WAYNE COUNTY

WIN Labor Market Report
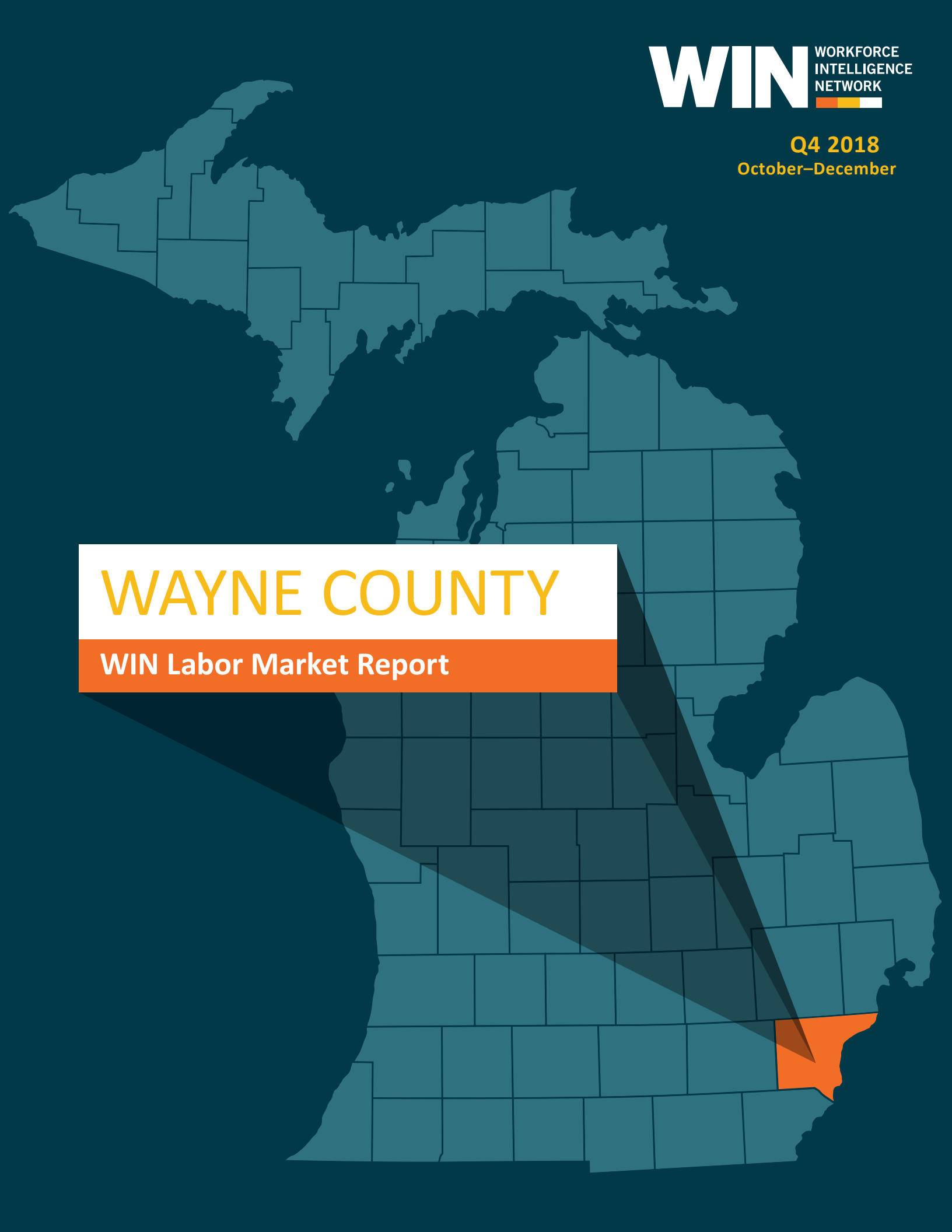
Report Contents

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 Wayne county. A workforce overview is provided within, identifying key components of the area's labor market including labor force status, demographic, and commuting data. WIN's analysis of online job postings, a proxy for employer demand, is a pioneering method for tracking the health of the labor market. This data is used to provide a real-time demand overview, detailing posting related findings for both employers and job seekers. WIN's data and research team analyzes job posting data at the occupation level within eleven customized occupation groups built using specific Standard Occupational Classification (SOC) codes to provide more contextualized information. Occupation groups combine data for jobs with similar skillsets, educational attainment, and experience requirements, which provides a more in-depth snapshot of the current labor market when compared to traditional industry data based upon North American Industry Classification System (NAICS) codes. Occupation outlook sections utilize these metrics to identify and display the top in-demand jobs, their entry requirements, and their earning potential.

WIN produces a 16-county region report quarterly using data from all eleven occupation groups. A report focused on the city of Detroit is also produced quarterly, focusing on five occupation groups related to Detroit's labor market. County reports are produced annually and focus on five occupation groups chosen to reflect the labor market specific to the county.

This report analyzes data from the fourth quarter of 2018 in Wayne county and includes summative data for October, November, and December of 2018. For Wayne County, the energy, engineers and designers, health care, information technology, and skilled trades and technicians occupation groups are analyzed.

For more information pertaining to the labor market in southeast Michigan, the custom occupation groups within this report, or any other workforce-related data projects, please visit www.WINintelligence.org or contact the data and research team directly at research@WINintelligence.org.

WIN
WORKFORCE
INTELLIGENCE
NETWORK

ANNUAL STATE OF THE LABOR MARKET
Wayne County | Q4 2018

State of the Labor Market in Wayne County

Over the course of 2018, both the labor force and employment figures increased in Wayne county. With employment growing by a greater margin than the labor force, the proportion of unemployed individuals decreased in the region. This caused the unemployment rate to drop from the 5.4 percent annual rate in 2017 to the annual rate of 5.2 percent in 2018. Employer demand for most occupation groups also increased during Q4 2018. The health care occupation group reported the highest demand with nearly 13,000 job postings during the quarter. Other occupation groups also offer great job opportunities for active job seekers: skilled postings grew by five percent from Q3 2018, including 31 percent of postings that were open to entry-level applicants.

Annual Labor Market Information

Moving into a ten-year high, the labor force in Wayne county increased by 3,042 individuals (0.4 percent) between 2017 and 2018. Employment increased by 4,889 workers (0.7 percent) between 2017 and 2018. With employment increasing more quickly than the labor force, the unemployment rate fell by 0.2 percentage points from the annual figures in 2017 to an annual rate of 5.2 percent in Wayne county during 2018.

Annual Labor Force, Employment, Unemployment Rate 2010–2018

Data: BLS | Analysis: Workforce Intelligence Network
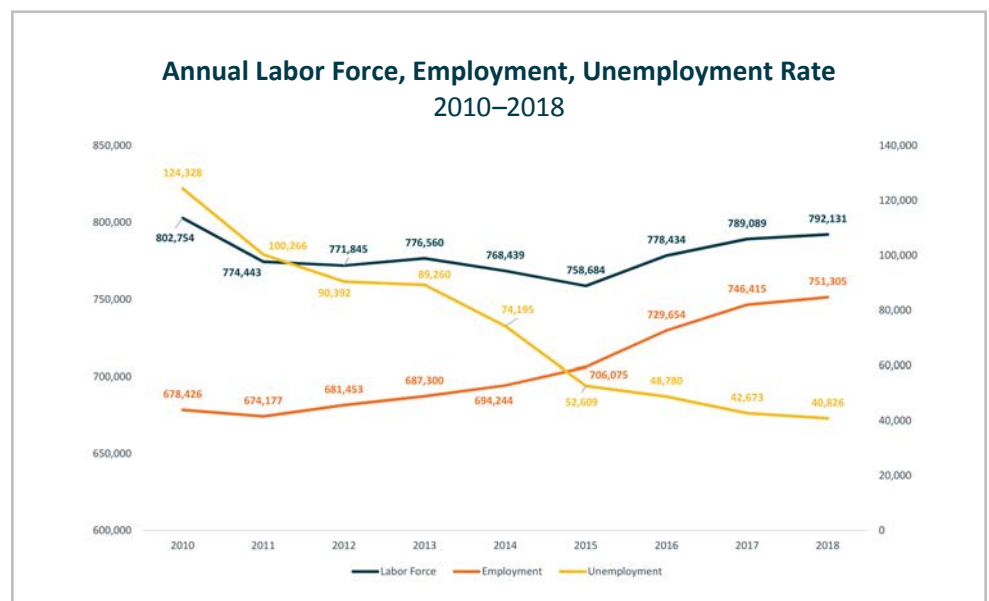
Quarterly Employer Demand Overview

Data from the fourth quarter of 2018, including posting information from October, November, and December, showed employer demand continue to grow throughout Wayne County. There were 8,867 more postings during Q4 2018 compared to the 105,432 postings made during Q4 2017 for a total of 114,299 postings. Typically, demand picks up throughout the year, but posting levels in 2018 were higher than during 2017.

Quarterly Posting Analysis, Wayne County Q4 2018

Q3 2017	331,528
Q4 2017	313,176
Q1 2018	310,666
Q2 2018	321,856
Q3 2018	326,705

Data: Emsi | Analysis: Workforce Intelligence Network
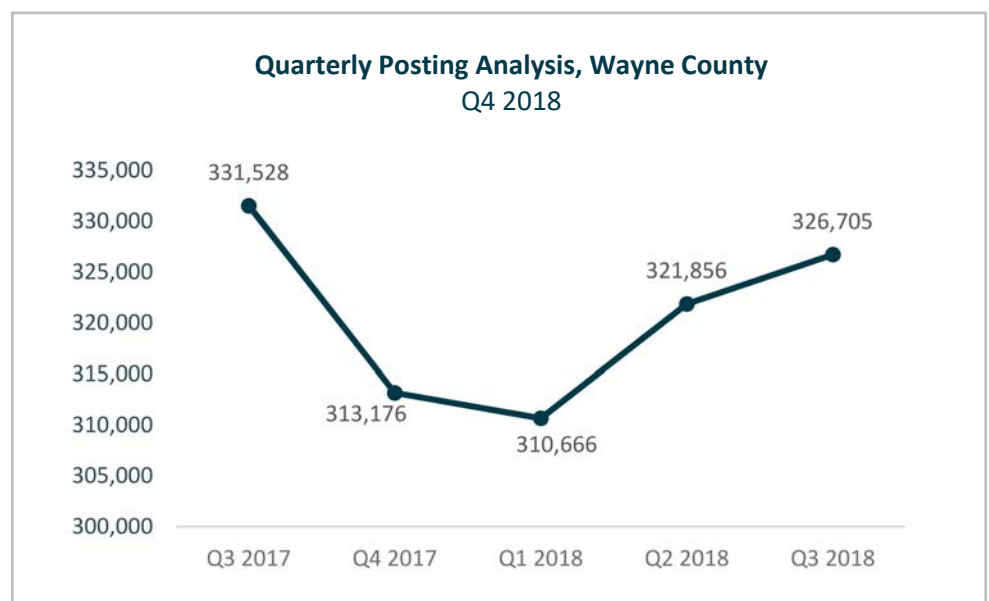
QUARTERLY WORKFORCE INDICATORS
Wayne County | Key Findings for Q4 2018

Employer demand surges to 114,299 postings during Q4 2018, with most occupation groups analyzed by WIN experiencing increases in online job postings between Q3 and Q4 2018.

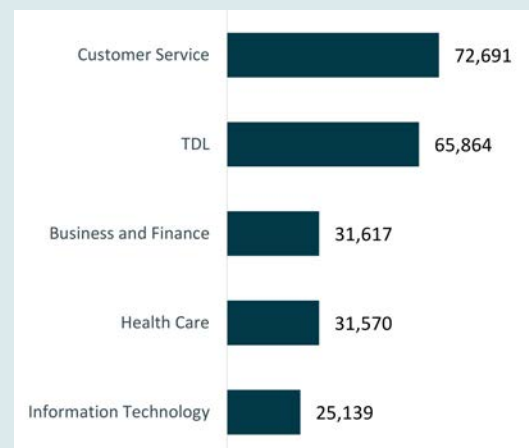During Q4 2018, there were 114,299 jobs posted, 8,708 more than the 105,591 jobs posted during Q3 2018 in Wayne county. Most of the occupation groups analyzed by WIN experienced an increase during the fourth quarter of 2018. The engineers and designers, IT, and skilled trades groups each increased by over 200 postings, while health care demand grew by over 2,000 ads. Online job postings made by employers in both the engineering and skilled trades occupation groups were up by five percent from the previous quarter (Q3 2018), both hitting nearly 5,000 postings.

Postings by Occupation Group
Q4 2018

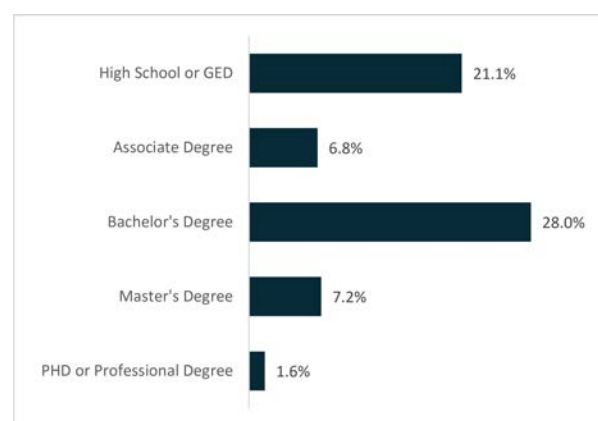| Occupation	Postings
Customer Service	72,691
TDL	65,864
Business and Finance	31,617
Health Care	31,570
Information Technology	25,139

Data: Emsi | Analysis: Workforce Intelligence Network

Job postings made by employers in Wayne county indicate a bachelor's degree as the most in-demand minimum education level during Q4 2018.

