.S. Census Bureau, American Community Survey Geographic Mobility Table S0701, 2006 to 2011. Accessed October 25, 2012 via American Factfinder, <http://factfinder2.census.gov>.

¹² The baby-boom years are between 1946 and 1964, with the peak birth year being 1957. Mitra Toossi, "A century of change: the U.S. labor force, 1950-2050," *Monthly Labor Review*, May 2002.

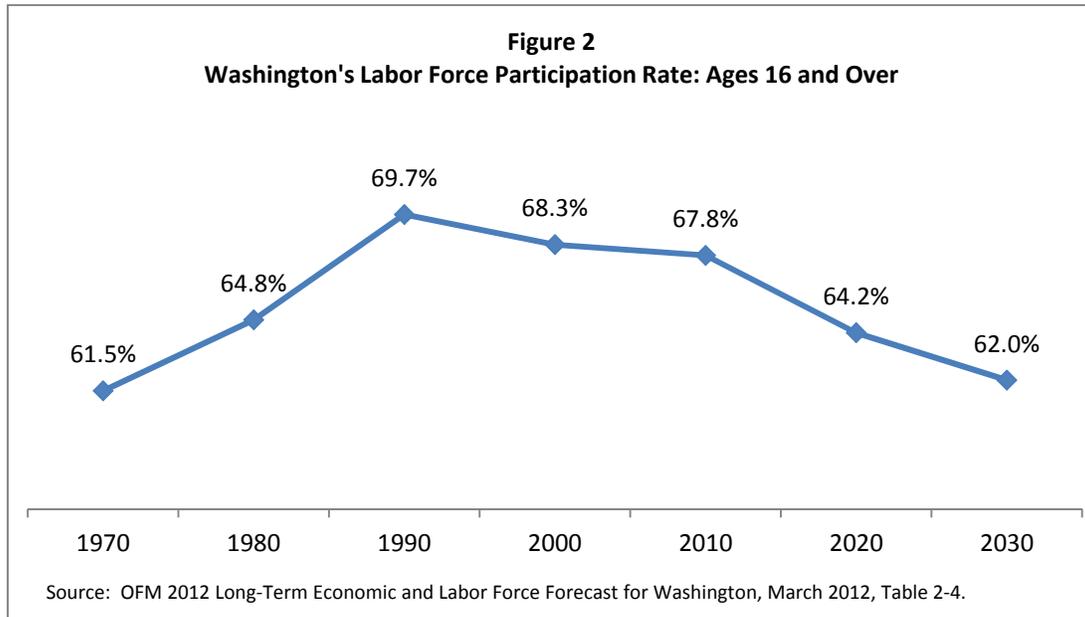
¹³ OFM, *2012 Long-Term Economic and Labor Force Forecast for Washington*, Chapter 1. <http://www.ofm.wa.gov/economy/longterm/2012/lt2012ch1.pdf>.

¹⁴ OFM, *2012 Long-Term Economic and Labor Force Forecast for Washington*, Chapter 1. <http://www.ofm.wa.gov/economy/longterm/2012/lt2012ch1.pdf>.

¹⁵ U.S. Census Bureau International Data Base, updated January, 26, 2012, extracted March 2012. <http://www.census.gov/population/international/data/idb/informationGateway.php>

Labor Force Participation Rate

Population growth is slowing, and so is the labor force participation rate—the percentage of the working age population that is either working or looking for work. The labor force projections shown in Figure 2 are based on the expected labor force participation rates of Washington residents and expected in-migrants, based on their ages and past behavior. Washington’s labor force participation rate peaked in 1990 at 69.7 percent and was 67.8 percent as of 2010. Labor force participation is projected to decrease by nearly 6 percentage points through 2030.



Factors that affect labor force participation are described below. They include changes in the age profile of the population, changes in rates of disability and rates of labor force participation by people with disabilities, and the increase in the labor force participation rates of women between 1970 and 1990.

The Aging Population

The state’s percentage of older adults age 55 and over is expected to increase from 16.4 percent of the labor force in 2005 to 26.4 percent of the labor force in 2030.¹⁶ That means in the next 20 years, slightly more than one in four Washington workers will be over age 55. As of 2011, the labor force participation rate among those age 55 and over is 40.1 percent in Washington, up from 37.3 percent in 2006.¹⁷

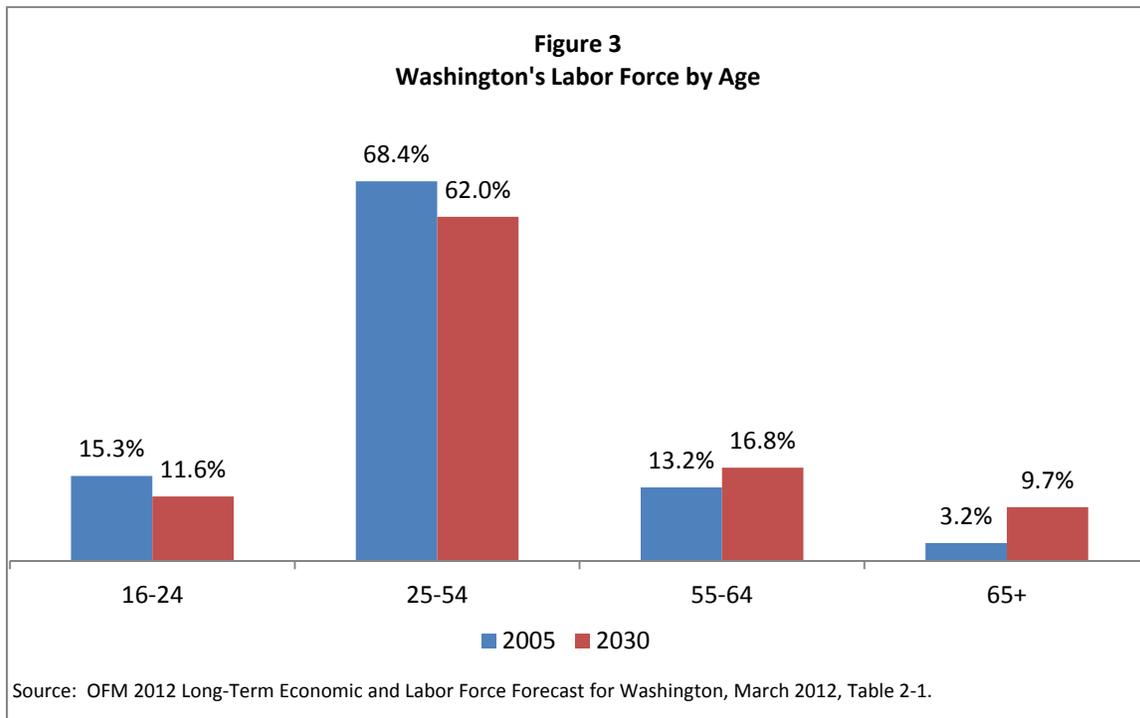
Historically, labor force participation rates drop significantly at ages 62 and 65. The earliest age that one can retire and receive Social Security benefits is 62. Prior to 2000, the normal retirement age for receiving full Social Security benefits was 65. In 2000, Congress raised the age of full retirement benefits by two months for those born in 1938, four months for those born in 1939, and six months for those born in 1940, and so on until 1943. The normal retirement age for those

¹⁶ OFM, 2012 Long-Term Economic and Labor Force Forecast for Washington, Table 2-1.
http://www.ofm.wa.gov/economy/longterm/2012/data_tables_2012.pdf

¹⁷ America’s Community Survey for 2006 & 2011, Table S2301, Employment Status.

born between 1943 and 1954 is 66, incrementing by two months for those born in 1955 until 1960. The full retirement benefit for those born in 1960 and later is 67.¹⁸

There are, however, those who will decide to continue working despite their eligibility to retire and many who will continue to work out of economic necessity. As individuals live longer and healthier lives, they may choose to remain in the workforce longer to stay engaged in activities that enhance their lives. The Senior Citizen Freedom to Work Act of 2000 eliminated a disincentive for those age 65 to 70 to continue working. Prior to 2000, many of those aged 65 to 70 who wanted to continue working were discouraged from doing so because Social Security reduced their benefits if they continued earning wages.¹⁹



Others might stay in the workforce to assure their economic security and to maintain health care benefits.²⁰ The rising cost of retiree health care benefits has already prompted many employers to reduce or eliminate these benefits for future retirees. This, in turn, has forced many older workers to continue working to maintain health care coverage.

¹⁸ Social Security Online, updated January, 25, 2012; accessed March 2012.
<http://www.socialsecurity.gov/retire2/agereduction.htm>

¹⁹ Mitra Toossi, "Labor force projections to 2012: the graying of the U.S. workforce," *Monthly Labor Review*, February 2004.

²⁰ Stephen J. Rose and Heidi I. Hartman, *Still a Man's Labor Market: The Long-Term Earnings Gap*, (Washington, D.C.: Institute for Women's Policy Research, 2004).

Andrew D. Eschtruth and Jonathan Gemusm, "Are Older Workers Responding to the Bear Market?" *Just the Facts On Retirement Issues*, September 2002, Number 5, http://www.bc.edu/centers/crr/facts/jtf_5.pdf (September 12, 2005).

Kelly Greene, "Many Older Professionals Delay Their Retirement," *The Wall Street Journal Online. CareerJournal.com*, <http://www.careerjournal.com/myc/retirement/20031002-greene.html> (September 12, 2005).
"Retirement Plans Retreat in Recession," *Silicon Valley/San Jose Business Journal*, March 5, 2003, <http://sanjose.bizjournals.com/sanjose/stories/2003/03/03/daily34.html> (September 12, 2005).

As a result of these factors, workers over the age of 65 are expected to be the fastest growing age group in the labor force between 2005 and 2030, as see in Figure 3 above. This group will increase from 3 percent of the labor force in 2005 to almost 10 percent in 2030, growing in number from 103,400 to 382,800.²¹ In Washington, the labor force participation rate among those age 65 and over is 15 percent as of 2011, up from 12.5 percent in 2006.²²

Older workers can offer employers valuable experience and knowledge. On the other hand, some older workers will need to upgrade their skills, while others will need substantial retraining to meet changing job requirements.

Young Adults in the Workforce

At the other end of the age spectrum are young adults, ages 16-24. Although this is a large potential workforce, this age group tends to have low labor force participation. In Washington the labor force participation rate of 16-24 year olds was 58.9 percent in 2011, down from 63.4 percent in 2006. This compares to labor force participation rates among 25-54 year olds of 81.6 percent in 2011 (81.8 percent in 2006).²³ A large number of 16 to 24-year-olds are still in school—either high school or postsecondary education—and are therefore excluded from the calculation of labor force participation rates. Unfortunately, far too many young adults not participating in the labor market are no longer in school, including many who dropped out of high school. The Washington State Report Card issued by the Office of the Superintendent of Public Instruction (OSPI) indicates that just 75 percent of the class of 2011 graduated on-time after four years of high school and only 83 percent of that year’s class is expected to graduate by age 21.²⁴ In 2011, 61,527 Washington teenagers between the ages of 15 and 19 were not enrolled in school. Even more troubling, just over 26,000 were neither enrolled in school or in the labor force, which is a 31 percent increase from the 20,000 reported in 2006.²⁵

As of 2011, nearly 17 percent—or about one in five—of Washington’s 18-24 year olds did not have a high school diploma or GED, which is down from the 19 percent reported in 2006.²⁶ Although some will eventually earn their high school diploma or an equivalent (such as the GED) and go on to participate in higher education, many more will continue to be challenged in the workplace because of their inadequate levels of education. The rates of degree attainment are starkly different by gender, with 20 percent of boys not earnings a high school diploma or GED, whereas only 13 percent of girls fall in this category.

²¹ OFM, 2012 Long-Term Economic and Labor Force Forecast for Washington, Table 2-1.
http://www.ofm.wa.gov/economy/longterm/2012/data_tables_2012.pdf

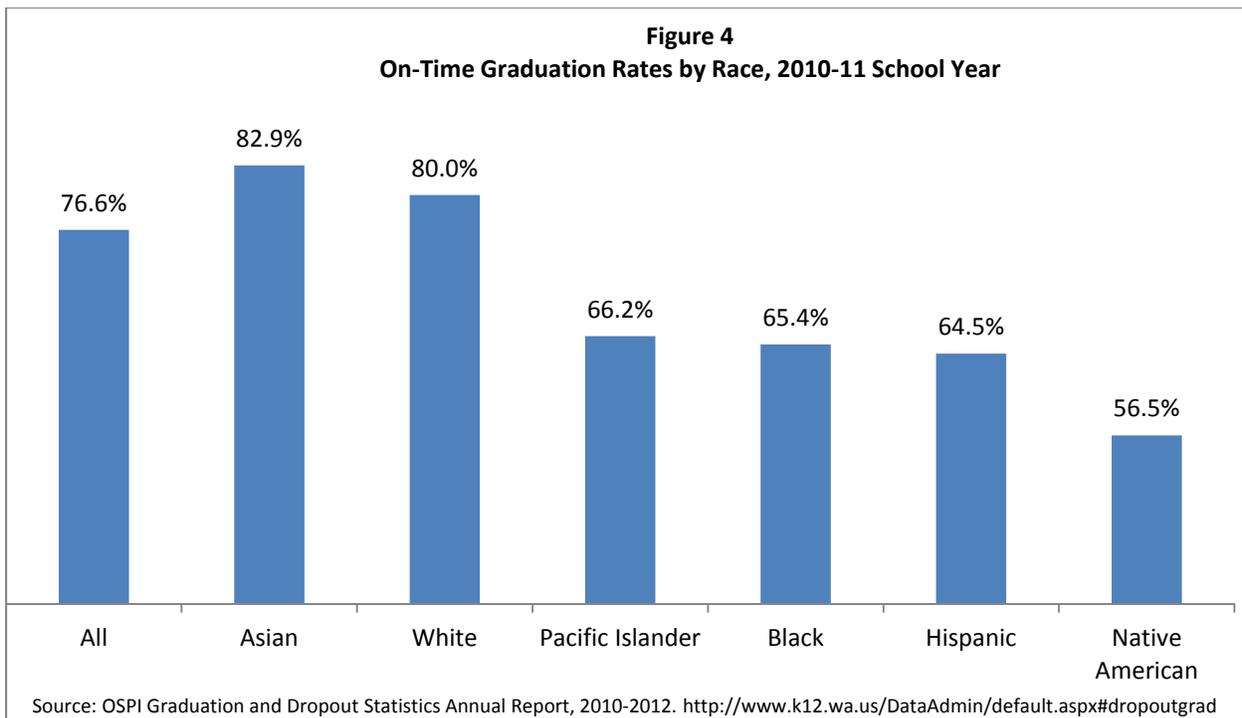
²² America’s Community Survey for 2006 & 2011, Table S2301, Employment Status.

