



SPOKANE  
WORKFORCE  
COUNCIL

JUNE 2018

IN PARTNERSHIP WITH:  
JPMORGAN CHASE & CO.

# Workforce Roadmap

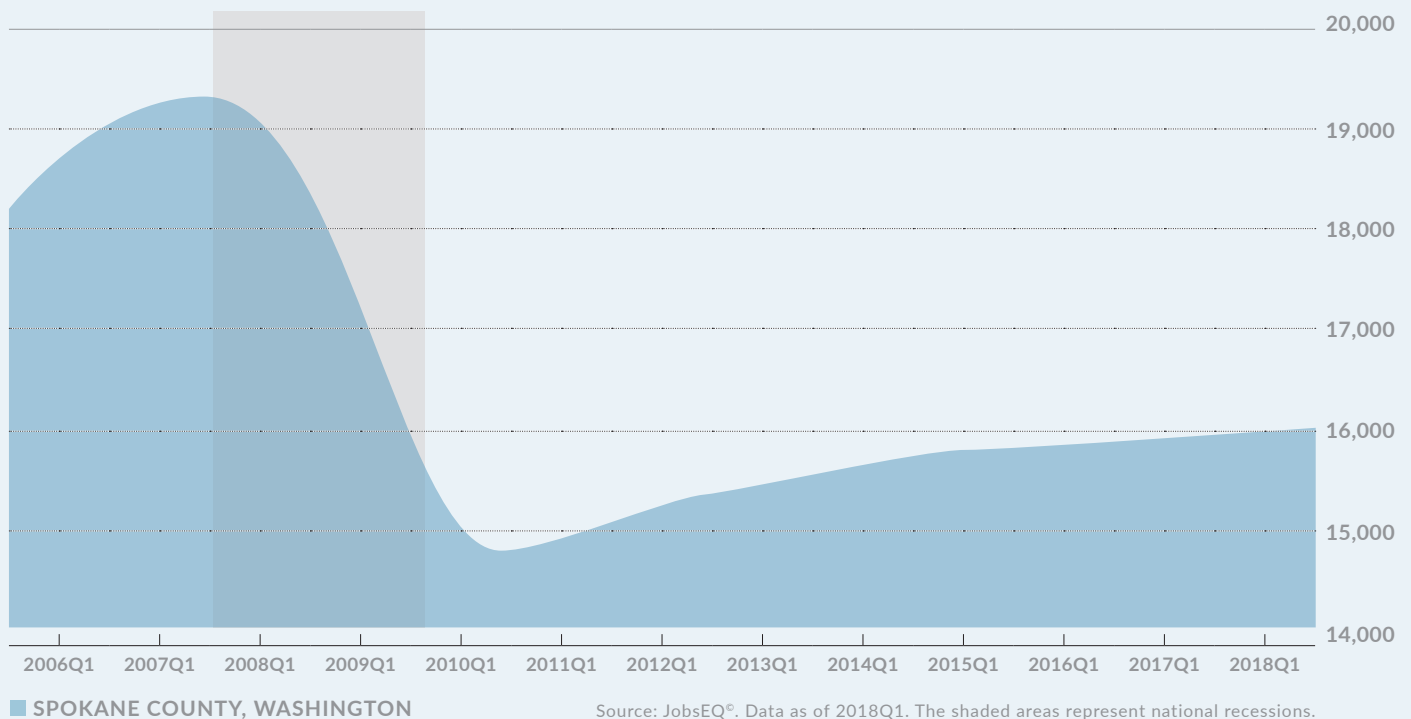
MANUFACTURING IN SPOKANE, WASHINGTON



# Manufacturing Industry Overview

In Spokane County, Washington, 15,818 people are employed in the manufacturing industry, which is equivalent to 6.8% of total employment in the county (233,465). This total includes all workers for manufacturing firms, not just production occupations. Over the last five years, 490 new jobs have been added to the total employment in the manufacturing industry, although current employment has not returned to pre-Great Recession levels, which peaked at 19,185 in 2007.