Over a quarter (28.0 percent) of the 114,299 jobs posted in Wayne county indicated the need for candidates with a bachelor's degree. Another 21.1 percent of these postings were looking for applicants with a high school diploma or equivalent. Higher education attainment tends to lead to more lucrative opportunities, but many entry level openings exist in each occupation group for candidates with all education levels. As only 65 percent of job postings identified a minimum education level, these figures may vary slightly across all job openings in the county.

Education Levels In-Demand
Q4 2018

Education Level	Percent
High School or GED	21.1%
Associate Degree	6.8%
Bachelor's Degree	28.0%
Master's Degree	7.2%
PHD or Professional Degree	1.6%

Data: Emsi | Analysis: Workforce Intelligence Network

Wayne county's unemployment rate is currently at 5.0 percent, down 0.4 percentage points from Q3 2018.

As of Q4 2018, employment grew throughout each quarter of the year, while the labor force increased through most of the year yet has fallen slightly into the fourth quarter. The drop in labor force participants combined with the increase in workers caused the quarterly unemployment rate to fall from 5.4 percent in Q3 2018 to 5.0 percent in Q4 2018 as more people successfully found work. During November 2018 unemployment hit its lowest point in Q4, 4.7 percent. For more information about this quarter's unemployment rate and other labor market indicators, see page 4.

Quarterly Labor Market Data

	3rd Quarter 2018	4th Quarter 2018	Change from 3rd Quarter 2018	Percent Change from 3rd Quarter 2018
Labor Force	796,791	795,491	-1,300	-0.2%
Employment	753,661	755,579	1,918	0.3%
Unemployment	43,130	39,912	-3,218	-7.5%
Unemployment Rate	5.4%	5.0%	-0.4%	na

Note: Monthly data average by quarter | Data: BLS

WORKFORCE OVERVIEW
Wayne County | Labor Market Information Q4 2018

Labor Force, Employment, Unemployment Rate
2018

Data: BLS | Analysis: Workforce Intelligence Network
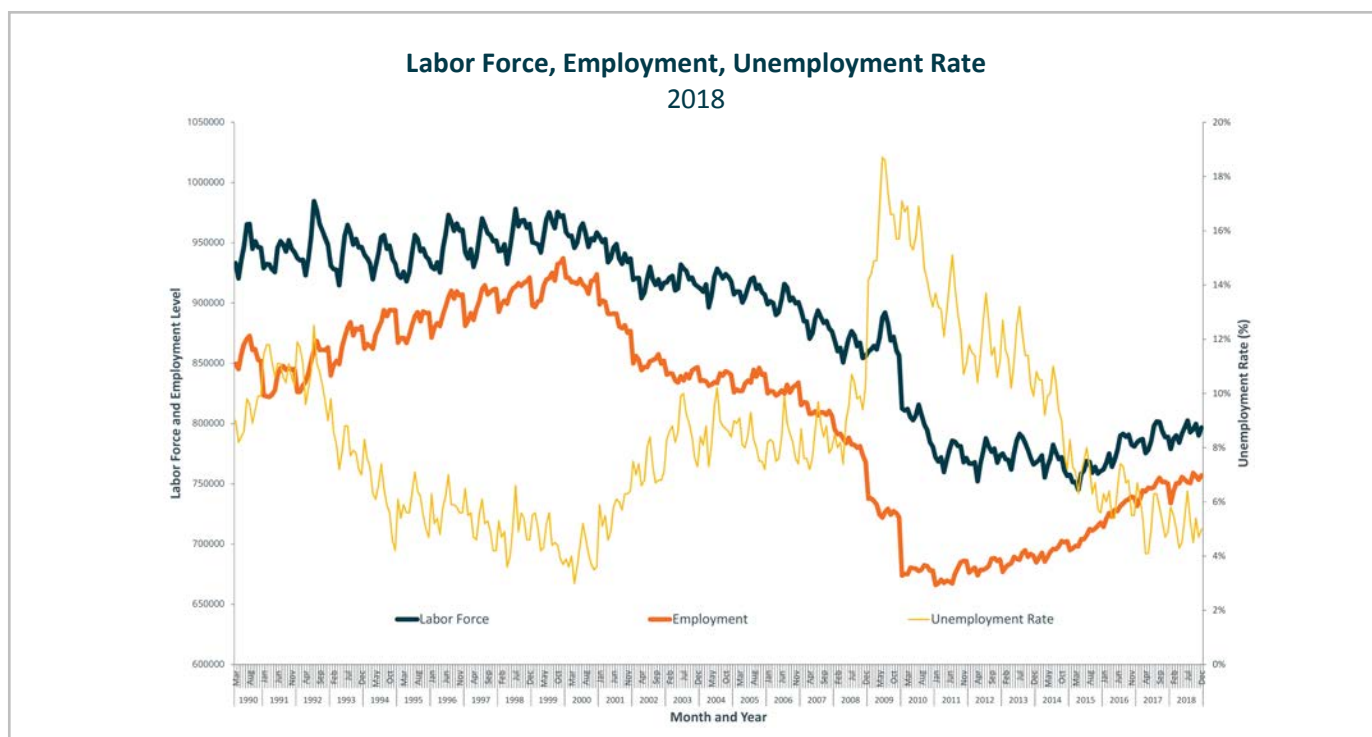
Quarterly Labor Market Data

	4th Quarter 2017	1st Quarter 2018	2nd Quarter 2018	3rd Quarter 2018	4th Quarter 2018	Change from 3rd Quarter 2018	Percent Change from 3rd Quarter 2018	Change from 4th Quarter 2017	Percent Change from 4th Quarter 2017
Labor Force	790,470	783,221	790,735	796,791	795,491	-1,300	-0.2%	5,022	0.6%
Employment	751,119	738,930	753,239	753,661	755,579	1,918	0.3%	4,460	0.6%
Unemployment	39,351	44,291	37,496	43,130	39,912	-3,218	-7.5%	561	1.4%
Unemployment Rate	5.0%	5.7%	4.7%	5.4%	5.0%	-0.4%	na	0.0%	na

Note: Monthly data averaged by quarter | Data: BLS

Labor Force, Employment, and Unemployment

The labor market in Wayne county has experienced relative stability since 2010. The labor force decreased by 1,300 workers (-0.2 percent) between Q3 2018 and Q4 2018. Employment in the county has increased from Q3 2018, by 1,918 workers (0.3 percent). With employment increasing while the labor force decreased, the unemployment rate fell this quarter: the quarterly unemployment rate decreased by 0.4 percentage points between Q3 2018 and Q4 2018 to 5.0 percent.

WORKFORCE OVERVIEW
Wayne County | 2017 Annual Population Demographics

Population Demographics

According to the data from the most recent Census Bureau 2017 ACS Five Year estimates, the population in Wayne county decreased by 0.2 percent between 2016 and 2017. During 2017, 1,763,822 people were living in the region. The sex of the populace was split almost evenly, with about 52 percent of the population identifying as female, and the other 48 percent identifying as male. A slight majority of the population identified as white (53 percent) with the second largest number of individuals identifying as black or African American (39 percent). The county, especially outside of the city of Detroit, is facing an aging population; 27.6 percent of population was over the age of 55, compared to 19.8 percent under the age of 24.

1,763,822
People in the Region
0.2% Decrease
from 2016

Population Race Demographics

- White, 53.17%
- Black or African American, 39.10%
- Asian, 3.12%
- Two or More Races, 2.34%
- Other Race, 1.93%
- American Indian or Alaska Native, 0.32%
- Native Hawaiian or Other Pacific Islander, 0.02%
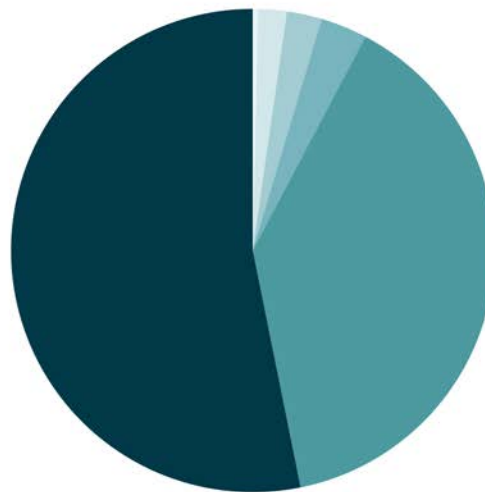
Population Gender Demographics

52% Females

48% Males

| 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |

Population Age Demographics

Age 14 and under 19.8% | Age 15-25 13.7% | Age 25-54 38.9% | Age 55+ 27.6%

Data: American Community Survey 5-Year Estimates | Analysis: Workforce Intelligence Network

2017 Labor Force, Employment, and Unemployment Demographics

Civilian Labor Force by Demographic Group			
Demographic Group	**Civilian Labor Force**	**Total Employment**	**Total Unemployment**	**Unemployment Rate**
Total Population 16 +	817,164	722,662	94,791	11.6%
Sex				
Male 16+	415,341	365,409	49,932	12.0%
16-19	16,771	11,582	5,189	30.9%
20-24	46,946	37,227	9,719	20.7%
25-54	271,249	242,060	29,189	10.8%
55-64	63,829	58,850	4,979	7.8%
65 Plus	16,546	15,690	856	5.2%
Female 16+	401,402	356,706	44,696	11.1%
16-19	16,896	11,573	5,323	31.5%
20-24	46,602	37,836	8,766	18.8%
25-54	258,124	232,168	25,956	10.1%
55-64	64,054	60,246	3,808	5.9%
65 Plus	15,726	14,883	843	5.4%
Race				
White	461,926	430,725	30,487	6.6%
Black / African American	298,073	239,952	58,124	19.5%
Native American	2,694	2,307	388	14.4%
Asian	26,293	24,145	2,130	8.1%
Native Hawaiian / Pacific Islander	235	201	0	0.0%
Some Other Race	14,278	12,687	1,599	11.2%
Two or More Races	13,692	11,910	1,794	13.1%
Ethnicity				
Hispanic	42,367	37,607	4,745	11.2%

Data: American Community Survey 5-Year Estimates | Analysis: Workforce Intelligence Network

Labor Market Demographics

During 2017, the most recent census year, there were about 800,000 people in the labor force, meaning they were either working or looking for work, in Wayne county. The 817,164 individuals participating in the labor force represent slightly less than half (46.3 percent) of those living in the region. The highest unemployment rates were seen in those aged 24 years old or younger. Males under the age of 19 face an unemployment rate of 30.9 percent. Black or African American job seekers also have a difficult time finding employment, facing an unemployment rate of 19.5 percent.

WORKFORCE OVERVIEW
Wayne County | 2018 Annual Working Population Demographics

Current Workforce Demographics

While the Census Bureau data is lagged by about two years, Emsi uses predictive modeling to estimate workforce information for the previous year, allowing for more current analysis. During 2018, there were a total of 735,500 individuals working in Wayne county. A slight majority (52 percent or 379,499 workers) were male, while 48 percent (356,000 workers) of the workforce was female. The largest portion of those working in the county were white, accounting for 67.2 percent of the workforce, while African American or black workers accounted for 22.5 percent of the workforce. Those identifying as having a Hispanic or Latino ethnicity accounted for 4.4 percent. Eighty-eight percent of the workforce was 25 years or older. Only twelve percent of those working were under the age of 25, indicating an aging workforce in Wayne county.

Workforce Race and Ethnicity Demographics

- White, 67.2%
- Black or African American, 22.5%
- Hispanic or Latino, 4.4%
- Asian, 4.0%
- Two or More Races, 1.5%
- American Indian or Alaska Native, 0.4%
- Native Hawaiian or Other Pacific Islander, 0.0%
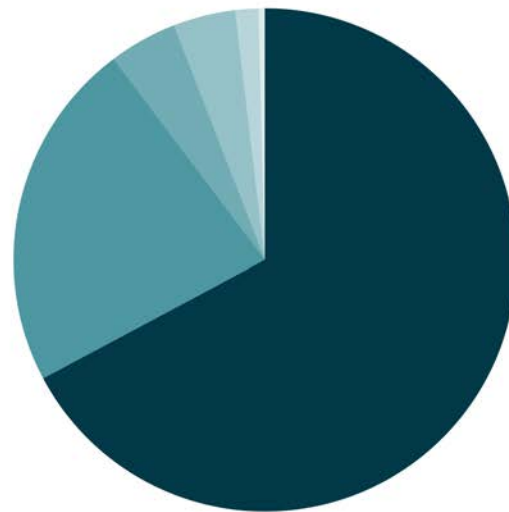
Workforce Gender Demographics

52% Males

48% Females

0   10   20   30   40   50   60   70   80   90   100

Workforce Age Demographics

Age 14-24, 12.4%

Age 25-54 65.6%

Age 55+ 22.0%

Data: Emsi | Analysis: Workforce Intelligence Network
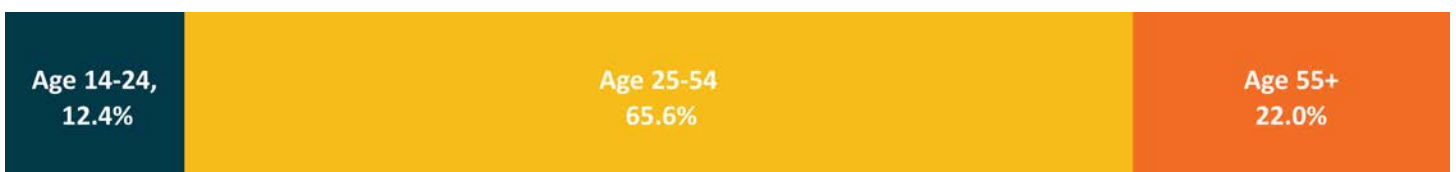
WORKFORCE OVERVIEW
Wayne County | 2015 Regional Commuting Patterns

Regional Commuting Patterns

According to the most recent OnTheMap data set available from the Census Bureau, during 2015, the county's workforce consisted of 650,971 residents. 374,612 (57.5 percent) of the residents lived and worked within the county, while the remaining 276,359 residents (42.5 percent) traveled outside of the region for work. There were 672,754 workers employed in the county during 2015. Of those, 298,142 workers (44.3 percent) lived outside of the region's borders and commuted in. We can see that Wayne County is, by a small margin, a net importer of jobs with more workers commuting into the area for employment than leaving.