²³ America’s Community Survey for 2006 & 2011, Table S2301, Employment Status.

²⁴ OSPI Washington State Report Card for 2010-11: <http://reportcard.ospi.k12.wa.us/summary.aspx?year=2010-11>
Data may be subject to upward revisions. The 783 percent graduation rate is an extended graduation rate based on the on-time graduation rate plus an estimate of the number in that class who will graduate through age 21 based on the profile of late graduations that occurred during the 2010-11 school year.

²⁵ America’s Community Survey for 2006 & 2011, Table S0902, Teenagers’ Characteristics.

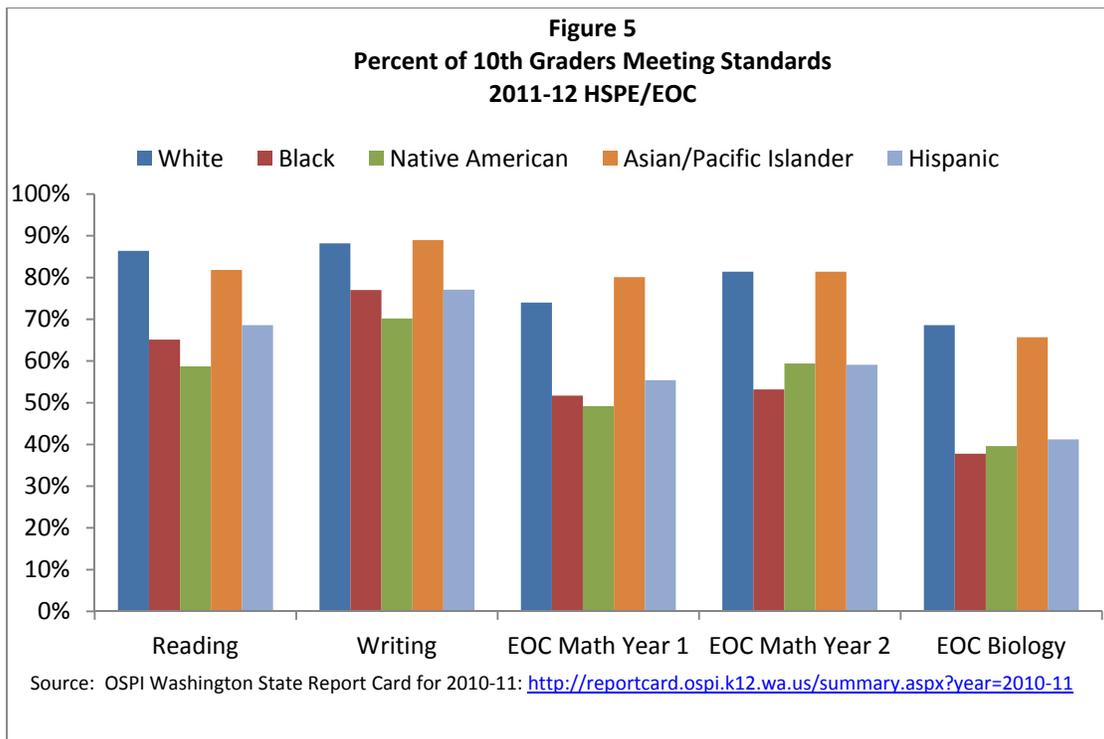
²⁶ America’s Community Survey for 2006 & 2011, Table S1501, Educational Attainment.



Graduating high school or getting a GED is a necessary step in securing good jobs which, increasingly, require some postsecondary education. On-time high school graduation rates—which means exiting high school in 4-years—in Washington are depicted in Figure 4 for the 2010-11 school year, the latest data available.²⁷ Overall, nearly 77 percent of students graduated on-time in the 2010-11 school year. Graduation rates were highest among Asian (83 percent) and white (80 percent) students, and below 70 percent for Pacific Islanders, blacks, and Hispanics, while Native Americans had the lowest on-time graduation rate at 56 percent.

Assessing how high school students are performing is an important area of pedagogic and political interest. New assessments of Washington’s youth in high school replaced the Washington Assessment of Student Learning (WASL) as of the 2009-10 school year. The WASL was replaced by the High School Proficiency Exam (HSPE) for reading and writing, and by End-Of-Course (EOC) exams in math and biology. It is not possible to compare WASL performance with the new assessments, but it is still possible to examine differences by race and ethnicity within the new performance tool, as depicted in Figure 5. Here, we see that higher percentages of white and Asian students are meeting the performance standards on the HSPE and EOC, whereas black, Native American, Pacific Islanders and Hispanic students are meeting the standards at rates of 20 to 30 percentage points less.

²⁷ There is a new method for on-time graduation rate calculation, which does not allow for a comparison to earlier years. Full report explaining the new methodology is here: OSPI Graduation and Dropout Statistics Annual Report, 2010-2011. http://www.k12.wa.us/DataAdmin/pubdocs/GradDropout/10-11/GradDropoutStats_2010-11.pdf



Reaching out to youth of all racial and ethnic backgrounds, and providing them with additional education and training options, can be difficult. Youth are the most mobile of Washington’s population groups. Almost 10 percent of 18-24 year olds living in Washington in 2010 had been living in another state or outside the United States a year earlier—the same rate as five years earlier. Another 9 percent had been living in a different county in Washington a year earlier and 22 percent moved within the same county over the past year.²⁸

Racial and Ethnic Diversity in the Workforce

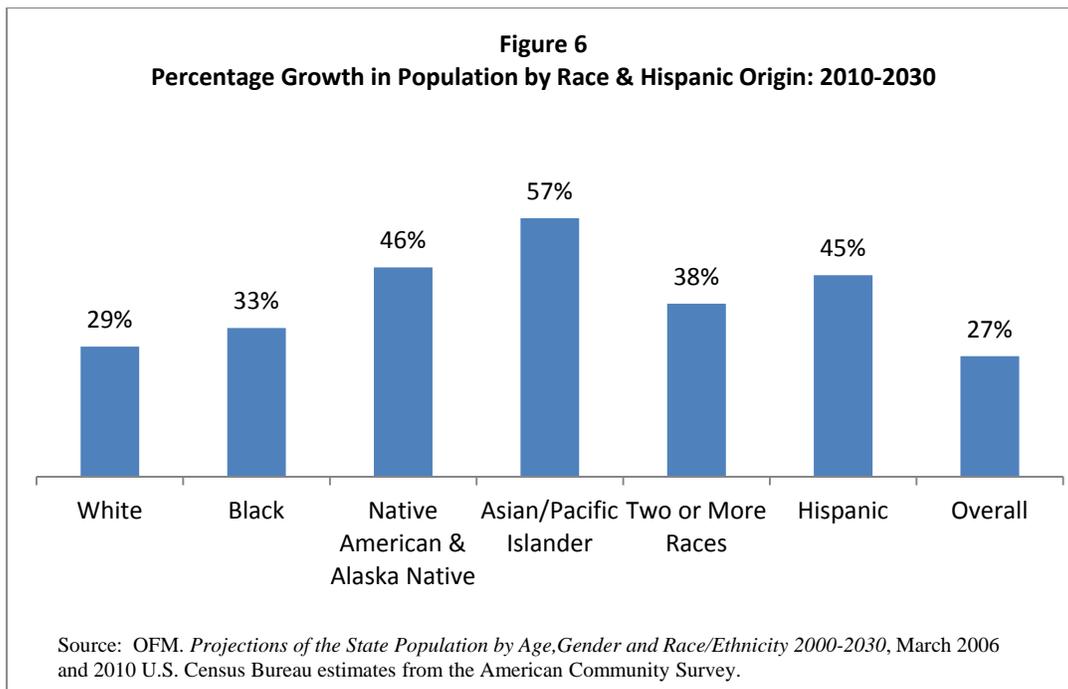
Over the next two decades, as depicted in Figure 6, Washington’s population is expected to become more racially and ethnically diverse. Between 2010 and 2030, all non-white groups are expected to grow faster than whites.²⁹

The Asian/Pacific Islander populations are the fastest growing among all racial and ethnic groups, followed by Native American and Alaska Natives and Hispanics. The Asian/Pacific Islander population is expected to grow by 57 percent from 525,000 in 2010 to 825,000 in 2030, while the Native American and Alaska Native population is projected to increase 46 percent from 100,000 to 146,000. The Hispanic population is projected to grow from 760,000 in 2100 to about 1,099,500 in 2030, an increase of 45 percent.³⁰

²⁸ U.S. Census Bureau, American Community Survey Geographic Mobility Table S0701, 2006 to 2011. Accessed October 25, 2012 via American Factfinder, <http://factfinder2.census.gov>.

²⁹ OFM reported on five major race groups: White only, Black only, Native American/Alaskan Native only, Asian/Pacific Islander only, and Two or More (i.e., multi-racial). Unless otherwise indicated people from the different racial groups can be either from Hispanic or non-Hispanic origin. Further, people of Hispanic origin can be of any race.

³⁰ OFM. Projections of the State Population by Age, Gender and Race/Ethnicity: 2000-2030, March 2006. This report was not updated by OFM, thus the 2010 American Community Survey Washington population estimates were used as the baseline to update the projections.



High immigration rates are a major factor in the growth of Hispanic and Asian and Pacific Islander populations, and also in the growth of all other demographic categories. One-eighth of Washington’s population in 2011 was foreign born (909,000 out of 6.8 million), similar to the proportion in 2006. Approximately 258,000 of these new residents entered the United States during the 1990s and 349,000 entered in 2000 or later. During the last decade, 40 percent of in-migrants were from Asia, 31 percent from Latin America, 17 percent from Europe, 5 percent from Africa, and the remainder from Canada and the Pacific Islands.³¹

Consistent with the earlier description of workforce growth, a considerable amount of Washington’s increased diversity is the result of in-migration from other states and nations. This is important to remember as we discuss the challenges faced as diverse new populations are assimilated into our labor force. We do not provide a primary or secondary education to many of these new arrivals and those who enter as children or teenagers may need assistance in making use of the educational opportunities available here.

In 2011, 43 percent of foreign-born residents were between 25 and 44 years of age. But many were younger—almost 17 percent were under the age of 25 and 8 percent were under the age of 18. In 2011, 73,000 foreign-born students attended elementary, middle and high schools in Washington and another 71,000 attended college or graduate school.³²

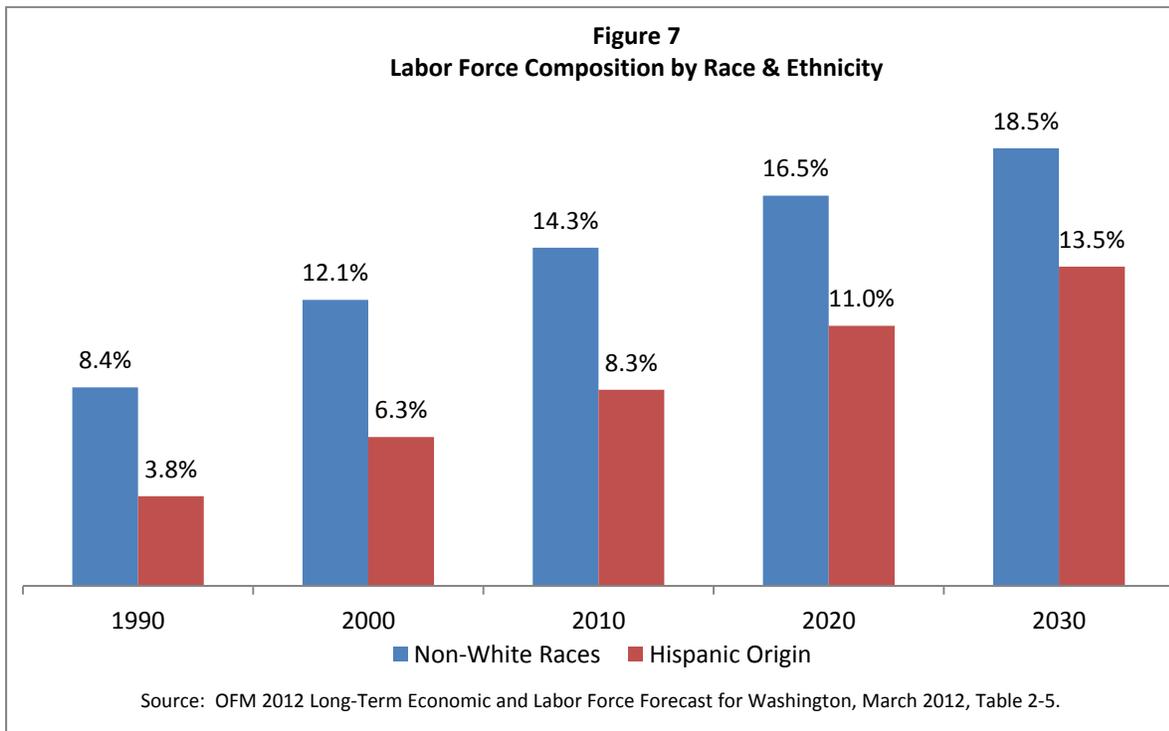
International arrivals are not the only source of Washington’s increased diversity. Some will come from natural increase as immigrants have children. Much of the remaining increase in Washington’s diversity comes from other states. Foreign born residents who arrive from other states make up 23 percent of the foreign born population in Washington as of 2011.³³

³¹ American Community Survey for 2006 & 2011, Tables S0501, S0502 and B05006. Selected Characteristics of the Foreign Born Population and Place of Birth of the Foreign Born Population.

³² American Community Survey for 2006 & 2011, Tables S0501, S0502 and B05006. Selected Characteristics of the Foreign Born Population and Place of Birth of the Foreign Born Population.

³³ American Community Survey for 2011, Tables S0701 Geographic Mobility by Selected Characteristics and B7007 Geographic Mobility by Citizenship Status.

Another way to visualize these demographic trends is displayed in Figure 7. In terms of labor force composition by race and ethnicity, the percent of Washington’s labor force from non-white backgrounds is expected to more than double between 1990 and 2030, increasing from 8.4 percent in 1990 to 18.5 percent in 2030. The proportion of the labor force that is Hispanic is projected to quadruple, from 3.5 percent in 1990 to 13.5 percent as of 2030.