Employment for Spokane County, Washington, Four-Quarter Moving Average



Manufacturing is considered one of five Targeted Industries by the Spokane Workforce Council. Targeted industries typically have higher than average wages, numerous entry points for workers with an Associate’s Degree or lower in education, have a number of projected job openings over the next few years, and are anchors to the regional economy.

The manufacturing industry in Spokane County has an average wage of \$52,322, as compared to the overall Spokane County average wage of \$45,890. The manufacturing industry is also expected to experience approximately 4,500 total job openings over the next three years, which includes projected new job growth, transfers and churn across all occupations, and job openings due to retirements.

**SPOKANE COUNTY  
AVERAGE WAGES**

**\$45,890**



OVERALL COUNTY AVERAGE

**\$52,322**



MANUFACTURING INDUSTRY

**SOURCES:** JobsEQ® by Chmura Economics and Analytics. Labor market data as of 2018Q1 unless noted. Labor Insights by Burning Glass. Real time job postings data ranges noted in text. Integrated Postsecondary Education Data System (IPEDS). Fall 2016 education award data.

# Industry Subsectors

The manufacturing industry is made up of a wide variety of subsectors, which include food, wood products, metal products, furniture, and equipment manufacturing. Below is the complete list of employment by subsector in the manufacturing industry in Spokane County sorted by NAICS code:

Industry Snapshot of Manufacturing in Spokane County, Washington, 2018Q1		CURRENT			5-YEAR HISTORY		3-YEAR FORECAST				
		Four Quarters Ending with 2018Q1			Total Change	AvgAnn% ChginEpl	Separations (Approximate)				Growth
		Empl	AvgAnn Wages	LQ	Empl	Region	Total New Demand	Exits	Transfers	Empl	AvgAnn Rate
NAICS	Industry										
311	Food Manufacturing	1,607	\$40,938	0.65	284	4.0%	562	226	349	-14	-0.03%
312	Beverage and Tobacco Product Manufacturing	480	\$37,081	1.18	247	15.5%	173	65	103	5	0.3%
313	Textile Mills	2	\$10,490	0.01	0	-4.3%	1	0	0	0	0.5%
314	Textile Product Mills	185	\$39,004	1.05	-13	-1.3%	47	26	33	-12	-2.3%
315	Apparel Manufacturing	141	\$24,982	0.67	10	1.6%	30	21	23	-14	-3.5%
316	Leather and Allied Product Manufacturing	141	\$32,651	2.85	-10	-1.3%	39	19	25	-6	-1.4%
321	Wood Product Manufacturing	364	\$33,657	0.58	77	4.8%	115	45	75	-5	-0.4%
322	Paper Manufacturing	366	\$56,611	0.66	36	2.1%	101	42	73	-13	-1.2%
323	Printing and Related Support Activities	426	\$33,360	.061	-52	-2.3%	114	55	81	-22	-1.8%
324	Petroleum and Coal Products Manufacturing	31	\$71,326	0.18	-11	-5.7%	9	3	6	0	-0.5%
325	Chemical Manufacturing	592	\$50,902	0.47	10	0.3%	166	60	114	-8	-0.4%
326	Plastics and Rubber Products Manufacturing	1,096	\$42,361	1.01	226	4.7%	315	124	224	-33	-1.1%
327	Nonmetallic Mineral Product Manufacturing	947	\$55,663	1.50	137	3.2%	276	110	187	-22	-0.08%
331	Primary Metal Manufacturing	1,824	\$65,256	3.24	-97	-1.0%	449	190	357	-99	-1.8%
332	Fabricated Metal Product Manufacturing	2,523	\$47,051	1.15	-32	-0.3%	746	270	508	-33	-0.4%
333	Machinery Manufacturing	1,350	\$60,141	0.82	-33	-0.5%	353	140	257	-44	-1.1%
334	Computer and Electronic Product Manufacturing	1,081	\$89,159	0.68	-191	-3.2%	229	101	182	-54	-1.7%
335	Electrical Equipment, Appliance, and Component Manufacturing	111	\$65,972	0.19	-7	-1.2%	31	13	21	-3	-0.8%
336	Transportation Equipment Manufacturing	1,116	\$57,421	0.44	-159	2.6%	317	118	214	-14	-0.4%
337	Furniture and Related Product Manufacturing	956	\$41,385	1.56	141	3.2%	296	122	180	-6	-0.2%
339	Miscellaneous Manufacturing	477	\$31,746	0.48	-72	-2.8%	140	55	90	-6	-0.4%
<b>31</b>	<b>Total Manufacturing</b>	15,818	\$52,322	0.82	490	0.6%	4,502	1,810	3,086	-395	-0.8
	<b>Total - All Industries</b>	233,465	\$45,890	1.00	19,854	1.8%	81,549	33,040	44,050	4,459	0.6%

