



INDUSTRY SECTOR SNAPSHOT: Manufacturing

AUTHOR

Nicole Jones
Senior Policy Analyst
Seattle Jobs Initiative

INTRODUCTION

Seattle Jobs Initiative (SJI) is a workforce development organization whose mission is to create opportunities for individuals to support themselves and their families through living-wage careers. We strive to assist job seekers in obtaining the skills they need to enter into careers leading to living wages. Through our Career Pathways program, we are able to offer participants short- and longer-term training options at area community colleges. Career Pathways is concentrated in four industry sectors - *Healthcare, Automotive, Manufacturing, and Office Occupations*. This brief snapshot seeks to capture the career opportunities provided by the *Manufacturing* industry in King County to ensure that our policies and practices are in alignment with growing industry sectors that provide living wage job opportunities.

INDUSTRY EMPLOYMENT

The total employment estimates for King County in 2013 are displayed in **Chart 1**, below. The eleven major industry supersectors, as defined by the North American Industry Classification System (NAICS) are shown as well as the change in employment growth from 2012. The *Trade, Transportation, and Utilities* industry supersector supplied the most employment in King County with 225,982 jobs through November, 2013. The *Manufacturing* industry supersector falls in the middle in terms of employment share with 105,936 jobs or 9 percent of the total jobs. It, like all other industries, experienced positive growth since 2012 at a rate of 2.6 percent. For the first time during the recovery period after the Great Recession, all King County major industries are on the uptick.

Chart 1: Industry Employment - King County 2013

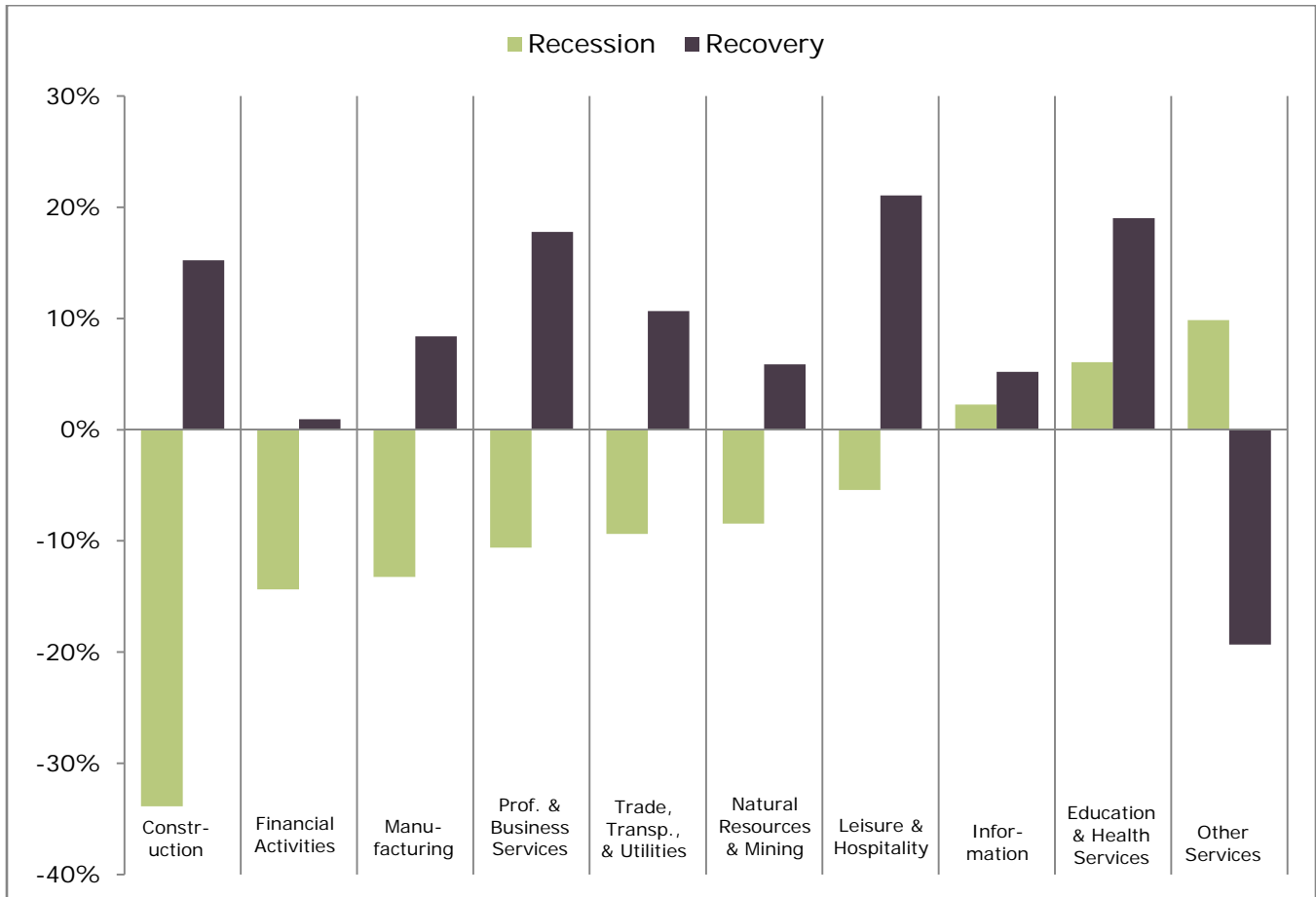
		Change from 2012
Trade, Transportation, and Utilities	225,982	4.2%
Professional and Business Services	198,382	3.1%
Government	167,936	1.5%
Educational and Health Services	149,009	2.9%
Leisure and Hospitality	120,255	4.6%
Manufacturing	105,936	2.6%
Information	82,827	2.2%
Financial Activities	69,409	1.7%
Construction	53,891	6.5%
Other Services	44,182	1.8%
Natural Resources and Mining	491	15.5%