The growing racial and ethnic diversity of Washington’s workforce makes boosting the education levels of all our population groups increasingly pressing. Among Washington’s labor force ages 25 to 64 in 2011, nearly 97 percent of whites had completed high school or its equivalent. Among both blacks and Native Americans, 92 percent had completed high school or its equivalent, while 90 percent of Asian/Pacific Islanders and only 65 percent of Hispanics had done so.³⁴

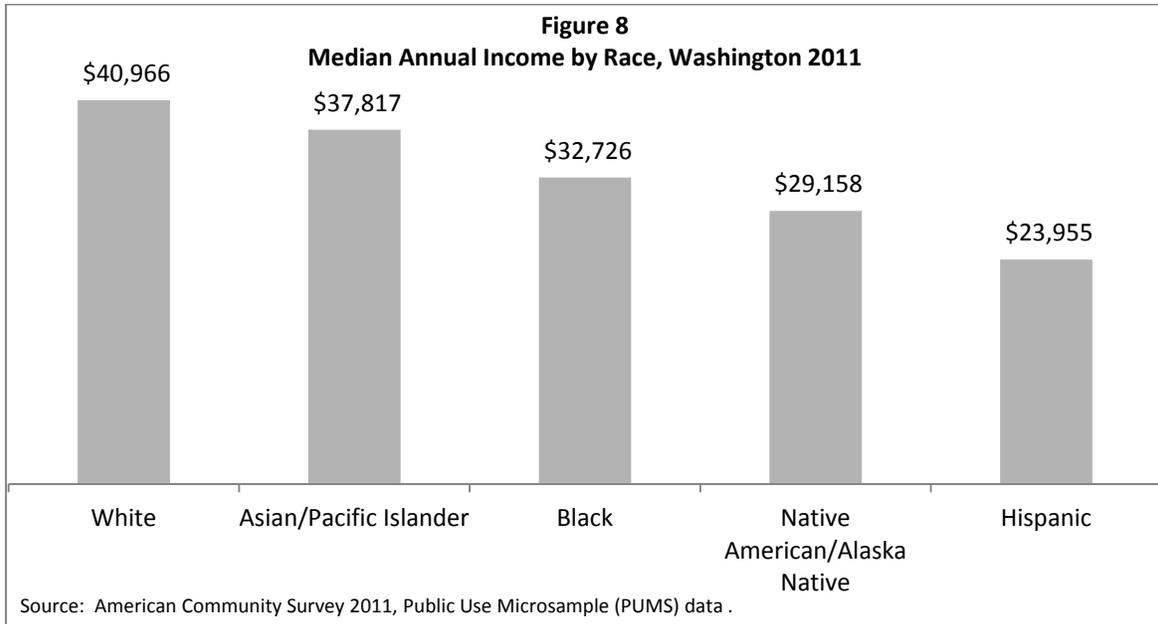
High school completion, however, is not sufficient to prepare young people for future occupational success. We know that better than one out of three Washington high school graduates do not carry on with their education in the year following graduation. Instead, they go directly to work, relying exclusively on their high school diploma to gain entry into mostly low-wage, low-skill jobs. Employers who hire these young people report that too many lack basic workplace or employability skills and the specific job skills that employers desire.³⁵

Among those ages 18 to 24 in Washington, 38 percent were enrolled in college or graduate school as of 2011. This is an increase from the 35 percent enrolled in 2006, but still lower than the rate for the U.S. overall, at 44 percent. Differences between males and females are stark, with only 34 percent of males enrolled compared to 43 percent of females. Looking at enrollment by race and ethnicity, Asian & Pacific Islanders had the highest rate of college enrollment at 55

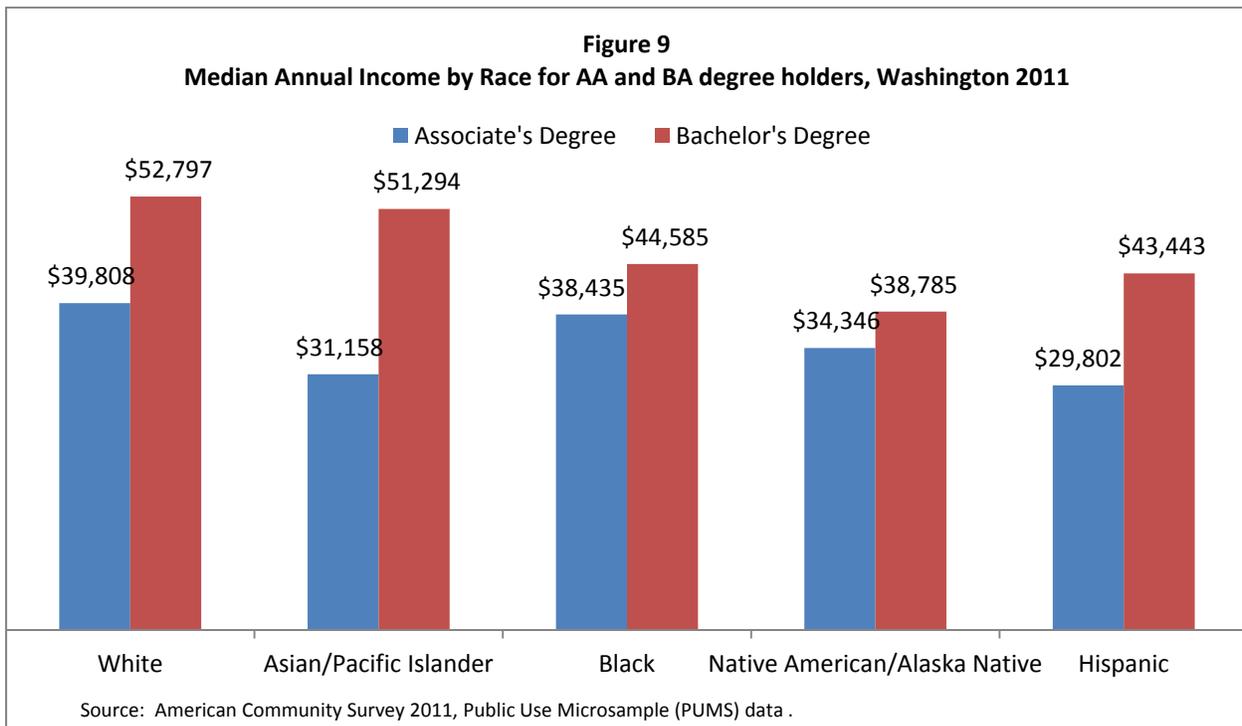
³⁴ U.S. Census Bureau, American Community Survey Public Use Micro Sample Data, 2011.

³⁵ Workforce Training and Education Coordinating Board, *Workforce Training Results, 2011*.
<http://wtb.wa.gov/Documents/WTR-ExecutiveSummaryOpeningandSystemwideResults2011.pdf>

percent, followed by whites (39 percent), blacks (37 percent) and Hispanics (29 percent), while Native Americans had the lowest at 17 percent.³⁶



Lower levels of education and skills, in addition to racial and ethnic discrimination, have negatively affected the labor market experiences of large percentages of individuals from racial and ethnic minority backgrounds. Racial and ethnic minorities tend to earn less in the labor market, as 2011 data for Washington depicts in Figure 8.³⁷ Further, minorities are also underrepresented in high-level positions which generally require education beyond high school completion, which partly accounts for this income discrepancy.



³⁶ U.S. Census Bureau, American Community Survey Public Use Micro Sample Data, 2011.

³⁷ U.S. Census Bureau, American Community Survey Public Use Micro Sample Data, 2011.

Yet, even though annual earnings increase with postsecondary degree attainment, racial and ethnic minorities on average earn less than do white college degree holders, as shown in Figure 9 for those holding associate's and bachelor's degrees in Washington as of 2011.

Although research has shown that policies such as affirmative action have mitigated some of its effects, racial and ethnic discrimination continues to exist. While the education system cannot completely eliminate racism, it can offer those from racial and ethnic minority backgrounds an opportunity to obtain the human capital needed to counteract some of its impact.³⁸

People with Disabilities

Nationally, the number of people reporting a disability appears to have increased over the last decade, and labor force participation among this population to have declined, since the passage of the Americans with Disabilities Act in the early 1990s. The reasons for this change are unclear, and even the facts are in dispute due to changes in definitions and surveys.³⁹ Survey questions used in the American Community Survey were changed as recently as 2003, making recent trends difficult to measure.⁴⁰ According to national data as of 2011, 45 percent of persons with a disability were age 65 and over and women were more likely to have a disability than men, largely due to women living longer on average than men.⁴¹

Low labor-force participation and employment rates may be at least partially the result of expansion of Supplemental Security Income benefits, which can be received by disabled people who are unable to work. However, discrimination may also play a role. Society often stigmatizes people with disabilities by treating them as deficient. Accommodations such as wheelchair ramps and sign-language interpreters are sometimes perceived as acts of generosity rather than public investments or basic civil rights.⁴²

Washington specific data on disability-status comes from the American Community Survey.⁴³ In 2011, 11 percent of Washington residents ages 18 to 64 reported having one or more disabilities.⁴⁴ Out of 458,000 Washingtonians reporting a disability, an estimated 200,000 did not report that their disabilities made it difficult to work at a job or business; three-fourths of this group was employed. The other 255,000 Washington residents estimated to have disabilities are not able to work without difficulties.

Given the relatively low level of labor market participation among those reporting a disability in Washington, we would expect higher levels of poverty among this group when compared to the

³⁸ Harry Holzer, "Expanding the African American Middle Class: Improving Labor Market Outcomes," July 15, 2005, http://www.urban.org/UploadedPDF/90828_holzer_072905.pdf (10/18/2005). Rakesh Kochlar, "Latino Labor Report, 2004: More Jobs for New Immigrants but at Lower Wages," May 2, 2005, <http://pewhispanic.org/files/reports/45.pdf> (9/13/2005).

³⁹ David C. Stapleton and Richard Burkhauser, Editors, *The Decline in Employment of People with Disabilities: A Policy Puzzle*, W.E. Upjohn Institute for Employment Research, Kalamazoo, Michigan, 2003.

⁴⁰ Sharon Stern and Matthew Brault, *Disability Data from the American Community Survey: A Brief Examination of the effects of a Question Redesign in 2003*, U.S. Census Bureau, January 28, 2005.

⁴¹ Bureau of Labor Statistics. *Persons with a Disability: Labor Force Characteristics Summary*, 2011. <http://www.bls.gov/news.release/disabl.nr0.htm>. Accessed, October 31, 2012.

⁴² Scott Sleek, "Three Decades after King, a report card," *APA (American Psychological Association) Monitor Online*, Volume 30, Number 1, January 1999, <http://www.apa.org/monitor/jan99/racism.html> (9/14 /2005). Page 3.

⁴³ Categories of disability include sensory disability, physical disability, mental disability, self-care disability, go-outside-the-home disability, and employment disability. The latter is based on a question which asks "Because of a physical, mental, or emotional condition lasting 6 months or more, does this person have difficulty...working at a job or business?"

⁴⁴ American Community Survey 2011, Table B18120: Employment Status By Disability Status And Type.

general population. Among those ages 18 and over reporting a disability, 22 percent have income at or below the poverty line compared to 11 percent of those not reporting a disability. Looking at those over the age of 65, who comprise the bulk of those reporting a disability, 13 percent have income at or below the poverty line compared to 6 percent of those not reporting a disability.⁴⁵

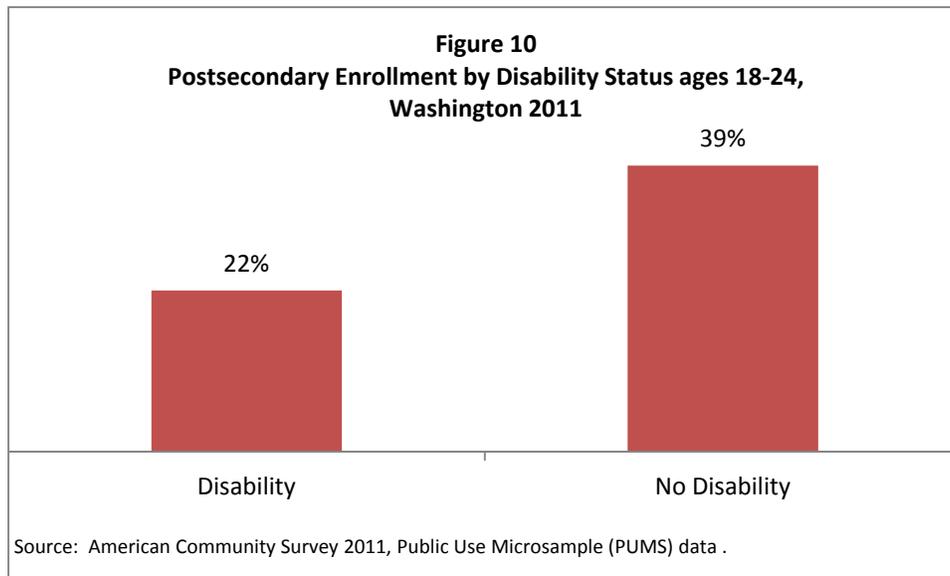


Figure 10 shows data suggesting that people with disabilities are enrolled in postsecondary education at lower rates and thus tend to have lower levels of educational attainment than those without disabilities. Washington residents 18 to 24 years of age with disabilities are less likely to be enrolled in postsecondary education, at 22 percent, compared to those without a disability, at 39 percent. Additionally, among those ages 25 to 64 in the labor force, 22 percent of Washingtonians reporting a disability have earned an associate’s degree or higher compared to 32 percent of those not reporting a disability.⁴⁶

The most recent survey of Washington’s 2010 special education high school graduates showed that 31 percent were attending postsecondary education and/or some other type of education (e.g., Job Corps, workforce development or vocational training) in the year after graduation after high school, while 35 percent were employed.⁴⁷

Finally, rates of disabilities differ by population. Disabilities are reported at higher rates among Native Americans (20 percent) than any other racial or ethnic group. Comparatively, whites and blacks each have a reported disability rate of 13 percent, Asian/Pacific Islanders a rate of 7 percent, and Hispanics 8 percent.⁴⁸ And, among veterans in Washington, over 26 percent reported a disability in 2011.⁴⁹

⁴⁵ American Community Survey 2011, Table B18130: Age By Disability Status By Poverty Status.

⁴⁶ U.S. Census Bureau, American Community Survey Public Use Micro Sample Data, 2011.