The location quotient (LQ) is a measure of the relative size of the selected region's industry employment compared to the national average. Eight of Spokane's manufacturing subsectors exceed the national average of employment by proportion, with Primary Metal Manufacturing at the highest location quotient of 3.24. LQ's that are above 1.25 are considered to be a competitive advantage for a region, and better allows for industry clustering to occur.

The largest subsector by total employment is Fabricated Metal Product Manufacturing, with 2,523 employed in Spokane County.

SOURCE: JobsEQ®, Data as of 2018Q1

# Industry/Occupation Mix

Below are the top 25 detailed occupations by total employment in the manufacturing industry. The total number employed for each occupation is estimated based on staffing patterns within the industry. Totals only include employment by manufacturing firms in Spokane County and does not include additional employment from other industries.

Industry/Occupation Mix for Manufacturing in Spokane County, Washington		CURRENT		3-YEAR DEMAND			
SOC	Title	Empl	Regional Average Wage	Labor Exits	Occ Transfers	Growth	Total
51-2092	Team Assemblers	817	\$32,900	96	160	-55	201
51-1011	First-Line Supervisors of Production and Operating Workers	655	\$60,100	61	123	-10	174
51-4041	Machinists	567	\$40,400	59	109	-5	163
51-4121	Welders, Cutters, Solderers, and Brazers	401	\$40,100	32	93	-2	123
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	368	\$29,000	54	93	-5	142
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technial and Scientific Products	352	\$59,700	34	69	-5	98
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	349	\$46,300	40	74	-22	91
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	298	\$40,400	30	62	-19	73
53-3032	Heavy and Tractor-Trailer Truck Drivers	281	\$42,800	35	52	-3	84
11-1021	General and Operations Managers	279	\$103,600	17	49	-5	61
51-9198	Helpers—Production Workers	264	\$28,300	42	73	-4	110
49-9014	Industrial Machinery Mechanics	258	\$47,600	26	40	0	67
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	252	\$33,600	26	54	-12	68
43-5071	Shipping, Receiving, and Traffic Clerks	243	\$35,500	27	42	-8	61
49-9071	Maintenance and Repair Workers, General	233	\$39,500	28	38	-4	61
53-7064	Packers and Packagers, Hand	231	\$28,400	46	55	-4	97
51-7011	Cabinetmakers and Bench Carpenters	208	\$39,500	29	34	1	65
51-9111	Packaging and Filling Machine Operators and Tenders	203	\$36,200	28	40	-1	67
43-9061	Office Clerks, General	201	\$33,700	33	32	-9	56
51-6031	Sewing Machine Operators	177	\$33,000	28	23	-12	39
17-2112	Industrial Engineers	175	\$77,300	12	22	1	35
43-4051	Customer Service Representatives	175	\$33,800	26	38	-4	59
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	174	\$42,800	14	36	-2	48
51-3092	Food Batchmakers	165	\$32,500	27	41	-1	67
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	161	\$55,700	14	25	-7	31

SOURCE: JobsEQ®, Data as of 2018Q1

# Production Occupations

Traditionally the manufacturing industry is associated with Production Occupations. Although many production workers can be found in different industries, the majority are in manufacturing. In total, 11,591 people are employed in production occupations in Spokane County. Below are the top 25 production occupations by total employment, across all industries:

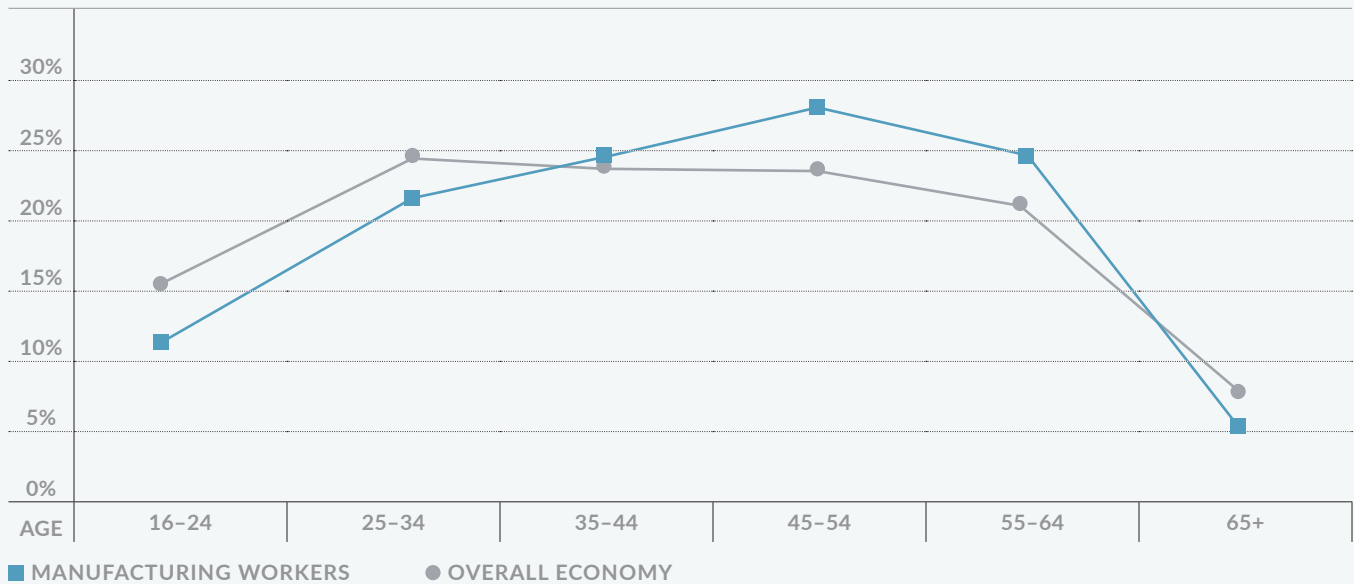
Occupation Snapshot of Production Occupations in Spokane County, Washington, 2018Q1		CURRENT			5-YEAR HISTORY		3-YEAR FORECAST				
		Four Quarters Ending with 2018Q1			Total Change	Avg Ann% ChginEpl	Separations (Approximate)			Growth	
		Empl	AvgAnn Wages	LQ	Empl	Region	Total New De-mand	Exits	Transfers	Empl	AvgAnn Rate
SOC	Title										
51-2092	Team Assemblers	1,113	\$32,900	.065	39	0.7%	293	132	222	-62	-1.9%
51-1011	First-Line Supervisors of Production and Operating Workers	895	\$60,100	0.95	40	0.9%	247	85	170	-7	-0.3%
51-4041	Machinists	671	\$40,400	1.12	28	0.8%	196	71	130	-3	-0.2%
51-4121	Welders, Cutters, Solderers, and Brazers	185	\$39,004	1.05	-13	-1.3%	47	26	33	-12	-2.3%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	525	\$46,300	0.66	3	0.1%	156	63	115	-21	-1.4%
51-9198	Helpers—Production Workers	379	\$28,300	0.60	35	2.0%	177	62	110	5	0.4%
51-.011	Bakers	356	\$29,100	1.23	57	3.5%	146	68	79	-2	-0.1%
51-6011	Laundry and Dry-Cleaning Workers	313	\$25,700	0.95	24	1.6%	125	63	63	-1	-0.1%
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	307	\$40,400	1.39	15	1.0%	76	31	64	-19	-2.1%
51-9199	Production Workers, All Other	304	\$32,300	0.77	30	2.1%	102	36	67	0	0.0%
59-9111	Packaging and Filling Machine Operators and Tenders	294	0.\$36,200	0.50	52	4.0%	100	42	58	1	0.1%
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	279	\$33,600	0.96	-2	-0.1%	77	28	60	-12	-1.4%
51-5112	Printing Press Operators	224	\$38,300	0.85	-14	-1.2%	59	25	42	-8	-1.2%
51-6031	Sewing Machine Operators	224	\$33,000	1.00	2	0.2%	56	36	30	-11	-1.6%
51-7011	Cabinetmakers and Bench Carpenters	223	\$39,500	1.35	44	4.5%	69	32	37	1	0.1%
51-3092	Food Batchmakers	206	\$32,500	0.88	36	3.9%	86	34	52	0	0.0%
51-3021	Butchers and Meat Cutters	201	\$40,000	1.00	19	2.0%	74	27	46	1	0.1%
51-2041	Structural Metal Fabricators and Fitters	190	\$52,500	1.62	-9	-0.9%	47	18	38	-10	-1.8%
51-2022	Electrical and Electronic Equipment Assemblers	184	\$29,800	0.57	-21	-2.2%	42	25	32	-15	-2.8%
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	177	\$42,800	0.82	0	0.1%	49	15	37	-2	-0.4%
51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	160	\$43,900	1.46	16	2.1%	35	11	33	-10	-2.0%
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	160	\$34,200	1.67	30	4.2%	51	18	33	0	0.0%
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	152	\$32,700	1.31	-7	-0.9%	37	15	30	-7	-1.7%
51-9121	Coating, Painting, and Spraying Machine Setter Operators, and Tenders	146	\$32,900	1.06	8	1.2%	44	13	32	-1	-0.3%
51-2099	Assemblers and Fabricators, All Other	108	\$30,700	0.31	6	1.1%	30	13	22	-5	-1.5%
51-0000	Production Occupations	11,591	\$39,300	0.82	521	0.9%	3,500	1,382	2,368	-250	-0.7%
00-000	<b>Total - All Occupations</b>	<b>233,465</b>	<b>\$47,100</b>	<b>1.00</b>	<b>19,854</b>	<b>1.8%</b>	<b>83,214</b>	<b>34,220</b>	<b>44,536</b>	<b>4,459</b>	<b>0.6%</b>

