

Q3 2017
July - September

SOUTHEAST MICHIGAN

WIN Labor Market Report





Introduction: Southeast Michigan (WIN 16-County Region)

About This Report

The Workforce Intelligence Network for Southeast Michigan (WIN) partnership is a collaboration of six Michigan Works! Agencies (MWAs) and ten community colleges across a 16-county region in Michigan. The counties in the WIN partnership include: Genesee, Hillsdale, Huron, Jackson, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, Saint Clair, Sanilac, Shiawassee, Tuscola, Washtenaw, and Wayne, along with the City of Detroit.

This report highlights labor market information and real-time job posting data for the WIN Region as a whole with special sections devoted to 11 occupational groups. WIN's analysis of online job postings, a proxy for employer demand, is a pioneering method for tracking the health of the labor market.

Occupational groups include:

- Agriculture (page 7)
- Business & Finance (page 12)
- Construction (page 19)
- Customer service (formerly retail & hospitality) (page 25)
- Education (page 31)
- Energy (page 37)
- Engineers & designers (manufacturing focused) (page 43)
- Health care (page 49)
- Information technology (page 55)
- Skilled trades & technicians (manufacturing focused) (page 61)
- Transportation, distribution, and logistics (TDL) (page 67)

Data analyzed includes:

- Employer demand
- Top posting jobs
- In-demand credentials, degrees, and skills
- Educational attainment required
- Wages offered in job postings
- Employment
- Unemployment
- Labor force

State of the Labor Market in the WIN 16-County Region

Quarter three of 2017 (Q3 2017, July through September) represented another quarter of economic growth as the economy continued to emerge from the recent great recession. Since January 2010, when the recession was at its deepest (the trough), the WIN 16-county region recovered 331,670 jobs. In Q3 2017, the total number of jobs held reached 2.68 million workers.

Q3 2017 posting continued to be high throughout the quarter despite a small decline. Job postings in Q3 2017 fell by two percent between quarters decreasing by 2,749 postings. Employment witnessed another increase during the quarter, as employment increased by 1.8 percent between Q2 2017 and Q3 2017. This growth added 46,394 jobs in the region. The labor force increased as well, by 24,406 during this time frame, indicating more people are actively looking for work. With the increase in labor force being greater than the simultaneous increase in employment, the number of unemployed individuals increased in the region. A total of 129,029 individuals identified as unemployed in Q3 2017. These changes brought the unemployment rate to 4.6 percent for Q3 2017.

Historically, the third quarter of the year is typically a time when employment continues to surge moving to Q4. This seems to be holding true for Q3 2017, as employment continued grow this quarter. The increase in the labor force indicates the supply of workers has also increased this quarter. This presents a great opportunity for employers as demand remains relatively high during this quarter. With these increases seen in the labor market Q3 2017 shows indicators for continued economic growth through 2017.



Introduction: Southeast Michigan (WIN 16-County Region)

Key Findings for Q3 2017

Online job postings within the WIN region remain relatively high over the past 6 years.

During Q3 2017, employer demand for all occupations decreased by two percent to 159,191 online job postings. Despite this drop, demand within southeast Michigan remains high after three years of growth in posting volume. Q3 2017 demand is 118 percent higher than the 73,176 postings in Q1 2011. See page XX for more details.

Registered Nurses remains the most in-demand job with a large volume of online advertisements.

Registered Nurses remains the top in-demand for the third straight quarter. Employers posted 7,774 job ads for nurses in Q3 2017, which is 732 more postings than the 7,042 ads posted for Heavy and Tractor-Trailer, Truck Drivers. Postings for Software Developers, Applications, were also notably high, with 5,736 postings. See page 5 for more details.

Job postings in the Skilled Trades occupation group remain relatively high despite the slight decrease in postings between quarters.

For the second quarter this year, there were over 5,500 postings related to Skilled Trades occupations. Postings over the past six years tended to fluctuate around 4,000 postings, so recent levels could indicate rising employer demand. Most of these postings required or preferred less than five years of experience, presenting a fantastic opportunity to both entry level and experienced job seekers. See page 61 for more details.

The labor force reached a new high, expanding 0.8 percent with an increase of over 24,405 participants between Q2 2017 and Q3 2017.

The number of people participating in the labor force in Q3 2017 increased by 24,405, bringing the total number of people in the labor force to nearly 2.8 million people. This milestone employment labor force number was last experienced in late 2008, before the recession. With more people participating in the workforce, employers have a larger pool of job seekers to fill positions with. See page 4 for more details.

The Customer Service occupation group reported the largest number of postings during Q3 2017.

During Q3 2017, there were a total of 35,593 online job postings related to Customer Service occupations. In addition to including the top-posted job (Registered Nurses), the Health Care occupation group reported the second largest number of postings, with 23,304. Both occupation groups offer opportunities to job seekers with the high employer demand, as evidenced through the increased postings and the number of entry level positions available with little educational requirements.

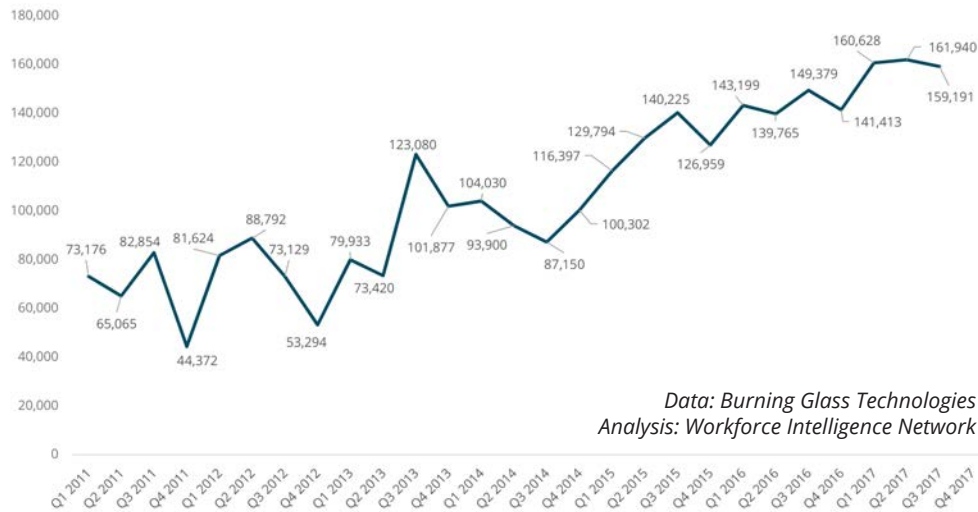


Workforce and Employer Demand Indicators

Postings Over Time

Online job ads for occupations in the WIN region decreased by two percent (2,749 postings) from 161,940 in Q2 2017 to 159,191 in Q3 2017. This level of demand was seven percent higher than the 149,379 online ads one year prior, in Q3 2016. Despite the slight drop, the number of postings have generally increased over recent years, with 86,015 more postings in Q3 2017 than in Q1 2011 (73,176).

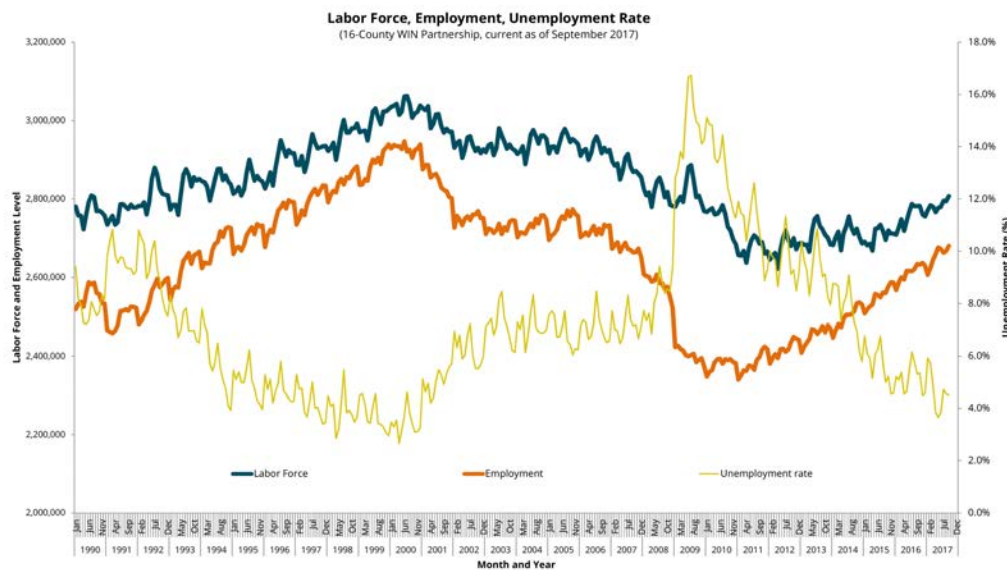
WIN Region Online Job Postings



Labor Force, Employment, and Unemployment

The labor market in the WIN region has experienced relative stability since 2010. The labor force increased by 24,406 workers (0.9 percent) between Q2 2017 and Q3 2017. Annually, however, it has increased by 28,685 individuals (+1.0 percent) from 2,755,253 in 2016 to 2,783,938 thus far in 2017. Employment in the WIN Region has increased slightly from Q2 2017 by 435 workers. Yearly employment increased by 46,394 (+1.8 percent) from 2,623,523 in Q3 2016 to 2,669,917 in Q3 2017. The annual unemployment rate in this region has also improved, experiencing a decrease over the past seven years to its lowest point this year. The quarterly unemployment rate increased by 0.8 percentage points between Q2 2017 and Q3 2017 to 4.6 percent.

Labor Force, Employment, Unemployment Rate 2017



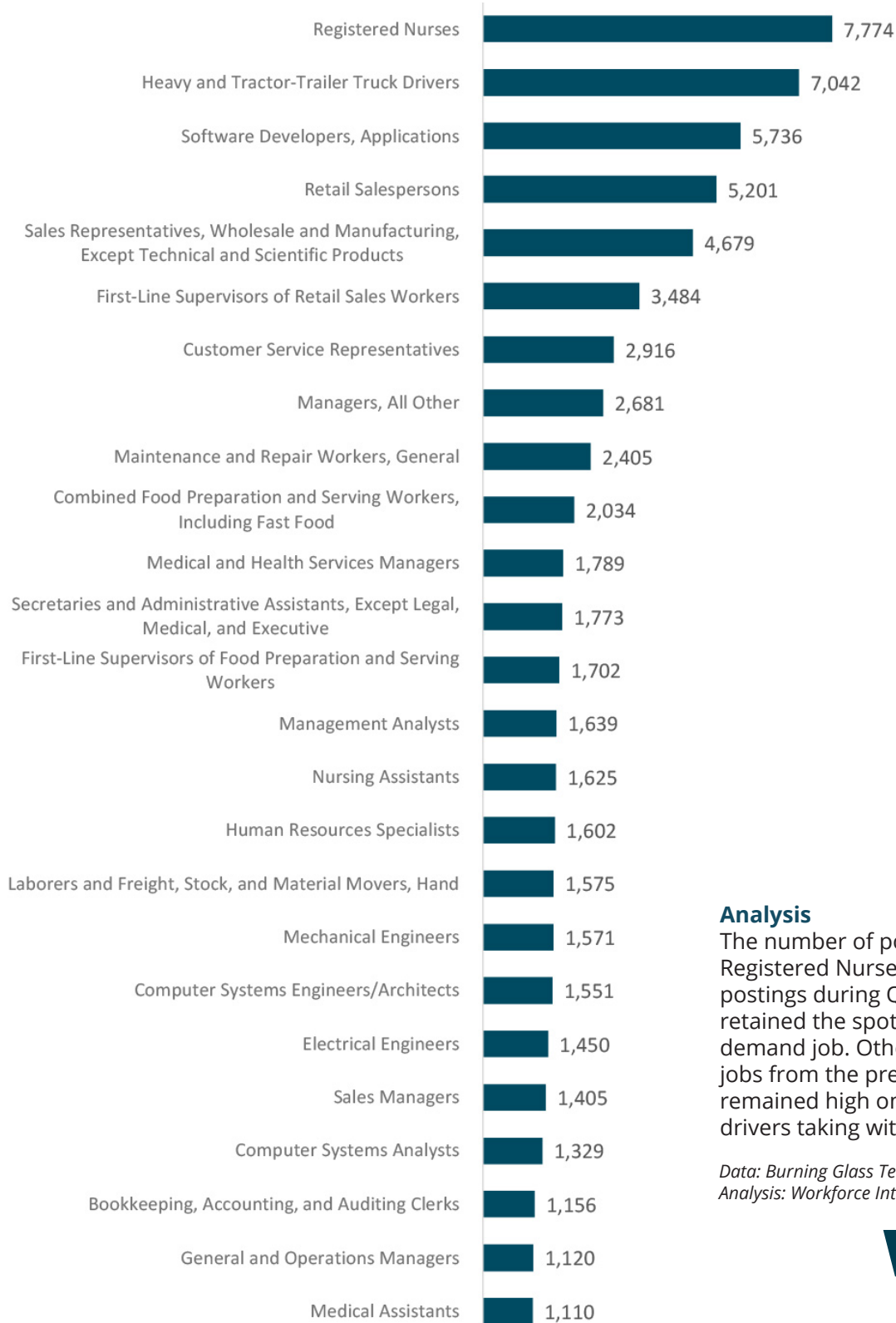


2,669,917 workers employed
in the WIN Region

4.6%
unemployment rate
in Q3 2017

Top Jobs Posted

Quarter 3 2017



Analysis

The number of postings for Registered Nurses fell to 7,774 postings during Q3 2017 but retained the spot as the highest in-demand job. Other top in-demand jobs from the previous quarters remained high on the list, with truck drivers taking with 7,042 postings.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



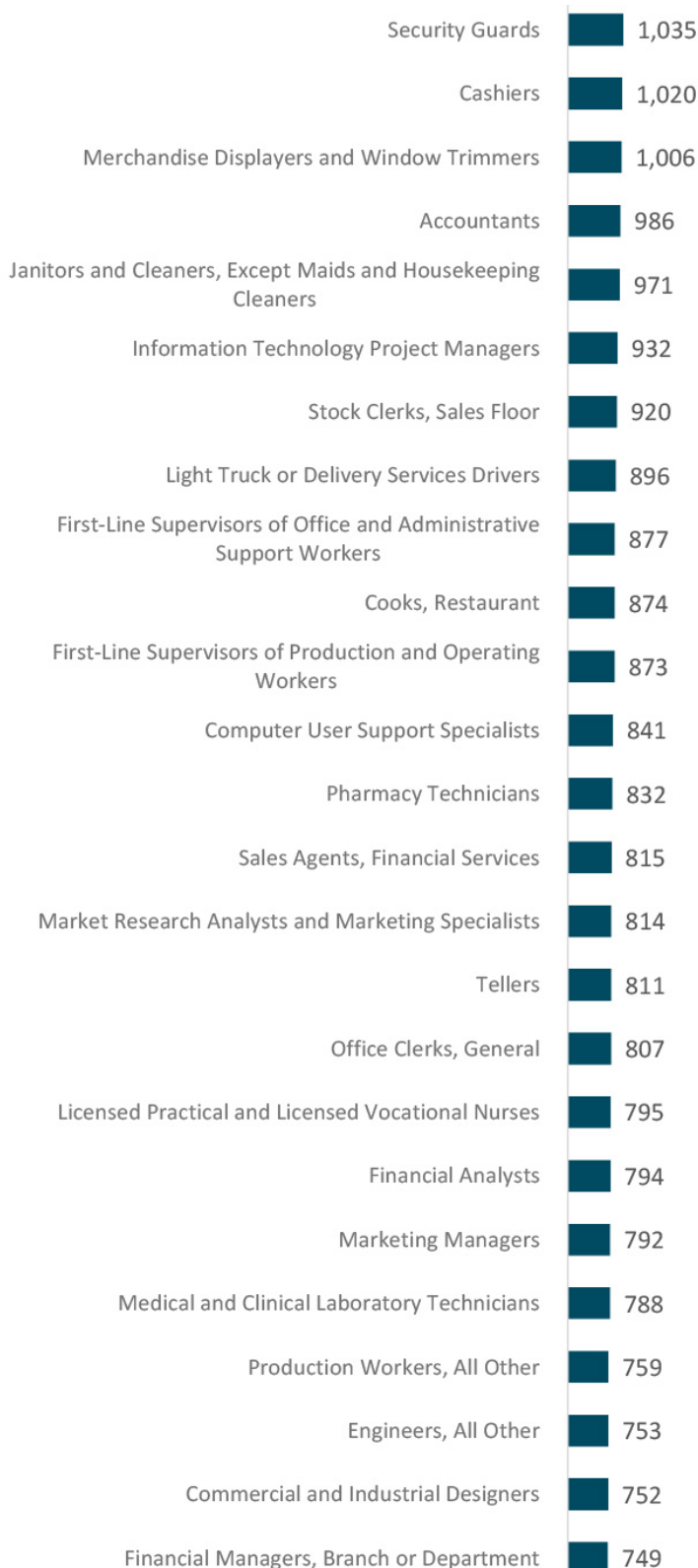
Employer demand:
159,191 online job postings



Registered Nurses top-posted
job in the WIN Region

Top Jobs Posted

Quarter 3 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Agriculture Occupation Group

Introduction

WIN's Agriculture group brings together occupations that require knowledge of the farming, livestock, the environment, and natural sciences. Occupations range from farm workers, to environmental engineers, to meat butchers, and recreation workers.

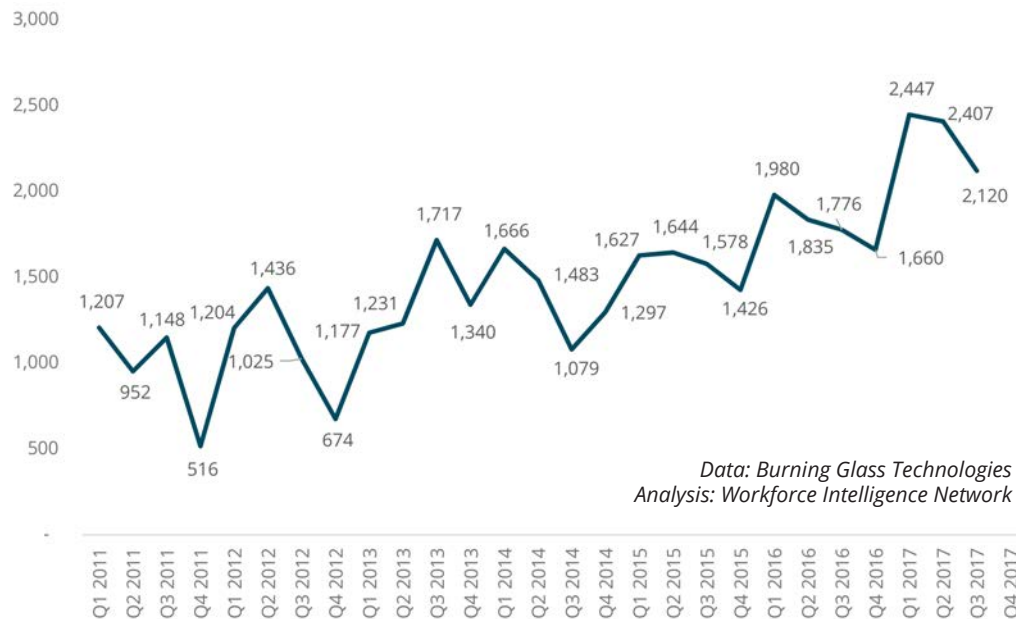
Job Posting Analysis

Job ads for occupations related to Agriculture dropped between Q2 2017 and Q3 2017 to 2,120 postings. Demand as shown by online postings demonstrated a slow overall trend of growth over the years. Though the occupation group experienced a slight drop, postings in Q3 2017 were 344 postings greater than Q3 2016, and 542 postings greater than Q3 2015.

Employment Analysis

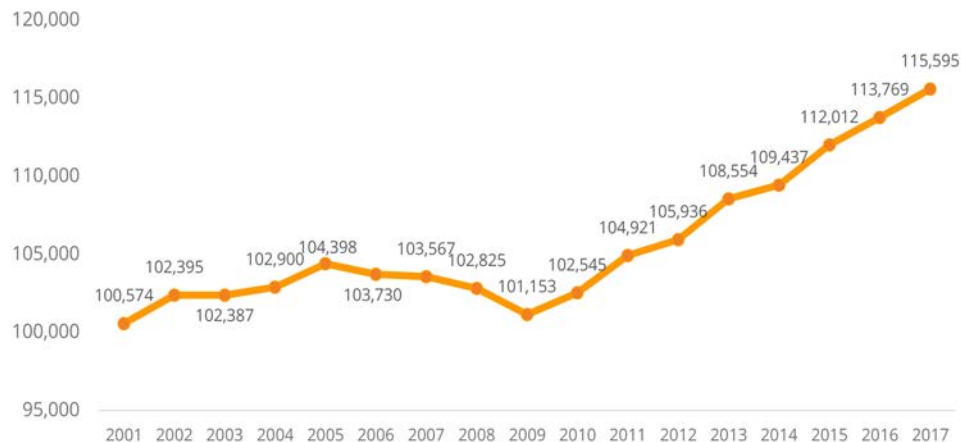
Agriculture employment has seen stable growth during recent years, after a drop between 2005 and 2009. In fact, current employment in the area is at its highest point in 16 years, with 115,595 individuals employed in Agriculture occupations.

Online Job Postings



Employment Over Time

2017



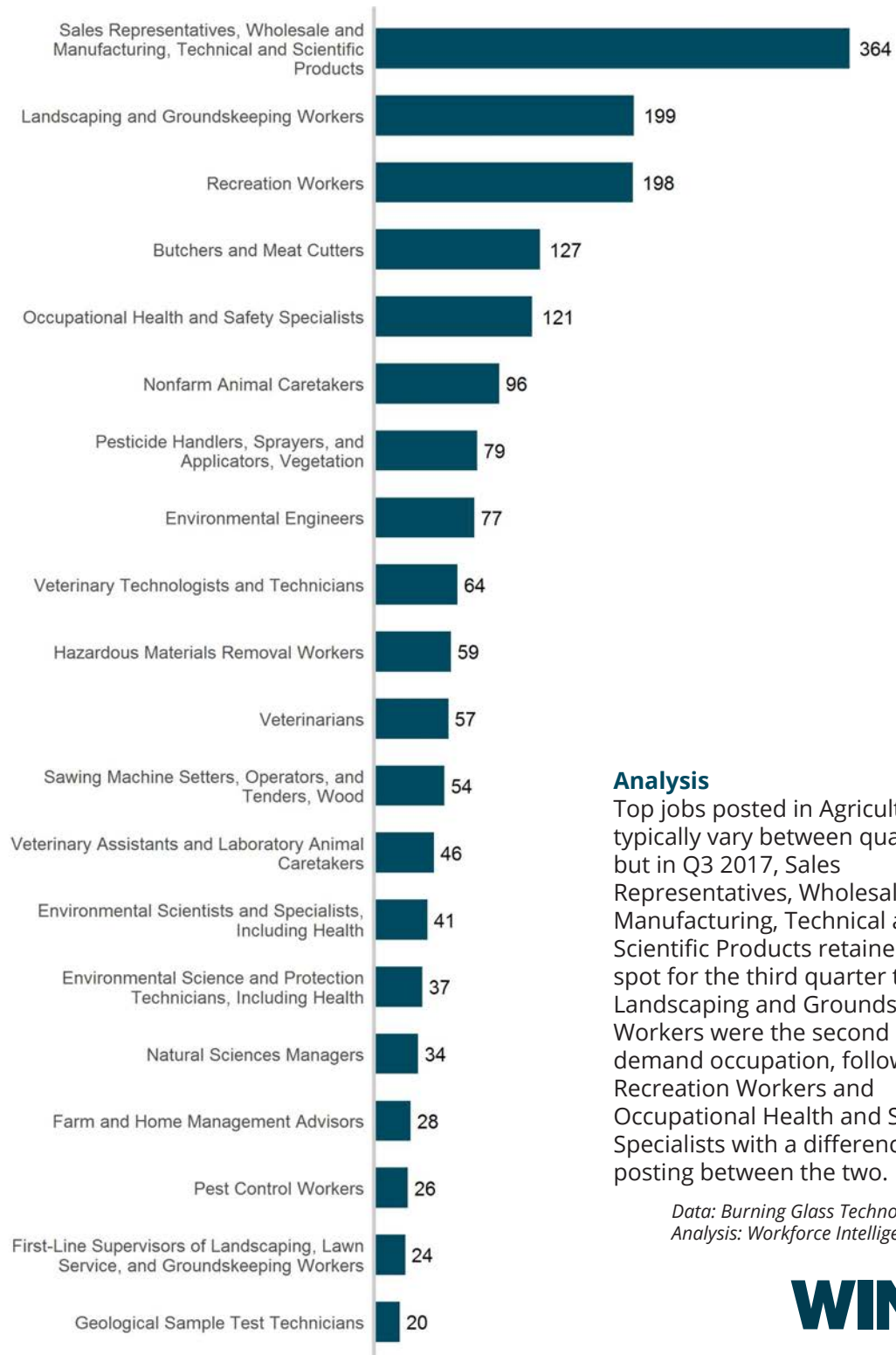


2,120 total postings,
287 fewer than Q2 2017



Sales Representatives
most in-demand occupation

Agriculture Top Jobs Posted Quarter 3 2017



Analysis

Top jobs posted in Agriculture typically vary between quarters, but in Q3 2017, Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products retained the top spot for the third quarter this year. Landscaping and Groundskeeping Workers were the second most in-demand occupation, followed by Recreation Workers and Occupational Health and Safety Specialists with a difference of one posting between the two.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Consistent employment growth in Agriculture since 2009

Agriculture Education and Experience

Many entry-level Agriculture positions are available within the WIN region . Of the 1,299 Agriculture job postings that specified a desired educational attainment level in Q3 2017, 660 postings preferred workers with high school or vocational training.

There were 1,113 postings that specified a desired experience level in Q3 2017, and almost all were available to workers with under five years of experience.

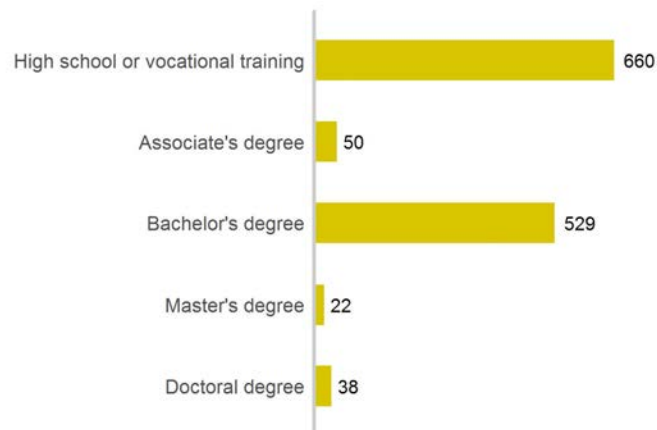
In-Demand Areas of Study

- Engineering, General
- Business Administration and Management, General
- Chemistry
- Mechanical Engineering
- Environmental/ Environmental Health Engineering



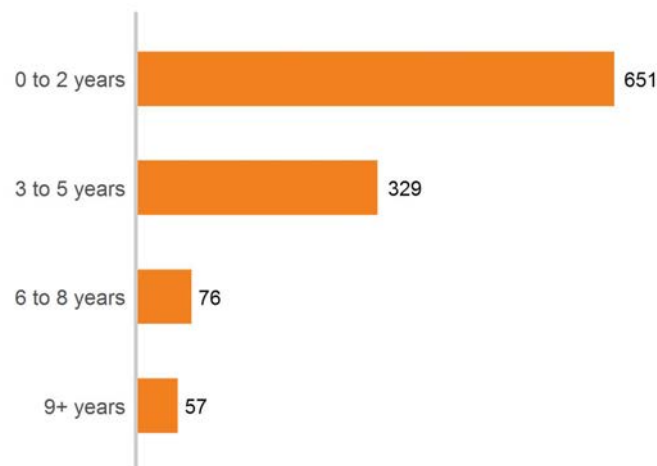
Growing fields of study: Engineering, Environmental Health

Educational Attainment



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Full-time jobs available in
Agriculture



\$48,000 average advertised
salary

Agriculture In-Demand Skills

Occupations in Agriculture require an array of both foundational and agriculture-specific skills. Sought-after technical skills ranged from repair and customer service to lawn care and fertilizers. Employers also prefer to hire individuals with physical strength and energetic personalities alongside strong writing, math, and computer proficiency. This combination of vital skills helps facilitate business transactions in these occupations:

Technical In-Demand Skills

- Sales
- Customer Service/ Customer Contact
- Inspection/ Repair
- Microsoft Office
- Labeling

Foundational In-Demand Skills

- Communication Skills
- Organizational Skills
- Writing
- Ability to Perform Physical Labor
- Detail-Oriented/ Problem Solving

Job Type

- Full-time: 54.6%
- Part-time: 7.0%
- Temporary: 8.3%

Certifications Required

- Commercial Driver's License
- Veterinary Technician
- Hazardous Materials Certification
- Certified Safety Professional
- Certified Industrial Hygienist



0-5 years, most in-demand
experience



Hot Skills: Sales, Customer
Service, Inspection

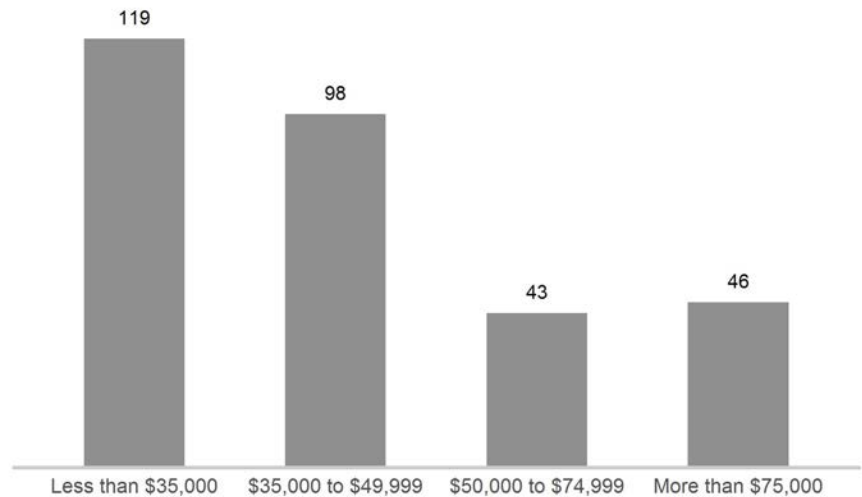
Agriculture

Wages and Advertised Salary Of

Of the 2,120 postings in Agriculture in Q3 2017, only 306 specified an annual salary. Among them, over half the postings offered less than \$50,000 per year, with an average annual salary of \$48,000. The table below containing data from BLS estimates that six out of the top ten occupations with wage data have a median salary of less than \$35,000 per year, while the others can earn over \$75,000 per year. The top job in this group, Environmental Engineers, reported median earnings over \$92,000 per year (\$44.57 per hour).