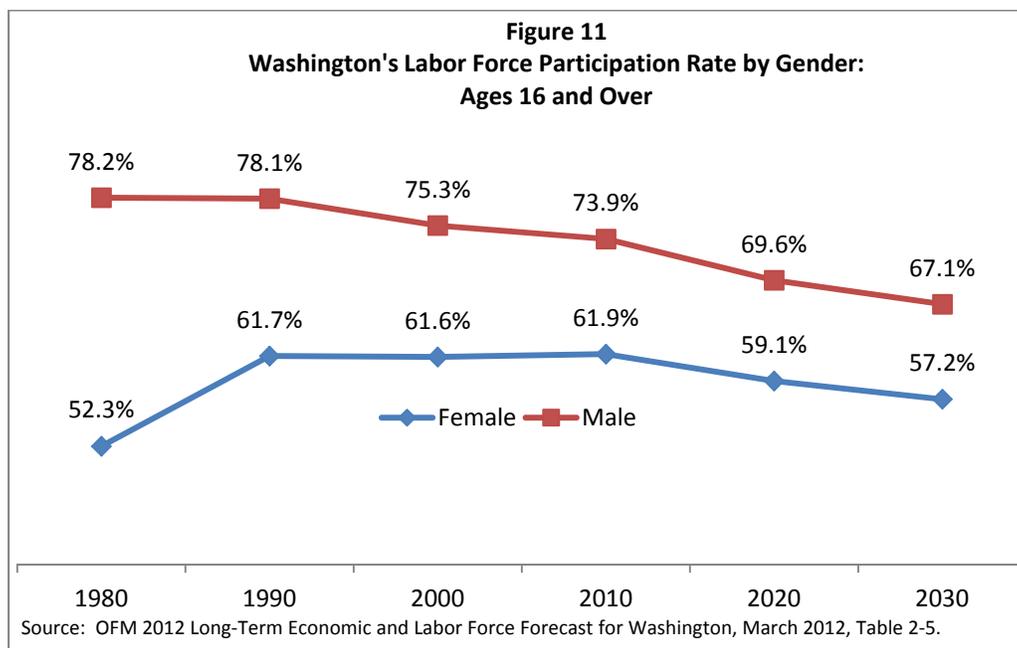
⁴⁷ OSPI, *Washington State’s 2009-2010 Post-School Outcome Reports: Postsecondary Engagement Activities of Young Adults with Individual Education Programs (IEPs)*. Prepared for OSPI by the Center for Change in Transition Services, Seattle University.

⁴⁸ American Community Survey 2011, Table S1810: Disability Characteristics.

⁴⁹ American Community Survey 2011, Table S2101: Veteran Status.

Women in the Workforce

For women, the largest gains in labor force participation rates occurred between 1970 and 1990. In 1975, Washington women's labor force participation rate stood at 47 percent and increased to 61.9 percent in 2010. However, as depicted in Figure 11, Washington's overall labor force participation rate is projected to decrease by 2030, and along with it that of women, which is projected to decline to 57.2 percent.⁵⁰



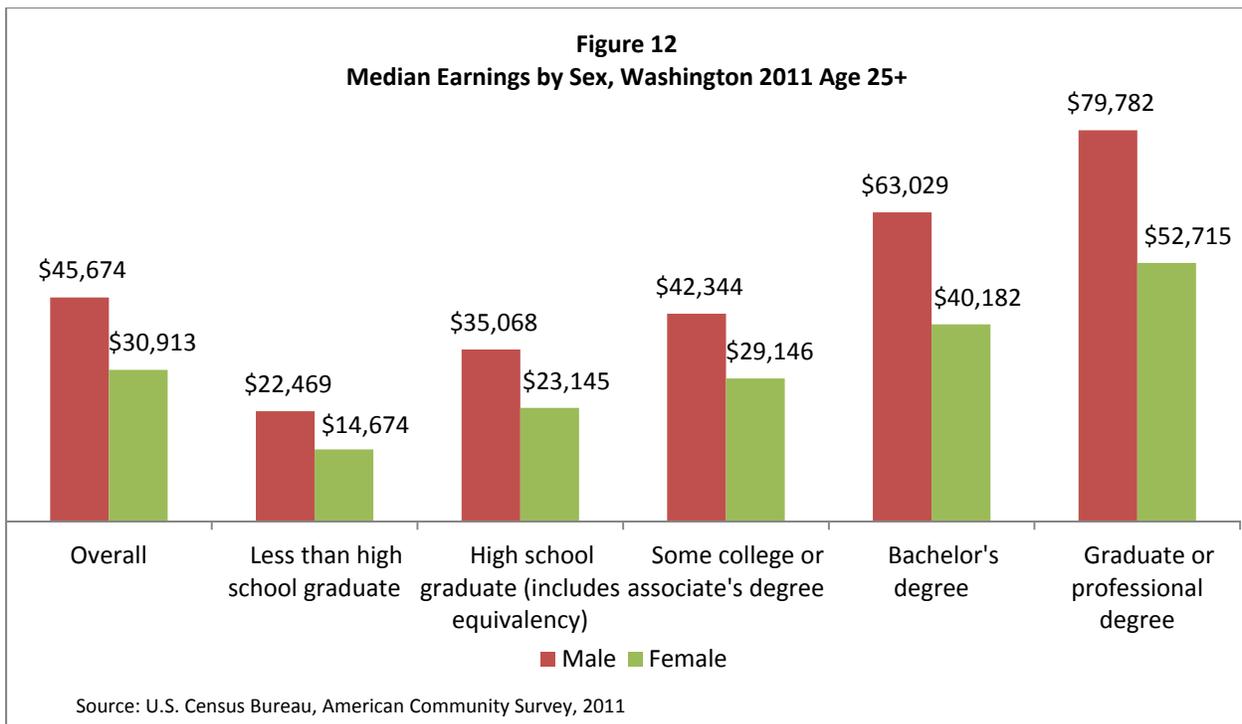
Women's increased labor force participation rates have been associated with many factors, including:

- Higher education levels that lead to more diverse career opportunities.
- More women remaining single, or marrying later in life, and delaying child bearing.
- A cultural shift in economic and career expectations.
- A decline in real wages that makes a second income necessary to offset the loss in real earnings of traditional male breadwinners.

Despite changing social expectations about parenting roles and responsibilities between men and women, children continue to have a significant impact on women's labor market outcomes. As of 2011, over 92,000 women between the ages of 15 and 50 years of age gave birth to a child within the past 12 months, just under six percent of all women in that age range. Of the women giving birth to a child in the past 12 months, 56 percent were in Washington's labor force in 2011, versus 71 percent of those who had not given birth in the past 12 months.⁵¹

⁵⁰ OFM, 2012 Long-Term Economic and Labor Force Forecast for Washington, Table 2-4.
http://www.ofm.wa.gov/economy/longterm/2012/data_tables_2012.pdf

⁵¹ American Community Survey 2011, Table S1301: Fertility.



Research shows that, to a large extent, the labor market disparities between women and men result from traditional gender roles and the career choices of women.⁵² Even in light of evolving social expectations, women continue to take on a disproportionate share of childrearing and housework responsibilities and, consequently, they experience more frequent and longer spells away from work than men. Additionally, large percentages of women work in industries and occupations, such as education and social services that, by and large, pay less than do positions that men disproportionately occupy, such as information technology. Overall, these constraints on employment contribute to the overall lower rates of income found for women compared to men.

This is evidenced by women's continued lower levels of compensation and hours of work compared to men, despite similar levels of education, as seen in Figure 12. These seemingly large gaps in pay—at approximately 65 percent of men—close by upwards of 10 percentage points when comparing full-time year-round earnings. Women earned just over 77 percent of what men earned, on average, when both are restricted to those working full-time year-round. Median earnings for women who worked full-time for the full year were \$40,993 compared to \$53,046 for men.⁵³

As women continue to enroll and complete postsecondary education at higher rates than men, and continue to choose higher paying occupational trajectories, the pay gap will close. The trend since the early 1990s has been higher rates of college enrollment for women compared to men. In 2011, over 43 percent of women in Washington ages 18 to 24, and 34 percent of men, were

⁵² Lisa Belkin, "The Opt-Out Revolution," *The New York Times*, October 26, 2003. Carrie Conaway, "Paying the Price," *Federal Reserve Bank of Boston Regional Review*, Q1 2005, http://www.bas.frb.org/economic/nerr/rr2005/q1/section_2c.pdf (9/14/2005).

Diane Furchtgott-Roth, "The Statistically Misleading 74 Cent Wage Gap," Testimony before the Equal Employment Opportunity Commission, Philadelphia, PA, April 12, 1999, http://www.aei.org/publicatiopns/pubID.17864.filter.all/pub_detail.asp (9/14/2005). Cathy Young, "Opting Out," *Reason Online*, June 2004, <http://www.reason.com/0406/co.cy.opting.shtml> (9/14/2005).

⁵³ American Community Survey 2011, Table B20017 Median Earnings in the Past 12 Months by Sex.

enrolled in postsecondary education. Similarly, nearly 50 percent of women in the Washington labor market ages 25 to 64 in 2011 had at least an Associate's Degree compared to 47 percent of men.⁵⁴ For example, over the last 40 years women have made tremendous strides in two of the highest paying careers: lawyers and doctors. Law school enrollment among women has increased since hovering at about 10 percent of incoming students in the early 1970s to 47 percent as of 2010, and women comprise an increasing proportion of partners in law firms, up to 20 percent as of 2011.⁵⁵ Likewise, medical school enrollment among women has increased from comprising 25 percent of the incoming students in 1975 to, similar to law school, 47 percent as of 2011.⁵⁶

Unemployment and Poverty

From January 2011 through September 2012, Washington's official unemployment rate averaged 8.8 percent, slightly higher than the average for the entire U.S. over that period, at 8.6 percent.⁵⁷ The most pressing concern is regarding long-term unemployment, especially among individuals who have exhausted their unemployment insurance benefits after 73 weeks. Washington-specific data on long-term unemployment shows that as of June, 2012 a total of 99,150 individuals on unemployment insurance had exhausted their benefits. Of these, 26 percent reported finding employment, while 6 percent had filed a new unemployment insurance claim.⁵⁸ Further, the exhaustees are more likely to be males, have a high school diploma or less, and be over age 45.

Taking a deeper look at how unemployment impacts Washingtonians from different demographic backgrounds is possible using unofficial unemployment data estimated from the U.S. Census Bureau's American Community Survey. The most recent data available, representing 2011 (released in October 2012), estimates an overall unemployment rate of 10.3 percent and higher rates for certain subpopulation (displayed in Figure 13).⁵⁹ Unemployment differs dramatically by age, where young adults ages 16 to 19 suffer from rates of unemployment three times that of the overall population. Unemployment also differs by race and ethnicity, whereby all non-white populations experience higher rates of unemployment when compared to whites, with the exception of Asians. Finally, rates of unemployment are nearly double the general population among those reporting a disability and three times as high for those living below the poverty line.

⁵⁴ U.S. Census Bureau, American Community Survey Public Use Micro Sample Data, 2011.

⁵⁵ American Bar Association, "Enrollment and Degrees Awarded 1963-2010."

http://www.americanbar.org/content/dam/aba/administrative/legal_education_and_admissions_to_the_bar/stats_1.authcheckdam.pdf

The National Association for Law Placement, "Law Firm Diversity Wobbles: Minority Numbers Bounce Back While Women Associates Extend Two-Year Decline" (November 3, 2011).

<http://www.nalp.org/uploads/PressReleases/2011WomenandMinoritiesPressRelease.pdf>

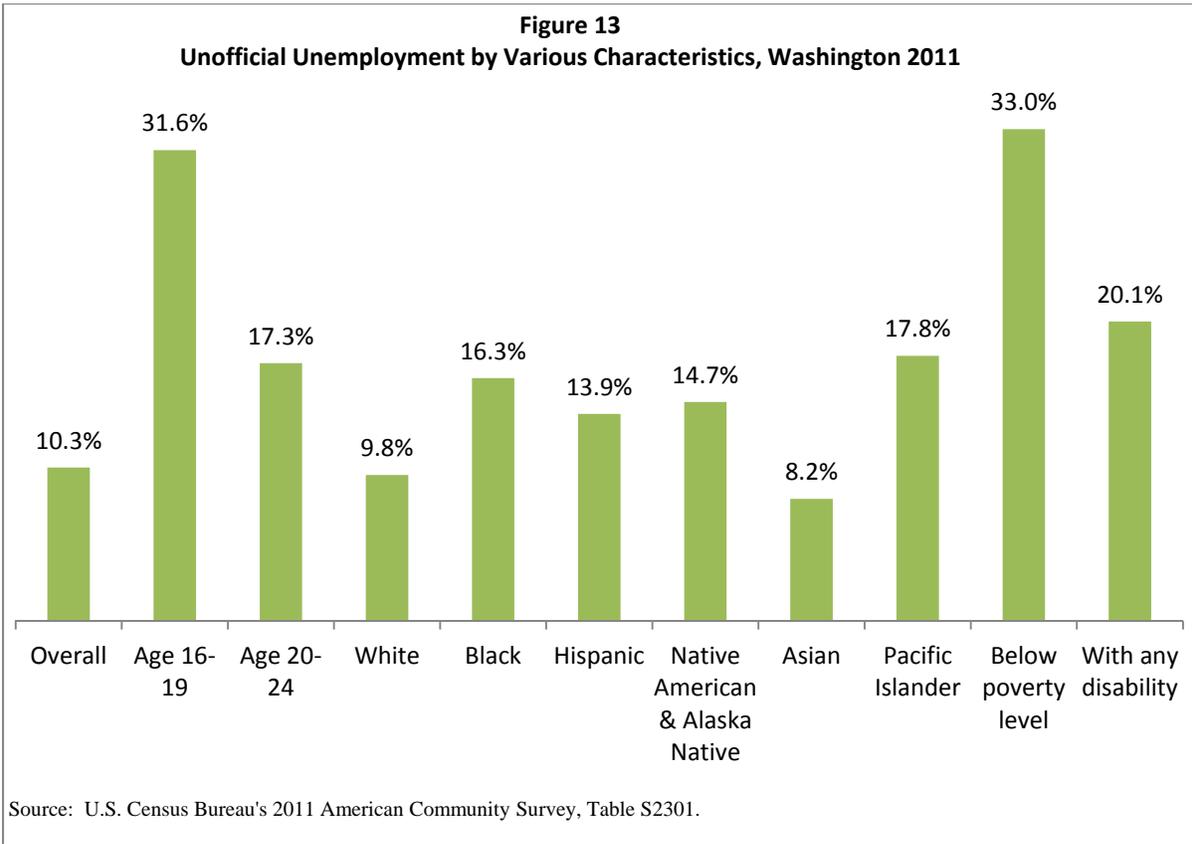
⁵⁶ Association of American Medical Colleges, 2012. "The Changing Gender Composition of U.S. Medical School Applicants and Matriculants." Analysis in Brief, AAMC. Volume 12, Number 1.