# Demographics

The manufacturing industry in Spokane has a higher concentration of older workers, and a significantly higher concentration of male workers, compared to the overall Spokane economy. The largest concentration of manufacturing workers is in the 45-54 age group, which represents more than one out of every four manufacturing workers.

## Age

AGE GROUPS BY TOTAL EMPLOYMENT IN MANUFACTURING INDUSTRY:

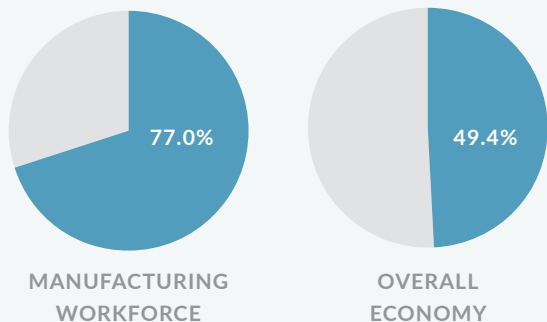


## Gender

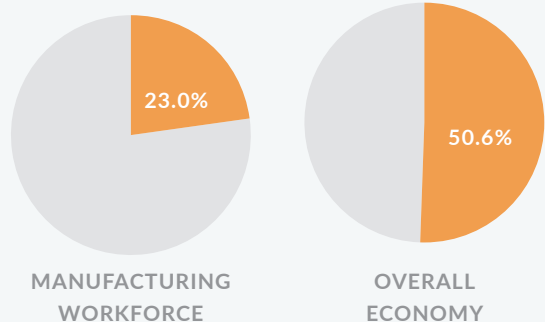
GENDER BY TOTAL EMPLOYMENT IN THE MANUFACTURING INDUSTRY

Males represent 77.0% of total employment in industry (49.4% in overall economy).  
 Females represent 23.0% of total employment in industry (50.6% in overall economy).