Advertised Salary in Job Postings

Quarter 3 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	\$22.24	\$28.25	\$39.64	\$55.99	\$73.99
37-3011	Landscaping and Groundskeeping Workers	\$9.43	\$10.39	\$12.21	\$14.91	\$18.76
39-9032	Recreation Workers	\$8.81	\$9.17	\$10.18	\$12.79	\$17.18
51-3021	Butchers and Meat Cutters	\$9.12	\$10.32	\$13.80	\$17.97	\$22.38
29-9011	Occupational Health and Safety Specialists	\$22.54	\$29.29	\$36.37	\$44.63	\$53.84
39-2021	Nonfarm Animal Caretakers	\$8.84	\$9.17	\$9.88	\$12.03	\$14.62
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	\$11.89	\$13.50	\$15.85	\$18.43	\$21.21
17-2081	Environmental Engineers	\$28.03	\$35.59	\$44.57	\$54.25	\$62.93
29-2056	Veterinary Technologists and Technicians	\$10.37	\$11.50	\$15.02	\$18.09	\$20.75
47-4041	Hazardous Materials Removal Workers	\$14.71	\$18.30	\$22.16	\$25.65	\$29.13

Data: EMSI, BLS
Analysis: Workforce Intelligence Network



Agriculture Occupations

Custom Occupation Group

WIN's Agriculture occupation group brings together occupations that require knowledge of the farming, livestock, the environment, and natural sciences. The following occupations are used by WIN researchers to provide custom analysis: The Workforce Intelligence Network for Southeast Michigan should be cited any time the analysis, graphics, or custom occupation group from this report are used.

SOC Code	Occupation	SOC Code	Occupation
11-9013	Farmers, Ranchers, and Other Agricultural Managers	47-4041	Hazardous Materials Removal Workers
11-9121	Natural Sciences Managers	49-3041	Farm Equipment Mechanics and Service Technicians
13-1021	Buyers and Purchasing Agents, Farm Products	49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers
13-1041	Compliance Officers	51-3021	Butchers and Meat Cutters
13-1074	Farm Labor Contractors	51-3022	Meat, Poultry, and Fish Cutters and Trimmers
17-2081	Environmental Engineers	51-3023	Slaughterers and Meat Packers
17-3025	Environmental Engineering Technicians	51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders
19-1011	Animal Scientists	51-3092	Food Batchmakers
19-1012	Food Scientists and Technologists	51-3093	Food Cooking Machine Operators and Tenders
19-1013	Soil and Plant Scientists	51-7041	Sawing Machine Setters, Operators, and Tenders, Wood
19-1021	Biochemists and Biophysicists	51-8031	Water and Wastewater Treatment Plant and System Operators
19-1023	Zoologists and Wildlife Biologists		
19-1031	Conservation Scientists		
19-1032	Foresters		
19-2041	Environmental Scientists and Specialists, Including Health		
19-4011	Agricultural and Food Science Technicians		
19-4041	Geological and Petroleum Technicians		
19-4091	Environmental Science and Protection Technicians, Including Health		
19-4093	Forest and Conservation Technicians		
19-4099	Life, Physical, and Social Science Technicians, All Other		
25-1099	Postsecondary Teachers		
29-1131	Veterinarians		
29-2056	Veterinary Technologists and Technicians		
29-9011	Occupational Health and Safety Specialists		
29-9012	Occupational Health and Safety Technicians		
31-9096	Veterinary Assistants and Laboratory Animal Caretakers		
33-3031	Fish and Game Wardens		
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers		
37-2021	Pest Control Workers		
37-3011	Landscaping and Groundskeeping Workers		
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation		
37-3013	Tree Trimmers and Pruners		
37-3019	Grounds Maintenance Workers, All Other		
39-2011	Animal Trainers		
39-2021	Nonfarm Animal Caretakers		
39-9032	Recreation Workers		
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products		
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers		
45-2011	Agricultural Inspectors		
45-2021	Animal Breeders		
45-2041	Graders and Sorters, Agricultural Products		
45-2091	Agricultural Equipment Operators		
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse		
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals		
45-3011	Fishers and Related Fishing Workers		
45-3021	Hunters and Trappers		
45-4011	Forest and Conservation Workers		
45-4021	Fallers		



Business & Finance Occupation Group

Introduction

Jobs in the Business and Finance occupation group can be found in nearly every type of business and industry. These workers need strong mathematical and accounting abilities along with project management and planning skills. Workers in this occupation group are in high demand in southeast Michigan.

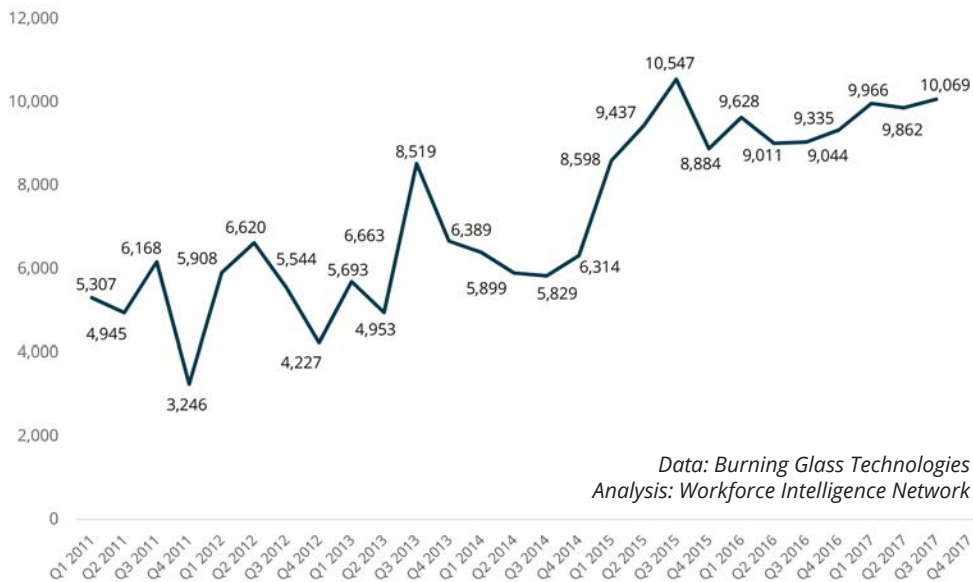
Job Posting Analysis

Business and Finance postings increased by two percent between Q2 2017 and Q3 2017, resulting in a total of 10,069 job ads. Demand in this occupation group has shown a pattern of growth since 2013, with an additional 4,376 more postings in Q3 2017 than Q1 2013.

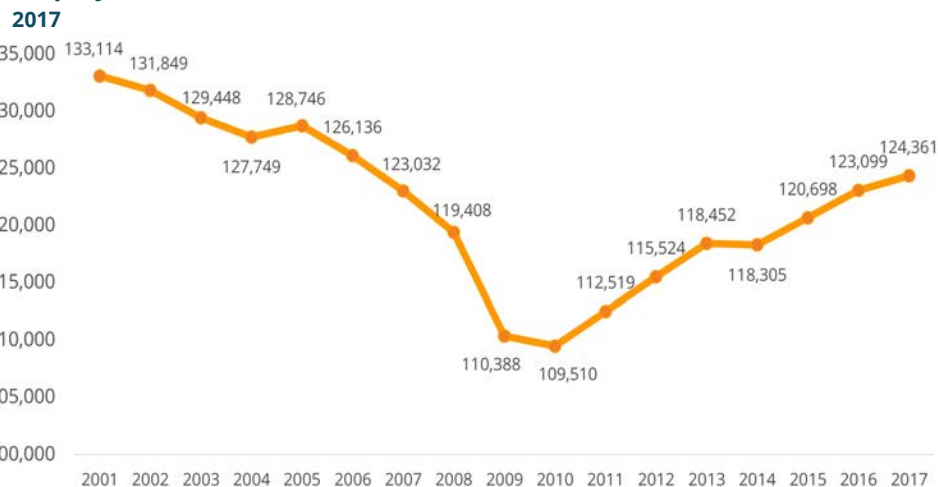
Employment Analysis

Employment in Business and Finance related occupations has steadily grown since the Great Recession in 2009. Employment for Business and Finance hit its lowest point in 2010, where the industry employed only 109,510 workers. Thus far in 2017, employment increased by nearly 15,000 individuals to 124,361 workers.

Online Job Postings



Employment Over Time



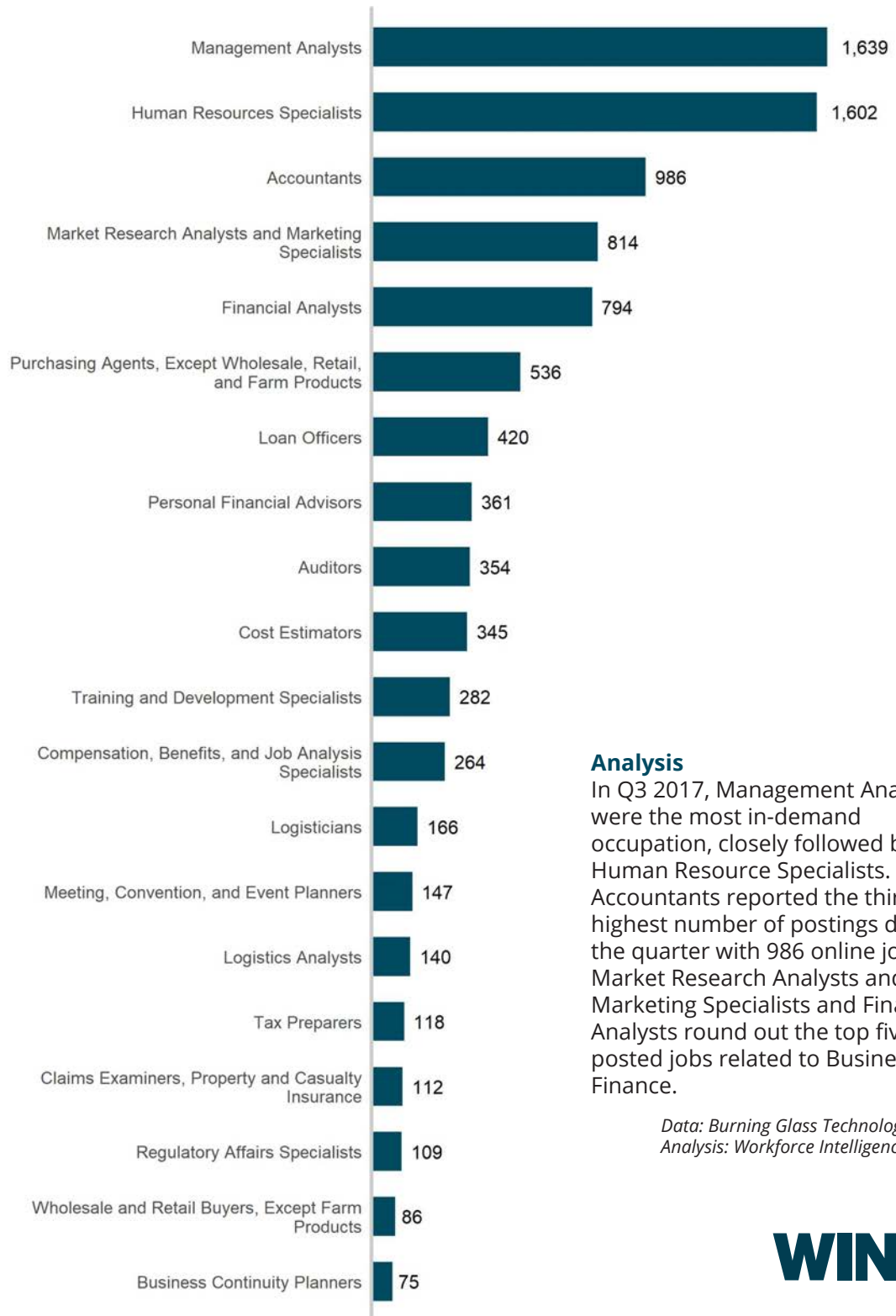


10,069 total jobs postings
in Business and Finance



124,361 Business and Finance
workers

Business & Finance
Top Jobs Posted
Quarter 3 2017



Analysis

In Q3 2017, Management Analysts were the most in-demand occupation, closely followed by Human Resource Specialists. Accountants reported the third highest number of postings during the quarter with 986 online job ads. Market Research Analysts and Marketing Specialists and Financial Analysts round out the top five posted jobs related to Business and Finance.

*Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network*



Top in-demand job: Management Analysts



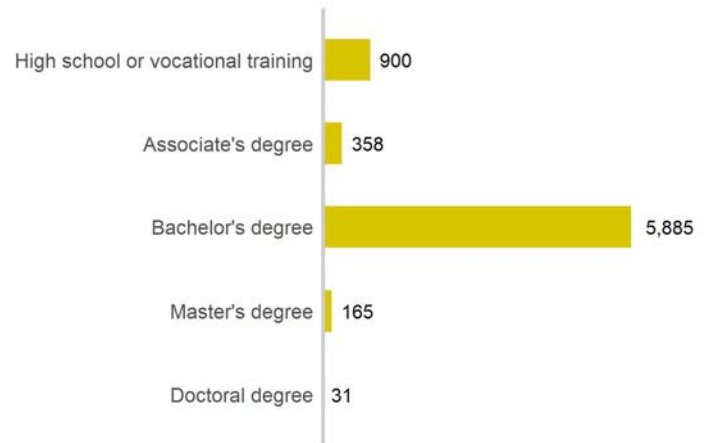
Bachelor's degree desired

Business & Finance Education and Experience

Of the 7,339 Business and Finance job postings that specified a desired educational attainment level, 80 percent preferred candidates with a bachelor's degree. High school or vocational training was the next most in-demand level of education.

Of the 6,360 postings that specified desired experience, these were split mostly between zero to two years of experience and three to five years of experience with 2,297 and 3,215 ads, respectively. In Q3 2017, entry-level Business and Finance positions are available to southeast Michigan workers willing to pursue a bachelor's degree.

Educational Attainment

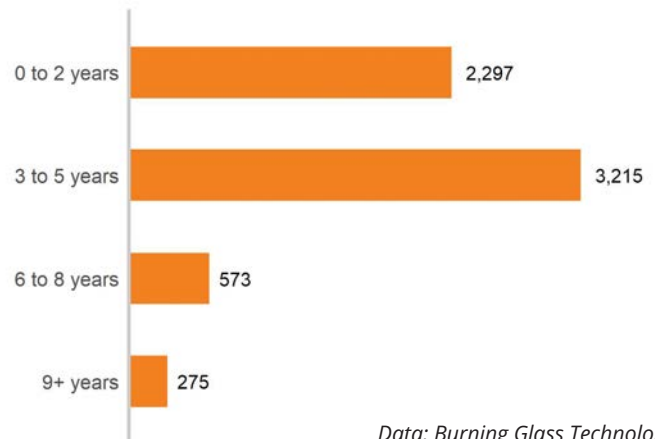


Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

In-Demand Areas of Study

- Business Administration and Management, General
- Accounting
- Finance, General
- Engineering, General
- Human Resources Development

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Typical annual salary:
> \$50,000 per year



In-demand experience:
0 to 5 years

Business & Finance In-Demand Skills

Occupations in Business and Finance require a variety of skills for effective fiscal management. These include interpersonal abilities like customer service alongside accounting and software familiarity. Employers hiring Business and Finance workers also specify common employability skills like communication, writing, and organization.

Technical In-Demand Skills

- Microsoft Office
- Accounting/ Budgeting
- Project Management
- Customer Service/ Customer Contact
- SAP

Foundational In-Demand Skills

- Communication Skills
- Writing
- Problem Solving
- Organizational Skills
- Detail-Oriented

Job Type

- Full-time: 54.4%
- Part-time: 2.0%
- Temporary: 4.0%

Certifications Required

- Certified Public Accountant (CPA)
- Series 7
- Certified Financial Planner
- Mortgage License
- Project Management Certification (e.g. PMP)



Top area of study:
Business Administration



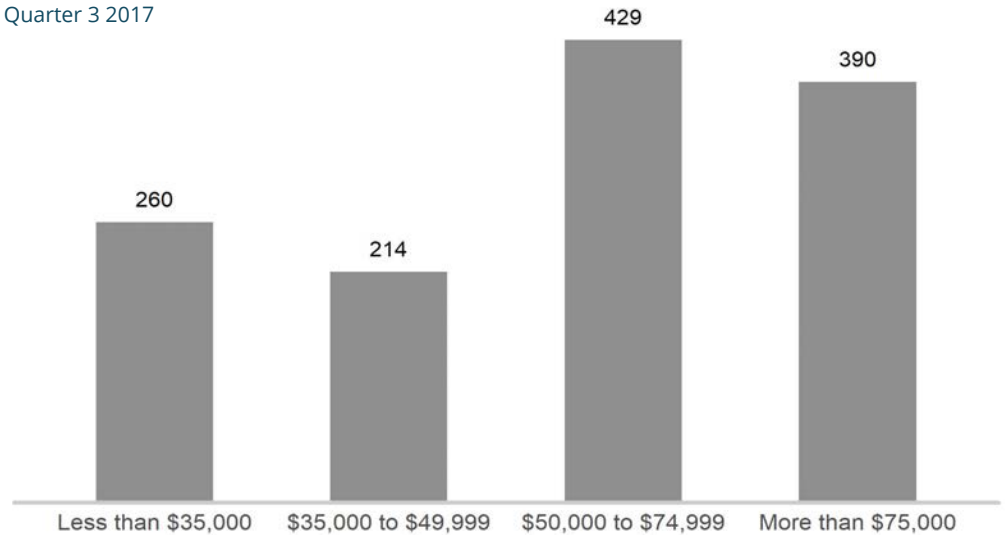
Accounting and software
skills in-demand

Business & Finance

Wages and Advertised Salary Only 1,293 postings in Business and Finance specified an annual salary during Q3, but those that did painted an optimistic picture. Of those postings, 63 percent offered \$50,000 or more annually with an average advertised salary of \$63,000. Lucrative positions in the field exist to suit the high education requirements. Entry-level (tenth percentile) wages for nine of the top ten Business and Finance jobs are over \$15 per hour, and over \$25 at the median wage level.

Advertised Salary in Job Postings

Quarter 3 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
13-1111	Management Analysts	\$23.92	\$29.82	\$39.27	\$52.08	\$68.84
13-1071	Human Resources Specialists	\$16.98	\$21.76	\$28.62	\$37.09	\$48.00
13-2011	Accountants	\$20.47	\$25.16	\$32.80	\$43.86	\$57.82
13-1161	Market Research Analysts and Marketing Specialists	\$18.07	\$23.32	\$32.34	\$43.54	\$54.91
13-2051	Financial Analysts	\$23.85	\$29.51	\$38.40	\$47.98	\$58.38
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	\$20.40	\$25.79	\$33.68	\$42.60	\$53.63
13-2072	Loan Officers	\$11.90	\$17.44	\$23.95	\$32.29	\$46.12
13-2052	Personal Financial Advisors	\$17.73	\$25.83	\$38.64	\$76.18	\$94.01
13-2011	Auditors	\$20.47	\$25.16	\$32.80	\$43.86	\$57.82
13-1051	Cost Estimators	\$16.91	\$21.95	\$30.44	\$39.99	\$48.41

Data: EMSI, BLS
Analysis: Workforce Intelligence Network



Business and Finance Occupations

Custom Occupation Group

Jobs in the Business and Finance occupation group can be found in nearly every type of business and industry. The following occupations are used by WIN researchers to provide custom analysis: The Workforce Intelligence Network for Southeast Michigan should be cited any time the analysis, graphics, or custom occupation group from this report are used.

SOC Code	Description
13-1011	Agents and Business Managers of Artists, Performers, and Athletes
13-1021	Buyers and Purchasing Agents, Farm Products
13-1022	Wholesale and Retail Buyers, Except Farm Products
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products
13-1031	Claims Adjusters, Examiners, and Investigators
13-1032	Insurance Appraisers, Auto Damage
13-1041	Compliance Officers
13-1051	Cost Estimators
13-1071	Human Resources Specialists
13-1074	Farm Labor Contractors
13-1075	Labor Relations Specialists
13-1081	Logisticians
13-1111	Management Analysts
13-1121	Meeting, Convention, and Event Planners
13-1131	Fundraisers
13-1141	Compensation, Benefits, and Job Analysis Specialists
13-1151	Training and Development Specialists
13-1161	Market Research Analysts and Marketing Specialists
13-1199	Business Operations Specialists, All Other
13-2011	Accountants and Auditors
13-2021	Appraisers and Assessors of Real Estate
13-2031	Budget Analysts
13-2041	Credit Analysts
13-2051	Financial Analysts
13-2052	Personal Financial Advisors
13-2053	Insurance Underwriters
13-2061	Financial Examiners
13-2071	Credit Counselors
13-2072	Loan Officers
13-2081	Tax Examiners and Collectors, and Revenue Agents
13-2082	Tax Preparers
13-2099	Financial Specialists, All Other



Construction Occupation Groups

Introduction

Jobs in the WIN Construction occupation group are associated with the skilled trades, engineering, management, and planning. Many construction employers are slowly starting to post jobs online, thus, online job ads are not always a complete picture of demand for these workers. Even so, it is an important and in-demand occupation group for southeast Michigan and posting data provides a glimpse into employer needs.

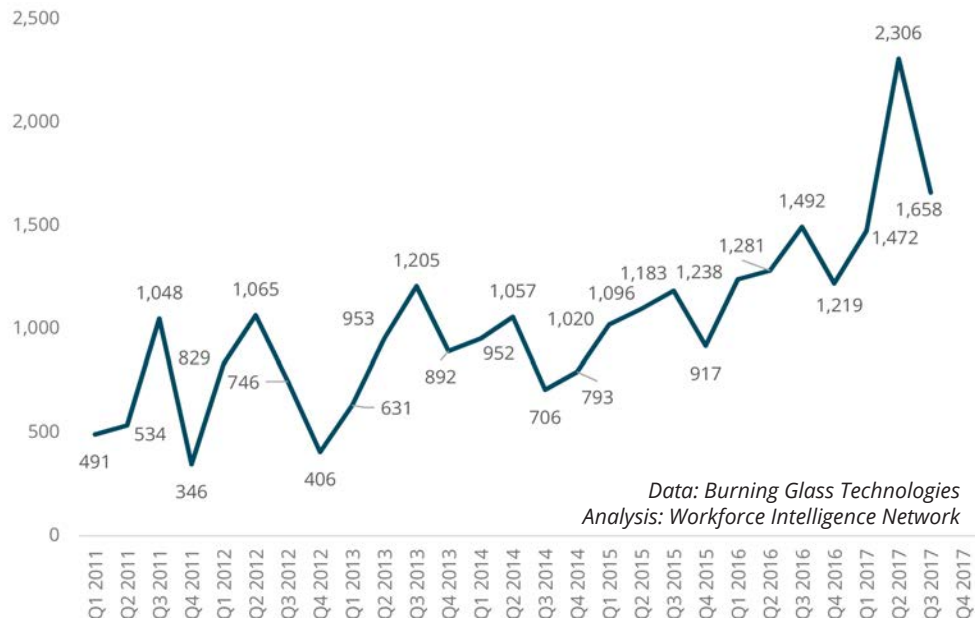
Job Posting Analysis

Online job ads for Construction workers fell this quarter after peaking to a new six-year high during Q2 2017. Postings fell by 28 percent, a decrease of 648 ads, between Q2 2017 and Q3 2017. While construction employers are beginning to utilize online hiring tools, most hiring is done through traditional methods like word-of-mouth, hiring halls, and unions.

Employment Analysis

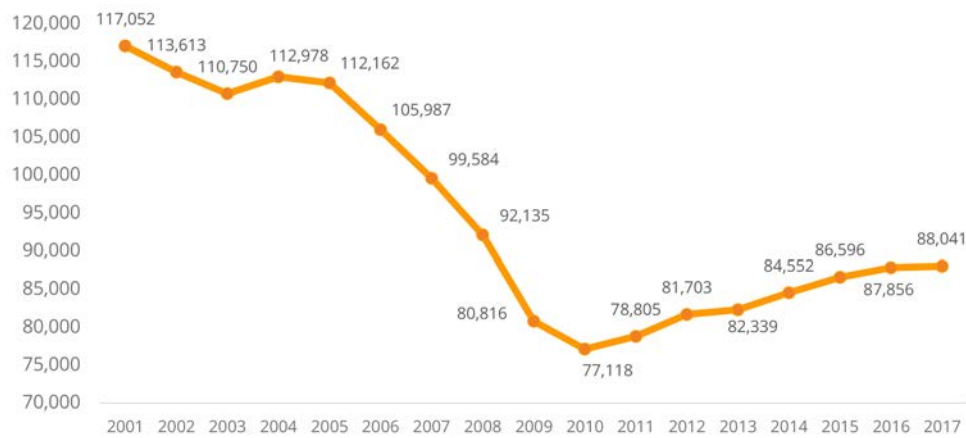
Construction employment has grown nearly 15 percent since 2010, recovering nearly 11,000 jobs from the depths of the recession in 2010. While employment is steadily growing, employment is still 29,011 individuals below the 2001 pre-recession peak.