https://www.aamc.org/download/277026/data/aibvol12_no1.pdf

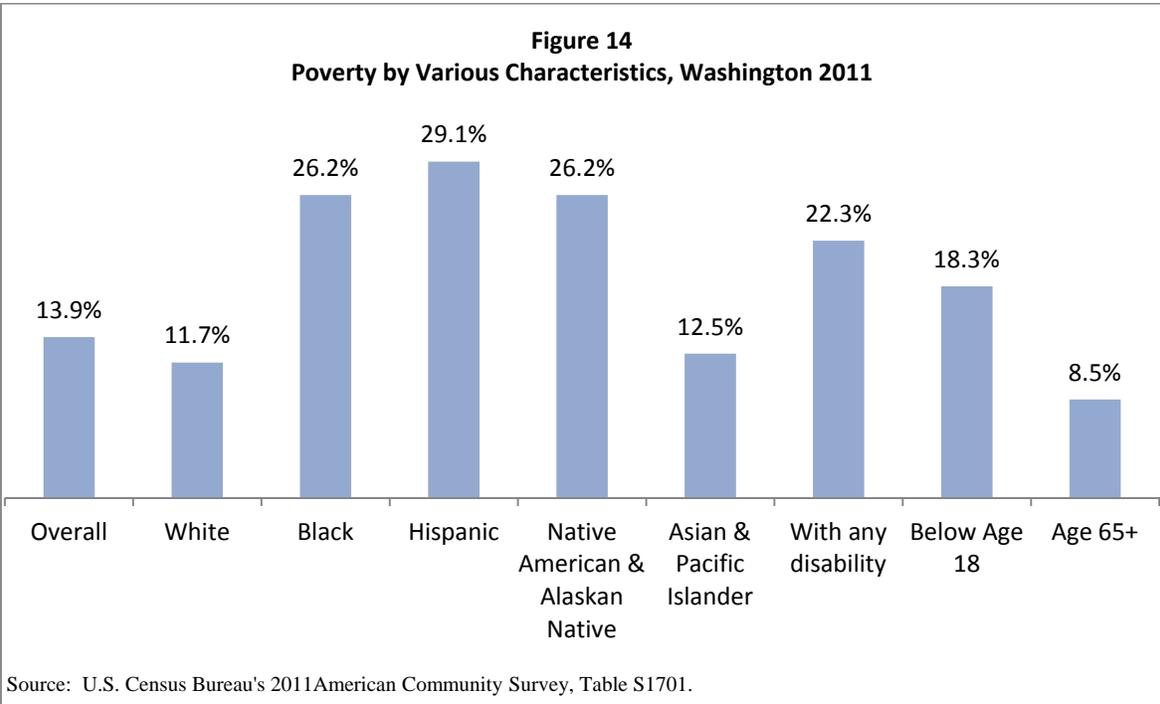
⁵⁷ Employment Security Monthly Employment Reports and Bureau of Labor Statistics data.

⁵⁸ Retooling Washington Work Group: Coordinated Outreach to Unemployment Insurance (UI) Exhaustees 18-month report, October 2010 - June 2012. http://www.wtb.wa.gov/Documents/Tab9c-RetoolingWAWorkGroup1_18-MonthReport_FINAL.pdf

⁵⁹ U.S. Census Bureau's 2011 American Community Survey, Table S2301.



Rates of poverty in Washington, depicted in Figure 14, likewise differ by sub-population. Whereas the overall rate of poverty in 2011 was just short of 14 percent, the rate for whites was nearly 12 percent whereas blacks, Hispanics and Native Americans all had rates higher than 26 percent. Among those reporting a disability, 22 percent were living in poverty. And, as with unemployment, poverty also differs by age. Nearly 1 in 5 children in Washington live in poverty, whereas less than 9 percent of those ages 65 and over do—in large part due to Social Security.



Summary

Compared to the workforce of decades ago, Washington's current labor force is older, more racially and ethnically diverse, and has a higher proportion of women. In short, our workforce reflects the changing composition of the population. However, the aging of the workforce and lower birthrates of the post-baby boom years suggest a potential labor force shortage in the future. We need to ensure that learning continues over a life time, as greater numbers of workers ages 65 and older will be working over the coming decades in an ever-evolving labor market.

Washington's ability to compete nationally and globally will require utilizing the full talents of our entire workforce. To do that, we must ensure our residents obtain the job skills and education required by our increasingly technology-driven, knowledge-based economy. This requires targeting educational opportunities to underserved populations such as blacks, Native Americans and Hispanics. These populations disproportionately suffer the ill-effects of the labor market, as rates of unemployment and poverty are higher among blacks, Native Americans and Hispanics than for the general population.

If we do nothing, we may find tomorrow's workforce unprepared and our economy wanting. If we act now, we can create new opportunities for previously underemployed and growing population groups, helping all Washingtonians and our economy prosper well into the 21st century.

TOMORROW'S ECONOMY

High Wages for the Highly Skilled

Despite the Great Recession, the transition to an economy based more on information, knowledge and services is continuing. The consequent shift in both the skills generally required and the occupations in demand also has continued.

Both the workplace and the outputs of industry have increasing technological components, most often involving information technology. On one hand, workers in a wide range of jobs find themselves required to use computers in the regular course of their work. On the other hand, the outputs increasingly are either products that embody or interact with technologically sophisticated devices, or they are services that are delivered over and/or must interact with information technology. From smart merchandise tags, to smart phones and appliances, to Internet banking and e-commerce, technology is permeating much of the workspace and the product and service markets. Even when a technological product is not overtly an information technology product, information technology is often intimately involved in its manufacture and use. For example, a composite wind turbine blade is probably manufactured using computer controlled machinery and non-destructive testing, and deployed in a device that is computer controlled.

Technology has made possible an extended virtual labor market for many types of services, through off-site or off-shore outsourcing, and virtual organizations and partnerships. This has raised levels of inter-state and international competition in services that accompany the globalization of product and capital markets.

Even during the recent recession, employers reported some shortages of job applicants with the specific skills required for their hiring plans. Such shortages can be expected to be more prevalent as recovery strengthens labor markets. Planning and management of the skills, education and training of the labor force must anticipate the challenges that will result from growth in the economy, technology and globalization. Our willingness to invest in educating and training our people will be a major factor in the long-term rate of growth for Washington's economy. It will also affect the degree of economic inequality among our citizens. Economists believe our economy will continue to generate good jobs, but to adapt to challenges and take advantage of new opportunities, Americans must achieve higher levels of education and training.

The Slow Economic Recovery

The 'Great Recession' that started in December 2007 has been the longest and deepest recession since the Second World War, with the most prolonged recovery. Although the recession officially ended in June of 2009, recovery is still a work in progress. During the Great Recession the national unemployment rate more than doubled, and although it has fallen from a mid-recession high of 10.1 percent, it has only recently dropped below 8 percent.

Real GDP grew at an average rate of 3.3 percent during the first year of the recovery. This rate is slower than other post-war recoveries. However, it is enough growth to stem the tide of

rising unemployment that hit a high of 10.1 percent in 2010. The second year of the recovery brought slower GDP growth, with an average rate of 1.6 percent – the unemployment rate was a bit lower as well, at 9.1 percent in mid-2011. Growth remained weak during the recovery’s third year, advancing at an annual average rate of 1.9 percent, and the unemployment rate slowly improved to 7.8 percent by September of 2012.

Washington’s Economy

After a period of job growth between 2004 and 2007 when non-farm payroll employment increased by an average rate of 2.8 percent per year, non-farm employment reached its peak in Washington in February 2008, three months after the national peak in December 2007. Once the Great Recession started Washington fared around average compared to other states. The only industry sector to expand during the Great Recession was education and health services. Construction fared the worst during this recession and manufacturing, utilities, information and other services fared better during this recession than in the recession in 2001.

Eighteen percent of Washington’s population under 18 are living below the poverty level.¹ The average duration of unemployment benefits rose from 13 weeks in 2009 to nearly 21 weeks in 2010 before falling to around 17 weeks in 2012. The rate of underemployment (part-time workers who desired full-time work) was 6.7 percent.² Washington added 58,500 jobs during the 12 months ending in September 2012. Over that year, Education and Health Services added 1,500 jobs, Professional and Business Services added 11,100 jobs,. The leisure and hospitality industries added 9,800 jobs. Manufacturing employment increased by 11,700 jobs, with 7,800 of those jobs in aerospace product parts and manufacturing. The retail and wholesale trade sectors added 4,500 and 3,600 jobs respectively, Construction added 4,700 jobs. Employment contracted in the government sector which lost 200 jobs.

Over-the-Year Non-Farm Employment Gains by Industry Sector: September 2011 to September 2012	
Industry Sector	Seasonally Adjusted Gains
Total Non-Farm	58,500
Manufacturing	11,700
- <i>Aerospace Products and Parts Manufacturing</i>	7,800
Professional and Business Services	11,100
Leisure and Hospitality	9,800
Construction	4,700
Government	4,600
Retail Trade	4,500
Wholesale Trade	3,600
Financial Activities	2,900

¹ U.S. Census Bureau 2011 American Community Survey.

² BLS Local Area Statistics Alternative Measures of Labor Underutilization for States 2011-2012.
<http://www.bls.gov/lau/stalt.htm>

Other Services	2,800
Education and Health Services	1,500
Transportation, Warehousing, and Utilities	1,500
Natural Resources and Mining	0
Information	-200

Source: Employment Security Department (ESD) LMEA, "Washington State Employment Situation Report for September 2012," October 23, 2012.

Washington's unemployment rate declined from 9.0 percent in September 2011 to 8.5 percent in September 2012. The estimated number of unemployed workers, seasonally adjusted, decreased from 315,100 in September 2011 to 296,400 in September 2012. Washington's economy added 58,500 workers to the labor force during this period. The long-term state forecast projects an annual growth rate of 1.4 percent between 2009 and 2014, which translates to adding nearly 203,700 nonfarm jobs.³

Long-Run Trends Increase Skill Requirements

Two of the major economic trends that are expected to continue to affect our workforce needs are technological advances and globalization. These trends result in market demand for more highly-skilled and differently-skilled labor. Providing timely response to these changing demands will pose stiff challenges for both our economic competitiveness and social cohesion.

Technological Advances

Over the years, new technologies have generated new products and industries, as well as changed the way firms are organized and how workers are utilized.⁴ Future technological advances are expected to continue to do so. With new technologies come changing job skill requirements. Although some technologies have created demand for unskilled workers, significant increases in demand for higher skilled workers has been a far more important result.

Workers in nearly every field have had to learn new skills as they have incorporated computers into their jobs. Machine tool operators make parts using computer-controlled machines. Forklift operators in factories use computerized inventory locating devices. Cars, traffic lights, heating and cooling systems, hospitals, machine shops—all have become computerized. Not only have employees needed to learn to use new, highly sophisticated machines, they have also had to learn, participate in, and sometimes design, whole new organizational processes associated with those machines, or with the information processes required for their efficient use. Many U.S. manufacturers have reduced the number of supervisors in their factories and given workers greater responsibility for ensuring quality, redesigning manufacturing processes and improving products. Some companies are adopting participatory, "high-performance" work systems that place more authority and problem-solving responsibilities with front-line workers. Jobs are more often broadly defined,

³ "Washington State Employment Situation Report for May" Employment Security Department (ESD) LMEA, June 19, 2012.

⁴ Lynn A. Karoly and Constantijn W.A. Panis, *The 21st Century at Work: Forces Shaping the Future Workforce and Workplace in the United States* (Santa Monica, CA: RAND Corporation, 2004). Paul Sommers, *Drivers For A Successful Technology-based Economy: Benchmarking Washington's Performance* (Seattle, WA: Technology Alliance, May 2003).

so that employees work in collaborative teams where success demands effective communication, and outcomes are focused on timeliness, quality, and customer service.⁵

Globalization

Global markets and competition pose many challenges to our economy as a whole, and specifically to workforce development. Consensus on many aspects of this problem are lacking. However, there is more agreement about the desirability of export promotion, though many disagreements remain about what promotional activities are effective. But in this area at least, some goals are being set and addressed in policy.

In January 2010, President Barack Obama announced the National Export Initiative:

- Increase Exports: Double exports in the next five years.
- Create Jobs: The creation of 2 million new jobs.

In June 22, 2010, Governor Christine Gregoire announced a new state export initiative:

- Increase the number of Washington businesses exporting to 10,500 over the next five years.
- Assist 5,000 Washington businesses to achieve \$600 million in new export sales.

Washington, more than any other state, relies on foreign trade. Estimates indicate that in 2010, there were 192,500 jobs directly supported by exports in Washington.⁶ Washington's industry leaders in aerospace, forest products, software, financial and legal services, and agriculture derive a significant portion of their revenues through foreign exports. In 2011 Washington was the 5th largest state exporter, exporting \$64.6 billion of goods. In 2004, Washington state exports equaled \$33.8 billion, barely half that amount.⁷ Though export demand has been in decline recently⁸, exports and trade will remain a major component of the Washington economy.

The consensus among many economists has been that globalization, at the aggregate level, has a favorable effect on income, prices, consumer choice, competition, and innovation in general and for the U.S in particular.⁹ But the effects of globalization accrue unevenly across industries, occupations, and individuals. Workers displaced by competition will generally be able to find jobs, but losses in earnings may be significant for some. Restructuring of the labor

⁵ Karoly & Panis, 2004, (p. xxv).

⁶ U.S. Department of Commerce, International Trade Administration

⁷ Choosewashington.com, accessed 8/30/2012.

⁸ Washington State Economic and Revenue Forecast: September, 2012, Washington State Economic and Revenue Forecast, p. 30

⁹ Martin N. Baily and Diana Farrell, "Exploding Myths About Offshoring," (McKinsey Global Institute, April 2004), http://www.mckinsey.com/mgi/reports/pdf/exploding_myths/explodingoffshoringmyths.pdf (November 28, 2005). L. Josh Bivens, "Truth and Consequences of Offshoring," Economic Policy Institute Briefing Paper, <http://www.epi.org/content.cfm/bp155> (10/28/2005). Lael Brainard and Robert E. Litan, "'Offshoring' Service Jobs: Bane or Boon—and What to Do?," The Brookings Institute Policy Brief #132, April 2004, <http://www.brook.edu/comm/policybriefs/pd132.pdf> (12/01/2005). Global Insight (USA), Inc., "Executive Summary: The Comprehensive Impact of Offshore Software and IT Services Outsourcing on the U.S. Economy and the IT Industry," (Arlington, VA: Information Technology Association of America, October 2005), <http://www.globalinsight.com/publicDownload/genericContent/103105execsum.pdf> (11/09/2005). U.S. Government Accountability Office (GAO), "Offshoring of Services: An Overview of the Issues," November 2005, <http://gao.gov/cpi-bin/getrpt?GAO-06-05> (12/01/2005).e

market to account for the changing composition of goods and services from the United States will mean that workers displaced by offshoring may have to get new jobs in different fields, which could mean longer periods of unemployment.¹⁰

Some portion of this displacement comes from offshore outsourcing. This has been a substantial movement over the last decade, and there are some signs of retrenchment due to changes in the economics, customer satisfaction issues, etc. However, while the rate of expansion of offshoring may never return to recent levels, it will remain as an influence on American labor markets. Internal out-sourcing to other states can also be expected to have similar, if less marked, effects on some industries and labor markets. Estimates suggest that up to 25 percent of all US jobs could possibly be offshored.¹¹

The question is not whether there will still be good jobs left in U.S. – the question is how many of them will there be? The most vulnerable jobs and occupations are ones with the following attributes or features:¹²

- No face-to-face customer servicing requirements.
- Primarily information content.
- Work process is telecommutable and Internet enabled.
- High wage differential with similar occupation in destination country.
- Low setup barriers.
- Low social networking requirement.