### MALES



### FEMALES



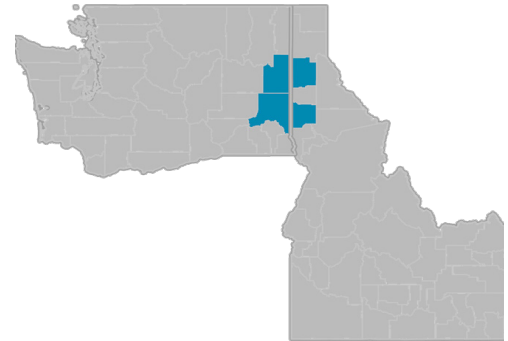
Demographics data are for the four quarters ending 2016Q1

# Regional Education Awards

Spokane County is home to three universities and two community colleges: Eastern Washington University, Gonzaga University, Whitworth University, Spokane Community College, and Spokane Falls Community College. 38,967 total students attend these schools. Washington State University and University of Washington also have medical schools located in Spokane.

In the greater region, North Idaho College in Coeur d'Alene, ID has 5,543 students, and Washington State University and University of Idaho combine for 41,058 total students.

The Spokane region produces many academic awards that are related to the manufacturing industry. Below are the total awards issued by degree level in the 2015-16 school year, in select fields relevant to manufacturing, across all colleges and universities in Spokane, Whitman, Kootenai (ID), and Latah (ID) Counties:



Title	AA/Cert	BA	Postgraduate	TOTAL
Mechanical Engineering	6	443	50	499
Electrical Engineering	0	219	52	271
Computer Science	5	160	31	196
Operations Management	0	157	0	157
Machine Tool Technology	39	0	0	39
Airframe Maintenance Tech.	37	0	0	37
Welding Technology	35	0	0	35
Modeling and Simulation	0	30	0	30
Computer Programming, Apps.	29	0	0	29
Computer Engineering	0	16	3	19
Aircraft Powerplant Tech.	16	0	0	16
Industrial Engineering	0	0	9	9

# Online Job Postings

Over the past year (June 1, 2017 – May 31, 2018), approximately 1,601 de-duplicated job openings were posted online in Spokane County by manufacturing firms. Below are a breakdowns of those postings by top 10 occupations, education required, and top skills asked for in the job description:

Occupations by Total Postings	Minimum Advertised Education
Sales Representative (124 online postings)	High School Degree (48.78% of postings)
Laborer / Warehouse Worker (90)	Associate's Degree (4.8%)
Production Worker (52)	Bachelor's Degree (44.76%)
Mechanical Engineer (40)	Master's Degree (0.98%)
Customer Service Representative (39)	Doctoral Degree (0.69%)
Business Development / Sales Manager (36)	
Manufacturing Engineer (35)	
Merchandiser / Ad Set Associate (32)	
Tractor-Trailer Truck Driver (29)	
Accountant (28)	

Baseline Skills	Specialized Skills
Communication Skills (522 postings)	Sales (310)
Organizational Skills (310)	Customer Service (271)
Microsoft Excel (285)	Repair (241)
Problem Solving (247)	Scheduling (198)
Microsoft office (241)	Budgeting (167)
Teamwork / Collaboration (240)	Forklift Operation (159)
Computer Literacy (234)	Quality Assurance and Control (131)
Planning (222)	Project Management (130)
Detail-Oriented (221)	Machinery (122)
Building Effective Relationships (176)	Customer Contact (105)

**48.78%**

REQUIRE A HIGH SCHOOL DEGREE

The highest number of postings for an occupation:

**124**

SALES REPRESENTATIVE POSTINGS

**522**

MANUFACTURING OCCUPATION POSTINGS REQUEST COMMUNICATIONS SKILLS



# Manufacturing Employer Focus Group

In early June 2018, the Spokane Workforce Council hosted a manufacturing employer focus group to discuss local workforce challenges and solutions for the industry. A number of small to mid-sized manufacturing firms took part in the workforce discussion. Below are some key findings and points of discussion from the focus group:

- Age of the existing workforce and general retention are major concerns.
- Lack of females and youth in the workforce pipeline is a concern.
- Staffing firms are needed to fill many roles, and typically cost around \$10,000 for a successful skilled worker job placement.
- Trade schools have focused approach on specific occupations and skills, but employers want cross-discipline skills and abilities.
- Industry-specific certifications are not as important as a willingness to learn skills.
- Some area firms have created an internal training center where all levels of employees can expand their skillsets after work hours. OJT (on-the-job training) for new hires is also part of the training center. This training investment has led to better retention and loyalty in workforce.
- Other firms indicated an internal training center would be an ideal addition to their operations, but may be too expensive.
- Lack of awareness from general public of what manufacturing jobs actually are may be limiting workforce pipeline. Manufacturing is typically thought of as a dirty and mindless job, which is not representative of most modern manufacturers.
- Rural areas around Spokane offer a pipeline of workers who may be more inclined to work in manufacturing.
- All firms that work on federal contracts indicated that they feel they are required to conduct pre-employment drug screenings and random drug tests. This has limited available workforce, especially due to legalized recreational marijuana use in Washington State.
- Contract manufacturing generally pays a lower wage and has a more difficult time hiring and retaining talent.
- Basic math skills have been a recurring issue with some workers, of all ages.

# Looking Ahead

New job growth in the manufacturing industry in Spokane, Washington has remained fairly flat for the last three years, after regaining some of the jobs lost during the Great Recession. Although total employment growth has slowed, the manufacturing industry represents the fourth largest GDP contributing industry in Spokane County, responsible for about \$1,831,847,000 in GDP in 2016.

Job openings in the industry are being driven by retirements in the workforce and general turnover within occupations. This trend is projected to create approximately 1,500 annual job openings across all manufacturing firms in Spokane County. A number of these projected job openings are not just in traditional production occupations, but also in sales and management roles.

The manufacturing industry is going through many changes. With the automation of many work processes, the skills and abilities required in the workforce are changing. Firms are looking for workers who have multi-disciplinary skills and the ability to learn new skills on the job. Firms have experienced successes in hosting internal skills training programs to on-board and up-skill existing workforce, which has led to a strong return on investment in both higher retention rates and higher-performing workers.

## THE MANUFACTURING INDUSTRY At-A-Glance

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**Fourth largest  
GDP contributing  
industry**



**Projected 1,500 annual job openings  
across all manufacturing firms in  
Spokane County**



**Firms are looking for workers who  
have multi-disciplinary skills and the  
ability to learn new skills on the job.**

The current manufacturing workforce is older than the Spokane workforce as a whole, and the manufacturing industry has a significant concentration of male workers (77%) across all occupations. To address projected job openings, specifically targeting recruitment to younger workers and female workers may help with potential occupation shortages. This may require adapting existing hiring and on-boarding policies.

The on-going issue of pre-employment drug screening and random drug tests is limiting potential workforce availability, especially in Washington State which has legalized recreational marijuana. A number of firms indicated that they did not want to drug test potential candidates for employment, but felt as a federal contractor, they were required to do so. Exploring options that adhere to federal drug free workplace standards while not limiting potential employment pools, such as only utilizing reasonable suspicion drug testing, may be a solution for local manufacturing firms.

Building a robust workforce will be necessary to fulfill broad occupational demand from existing local firms, as well as to help attract new businesses to locate in the area. Local workforce is the primary consideration of economic development efforts, and as Spokane becomes more recognized as an attractive place to live and work, it is vital that the whole workforce development system is aligned around efforts to ensure that in-demand skills and abilities are built into the labor force.

**77%**  
**of workers in the  
manufacturing  
industry are male**



**The on-going issue of pre-employment drug screening and random drug tests is limiting potential workforce availability**

As Spokane becomes more recognized as an attractive place to live and work, it is vital that the whole workforce development system is aligned around efforts to ensure that in-demand skills and abilities are built into the labor force.



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