Online Job Postings



Employment Over Time

2017





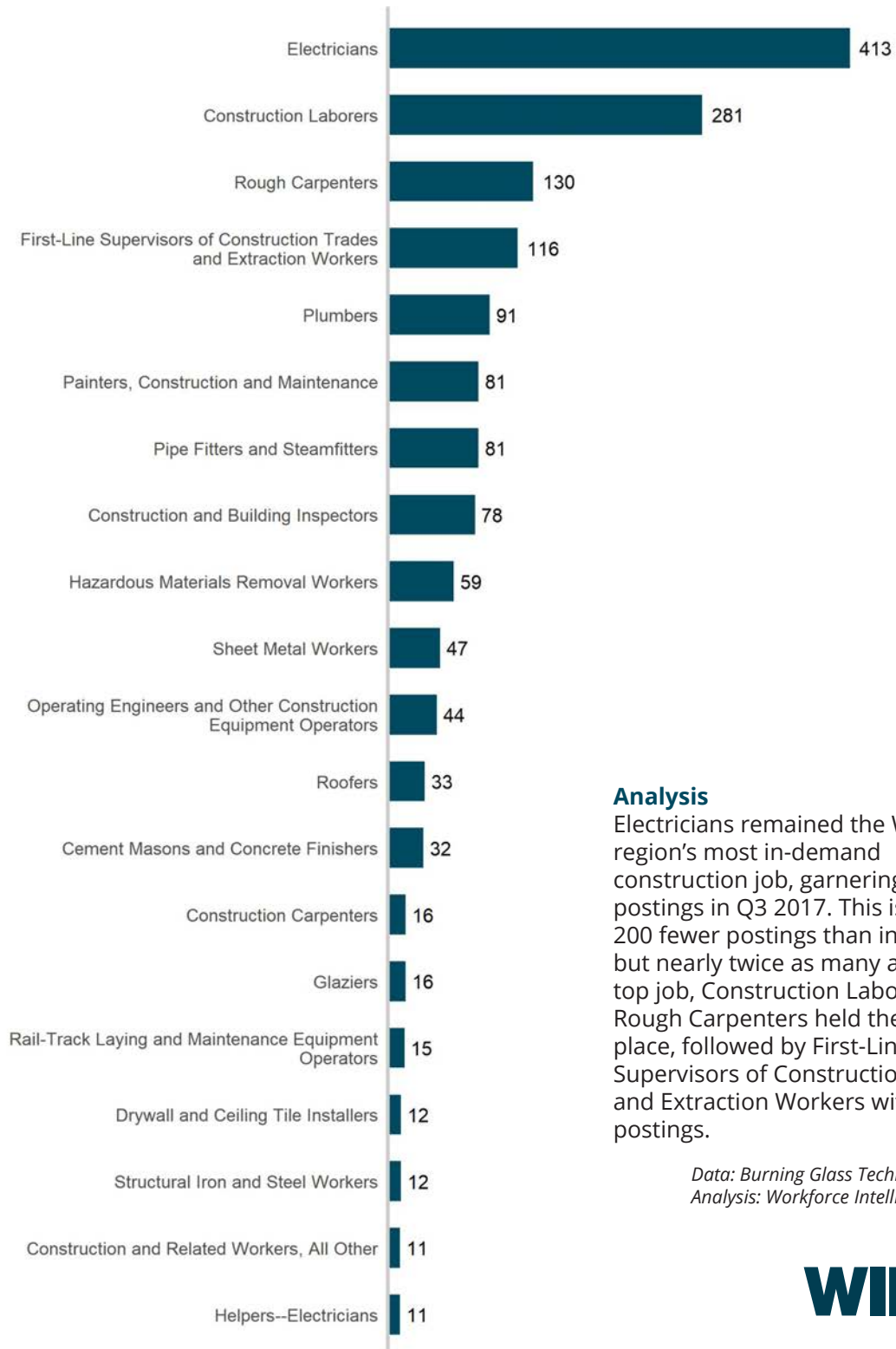
Electricians most
in-demand job



1,658 online job postings
in Construction

Construction Top Jobs Posted

Quarter 3 2017



Analysis

Electricians remained the WIN region's most in-demand construction job, garnering 413 postings in Q3 2017. This is almost 200 fewer postings than in Q2 2017, but nearly twice as many as the next top job, Construction Laborers. Rough Carpenters held the third place, followed by First-Line Supervisors of Construction Trades and Extraction Workers with 116 postings.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Vocational training required
for most construction jobs



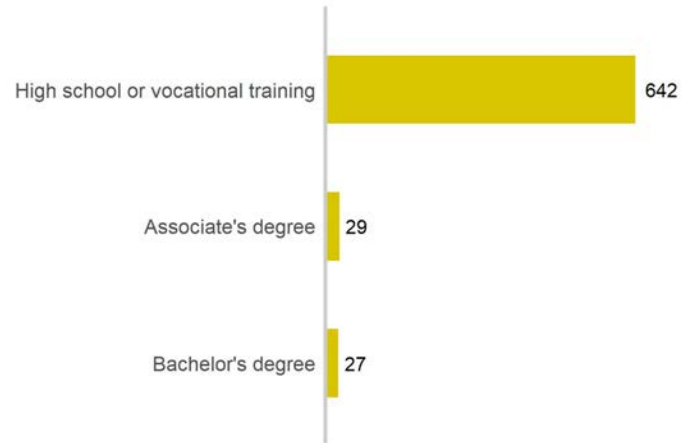
Most positions open to workers
with 0 to 5 years experience

Construction Education and Experience

Most Construction jobs require a registered apprenticeship or other skilled training. While most postings list high school as the only required credential, it is clear from the necessary skills that vocational training is required for Construction jobs.

Many Construction jobs posted this quarter (44 percent) were available to entry-level workers. Workers with three to five years of previous experience were also in-demand, with 43 percent of postings seeking workers with more experience.

Educational Attainment

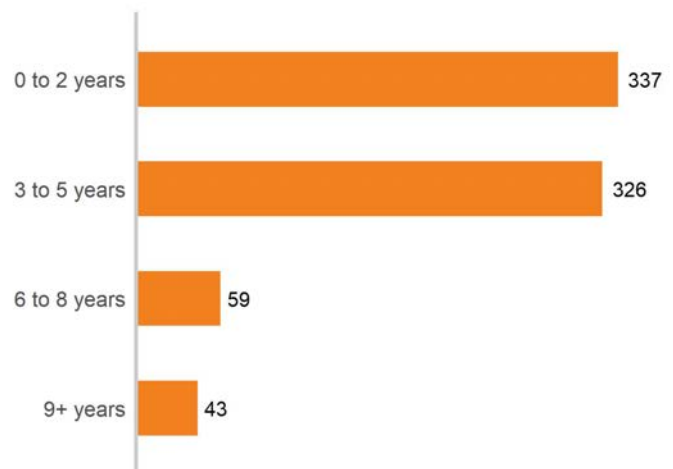


Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

In-Demand Areas of Study

- Business Administration and Management, General
- Engineering, General
- Electrical and Electronic Engineering Technologies/ Technicians, Other
- Construction Management
- Engineering/ Industrial Management

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Top skills: electrical work,
plumbing, carpentry



Over half of job postings
advertise full-time work

Construction In-Demand Skills

In-demand skills for construction workers range from trade specific knowledge to widely applicable foundational abilities. Technical skills are generally occupation-specific and include carpentry, plumbing, electrical work, and repair. Mastery of these abilities requires specialized training outside of high school or an apprenticeship program included as part of a high school curriculum.

Foundational skills are also immensely important. Construction employers want workers to be able to problem solve, manage projects, collaborate, and work well with clients. Construction occupations are also physically demanding.

Technical In-Demand Skills

- Repair/ Inspection
- Electrical Work
- Hand Tools
- Machinery
- Carpentry

Foundational In-Demand Skills

- Troubleshooting/ Preventive Maintenance
- Communication Skills
- Ability to Perform Physical Labor
- Organizational Skills
- Writing

Job Type

- Full-Time: 59.5%
- Part-time: 1.0%
- Temporary: 7.0%

Certifications Required

- Commercial Driver's License
- Electrician Certification
- Occupational Safety and Health Administration Certification
- Hazardous Materials Certification
- Air Brake Certified



\$49,000: average advertised salary during Q3 2017



Electricians, plumbers, pipefitters: most wage growth potential outside of management

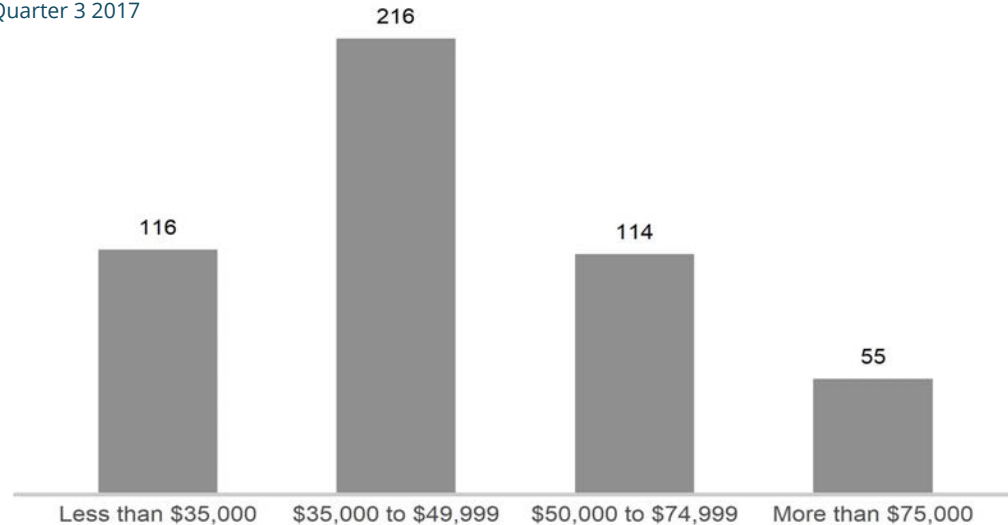
Construction

Wages and Advertised Salary

Wages for Construction workers have a broad range and offer growth potential. Twenty-three percent of Q3 postings that advertised salaries offered less than \$35,000 per year. Forty-three percent of these postings offer slightly higher income between \$35,000 and \$50,000 annually. The average advertised annual salary in Q3 2017 was \$49,000. The importance of experience in the Construction field is evident in the wage table below, in which the difference between tenth and ninetieth percentile wages for Electricians, Rough Carpenters, Construction and Building Inspectors, First-Line Supervisors, Plumbers, Pipe Fitters, and Sheet Metal Workers is over \$20 per hour.

Advertised Salary in Job Postings

Quarter 3 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
47-2111	Electricians	\$15.15	\$22.27	\$31.53	\$36.32	\$39.65
47-2061	Construction Laborers	\$11.41	\$14.00	\$18.36	\$23.53	\$29.02
47-2031	Rough Carpenters	\$13.93	\$18.00	\$24.09	\$30.03	\$35.25
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$21.07	\$25.15	\$30.16	\$39.29	\$48.36
47-2152	Plumbers	\$17.94	\$25.82	\$32.60	\$36.78	\$41.62
47-2141	Painters, Construction and Maintenance	\$12.91	\$16.52	\$20.99	\$25.73	\$29.52
47-2152	Pipe Fitters and Steamfitters	\$17.94	\$25.82	\$32.60	\$36.78	\$41.62
47-4011	Construction and Building Inspectors	\$16.52	\$21.88	\$27.69	\$32.38	\$37.54
47-4041	Hazardous Materials Removal Workers	\$14.71	\$18.30	\$22.16	\$25.65	\$29.13
47-2211	Sheet Metal Workers	\$14.56	\$19.76	\$25.09	\$30.02	\$35.33

Data: EMSI, BLS
Analysis: Workforce Intelligence Network



Construction Occupations

Custom Occupation Group

Jobs in the WIN Construction occupation group are associated with the skilled trades, engineering, management, and planning. The following occupations are used by WIN researchers to provide custom analysis: The Workforce Intelligence Network for Southeast Michigan should be cited any time the analysis, graphics, or custom occupation group from this report are used.

SOC Code	Occupation	SOC Code	Occupation
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	47-5013	Service Unit Operators, Oil, Gas, and Mining
47-2011	Boilermakers	47-5021	Earth Drillers, Except Oil and Gas
47-2021	Brickmasons and Blockmasons	47-5031	Explosives Workers, Ordnance Handling Experts, and Blasters
47-2022	Stonemasons	47-5041	Continuous Mining Machine Operators
47-2031	Carpenters	47-5042	Mine Cutting and Channeling Machine Operators
47-2041	Carpet Installers	47-5049	Mining Machine Operators, All Other
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	47-5051	Rock Splitters, Quarry
47-2043	Floor Sanders and Finishers	47-5061	Roof Bolters, Mining
47-2044	Tile and Marble Setters	47-5071	Roustabouts, Oil and Gas
47-2051	Cement Masons and Concrete Finishers	47-5081	Helpers--Extraction Workers
47-2053	Terrazzo Workers and Finishers	47-5099	Extraction Workers, All Other
47-2061	Construction Laborers		
47-2071	Paving, Surfacing, and Tamping Equipment Operators		
47-2072	Pile-Driver Operators		
47-2073	Operating Engineers and Other Construction Equipment Operators		
47-2081	Drywall and Ceiling Tile Installers		
47-2082	Tapers		
47-2111	Electricians		
47-2121	Glaziers		
47-2131	Insulation Workers, Floor, Ceiling, and Wall		
47-2132	Insulation Workers, Mechanical		
47-2141	Painters, Construction and Maintenance		
47-2142	Paperhangers		
47-2151	Pipelayers		
47-2152	Plumbers, Pipefitters, and Steamfitters		
47-2161	Plasterers and Stucco Masons		
47-2171	Reinforcing Iron and Rebar Workers		
47-2181	Roofers		
47-2211	Sheet Metal Workers		
47-2221	Structural Iron and Steel Workers		
47-2231	Solar Photovoltaic Installers		
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters		
47-3012	Helpers--Carpenters		
47-3013	Helpers--Electricians		
47-3014	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons		
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters		
47-3016	Helpers--Roofers		
47-3019	Helpers, Construction Trades, All Other		
47-4011	Construction and Building Inspectors		
47-4021	Elevator Installers and Repairers		
47-4031	Fence Erectors		
47-4041	Hazardous Materials Removal Workers		
47-4051	Highway Maintenance Workers		
47-4061	Rail-Track Laying and Maintenance Equipment Operators		
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners		
47-4091	Segmental Pavers		
47-4099	Construction and Related Workers, All Other		
47-5011	Derrick Operators, Oil and Gas		
47-5012	Rotary Drill Operators, Oil and Gas		



Customer Service Occupation Group

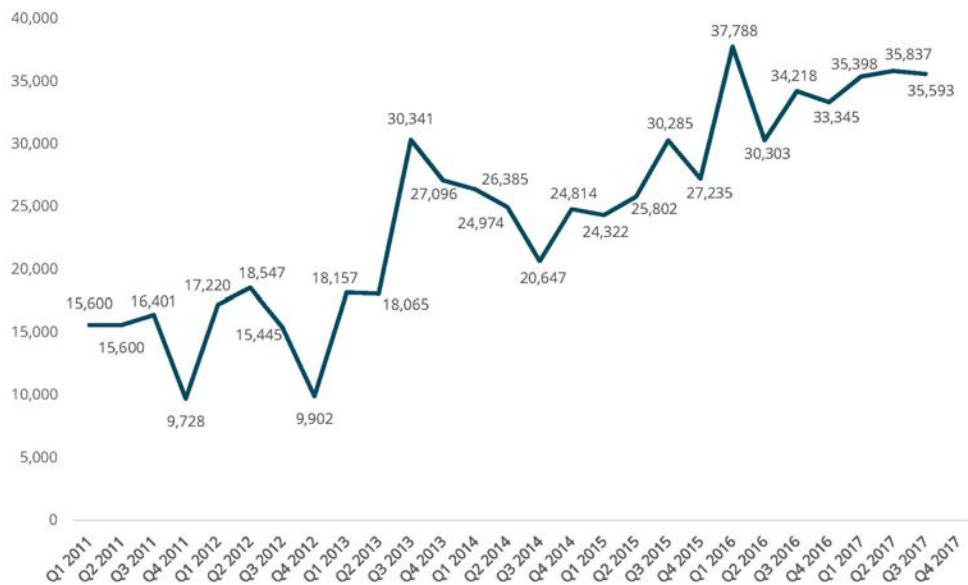
Introduction

The Customer Service group is the largest occupational group that WIN analyzes, both in terms of employment and online job postings. This group is of very high importance to the region because it is the first to grow when the economy expands and the first to contract in a downturn: it is often a leading indicator. As defined by WIN, this group encompasses all customer service occupations, with skills transferable across the retail sector, the hotel industry, food and beverage service industry, call centers, and other areas.

Job Posting Analysis

Online job ads for Customer Service workers fell one percent between Q2 2017 and Q3 2017, decreasing by 244 postings for a total of 35,593. After reaching a peak of almost 38,000 postings during Q1 2016, postings have stabilized at 35,000 ads.

Online Job Postings



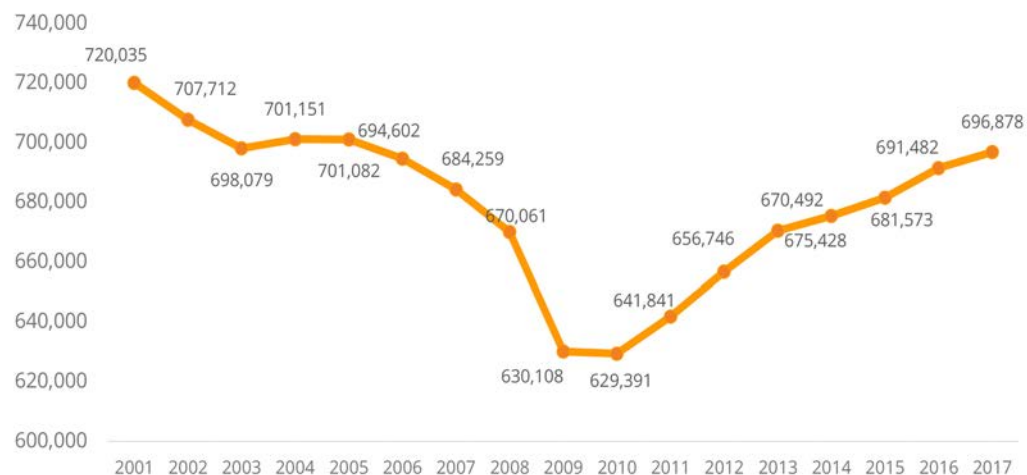
Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Employment Analysis

Employment in Customer Service occupations has increased 11 percent since the 2010 recession low, adding 67,487 jobs. Estimates for 2017 show that nearly 700,000 individuals are employed in Customer Service-related jobs, making it the region's largest occupation group. Job growth is relatively steady, but employers must employ another 20,000 individuals to reach 2001 employment levels.

Employment Over Time

2017



Data: EMSI
Analysis: Workforce Intelligence Network

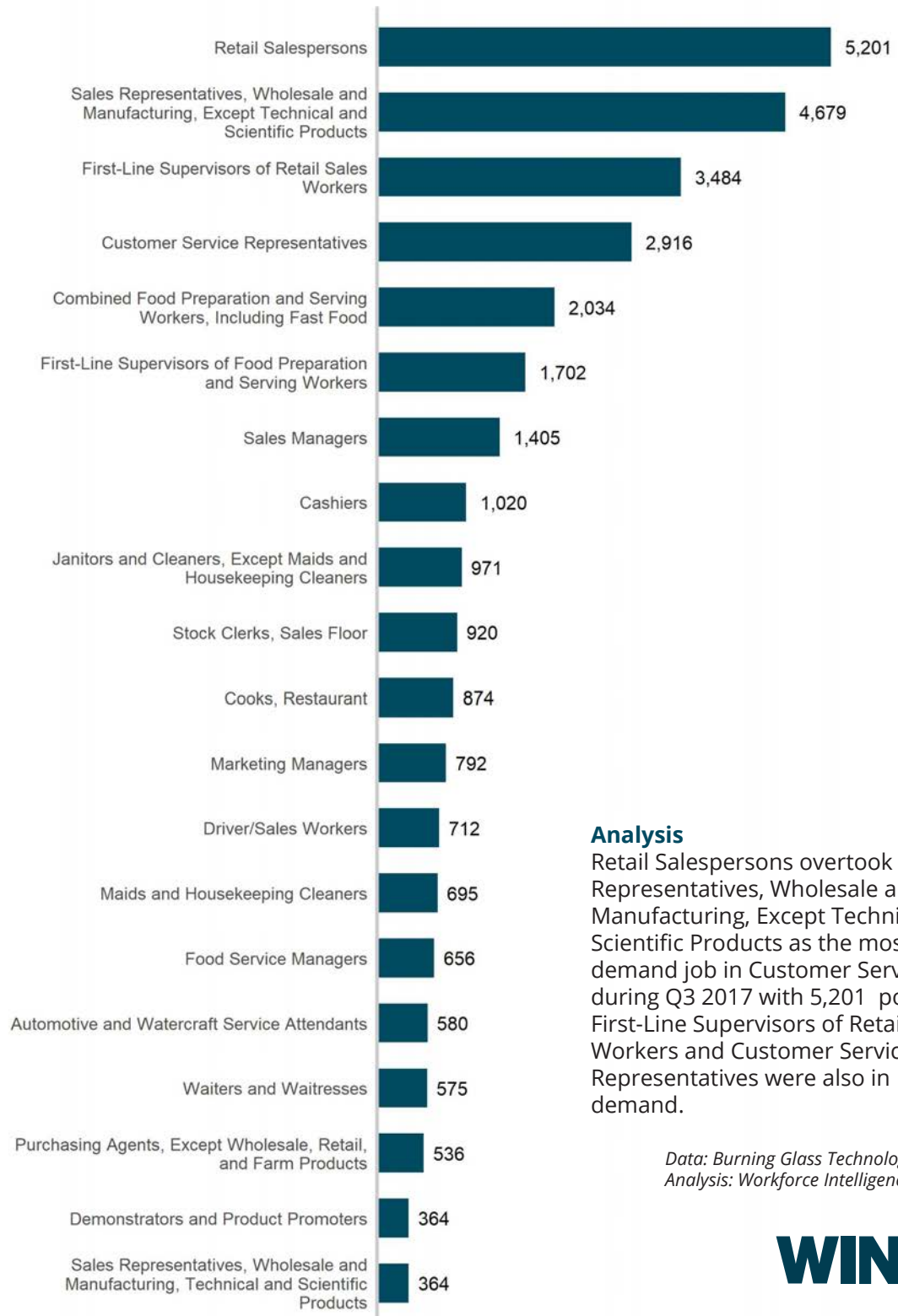


Retail Salespersons:
most in-demand occupation



35,593 total job postings

**Customer Service
Top Jobs Posted**
Quarter 3 2017



Analysis

Retail Salespersons overtook Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products as the most in-demand job in Customer Service during Q3 2017 with 5,201 postings. First-Line Supervisors of Retail Sales Workers and Customer Service Representatives were also in demand.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



696,878 individuals employed



Entry-level
opportunities available

Customer Service Educational Attainment Required

Customer Service jobs either require little to no training past a high school education or require a bachelor's degree. This is because occupations in the group range from retail sales and other lower skill jobs to those in sales and management positions.

Similarly, many Customer Service jobs are open to entry-level workers, with 8,795 postings citing this experience level in Q3 2017 job ads. Often, these jobs allow individuals to gain experience and foundational skills before transitioning to other career paths or leadership roles.

Educational Attainment

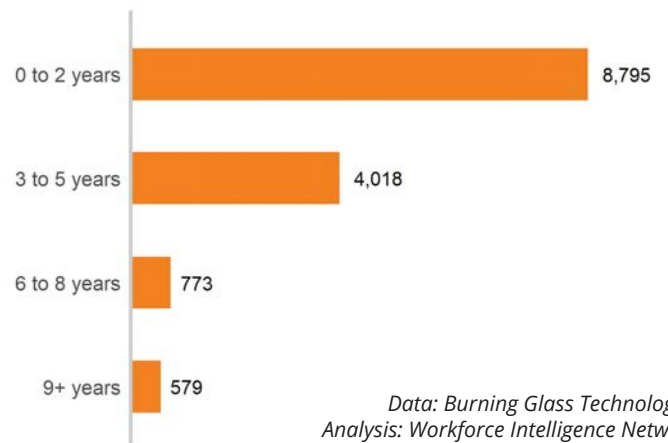


Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

In-Demand Areas of Study

- Business Administration and Management, General
- Engineering, General
- Marketing/ Marketing Management, General
- Finance, General
- Logistics, Materials, and Supply Chain Management

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Bachelor's degree preferred
for management positions



Essential skills: Sales and
customer service

Customer Service In-Demand Skills

Customer Service employers are seeking workers with a wide array of high-level communication skills. The most in-demand skillsets in this occupation group were sales and customer service, the feature connecting all jobs in this group. Supervisory skills, such as Merchandising and Store Management, were also present in many of the postings. These abilities are vital for Customer Service workers to build and cultivate relationships with customers and ensure they find the products to meet their needs.

Technical In-Demand Skills

- Sales/ Customer Service/ Customer Contact
- Retail Setting
- Merchandising
- Store Management
- Scheduling

Foundational In-Demand Skills

- Communication Skills/ Teamwork
- Ability to Perform Physical Labor
- Organizational Skills
- Writing/ Problem Solving
- Computer Skills/ Microsoft Office

Job Type

- Full-time: 39.8%
- Part-time: 13.5%
- Temporary: 6.9%

Certifications Required

- SERVSAFE
- Automotive Service Excellence (ASE) Certification
- Commercial Driver's License
- Food Service Sanitation Certification
- Insurance License



\$52,000:
average advertised salary



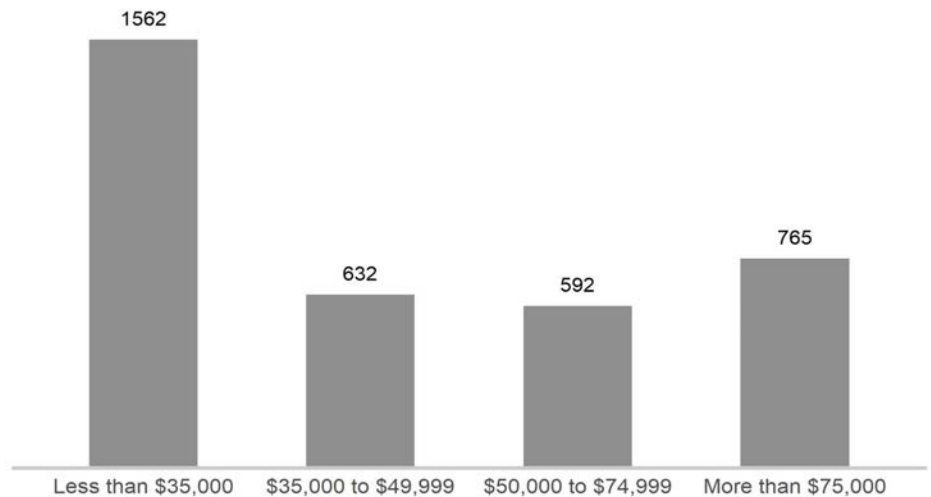
Sales Managers have high
earning potential

Customer Service Wages and Advertised Salary

Many Customer Service jobs pay relatively low wages, given the low education and experience criteria in most postings. Some occupations offer a great deal of wage potential but also require more education and training. While 44 percent of postings advertised an annual salary below \$35,000, the average advertised salary in Q3 2017 was \$52,000. The wage table below shows the promising wage growth for both the top occupation, Wholesale and Manufacturing Sales Representatives, as well as Sales Managers.

Advertised Salary in Job Postings

Quarter 3 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
41-2031	Retail Salespersons	\$8.88	\$9.27	\$10.39	\$13.40	\$19.07
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$14.33	\$20.53	\$29.27	\$44.12	\$60.26
41-1011	First-Line Supervisors of Retail Sales Workers	\$11.96	\$15.02	\$19.26	\$25.05	\$33.56
43-4051	Customer Service Representatives	\$9.58	\$11.72	\$15.51	\$20.19	\$26.74
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	\$8.71	\$8.91	\$9.25	\$9.95	\$11.95
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	\$9.84	\$11.60	\$14.82	\$20.46	\$26.04
11-2022	Sales Managers	\$34.50	\$45.91	\$60.68	\$79.02	\$114.91
41-2011	Cashiers	\$8.74	\$9.05	\$9.67	\$11.61	\$14.71
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	\$9.07	\$9.65	\$11.36	\$14.66	\$18.58
43-5081	Stock Clerks, Sales Floor	\$8.86	\$9.33	\$11.04	\$14.72	\$18.63

Data: EMSI, BLS
Analysis: Workforce Intelligence Network



Customer Service Occupations

Custom Occupation Group

The Customer Service group is the largest occupational group that WIN analyzes, both in terms of employment and online job postings. The following occupations are used by WIN researchers to provide custom analysis: The Workforce Intelligence Network for Southeast Michigan should be cited any time the analysis, graphics, or custom occupation group from this report are used.

SOC Code	Occupation	SOC Code	Occupation
11-2021	Marketing Managers	41-9099	Sales and Related Workers, All Other
11-2022	Sales Managers	43-3041	Gaming Cage Workers
11-3061	Purchasing Managers	43-3061	Procurement Clerks
11-9051	Food Service Managers	43-4051	Customer Service Representatives
11-9071	Gaming Managers	43-4081	Hotel, Motel, and Resort Desk Clerks
11-9081	Lodging Managers	43-4151	Order Clerks
13-1022	Wholesale and Retail Buyers, Except Farm Products	43-4181	Reservation and Transportation Ticket Agents and Travel Clerks
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	43-5081	Stock Clerks and Order Fillers
13-1121	Meeting, Convention, and Event Planners	51-3011	Bakers
13-1199	Business Operations Specialists, All Other	51-3021	Butchers and Meat Cutters
37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	51-3022	Meat, Poultry, and Fish Cutters and Trimmers
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	51-3023	Slaughterers and Meat Packers
37-2012	Maids and Housekeeping Cleaners	51-6011	Laundry and Dry-Cleaning Workers
39-1011	Gaming Supervisors	53-2031	Flight Attendants
39-1012	Slot Supervisors	53-3031	Driver/Sales Workers
39-3011	Gaming Dealers	53-6021	Parking Lot Attendants
39-3012	Gaming and Sports Book Writers and Runners	53-6031	Automotive and Watercraft Service Attendants
39-3019	Gaming Service Workers, All Other	53-6061	Transportation Attendants, Except Flight Attendants
39-3031	Ushers, Lobby Attendants, and Ticket Takers		
39-3091	Amusement and Recreation Attendants		
39-3093	Locker Room, Coatroom, and Dressing Room Attendants		
39-3099	Entertainment Attendants and Related Workers, All Other		
39-6011	Baggage Porters and Bellhops		
39-6012	Concierges		
39-7011	Tour Guides and Escorts		
39-7012	Travel Guides		
39-9032	Recreation Workers		
39-9041	Residential Advisors		
41-1011	First-Line Supervisors of Retail Sales Workers		
41-1012	First-Line Supervisors of Non-Retail Sales Workers		
41-2011	Cashiers		
41-2012	Gaming Change Persons and Booth Cashiers		
41-2021	Counter and Rental Clerks		
41-2022	Parts Salespersons		
41-2031	Retail Salespersons		
41-3041	Travel Agents		
41-3099	Sales Representatives, Services, All Other		
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products		
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products		
41-9011	Demonstrators and Product Promoters		
41-9041	Telemarketers		
41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers		



Education Occupation Group

Introduction

Education-related jobs can be found both in the private and public sectors with teachers and other education-related workers employed in public schools, private schools, and training institutions. Jobs in the education occupation group require a variety of skills and credentials dependent on the target age group and topic area for the educator. From elementary school teachers to college professors, educators are the backbone of training the future workforce.