Where Wayne County Residents Work

Data: U.S. Census OnTheMap, 2015
Analysis: Workforce Intelligence Network

Where Wayne County Workers Live

Data: U.S. Census OnTheMap, 2015
Analysis: Workforce Intelligence Network

298,142 — LIVE OUTSIDE OF WAYNE COUNTY AND COMMUTE IN

374,612 — LIVE AND WORK IN WAYNE COUNTY

276,359 — LIVE IN WAYNE COUNTY AND COMMUTE OUT

REAL-TIME DEMAND OVERVIEW
Wayne County | Top Posted Jobs | Q4 2018

Top Posted Jobs
Q4 2018

Occupation	Postings
Heavy and Tractor-Trailer Truck Drivers	8,519
Registered Nurses	4,474
Software Developers, Applications	2,938
Retail Salespersons	2,885
First-Line Supervisors of Retail Sales Workers	2,691
Customer Service Representatives	2,413
Computer Occupations, All Other	1,996
Light Truck or Delivery Services Drivers	1,934
Accountants and Auditors	1,566
Sales Managers	1,554
Industrial Engineers	1,508
Maintenance and Repair Workers, General	1,504
Business Operations Specialists, All Other	1,378
Management Analysts	1,367
Mechanical Engineers	1,358
First-Line Supervisors of Office and Administrative Support Workers	1,274
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,248
Computer Systems Analysts	1,244
Stock Clerks and Order Fillers	1,196
Marketing Managers	1,109

Typical Entry Education
- No formal educational credential
- High school diploma or equivalent
- Postsecondary nondegree award
- Bachelor's degree

Top Posted Jobs: Q4 2018

Heavy and Tractor-Trailer Truck Drivers were the highest in-demand occupation for the fourth quarter of 2018, with 8,519 online job postings. Of the top five overall in-demand occupations, two (Registered Nurses and Software Developers, Applications) typically require a bachelor's degree for entry. Median wages for Registered Nurses are nearly $15 more per hour than the other top jobs, and Software Developers nearly $25. Customer service occupations round out the remaining top five occupations with Retail Salespersons (2,885 postings) and First-Line Supervisors of Retail Sales Workers (2,691 postings) in high demand during Q4 2018.

REAL-TIME DEMAND OVERVIEW
Wayne County | Top Posted Entry-Level Jobs | Q4 2018

Top Posted Entry-Level Jobs
Q4 2018

Occupation	Postings
Registered Nurses	1,991
Heavy and Tractor-Trailer Truck Drivers	1,836
First-Line Supervisors of Retail Sales Workers	855
Software Developers, Applications	760
Customer Service Representatives	610
Maintenance and Repair Workers, General	469
Retail Salespersons	464
Computer Occupations, All Other	448
Business Operations Specialists, All Other	427
First-Line Supervisors of Office and Administrative Support Workers	404
Mechanical Engineers	391
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	386
Accountants and Auditors	377
Industrial Engineers	366
Computer User Support Specialists	360
Management Analysts	350
Taxi Drivers and Chauffeurs	338
First-Line Supervisors of Food Preparation and Serving Workers	301
Light Truck or Delivery Services Drivers	297
Stock Clerks and Order Fillers	287

Typical Entry Education
- No formal educational credential
- High school diploma or equivalent
- Some college, no degree
- Postsecondary nondegree award
- Bachelor's degree

Top Posted Entry-Level Jobs: Q4 2018

These entry-level jobs represent the top posted occupations requiring zero to two years of previous work experience. Many of these occupations (50 percent) require training or education beyond high school. Those who enter the workforce with a bachelor's degree can expect entry wages nearly double those with fewer years of education. Registered Nurses were the top posted entry-level job with nearly 2,000 postings in Q4 2018.

REAL-TIME DEMAND OVERVIEW
Wayne County | Job Postings by City | Q4 2018

Map based on Longitude (generated) and Latitude (generated). Size shows sum of Unique Postings. Details are shown for City.

Top In-Demand Qualifications

- Commercial Driver's License (CDL)
- Licensed Practical Nurse
- Certified Nursing Assistant
- Nurse Practitioner
- Certified Public Accountant
- American Registry of Radiologic Technologists (ARRT) Certified
- Patient Care Technician
- Radiologic Technologist
- Medical Technologist
- CompTIA Security+

Top In-Demand Skills

- Merchandising
- Restaurant Operation
- Selling Techniques
- Accounting
- Nursing
- Customer Satisfaction
- Warehousing
- Customer Experience
- Agile Software Development
- Purchasing

Top Posting Employers*

- Henry Ford Health System
- Ford Motor Company
- William Beaumont Hospital
- Shipt LLC
- Virtual Vocations
- Deloitte LLP
- Tenet Healthcare Corporation
- Anthem, Inc.
- The Home Depot Inc
- Soliant Health, Inc

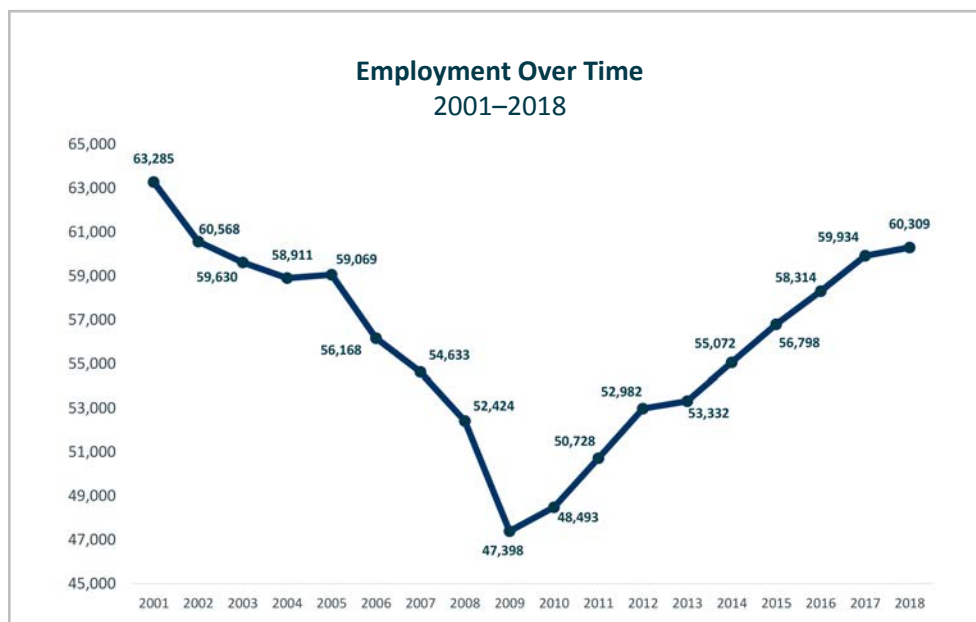**Employer names are listed as they appear in online job postings.*

ENERGY OCCUPATION GROUP
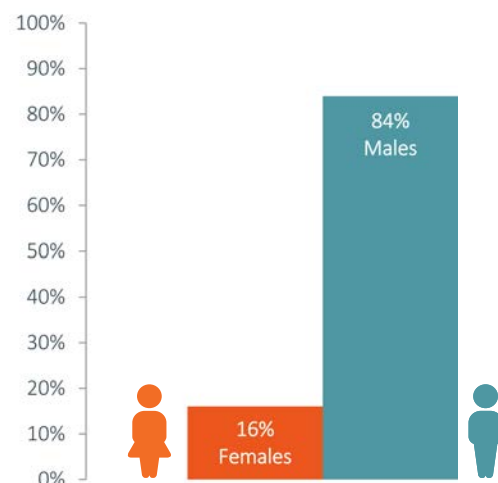## Wayne County | Q4 2018

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.

60,309
Energy Workers
0.6% Increase from 2017

Employment Over Time
2001–2018

Year	Value
2001	63,285
2002	60,568
2003	59,630
2004	58,911
2005	59,069
2006	56,168
2007	54,633
2008	52,424
2009	47,398
2010	48,493
2011	50,728
2012	52,982
2013	53,332
2014	55,072
2015	56,798
2016	58,314
2017	59,934
2018	60,309

Worker Gender Demographics

84% Males
16% Females

Energy Worker Demographics

According to the most recent Emsi data set available (2018), The over 60,000 workers in the energy occupation group are primarily white males between the ages of 25 and 54, with 16 percent of workers identifying as female and just 24 percent identifying as a racial minority. Only five percent of the workers in the occupation group are under the age of 24, indicating that the energy field faces a particular threat from the region's aging workforce.

Race and Ethnicity Demographics

76.1% White | 13.1% Black or African American | 6.0% Asian
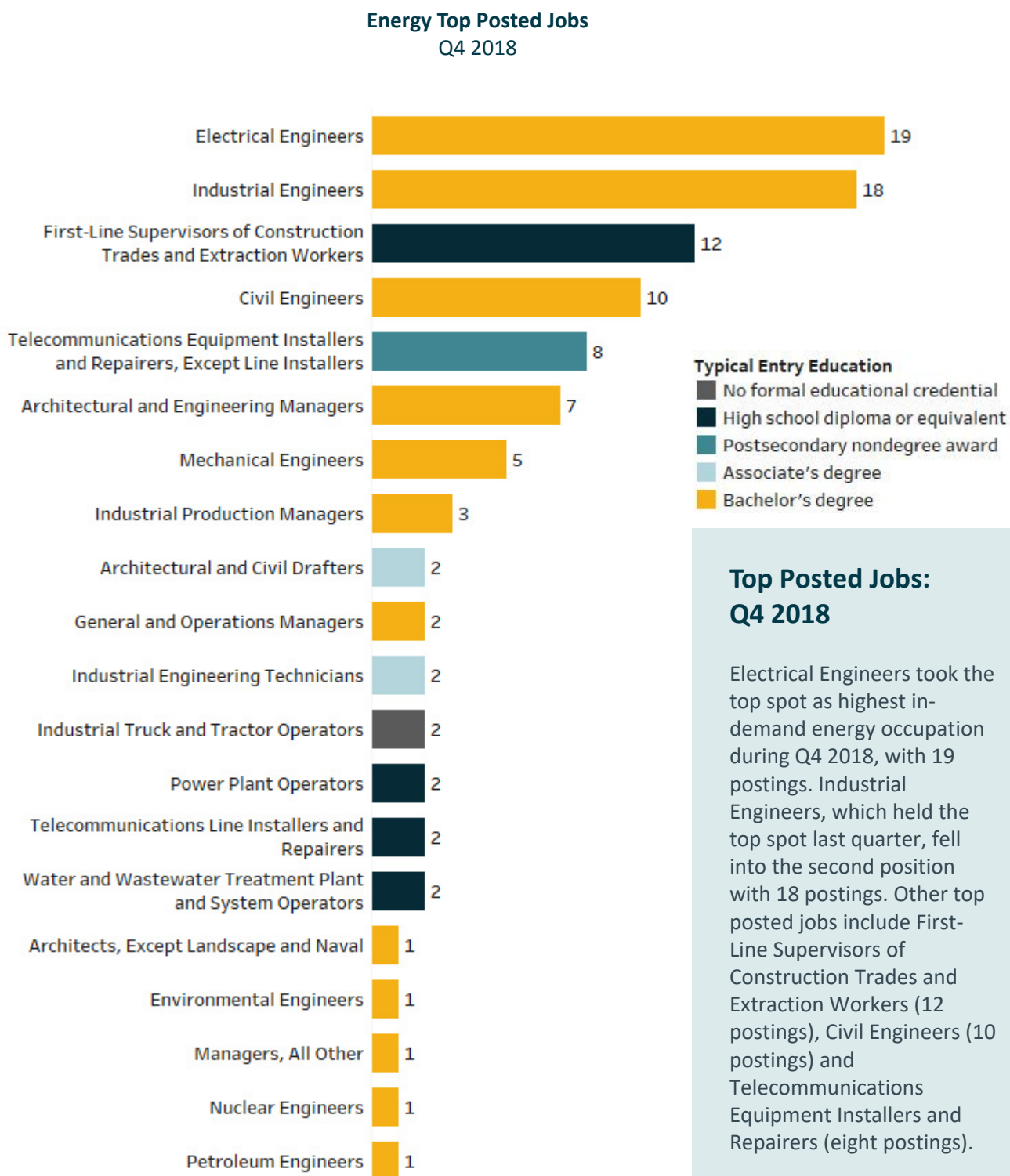
Worker Age Demographics