Cost differentials, the availability of highly educated graduates, the widespread acceptance of English as the language of business and communication, and other institutional and cultural compatibilities are factors that facilitate the offshoring of U.S. jobs to certain foreign countries. However, the economic and political trajectory of nations with offshoring potential will have a major effect on the extent to which use of this option is implemented. The three major emerging market economies with sizeable higher education sectors, —China, India, and Russia— all have potential internal barriers that could constrain future growth.¹³ India has not been able to provide basic school education on the wide-scale level that would ensure future growth in highly trained graduates; Russia is experiencing institutional underdevelopment, erratic reforms, and challenges in resourcing an advanced higher education system; and China still faces language, institutional, and cultural barriers. Rising salaries in these countries could decrease the cost gains for offshoring.¹⁴ Immigration policy options, such as the H-1B visa program provide an alternate model for skilled labor sourcing, with some of the same advantages, but with a very different set of impacts on the US economy and political constraints.

¹⁰ Linda Levine, "Offshoring and Job Loss Among U.S. Workers," Congressional Research Service. January 21, 2011.

¹¹ Alan S. Blinder, "How Many U.S. Jobs Might be Offshorable?," *World Economics*, Vol. 10 no. 2 (April-June 2009), p. 69.

¹² Ashok D. Bardhan and Cynthia Kroll, "The New Wave of Outsourcing," (Berkeley, CA: Fisher Center for Real Estate and Urban Economics, University of California, Berkeley, Paper #1103, 2003), <http://repositories.cdlib.org/iber/fcreue/reports/1103> (12/05/2005).

¹³ Bardhan and Kroll, (p. 5).

¹⁴ Peter Engardio, "The Future of Outsourcing, *Business Week*, January 30 2006, p. 58.

Potential quality control problems and concerns over intellectual property theft also may limit overseas outsourcing for some activities. The total growth of high-tech jobs may outpace the increasing supply of knowledgeable workers in the emerging economy. As Robert Reich, a professor of public policy at UC Berkeley and former Labor Secretary, noted "Even as the supply of workers around the world capable of high-tech innovation increases, the demand for innovative people is increasing at an even faster pace."¹⁵

The most positive jobs scenario would see many of the highest skill and highest paid jobs created in the U.S., while jobs lower on the knowledge and value added scales are outsourced.¹⁶ Under this scenario, innovation would lead to a continuing stream of new service and manufacturing activities, and hence, new jobs and occupations, while competition and the need for lower-cost supply would drive more mature service operations overseas. Depending on their education and skills, individual workers might still find it difficult to find replacement employment at similar wages, but overall, the jobs lost to outsourcing would be replaced by higher-wage jobs in new subsectors brought about by innovation."¹⁷ Reich has similarly argued that there will be plenty of good jobs in the future, but too few Americans are being prepared for them.

However, there are many examples of outsourcing where there is no visible connection tradeoff between loss of low and middle wage jobs and increases in higher skill or knowledge jobs that produce new products or services.

The Bureau of Labor Statistics analyzed service providing occupations that were susceptible to offshoring; they identified 160 occupations that have diverse functions, levels of education, and earnings. Nearly every computer and mathematical science occupation has some degree of susceptibility to offshoring. Over 80 percent of workers in these highly susceptible occupations had at least some college education, and over half had a bachelor's degree. The most susceptible occupations are computer programmers and operators, data entry workers, typists, and pharmacy technicians who had 1.) inputs and outputs that could be easily transmitted 2.) require little interaction with other types of workers 3.) little to no local cultural knowledge and 4.) high degree of routine work.¹⁸

Washington's Competitive Position

In addition to its status as an international trade hub, Washington has dominant global leaders in two sectors: software and aerospace. It also has an emerging national leader in e-commerce, though it is far from clear how the structure of this sector will evolve internationally or nationally.

At a national level, Washington's natural resource base will support a long term economic role in producing agricultural and forest products for both domestic and foreign markets. The State's natural resource base also includes significant renewable energy resources, particularly in hydropower.

¹⁵ Robert Reich, "High-Tech Jobs Are Going Abroad! But That's Okay," Washington Post Company, 2003.

¹⁶ Bardhan and Kroll, 2003, (p. 12).

¹⁷ Ibid.

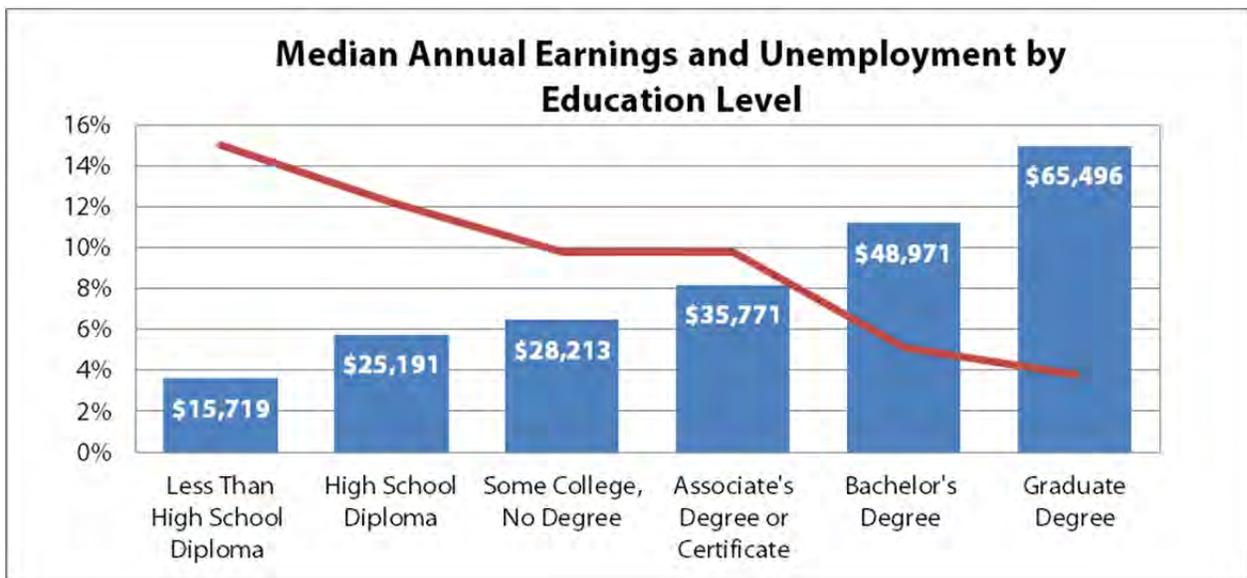
¹⁸ Roger J. Moncarz, Michael Wolf, and Benjamin Wright. "Service-providing occupations, offshoring, and the labor market." Monthly Labor Review. December 2008.

There are other fields in which Washington can be expected to remain a significant if not dominant player at the national level, such as biotechnology. There are also other successful sectors that provide important diversification to the economic base, some of which have developed to support the state's global leaders, like composite manufacturing, and others having survived from the earlier industrial economy, like marine and truck manufacturing.

Increasing Gap Between the Haves and the Have-Nots

Starting in the mid-1970s, income inequality in America has worsened, and studies suggest that pervasive technological change is a culprit. Globalization also has been linked to the decline in earnings particularly among less-skilled workers over the last few decades. The demand for highly skilled workers in all sectors of the economy has increased rapidly. Supply has not kept up with demand and the earning gap between more-educated and less-educated workers has widened.¹⁹

Data from the American Community Survey show a positive relationship between training levels and 2010 annual average wage estimates of workers in Washington.²⁰ Workers with an Associate's Degree earn over \$10,000 more than workers with only a High School Diploma. Workers with a Bachelor's Degree earn \$13,000 more than those with an Associate's Degree. Similarly, Unemployment rates were lower for more educated workers, ranging in 2010 from under 4% for those with Graduate Degrees, to nearly 16% for those without high school diplomas.



U.S. Census Bureau 2010 American Community Survey

While the general relationship is for higher credential to be associated with higher earnings, the program of study also makes large difference. The Workforce Board's analysis of recent college graduates by program of study shows that earnings in the year after graduation vary by as much as two or three-fold, depending on one's field. Workers in higher paying fields

¹⁹ Karoly & Panis, 2004, (p. xxiii).

²⁰ U.S. Census Bureau 2010 American Community Survey.

with mid-level credentials have higher average earnings than baccalaureate holders in lower-paying fields.

Average Wages

The recession of 2001-02 curbed average wages for several years, and significant growth did not start until 2006.²¹ The average annual wage in Washington has increased every year since 2008. In 2010 there was a 2.1 rise in the average annual wage; in 2011 the annual average wage grew by 3.6 percent. The 2011 average annual wage in Washington is \$49,894, ranking 10th out of all states.²²

Multiple Job Holding

Workers can increase their incomes by holding more than one job. How common is this? Also, are low-skill workers with more than one job able to overcome the low pay associated with low-skill jobs? According to the Bureau of Labor Statistics, 4.9 percent of workers age 16 and over held more than one job in 2010 and 2011. The most recent Bureau of Labor Statistics data for individual states shows Washington's rate of multiple job holding is 5.7 percent.²³ Multiple job-holders are those who report that they hold two or more jobs during the same week in response to the Current Population Survey.

Self-Employment in Washington

The most current data available, from the 2010 American Community Survey, reports Washington's self-employment²⁴ in unincorporated businesses at 6.3 percent of the workforce ages 16 and over, or approximately 194,000 self-employed individuals in our state.²⁵ In 2010, self-employment from incorporated businesses accounted for an additional 4 percent of Washington self-employment and 3.6 percent at the national level.

As the following table depicts, Washington's 6.3 percent rate of self-employment is very close to the 2010 national average of 6.4 percent. Compared to 51 other states and territories, Washington is in the middle of the states, with a ranking of 25th in terms of the self-employed proportion of the workforce. Montana has the highest rate of self-employment at 10.1 percent, while Delaware has the lowest at 4.0 percent. Other west coast states, such as California (ranked 7th at 8.6 percent) and Oregon (ranked 9th at 8.3 percent) have higher rates of self-employment than Washington.

Compared to 10 years earlier, self-employment in Washington and nationally has fallen. In 2000, Washington's self-employment was at just short of 200,000, or 7.2 percent of the workforce.²⁶ Nationally, the rate of self-employment in 2000 was 6.6 percent, and Washington ranked 22nd out of 52 states and territories, with Montana having the highest rate at 11.8

²¹ <http://www.esd.wa.gov/newsandinformation/releases/average-wage-grew-in-2011-12-024.php>

²² <http://www.ofm.wa.gov/trends/economy/fig102.asp>. Inflation adjusted to 2010 dollars.

²³ Jim Campbell, "Multiple Job Holding in States in 2011," Monthly Labor Review, Bureau of Labor Statistics, <http://www.bls.gov/opub/mlr/2012/05/art4full.pdf>.

²⁴ Self-employment is defined as those individuals employed in their own unincorporated business to make data comparable to earlier periods.

²⁵ U.S. Census Bureau's 2010 American Community Survey, Table S2407 - Industry By Class Of Worker For The Civilian Employed Population 16 Years And Over, Accessed via American Factfinder.

²⁶ 2000 U.S. Census, Table QT-P25 - Class of Worker by Sex, Place of Work, and Veteran Status: 2000. Accessed via American Factfinder, Census 2000 Summary File 3 (SF 3).

percent and Delaware the lowest at 4.9 percent. Earlier data, from the 1990 Census, found Washington's self-employment rate to be 7.8 percent of the workforce.²⁷

Self-Employment by State, 2010

State	% Self-Employment	State Rank	State	% Self-Employment	State Rank
United States	6.4%	-			
Montana	10.1%	1	Massachusetts	6.2%	27
Vermont	9.7%	2	Minnesota	6.2%	28
Puerto Rico	9.4%	3	Missouri	6.2%	29
Maine	9.2%	4	Florida	6.1%	30
North Dakota	8.9%	5	Mississippi	6.0%	31
South Dakota	8.9%	6	North Carolina	6.0%	32
California	8.6%	7	Georgia	5.9%	33
New Hampshire	8.3%	8	Kentucky	5.9%	34
Oregon	8.3%	9	Pennsylvania	5.8%	35
Hawaii	8.0%	10	Alabama	5.7%	36
Idaho	7.7%	11	Louisiana	5.7%	37
Nebraska	7.7%	12	Wisconsin	5.7%	38
Colorado	7.4%	13	Michigan	5.4%	39
Iowa	7.3%	14	Ohio	5.3%	40
Oklahoma	7.3%	15	Rhode Island	5.3%	41
Texas	7.2%	16	South Carolina	5.3%	42
Tennessee	7.1%	17	Illinois	5.1%	43
Kansas	7.0%	18	Nevada	5.1%	44
New Mexico	7.0%	19	Indiana	5.0%	45
Wyoming	6.9%	20	Utah	5.0%	46
Connecticut	6.8%	21	Virginia	5.0%	47
Arkansas	6.6%	22	Maryland	4.9%	48
Alaska	6.3%	23	West Virginia	4.9%	49
New York	6.3%	24	District of Columbia	4.8%	50
Washington	6.3%	25	New Jersey	4.8%	51
Arizona	6.2%	26	Delaware	4.0%	52

Source: U.S. Census Bureau's 2010 American Community Survey, Table S2407 - Industry By Class Of Worker For The Civilian Employed Population 16 Years And Over

²⁷ OFM 1990 U.S. Census Demographic Profiles of Counties, Labor Force Status and Employment Characteristics, <http://www.ofm.wa.gov/pop/census1990/county/default.asp>

Washington Self-Employment, 2006 & 2010	2006		2010		2006-10
Self-Employment in Unincorporated Businesses Only	Percent Self- Employed	Number Self- Employed	% Self- Employed	Number Self- Employed	Change in Percentage Points
Total employed population	7.4%	228,264	6.3%	193,427	-1.1%
Other services, except public administration	21.1%	31,111	20.0%	30,028	-1.1%
Construction	13.4%	32,877	12.8%	24,066	-0.6%
Professional, scientific, and management, and administrative and waste management services	13.1%	43,266	12.4%	45,443	-0.7%
Agriculture, forestry, fishing and hunting, and mining	14.7%	12,151	9.7%	7,895	-5.0%
Finance and insurance, and real estate and rental and leasing	10.1%	20,928	8.3%	14,414	-1.8%
Arts, entertainment, and recreation, and accommodation and food services	5.5%	14,344	5.6%	14,799	0.1%
Information	3.4%	3,109	5.3%	3,611	1.9%
Educational services, and health care and social assistance	4.2%	25,819	4.1%	27,255	-0.1%
Transportation and warehousing, and utilities	5.6%	8,878	3.9%	5,900	-1.7%
Wholesale trade	4.9%	5,350	3.5%	3,311	-1.4%
Retail trade	6.3%	21,153	3.4%	12,344	-2.9%
Manufacturing	2.6%	8,860	1.6%	5,219	-1.0%
Public administration	0.0%	-	0.0%	-	0.0%

U.S. Census Bureau's 2006 & 2010 American Community Survey, workers ages 16 and over.