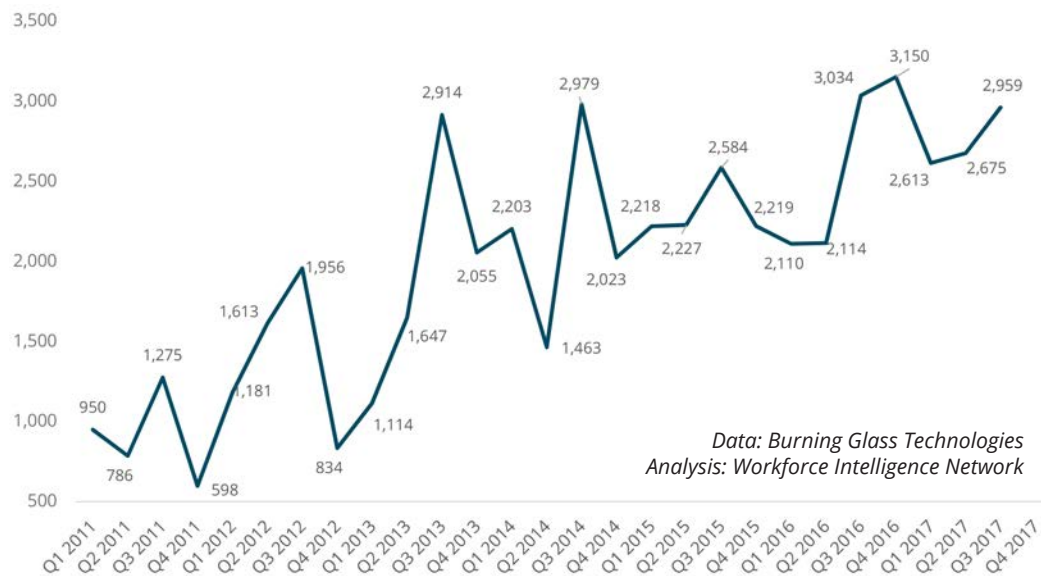
Job Posting Analysis

Job postings in Education do not follow a traditional business cycle like many other occupation groups. Instead, Education hiring peaks during quarter three, particularly in July and August when schools ramp up staffing for the school year. Q3 2017 postings increased by 284 postings after Q2 2017 for a total of 2,959 job ads.

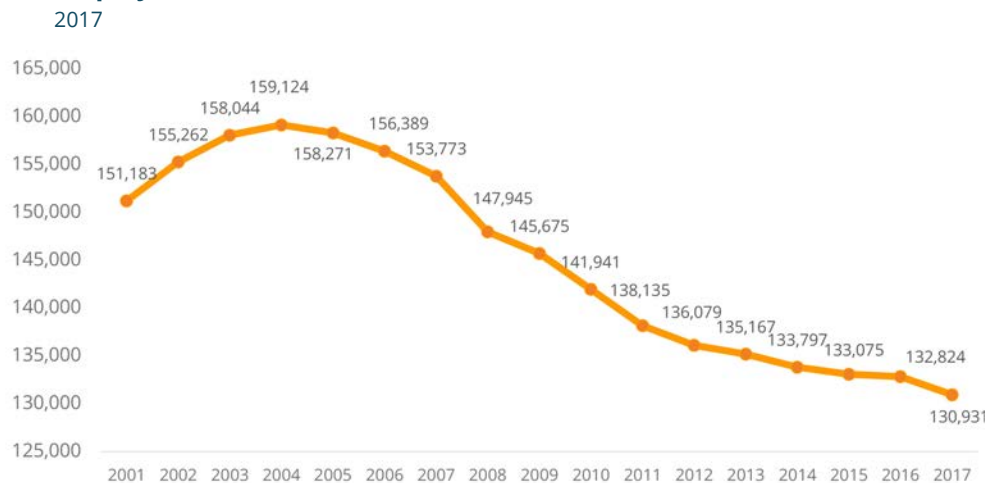
Employment Analysis

Unlike many other occupation groups that have recovered jobs since the recession, Education employment has been declining since 2004 and currently has 130,931 workers compared to the 159,124 during the peak in 2004. There was also no precipitous drop in employment during 2009 and 2010 as the economy collapsed. Education positions, many of which are publicly funded, typically follow government spending on educator positions and part-time versus full-time faculty choices made by universities in response.

Online Job Postings



Employment Over Time



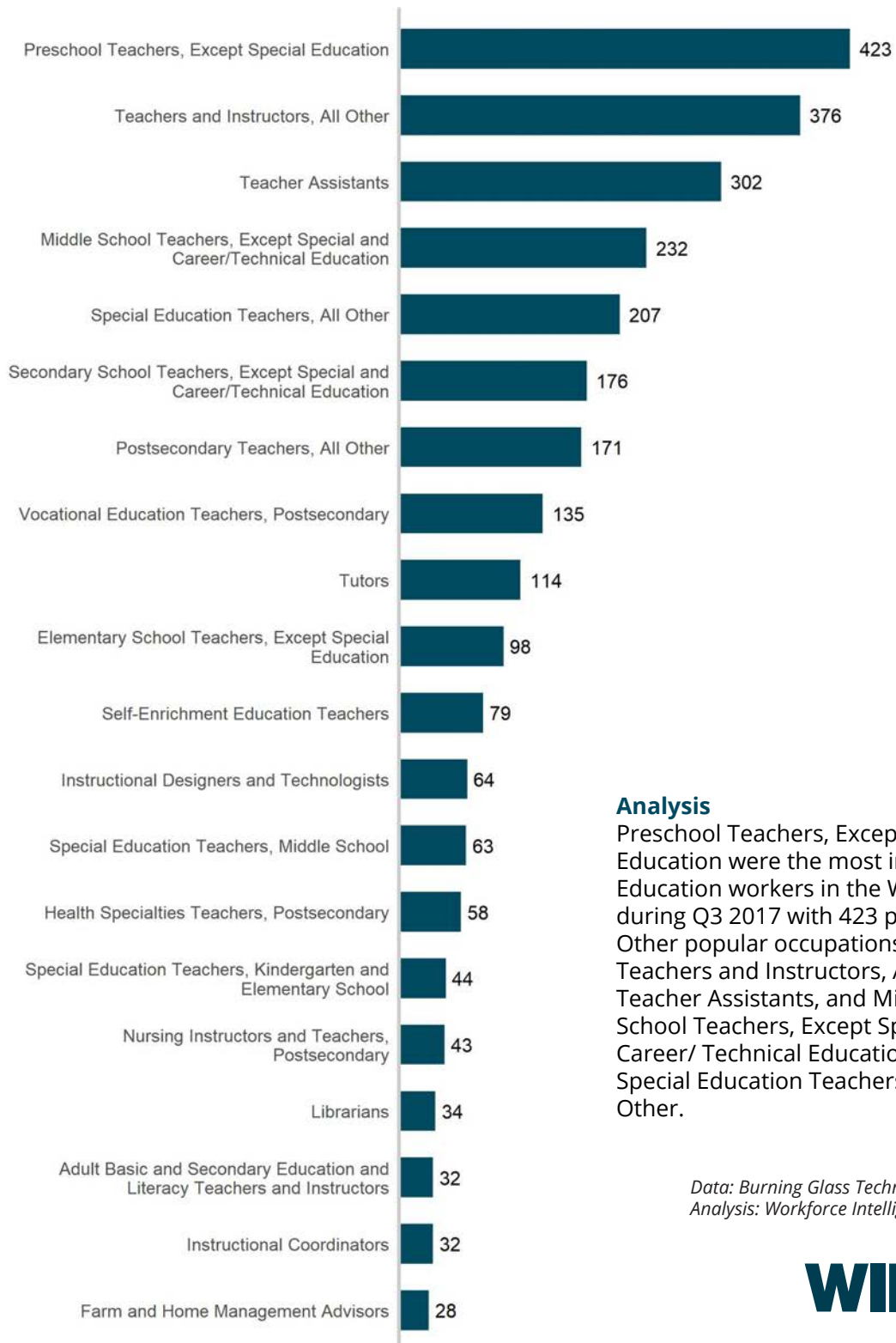


Preschool Teachers:
most in-demand occupation



2,959 Education jobs posted
during Q3 2017

Education
Top Jobs Posted
Quarter 3 2017



Analysis

Preschool Teachers, Except Special Education were the most in-demand Education workers in the WIN region during Q3 2017 with 423 postings. Other popular occupations include Teachers and Instructors, All Other, Teacher Assistants, and Middle School Teachers, Except Special and Career/ Technical Education, and Special Education Teachers, All Other.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Bachelor's degree required for teaching positions



Entry-level opportunities available in Education

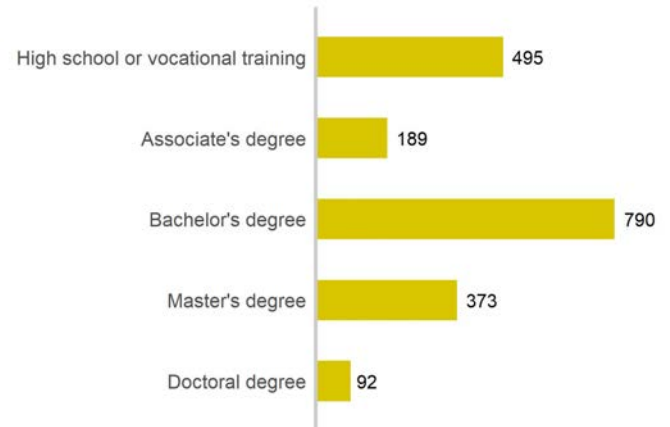
Education

Education and Experience

Most positions in Education require college education as training requirements have increased. Another large batch of postings are open to those with vocational training, most likely accounting for Teacher Assistants.

Many positions are open to less experienced workers with 614 postings offering entry-level opportunities. The next most requested experience is three to five years, with 210 ads preferring this criterion. Few postings require more than five years of experience.

Educational Attainment

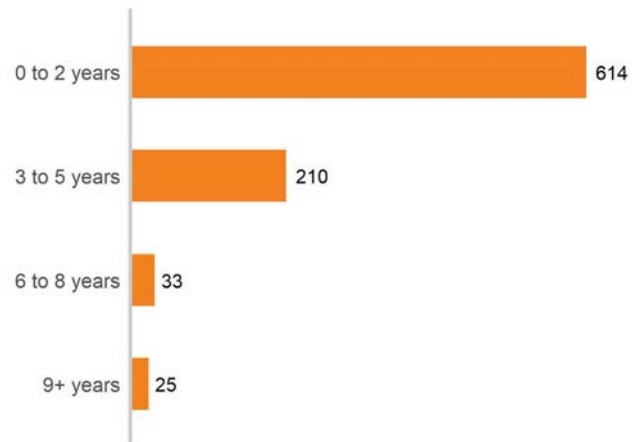


Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

In-Demand Areas of Study

- Early Childhood Education and Teaching
- Child Development
- Nursing Science
- Business Administration and Management, General
- Computer Science

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Child Care and Lesson Planning: in-demand skills



Teacher certification required

Education In-Demand Skills

To effectively prepare students for careers of their own, educators must be proficient in classroom-specific teaching skills bolstered by the communication, planning, and computer skills valued in most industries. Technical skills for teachers and other occupations in the Education occupation group include lesson planning, teaching, and child care.

Technical In-Demand Skills

- Teaching/ Early Childhood Education
- Child Care/ Child Development
- Lesson Planning
- Special Education
- Scheduling

Foundational In-Demand Skills

- Communication Skills/ Teamwork
- Writing/ Planning/ Research
- Organizational Skills
- English
- Computer Skills

Job Type

- Full-time: 58.1%
- Part-time: 15.4%
- Temporary: 10.5%

Certifications Required

- Certified Teacher
- Teaching Certificate
- First Aid CPR AED
- Teaching License
- Special Education Certification



\$50,000:
average advertised salary



Earning potential increases
with age of students taught

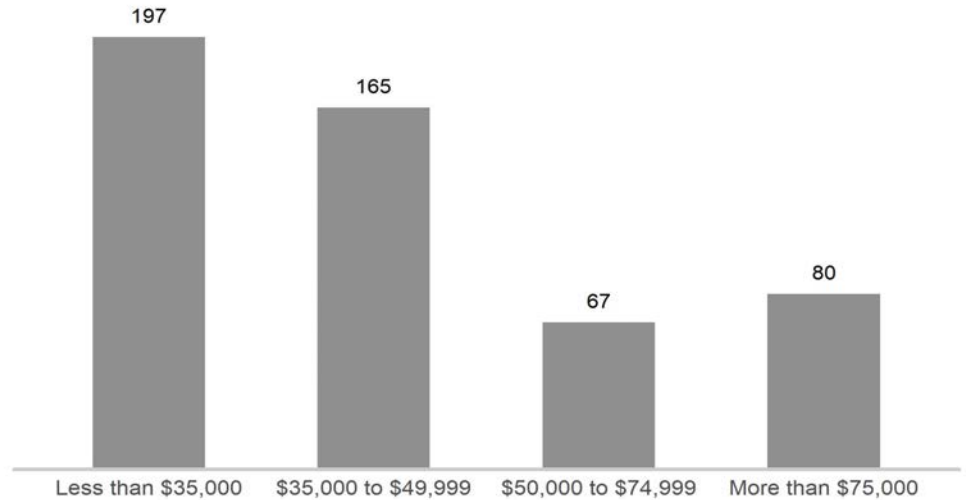
Education

Wages and Advertised Salary

Starting wages for many teaching positions are not competitive but do have growth potential. Teachers' wages are generally negotiated by a union and increase over time. The average advertised salary for Education jobs during Q3 2017 was \$50,000. Over 39 percent of postings indicate annual salaries below \$35,000 despite high educational requirements. In the wage table below, four of the top ten jobs have entry-level wages at or below \$10 per hour, though most show dramatic increases over time. However, preschool teachers and teacher assistants earn less than \$13 per hour at the median.

Advertised Salary in Job Postings

Quarter 3 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
25-2011	Preschool Teachers, Except Special Education	\$9.56	\$10.62	\$12.91	\$17.37	\$22.84
25-3099	Teachers and Instructors, All Other	\$9.52	\$11.61	\$16.46	\$27.84	\$38.45
25-9041	Teacher Assistants	\$9.06	\$9.99	\$12.13	\$15.00	\$18.78
25-2022	Middle School Teachers, Except Special and Career/Technical Education	\$18.19	\$23.42	\$32.17	\$38.93	\$44.11
25-2059	Special Education Teachers, All Other	\$17.19	\$23.22	\$32.09	\$39.12	\$47.07
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	\$17.46	\$22.04	\$30.61	\$38.79	\$45.70
25-1199	Postsecondary Teachers, All Other	#N/A	Insf. Data	Insf. Data	Insf. Data	Insf. Data
25-1194	Vocational Education Teachers, Postsecondary	Insf. Data	Insf. Data	Insf. Data	Insf. Data	Insf. Data
25-3099	Tutors	\$9.52	\$11.61	\$16.46	\$27.84	\$38.45
25-2021	Elementary School Teachers, Except Special Education	\$17.52	\$22.63	\$31.49	\$37.69	\$44.15

Data: EMSI, BLS
Analysis: Workforce Intelligence Network

Custom Occupation Group

Education-related jobs can be found both in the private and public sectors with teachers and other education-related workers employed in public schools, private schools, and training institutions. The following occupations are used by WIN researchers to provide custom analysis: The Workforce Intelligence Network for Southeast Michigan should be cited any time the analysis, graphics, or custom occupation group from this report are used.

SOC Code Occupation

25-1099	Postsecondary Teachers
25-2011	Preschool Teachers, Except Special Education
25-2012	Kindergarten Teachers, Except Special Education
25-2021	Elementary School Teachers, Except Special Education
25-2022	Middle School Teachers, Except Special and Career/Technical Education
25-2023	Career/Technical Education Teachers, Middle School
25-2031	Secondary School Teachers, Except Special and Career/Technical Education
25-2032	Career/Technical Education Teachers, Secondary School
25-2051	Special Education Teachers, Preschool
25-2052	Special Education Teachers, Kindergarten and Elementary School
25-2053	Special Education Teachers, Middle School
25-2054	Special Education Teachers, Secondary School
25-2059	Special Education Teachers, All Other
25-3011	Adult Basic and Secondary Education and Literacy Teachers and Instructors
25-3021	Self-Enrichment Education Teachers
25-3098	Substitute Teachers
25-3099	Teachers and Instructors, All Other
25-4011	Archivists
25-4012	Curators
25-4013	Museum Technicians and Conservators
25-4021	Librarians
25-4031	Library Technicians
25-9011	Audio-Visual and Multimedia Collections Specialists
25-9021	Farm and Home Management Advisors
25-9031	Instructional Coordinators
25-9041	Teacher Assistants
25-9099	Education, Training, and Library Workers, All Other

Introduction

Energy-related occupations encompass jobs in engineering, science, mining, and extraction. Workers in this field have a range of skills all related to keeping businesses and homes powered. Energy companies employ workers in a variety of occupations, many of which are also included in other WIN occupation groups. Data referenced in this section pertain only to job postings from energy-related businesses.

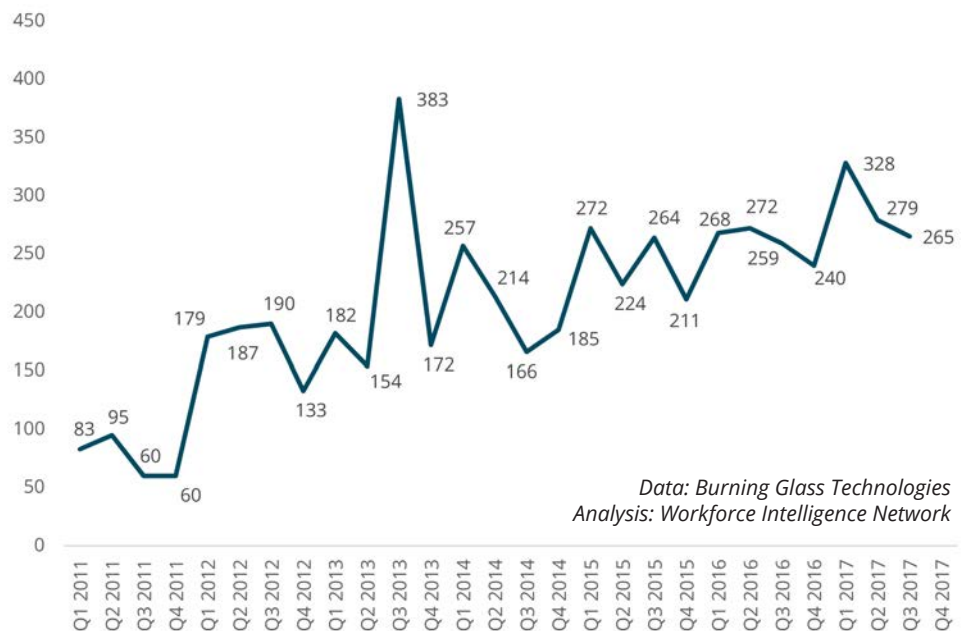
Job Posting Analysis

Online job ads for Energy workers fell during Q3 2017, dropping 14 postings for a total of 265. Postings had stagnated around an average of 250 job ads for the previous eleven quarters. Employer demand this quarter is two percent higher than during Q3 2016.

Employment Analysis

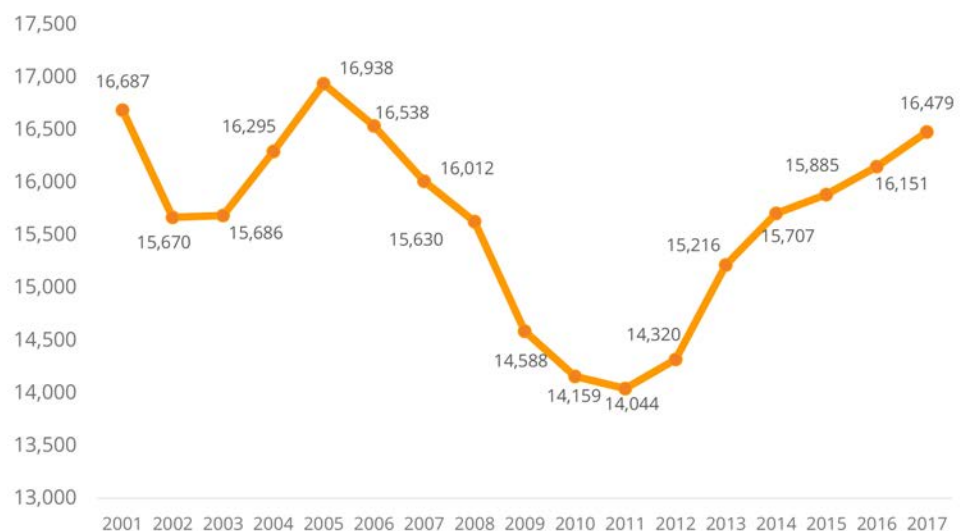
The data presented in the graph to the right represents total employment in the Energy industries (NAICS 2111, 2131, 2211, 2212, 2371), not just WIN-designated Energy occupations. In 2017, 16,479 southeast Michigan workers are employed in these industries. Employment in these industries declined between 2005 and 2011, losing 2,894 jobs. Since then, employment has demonstrated steady growth and recovered 2,435 jobs.

Online Job Postings



Employment Over Time

2017



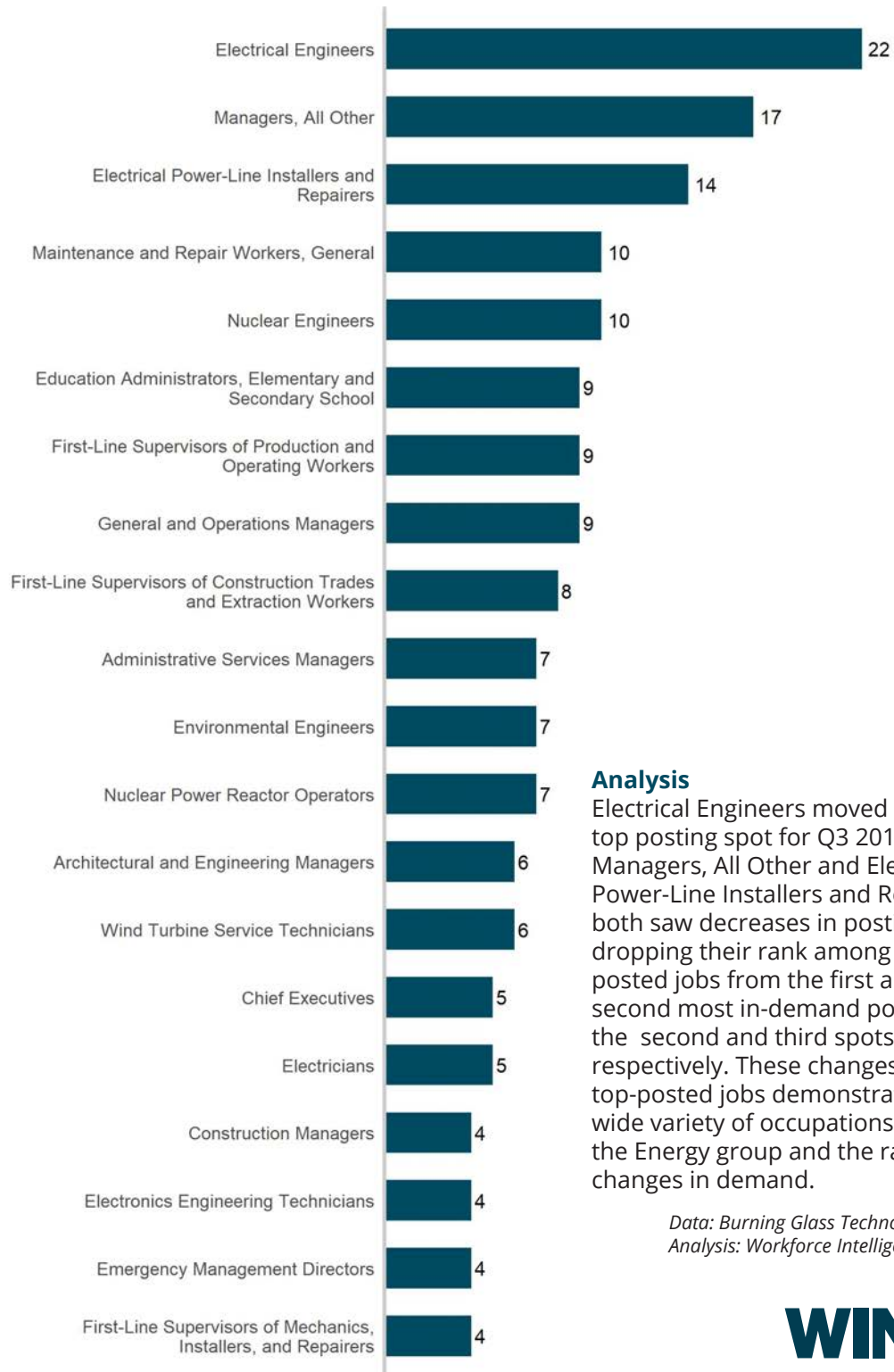


Electrical Engineers:
most in-demand job



Now Hiring: 265 Energy jobs
posted

Energy
Top Jobs Posted
Quarter 3 2017



Analysis

Electrical Engineers moved into the top posting spot for Q3 2017. Managers, All Other and Electrical Power-Line Installers and Repairs both saw decreases in postings, dropping their rank among the top-posted jobs from the first and second most in-demand position to the second and third spots respectively. These changes in the top-posted jobs demonstrate the wide variety of occupations within the Energy group and the rapid changes in demand.

*Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network*



Technical and vocational training highly sought after

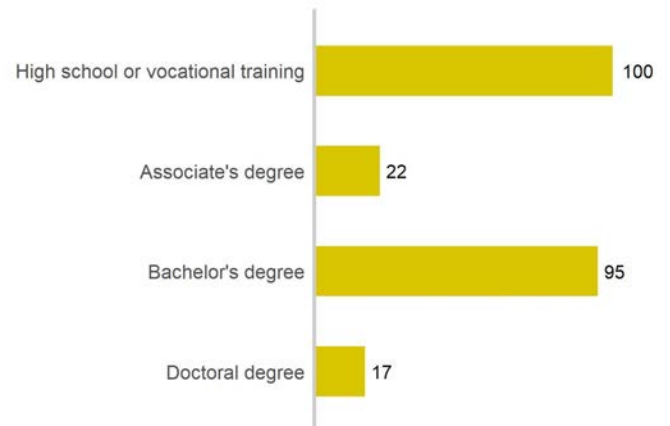


3 to 5 years of experience in-demand

Energy Education and Experience

Many jobs in Energy have an engineering focus and thus require a bachelor's degree for employment. However, there are nearly as many technician-level positions that require vocational training such as an apprenticeship. As seen in 44 percent of the postings that specified an experience level, energy companies posting in Q3 2017 preferred three to five years of experience. Demand for entry-level workers was much lower, with only 19 percent of postings looking for these workers.

