



MSP Sector Analysis Manufacturing

Surplus and Gap Overview

High Retirement Rates, Low Training Numbers

Multiple career pathways are needed in Manufacturing. Over 25% of workers in the industry are over 55 years of age, and the majority of workers identify as white male. The Manufacturing industry has grown more than anticipated; employment in manufacturing roles rose an average of 1.7% each year since 2014, compared to 1.3% nationally. Sector unemployment sits at approximately 4.2%, due in large part to having less than one jobseeker per vacancy and record numbers of Manufacturing Industry vacancies (6,871) in Q2 of 2017. Employers will need to train workers to fill roles being lost to retirements and increase automation.

Top Occupations in Demand in the 7-County Metro

Top Manufacturing Job Titles Used by Employers	Manufacturing Occupations (sorted by job posting volume)	Employment Q3 2017	% Employment in Industry	Job Postings Available Q3 2017	Share Postings Requiring an AA or Less	Est. 3-Year Annual Growth	Est. 3-Year Supply Gap (or Surplus)	Mean Wage Q3 2017
Quality Engineer, Supplier Performance Engineer, Manufacturing/Process Engineer	Industrial Engineers	5,721	71%	4,312	4%	0.7%	99	\$93,200
Production Supervisors, Production Manager, Operations Supervisor, Kitting Lead	First-Line Supervisors of Production and Operating Workers	6,733	76%	2,866	82%	-0.1%	(42)	\$64,100
Material Handler, Package Handler, Order Picker/Packer	Laborers and Freight, Stock, and Material Movers, Hand	29,386	10%	1,714	98%	0.8%	(753)	\$32,600
Mechanical Design Engineer, Project Engineer	Mechanical Engineers	4,572	55%	1,197	13%	0.6%	81	\$85,400
Electrical Design Engineer, Project Test Engineer, Electrical Controls Engineer	Electrical Engineers	3,005	46%	995	6%	0.5%	48	\$95,600
Quality Technician, Manufacturing Technician, Process Technician	Industrial Engineering Technicians	1,591	84%	875	87%	0.0%	(6)	\$55,600
CAD Technician, Electronic Technician, Engineering Technician	Electrical and Electronic Engineering Technicians	1,837	56%	830	87%	-0.1%	(9)	\$62,700
Production Worker, Laborer, Production Associate	Helpers--Production Workers	5,912	57%	703	99%	1.3%	(144)	\$26,100
Electrical Assembler, General Assembly - Soldering, Machine Builder - Electrical	Electrical and Electronic Equipment Assemblers	5,808	90%	675	100%	-2.5%	(312)	\$34,300
CNC Machinist, Mill Machinist, Milling & Grinding Machinist	Machinists	6,865	88%	646	99%	0.1%	(36)	\$50,200
Chemical Receiving Operator, Dimensional Technician	Inspectors, Testers, Sorters, Samplers, and Weighers	6,269	65%	449	98%	-1.2%	(270)	\$41,600
Maintenance Mechanic, Maintenance Machinist, Rotating Equipment Mechanic	Industrial Machinery Mechanics	3,322	57%	441	94%	0.6%	39	\$57,700
Total (includes 105 other occupations)		196,729 (114,234 in industry)	58%	22,120 (9,379 in industry)	94%	-0.5%	(2,910)	\$46,800

Top Employers Recruiting Candidates at all Levels

Staffing & Temp/Job Ads

- Entegee (598)
- Aerotek (404)
- Express Empl. Pro. (395)
- Pro Staff (330)
- Volt Workforce Sol. (212)

Direct Employers/Job Ads

- Honeywell (100)
- Medtronic (71)
- Andersen Corporation (68)
- Emerson Process Mgmt. (59)
- BTD Manufacturing (57)

Top Certifications Sought

- Petroleum-Oriented Safety Training
- Accreditation from the Board of Engineering and Technology (ABET)
- Manager of Quality
- OSHA
- 6 Sigma Green Belt

Top Hard Skills Sought

- Medical Devices
- Quality Systems
- Quality Assurance
- Computer-Aided Design
- Forklifts

Industry Detail

Industry	Current			Historical				3-Year Forecast		
	Employment Q3 2017	Avg. Annual Wages	Location Quotient	Total 3-Year Employment Change	7-County Metro	Minnesota	USA	Total Approx Sep Demand	Total Growth Demand	Est. Avg. Annual Growth
Food & Product Manufacturing	60,658	\$65,439	0.96	2,624	1.5%	1.5%	1.5%	19,748	-1,525	-0.8%
Fabrication	42,243	\$70,454	1.40	751	0.6%	0.4%	-1.0%	12,809	-585	-0.5%
Assembly	41,840	\$98,902	1.12	733	0.6%	-0.3%	1.0%	11,265	-1,266	-1.0%
Medical Device Manufacturing	17,986	\$90,220	2.48	1,610	3.2%	3.1%	0.9%	5,446	122	0.2%
Furniture, Clothing, Jewelry, & Other	11,246	\$55,227	0.81	612	1.9%	2.3%	0.4%	3,492	-291	-0.9%
Manufacturing Industry	173,973	\$76,716	1.15	6,329	1.2%	1.0%	0.8%	N/A	-3,522	-0.7%
All Industries	1,845,752	\$62,684	1.00	109,879	2.1%	1.7%	1.8%	609,778	40,770	0.7%