Age 14-24 4.7%

Age 25-54 72.0%

Age 55+ 23.2%

Data: Emsi | Analysis: Workforce Intelligence Network

107 Energy Postings: 21 Fewer Than in Q3 2018

Bachelors Degree Required for Most Energy Jobs

Energy Top Posted Jobs
Q4 2018

Job	Postings
Electrical Engineers	19
Industrial Engineers	18
First-Line Supervisors of Construction Trades and Extraction Workers	12
Civil Engineers	10
Telecommunications Equipment Installers and Repairers, Except Line Installers	8
Architectural and Engineering Managers	7
Mechanical Engineers	5
Industrial Production Managers	3
Architectural and Civil Drafters	2
General and Operations Managers	2
Industrial Engineering Technicians	2
Industrial Truck and Tractor Operators	2
Power Plant Operators	2
Telecommunications Line Installers and Repairers	2
Water and Wastewater Treatment Plant and System Operators	2
Architects, Except Landscape and Naval	1
Environmental Engineers	1
Managers, All Other	1
Nuclear Engineers	1
Petroleum Engineers	1

Typical Entry Education
- No formal educational credential
- High school diploma or equivalent
- Postsecondary nondegree award
- Associate's degree
- Bachelor's degree

Top Posted Jobs: Q4 2018

Electrical Engineers took the top spot as highest in-demand energy occupation during Q4 2018, with 19 postings. Industrial Engineers, which held the top spot last quarter, fell into the second position with 18 postings. Other top posted jobs include First-Line Supervisors of Construction Trades and Extraction Workers (12 postings), Civil Engineers (10 postings) and Telecommunications Equipment Installers and Repairers (eight postings).

High Earning Potential for General and Operations Managers

Professional Engineering Certification: Most In-Demand Energy Certification

Energy Wage Overview

The high demand for engineers in the energy field creates lucrative opportunities for job seekers willing to achieve the minimum educational requirements related to these jobs. According to the Bureau of Labor Statistics (BLS), one of the top posted energy job, Electrical Engineers, offers a median hourly wage of $43.21, or annual earnings of nearly $90,000. Technician and construction-focused positions generally have shorter term educational requirements than engineers and pay somewhat higher than similar occupations in other industries.

Wage Overview for Top Posted Energy Jobs in Q4 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
17-2071	Electrical Engineers	$30.71	$35.62	$43.21	$51.05	$62.44
17-2112	Industrial Engineers	$31.05	$35.88	$43.40	$50.89	$59.59
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	$20.25	$26.80	$33.03	$40.26	$48.83
17-2051	Civil Engineers	$25.30	$30.98	$38.58	$51.56	$70.56
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	$17.72	$21.72	$31.93	$38.51	$44.83
11-9041	Architectural and Engineering Managers	$43.14	$52.32	$65.21	$78.55	$96.13
17-2141	Mechanical Engineers	$31.74	$37.38	$45.86	$55.59	$63.13
11-3051	Industrial Production Managers	$34.69	$45.41	$57.68	$72.03	$86.87
11-1021	General and Operations Managers	$27.07	$37.71	$53.47	$78.32	$104.28
17-3011	Architectural and Civil Drafters	$16.23	$19.82	$22.34	$25.17	$29.88

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills
- Customer Satisfaction
- Corporate Social Responsibility
- Continuous Improvement Process
- Corporate Services
- Strategic Business Unit

In-Demand Foundational Skills
- Management
- Operations
- Communications
- Leadership
- Construction

In-Demand Education Level*
- High School Diploma: 24.8%
- Associate Degree: 9.2%
- Bachelor's Degree: 48.9%
- Master's Degree: 16.3%

Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent
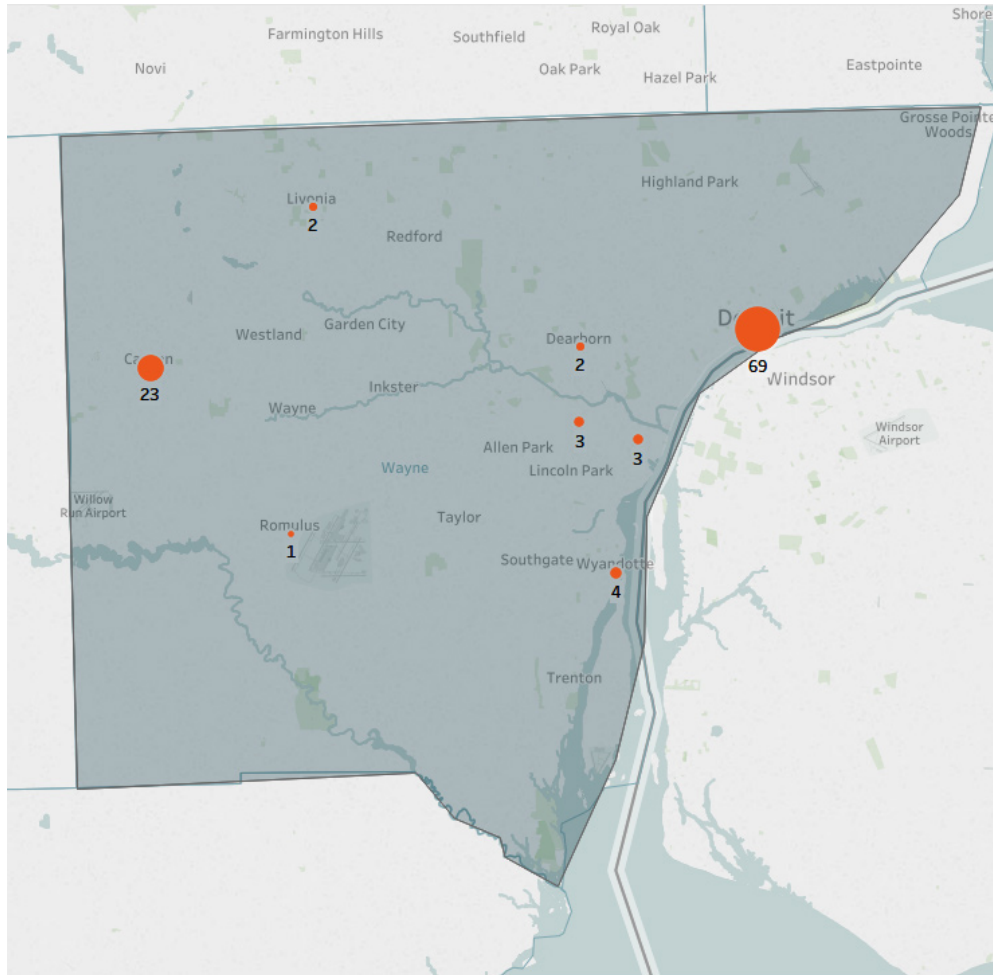
In-Demand Certifications
- Professional Engineer
- Certification in Clinical Cytogenetics
- Associates in Rural Development
- Commercial Driver's License (CDL)
- Operator Certification

Utility and Construction Companies: Top Employers

Engineering Skills are in High Demand

Map based on Longitude (generated) and Latitude (generated).
Size shows sum of Unique Postings. Details are shown for City.

Top Posting Employers*

- DTE Energy Company
- Communications Construction Group, LLC
- Henkels & McCoy, Inc.
- Veolia Energy
- Cavo Broadband Communications, LLC
- McDermott International, Inc.
- Duke Energy Services Canada Ltd
- Omega Homes Inc
- Quest Automated Services LLC
- CMS Energy Corporation

*Employer names are listed as they appear in online job postings.

Job Postings by City

1. Detroit, MI: 69 Postings
2. Canton, MI: 23 Postings
3. Wyandotte, MI: 4 Postings
4. Melvindale, MI: 3 Postings
5. River Rouge, MI: 3 Postings

ENGINEERING AND DESIGN OCCUPATION GROUP
## Wayne County | Q4 2018

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.

26,514
Engineering Workers

0.7% Increase from 2017

Employment Over Time
2001–2018

Worker Gender Demographics

87% Males

13% Females
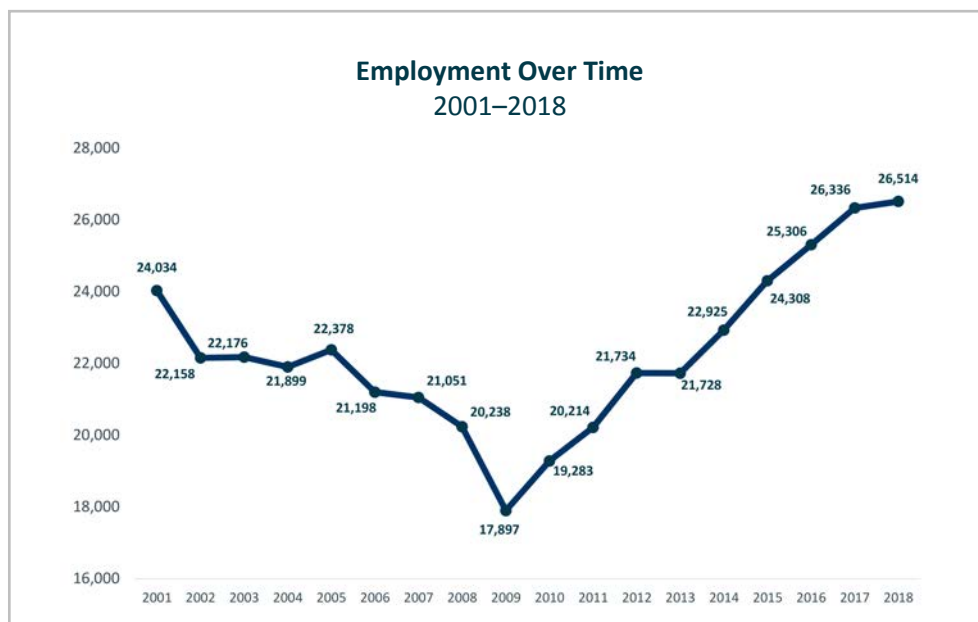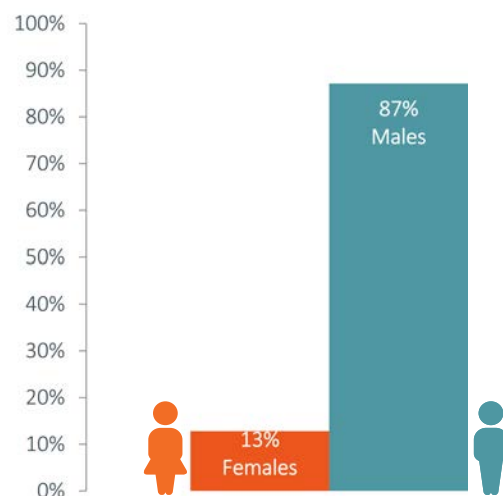
Engineering and Design Worker Demographics

According to the most recent Emsi data set available (2018), the 26,500 workers in the Engineers and Designers group are not particularly diverse. Just five percent of the workforce is under 25, likely due to the consistently high educational requirements. Thirteen percent of current workers are female, and only 23 percent identify as a race other than white; as the labor force overall continues to change, this is one field that could benefit from seeking more diverse talent.