Educational Attainment

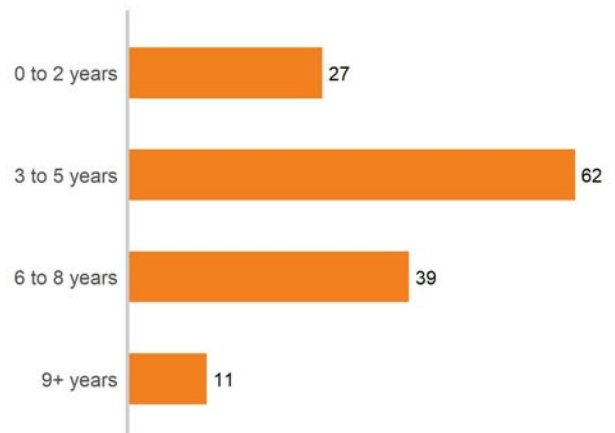


Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

In-Demand Area of Study

- Engineering, General
- Business Administration and Management, General
- Engineering Technology, General
- Electrical and Electronic Engineering Technologies/Technicians, Other
- Mechanical Engineering

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Managements skills in high demand



PMP and CDL certifications in-demand

Energy In-Demand Skills

Employers in the Energy group need workers to have diverse skill sets to suit the many different occupations included. Planning, problem solving, and communications skills are key skills for Energy workers as in many other occupation groups. Since most positions are highly technical, more specific abilities required for Energy jobs reflect engineering and management needs and range from budgeting and management to technical support and repair.

Technical In-Demand Skills

- Budgeting/ Scheduling
- Project Management/ Supervisory Skills
- Repair/ Inspection
- Microsoft Office
- Technical Support

Foundational In-Demand Skills

- Planning/ Writing/ Research
- Problem Solving
- Writing
- Communication Skills
- Ability to Perform Physical Labor

Job Type

- Full-time: 40.0%
- Part-time: Less than 0.1%
- Temporary: Data Not Available

Certifications Required

- Commercial Driver's License
- Air Brake Certified
- Project Management Certification (E.G. PMP)
- CDL Class A
- Six Sigma Black Belt



\$49,000:
Average advertised salary



Engineering and Management
positions provide high wage growth

Energy

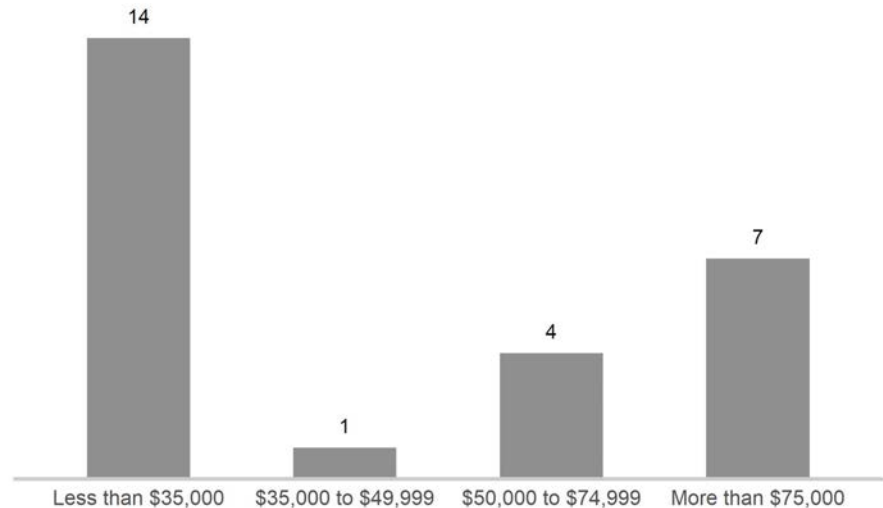
Wages and Advertised Salary

Only ten percent of Q3 2017 Energy postings advertised a salary. Of those that did indicate a salary, most were either advertising under \$35,000 or above \$75,000 annually. The average advertised salary in a posting during Q3 2017 was \$49,000.

According to BLS data, wages for energy workers are high and offer upward growth. This is especially true for engineers and managers. General and Operation Managers reported median annual incomes greater than \$100,000 per year.

Advertised Salary in Job Postings

Quarter 3 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
17-2071	Electrical Engineers	\$28.08	\$34.20	\$42.72	\$50.98	\$61.85
11-9199	Managers, All Other	\$29.81	\$36.73	\$47.75	\$60.25	\$75.86
49-9051	Electrical Power-Line Installers and Repairers	\$17.16	\$27.40	\$37.27	\$44.69	\$49.61
49-9071	Maintenance and Repair Workers, General	\$10.24	\$12.66	\$16.93	\$22.49	\$27.90
17-2161	Nuclear Engineers	\$34.52	\$41.74	\$47.02	\$52.16	\$59.77
11-9032	Education Administrators, Elementary and Secondary School	\$29.95	\$38.24	\$46.54	\$54.62	\$61.34
51-1011	First-Line Supervisors of Production and Operating Workers	\$17.69	\$23.27	\$30.49	\$40.20	\$49.23
11-1021	General and Operations Managers	\$22.46	\$33.08	\$50.23	\$77.04	\$103.94
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$21.07	\$25.15	\$30.16	\$39.29	\$48.36
11-3011	Administrative Services Managers	\$23.80	\$32.11	\$41.81	\$53.42	\$66.74

Data: EMSI, BLS
Analysis: Workforce Intelligence Network

Custom Occupation Group

Jobs in the WIN Energy occupation group are associated with the skilled trades, engineering, management, and planning. Due to the nature of these jobs and the broad industry of Energy as a whole, NAICS codes are used instead of SOC codes to encompass all those employed in Energy related fields. The following occupations are used by WIN researchers to provide custom analysis: The Workforce Intelligence Network for Southeast Michigan should be cited any time the analysis, graphics, or custom occupation group from this report are used.

NAICS Code Industry

2111	Oil and Gas Extraction
2131	Support Activities for Mining
2211	Electric Power Generation, Transmission and Distribution
2212	Natural Gas Distribution
2371	Utility System Construction



Engineers & Designers Occupation Group (Manufacturing Focused)

Introduction

Jobs in the manufacturing industry can range from assembly and production, to skilled trades and technicians, designers and engineers, and even computer-related occupations such as software development. Demand for engineers in the region has been consistent, and employment has been growing quickly.

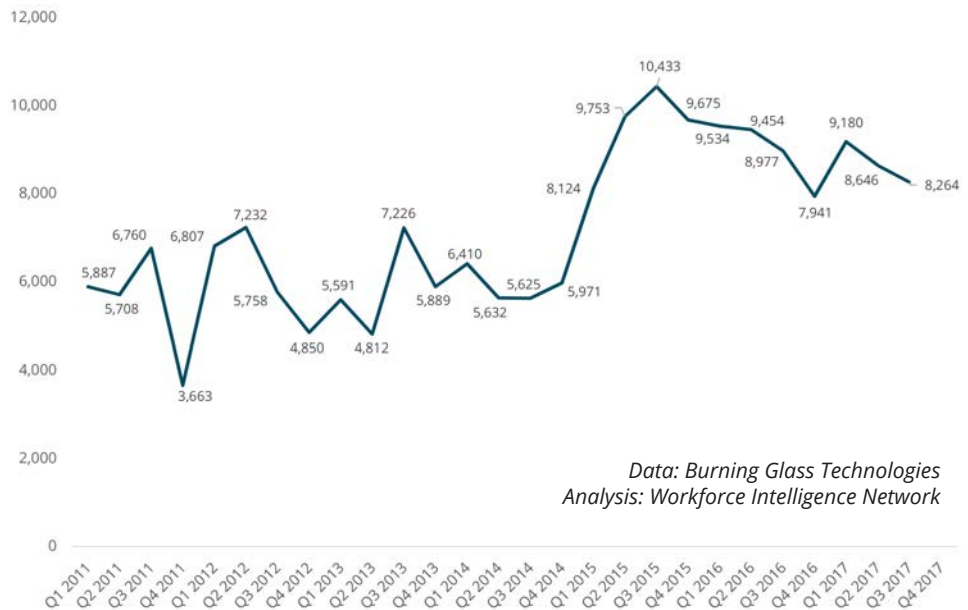
Job Posting Analysis

Online job ads for Engineers and Designers dropped four percent to 8,264 during Q3 2017, compared to 8,646 postings during Q2 2017. This drop continues the overall decline in postings for Engineers and Designers in the WIN region that started when postings peaked during Q1 2015.

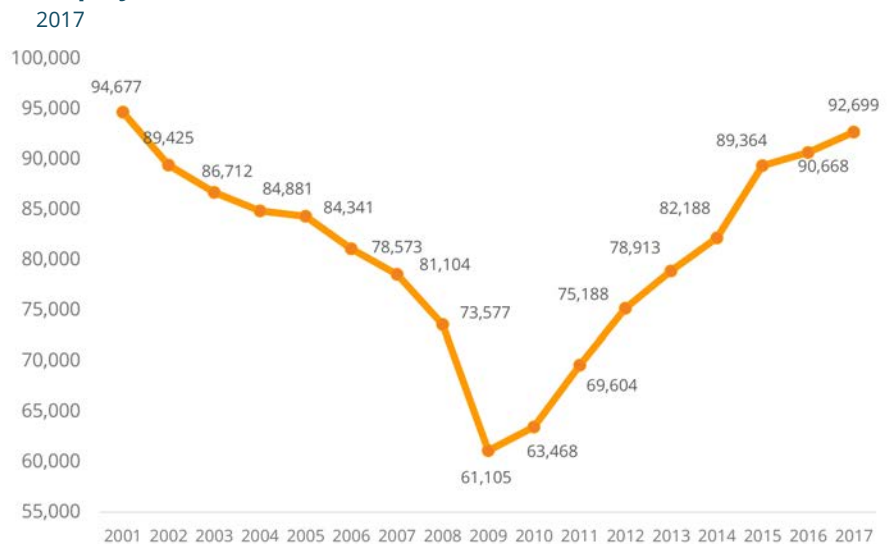
Employment Analysis

Employment in occupations related to Engineers and Designers grew modestly between 2016 and 2017, gaining 2,031 positions for 92,699 in total. A downward trend of employment for WIN region engineers began in 2001 when employment peaked at 94,677 jobs, well before the Great Recession of 2009. Since the lowest point of 61,105 workers in 2009, growth has been consistent. Current employment levels are only about 2,000 workers beneath the 2001 peak.

Online Job Postings



Employment Over Time



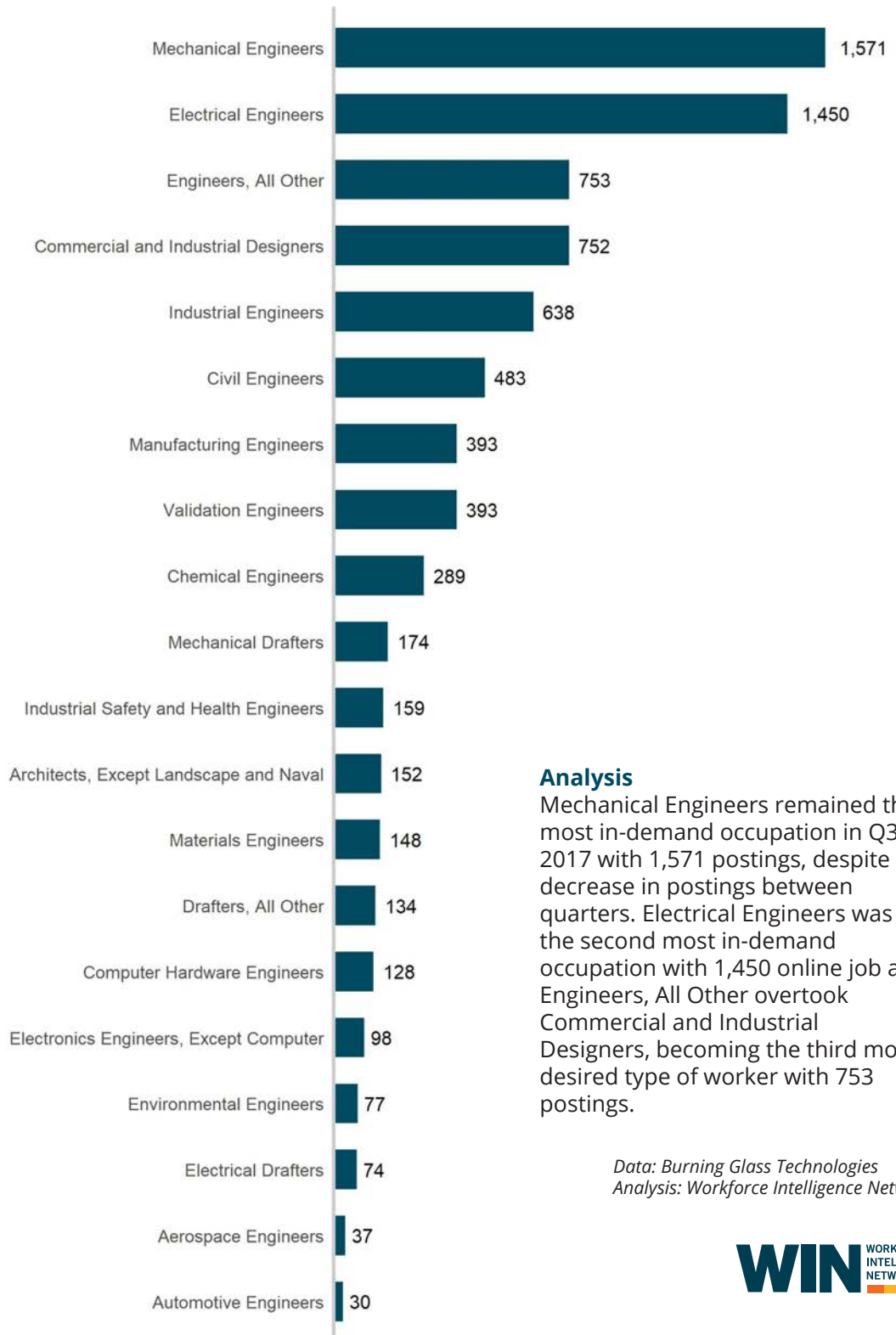


Now Hiring: 8,264 online job
Engineering and Designer postings



Most desired experience:
3 to 5 years

Engineers & Designers Top Jobs Posted Quarter 3 2017



Analysis

Mechanical Engineers remained the most in-demand occupation in Q3 2017 with 1,571 postings, despite the decrease in postings between quarters. Electrical Engineers was the second most in-demand occupation with 1,450 online job ads. Engineers, All Other overtook Commercial and Industrial Designers, becoming the third most desired type of worker with 753 postings.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Education desired:
Bachelor's degree

56%

of postings with advertised salaries
were \$75,000 or more per year

Engineers & Designers Education and Experience

Of the Engineers and Designer job postings that specified a desired experience level during Q3 2017, 79 percent required five years of experience or less. The most in-demand level of experience was three to five years with 3,115 postings. Education is key to augment experience for engineers. Of the 92 percent of ads that specified educational attainment, or 5,947 postings, most required a bachelor's degree. The near universal requirement for moderate experience alongside a college education suggests that incoming students should seek work experience before leaving school.

Educational Attainment

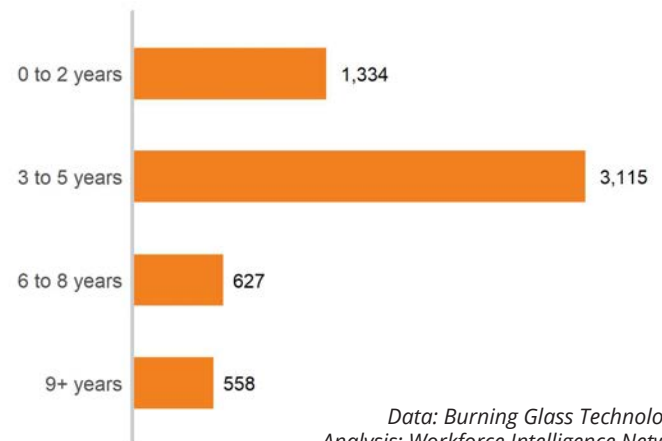


Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

In-Demand Area of Study

- Engineering, General
- Mechanical Engineering
- Electrical and Electronic Engineering Technologies/Technicians, Other
- Computer Science
- Business Administration and Management, General

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Top area of study:
Engineering

58%
of job ads offer
full-time employment

Engineers & Designers In-Demand Skills

Engineering and Design occupations require a wide array of skills, from the highly technical to those valued in most modern workplaces. Advanced knowledge of manufacturing processes and project development are desired, as are familiarity with Microsoft Office and scheduling. Employers hiring Engineers and Designers prefer candidates with effective communication, organization, and problem-solving skills.

Technical In-Demand Skills

- Microsoft Office
- Validation
- Mechanical Engineering
- Electrical Engineering
- Project Development

Foundational In-Demand Skills

- Communication Skills
- Problem Solving
- Writing
- Mathematics
- Planning

Job Type

- Full-time: 58.2%
- Part-time: 0.7%
- Temporary: 2.9%

Certifications Required

- American Board for Engineering and Technology (ABET) Accredited
- Professional Engineer
- Six Sigma Certification
- Six Sigma Black Belt
- Certified Quality Engineer



In-demand skills:
Validation, Microsoft Office



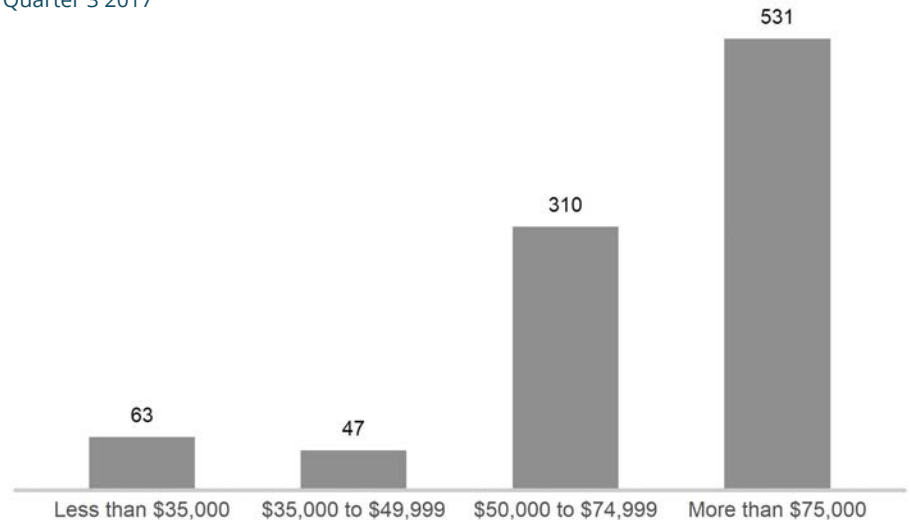
Top certification:
ABET Accredited

Engineers & Designers Wages and Advertised Salary

Among online job ads that listed salary information, 56 percent offered over \$75,000 annually. With a mean real-time salary for Engineers and Designers of \$81,000, it remains a field well worth the educational investment necessary for entry. Eight of the ten top jobs have median wages over \$40 hourly, with some having the potential to increase to over \$60 per hour. Even starting wages for half of the top occupations in the Engineers and Designers group are over \$25 per hour.

Advertised Salary in Job Postings

Quarter 3 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
17-2141	Mechanical Engineers	\$27.67	\$34.60	\$43.15	\$52.66	\$61.67
17-2071	Electrical Engineers	\$28.08	\$34.20	\$42.72	\$50.98	\$61.85
17-2199	Engineers, All Other	\$24.26	\$35.33	\$44.80	\$55.07	\$65.07
27-1021	Commercial and Industrial Designers	\$25.55	\$33.11	\$40.11	\$46.39	\$50.78
17-2112	Industrial Engineers	\$29.21	\$35.20	\$43.30	\$52.21	\$60.12
17-2051	Civil Engineers	\$24.34	\$28.66	\$35.26	\$43.57	\$55.31
17-2199	Manufacturing Engineers	\$24.26	\$35.33	\$44.80	\$55.07	\$65.07
17-2199	Validation Engineers	\$24.26	\$35.33	\$44.80	\$55.07	\$65.07
17-2041	Chemical Engineers	\$35.91	\$40.94	\$48.10	\$57.12	\$65.72
17-3013	Mechanical Drafters	\$16.33	\$20.99	\$27.72	\$34.49	\$39.79

Data: EMSI, BLS
Analysis: Workforce Intelligence Network

Engineers and Designers Occupations

Custom Occupation Group

WIN's Engineers and Designers occupation group includes jobs related to engineering and the technicians and designers who aid in the design phase of production. The following occupations are used by WIN researchers to provide custom analysis: The Workforce Intelligence Network for Southeast Michigan should be cited any time the analysis, graphics, or custom occupation group from this report are used.

SOC Code Occupation

17-1011	Architects, Except Landscape and Naval
17-1012	Landscape Architects
17-1021	Cartographers and Photogrammetrists
17-1022	Surveyors
17-2011	Aerospace Engineers
17-2021	Agricultural Engineers
17-2031	Biomedical Engineers
17-2041	Chemical Engineers
17-2051	Civil Engineers
17-2061	Computer Hardware Engineers
17-2071	Electrical Engineers
17-2072	Electronics Engineers, Except Computer
17-2081	Environmental Engineers
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors
17-2112	Industrial Engineers
17-2121	Marine Engineers and Naval Architects
17-2131	Materials Engineers

SOC Code Occupation

17-2141	Mechanical Engineers
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
17-2161	Nuclear Engineers
17-2171	Petroleum Engineers
17-2199	Engineers, All Other
17-3011	Architectural and Civil Drafters
17-3012	Electrical and Electronics Drafters
17-3013	Mechanical Drafters
17-3019	Drafters, All Other
17-3021	Aerospace Engineering and Operations Technicians
17-3025	Environmental Engineering Technicians
17-3029	Engineering Technicians, Except Drafters, All Other
17-3031	Surveying and Mapping Technicians
27-1021	Commercial and Industrial Designers

Health Care Occupation Group

Introduction

WIN's health care occupation group includes jobs related to health care support and practitioners.

Employment in this group has been consistently growing, more health care workers needed to care for Michigan's aging population and in response to regulatory and other changes. Registered nurses are routinely the most in-demand job in this group.

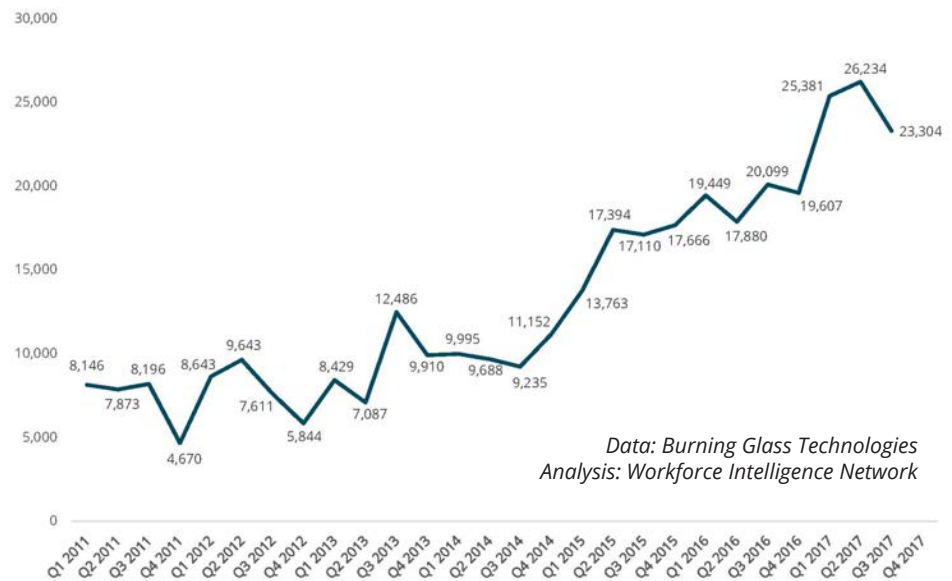
Job Posting Analysis

Online job ads for Health Care fell after reaching a new high of 26,234 postings during Q2 2017. Employers listed 23,304 postings during Q3 2017, 11 percent less than last quarter. Current demand is over 3,000 more postings than one year ago, in Q3 2016, and over 15,000 more postings than in Q1 2011.

Employment Analysis

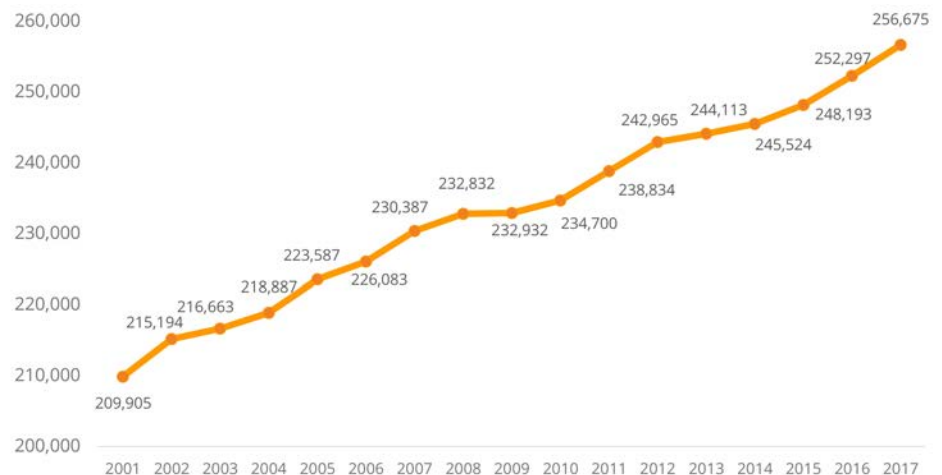
With 256,675 jobs, 2017 continues to set peak employment in Health Care, exceeding the previous high of 252,297 jobs in 2016. Employment has shown consistent growth since 2001, and is now 22 percent higher than the 209,905 workers employed in Health Care that year.

Online Job Postings



Employment Over Time

2017



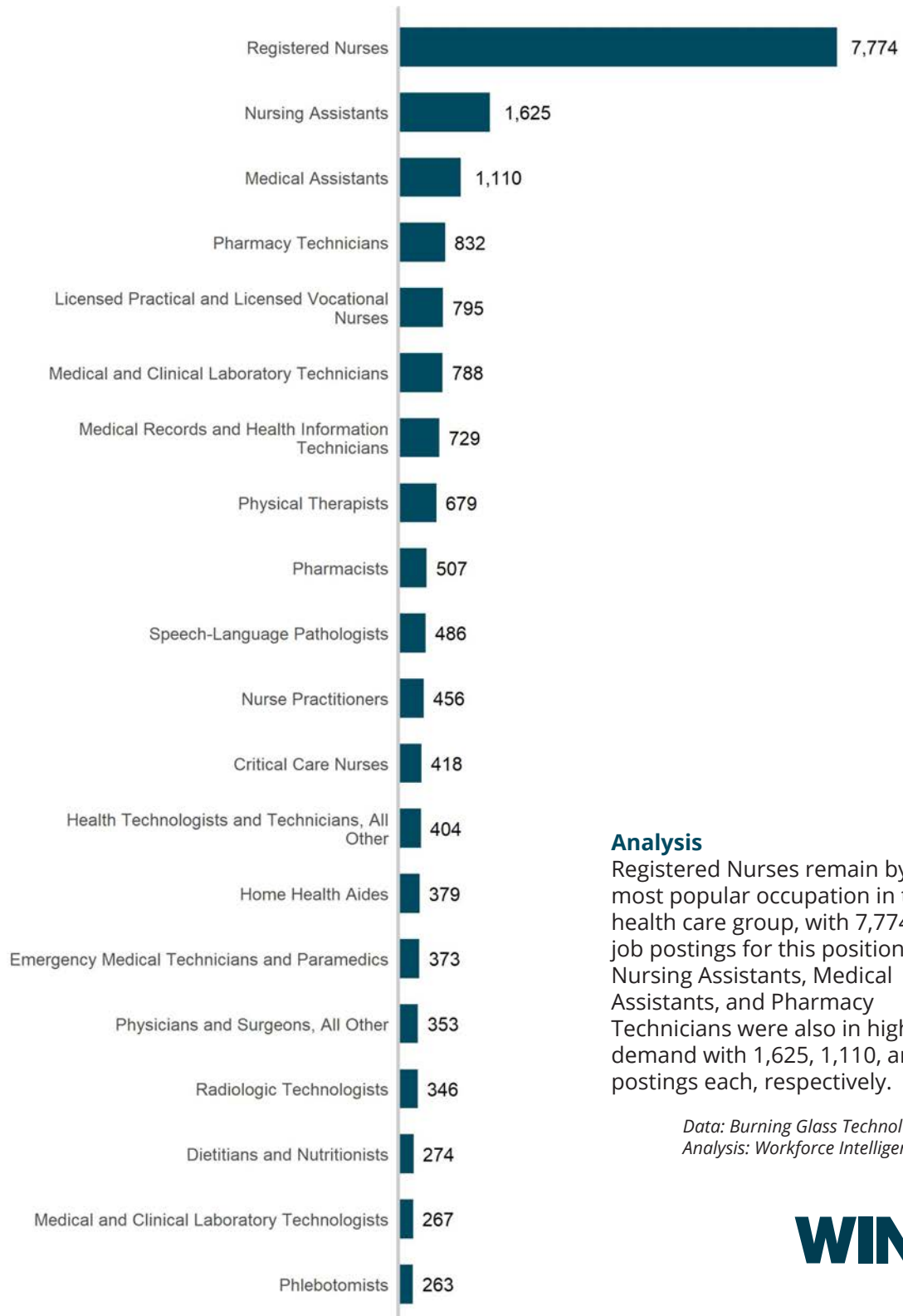


Job postings related to
Health Care decreased 11%



Top in-demand occupation:
Registered Nurses

Health Care Top Jobs Posted Quarter 3 2017



Analysis

Registered Nurses remain by far the most popular occupation in the health care group, with 7,774 online job postings for this position. Nursing Assistants, Medical Assistants, and Pharmacy Technicians were also in high demand with 1,625, 1,110, and 832 postings each, respectively.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



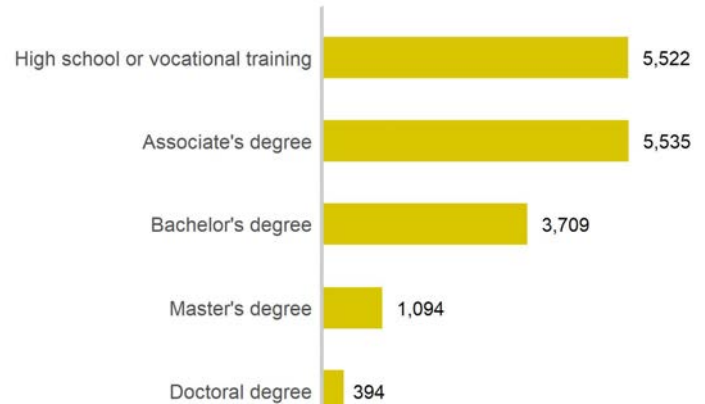
In-demand experience level:
0 to 2 years

68%
of Health Care jobs required
an associate's degree or less

Health Care Education and Experience

Almost all the Health Care job postings that specified a desired experience level during Q3 2017 were available to workers with under two years of experience. Additionally, 68 percent of postings indicating a desired educational attainment level were open to workers with an associate's degree or less. The high proportion of positions requiring limited education and experience combined with the steady employment growth make health care occupations a strong prospect for many workers.