Medical Equipment & Supplies:
15,000 employed, +3.3%

Pharmaceutical & Medicine:
3,000 employed, +2.4%



Educational Awards in Manufacturing by School - in 2016

Schools	Certificate	AA	BA	Post-graduate	Grand Total	Share of Graduates
Anoka Technical College	56	65			121	4%
Anoka-Ramsey Community College	9	5			14	0.5%
Augsburg College			12		12	0.4%
Bethel University			9		9	0.3%
Century College	44	45			89	3%
Concordia University-Saint Paul			1	8	9	0.3%
Dakota County Technical College	149	39			188	6%
Dunwoody College of Technology	51	109	19		179	6%
Globe University-Woodbury**		14	4		18	1%
Hamline University			13		13	0.4%
Hennepin Technical College	275	150			425	14%
Inver Hills Community College		2			2	0.1%
Macalester College			20		20	1%
Metropolitan State University			12		12	0.4%
Minneapolis Community & Technical College	39	28			67	2%
National American University			2		2	0.1%
Normandale Community College	10	11			21	1%
North Hennepin Community College	22	2			24	1%
Saint Paul College	105	23			128	4%
St Catherine University			9		9	0.3%
University of Minnesota-Twin Cities			904	431	1,335	45%
University of St Thomas			152	91	243	8%
Total Awards	760	493	1,157	530	2,940	
Share of Awards	26%	17%	39%	18%		

Educational Awards by Program

2-Digit CIP	Degrees Related to Manufacturing	Certificate & AA	BA	Post-graduate	Total
1	Food Science	40	39	18	97
14	Engineering	0	758	383	1,141
15	Technology	541	4	19	564
19	Apparel & Textile Manufacturing	23	0	0	23
40	General Chemistry	12	249	78	339
41	Nuclear/Chemical Technology	5	0	0	5
46	Lineworker	60	0	0	60
47	Maintenance Technology	39	0	0	39
48	CNC/Machining/Welding Technology	463	3	0	466
51	Orthotist/Prosthetist	44	0	8	52
52	Chain Management/Supervision	26	121	0	147
Share by Award Level		43%	39%	18%	

Occupations with Greatest Training Need	Est. Annual Supply Gap	Training Concentration	Additional Adults to be Trained	% College Educated Nationwide
• Industrial Engineering Technicians	(6)	16% (very low)	286	50-75%
• Welders, Cutters, Solderers & Brazers	(18)	56% (low)	164	25-50%
• Industrial Engineers*	99	50% (low)	106	75%+
• Electrical Engineers*	48	70% (mod.)	92	75%+
• Machinists	(36)	1% (very low)	62	25-50%
• Electrical & Electronic Engineering Techs	(9)	31% (very low)	56	50-75%

Training Program Graduates

Entry-Level Credential Programs	Est. Annual Graduates
Pathways to Prosperity Program	43
Dislocated Worker Program	30
<i>Less than 16% of graduates from either program secured employment in manufacturing</i>	

National Incident Training System (NIMS) Certificates

Courses
ICS
NIMS
AHPS

For more information:

- Industry Contact: [Mike Slezak, DEED](mailto:michael.slezak@state.mn.us) (michael.slezak@state.mn.us)
- MSPWin Career Map: <http://mspwin.org/wp-content/uploads/2016/06/Career-Pathway-Maps.pdf>
- RealTime Talent Reports: realtimetalent.org/research/reports

*Indicates expected worker gap. Other occupations will have under-skilled workers. **Globe University closed in 2017. Programs listed are explicitly tied to finance and awarded more than 10 degrees or certificates in 2016. Developed by Erin Olson (erin@realtimetalentmn.org). Published 1/16/2018 by RealTime Talent. Sources: TalentNeuron Recruit aggregate online job postings. www.wantedanalytics.com accessed January 15, 2018. Counts of job postings in Q3 2017 by employer were available July 1 - September 30, 2017 in the 7-county Minneapolis-Saint Paul Metro. Includes staffing agencies. Percent change in job postings are the change from the same quarter in the prior year. Employment, wage, and education data modeled from IPEDS, OES, and BLS data by JobsEQ. 2016 completions include awards issued and are not counts of graduates. Living wage was defined for the purposes of these reports as any occupation where the median wage is \$30,000 annually, or about \$14.50 per