Recession – The Hangover

Recessions with great depth and prolonged recovery have fortunately been rare. However, this means we have little experience with some of the labor market and workforce complications that are only significant in long periods of weak labor markets. Disrupting career development, life plans, or education for 12 to 18 months due to a normal recession does not greatly alter the labor market conditions once the recovery is well under way or the career trajectory of large numbers of workers. Unfortunately, the accumulated disruptions of five years of depressed labor markets are far more significant. Large numbers of households have had major losses in net worth that influence their ability to invest in education (or to support demand for capital goods). Thousands of prime-age workers have become long-term unemployed, with those who were eligible having exhausted even extended UI benefits. Thousands of young workers are years behind in acquiring initial work experience that normally enhances both their hire-ability and practical experience to inform their career planning.

On top of this, there is a significant flow of demobilizing veterans in need of employment in a relatively sparse labor market that has very different working conditions and limited automatic transferability of their established skills.

Labor statistics show that significant numbers who would prefer to work full time are currently underemployed in part-time jobs. This segment of Washington's workforce has doubled from 3.3% in 2007 and has hovered at or near a recession maximum of 6.7% since 2010.²⁸ The number of workers who have either left the labor market or failed to enter it is large enough that the labor force participation rate has significantly declined and has not yet begun to recover.²⁹ In Washington, this effect has been strongest for young workers, for whom the labor force participation has fallen from 45.8% in 2006 to 36.1% in 2011. Finally, while the decline in household assets and uncertainty about both the general economy and the reliability of pension benefits have led many baby boomers to defer their retirement, this has had the paradoxical effect of reducing the number of younger workers trained on the job to replace them when they eventually do retire.

Washington's Industry Outlook

For years, Washington's economy provided substantial numbers of high-paying jobs with benefits to workers with modest education levels in natural resources and manufacturing industries. These traditional sources of high-wage work are either shrinking or have limited prospects for growth.³⁰ Some sectors have been experiencing job gains since the recession ended while others are facing continued losses. The health services industry grew during the recession, and has continued to grow since the recession ended, adding nearly 40,000 jobs between June 2009 and August 2012. The information sector has grown 2.3 percent since the end of the recession, adding 2,500 jobs. Aerospace product and parts manufacturing has grown 15.6 percent since the end of the recession, adding nearly 13,000 jobs. However, employment in the construction industry has contracted, decreasing from 196,100 workers at the end of the recession to 142,200 in August 2012. Employment in wood product manufacturing, logging, and sawmills and wood preservation have been declining since before the recession and are not likely to return to be major sources of jobs.

Projections to 2040 show changes by industry in the distribution of Washington's non-farm employment.³¹ Service industries are among the fastest growing, driven by increases in software publishing and professional and business services (e.g., accounting, engineering, computer systems and programming).

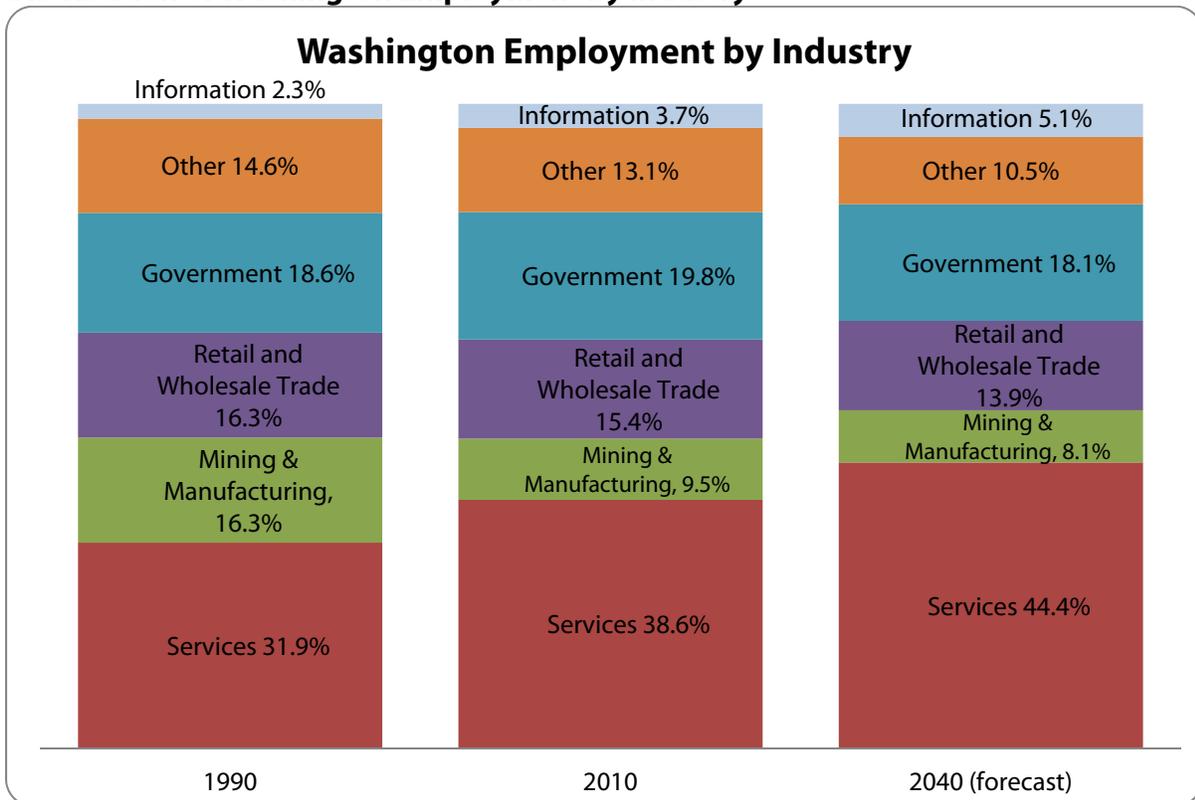
²⁸BLS Local Area Statistics Alternative Measures of Labor Underutilization for States
http://www.bls.gov/lau/stalt_archived.htm

²⁹ Age 16-19, U.S. Census Bureau 2011 American Community Survey.

³⁰ Dave Wallace, "Getting Paid to Make Paper," Washington Labor Market Quarterly Review, Volume 29, Number 3, July-September 2005.

³¹ Washington State Office of Financial Management (OFM) and ESD, *2012 Long-Term Economic and Labor Force Forecast for Washington*. <http://www.ofm.wa.gov/economy/longterm/2012/lt2012ch3.pdf>. February 2012.

Distribution of Washington Employment by Industry



Source: Office of Financial Management

By 2040 the information and service sectors are projected to account for nearly half of employment, up from a third of employment in 1990. Government will continue to supply about 18 percent of employment. Trade and manufacturing industries will lose employment share through 2040. The mining and manufacturing industries' share of employment is expected to decrease to 8.1 percent of non-farm employment by 2040, less than half of its 16.3 percent share in 1990.

Despite the overall decline in manufacturing employment as a percent of total employment, employment growth is expected in aerospace and advanced manufacturing. Because of record aircraft orders, the aerospace industry expects significant hiring in the near-term. Over a longer period, the prospects are good for substantial advanced manufacturing employment, including aerospace.

What Jobs Will be Available?

As many as 30% (nationally) of the new family-wage job opportunities will be in occupations that require postsecondary education but not necessarily a four-year degree, according to a Georgetown University study.³² The following chart includes occupations requiring more than one year and up to, but less than four years of postsecondary training that are expected to be in demand between 2010 and 2020.³³

Annual Job Openings in Washington in Occupations Requiring More Than One Year and up to, but Less Than, Four Years of Postsecondary Education (2004-2014)

Occupation	Estimated Employment 2010	Average Annual Openings 2010-2015	Average Annual Openings 2015-2020
Registered Nurses	55,401	2,051	2,588
Carpenters	35,332	1,171	1,088
Nursing Aides, Orderlies, and Attendants	24,911	775	940
Supervisors/Managers of Construction Trades and Extraction Workers	15,384	623	598
Electricians	14,682	696	627
Computer Support Specialists	16,481	854	961
Medical Secretaries	16,539	580	642
Licensed Practical and Licensed Vocational Nurses	9,741	398	448
Gaming Dealers	6,126	365	272
Aircraft Structure, Surfaces, Rigging and Systems Assemblers	11,594	701	437
Cost Estimators	5,290	236	236
Aircraft Mechanics and Service Technicians	5,232	254	199
Preschool Teachers, Except Special Education	6,713	262	267

Source: ESD, *Long Term Occupational Projections. As of May 2012. Trends may have changed.*

Washington employers in a recent survey regarding their job vacancies in spring 2012 reported an estimated 52,000 job openings.³⁴ The number of job openings has increased on each survey since the fall 2009 survey at the end of the recession, when there were 32,027 job vacancies across the state. Health care and social assistance industry employers reported the largest number of openings: 11,050. Retail trade and accommodation and food services followed with 6,950 and 5,570 vacancies. Of all the job vacancies, 63 percent were full-time and 86 percent were permanent positions. Of total estimated vacancies, 59 percent required a high school diploma or had no education requirements at all.

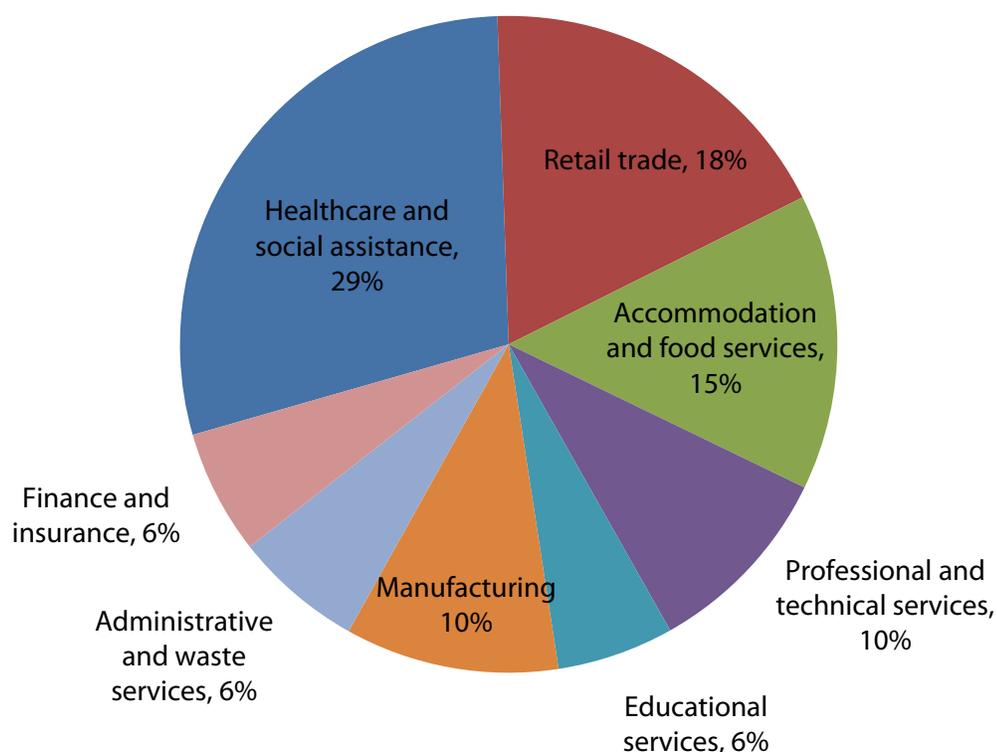
³² Anthony P. Carnevale, Tamara Jayasundera and Andrew R. Hanson, "Career and Technical Education: Five Ways that Pay, Along the Way to the B.A." (Georgetown Public Policy Institute, Center on Education and the Workforce. September 2012) http://www.insidehighered.com/sites/default/server_files/files/CTE_FiveWays_FullReport_Embargoed.pdf

³³ Washington Occupational Employment Projections, May 2012. ESD, LMEA.

³⁴ ESD, *Washington State Spring 2012 Job Vacancy Survey Report*, October 2012.

<https://fortress.wa.gov/esd/employmentdata/docs/occupational-reports/job-vacancy-survey-report-2011-spring.pdf>.

Percent of Washington Job Vacancies by Industry



Source: Spring 2012 Job Vacancy Survey Report

The average estimated hourly wage for hires was \$15.45. The median estimated hourly wage was \$10.42. Of the top 25 occupations for hires, the one with the highest starting wage was electricians, with an estimated average hourly wage of \$33.01, followed by business operations specialists (\$30.14), and registered nurses (\$29.53).

Employers Report a Shortage of Skilled Workers

The transition to a more knowledge-based economy has called for some changes in the types of skills employers are requiring now, or will be requiring in the near future.³⁵ Advanced technologies clearly require workers with the knowledge and skills to use them effectively, efficiently, and creatively. Rapid technological changes and increased global competition have led to a growing importance of strong non-routine cognitive skills, such as abstract reasoning, problem-solving, communication, and collaboration. Employers continue to report a shortage of workers with either basic workplace or job-specific skills, or both.

Roughly 3,000 firms responded to the Workforce Board's *Washington State Employers' Workforce Needs and Practices Survey*, conducted during the spring and summer of 2010.³⁶ Fewer firms reported hiring new employees as compared to previous surveys: 62% in 2010 compared with 80 percent in 2007. Due to the recession, skill shortages declined. Among

³⁵ Karoly & Panis, 2004.

³⁶ Workforce Board, *Washington State Employers' Workforce Training Needs and Practices*, 2010.

firms attempting to hire, 26 percent reported difficulty finding qualified job applicants, compared with 60 percent in 2007. The difficulty in finding qualified job applicants was most severe in the manufacturing (29 percent) services (28 percent) and other industries (37 percent)³⁷. Extrapolating from the survey results, an estimated 28,100 Washington firms—about one-quarter—had difficulty finding qualified job applicants during the fall of 2010.