Source: Washington State Employment Security Department, Washington Employment Estimates - Not Seasonally Adjusted

THE GREAT RECESSION

During the economic downturn that was the Great Recession in the US, many industries experienced sharp declines in employment. The Great Recession stretched from December of 2007 to June of 2009 in America.ⁱ However, for King County, the employment decline began in January of 2008 and hit its lowest point in January of 2010.ⁱⁱ **Chart 2**, below, displays the recession period according to this timeframe. The recovery period is identified as February, 2010 through June, 2013 (the most current employment data available). During the recession period, the *Manufacturing* industry's employment declined at a rate of 13.2 percent - nearly 11,000 jobs lost. Only Construction and Financial Activities experienced sharper declines in employment. While the *Manufacturing* industry has not fully recovered to its pre-recession employment levels, it has experienced an 8.4 percent gain in employment during the recovery period. *Manufacturing* in King County is on the road to recovery.

Chart 2: Recession and Recovery Industry Employment Growth - King County

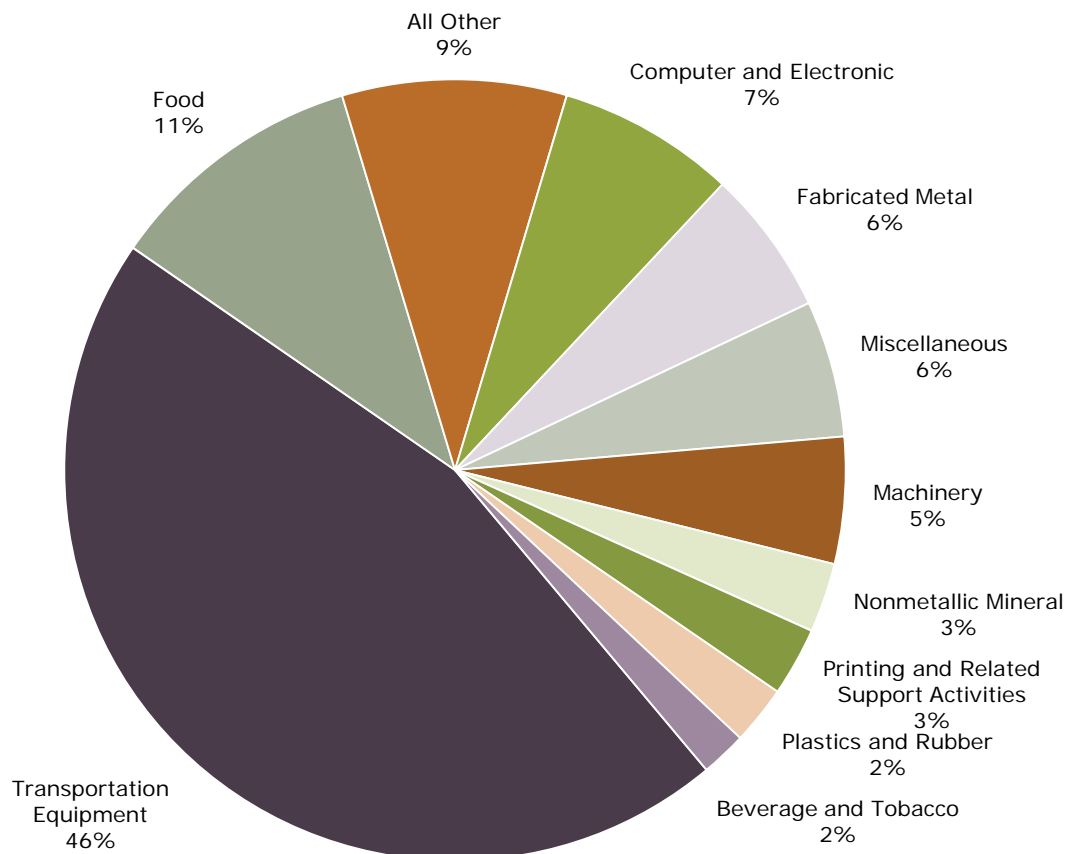


Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

MANUFACTURING INDUSTRY SUBSECTORS

The *Manufacturing* sector of King County is comprised of many subsectors. **Chart 3**, below, displays these subsectors with the “All Other” proportion representing Textile Mills and Product Mills, Apparel, Leather and Allied Product, Wood Product, Paper, Petroleum and Coal, Chemical, Primary Metal, Electrical Equipment, and Furniture Product Manufacturing subsectors. All of these subsectors together account for 9 percent of the total *Manufacturing* employment in King County. Transportation and Equipment Manufacturing employs almost half of the entire *Manufacturing* workforce with a 46 percent share of employment. This subsector produces equipment for transporting people and goods. Aerospace, motor vehicle, railroad, and ship and boat products are all manufactured in this industry.ⁱⁱⁱ