Race and Ethnicity Demographics

77.1% White | 9.2% Black or African American | 9.5% Asian

Worker Age Demographics

Age 14-24
4.9%

Age 25-54
71.7%

Age 55+
23.4%

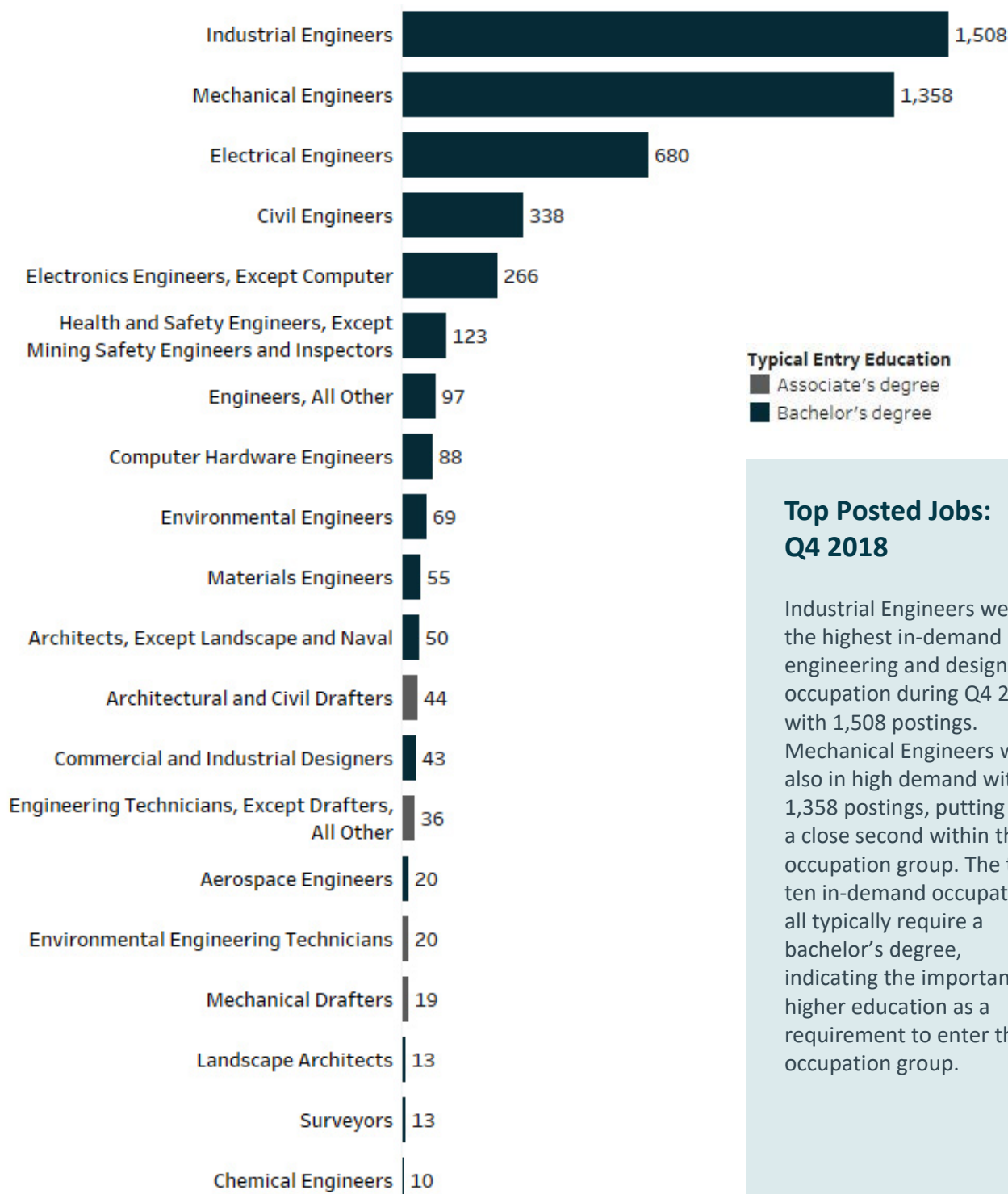*Data: Emsi | Analysis: Workforce Intelligence Network*

4,890 Engineering and Design Postings: 242 More Than in Q3 2018

Bachelor's Degree Required for Most Engineering and Design Jobs

Engineering and Design Top Posted Jobs
Q4 2018

Job Title	Postings
Industrial Engineers	1,508
Mechanical Engineers	1,358
Electrical Engineers	680
Civil Engineers	338
Electronics Engineers, Except Computer	266
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	123
Engineers, All Other	97
Computer Hardware Engineers	88
Environmental Engineers	69
Materials Engineers	55
Architects, Except Landscape and Naval	50
Architectural and Civil Drafters	44
Commercial and Industrial Designers	43
Engineering Technicians, Except Drafters, All Other	36
Aerospace Engineers	20
Environmental Engineering Technicians	20
Mechanical Drafters	19
Landscape Architects	13
Surveyors	13
Chemical Engineers	10

Typical Entry Education
- Associate's degree
- Bachelor's degree

Top Posted Jobs: Q4 2018

Industrial Engineers were the highest in-demand engineering and design occupation during Q4 2018, with 1,508 postings. Mechanical Engineers were also in high demand with 1,358 postings, putting it in a close second within the occupation group. The top ten in-demand occupations all typically require a bachelor's degree, indicating the importance of higher education as a requirement to enter this occupation group.

High Earning Potential for Environmental Engineers

Professional Engineer: Most In-Demand Engineering and Design Certification

Engineering and Design Wage Overview

Most engineering and design related jobs offer high wages, providing a lucrative opportunity to job seekers willing to meet the minimum education requirements related to these jobs. The top posted engineering and design job, Industrial Engineers, offers a median hourly wage of $43.40, or an annual salary of nearly $90,000 according to the Bureau of Labor Statistics (BLS).

Wage Overview for Top Posted Engineering and Design Jobs in Q4 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
17-2112	Industrial Engineers	$31.05	$35.88	$43.40	$50.89	$59.59
17-2141	Mechanical Engineers	$31.74	$37.38	$45.86	$55.59	$63.13
17-2071	Electrical Engineers	$30.71	$35.62	$43.21	$51.05	$62.44
17-2051	Civil Engineers	$25.30	$30.98	$38.58	$51.56	$70.56
17-2072	Electronics Engineers, Except Computer	$31.51	$35.67	$43.14	$50.94	$61.94
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	$29.62	$33.60	$46.89	$58.59	$68.32
17-2199	Engineers, All Other	$24.58	$36.89	$46.93	$57.10	$65.94
17-2061	Computer Hardware Engineers	$26.58	$31.67	$43.89	$59.52	$71.65
17-2081	Environmental Engineers	$30.57	$37.33	$48.62	$59.68	$70.42
17-2131	Materials Engineers	$27.73	$32.95	$40.16	$51.79	$69.00

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills
- Mechanical Engineering
- Electrical Engineering
- Engineering Mathematics
- Continuous Improvement Process
- Automotive Industry

In-Demand Foundational Skills
- Management
- Communications
- Operations
- Leadership
- Innovation

In-Demand Education Level*
- High School Diploma: 4.7%
- Associate Degree: 5.7%
- Bachelor's Degree: 68.6%
- Master's Degree: 14.1%

Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent
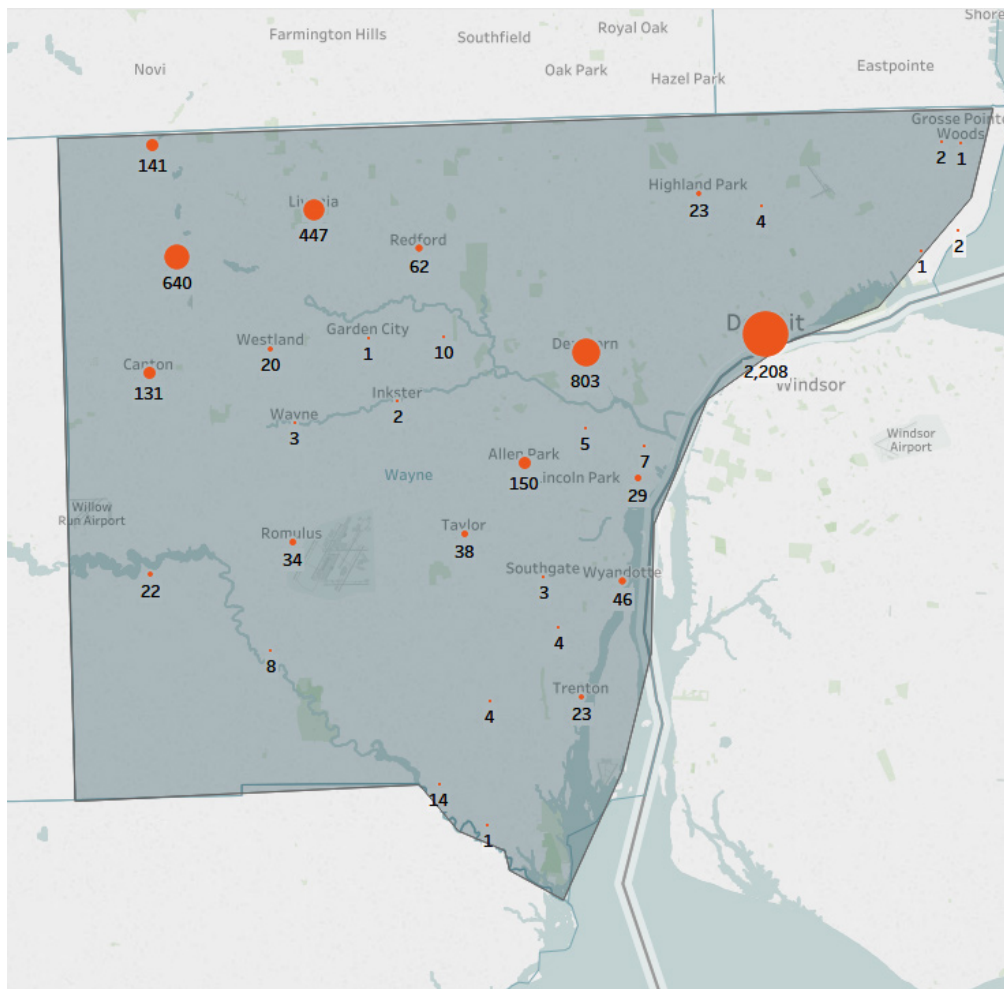
In-Demand Certifications
- Professional Engineer
- Certified Quality Engineer
- Licensed Professional Engineer
- (American Society for Quality) ASQ Certified
- Drug Recognition Expert

Automakers and Manufactures are Top Engineering Employers

Continuous Improvement Skills are in High Demand

Map based on Longitude (generated) and Latitude (generated).
Size shows sum of Unique Postings. Details are shown for City.

Top Posting Employers*

- Ford Motor Company
- American Axle & Manufacturing, Inc.
- Endevis, L.L.c
- Msx International, Inc.
- Gtech Services, Inc
- Jacobs Engineering Group Inc.
- Adient
- Roush Industries, Inc.
- Robert Bosch LLC
- RANDSTAD HOLDING nv

Employer names are listed as they appear in online job postings.

Job Postings by City

1. Detroit, MI: 2,208 Postings
2. Dearborn, MI: 803 Postings
3. Plymouth, MI: 640 Postings
4. Livonia, MI: 447 Postings
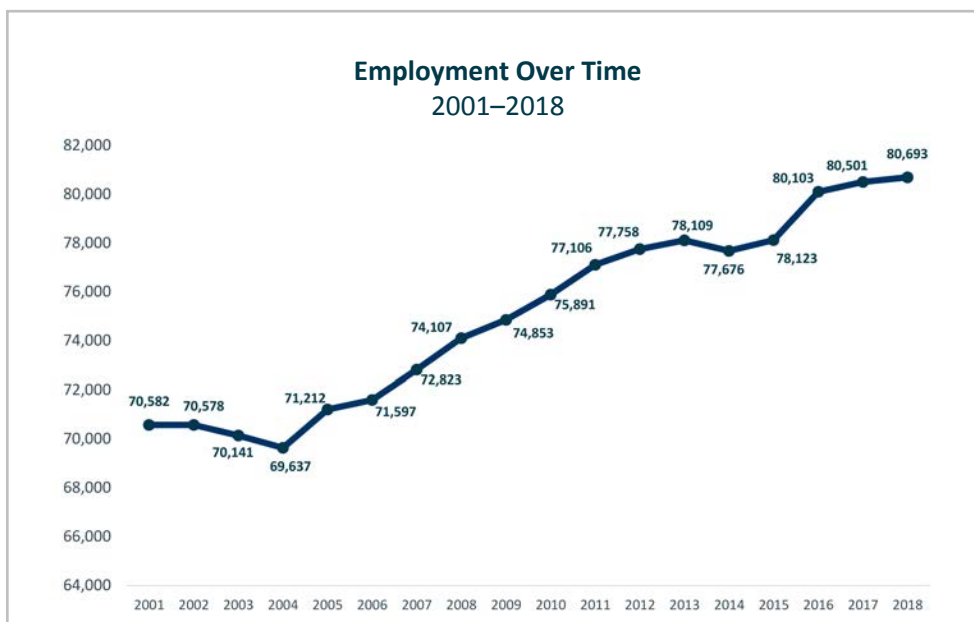5. Allen Park, MI: 150 Postings

HEALTH CARE OCCUPATION GROUP
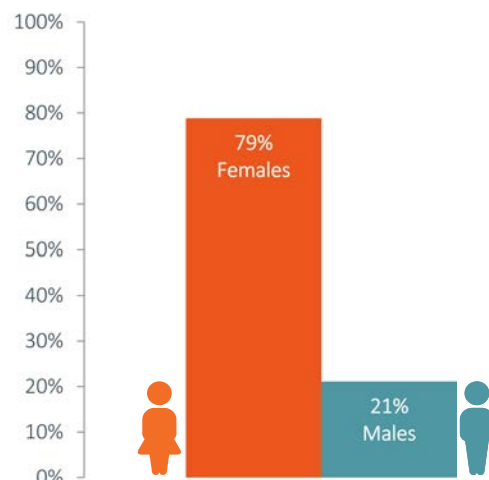## Wayne County | Q4 2018

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.

80,693
Health Care Workers
0.2% Increase
from 2017

Employment Over Time
2001–2018

82,000
80,000
78,000
76,000
74,000
72,000
70,000
68,000
66,000
64,000

70,582   70,578   70,141   69,637   71,212   71,597   72,823   74,107   74,853   75,891   77,106   77,758   78,109   77,676   78,123   80,103   80,501   80,693

2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Worker Gender Demographics

79% Females

21% Males

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%

Health Care Worker Demographics

According to the most recent Emsi data set available (2017), the Health Care occupation group employs around 244,937 workers, who are primarily female (79 percent) and between the ages of 25 and 54 (70 percent), although 21 percent of workers are over 55. The group has a similar proportion of racial minorities as the workforce as a whole, with 70 percent of workers identifying as white, 20 percent identifying as black or African American, and ten percent identifying otherwise.