Educational Attainment

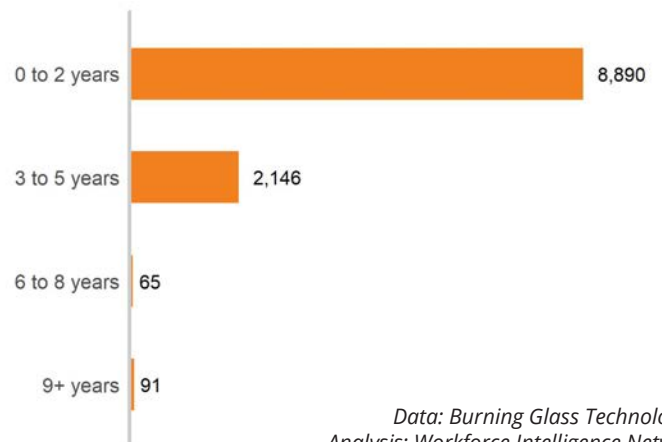


Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

In-Demand Area of Study

- Nursing Science
- Physical Therapy/Therapist
- Business Administration and Management, General
- Radiologic Technology/Science - Radiographer
- Occupational Therapy/Therapist

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Top area of study: Nursing
Science, Physical Therapy

51%
of Health Care jobs with advertised
salaries were over \$50,000

Health Care In-Demand Skills

The occupations in the Health Care group require a wide array of high-level technical skills necessary to effectively provide care. These skills range from technical medical expertise such as CPR, therapy and disease knowledge, to interpersonal and organizational skills like patient care and case management. Employers hiring Health Care workers often post complementary employability skills seeking effective communicators and planners.

Technical In-Demand Skills

- Patient Care/ Treatment Planning
- Teaching
- Supervisory Skills
- Cardiopulmonary Resuscitation (CPR)
- Therapy

Foundational In-Demand Skills

- Communication Skills
- Teamwork/ Collaboration
- Writing
- Planning
- Quality Assurance and Control

Job Type

- Full-time: 51.8%
- Part-time: 9.8%
- Temporary: 8.8%

Certifications Required

- Registered Nurse
- First Aid CPR AED
- American Heart Association Certification
- Basic Cardiac Life Support Certification
- Critical Care Registered Nurse (CCRN)



In-demand certifications:
RN, CPR



\$60,000:
average advertised salary

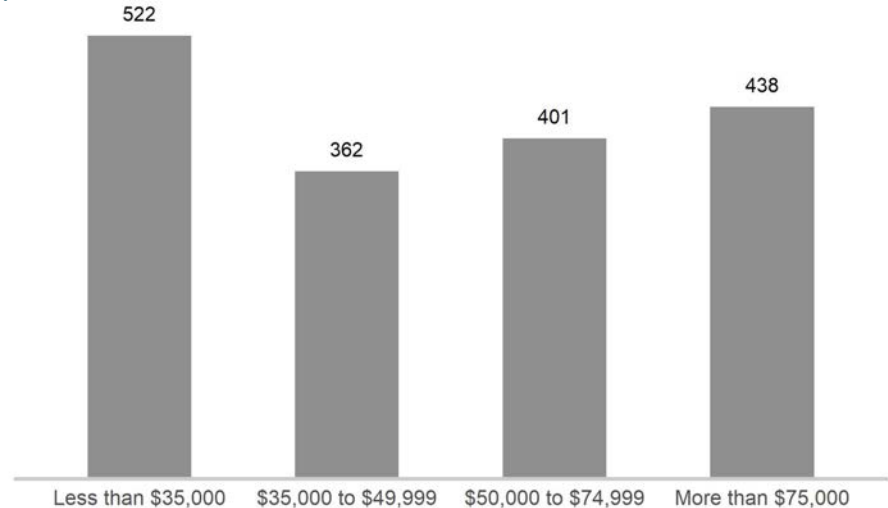
Health Care

Wages and Advertised Salary

Salary data, where advertised, was evenly distributed during Q3 2017. Of the 23,304 postings, only 1,723 specified a salary. The mean advertised salary was \$60,000 annually, with 49 percent of postings offering below \$50,000 and 51 percent above. The near equal grouping of salary levels above and below \$50,000 per year shows that despite low education and experience requirements for entry into Health Care occupations, there is plenty of room for advancement in the field. Registered Nurses have strong wage opportunities, offering \$34.10 hourly at the median and \$47.51 at the 90th percentile.

Advertised Salary in Job Postings

Quarter 3 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
29-1141	Registered Nurses	\$25.95	\$29.61	\$34.10	\$38.82	\$47.51
31-1014	Nursing Assistants	\$10.39	\$12.14	\$13.88	\$15.97	\$18.10
31-9092	Medical Assistants	\$11.20	\$12.61	\$14.30	\$16.60	\$18.65
29-2052	Pharmacy Technicians	\$9.86	\$11.44	\$14.16	\$17.03	\$19.16
29-2061	Licensed Practical and Licensed Vocational Nurses	\$19.24	\$21.33	\$24.32	\$27.48	\$29.60
29-2012	Medical and Clinical Laboratory Technicians	\$10.85	\$12.86	\$15.16	\$18.18	\$24.16
29-2071	Medical Records and Health Information Technicians	\$11.75	\$13.95	\$17.32	\$22.11	\$27.41
29-1123	Physical Therapists	\$28.14	\$34.33	\$41.38	\$49.30	\$65.68
29-1051	Pharmacists	\$45.26	\$52.40	\$57.03	\$61.68	\$67.87
29-1127	Speech-Language Pathologists	\$25.88	\$31.12	\$37.40	\$45.19	\$65.22

Data: EMSI, BLS
Analysis: Workforce Intelligence Network

Custom Occupation Group

WIN's Health Care occupation group includes jobs related to health care support and practitioners. The following occupations are used by WIN researchers to provide custom analysis: The Workforce Intelligence Network for Southeast Michigan should be cited any time the analysis, graphics, or custom occupation group from this report are used.

SOC Code	Occupation	SOC Code	Occupation
29-1011	Chiropractors	29-2035	Magnetic Resonance Imaging Technologists
29-1021	Dentists, General	29-2041	Emergency Medical Technicians and Paramedics
29-1022	Oral and Maxillofacial Surgeons	29-2051	Dietetic Technicians
29-1023	Orthodontists	29-2052	Pharmacy Technicians
29-1024	Prosthodontists	29-2053	Psychiatric Technicians
29-1029	Dentists, All Other Specialists	29-2054	Respiratory Therapy Technicians
29-1031	Dietitians and Nutritionists	29-2055	Surgical Technologists
29-1041	Optometrists	29-2056	Veterinary Technologists and Technicians
29-1051	Pharmacists	29-2057	Ophthalmic Medical Technicians
29-1061	Anesthesiologists	29-2061	Licensed Practical and Licensed Vocational Nurses
29-1062	Family and General Practitioners	29-2071	Medical Records and Health Information Technicians
29-1063	Internists, General	29-2081	Opticians, Dispensing
29-1064	Obstetricians and Gynecologists	29-2091	Orthotists and Prosthetists
29-1065	Pediatricians, General	29-2092	Hearing Aid Specialists
29-1066	Psychiatrists	29-2099	Health Technologists and Technicians, All Other
29-1067	Surgeons	29-9011	Occupational Health and Safety Specialists
29-1069	Physicians and Surgeons, All Other	29-9012	Occupational Health and Safety Technicians
29-1071	Physician Assistants	29-9091	Athletic Trainers
29-1081	Podiatrists	29-9092	Genetic Counselors
29-1122	Occupational Therapists	29-9099	Healthcare Practitioners and Technical Workers, All Other
29-1123	Physical Therapists	31-1011	Home Health Aides
29-1124	Radiation Therapists	31-1013	Psychiatric Aides
29-1125	Recreational Therapists	31-1014	Nursing Assistants
29-1126	Respiratory Therapists	31-1015	Orderlies
29-1127	Speech-Language Pathologists	31-2011	Occupational Therapy Assistants
29-1128	Exercise Physiologists	31-2012	Occupational Therapy Aides
29-1129	Therapists, All Other	31-2021	Physical Therapist Assistants
29-1131	Veterinarians	31-2022	Physical Therapist Aides
29-1141	Registered Nurses	31-9011	Massage Therapists
29-1151	Nurse Anesthetists	31-9091	Dental Assistants
29-1161	Nurse Midwives	31-9092	Medical Assistants
29-1171	Nurse Practitioners	31-9093	Medical Equipment Preparers
29-1181	Audiologists	31-9094	Medical Transcriptionists
29-1199	Health Diagnosing and Treating Practitioners, All Other	31-9095	Pharmacy Aides
29-2011	Medical and Clinical Laboratory Technologists	31-9096	Veterinary Assistants and Laboratory Animal Caretakers
29-2012	Medical and Clinical Laboratory Technicians	31-9097	Phlebotomists
29-2021	Dental Hygienists	31-9099	Healthcare Support Workers, All Other
29-2031	Cardiovascular Technologists and Technicians		
29-2032	Diagnostic Medical Sonographers		
29-2033	Nuclear Medicine Technologists		
29-2034	Radiologic Technologists		



Information Technology Occupation Group

Introduction

Information technology jobs include occupations that are associated with entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia, and systems integration services. While the information technology group does not currently meet the employment levels of the others, it is quickly growing.

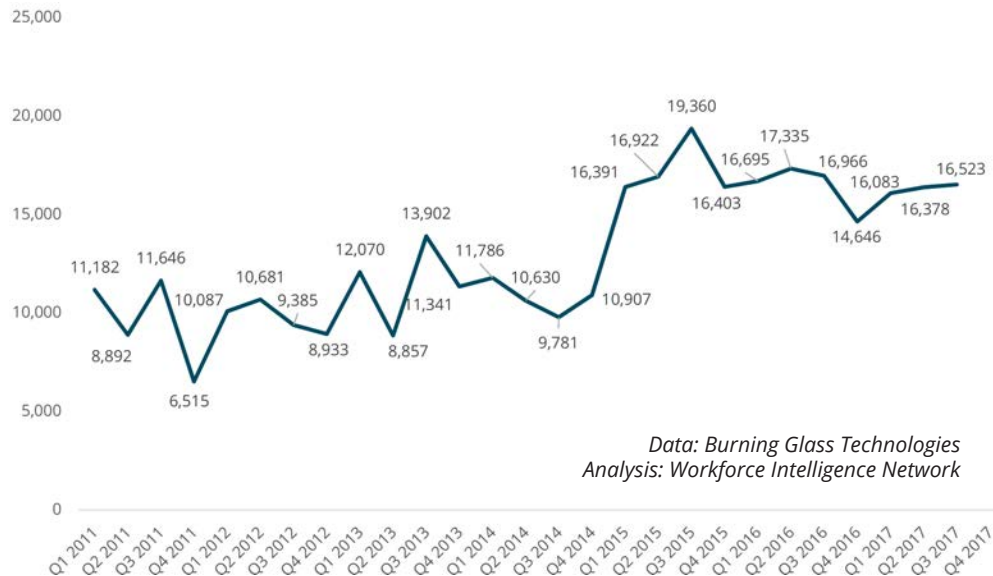
Job Posting Analysis

Online job ads for occupations related to IT increased one percent to 16,523 during Q3 2017, compared to 16,378 postings during Q2 2017. Employer demand for IT occupations in the WIN region last peaked at 19,360 postings in Q3 2015.

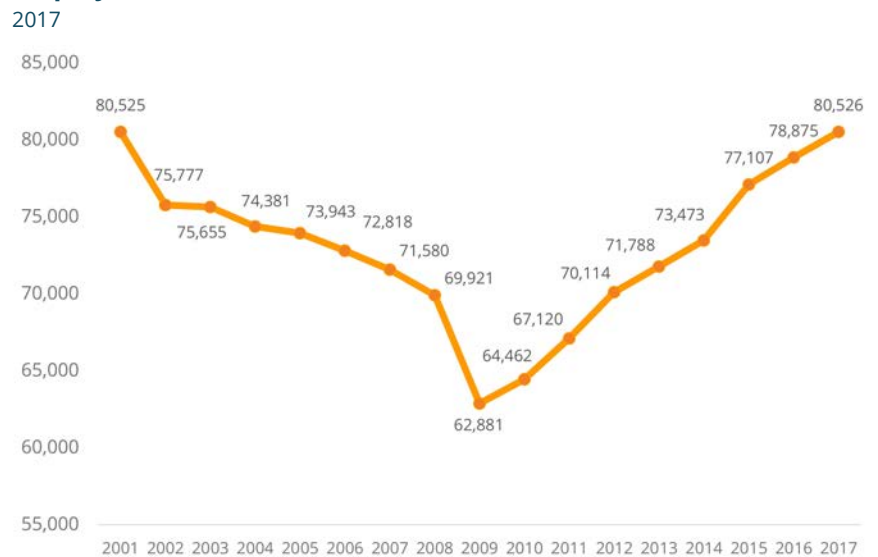
Employment Analysis

WIN region employment in IT-related occupations has enjoyed consistent growth since 2012, the lowest point in the previous 15 years. To continue this pattern, 2017 reported 80,526 jobs in IT, an increase from 78,875 jobs in 2016.

Online Job Postings



Employment Over Time





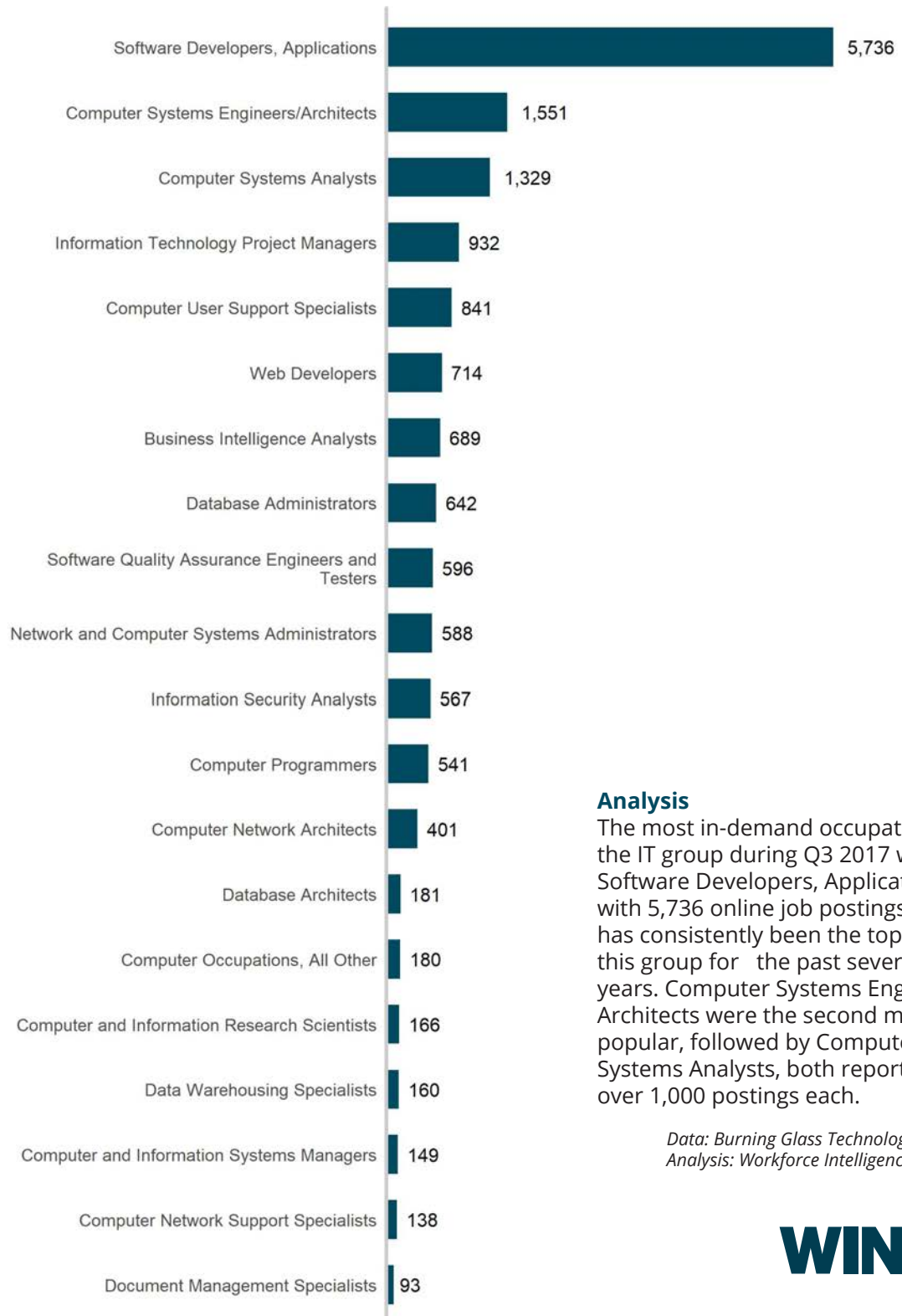
Most in-demand occupation:
Software Developers for Applications



In-demand experience:
3 to 5 years

Information Technology Top Jobs

Quarter 3 2017



Analysis

The most in-demand occupation in the IT group during Q3 2017 was Software Developers, Applications with 5,736 online job postings, which has consistently been the top job in this group for the past several years. Computer Systems Engineers/Architects were the second most popular, followed by Computer Systems Analysts, both reporting over 1,000 postings each.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Education required: 85%
desire bachelor's degree

1%

increase in job postings
related to IT

Information Technology Educational Attainment Required

Of the 11,153 IT job postings that specified a desired experience level during Q3 2017, 75 percent were available to workers with under five years of experience. Most of those postings request three to five years of experience, perhaps reflecting the high number of openings for project managers. Educational requirements were less flexible, with 85 percent of postings that reported a minimum education requirement of a bachelor's degree. The premium put on education over experience illustrates that workers willing to pursue the necessary education will find ample opportunity in IT-related fields.

Educational Attainment

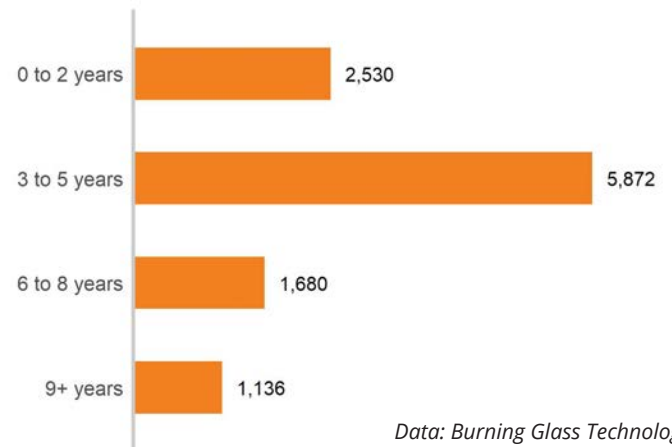


Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

In-Demand Area of Study

- Computer Science
- Engineering, General
- Electrical and Electronic Engineering Technologies/ Technicians, Other
- Business Administration and Management, General
- Mechanical Engineering

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Knowledge areas:
Computer Science, Engineering

71%
of advertised salaries
> \$75,000

Information Technology In-Demand Skills

IT occupations require highly technical software proficiency, reflecting the high levels of education for entry. WIN region employers hiring during Q3 2017 sought prowess with specific applications like SQL and software engineering. These employers also sought candidates with the ability to effectively problem solve and communicate their solutions to clients.

Technical In-Demand Skills

- SQL
- Software Development
- JAVA/ JavaScript
- Project Management
- Software Engineering

Foundational In-Demand Skills

- Communication Skills
- Writing
- Problem Solving/ Troubleshooting
- Teamwork/ Collaboration
- Planning

Job Type

Full-time:
51.7%
Part-
time:
0.9%
Tempora-
ry: 2.9%

Certifications Required

- Certified Information Systems Security Professional (CISSP)
- Project Management Certification (e.g. PMP)
- Security Clearance
- American Board for Engineering and Technology (ABET) Accredited
- Certified Information Systems Auditor (CISA)



Certifications in-demand: Project Management



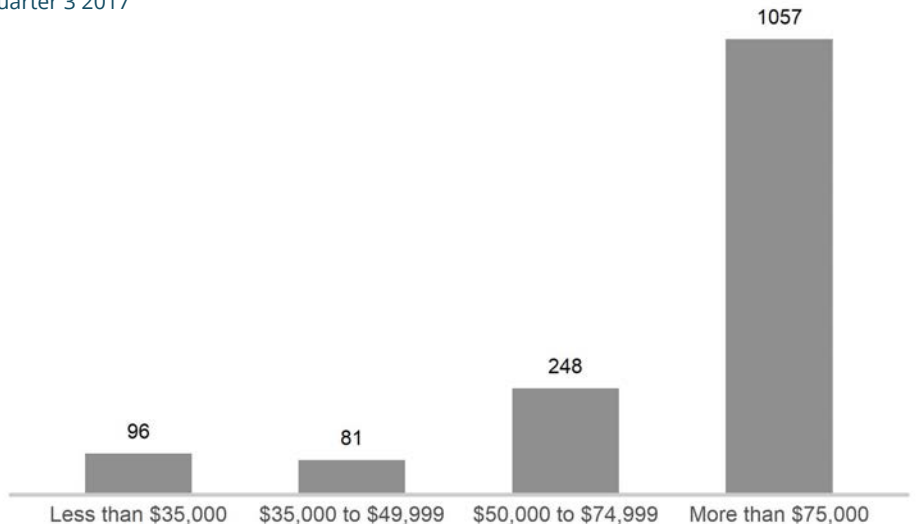
\$96,000:
average advertised salary

Information Technology Wages

Advertised salaries for IT occupations during Q3 2017 were typically above \$75,000 per year, with 72 percent of postings in this category and a mean real-time salary of \$96,000. The high salaries despite modest experience requirements makes IT a lucrative field in the WIN region for those willing to pursue the necessary training.

Advertised Wages in Job Postings

Quarter 3 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
15-1132	Software Developers, Applications	\$24.86	\$32.69	\$42.33	\$53.98	\$63.99
15-1199	Computer Systems Engineers/Architects	\$20.58	\$27.51	\$38.56	\$49.44	\$59.88
15-1121	Computer Systems Analysts	\$25.88	\$33.07	\$42.76	\$52.33	\$61.84
15-1199	Information Technology Project Managers	\$20.58	\$27.51	\$38.56	\$49.44	\$59.88
15-1151	Computer User Support Specialists	\$13.44	\$16.90	\$23.09	\$30.98	\$41.13
15-1134	Web Developers	\$19.55	\$24.04	\$30.50	\$38.91	\$46.64
15-1199	Business Intelligence Analysts	\$20.58	\$27.51	\$38.56	\$49.44	\$59.88
15-1141	Database Administrators	\$26.07	\$33.13	\$43.15	\$52.67	\$60.85
15-1199	Software Quality Assurance Engineers and Testers	\$20.58	\$27.51	\$38.56	\$49.44	\$59.88
15-1142	Network and Computer Systems Administrators	\$23.37	\$29.11	\$37.22	\$45.95	\$54.71

Data: EMSI, BLS
Analysis: Workforce Intelligence Network

Custom Occupation Group

WIN's Information Technology (IT) occupation group looks at workers tasked to work with and develop programs, websites, and other computer system processes. The following occupations are used by WIN researchers to provide custom analysis: The Workforce Intelligence Network for Southeast Michigan should be cited any time the analysis, graphics, or custom occupation group from this report are used.

SOC Code Occupation

11-3021	Computer and Information Systems Managers
15-1111	Computer and Information Research Scientists
15-1121	Computer Systems Analysts
15-1122	Information Security Analysts
15-1131	Computer Programmers
15-1132	Software Developers, Applications
15-1133	Software Developers, Systems Software

SOC Code Occupation

15-1134	Web Developers
15-1141	Database Administrators
15-1142	Network and Computer Systems Administrators
15-1143	Computer Network Architects
15-1151	Computer User Support Specialists
15-1152	Computer Network Support Specialists
15-1199	Computer Occupations, All Other



Skilled Trades & Technicians Occupation Group (Manufacturing Focused)

Introduction

WIN's technicians/skilled trades category includes jobs related to advanced manufacturing. Southeast Michigan has more demand for skilled- trades labor, such as CNC machinists and welders, than almost anywhere else in the country.

NOTE: Skilled trades related to construction and assembly are not included in this cluster, as the focus is on advanced manufacturing only.

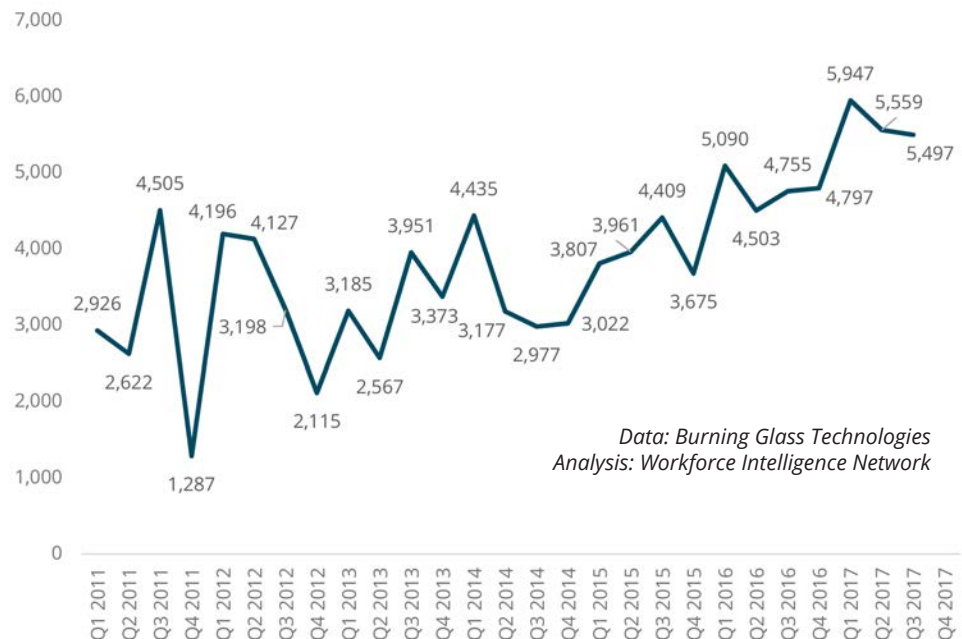
Job Posting Analysis

Online job ads for Skilled Trades occupations fell one percent to 5,497 postings during Q3 2017 following only modest growth during 2016. Despite quarterly variation, demand for Skilled Trades workers in the WIN region has been on the rise since the end of 2012, which reported 2,115 online job ads for Skilled Trades positions.