Chart 3: Manufacturing Subsector Share of Employment - King County 2013

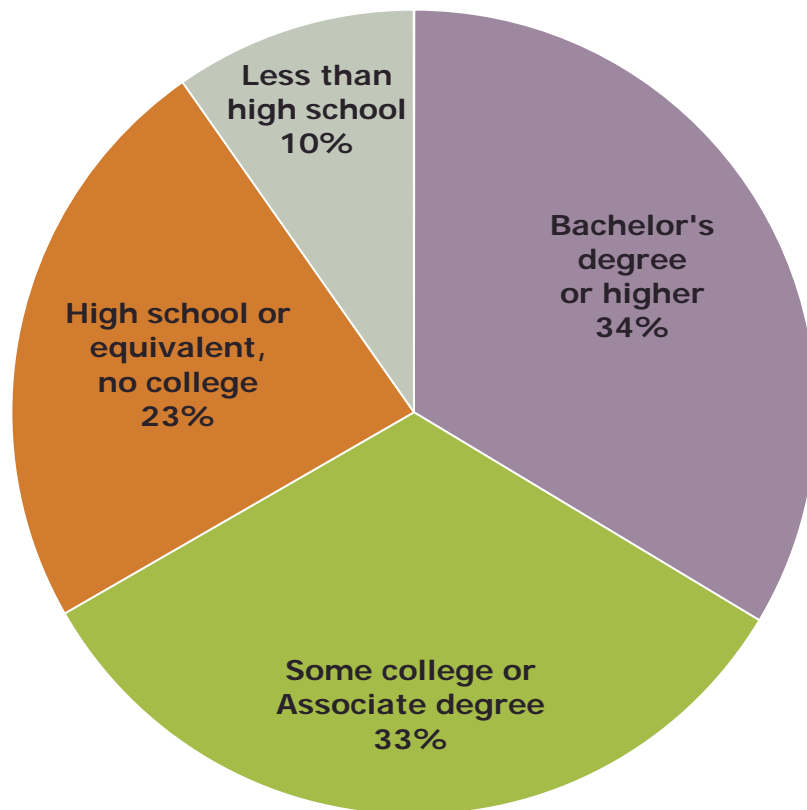


Source: EMSI 2013.4 Class of Worker

EDUCATIONAL ATTAINMENT

The *Manufacturing* sector in King County is one that is very diverse in terms of educational attainment. Roughly one-third of the workforce is made up of bachelor degree holders or higher, one-third is made up of workers with some college credentials or an associate's degree, and one-third is made up of workers with a high school diploma or less. Given that over 65 percent of the workforce possesses less than a bachelor's degree, there is ample opportunity for individuals with limited education to obtain employment in the King County *Manufacturing* sector. However, it is important to note that only 10 percent of the workforce holds less than a high school diploma. Like most other industries in King County, workers with less than a high school diploma are not often hired by employers. Workers must strive to obtain at least a high school diploma to gain entry into the *Manufacturing* workforce.

Chart 4: Manufacturing Educational Attainment - King County 2012



Source: US Census Bureau, Quarterly Workforce Indicators - Longitudinal-Employer Household Dynamics Program

MIDDLE-WAGE JOBS

In recent years, SJI has focused its labor market research on identifying middle-wage jobs in the Seattle area to corroborate its mission to create opportunities for individuals to support themselves and their families. Middle-wage jobs are defined as those that require some education and training beyond high school, but less than a bachelor's degree, and that pay at least \$17 per hour.^{iv} Because only one-third of the *Manufacturing* workforce in King County possesses education levels beyond an associate's degree, there are many opportunities for individuals with credentials below the baccalaureate level. **Table 1**, on the following page, displays the *Manufacturing* middle-wage jobs in King County. The table is broken down by educational attainment at the national level. In general, the King County workforce is more educated than the US workforce as a whole and therefore it is important to keep in mind that the actual attainment levels needed may be higher for certain occupations than is depicted in **Table 1**. The table also shows only those middle-wage jobs with projected annual openings through 2016 and their corresponding median hourly earnings.

Middle-wage jobs at the associate degree level are sparse within King County's *Manufacturing* sector. Only *Medical Equipment Repairers* and *Radio, Cellular, and Tower Equipment Installers and Repairers* have projected openings over the next three years. Together, these occupations employ fewer than 1,000 people, but do provide desirable wages. Middle-wage jobs at the postsecondary vocational award level are much more plentiful. *HVAC Installers, Aircraft Mechanics, Automotive Mechanics, and Welders* are all projected to have 80 or more openings annually through 2016. Additionally, all of these occupations combined provide nearly 10,000 jobs for the *Manufacturing* workforce and pay a median wage of over \$20 per hour in King County. Among those middle-wage jobs with education levels of a high school diploma combined with on-the-job training, many have a significant number of projected openings. However, only *Aircraft Structure, Surfaces, Rigging, and Systems Assemblers* are projected to have over 100 openings per year through 2016. This occupation provides the *Manufacturing* workforce of King County with over 6,000 jobs and incumbent workers typically earn \$24.22 per hour on the median. *Metal and Plastic Computer-Controlled Machine Tool Operators* also provide a decent amount of jobs with almost 1,000 and are expected to see about 40 openings annually through 2016. Furthermore, incumbent workers earn a median wage of \$21.13 per hour in King County.

The *Manufacturing* workforce of King County is one possessing abundant middle-wage jobs. While there are many opportunities for individuals with less than a bachelor's degree, those with a postsecondary vocational award will have better luck obtaining employment coupled with desirable wages. As the *Manufacturing* industry shifts to one that is more advanced in its production processes, the demand for specialized, technical training will continue to increase and low-skill jobs requiring a high school diploma or less will fade away.^v Thus, community colleges and vocational schools should focus their efforts on growing and continuously improving their *Manufacturing* programs.