Race and Ethnicity Demographics
63.0% White | 25.9% Black or African American | 6.4% Asian
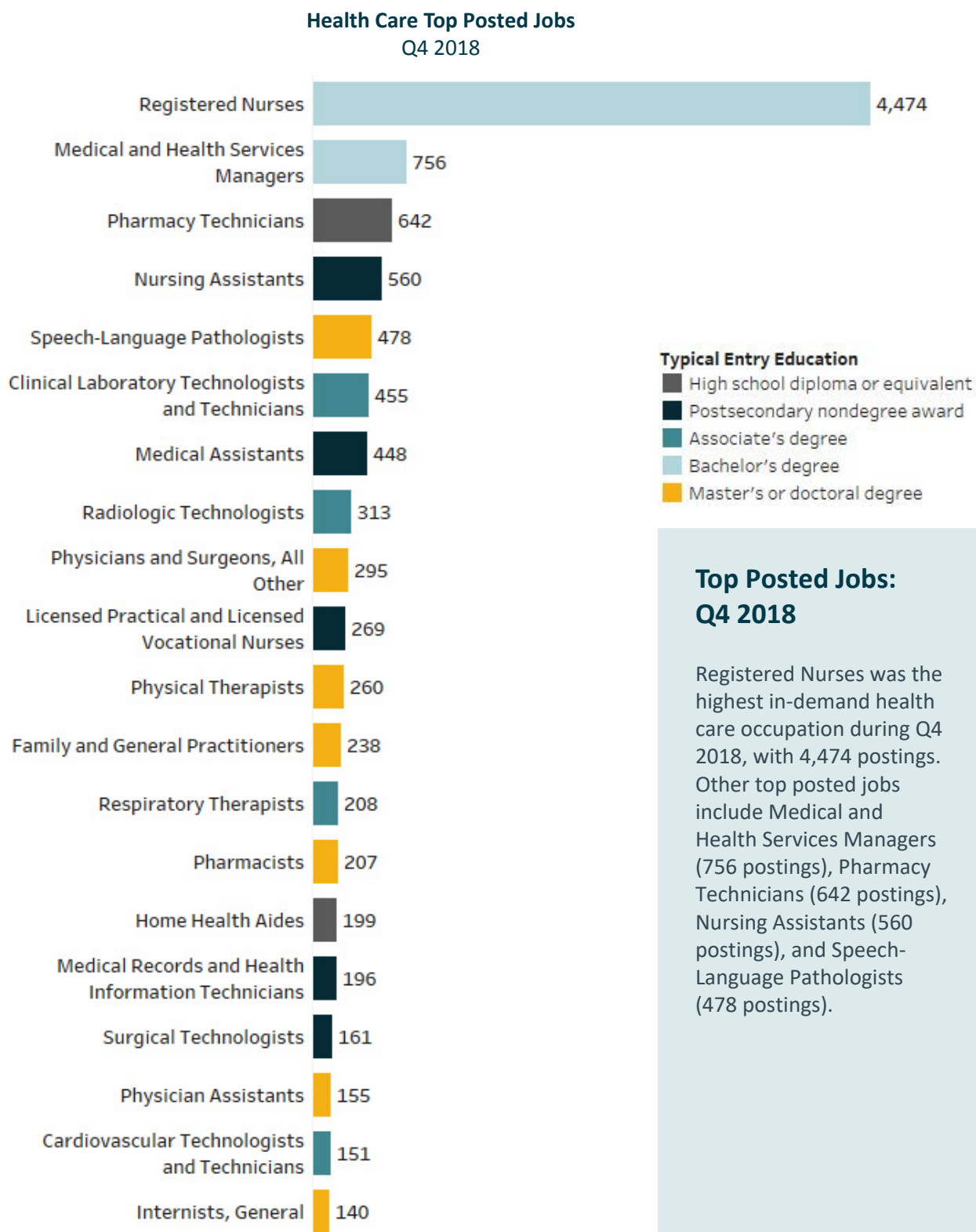
Worker Age Demographics

Age 14-24
7.2%

Age 25-54
70.8%

Age 55+
22.0%

Data: Emsi | Analysis: Workforce Intelligence Network

12,868 Health Care Postings: 2,163 More Than in Q3 2018

Bachelor's Degree Required for High Paying Health Care Jobs

Health Care Top Posted Jobs
Q4 2018

Occupation	Postings
Registered Nurses	4,474
Medical and Health Services Managers	756
Pharmacy Technicians	642
Nursing Assistants	560
Speech-Language Pathologists	478
Clinical Laboratory Technologists and Technicians	455
Medical Assistants	448
Radiologic Technologists	313
Physicians and Surgeons, All Other	295
Licensed Practical and Licensed Vocational Nurses	269
Physical Therapists	260
Family and General Practitioners	238
Respiratory Therapists	208
Pharmacists	207
Home Health Aides	199
Medical Records and Health Information Technicians	196
Surgical Technologists	161
Physician Assistants	155
Cardiovascular Technologists and Technicians	151
Internists, General	140

Typical Entry Education
- High school diploma or equivalent
- Postsecondary nondegree award
- Associate's degree
- Bachelor's degree
- Master's or doctoral degree

Top Posted Jobs: Q4 2018

Registered Nurses was the highest in-demand health care occupation during Q4 2018, with 4,474 postings. Other top posted jobs include Medical and Health Services Managers (756 postings), Pharmacy Technicians (642 postings), Nursing Assistants (560 postings), and Speech-Language Pathologists (478 postings).

Data: Emsi
Analysis: Workforce Intelligence Network

High Earning Potential for Speech-Language Pathologists

Licensed Practical Nurse: Most In-Demand Health Care Certification

Health Care Wage Overview

Wages in the high-demand health care field tend to scale with both education and experience. The health care occupation group offers a relatively broad array of entry requirements and a high volume of jobs are open to candidates with less than a bachelor's degree. These jobs that require less than a bachelor's degree pay more than the region's median wage of $17.81 per hour. Registered Nurses, the top posted health care job in Q4 2018, offers a median hourly wage of $34.01 per hour or annual salary of nearly $70,000 according to the Bureau of Labor Statistics (BLS).

Wage Overview for Top Posted Health Care Jobs in Q4 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
29-1141	Registered Nurses	$25.64	$29.35	$34.01	$38.11	$44.13
11-9111	Medical and Health Services Managers	$31.61	$40.65	$52.91	$75.00	$101.28
29-2052	Pharmacy Technicians	$9.95	$11.59	$14.61	$17.60	$20.11
31-1014	Nursing Assistants	$10.33	$12.21	$13.92	$15.97	$18.19
29-1127	Speech-Language Pathologists	$26.49	$31.76	$36.36	$42.77	$48.33
29-2018	Clinical Laboratory Technologists and Technicians	$16.13	$23.25	$30.41	$38.52	$60.06
31-9092	Medical Assistants	$11.43	$12.86	$14.43	$16.74	$18.60
29-2034	Radiologic Technologists	$19.60	$23.13	$27.48	$31.71	$37.05
29-1069	Physicians and Surgeons, All Other	$20.99	$24.28	$28.83	$95.78	$100.00
29-2061	Licensed Practical and Licensed Vocational Nurses	$20.41	$22.43	$25.51	$28.46	$30.23

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills
- Nursing
- Basic Life Support
- Health Sciences
- Nursing Care
- Advanced Cardiovascular Life Support (ACLS)

In-Demand Foundational Skills
- Management
- Leadership
- Communications
- Cardiopulmonary Resuscitation
- Research

In-Demand Education Level*
- High School Diploma: 19.9%
- Associate Degree: 20.0%
- Bachelor's Degree: 26.1%
- Master's Degree: 10.5%

Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent
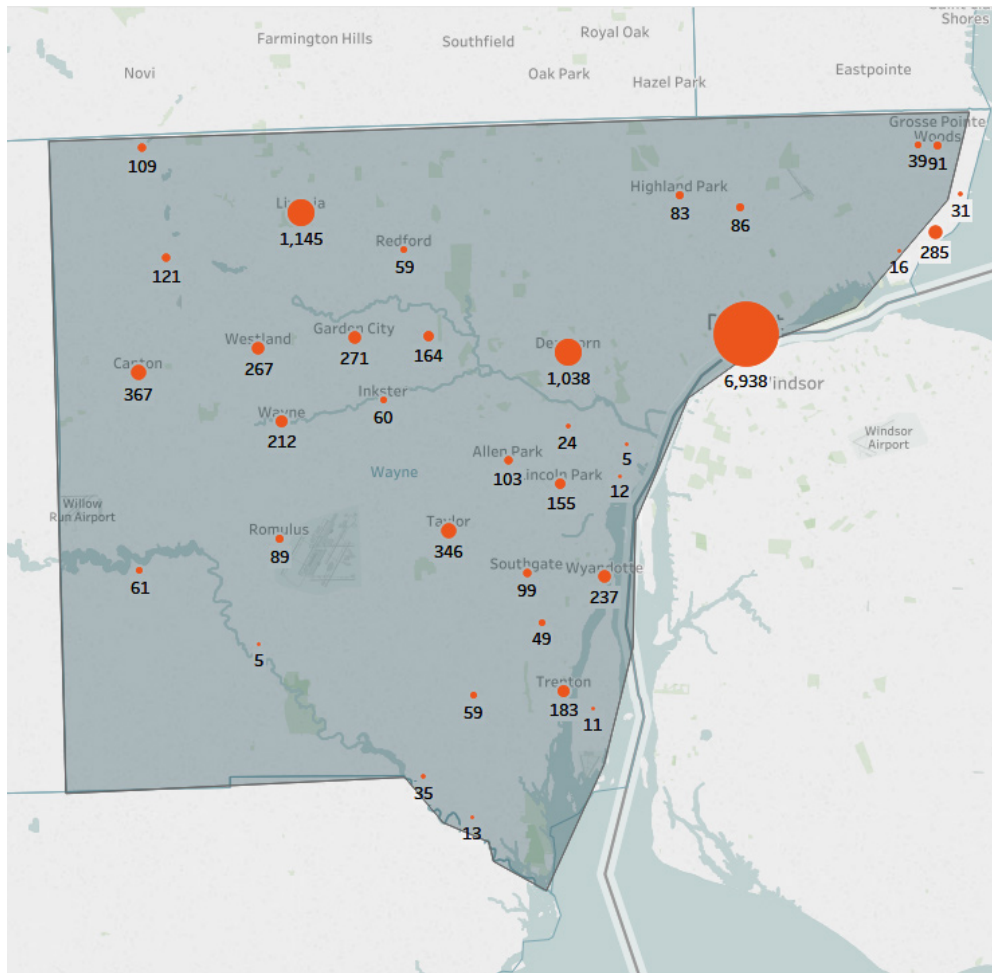
In-Demand Certifications
- Licensed Practical Nurse
- Certified Nursing Assistant
- Nurse Practitioner
- American Registry of Radiologic Technologists (ARRT) Certified
- Patient Care Technician

Hospitals and Pharmacies were Top Employers of Health Care Workers During Q4 2018

Nursing and Management Skills are in High Demand

Map based on Longitude (generated) and Latitude (generated).
Size shows sum of Unique Postings. Details are shown for City.

Top Posting Employers*

- Henry Ford Health System
- William Beaumont Hospital
- Tenet Healthcare Corporation
- Ascension Health
- Mercy Medical Center, Inc.
- Aureus Medical Management Services L.L.C.
- CVS Health Corporation
- Soliant Health, Inc
- Manor Care, Inc.
- Sunbelt Staffing, LLC

Employer names are listed as they appear in online job postings.

Job Postings by City

1. Detroit, MI: 6,938 Postings
2. Livonia, MI: 1,145 Postings
3. Dearborn, MI: 1,038 Postings
4. Canton, MI: 367 Postings
5. Taylor, MI: 346 Postings

# INFORMATION TECHNOLOGY (IT) OCCUPATION GROUP
## Wayne County | Q4 2018

Introduction

Information technology (IT) 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 employ as many individuals as the other groups here, it is quickly growing.