Employers had the most difficulty finding applicants with job-specific skills (85 percent). For example, they wanted to hire a registered nurse but had trouble finding one; however, large percentages also reported difficulty finding applicants with communication skills (76 percent), and ability to adapt to changes in duties and responsibilities (75 percent), problem-solving or critical thinking skills (69 percent), and positive work habits and attitudes (68 percent).

Employers attempting to hire were asked about the level of difficulty they encountered in finding qualified applicants with specific education levels. They reported the greatest shortage of applicants for jobs requiring postsecondary education, especially for vocationally trained workers from our community colleges, apprenticeship programs, and private career schools. Among employers attempting to hire workers with a postsecondary vocational certificate, 70 percent reported difficulty finding qualified applicants. In contrast, among employers attempting to hire workers with only a high school diploma, 32 percent reported difficulty.

**Employer Difficulty Finding Applicants by Educational Level
(Percentage and Estimated Number of Firms With Difficulty)**

Educational Level	Among Employers Attempting to Hire at That Level 2010	Among Employers Attempting to Hire at That Level 2008	Estimated Number of Firms 2010
Neither a high school diploma or GED	21%	33%	3,349
High school diploma or GED	32%	32%	7,480
Some college course work	57%	67%	11,005
Vocational certificate	69%	70%	12,322
Vocational associate's degree	63%	64%	7,949
Academic associate's degree	64%	48%	7,475
Baccalaureate degree	59%	61%	6,799
Master's degree	75%	54%	6,547
PhD or Professional degree	53%	66%	2,408

Source: Workforce Board, 2008, 2010.

The problem will likely grow worse. Skills required in the workplace continue to increase, and, as a result, about one-fifth of all firms reported that their need for workers with postsecondary training would increase over the next five years.

³⁷ Other industries include transportation, utilities, insurance, banking, and real estate.

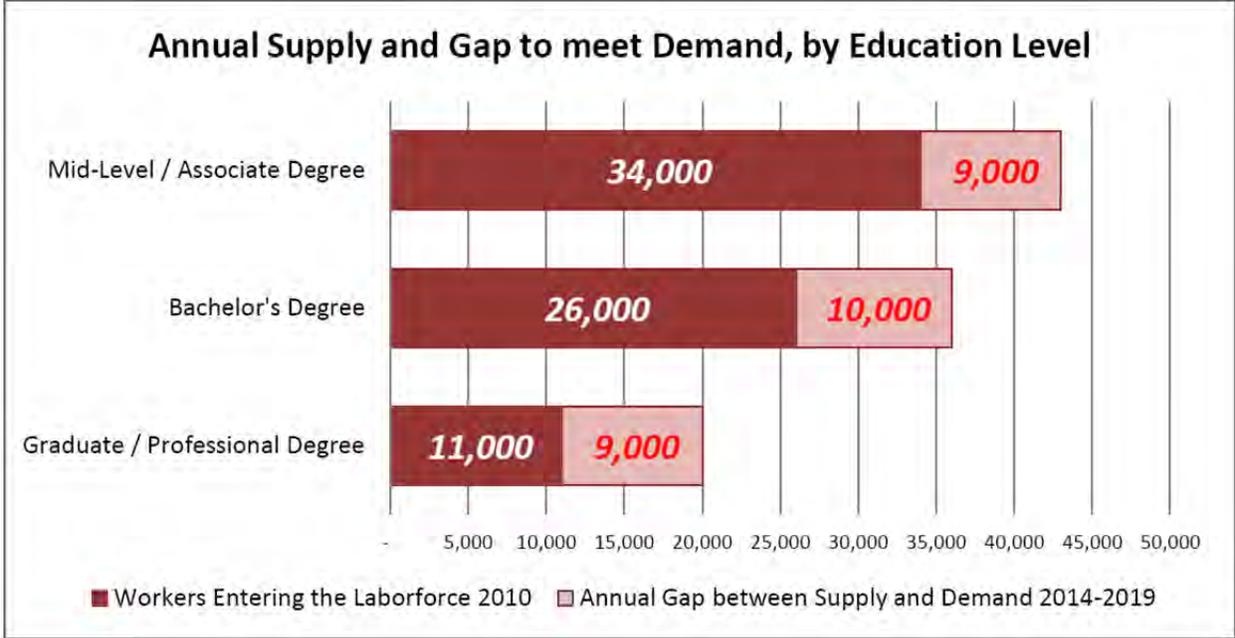
Educational Level (Among all Employers the Percentage Expecting a Change in Demand)

Educational Level	Increase	Decrease
Neither a high school diploma or GED	7%	5%
High school diploma or GED	12%	1%
Some college course work	19%	1%
Vocational certificate	19%	1%
Vocational associate's degree	15%	1%
Academic associate's degree	16%	1%
Baccalaureate degree	17%	2%
Master's degree	6%	2%

Source: Workforce Board Employer Needs Survey, 2010.

Sizing the Skilled Labor Supply Gap

Forecasting the exact numbers of skilled workers needed is a daunting task given the overall uncertainties about the patterns of recovery and the future course of technological and political changes. Forecasting techniques inherently rely on information and patterns from the past. Therefore, they inevitably miss new or unanticipated changes. Subject to those cautions, forecasts are made about future labor demand, assuming a reasonable level of similarity with pre-recession trajectories in the economy.



To meet the projected needs of employers, Washington will need an additional 9,000 completers at the mid-level; 10,000 at the bachelor's level; and 9,000 at the graduate level annually by 2019.

High employer demand programs of study are those fields where the in-state supply of graduates per year is less than the average annual number of net openings expected in Washington.

- At the mid-level, high demand programs of study are identified as health professions; installation, maintenance and repair; manufacturing and production; accounting and bookkeeping; protective services; and science technology.
- At the baccalaureate level, high demand programs of study are identified as computer science; engineering; health professions; life sciences and agriculture; and physical science occupations.
- At the graduate level, high demand programs of study are identified as: computer science; engineering; health professions; life science and agriculture; physical science; and human and protective service occupations.
- Further analysis is required in education, and media and communications occupations at all levels; and social science occupations at the baccalaureate level.

The Workforce Board regularly analyzes supply and demand at the mid-level using labor market data and student records. The mid-level occupations that we expect to have the biggest gaps between supply and demand, if we do not increase supply, can be found at <http://www.wtb.wa.gov/HighDemandFields.asp>. This list of high employer demand programs of study at the mid-level will be updated annually.

Strategic Industry Clusters

The Workforce Training and Education Coordinating Board strategic cluster policy for workforce development relies partly on an [industry cluster analysis](#) using detailed industry data to define regional specialties, develop maps of industry clusters and prioritize clusters for regional development purposes. This policy derives from a process begun with the [Skills for the Next Washington](#) initiative.

Workforce Board Strategic Cluster Policy

- Strategic industry clusters shall be identified for the purpose of guiding and informing policy and investment decisions for workforce education and training, such as the awarding of discretionary funds for cluster-based workforce development initiatives.
- [Consensus rankings of strategic clusters](#) shall be used to steer investments toward those clusters that are most strategic for workforce development. The Board will guide investments toward clusters that are at the higher rather than the lower end of the strategic rankings.

This ranking of industry clusters is intended to guide and inform policy and investment decisions for workforce education and training. The Workforce Board will guide investments toward clusters that are at the higher rather than the lower end of the strategic rankings. The Workforce Board adopted these clusters in November of 2011.

**Olympic Workforce Development Area
Region 1**

Cluster or Industry	Overall Rank
Navy	1
Health Care, Rehabilitation, and Elder Care	2
Marine and Advanced Manufacturing and Marine Port Activity	3
Wood Products	4
Aquaculture, Fisheries, and Fishing Vessel and Equipment Repair	5
Technical Services	6
Construction	7
Wholesale Trade Distribution Services	8
Tourism, Accommodation, Hospitality, Gaming and Recreation	9

**Pacific Mountain Workforce Development Area
Region 2**

Cluster or Industry	Overall Rank
State Government	1
Forest Products	2
Health Care	3
Business Support Services	4
Fishing, Seafood Processing, and Shipbuilding	5
Warehousing and Storage	6
Agriculture and Forestry Support	7
Heavy and Civil Engineering and Construction	8

Northwest Workforce Development Area - Region 3

Cluster or Industry	Overall Rank
Manufacturing (Advanced Manufacturing)	1
Petroleum & Coal Products Manufacturing	1.a
Wood Product Manufacturing	1.b
Primary Metal Manufacturing	1.c
Food Manufacturing	1.d
Machinery Manufacturing	1.e
Transportation Equipment Manufacturing (including aerospace and marine)	1.f
Construction	2
Health Care	3

**Snohomish County Workforce Development Area
Region 4**

Cluster or Industry	Overall Rank
Aerospace and Composites Manufacturing	1
Computer and Electronic Manufacturing (includes Medical Devices)	2
Ship and Boat Building and Composites Manufacturing	3
Architectural and Structural Metals Manufacturing	4
Wood Furniture and Cabinets Manufacturing	5

Heavy Construction (roads, bridges, utilities, infrastructure)	6
Research and Development in Biotechnology	7
Forest Products*	8
Navy*	9

**Indicates clusters the state lists as strategic, but local Workforce Development Council does not.*

Seattle-King County Workforce Development Area - Region 5

Cluster or Industry	Overall Rank
Health Care (including life sciences research and development)	1
Manufacturing	2
Aerospace & Transportation Equipment	2.a
Overhead Cranes & Hoists	2.b
Medical Devices	2.c
Fisheries & Seafood Processing	2.d
Construction	3
Trade, Transportation & Logistics	4
Information Technology	5

Tacoma-Pierce County Workforce Development Area Region 6

Cluster or Industry	Overall Rank*
National Security	
Information Technology/Computer Systems Design and Related Services	
Health Care	
Trade/Deep Sea Transportation and Warehousing Logistics	
Construction	
Food Manufacturing	
Aerospace Manufacturing	
Building Products Manufacturing	

**Overall rank was not assigned to clusters by the Tacoma-Pierce County WDA.*

Southwest Washington Workforce Development Area * Region 7

Cluster or Industry	Overall Rank
Health Care	1
Manufacturing	2
Wood Products	2.a
Paper Products	2.b
Machinery	2.c
Electronics	2.d
Food Product Manufacturing	2.e
High Tech/Information Technology	3
Electronics	3.a
Telecommunications	3.b
Professional & Technical Services	4
Utilities	5

Construction 6

North Central Workforce Development Area - Region 8

Cluster or Industry	Overall Rank
Agriculture	1
Food & Beverage Processing	2
Health Care	3
Chemical, Mineral and Metal Manufacturing	4
Electrical Utilities - Power Generation	5
Telecommunications	6
Gambling & Recreation	7

**South Central Workforce Development Area
Region 9**

Cluster or Industry	Overall Rank
Agriculture & Food Processing	1
Health Care	2
Manufacturing	3
Plastics and Wood Products Manufacturing	3.a
Fabricated and Metal Product Manufacturing	3.b
Clean Technology/Renewable Energy	4
Warehousing/Distribution	5
Support Activities for Transportation	5.a
Truck Transportation	5.b
Professional and Business Services	6
Construction	7

**Eastern Washington Partnership Workforce Development Area
Region 10**

Cluster or Industry	Overall Rank
Agriculture and Food Products/Transportation & Distribution Chain	1
Health Care	2
Renewable Energy	3
Depository Credit Organizations	4
Forest Products	5
Mining	6

**Benton-Franklin Workforce Development Area
Region 11**

Cluster or Industry	Overall Rank
Waste Management and Remediation	1
Health Care Services	2
Physical Science Research and Development	3
Agriculture and Food Processing	4
Advanced Manufacturing (To be specified)	5
Business Support Services	6

**Spokane Area Workforce Development Area
Region 12**

Cluster or Industry	Overall Rank
Health Services	1
Aerospace and Advanced Manufacturing, including: Plastics and rubber products Metal and machinery Computers and electronic products	2
Professional and Technical Services	3
Business Support Services	4
Energy, Waste Management, and Remediation	5
Finance and Insurance	6

Summary and Implications

Like the national economy, Washington’s economy was contracted during the Great Recession. Unemployment reached a high in February 2010 and has been decreasing since. Construction was hit particularly hard by the recession, but is finally showing signs of a sustained recovery.

Major recessions and depressions never recover to exactly the same economy that preceded the recession. Economic dislocations not only adjust the distribution of capital and labor, they disrupt structural barriers to change, reformulate economic thinking, and include or cause political change. The combination of the magnitude of this recession and the “post-industrial” globalized economy in which it occurred leave us with little relevant historical precedent on which to construct a definitive forecast of the specifics of the recovery. In addition, there are abnormally large numbers of workers with long disruptions of their employment history and or greatly diminished net worth, and an abnormally large deficit in the work experience of young workers trying to enter or establish themselves in the workforce during the last five years.

The rapid rate of technological change and the pressures of globalization, while perhaps somewhat slowed, have clearly not been eliminated, during either this recession or the milder one that preceded it.

The pace, shape, and distribution of the global recovery from this recession is unclear. Each nation’s choice of economic, trade, technology, industrial, immigration, environmental and education policies will affect the trajectory of the global economy and the place of each nation and its trading partners in that economy. The choices each nation implements, between austerity and stimulus, between protectionism and market opening, have not yet been determined by their political processes, may change over time and will have a major influence on the future economy. The risks of a major Eurozone disruption and the Chinese response to recent deceleration in their economy are only the most recent of what is likely to be an evolving list of uncertain major economic influences.

On top of those concerns is layered the potential change resulting from possible climate change events (regardless of cause). The direct economic consequences can be significant,

both through acute events like major storms and through more frequent chronic events like droughts. Beyond the direct effects, the global economy will be affected by demographic and political reactions to those events.

Washington's significant national and international economic roles put it in a relatively strong position in comparison to many other states in terms weathering negative economic developments. However, the same web of connections means that negative events elsewhere will definitely have consequences for Washington.

Some overall trends such as technological change, the increased importance of international trade, and the increasing premium on skills and flexibility in the labor force are almost certain to continue. However, which industries, labor markets and activities are likely to be most heavily impacted by those trends is much harder to forecast. As the past decades have demonstrated, these forces generate significant social stresses, this pattern is likely to continue. There will inevitably be responses through the political systems of states and nations to these stresses, responses that will have consequences for the economy.

Through this period, there will still be a need to pursue policies and practices that enable the workers to acquire skills that are in demand in the market place, systems of improved communication between employers, training providers and workers about the evolving demands for skills in the workforce, and planning and policies that support flexibility in both the capacity and the content of the education and training system to enable the Washington economy to respond effectively to circumstances that may change in relatively unpredictable ways.