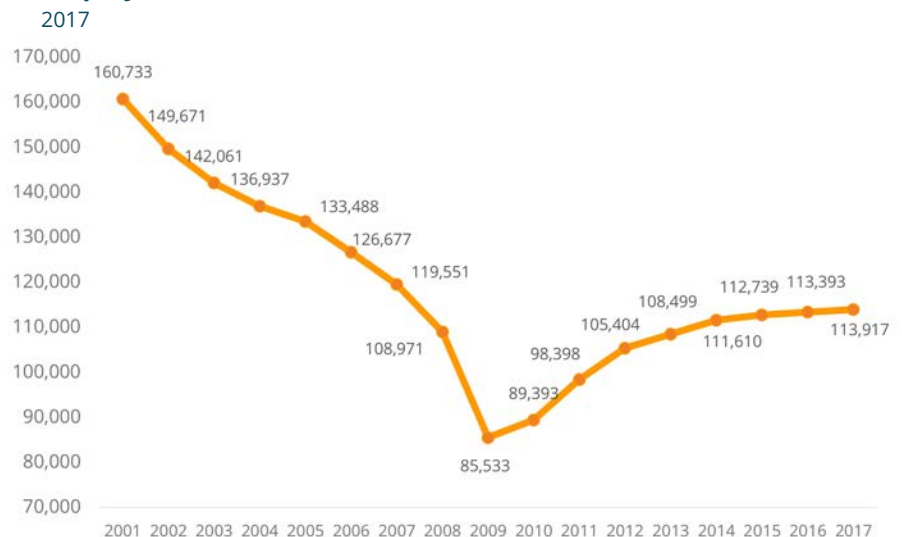
Employment Analysis

Employment in Skilled Trades declined steeply between 2001 and 2009, but has made consistent, if small, gains since the Recession low of 85,533 employed workers. Employment levels have increased one percent since 2015, and 113,917 individuals were employed in Skilled Trades occupations in 2017.

Online Job Postings



Employment Over Time



Data: EMSI
Analysis: Workforce Intelligence Network



Most in-demand occupation: First-Line Supervisors of Production Workers

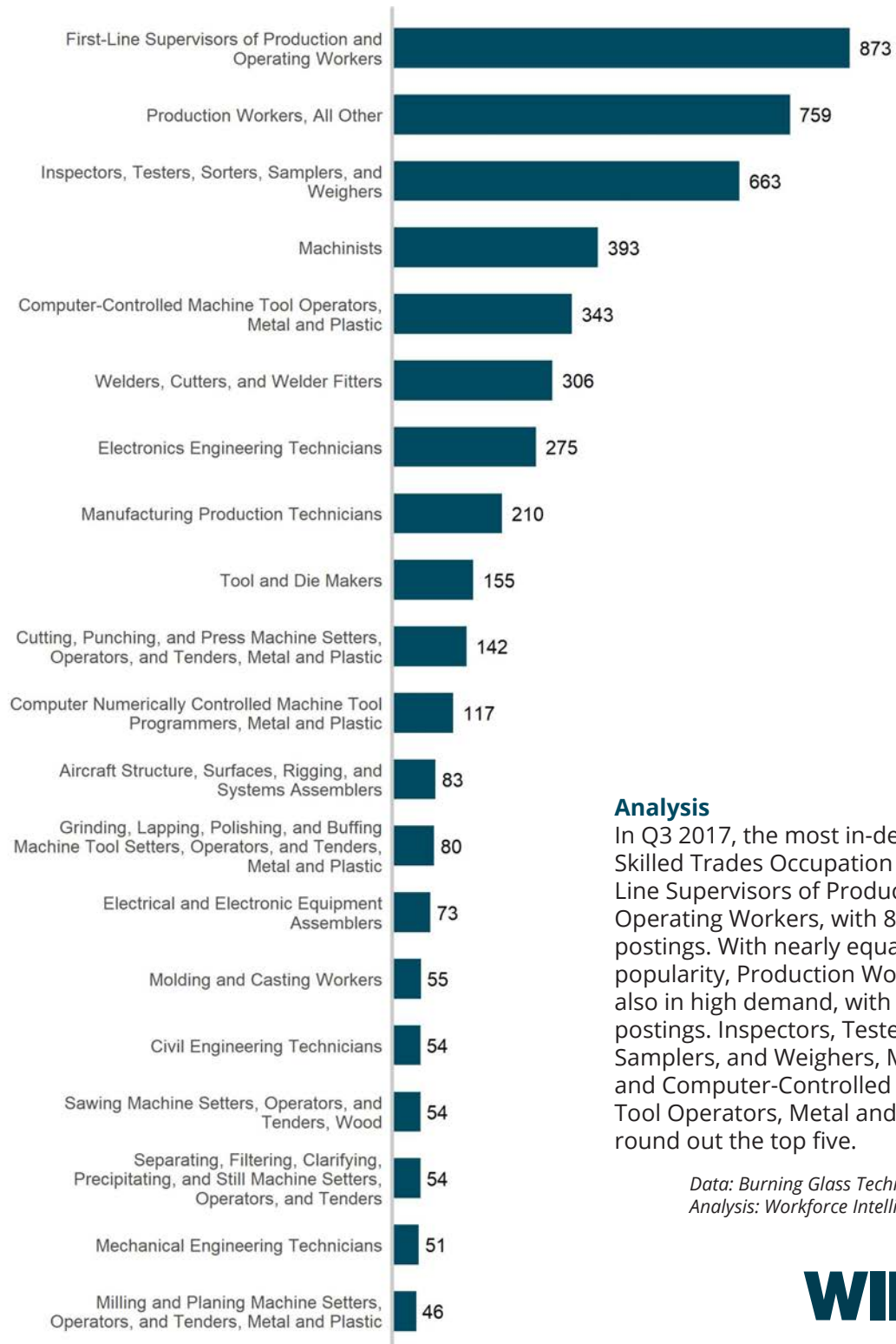


Experience in-demand: zero to two years

Skilled Trades & Technicians

Top Jobs Posted

Quarter 3 2017



Analysis

In Q3 2017, the most in-demand Skilled Trades Occupation was First-Line Supervisors of Production and Operating Workers, with 873 postings. With nearly equal popularity, Production Workers were also in high demand, with 759 postings. Inspectors, Testers, Sorters, Samplers, and Weighers, Machinists, and Computer-Controlled Machine Tool Operators, Metal and Plastic round out the top five.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



\$40,000:
average advertised salary

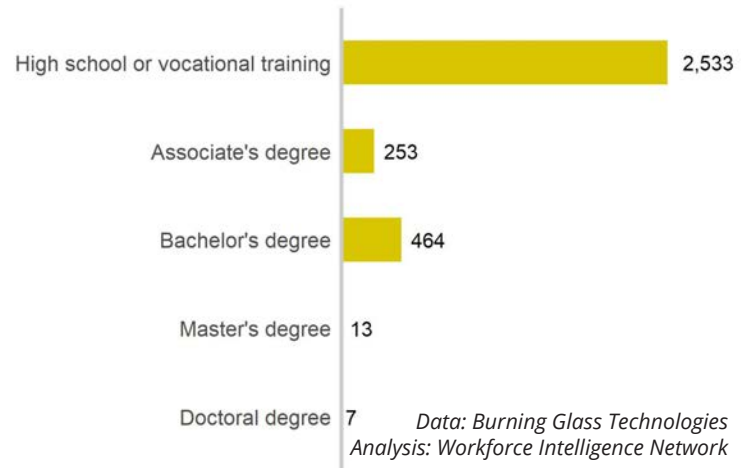
1%

Decrease in job postings
related to Skilled Trades

Skilled Trades & Technicians Educational Attainment Required

Postings indicating desired experience sought both entry-level workers and workers with previous experience for skilled trades occupations. While 45 percent of postings that specified experience are available to those with fewer than two years of experience, another 44 percent would like more experienced workers with three to five years. Education requirements are not as variable. A clear majority (78 percent) of job postings required only a high school diploma or, more commonly, vocational training. The low educational requirements in the Skilled Trades occupations make many positions accessible to entry-level workers willing to put time into on the job training and practice.

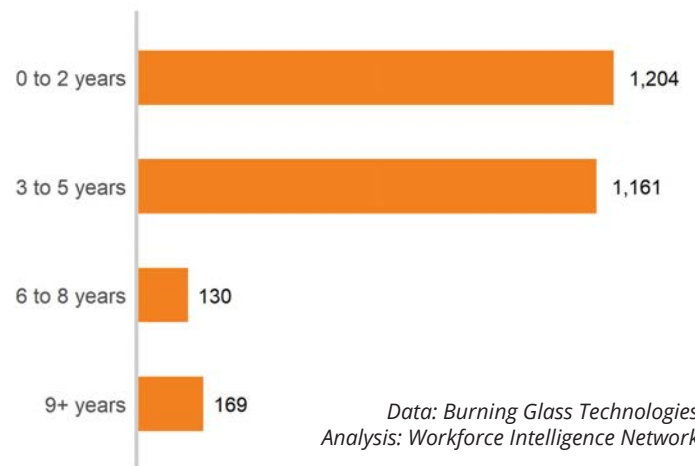
Educational Attainment



In-Demand Area of Study

- Engineering, General
- Business Administration and Management, General
- Mechanical Engineering
- Electrical and Electronic Engineering Technologies/ Technicians, Other
- Computer Science

Experience Required





In-demand certifications:
CDL, Forklift Operator Certification

68%
of job ads offer
full-time employment

Skilled Trades & Technicians In-Demand Skills

Skilled Trades occupations mainly require manufacturing focused skills and specific tool proficiencies. Employer demand for skills such as CNC milling and repair abilities showcases the technical nature of these positions. Workers will also need more general skills like physical ability, mathematics, and effective communication to succeed in the workplace.

Technical In-Demand Skills

- Repair/ Inspection
- Machining
- Computer Numerical Control (CNC)
- Scheduling
- Welding

Foundational In-Demand Skills

- Communication Skills
- Ability to Perform Physical Labor
- Mathematics
- Problem Solving
- Troubleshooting

Job Type

- Full-time: 65.2%
- Part-time: 1.3%
- Temporary: 6.2%

Certifications Required

- Commercial Driver's License
- Forklift Operator Certification
- Welding Certification (E.G. AWS Certified Welder)
- Security Clearance
- Six Sigma Certification



Education required: High school diploma and vocational training



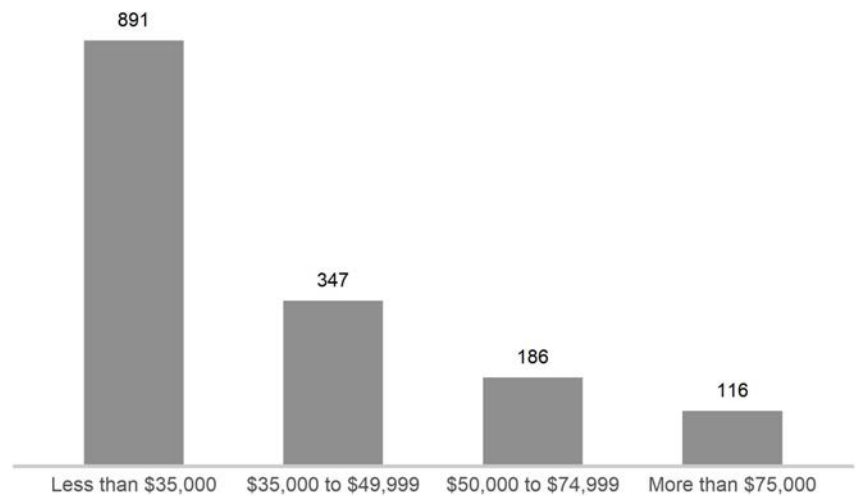
Knowledge areas: Engineering, Business Administration

Skilled Trades & Technicians Wages and Advertised Salary

Skilled Trades are among the lowest paid occupations across southeast Michigan. In Q3 2017, 58 percent of advertised salaries in the Skilled Trades were below \$35,000 per year. The median advertised salary was \$40,000 annually, although this may reflect the high number of entry-level jobs represented in online job postings. Wage data from the BLS, shown below, reports that all of the top ten in-demand Skilled Trades jobs during Q3 2017 have median wages over \$15 per hour with strong growth potential following additional experience.

Advertised Salary in Job Postings

Quarter 3 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
51-1011	First-Line Supervisors of Production and Operating Workers	\$17.69	\$23.27	\$30.49	\$40.20	\$49.23
51-9199	Production Workers, All Other	\$10.58	\$13.29	\$17.05	\$20.16	\$24.66
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$9.83	\$11.63	\$16.00	\$22.84	\$29.60
51-4041	Machinists	\$12.87	\$15.69	\$20.00	\$24.87	\$29.13
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	\$12.00	\$14.90	\$18.67	\$22.27	\$27.46
51-4121	Welders, Cutters, and Welder Fitters	\$13.16	\$15.48	\$18.30	\$22.73	\$29.08
17-3023	Electronics Engineering Technicians	\$15.77	\$20.31	\$26.74	\$33.16	\$39.30
17-3029	Manufacturing Production Technicians	\$18.24	\$24.12	\$31.22	\$37.72	\$46.03
51-4111	Tool and Die Makers	\$16.42	\$20.60	\$25.95	\$32.11	\$36.45
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$10.80	\$12.77	\$16.71	\$25.02	\$28.04

Data: EMSI, BLS
Analysis: Workforce Intelligence Network

Skilled Trades Occupations

Custom Occupation Group

The Skilled Trades Occupations group encompasses many workers within technical fields and manufacturing. With the automotive industry presence in Southeast Michigan, the Skilled Trades occupation group covers many local workers. The following occupations are used by WIN researchers to provide custom analysis: The Workforce Intelligence Network for Southeast Michigan should be cited any time the analysis, graphics, or custom occupation group from this report are used.

SOC Code Occupation

11-3051	Industrial Production Managers
17-3021	Aerospace Engineering and Operations Technicians
17-3022	Civil Engineering Technicians
17-3023	Electrical and Electronics Engineering Technicians
17-3024	Electro-Mechanical Technicians
17-3025	Environmental Engineering Technicians
17-3026	Industrial Engineering Technicians
17-3027	Mechanical Engineering Technicians
17-3029	Engineering Technicians, Except Drafters, All Other
17-3031	Surveying and Mapping Technicians
51-1011	First-Line Supervisors of Production and Operating Workers
51-2021	Coil Winders, Tapers, and Finishers
51-2041	Structural Metal Fabricators and Fitters
51-2091	Fiberglass Laminators and Fabricators
51-3099	Food Processing Workers, All Other
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic
51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic
51-4022	Forging Machine Setters, Operators, and Tenders, Metal and Plastic
51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic

SOC Code Occupation

51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic
51-4035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic
51-4041	Machinists
51-4051	Metal-Refining Furnace Operators and Tenders
51-4052	Pourers and Casters, Metal
51-4061	Model Makers, Metal and Plastic
51-4062	Patternmakers, Metal and Plastic
51-4071	Foundry Mold and Coremakers
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic
51-4111	Tool and Die Makers
51-4121	Welders, Cutters, Solderers, and Brazers
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic
51-4192	Layout Workers, Metal and Plastic
51-4193	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic
51-4194	Tool Grinders, Filers, and Sharpeners
51-4199	Metal Workers and Plastic Workers, All Other
51-5111	Prepress Technicians and Workers
51-9199	Production Workers, All Other



Transportation, Distribution, and Logistics (TDL) Occupation Group

Introduction

Transportation, distribution, and logistics (TDL) workers help move materials in an efficient manner whether it is from one company to another or directly to a consumer. Logistics workers range from materials movers to logistics analysts, coordinating and analyzing material and goods movement.

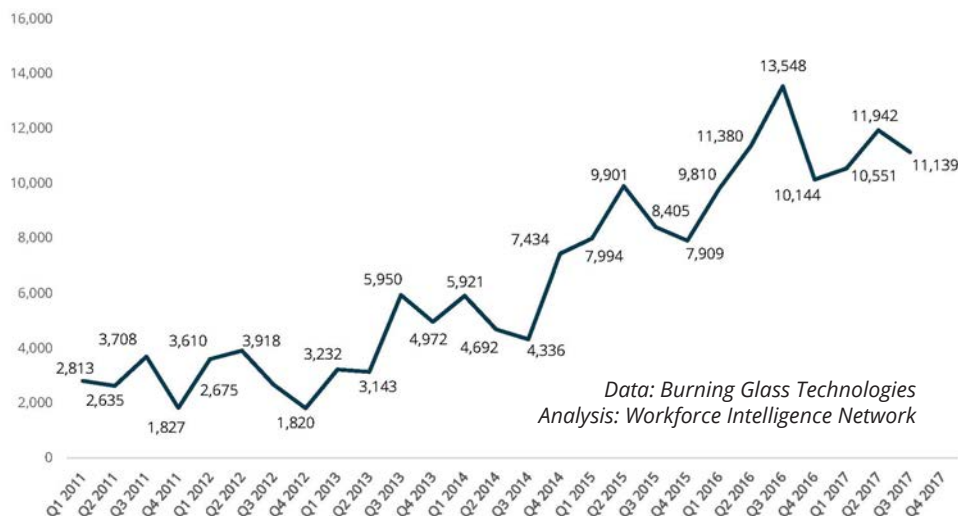
Job Posting Analysis

Online job postings for TDL occupations have continued to trend upward. In Q3 2017, there was a seven percent decline to 11,139 online job ads. Over the past year, the surge in demand for truck drivers has sustained a high volume of postings in TDL.

Employment Analysis

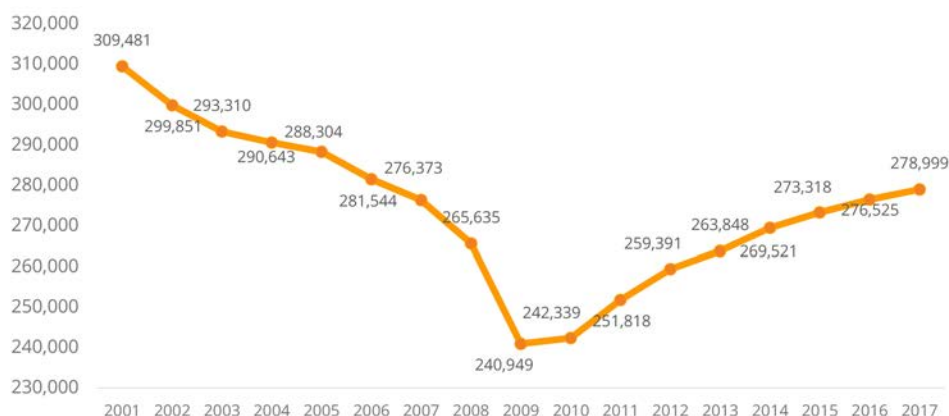
Employment of TDL workers increased to 278,999 workers in 2017. This represents the highest level of employment in the WIN region for this occupation group since 2007. Since bottoming out in 2009 during the Great Recession, employment has now increased for eight consecutive years.

Online Job Postings



Employment Over Time

2017





Most in-demand job:
Truck Drivers

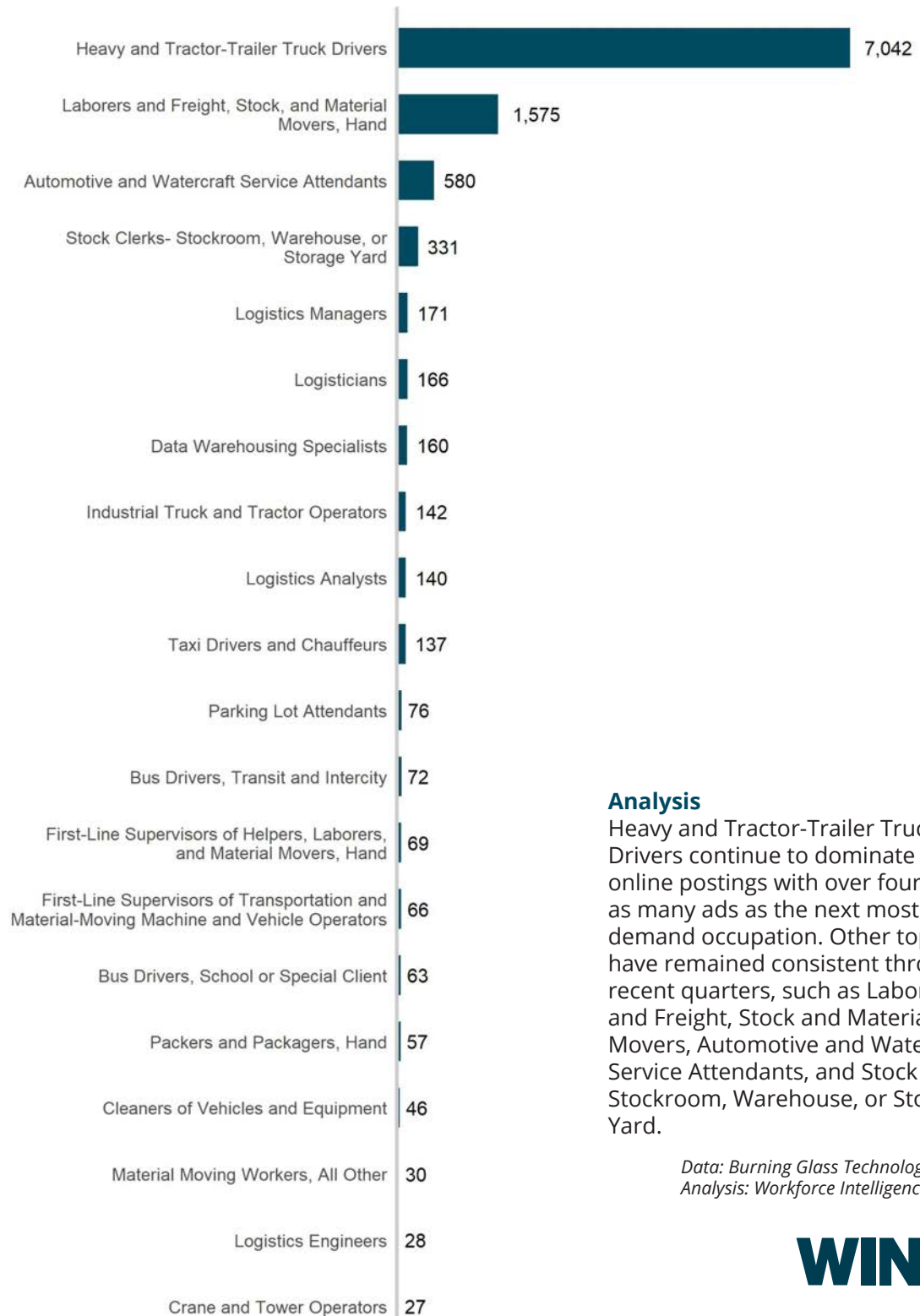


Entry-level opportunities
remain high

Transportation, Distribution, and Logistics (TDL)

Top Jobs Posted

Quarter 3 2017



Analysis

Heavy and Tractor-Trailer Truck Drivers continue to dominate TDL online postings with over four times as many ads as the next most in-demand occupation. Other top jobs have remained consistent through recent quarters, such as Laborers and Freight, Stock and Material Movers, Automotive and Watercraft Service Attendants, and Stock Clerks- Stockroom, Warehouse, or Storage Yard.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



278,999 workers employed
in TDL-related jobs

7%

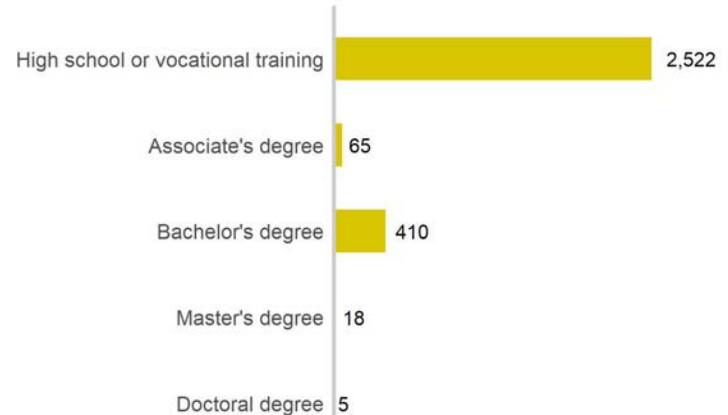
decrease in job postings
related to TDL

Transportation, Distribution, and Logistics (TDL) Education and Experience

Entry-level job opportunities in TDL are abundant as 77 percent of openings that specified desired experience are available to candidates with zero to two years. The next most in-demand experience level was three to five years, with about a fifth as many postings.

Among postings stating educational requirements, 84 percent of postings required only a high school diploma or vocational training. Bachelor's degrees were the second most in-demand education level for prospective candidates, with 14 percent of job ads. These likely represent logistics analyst and logistician positions. The low requirements for entry and continually growing employment levels make this occupation group a promising one for workers.

Educational Attainment

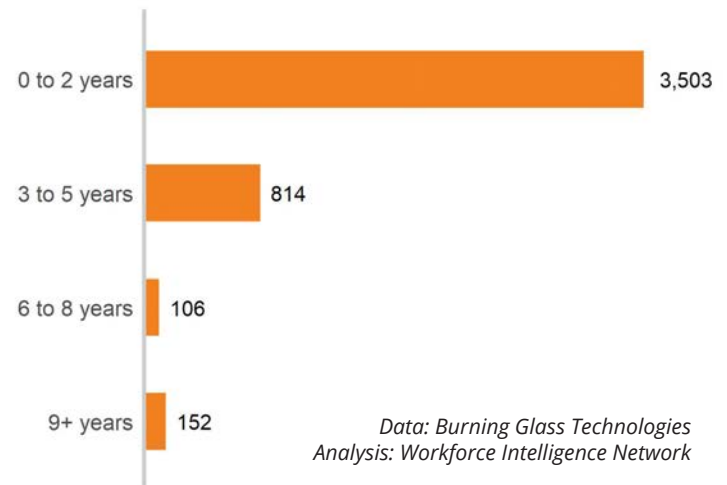


Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

In-Demand Area of Study

- Logistics, Materials, and Supply Chain Management
- Business Administration and Management, General
- Engineering, General
- Computer Science
- Mechanical Engineering

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Hot skills:
Inspection, Repair, Forklift Operation



Bachelor's degree leads to
high wage potential

Transportation, Distribution, and Logistics (TDL) In-Demand Skills

The most often advertised baseline and specialized skills for TDL occupations demonstrate that employers in southeast Michigan seek workers with well-rounded foundational skills along with expertise in TDL-specific duties. In addition to skills in auto repair, logistics, or inventory management, these workers must be able to communicate in teams, problem solve, and effectively perform physical labor.

Technical In-Demand Skills

- Repair/ Inspection
- Customer Service
- Forklift Operation
- Bus Driving
- Logistics

Foundational In-Demand Skills

- Communication Skills
- Ability to Perform Physical Labor
- Organizational Skills/ Detail-Oriented
- Writing
- Planning

Job Type

- Full-time: 31.4%
- Part-time: 4.5%
- Temporary: 4.1%

Certifications Required

- CDL Class A
- Commercial Driver's License
- Automotive Service Excellence (ASE) Certification
- Forklift Operator Certification
- Air Brake Certified



Occupation group average
advertised salary: \$55,000



\$49.51: median hourly wage
for Logistics Managers

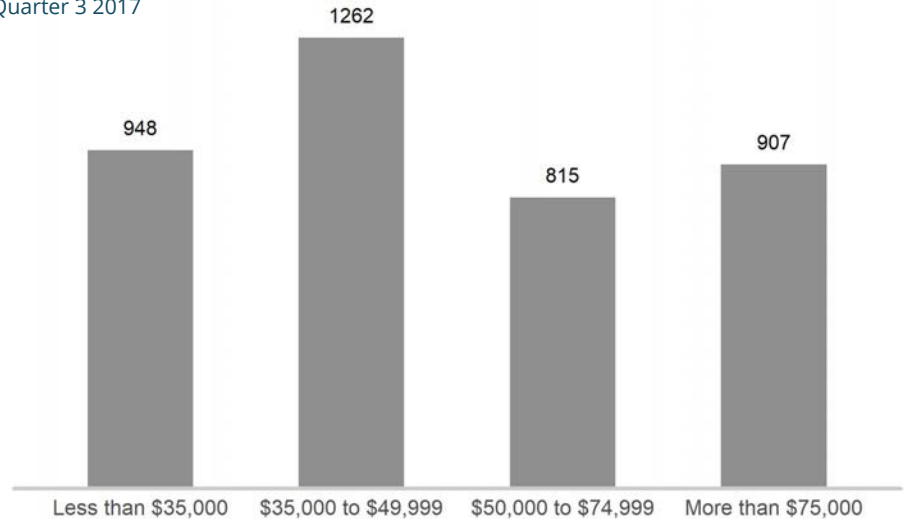
Transportation, Distribution, and Logistics (TDL)

Wages and Advertised Salary

While the most common advertised salary for the TDL group in the WIN region was between \$35,000 and \$50,000 annually represented by 32 percent of postings, jobs offering over \$75,000 were relatively common as well with 23 percent of postings offering high salaries. Job postings advertising salaries do not represent wages for all jobs in TDL, but they serve as a sufficient proxy to suggest strong wage growth potential for some occupations. The average advertised salary in Q3 2017 was \$55,000 per year. With the concentration of most advertised salaries spread relatively evenly between several earning brackets in TDL, the wage table below may provide a better evaluation of earnings.