Table 1: Manufacturing Middle-Wage Jobs - King County

Occupation	2013 Jobs	Annual Openings (2013-2016)	Median Hourly Earnings
Associate's Degree			
Medical Equipment Repairers	574	19	\$25.36
Radio, Cellular, and Tower Equipment Installers and Repairs	221	9	\$37.77
Postsecondary Vocational Award			
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	1,570	102	\$28.46
Aircraft Mechanics and Service Technicians	3,111	93	\$26.08
Automotive Service Technicians and Mechanics	3,303	84	\$21.01
Welders, Cutters, Solderers, and Brazers	1,888	83	\$21.95
Bus and Truck Mechanics and Diesel Engine Specialists	2,195	49	\$28.24
Avionics Technicians	691	17	\$29.14
Electrical and Electronics Repairers, Commercial and Industrial Equipment	554	14	\$36.66
Jewelers and Precious Stone and Metal Workers	208	5	\$22.67
Electrical and Electronics Installers and Repairers, Transportation Equipment	179	5	\$27.78
High School Diploma and On-the-Job Training			
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	6,280	141	\$24.22
Computer-Controlled Machine Tool Operators, Metal and Plastic	969	41	\$21.13
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	409	14	\$33.92
Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	116	12	\$17.53
Engine and Other Machine Assemblers	505	10	\$18.62
Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	238	9	\$21.67
Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	202	8	\$20.81
Tool and Die Makers	813	8	\$31.37
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	132	7	\$20.98
Layout Workers, Metal and Plastic	160	5	\$24.45
Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	229	5	\$22.45
Electromechanical Equipment Assemblers	72	5	\$20.73

Source: BLS Training Requirements 2010, EMSI 2013.4 Class of Worker

EDUCATION AND TRAINING PROGRAMS

SJI's Career Pathways program provides individuals the opportunity to take classes at area community and technical colleges that link to short- and long-term training credentials. Career Pathways focuses its offerings in four industry sectors: *Automotive, Manufacturing, Healthcare, and Office Occupations*. Upon completion of a Career Pathways program, individuals are equipped with the necessary skills to advance to a living-wage career. In combination with South Seattle Community College, SJI runs a cohort of students in the welding technology program, through which students can obtain a short-term certificate or continue on to longer-term welding trainings.

The *Manufacturing* programs in King County are mainly concentrated in welding and machining technologies. Using the Integrated Postsecondary Education System's (IPEDS) data, **Table 2** was constructed to show the number of students completing *Manufacturing* education and training programs at local community colleges. For Welding Technology, short-term certificates of less than one year are the most common type of certificate awarded. Green River Community College and South Seattle Community College both offer this type of certificate and produce around 100 awards per year. Lake Washington Institute of Technology and Renton Technical College both offer longer term certificates in welding, but to a much smaller pool of students. There are not many certificates awarded in Machining Technology in King County. Again, the most popular certificate awarded is a short-term certificate of less than one year. Green River is the only institution in King County to offer a machining short-term certificate. Given that only a high school diploma and on-the-job training is currently needed for most machining jobs, the low number of certificates awarded is not surprising. However, as the country continues to shift to more specialized training in advanced *Manufacturing*, a focus in education and training programs in Machining Technology like Green River's are worth exploring in the near future.

Table 2: Manufacturing Education and Training Programs - King County 2012

Institution	Award Level	2012 Completions
Welding Technology/Welder		
Green River Community College	Associate's degree	13
	Award of less than 1 academic year	95
Lake Washington Institute of Technology	Associate's degree	14
	Award of at least 1 but less than 2 academic years	5
Renton Technical College	Associate's degree	1
	Award of at least 1 but less than 2 academic years	13
Seattle Community College-South Campus	Associate's degree	5
	Award of less than 1 academic year	115
Machine Tool Technology/Machinist		
Green River Community College	Associate's degree	4
	Award of less than 1 academic year	19
Lake Washington Institute of Technology	Associate's degree	2
	Award of at least 1 but less than 2 academic years	2
Renton Technical College	Associate's degree	2
	Award of at least 2 but less than 4 academic years	8
Shoreline Community College	Associate's degree	2
	Award of at least 1 but less than 2 academic years	5
Cabinetmaking and Millwork		
Seattle Community College-Central Campus	Associate's degree	14

Source: EMSI 2013.4 Class of Worker

REGIONAL BUSINESSES

In King County alone, there are thousands of *Manufacturing* employers ranging from *Motor Vehicle Manufacturing* to *Wineries* and *Breweries*. **Table 3**, below, displays some of the top performing regional businesses within the sector in terms of annual sales. It then further deconstructs the employers by the number of employees employed locally at their respective businesses. For those employers with over 500 employees, PACCAR boasts the most sales. PACCAR is a semi-truck *Manufacturing* company whose corporate headquarters is located in Bellevue. For the next tier of employers with 100 to 500 employees, The Boeing Company located in Renton has the highest sales. Although Boeing has many branches that total well over 500 employees, this specific branch employs around 300 workers. And for mid-size employers of 50 to 100 employees, Weyerhaeuser boasts the highest sales. Weyerhaeuser is one of the world's largest suppliers of timberland and manufactures wood and cellulose fiber products. And lastly, Information Systems Support is the top small *Manufacturing* employer with fewer than 50 employees. They specialize in software reproducing and are located in Tukwila.