23,102
IT Workers
0.2% Decrease from 2017

Worker Gender Demographics
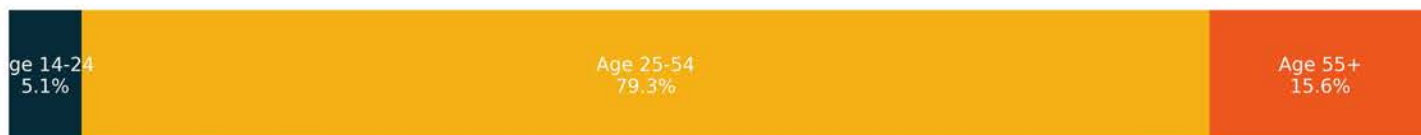
Employment Over Time
2001–2018
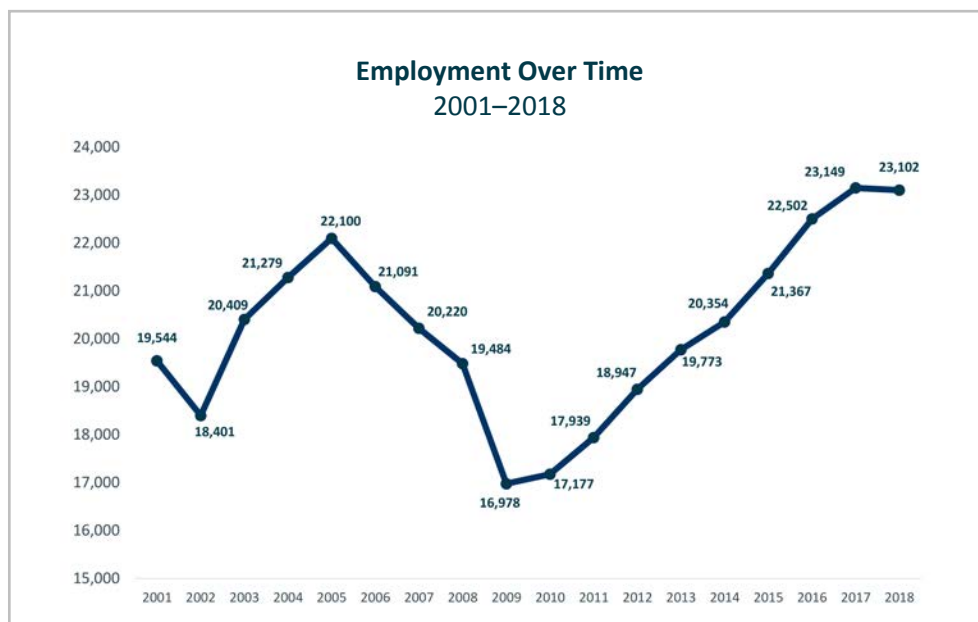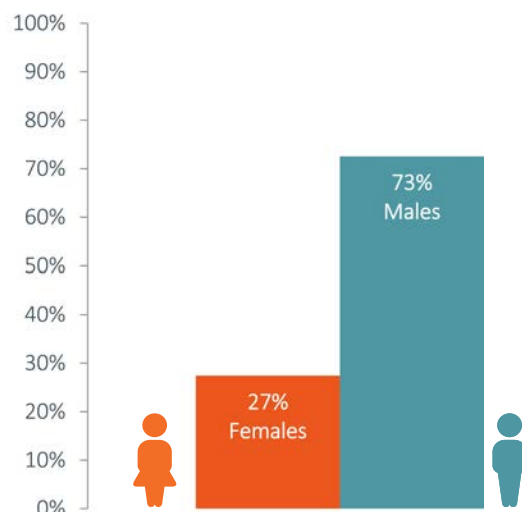
IT Worker Demographics

According to the most recent Emsi data set available (2018), the 23,000 workers in the IT occupation group are primarily white males between the ages of 25 and 54. Currently, 73 percent of workers identify as male, and 66 percent identify as white. There are a broad range of organizations providing specialized training resources for female and minority IT workers in the City of Detroit as well as throughout southeast Michigan. With the push to diversify the IT field, more opportunities are opening for women and minorities.

Race and Ethnicity Demographics
66.0% White | 14.3% Black or African American | 15.7% Asian
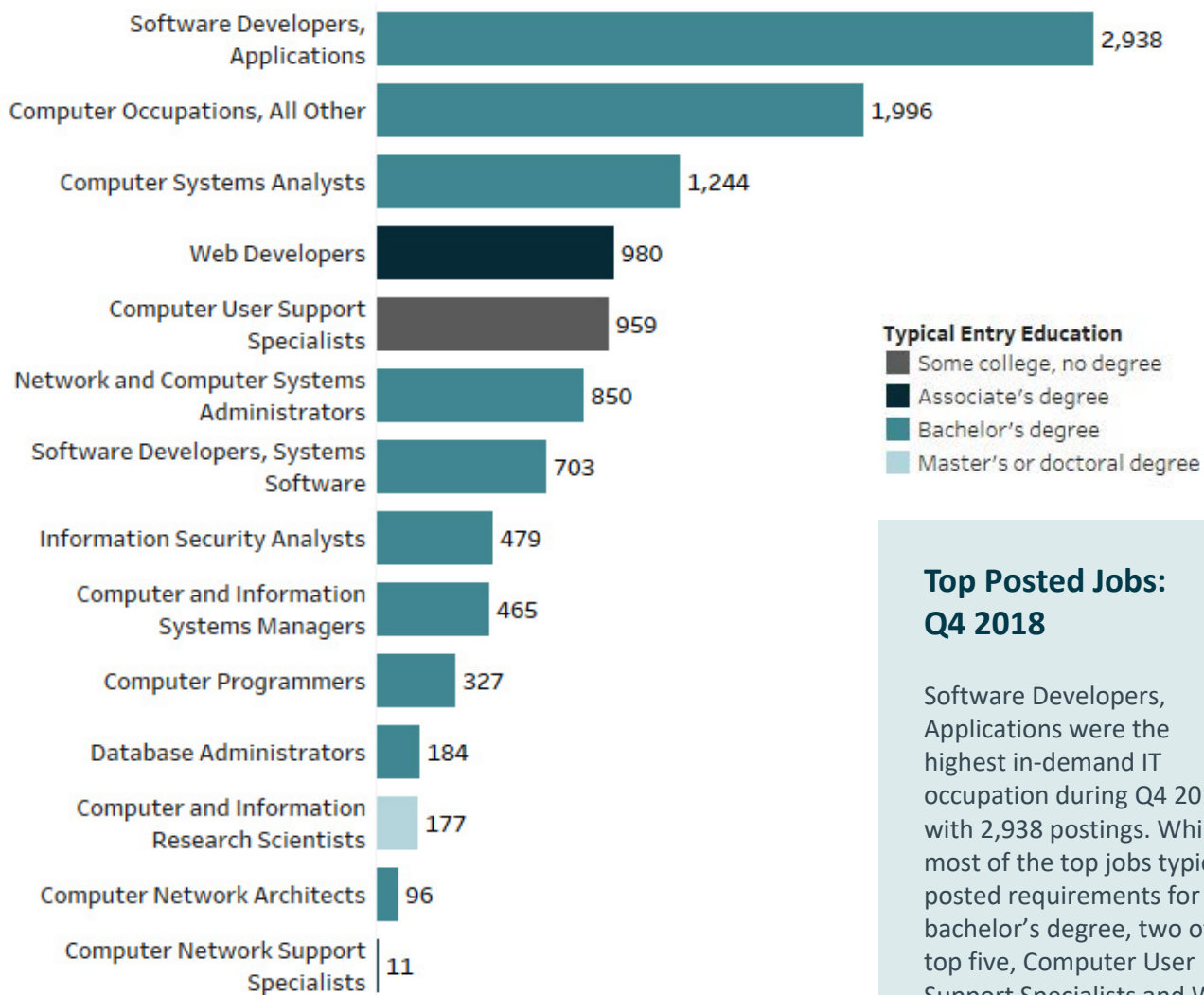
Worker Age Demographics

Age 14-24 5.1%   Age 25-54 79.3%   Age 55+ 15.6%

Data: Emsi | Analysis: Workforce Intelligence Network

11,409 IT Postings:
2,136 More Than in Q3 2018

Bachelors Degree
Required for Most IT Jobs

Information Technology Top Posted Jobs
Q4 2018

Job	Postings
Software Developers, Applications	2,938
Computer Occupations, All Other	1,996
Computer Systems Analysts	1,244
Web Developers	980
Computer User Support Specialists	959
Network and Computer Systems Administrators	850
Software Developers, Systems Software	703
Information Security Analysts	479
Computer and Information Systems Managers	465
Computer Programmers	327
Database Administrators	184
Computer and Information Research Scientists	177
Computer Network Architects	96
Computer Network Support Specialists	11

Typical Entry Education
- Some college, no degree
- Associate's degree
- Bachelor's degree
- Master's or doctoral degree

Top Posted Jobs:
Q4 2018

Software Developers, Applications were the highest in-demand IT occupation during Q4 2018, with 2,938 postings. While most of the top jobs typically posted requirements for a bachelor's degree, two of the top five, Computer User Support Specialists and Web Developers, typically require only an associate degree or some college.

Data: Emsi
Analysis: Workforce Intelligence Network

High Earning Potential for Computer and Information System Managers

CISSP: Most In-Demand IT Certification

IT Wage Overview

Most IT-related jobs offer high wages providing a lucrative opportunity to job seekers willing to meet the minimum education requirements related to these jobs. Software Developers, Applications, the top posted IT job in Q4 2018, offers a median hourly wage of $44.69 per hour or nearly $93,000 per year according to the Bureau of Labor Statistics (BLS).

Wage Overview for Top Posted IT Jobs in Q4 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
15-1132	Software Developers, Applications	$29.13	$35.52	$44.69	$56.11	$67.21
15-1199	Computer Occupations, All Other	$23.05	$29.01	$40.37	$51.07	$59.44
15-1121	Computer Systems Analysts	$25.14	$30.29	$39.19	$49.11	$60.87
15-1134	Web Developers	$21.08	$25.12	$29.89	$39.47	$48.12
15-1151	Computer User Support Specialists	$12.89	$16.61	$22.66	$29.55	$37.82
15-1142	Network and Computer Systems Administrators	$25.06	$29.89	$36.50	$44.89	$52.34
15-1133	Software Developers, Systems Software	$25.77	$33.21	$42.37	$48.97	$58.52
15-1122	Information Security Analysts	$30.88	$37.02	$47.82	$58.60	$67.97
11-3021	Computer and Information Systems Managers	$41.71	$50.74	$62.00	$76.34	$94.80
15-1131	Computer Programmers	$22.04	$27.30	$34.19	$42.88	$53.75

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills
- Agile Software Development
- SQL
- Java
- Software Engineering
- JavaScript

In-Demand Foundational Skills
- Management
- Communications
- Integration
- Operations
- Information Technology

In-Demand Education Level*
- High School Diploma: 3.6%
- Associate Degree: 3.6%
- Bachelor's Degree: 55.6%
- Master's Degree: 12.6%

Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent

In-Demand Certifications
- Certified Information Systems Security Professional (CISSP)
- Certified Information Security Manager
- Cisco Certified Network Associate
- Microsoft Certified Systems Engineer
- Microsoft Certified Professional

Automotive and Tech Companies are Top Employers of IT Workers

Agile Software Development Skills are in High Demand

*Map based on Longitude (generated) and Latitude (generated).
Size shows sum of Unique Postings. Details are shown for City.*

Top Posting Employers*

- Ford Motor Company
- Virtual Vocations
- Deloitte LLP
- Msx International, Inc.
- Quicken Loans Inc.
- Fast Switch, Ltd.
- Teksystems, Inc.
- Anthem, Inc.
- Systems Technology Group, Inc
- Strategic Staffing Solutions, Inc.

*Employer names are listed as they appear in online job postings.

Job Postings by City

1. Detroit, MI: 6,452 Postings
2. Dearborn, MI: 2,426 Postings
3. Livonia, MI: 730 Postings
4. Plymouth, MI: 512 Postings
5. Allen Park, MI: 493 Postings

SKILLED TRADES AND TECHNICIANS (MANUFACTURING) OCCUPATION GROUP
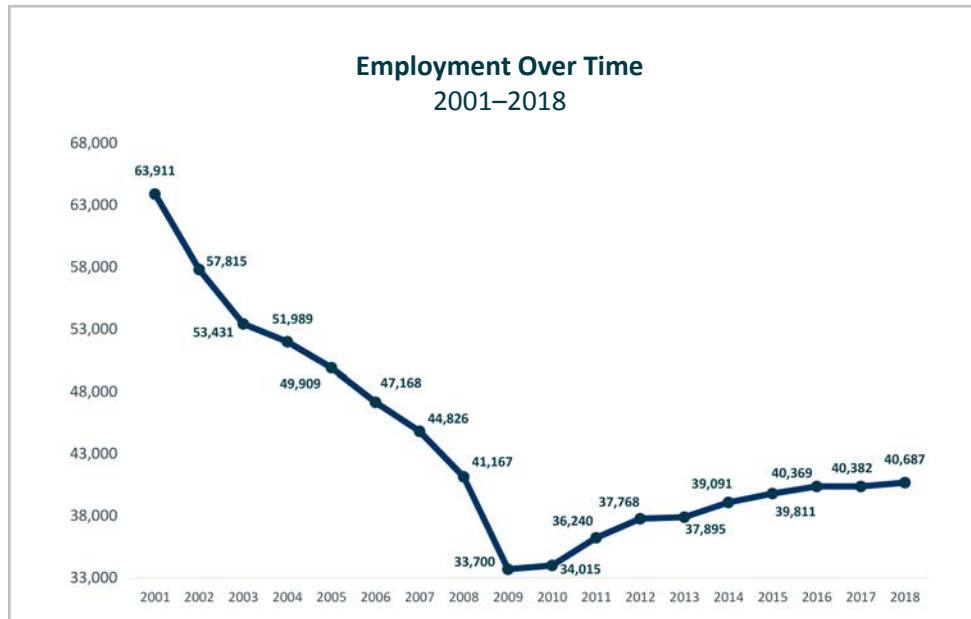## Wayne County | Q4 2018

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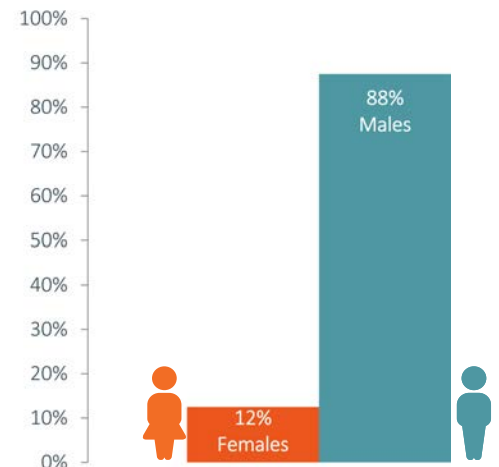
NOTE: Skilled trades related to construction and assembly are not included in this cluster, as the focus is on advanced manufacturing only.