Advertised Salary in Job Postings

Quarter 3 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$13.77	\$16.07	\$19.55	\$24.45	\$30.33
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$9.37	\$10.67	\$13.24	\$16.65	\$20.29
53-6031	Automotive and Watercraft Service Attendants	\$8.80	\$9.15	\$9.96	\$12.01	\$14.25
43-5081	Stock Clerks- Stockroom, Warehouse, or Storage Yard	\$8.86	\$9.33	\$11.04	\$14.72	\$18.63
11-3071	Logistics Managers	\$32.37	\$39.03	\$49.51	\$62.31	\$75.72
13-1081	Logisticians	\$23.50	\$30.34	\$40.67	\$48.55	\$56.46
15-1199	Data Warehousing Specialists	\$20.58	\$27.51	\$38.56	\$49.44	\$59.88
53-7051	Industrial Truck and Tractor Operators	\$10.66	\$12.66	\$16.00	\$21.20	\$25.21
13-1081	Logistics Analysts	\$23.50	\$30.34	\$40.67	\$48.55	\$56.46
53-3041	Taxi Drivers and Chauffeurs	\$8.88	\$9.40	\$10.66	\$12.63	\$15.41

Data: EMSI, BLS

Analysis: Workforce Intelligence Network

Custom Occupation Group

The Transportation, Distribution, and Logistics group (TDL) encompasses jobs focused on the supply chain, with warehouse workers, truck drivers, and logisticians. The following occupations are used by WIN researchers to provide custom analysis: The Workforce Intelligence Network for Southeast Michigan should be cited any time the analysis, graphics, or custom occupation group from this report are used.

SOC Code	Occupation	SOC Code	Occupation
11-3071	Transportation, Storage, and Distribution Managers	49-9099	Installation, Maintenance, and Repair Workers, All Other
11-9199	Managers, All Other	51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers
13-1081	Logisticians	51-2031	Engine and Other Machine Assemblers
13-1199	Business Operations Specialists, All Other	53-1011	Aircraft Cargo Handling Supervisors
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand
17-3021	Aerospace Engineering and Operations Technicians	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators
19-3099	Social Scientists and Related Workers, All Other	53-2011	Airline Pilots, Copilots, and Flight Engineers
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	53-2012	Commercial Pilots
43-5011	Cargo and Freight Agents	53-2021	Air Traffic Controllers
43-5021	Couriers and Messengers	53-2022	Airfield Operations Specialists
43-5032	Dispatchers, Except Police, Fire, and Ambulance	53-2031	Flight Attendants
43-5051	Postal Service Clerks	53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians
43-5052	Postal Service Mail Carriers	53-3021	Bus Drivers, Transit and Intercity
43-5053	Postal Service Mail Sorters, Processors, and Processing Machine Operators	53-3022	Bus Drivers, School or Special Client
43-5061	Production, Planning, and Expediting Clerks	53-3032	Heavy and Tractor-Trailer Truck Drivers
43-5071	Shipping, Receiving, and Traffic Clerks	53-3033	Light Truck or Delivery Services Drivers
43-5081	Stock Clerks and Order Fillers	53-3041	Taxi Drivers and Chauffeurs
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	53-3099	Motor Vehicle Operators, All Other
47-2011	Boilermakers	53-4011	Locomotive Engineers
47-4061	Rail-Track Laying and Maintenance Equipment Operators	53-4012	Locomotive Firers
49-2091	Avionics Technicians	53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	53-4021	Railroad Brake, Signal, and Switch Operators
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	53-4031	Railroad Conductors and Yardmasters
49-3011	Aircraft Mechanics and Service Technicians	53-4099	Rail Transportation Workers, All Other
49-3021	Automotive Body and Related Repairers	53-6011	Bridge and Lock Tenders
49-3022	Automotive Glass Installers and Repairers	53-6021	Parking Lot Attendants
49-3023	Automotive Service Technicians and Mechanics	53-6031	Automotive and Watercraft Service Attendants
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	53-6041	Traffic Technicians
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	53-6051	Transportation Inspectors
49-3043	Rail Car Repairers	53-6099	Transportation Workers, All Other
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	53-7011	Conveyor Operators and Tenders
49-3091	Bicycle Repairers	53-7021	Crane and Tower Operators
49-3092	Recreational Vehicle Service Technicians	53-7032	Excavating and Loading Machine and Dragline Operators
49-3093	Tire Repairers and Changers	53-7041	Hoist and Winch Operators
49-9097	Signal and Track Switch Repairers	53-7051	Industrial Truck and Tractor Operators
		53-7061	Cleaners of Vehicles and Equipment
		53-7062	Laborers and Freight, Stock, and Material Movers, Hand
		53-7064	Packers and Packagers, Hand
		53-7121	Tank Car, Truck, and Ship Loaders

Annual Labor Market Data

	2010 Annual	2011 Annual	2012 Annual	2013 Annual	2014 Annual	2015 Annual	2016 Annual	2017 Annual (Thru 3rd Quarter)	Change from 2016	Percent Change from 2016
Labor Force	2,748,569	2,674,603	2,675,835	2,707,407	2,709,990	2,705,375	2,755,253	2,783,938	28,685	1.0%
Employment	2,380,682	2,382,010	2,417,900	2,454,572	2,499,390	2,551,546	2,612,592	2,660,796	48,204	1.8%
Unemployment	367,888	292,593	257,935	252,835	210,601	153,829	142,661	123,142	-19,519	-13.7%
Unemployment Rate	13.4%	10.9%	9.6%	9.3%	7.8%	5.7%	5.2%	4.4%	-0.8%	na

**Note: Monthly data averaged by year*

Data: Bureau of Labor Statistics

Quarterly Labor Market Data

	3rd Quarter 2016	4th Quarter 2016	1st Quarter 2017	2nd Quarter 2017	3rd Quarter 2017	Change from 2nd Quarter 2017	Percent Change from 2nd Quarter 2017	One-Year Change from 3rd Quarter 2016	One-Year Percent Change from 3rd Quarter 2016
Labor Force	2,783,520	2,765,994	2,778,325	2,774,542	2,798,947	24,405	0.9%	15,427	0.6%
Employment	2,623,523	2,632,697	2,624,882	2,669,483	2,669,917	435	0.0%	46,394	1.8%
Unemployment	159,997	133,297	153,443	105,059	129,029	23,970	15.6%	-30,967	-19.4%
Unemployment Rate	5.7%	4.8%	5.5%	3.8%	4.6%	0.8%	na	-1.1%	na

**Note: Monthly data averaged by quarter*

Data: Bureau of Labor Statistics













Monthly Labor Market Data

	July 2016	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017	February 2017	March 2017	April 2017	May 2016	June 2017	July 2017	August 2017	September 2017
Labor Force	2,787,191	2,781,422	2,781,946	2,781,878	2,760,458	2,755,647	2,770,797	2,783,790	2,780,388	2,766,314	2,777,497	2,779,815	2,795,262	2,794,401	2,807,177
Employment	2,615,624	2,620,991	2,633,954	2,632,527	2,636,540	2,629,025	2,606,480	2,623,865	2,644,302	2,659,861	2,675,918	2,672,669	2,662,786	2,666,875	2,680,091
Unemployment	171,567	160,431	147,992	149,351	123,918	126,622	164,317	159,925	136,086	106,453	101,579	107,146	132,476	127,526	127,086
Unemployment Rate	6.2%	5.8%	5.3%	5.4%	4.5%	4.6%	5.9%	5.7%	4.9%	3.8%	3.7%	3.9%	4.7%	4.6%	4.5%

** Note: Data shown for 15 most recently available months*

Data: Bureau of Labor Statistics
















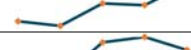

Job Posting Data by Occupation Group* Over Time

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
Total Postings	149,379	141,413	160,628	161,940	159,191		6.6%	-1.7%
Agriculture	1,776	1,660	2,447	2,407	2,120		19.4%	-11.9%
Business & finance	9,044	9,335	9,966	9,862	10,069		11.3%	2.1%
Construction	1,492	1,219	1,472	2,306	1,658		11.1%	-28.1%
Customer service	34,218	33,345	35,398	35,837	35,593		4.0%	-0.7%
Education	3,034	3,150	2,613	2,675	2,959		-2.5%	10.6%
Energy	259	240	328	279	265		2.3%	-5.0%
Engineers & designers	8,977	7,941	9,180	8,646	8,264		-7.9%	-4.4%
Health care	20,099	19,607	25,381	26,234	23,304		15.9%	-11.2%
Information technology	16,966	14,646	16,083	16,378	16,523		-2.6%	0.9%
Skilled trades & technicians	4,755	4,797	5,947	5,559	5,497		15.6%	-1.1%
Transportation, distribution, and logistics	13,548	10,144	10,551	11,942	11,139		-17.8%	-6.7%

**Note: Some overlap exists between groups, the occupational groups are not mutually exclusive. Thus, postings should not be added from one group to another but instead should be analyzed on their own.*


















Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Total Job Postings: WIN Partnership

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Share of Q3 2017 Total	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
WIN-Region Total	149,379	141,413	160,628	161,940	159,191	100.0%		6.6%	-1.7%
Detroit	29,905	27,288	28,238	31,757	32,332	20.3%		8.1%	1.8%
Genesee & Shiawassee	6,667	6,261	7,102	6,463	6,468	4.1%		-3.0%	0.1%
Hillsdale & Lenawee	2,329	1,848	1,952	2,056	3,261	2.0%		40.0%	58.6%
Jackson	2,618	2,634	3,432	3,260	3,311	2.1%		26.5%	1.6%
Livingston	2,727	2,545	2,692	2,539	2,688	1.7%		-1.4%	5.9%
Macomb	15,085	14,694	18,850	17,431	14,601	9.2%		-3.2%	-16.2%
Monroe	3,196	2,940	2,494	2,512	2,541	1.6%		-20.5%	1.2%
Oakland	42,873	40,027	48,075	47,454	46,790	29.4%		9.1%	-1.4%
St. Clair	2,259	2,163	2,297	2,210	2,344	1.5%		3.8%	6.1%
Thumb Area	1,783	1,608	1,919	1,871	2,004	1.3%		12.4%	7.1%
Washtenaw	11,232	11,328	12,912	12,921	14,002	8.8%		24.7%	8.4%
Wayne	58,610	55,365	58,903	63,223	61,181	38.4%		4.4%	-3.2%
Outer Wayne	28,705	28,077	30,665	31,466	28,849	18.1%		0.5%	-8.3%
Prosperity Region 6	10,709	10,032	11,318	10,544	10,816	6.8%		1.0%	2.6%
Prosperity Region 9	18,906	18,355	20,988	20,776	23,262	14.6%		23.0%	12.0%
Prosperity Region 10	119,764	113,026	128,322	130,620	125,113	78.6%		4.5%	-4.2%


















Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Agriculture Job Postings: WIN Partnership

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Share of Q3 2017 Total	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
WIN-Region Total	1,776	1,660	2,447	2,407	2,120	100.0%		19.4%	-11.9%
Detroit	351	358	386	434	303	14.3%		-13.7%	-30.2%
Genesee & Shiawassee	86	82	140	141	108	5.1%		25.6%	-23.4%
Hillsdale & Lenawee	26	10	29	32	34	1.6%		30.8%	6.3%
Jackson	19	27	48	55	39	1.8%		105.3%	-29.1%
Livingston	51	36	66	65	50	2.4%		-2.0%	-23.1%
Macomb	149	183	315	243	205	9.7%		37.6%	-15.6%
Monroe	30	29	31	34	35	1.7%		16.7%	2.9%
Oakland	534	435	684	645	633	29.9%		18.5%	-1.9%
St. Clair	20	20	42	37	27	1.3%		35.0%	-27.0%
Thumb Area	30	15	53	22	30	1.4%		0.0%	36.4%
Washtenaw	175	173	220	240	245	11.6%		40.0%	2.1%
Wayne	656	650	817	893	714	33.7%		8.8%	-20.0%
Outer Wayne	305	292	431	459	411	19.4%		34.8%	-10.5%
Prosperity Region 6	136	117	235	200	165	7.8%		21.3%	-17.5%
Prosperity Region 9	271	246	363	392	368	17.4%		35.8%	-6.1%
Prosperity Region 10	1,369	1,297	1,847	1,815	1,587	74.9%		15.9%	-12.6%




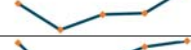













Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Business and Finance Job Postings: WIN Partnership

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Share of Q3 2017 Total	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
WIN-Region Total	9,044	9,335	9,966	9,862	10,069	100.0%		11.3%	2.1%
Detroit	2,411	2,310	2,276	2,613	2,919	29.0%		21.1%	11.7%
Genesee & Shiawassee	171	255	259	236	180	1.8%		5.3%	-23.7%
Hillsdale & Lenawee	55	65	97	65	216	2.1%		292.7%	232.3%
Jackson	155	196	200	190	129	1.3%		-16.8%	-32.1%
Livingston	108	105	103	91	102	1.0%		-5.6%	12.1%
Macomb	645	701	903	734	625	6.2%		-3.1%	-14.9%
Monroe	169	172	175	104	117	1.2%		-30.8%	12.5%
Oakland	3,017	3,053	3,364	3,210	3,249	32.3%		7.7%	1.2%
St. Clair	89	115	74	78	77	0.8%		-13.5%	-1.3%
Thumb Area	40	51	41	42	30	0.3%		-25.0%	-28.6%
Washtenaw	689	737	747	743	796	7.9%		15.5%	7.1%
Wayne	3,906	3,884	4,003	4,369	4,548	45.2%		16.4%	4.1%
Outer Wayne	1,495	1,574	1,727	1,756	1,629	16.2%		9.0%	-7.2%
Prosperity Region 6	300	421	374	356	287	2.9%		-4.3%	-19.4%
Prosperity Region 9	1,007	1,103	1,147	1,089	1,243	12.3%		23.4%	14.1%
Prosperity Region 10	7,737	7,810	8,445	8,417	8,539	84.8%		10.4%	1.4%


















Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Construction Job Postings: WIN Partnership

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Share of Q3 2017 Total	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
WIN-Region Total	1,492	1,219	1,472	2,306	1,658	100.0%		11.1%	-28.1%
Detroit	261	253	235	304	303	18.3%		16.1%	-0.3%
Genesee & Shiawassee	89	45	88	92	97	5.9%		9.0%	5.4%
Hillsdale & Lenawee	32	13	24	25	43	2.6%		34.4%	72.0%
Jackson	43	23	33	41	44	2.7%		2.3%	7.3%
Livingston	40	45	43	37	39	2.4%		-2.5%	5.4%
Macomb	184	162	241	263	211	12.7%		14.7%	-19.8%
Monroe	28	19	26	37	46	2.8%		64.3%	24.3%
Oakland	414	311	376	440	419	25.3%		1.2%	-4.8%
St. Clair	24	11	15	22	24	1.4%		0.0%	9.1%
Thumb Area	36	31	29	40	44	2.7%		22.2%	10.0%
Washtenaw	100	80	91	104	112	6.8%		12.0%	7.7%
Wayne	502	479	506	556	579	34.9%		15.3%	4.1%
Outer Wayne	241	226	271	252	276	16.6%		14.5%	9.5%
Prosperity Region 6	149	87	132	154	165	10.0%		10.7%	7.1%
Prosperity Region 9	215	161	191	207	238	14.4%		10.7%	15.0%
Prosperity Region 10	1,128	971	1,149	1,296	1,255	75.7%		11.3%	-3.2%

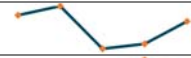
















Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Customer Service Job Postings: WIN Partnership

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Share of Q3 2017 Total	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
WIN-Region Total	34,218	33,345	35,398	35,837	35,593	100.0%		4.0%	-0.7%
Detroit	5,415	4,888	5,044	5,422	5,524	15.5%		2.0%	1.9%
Genesee & Shiawassee	1,698	1,575	1,756	1,701	1,679	4.7%		-1.1%	-1.3%
Hillsdale & Lenawee	464	485	467	421	698	2.0%		50.4%	65.8%
Jackson	560	572	767	624	755	2.1%		34.8%	21.0%
Livingston	857	913	942	880	1,016	2.9%		18.6%	15.5%
Macomb	3,792	3,749	4,055	3,979	3,772	10.6%		-0.5%	-5.2%
Monroe	567	675	727	637	624	1.8%		10.1%	-2.0%
Oakland	10,413	9,614	10,766	11,035	10,919	30.7%		4.9%	-1.1%
St. Clair	474	575	550	547	661	1.9%		39.5%	20.8%
Thumb Area	366	355	430	392	561	1.6%		53.3%	43.1%
Washtenaw	2,584	2,529	2,705	2,658	2,818	7.9%		9.1%	6.0%
Wayne	12,443	12,303	12,233	12,963	12,090	34.0%		-2.8%	-6.7%
Outer Wayne	7,028	7,415	7,189	7,541	6,566	18.4%		-6.6%	-12.9%
Prosperity Region 6	2,538	2,505	2,736	2,640	2,901	8.2%		14.3%	9.9%
Prosperity Region 9	4,465	4,499	4,881	4,583	5,287	14.9%		18.4%	15.4%
Prosperity Region 10	27,215	26,341	27,781	28,614	27,405	77.0%		0.7%	-4.2%







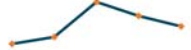










Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Education Job Postings: WIN Partnership

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Share of Q3 2017 Total	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
WIN-Region Total	3,034	3,150	2,613	2,675	2,959	100.0%		-2.5%	10.6%
Detroit	391	538	491	629	575	19.4%		47.1%	-8.6%
Genesee & Shiawassee	257	212	242	200	288	9.7%		12.1%	44.0%
Hillsdale & Lenawee	68	61	14	42	49	1.7%		-27.9%	16.7%
Jackson	80	60	59	64	74	2.5%		-7.5%	15.6%
Livingston	43	21	18	11	21	0.7%		-51.2%	90.9%
Macomb	306	337	247	261	331	11.2%		8.2%	26.8%
Monroe	58	52	28	24	27	0.9%		-53.4%	12.5%
Oakland	796	765	659	634	627	21.2%		-21.2%	-1.1%
St. Clair	49	8	17	8	52	1.8%		6.1%	550.0%
Thumb Area	79	38	37	38	49	1.7%		-38.0%	28.9%
Washtenaw	347	416	332	297	419	14.2%		20.7%	41.1%
Wayne	951	1,180	960	1,018	1,022	34.5%		7.5%	0.4%
Outer Wayne	560	642	469	389	447	15.1%		-20.2%	14.9%
Prosperity Region 6	385	258	296	246	389	13.1%		1.0%	58.1%
Prosperity Region 9	538	558	423	414	563	19.0%		4.6%	36.0%
Prosperity Region 10	2,111	2,334	1,894	1,937	2,007	67.8%		-4.9%	3.6%













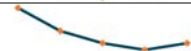




Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Energy Job Postings: WIN Partnership

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Share of Q3 2017 Total	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
WIN-Region Total	259	240	328	279	265	100.0%		2.3%	-5.0%
Detroit	87	79	123	98	108	40.8%		24.1%	10.2%
Genesee & Shiawassee	0	1	6	4	2	0.8%		200.0%	-50.0%
Hillsdale & Lenawee	0	0	1	1	1	0.4%		100.0%	0.0%
Jackson	21	31	16	33	12	4.5%		-42.9%	-63.6%
Livingston	0	0	2	2	1	0.4%		100.0%	-50.0%
Macomb	4	6	16	12	9	3.4%		125.0%	-25.0%
Monroe	93	55	60	50	42	15.8%		-54.8%	-16.0%
Oakland	3	9	15	27	16	6.0%		433.3%	-40.7%
St. Clair	7	12	34	9	16	6.0%		128.6%	77.8%
Thumb Area	5	5	7	3	7	2.6%		40.0%	133.3%
Washtenaw	5	7	7	5	9	3.4%		80.0%	80.0%
Wayne	121	114	164	133	150	56.6%		24.0%	12.8%
Outer Wayne	34	35	41	35	42	15.8%		23.5%	20.0%
Prosperity Region 6	12	18	47	16	25	9.4%		108.3%	56.3%
Prosperity Region 9	26	38	26	41	23	8.7%		-11.5%	-43.9%
Prosperity Region 10	221	184	255	222	217	81.9%		-1.8%	-2.3%


















Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Engineers & Designers Job Postings: WIN Partnership

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Share of Q3 2017 Total	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
WIN-Region Total	8,977	7,941	9,180	8,646	8,264	100.0%		-7.9%	-4.4%
Detroit	1,273	977	1,001	1,140	1,218	14.7%		-4.3%	6.8%
Genesee & Shiawassee	99	109	104	110	128	1.5%		29.3%	16.4%
Hillsdale & Lenawee	70	57	82	69	71	0.9%		1.4%	2.9%
Jackson	142	162	129	156	145	1.8%		2.1%	-7.1%
Livingston	85	62	66	64	47	0.6%		-44.7%	-26.6%
Macomb	1,108	1,102	1,720	1,236	804	9.7%		-27.4%	-35.0%
Monroe	187	123	95	97	93	1.1%		-50.3%	-4.1%
Oakland	3,493	3,115	3,827	3,725	3,595	43.5%		2.9%	-3.5%
St. Clair	70	86	79	64	57	0.7%		-18.6%	-10.9%
Thumb Area	25	26	22	29	22	0.3%		-12.0%	-24.1%
Washtenaw	374	372	465	455	493	6.0%		31.8%	8.4%
Wayne	3,324	2,727	2,591	2,641	2,809	34.0%		-15.5%	6.4%
Outer Wayne	2,051	1,750	1,590	1,501	1,591	19.3%		-22.4%	6.0%
Prosperity Region 6	194	221	205	203	207	2.5%		6.7%	2.0%
Prosperity Region 9	671	653	742	744	756	9.1%		12.7%	1.6%
Prosperity Region 10	8,112	7,067	8,233	7,699	7,301	88.3%		-10.0%	-5.2%












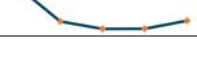





Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Health Care Job Postings: WIN Partnership

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Share of Q3 2017 Total	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
WIN-Region Total	20,099	19,607	25,381	26,234	23,304	100.0%		15.9%	-11.2%
Detroit	5,403	5,131	5,702	6,287	5,977	25.6%		10.6%	-4.9%
Genesee & Shiawassee	1,197	1,203	1,589	1,338	1,373	5.9%		14.7%	2.6%
Hillsdale & Lenawee	234	213	278	329	474	2.0%		102.6%	44.1%
Jackson	305	269	488	584	584	2.5%		91.5%	0.0%
Livingston	261	269	309	285	268	1.2%		2.7%	-6.0%
Macomb	2,055	1,999	3,081	2,964	1,855	8.0%		-9.7%	-37.4%
Monroe	647	550	254	354	342	1.5%		-47.1%	-3.4%
Oakland	4,291	4,295	5,802	5,706	5,441	23.3%		26.8%	-4.6%
St. Clair	466	480	598	585	488	2.1%		4.7%	-16.6%
Thumb Area	306	292	347	370	351	1.5%		14.7%	-5.1%
Washtenaw	1,778	1,926	2,444	2,547	2,530	10.9%		42.3%	-0.7%
Wayne	8,559	8,111	10,191	11,172	9,598	41.2%		12.1%	-14.1%
Outer Wayne	3,156	2,980	4,489	4,885	3,621	15.5%		14.7%	-25.9%
Prosperity Region 6	1,969	1,975	2,534	2,293	2,212	9.5%		12.3%	-3.5%
Prosperity Region 9	2,578	2,677	3,519	3,745	3,856	16.5%		49.6%	3.0%
Prosperity Region 10	15,552	14,955	19,328	20,196	17,236	74.0%		10.8%	-14.7%


















Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Information Technology Job Postings: WIN Partnership

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Share of Q3 2017 Total	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
WIN-Region Total	16,966	14,646	16,083	16,378	16,523	100.0%		-2.6%	0.9%
Detroit	4,375	3,795	3,711	4,620	4,587	27.8%		4.8%	-0.7%
Genesee & Shiawassee	223	174	189	124	156	0.9%		-30.0%	25.8%
Hillsdale & Lenawee	67	40	41	17	171	1.0%		155.2%	905.9%
Jackson	154	178	171	215	192	1.2%		24.7%	-10.7%
Livingston	95	72	79	62	73	0.4%		-23.2%	17.7%
Macomb	1,300	1,104	1,547	1,284	821	5.0%		-36.8%	-36.1%
Monroe	95	101	106	92	72	0.4%		-24.2%	-21.7%
Oakland	5,712	5,039	5,991	5,840	5,960	36.1%		4.3%	2.1%
St. Clair	41	32	45	37	41	0.2%		0.0%	10.8%
Thumb Area	33	23	21	10	14	0.1%		-57.6%	40.0%
Washtenaw	1,207	1,255	1,530	1,419	1,591	9.6%		31.8%	12.1%
Wayne	8,018	6,628	6,363	7,278	7,432	45.0%		-7.3%	2.1%
Outer Wayne	3,643	2,833	2,652	2,658	2,845	17.2%		-21.9%	7.0%
Prosperity Region 6	297	229	255	171	211	1.3%		-29.0%	23.4%
Prosperity Region 9	1,523	1,545	1,821	1,713	2,027	12.3%		33.1%	18.3%
Prosperity Region 10	15,125	12,872	14,007	14,494	14,285	86.5%		-5.6%	-1.4%



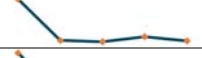

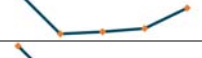


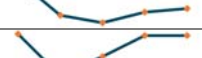

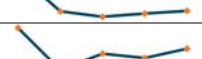







Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Skilled Trade & Technician Job Postings: WIN Partnership

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Share of Q3 2017 Total	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
WIN-Region Total	4,755	4,797	5,947	5,559	5,497	100.0%		15.6%	-1.1%
Detroit	494	460	502	575	557	10.1%		12.8%	-3.1%
Genesee & Shiawassee	201	265	253	250	225	4.1%		11.9%	-10.0%
Hillsdale & Lenawee	110	114	119	169	173	3.1%		57.3%	2.4%
Jackson	103	129	157	149	131	2.4%		27.2%	-12.1%
Livingston	224	161	165	167	169	3.1%		-24.6%	1.2%
Macomb	771	784	1,042	962	1,003	18.2%		30.1%	4.3%
Monroe	115	102	120	114	119	2.2%		3.5%	4.4%
Oakland	1,263	1,225	1,569	1,465	1,393	25.3%		10.3%	-4.9%
St. Clair	126	109	108	121	119	2.2%		-5.6%	-1.7%
Thumb Area	135	156	171	166	120	2.2%		-11.1%	-27.7%
Washtenaw	290	296	335	365	392	7.1%		35.2%	7.4%
Wayne	1,419	1,456	1,664	1,631	1,653	30.1%		16.5%	1.3%
Outer Wayne	925	996	1,162	1,056	1,096	19.9%		18.5%	3.8%
Prosperity Region 6	462	530	532	537	464	8.4%		0.4%	-13.6%
Prosperity Region 9	727	700	776	850	865	15.7%		19.0%	1.8%
Prosperity Region 10	3,568	3,567	4,395	4,172	4,168	75.8%		16.8%	-0.1%

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Transportation, Distribution, and Logistics Job Postings: WIN Partnership

	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Share of Q3 2017 Total	Change Over Time	Annual Change Q3 2016-Q3 2017	Quarter Growth Q2 2017-Q3 2017
WIN-Region Total	13,548	10,144	10,551	11,942	11,139	100.0%		-17.8%	-6.7%
Detroit	1,704	1,541	1,339	1,495	1,739	15.6%		2.1%	16.3%
Genesee & Shiawassee	930	503	488	541	497	4.5%		-46.6%	-8.1%
Hillsdale & Lenawee	804	282	288	399	517	4.6%		-35.7%	29.6%
Jackson	456	227	239	257	368	3.3%		-19.3%	43.2%
Livingston	388	195	194	213	237	2.1%		-38.9%	11.3%
Macomb	1,533	1,202	1,377	1,726	1,295	11.6%		-15.5%	-25.0%
Monroe	644	340	275	367	398	3.6%		-38.2%	8.4%
Oakland	2,390	2,030	2,196	2,376	2,376	21.3%		-0.6%	0.0%
St. Clair	463	234	200	220	237	2.1%		-48.8%	7.7%
Thumb Area	412	200	282	260	307	2.8%		-25.5%	18.1%
Washtenaw	687	434	419	464	457	4.1%		-33.5%	-1.5%
Wayne	4,841	4,398	4,593	5,119	4,612	41.4%		-4.7%	-9.9%
Outer Wayne	3,137	2,857	3,254	3,624	2,873	25.8%		-8.4%	-20.7%
Prosperity Region 6	1,805	937	970	1,021	1,041	9.3%		-42.3%	2.0%
Prosperity Region 9	2,335	1,138	1,140	1,333	1,579	14.2%		-32.4%	18.5%
Prosperity Region 10	9,408	7,970	8,441	9,588	8,681	77.9%		-7.7%	-9.5%

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