Table 3: Top Regional Businesses - King County

Business Name	Address	City
More than 500 Employees		
Paccar Inc	777 106th Ave Ne	Bellevue
Cray Inc.	901 5th Ave Ste 1000	Seattle
Ste. Michelle Wine Estates Ltd.	14111 Ne 145th St	Woodinville
Pac National	15435 Ne 92nd St	Redmond
Genie Holdings, Inc	18340 Ne 76th St	Redmond
Between 100 and 500 Employees		
The Boeing Company	500 Naches Ave Sw	Renton
Evergreen Pharmaceutical, Inc.	12220 113th Ave Ne Ste 101	Kirkland
Hewlett-packard	14475 Ne 24th St	Bellevue
West Consultants Inc	2101 4th Ave	Seattle
Alliance Packaging Llc	1000 Sw 43rd St	Renton
Between 50 and 100 Employees		
Weyerhaeuser Company	33663 Weyerhaeuser Way S	Federal Way
Esterline Technologies Corporation	500 108th Ave Ne	Bellevue
Pc Specialists, Inc	1606 148th Ave Se Ste 100	Bellevue
Trident Seafoods Corporation	5303 Shilshole Ave Nw	Seattle
American Seafoods, Lp	2025 1st Ave Ste 900	Seattle
Less than 50 Employees		
Information Systems Support	1101 Andover Park W Ste 101	Tukwila
The Derby Cycle Corporation	22710 72nd Ave S	Kent
Iris Window Coverings Nw, Inc	505 S 4th St	Renton
Dendreon Corporation	1301 2nd Ave Ste 3200	Seattle
Cardinal Industrial Finishes	19230 144th Ave Ne Ste A	Woodinville

Source: EMSI Equifax Business-Level Data

CONCLUSION

While King County's *Manufacturing* industry has yet to fully recover to its pre-recession levels, it has made significant gains in employment since the end of the Great Recession. It was one of the industries hit hardest during the recession, but has since experienced job growth of over 8 percent. The *Manufacturing* workforce is very diverse in terms of the educational attainment of its incumbent workers. As long as an individual possesses a high school diploma, there is opportunity for employment. Moreover, middle-wage jobs are plentiful in *Manufacturing*, specifically for individuals with a postsecondary vocational award. While there are opportunities for individuals with a high school diploma, there is an abundance of middle-wage jobs for those with a postsecondary vocational award and those jobs are expected to grow into the foreseeable future. Ultimately, the *Manufacturing* industry of King County provides low-skill, low-income individuals with opportunities for well-paying careers.

NOTES

ⁱ Catherine Rampell, "The Recession Has (Officially) Ended," *New York Times*, September 20, 2010, <http://economix.blogs.nytimes.com/2010/09/20/the-recession-has-officially-ended/>.

ⁱⁱ Bureau of Labor Statistics, "Quarterly Census of Employment and Wages: Total Covered Employment," US Department of Labor, Bureau of Labor Statistics, accessed on December 10, 2013, <http://www.bls.gov/cew/>.

ⁱⁱⁱ Bureau of Labor Statistics, "Industries at a Glance: Transportation Equipment *Manufacturing*," US Department of Labor, Bureau of Labor Statistics, accessed on December 13, 2013, <http://www.bls.gov/iag/tgs/iag336.htm>.

^{iv} Mark Gardner, Juliet Scarpa, and Paul Sommers, "Skills Required: Preparing Puget Sound for Tomorrow's Middle-Wage Jobs," (Middle-Wage Jobs Reports, Seattle, Seattle Jobs Initiative, 2008), 4.

^v Christopher Gergen and Stephen Martin, "Workforce training is critical to reinventing *Manufacturing* in NC," *News & Observer*, November 9, 2013, <http://www.newsobserver.com/2013/11/09/3349677/workforce-training-is-critical.html>.