40,687
Trade Workers

0.8% Increase from 2017

Employment Over Time
2001–2018

Worker Gender Demographics

88% Males

12% Females

Skilled Trades and Technicians Worker Demographics

According to the most recent Emsi data set available (2018), the Skilled Trades occupation group employs about 40,500 workers in Wayne County. A majority of workers are white males between the ages of 25 and 54. Additional outreach may be necessary in the near future, as at 25.6 percent, the group has a somewhat higher proportion than average of workers over age 55.

Race and Ethnicity Demographics

72.5% White | 18.1% Black or African American | 2.9% Asian
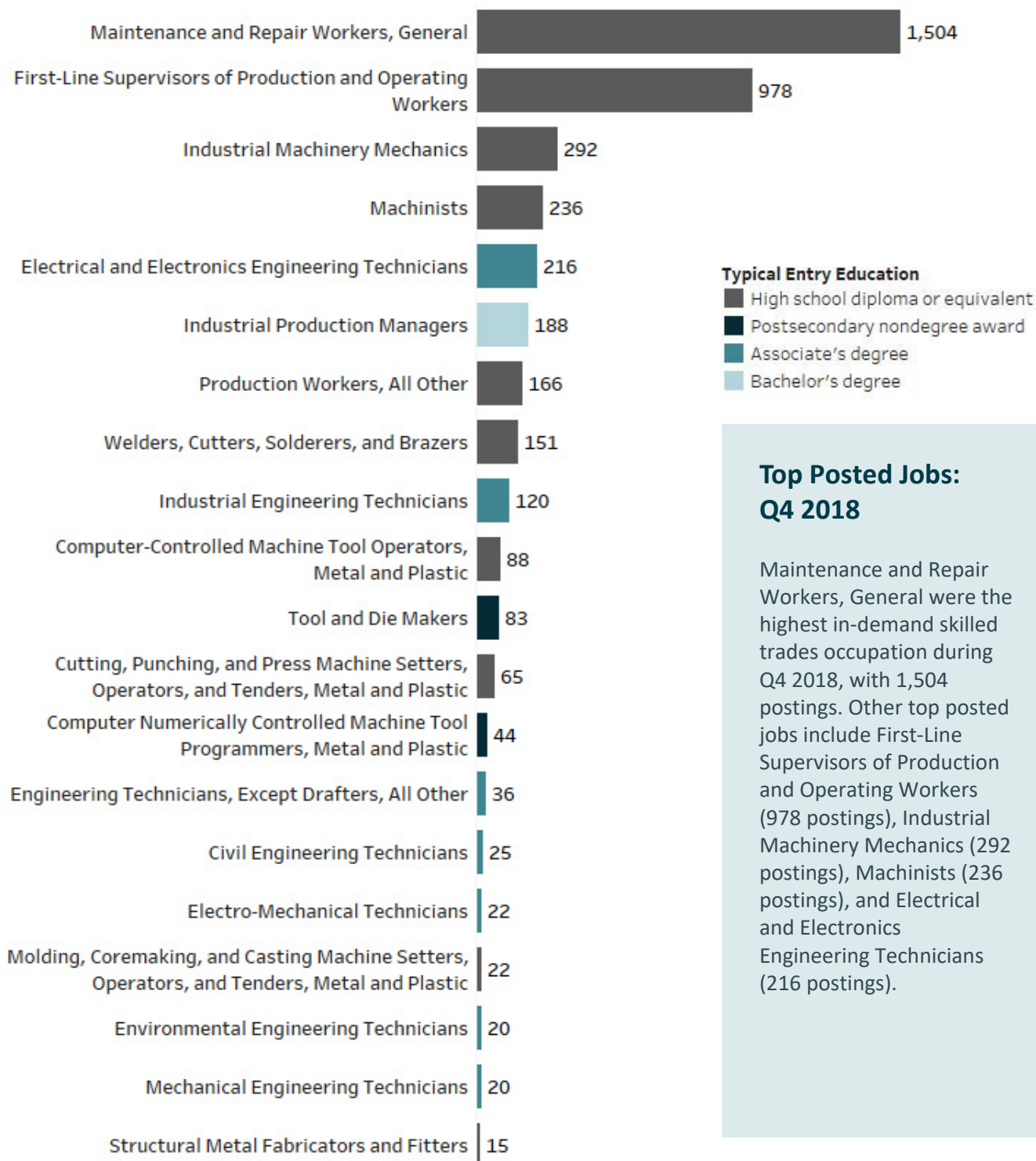
Worker Age Demographics

Age 14-24
5.8%

Age 25-54
68.6%

Age 55+
25.6%

Data: Emsi | Analysis: Workforce Intelligence Network

4,383 Skilled Trades Postings:
244 More than in Q3 2018

Vocational Training Required
for Most Skilled Trades Jobs

Skilled Trades and Technicians Top Posted Jobs
Q4 2018

Occupation	Postings
Maintenance and Repair Workers, General	1,504
First-Line Supervisors of Production and Operating Workers	978
Industrial Machinery Mechanics	292
Machinists	236
Electrical and Electronics Engineering Technicians	216
Industrial Production Managers	188
Production Workers, All Other	166
Welders, Cutters, Solderers, and Brazers	151
Industrial Engineering Technicians	120
Computer-Controlled Machine Tool Operators, Metal and Plastic	88
Tool and Die Makers	83
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	65
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	44
Engineering Technicians, Except Drafters, All Other	36
Civil Engineering Technicians	25
Electro-Mechanical Technicians	22
Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	22
Environmental Engineering Technicians	20
Mechanical Engineering Technicians	20
Structural Metal Fabricators and Fitters	15

Typical Entry Education
- High school diploma or equivalent
- Postsecondary nondegree award
- Associate's degree
- Bachelor's degree

**Top Posted Jobs:
Q4 2018**

Maintenance and Repair Workers, General were the highest in-demand skilled trades occupation during Q4 2018, with 1,504 postings. Other top posted jobs include First-Line Supervisors of Production and Operating Workers (978 postings), Industrial Machinery Mechanics (292 postings), Machinists (236 postings), and Electrical and Electronics Engineering Technicians (216 postings).

High Earning Potential for Industrial Production Managers

In-Demand Skilled Trades Certification: CDL

Skilled Trades and Technicians Wage Overview

Half of the top ten in-demand skilled trades occupations have median wages above $20 per hour according to the Bureau of Labor Statistics (BLS). Maintenance and Repair Workers, General, the top posted skilled trades job in Q4 2018, offers a median hourly wage of $18.34, which translates to an annual salary of over $38,000.

Wage Overview for Top Posted Skilled Trades and Technicians Jobs in Q4 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
49-9071	Maintenance and Repair Workers, General	$10.42	$13.26	$18.34	$24.24	$29.67
51-1011	First-Line Supervisors of Production and Operating Workers	$18.72	$24.90	$33.85	$44.08	$53.73
49-9041	Industrial Machinery Mechanics	$17.49	$22.51	$28.48	$34.43	$37.95
51-4041	Machinists	$10.95	$13.68	$18.16	$23.35	$28.76
17-3023	Electrical and Electronics Engineering Technicians	$16.28	$22.01	$29.77	$35.28	$40.15
11-3051	Industrial Production Managers	$34.69	$45.41	$57.68	$72.03	$86.87
51-9199	Production Workers, All Other	$11.04	$15.66	$17.86	$20.61	$24.00
51-4121	Welders, Cutters, Solderers, and Brazers	$12.67	$15.42	$18.75	$24.00	$33.56
17-3026	Industrial Engineering Technicians	$15.60	$18.36	$26.84	$35.95	$42.32
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	$11.08	$12.84	$14.79	$20.57	$27.35

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills
- HVAC
- Machining
- Continuous Improvement Process
- Preventive Maintenance
- Plumbing

In-Demand Foundational Skills
- Management
- Operations
- Troubleshooting (Problem Solving)
- Communications
- Leadership

In-Demand Education Level*
- High School Diploma: 43.6%
- Associate Degree: 10.2%
- Bachelor's Degree: 14.5%
- Master's Degree: 1.5%

Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent
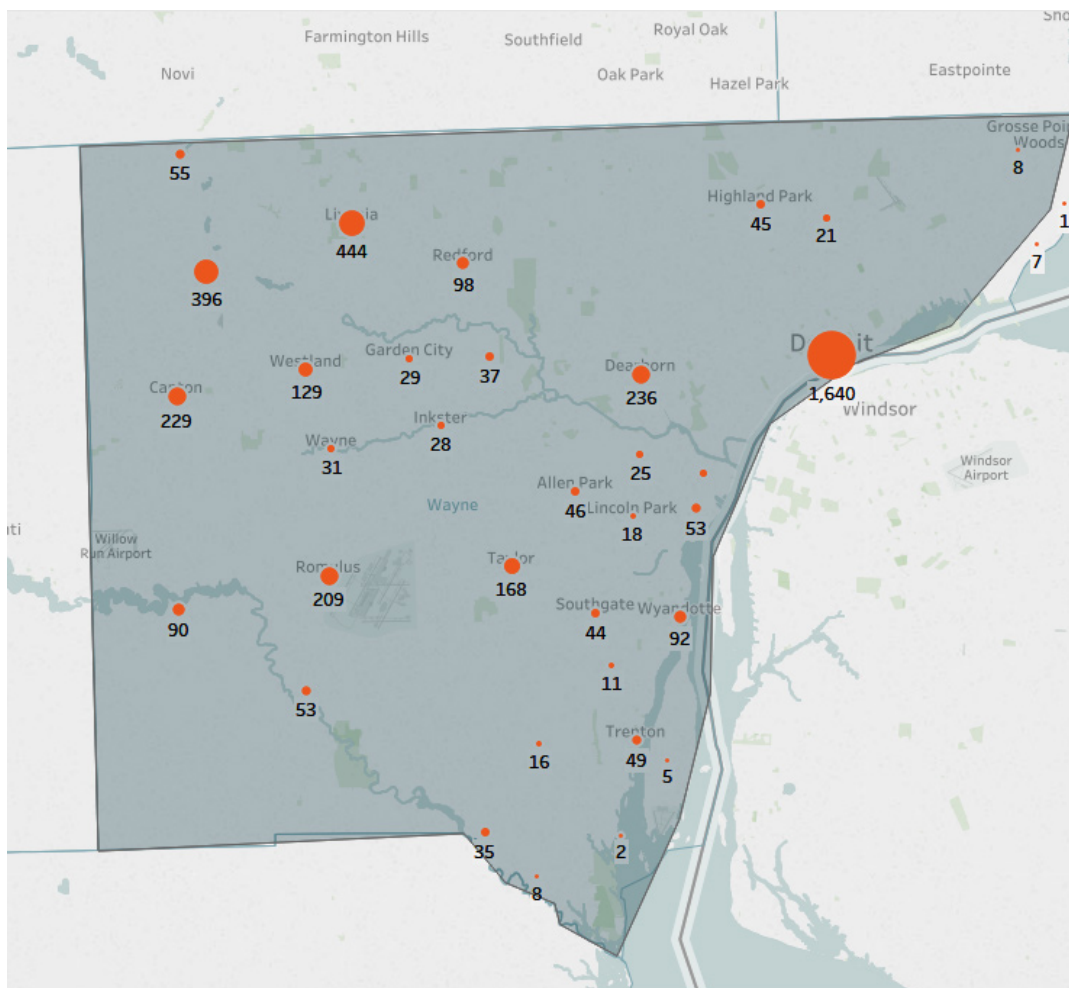
In-Demand Certifications
- Commercial Driver's License (CDL)
- Certified First Responder
- American Society for Quality (ASQ) Certified
- CompTIA Security+
- Certified Quality Engineer

Staffing Agencies and Manufacturers: Top Employers of Skilled Trades Workers

HVAC and Management Skills are in High Demand

Map based on Longitude (generated) and Latitude (generated).
Size shows sum of Unique Postings. Details are shown for City.

Top Posting Employers*

- McDonald's Corporation
- Kelly Services, Inc.
- Cbre Group, Inc.
- Shipt LLC
- A.J.M. Packaging Corporation
- The Home Depot Inc
- FCA US LLC
- Flex-N-Gate Corporation
- United States Steel Corporation
- Ford Motor Company

*Employer names are listed as they appear in online job postings.

Job Postings by City

1. Detroit, MI: 1,640 Postings
2. Livonia, MI: 444 Postings
3. Plymouth, MI: 396 Postings
4. Dearborn, MI: 236 Postings
5. Canton, MI: 229 Postings

Website
www.WINintelligence.org

Email
info@WINintelligence.org

Phone
313.744.2946

Address
25363 Eureka Road
Taylor, MI 48180

Facebook
@workforceintelligencenetwork

Twitter
@WIN-semich

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